

meR PVI

VEGETABLE CULTURE

B A E 3 3 0 1



af GmkvjPvi Gû iÿvj †W†fjc†g,U
evsjv†`k Dšy weke`vjq

BANGLADESH OPEN UNIVERSITY

meR PVI

VEGETABLE CULTURE

we G B 3301

†Kvm ‖W†fjc†g>U ‖Ug

■ †jLK

W. AvRv` Gd. Gg. **kidžb**

evsjv†`k Kll. ‖ekle`vjq

W. Gm. Gg. **g†bvqi tnv†mb**

evsjv†`k Kll. M†eIYv Bb†óUUDU

W. †gv: **Avāy ing**

evsjv†`k Kll. ‖ekle`vjq

■ mǝžv`K

W. †gv: **AveyZ†je**

†ž Ae GllMKvjPvi GŪ i†ivj †W†fjc†g>U

evsjv†`k Dššy ‖ekle`vjq

W. †gv: **†ejvj tnv†mb**

†ž Ae GllMKvjPvi GŪ i†ivj †W†fjc†g>U

evsjv†`k Dššy ‖ekle`vjq

■ iPbv%k jx

cKvkbv, gŷY I ‖eZiY ‖efvM

evsjv†`k Dššy ‖ekle`vjq

■ mgšqKvix

W. **Avey†nbv †gv: dvi†K**

†ž Ae GllMKvjPvi GŪ i†ivj †W†fjc†g>U

evsjv†`k Dššy ‖ekle`vjq

G †Kvm eBllU †idvix KZK ‖bix††Yi ci evsjv†`k Dššy ‖ekle`vj†qi †ž Af
GllMKvjPvi GŪ i†ivj †W†fjc†g>U-Gi Qv††`i Rb` gŷZ n†q†Ql

†ž Af GllMKvjPvi GŪ i†ivj †W†fjc†g>U



evsjv†`k Dššy ‖ekle`vjq

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মসুউব্বি চিলি

mfvciz

W. Aveynbv tgv: dvi:K

~z Ae GIMKvjPvi GÜ i:ivj tWtfjctgU
evsjv~k DŠy~ekwe~vjq

m`m`

W. Kvgvj Dİxb Avg`

m`m` cıiPvjK (Aemi cvB)
evsjv~k KİL.M#eIYv KvDİYj

W. tgv: AveyZv~je

tgv: mİlqvi tnv~mb tPšayx

W. tgv: kvn Avjg mİKvi

W. Av b g Avıgbı ingvb

W. tgv: tgv~k`y ingvb

W. tgv: wejvj tnv~mb

W. Aveynv~K tgv: tmi:jg

W. tgv: bıej Bmjvg

evsjv~k DŠy~ekwe~vjq

mweK ZEvav~b

W. Aveynbv tgv: dvi:K

~z Ae GIMKvjPvi GÜ i:ivj tWtfjctgU
evsjv~k DŠy~ekwe~vjq

VEGETABLE CULTURE (Sabji Chash)

a three credit coursebook for the bachelor of
agricultural education program.

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ÒmewR PvIÓ tKvmeBvU we t k l f v t e ˘ Af GvMKvjPvi GÛ i i v j w w f j c t g u G i
 weGMGW t c v M v t g i Q v Î t ` i R b t j L v n t q t Q | A v c w b R v t b b , ` y k t v q w k t K i m v e t Y K
 D c w Z t b B | Z v B c v t V i t K v t b v K v b w e l q t h b A v c b v i e s t Z A m y e a v b v n q t m t K
 ` p t i t L B t K v m e B v U t j L v n t q t Q | t K v m e B v U i A v t 2 K I D c v c b v Z v B c P i j Z c v w e B
 t t K w K Q y w w f b a i t b i | t h t n Z z n i v m i i w k t K i m v n v h Q v o v B t K v m e B v U A v c b v t K w b t R
 c t o e s t Z n t e , Z v B G v U K x f v t e c o t e b c t g B Z v t R t b w b b | G t Z t K v m e B v U c o t Z I
 e s t Z A v c b v i m y e a v n t e |

tKvmeBvU i t c t i L v

ÒmewR PvIÓ tKvmeBvU A v U v B D w b t U G K v a K c v i t q t Q | c v v m s L v w b a v i Y K i v n t q t Q
 B D w b t U i w e l q e i I c i w b f i K t i | B D w b t U i c v v t j v t K A v j v v K t i m v R v t b v n t j I
 G t i g t a G K v U t h v M m Î i t q t Q | t K v m e B v U i B D w b U 1, 2 I 3-G i c v Î t c i P b v
 K t i t Q b W. A v R v G d . G g . k i d z b , A a v c K , D v v b Z Z w e f v M , e v s j v t k K v L .
 w e k w v j q , g q g b m s n ; B D w b U 4 I 5-G i c v Î t c i P b v K t i t Q b W. A v â y i n g ,
 D v v b Z Z w e f v M , e v s j v t k K v k . w e k w v j q , g q g b m s n ; G e s B D w b U 6, 7 I 8-G i
 c v Î t c i P b v K t i t Q b W. G m . G g . g t b v q v i t n v t m b , g E v e Á w b K K g K Z v , e v s j v t k K v L .
 M t e I Y v B b v ÷ w U D U , M v R x c y |

B D w b t U i f y g K v

c w Z v U B D w b t U i i i t Z B i t q t Q G K v U f y g K v | f y g K v q B D w b t U i w e l q e i D t Î k Ges
 , i z m s t t c Z z j a i v n t q t Q | B D w b U v t Z K x K x w e l q w b t q A v t j v P b v K i v n t q t Q
 m s t t c Z v i l D t j L i t q t Q | G t Z A v c w b B D w b t U i i i t Z B t R t b h v t Q b c v t V i g j
 A v t j v P m w P K x ?

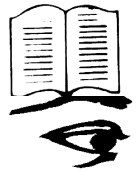
c v t V i D t Î k

j t K i t e b c w Z v U c v t V i i i t Z G K e v G K v a K m y b o D t Î k t q v A v t Q | c w Z v U
 D t Î k t K t K v K t i B c v t V i w e l q e m n R f v t e e Y b v K i v n t q t Q | c v v t k t l c v t V i
 D t Î k t j v A R b K i v m a e n t q t Q w K — b v Z v w b t R w b t R B g j v q b K i t e b | G R b c v v
 t k t l g j v q b c k A v r c v t V i e i g y v q b i t q t Q | G t Z A v c w b c w v U K Z U k z e s t Z
 c v i t e b Z v w b a v i Y K i t Z c v i t e b |

A v B K t b i (I C O N) e e n v i

c v t V i w e l q e t j v G K w o t Z e t S t b q v i R b c t q v R b A b y n t i t K v m e B v U i w e f b
 R v q M v q w e f b a i t b i c Z x K e v A v B K b e e n v i K i v n t q t Q , h v t t L A v c w b m n t R B
 w e l q e i D c v c b v G e s A v c b v i K i Y x q K x Z v e s t Z c v i t e b | w b t G t K v m e B v U t Z
 e e u Z w e f b a i t b i A v B K t b i A w b t k K i v n t j v —

 +  = c o b I j t K i t b



= Aveik`K cvV/mvigg

= Qve t`Lj



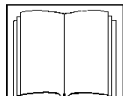
= Abkxb/Povš gj`vqb



= cvtWëi gj`vqb



= Dëigjv



= Z`mî

e · jLb



cv†Vi iZc Y kYxq Ask†K Avil AvKIYxq K†i c`k†bi Rb` gv†S
gv†SB Ôe · jL†biô gva†g Z†j aiv n†q†Q| cvZU e · jLb g†bv†hVM j`†q
cob Ges g†b ivLv† tPóv Ki†b|

Abkxb

Avc†b cvVU f†jv†f†e e†Z cv†Qb K — bv Zv hvPvB Kivi Rb` cv†Vi gv†S tKv†bv
tKv†bv RvqMvq t`qv i†q†Q Abkxb| Abkxb,†jv Avcbv†K mgva† Ki†Z n†e| Gme
Abkxb Avcbvi Avb I` jZv e†x†Z mnvqZv Ki†e|

mvigg

cvZU cv†VB mvigg t`qv Av†Q| mvigg c†o Avc†b †b`ó cv†Vi †elqe` m`ú†K A†Z
mn†RB aviY †b†Z cv†eb|

cv†Wëi gj`vqb

cvZU cv†Vi t††I Avc†b cvVU KZUK†e†Z t††i†Qb Zv hvPvB†qi Rb` i†q†Q cv†Wëi
gj`vqb| cvVU f†jv†f†e tevSvi ci cv†Wëi gj`vq†bi ck,†jvi Dëi t`qvi tPóv
Ki†b| AZ:ci Avcbvi t`qv Dëi BD†bU t††I t`qv Dë†ii mv†_ †g†j†q †bb| me,†jv
Dëi m†VK n†j cieZx cv i†i Ki†b Ab`_vq cvVU c†ivq cob|

Povš gj`vqb

cvZ BD†b†Ui t††I i†q†Q Povš gj`vqb| G†Z ms††B I i†bv†g†K ck i†q†Q| G
ck,†jvi Dëi ^Z†i Kivi tPóv Ki†b, hv Avcbv†K c†x††vq f†jv† djvdj Ki†Z mn†vh`
Ki†e| G†††† Ab`vb` Z`m††i mn†vh` †b†Z cv†ib| GQvov c†qv††b Avcbvi †UDU†ii

mv†_I K_v ej†Z cv†ib| BDw†Ui me,†jv cW fv†jvfv†e co†j Pp†Š gj†vq†bi
ck,†jv mg†va†b†Kv†bv Am†ya†v n†e bv|

meiR P*†***I**i c*ii*P*†*Z I ,iZ

kivK-meiR cavbZ imvj cK*†*zi ,j*†*RvZxq MvQ| Z*†*e *†*ei*†*r I e*†*†RvZxq MvQ| kivK-meiR n*†*Z c*†*i| meiR*†*f*†*` G*†*`i LvIqvi Dc*†*h*†*Mx Ask A_vr c*†*vZ*†*, Kv*†*U, d*†*z, exR I g*†*j K*†*Wv A_e*†*v i*†*v*†*v K*†*i LvIq*†* h*†*vq| Z*†*e t*†*ei*†*ki f*†*vM meiRB i*†*v*†*v K*†*i LvIq*†* nq| c*†*vZ*†* i*†*v*†*v Kiv n*†*j G*†*K kivK Ges c*†*vZ*†* Q*†*vov Mv*†*Qi Ab*†* Ask i*†*v*†*v Kiv n*†*j Z*†*vK meiR ejv nq| t*†*ei*†*kifvM kivK-meiR GK*†*eIR*†*ex D*†*i™`| t*†*h ,*†*jv `B ev e*†*u*†*eIR*†*ex t*†*m ,*†*jv*†*KI m*†*v*†*viYZ GK eIR*†*exi gZ R*†*š*†*v*†*bv n*†*q _v*†*K| kivK-meiR*†*Z *†*ei*†*fb Lv*†*`vcv`vb h*†*ó c*†*i*†*g*†*vY *†*ei`g*†*vb \_vKvq g*†*vbe-cyóZ Gi c*†*q*†*vRb*†*qZv Ac*†*i*†*m*†*g| cyó *†*ei*†*Áv*†*z`i g*†*z kixi m*†*y mej, KgV i*†*vLvi Rb` GKRB c*†*v*†*Beq` g*†*v*†*bi c*†*iZ`b 200 Mvg meiR LvIq*†* D*†*iPZ| *†*Kš Av*†*g*†*v`i t`*†*ki g*†*v*†*by c*†*iZ`b t*†*h meiR Lvq Zvi c*†*i*†*g*†*vY n*†*Q g*†*l 70 Mvg (Avjyl *†*gió Avjymn)| Avjyl *†*gió Avjyev` *†*z`*†*j Gi c*†*i*†*g*†*vY `wvq g*†*l 30 Mvg| D*†*zL` t*†*h, kix*†*ii P*†*vin`vi kZKiv 90-95 f*†*vM *†*fUv*†*gb Ôimó, 60-80 f*†*vM *†*fUv*†*gb ÔGó Ges 20-30 f*†*vM *†*fUv*†*gb Ô*†*eó GKg*†*l meiR I d*†*j n*†*Z Av*†*tm| GQvov kivK-meiR*†*Z *†*ei*†*fb L*†*vbR c`v_ D*†*zL*†*h*†*vM` c*†*i*†*g*†*vY *†*ei`g*†*vb i*†*q*†*Q| cyóMZ ,i*†*z*†*i Gme K_v Av*†*g*†*v`i A*†*b*†*Ki Rv*†*v t*†*b e*†*j meiR LvIqvi c*†*iZ Av*†*g*†*v`i AvMn ZZUv ev*†*o*†*ib| Gi d*†*j Gi P*†*lvev`I G*†*`k m*†*xigZ i*†*q*†*Q| eZg*†*v*†*b A*†*aK Av*†*qi Drm *†*n*†*tm*†*e Ges avb I M*†*gi *†*eiKí *†*n*†*tm*†*e meiRi P*†*lvev` I e`envi *†*bi`b evo*†*Q|

G BD*†*b*†*Ui *†*ei*†*fb c*†*v*†*v D`vbZ*†*Éi av*†*Yv Ges Gi *†*ei*†*fb kvLvmg*†*ni *†*ei`Z, g*†*vbe-cyóZ meiRi Ae`vb, meiRi A\_ *†*biZK I t*†*fIR ,iZ, meiRi Drcv`b c*†*i*†*Z I e`envi m*†*g*†*†v m`úK Z*†*viEK I e`envi*†*Kmn *†*ei`viZf*†*te Av*†*jvPbv Kiv n*†*q*†*Q|

c*†*v 1.1 D`vbZ*†*Éi av*†*Yv I kvLvmn*†*

GB c*†*v t*†*k*†*I Av*†*cb

- D`vbZÉ m*†*zÜ av*†*Yv *†*z`*†*Z c*†*i*†*teb|
- D`vbZ*†*Éi *†*ei*†*fb kvLvi b*†*g ej*†*Z c*†*i*†*teb|
- D`vbZ*†*Éi kvLvmg*†*ni m*†*Áv eYbv Ki*†*Z c*†*i*†*teb|

D`vbZ*†*Éi av*†*Yv

K*†*L*†**†*ei*†*Áv*†*bi t*†*h kvLvq D`vb dm*†*ji Drcv`b, Dbqb, e`envi BZ`v` *†*z`K m*†*óúK Av*†*jvPbv Kiv nq Zvi b*†*g D`vbZÉ| D`vbZÉ n*†*jv Horticulture Gi evs*†*jv c*†*iZkã| j`v*†*Ub f*†*vIvq hortus I cultura kãð*†*qi m*†*gš*†*q m*†*ß`k kZvã*†*z Horticulture k*†*ãi DrcÉ n*†*q*†*Qj| Hortus A_ t*†*eo*†*v Ges cultura A_ P*†*lvev`| h*†*y i*†*vó*†*i cL`vZ D`vbZviEK R*†*j Rv*†*bK (1954) D`vbZ*†*Éi m*†*Áv *†*z`*†*Z *†*M*†*q ej*†*Qb, “m*†*ivm*†*i g*†*v*†*bi Lv`, Jla I g*†*bi t*†*LviK t*†*hMvq Ges *†*ei*†*kI hZ m*†*nKv*†*i R*†*š*†*v*†*bv c*†*q*†*vRb nq Ggb D*†*i™` PPvq K*†*L*†**†*ei*†*Áv*†*bi t*†*h kvLv *†*biq*†*vRZ Z*†*vK D`vbZÉ ej*†*|

D`vbZ*†*Éi kvLv



D`vbZtEi cavb kvLv, t jv n t jv :

1. meRieÁvb (Olericulture)
2. djieÁvb (Pomology)
3. dztieÁvb (Floriculture)

GQvov I i t q t Q gmjweÁvb I A_Kix D`vb dmjweÁvb| w b t P we l q, t j v Av t j v P b v K i v n t j v |

meRieÁvb D`vbZtEi
GKvU cavb kvLv| Bst i R t Z
G kvLv Olericulture b v t g
A w f i n Z |

1. meRieÁvb t meRieÁvb D`vbZtEi GKvU cavb kvLv| Bst i R t Z G kvLv Olericulture b v t g A w f i n Z | meRieÁvb D`vbZtEi Ggb GKvU , i t Z c t k v L v h v t Z A w a K d j b c v l q v i w b i g t E k v K - m e i R i D r c v E , m g w e K v k , M o b I M v b , e s k w e v i , m e i R P t I A v e n v l q v I g w U i c f v e , P v l v e v ` c x v Z , d m j m s M n I Z v i e e n v i m a t U P P v K i v n q |

2. djieÁvb t D`vbZtEi t h kvLvq d j M v t Q i e s k w e v i , P v l v e v ` , d j D r c v ` t b A v e n v l q v I g w U i c f v e , d m j m s M n I Z v i e e n v i m a t U P P v K i v n q Z v t K d j i e Á v b e v P o m o l o g y e t j |

3. dztieÁvb t Bst i R t Z G kvLv t K Floriculture e t j | dztieÁvb e j t Z d z I m y k M v t Q i P v l v e v ` I e e v c b v m a t U x q weÁvb t K t e v S i q | dztieÁvb i GKvU DckvLv i t q t Q h v i b i g L a n d s c a p e H o r t i c u l t u r e e v j c w i K i b v | G B D c k v L v t Z M v Q c v j v j v m t q G j v K v we t k t I i c v K v Z K t m s ` h e w x i w e l q m s m u s K g K v U w b t q A v t j v P b v K i v n q |



mvigg

- D`vbZtEi n t j v d j , d z , k v K - m e i R , g m j v I A \_ K i x d m t j i P v l v e v ` I e e v c b v m a t U x q weÁvb |
- D`vbZtEi kvLv, t j v n t j v d j i e Á v b , m e i R i e Á v b , d z i e Á v b , g m j w e Á v b I A \_ K i x D ` v b d m j w e Á v b |
- meRieÁvb e v O l e r i c u l t u r e m e i R i P v l v e v ` I e e v c b v w b t q A v t j v P b v K t i |
- d j i e Á v b e v P o m o l o g y d t j i D r c v ` b I e e n v i w b t q A v t j v P b v K t i |
- d z i e Á v b e v F l o r i c u l t u r e d z I m y k M v t Q i P v l v e v ` I e e v c b v w b t q A v t j v P b v K t i |



c#V#W#E#i g#j`vqb 1.1

1. mZ" n#j Ômô Ges #g_`v n#j Ô#gô #jL#|

K. k#K-me#R cavbZ , j#R#Z#q M#Q|

L. D`vb dm#j i te j#q c#Z#U M#Q i Avj#`v hZ #b#q#nq|

M. meiR #eÁ#bi Bs#i#R c#Zkã n#j# Horticulture|

2. #b`vb c#Y Ki#b|

K. k#i#i P#n`vi kZKiv f#M #fU#gb Ô#mô Av#m k#K meiR I dj #_#K|

L. GKRb c#B eq` g#b#i c#Z#`b M#g meiR Lv I#q# D#PZ|

M. Horticulture (D`vbZ#) `# j`#Ub kã I n#Z Drc#E n#q#Q|

3. m#VK D#i i c#k #UK #P#Y (✓) #`b|

K. Horticulture k#ã i Drc#E #K#b f#I#v #_#K n#q#Q ?

1. Av#e#

2. d#i#m

3. j`#Ub

4. `ú`#bk

L. D`vb dmj #K#b , #j#v ?

1. meiR, dj I d#

2. a#b, Mg, f#E#v

3. m#i#I#v, m#q#e#b

4. ebR D#TM`

M. Pomology j#Z #K e#q# ?

1. meiR #eÁ#b

2. dj #eÁ#b

3. d# #eÁ#b

4. gmj#v #eÁ#b

4. GK K_vq ev ev#K" D#i #`b|

K. e#j#v#`#k Rbc#Z c#Z#`b KZ M#g meiR Lv I#q#nq?

L. D`vbZ#E#i cavb k#Lv , #j#v K# K#?

M. d# #eÁ#bi Dck#Lv i b#g K#?

cvV 1.2 gvbe cyóZ meRi Ae`vb



GB cvV tkZl Avcib

- Lv`i wefb cyó Dcv`vbi bvg ejZ cviteb|
- myg Lv` KvK ej Ges myg Lv` ^ZiZ meRi cqvRbxqZv Kx Zv jLZ cviteb|
- GKRb cvSeq` gvblyi Rb` cqvRbxq` ^`bK cyó Dcv`vbi cwigY D+jL KiZ cviteb|
- wefb cyó Dcv`vb mieivn meRi fvgKv eYbv KiZ cviteb|
- wefb meRZ we`gvb cyó Dcv`vbmgni cwigY D+jL KiZ cviteb|



Lv`i cyó Dcv`vb I myg Lv`

my, mej I Kgfg _vKvi Rb` Avgiv cZi`b wefb Lv` MnY K+i \_wK| GB Lv` Avgv`i kixiK cU U cyó Dcv`vb—h_v, AvgI, tkZmvi, tn, Lv`cvY I LibR c`v mieivn K+i _vK| t`tn cZiU Dcv`vbi myúo KvR i+qQ| G`i th tKvbwUi Afve t`Lv w`j gvbly mn+RB KgfgZv nwiq td+j Ges tivMμvš n+q cto| Avgv`i t`tki GKRb cvSeq` gvblyi ^`bK th cwigY cyó Dcv`vb (mPivPi th, +jvi Afve nq) cqvRb Zv 1.2.1 bs mviY+Z t`Lvbv n+qQ| th+nZzkvK-meR wfuwgb I jeY RvZxq Dcv`vbi cavb Drm, tm+nZLv`K myg KiZ n+j ^`b`b Lv` ZvjKvq meR _vKv GKvš cqvRb| GQvov Avgiv Rwb th kvK-meR imvj cKvZi Dm` Ges GZ kZKiv 75-90 fVM cwb i+qQ| ZvB ZvRv Ae`vq LvIqv kvK meR kixi weix cwb mieivn K+i, hv i³K Zij ivL, Lv`te`i cvicvK KvR mrvh` K+i Ges kixi i`Hz c`v tei K+i w`Z mnvqZv K+i|

mviY 1.2.1 GKRb cvSeq` t+jvKi Rb` cqvRbxq` ^`bK wefb cyó Dcv`vbi`xKZ. cwigY

wefb Lv` Avgv`i kixiK
cU U cyó Dcv`vb h_v,
AvgI, tkZmvi, tn, Lv`cvY
I LYR c`v mieivn K+i
vK| G`i th tKvbwUi
Afve t`Lv w`j gvbly
mn+RB KgfgZv nwiq td+j
Ges tivMμvš n+q cto|

Dcv`vbi bvg	cjZl	gnjv
Lv` k <sup>3</sup>	3000 K`vjvvi	2000 K`vjvvi
AvgI	58 Mvg	43 Mvg
K`vjwqv	500 wg.Mv.	500 wg.Mv.
tjšn	10 wg.Mv.	10 wg.Mv.
wfuwgb-G	2500 Av. GKK	2500 Av. GKK
wfuwgb we1	1.4 wg.Mv.	1.4 wg.Mv.
wfuwgb we2	1.5 wg.Mv.	1.5 wg.Mv.
wfuwgb we3	15 wg.Mv.	15 wg.Mv.
wfuwgb w	30 wg.Mv.	30 wg.Mv.

* 1 Av. GKK = 0.3 gvB+μMvg

Lɿʔi ɿeɪfb cɿɔ Dcɿʔvb mieivɿn meiRi Aeʔvb

Awɪɪ

Awɪɪɿli cɿɿb KvR tʔni ɻismɿckx MVb, eab Ges msiɿɿY| ɻvQ I ɻism Awɪɪɿli cɿɿb Drm| Zɿe Awɪɪʔi tʔk ɻbeɿʔni cɿqɿRbxq Awɪɪɿli kZKiv 70 fɿM ʔvbɿʔvi Lvʔ, 15 fɿM cɿYxR, 5 fɿM meiR Ges evKxUKZWɿj I Abʔvbʔ Lvʔ tʔK Avɿm| Awɪɪ nɿjv KZK, ɿjv AʔvɻBɿbv ɻimɿWi ɻɻi| kmʔ KYv tʔK th Awɪɪ cɿlqɿ hvq ZɿZ cɿqɿRbxq me aiɿbi AʔvɻBɿbv ɻimW tɿB eɿj Zv Awɪɪʔi tʔni Awɪɪɿli Pɿɿnʔ v tɻUvɿZ cɿɿibv| tɿm KvɿɿY fɿZ ev iɿUi mɿɿ ɿbqɻgZ kvK meiR tɿLɿj kixɿii Pɿɿnʔ v Abɿɿx mɿyɻ Awɪɪ ɿbɿɔZ nq| GLvɿb ejv cɿqɿRb th, kvK meiRɿZ ɿeʔvɿb Awɪɪɿli kZKiv 70-75 fɿM mnɿR nRɻɿhMʔ| ɿkgRvZxq meiR— thgb ɿkg, ɻUiɿɿ, eieU BZʔvʔZ Dɿj-LɿhMʔ cɿigvY Awɪɪ cɿlqɿ hvq|

kKiv I tɿn RvZxq Dcɿʔvb

kKiv I tɿnRvZxq Dcɿʔvbmgɿ kixɿii Zvcɻɿv iɿɿv Kɿi Ges ʔbɿʔb kvixɿiK I ɻvɿmK KvRKg ɻɻav Kivi Rbʔ th kɿʔ ev Kʔvjɿii cɿqɿRb Zv mieivn Kɿi| Kʔvjɿii Afvɿe tʔni IRb Kɿg Avɿm, KvRKg Kivi ɿɻZv tɿvc cɿq, Ávb ARɿbi ʔɿv Kɿg hvq, hvi dɿj ʔvɿeK ɻvɿmK I ʔɿnK ɿeKvK NɿUv| cɿZMɻg kKiv I tɿn cʔv kixɿiK h_vɿɿg 4.10 Ges 9.45 Kʔvjɿi Lvʔkɿʔ mieivn Kɿi| tʔni tɻU Pɿɿnʔ vi AŠZ kZKiv ʔkfvM Kʔvjɿi tncʔv nɿZ Avmɿ DɿPZ| Abʔvq tʔni ɻɿaʔ ʔeYxq ɿfUvɿgbmgɿ thgb ɿfUvɿgb ÔGÔ, ÔiWÔ, ÔBÔ Ges ÔtKÔ Gi tɿvɿY evaɿcɿB nq| kKivi tɿki fɿM Pɿɿnʔ v tɻUvq PɿDj I Mg| Avi tɿn cʔv Avɿm cɿYR Lvʔ I tɿfIR tɿZj tʔK| kvK-meiRɿZ kKiv I tɿnRvZxq Dcɿʔvb Kg ʔvɿK| Zɿe ɻjRvZxq meiR, Avjyɻɻó AvjyKPZʔvʔZ DɿjLɿhMʔ cɿigvY kKiv iɿqɿQ| kixɿii Pɿɿnʔ vi Kgcɿɿ kZKiv 5 fɿM Kʔvjɿi kvK-meiR I dj ɻɿji kKiv I tɿn tʔK Avmɿ DɿPZ; hv GKB mɿɿ ɿfUvɿgb I LɿbR Dcɿʔvɿbi kvixɿiK Pɿɿnʔ v cɿY KiɿZ mɿvɿhʔ Kɿi| meiRi ɻɿaʔ Ggb tɿvb Dɿʔ tɿB hvɿK tʔni DɿjLɿhMʔ Drm ɿnɿmɿe ɿeɿPbv Kiv thɿZ cɿi| jvD I Kɻovi exR, aɿbqɿ I ɿRivi exR Ges mɻexɿbi exɿR cPZ cɿigvY tɿZj AvɿQ|

ɿfUvɿgb (Vitamin) ev LvʔcɿY

ɿfUvɿgbɿi cɿɿb DrmB nj kvK-meiR I dj-ɻj| ɻbeɿʔni Pɿɿnʔ vi kZKiv cɿq 90-95 fɿM ɿfUvɿgb ÔimÔ, 60-80 fɿM ɿfUvɿgb ÔGÔ, 20-30 fɿM ɿfUvɿgb ÔieÔ Ges DɿjLɿhMʔ cɿigvY ɿfUvɿgb ÔBÔ I ÔtKÔ kvK-meiR I dj-ɻj nɿZ Avɿm|

ɿfUvɿgb ÔGÔ tʔɿZi cɿɔi Ges tɿPɿLi ʔókɿʔ Aɿɿɿ ivLvi Rbʔ ɿfUvɿgb ÔGÔ GKɿŠ cɿqɿRb| Gi Afvɿe ivZKvɿv tɿvM nq Ges ɻvɿy mnɿR WŮvq AvɿvŠ nq| meɿ kvK-meiR, njy kɿmɿkô ɻɻv AvjyMvRi, ɿɻi Kɻov BZʔvʔ ɿfUvɿgb ÔGÔ Gi cɿɿb Drm| meɿ kvK-meiR ɻbeɿʔni Pɿɿnʔ vi kZKiv 30 fɿM ɿfUvɿgb ÔGÔ mieivn Kɿi ʔvɿK|

ɿfUvɿgb ɿe-1 ev ʔvqɿgb t ɿfUvɿgb ɿe-1mɻqɿšɿi ʔvɿeK KvR Ges kKiv ɿecvɿK mɿvɿhʔ Kɿi| Gi Afvɿe kixɿii Zvc, IRb I nRg kɿʔ tɿvc cɿq Ges tɿiɿeɿi tɿvM tʔLv tʔq| tɿXKQvUv PɿDj, jvj Mg, ɿWg, ɻvQ, KɿjRvi cɿkvɿk kvK-meiRɿZ DɿjLɿhMʔ cɿigvY ɿfUvɿgb ɿe-1 cɿlqɿ hvq|

cɿZMɻg kKiv I tɿn
cʔv kixɿiK h_vɿɿg
4.10 Ges 9.45
Kʔvjɿi Lvʔkɿʔ
mieivn Kɿi| kKivi
tɿki fɿM Pɿɿnʔ v
tɻUvq PɿDj I Mg|
Avi tɿn cʔv Avɿm
cɿYR Lvʔ I tɿfIR
tɿZj tʔK|

ɿfUvɿgb ÔGÔ Gi
Afvɿe ivZKvɿv tɿvM
nq Ges ɻvɿy mnɿR
WŮvq AvɿvŠ nq|
ɿfUvɿgb ɿe-1 Gi
Afvɿe kixɿii Zvc,
IRb I nRg kɿʔ
tɿvc cɿq Ges
tɿiɿeɿi tɿvM tʔLv
tʔq|

ffUvvgb we-2 I we-3
Afvte Pg#ivM nq,
†Vw I bvK †dvjv
†Lvq, †Pv†Li
†RvZk³ ¶ZM
nq| ffUvg#bi
Afvte †c†jMv †ivM
nq|

ffUvvgb we-2 ev ivBte†d†fb t m^{yv} I ††ni vfvieK e^xi Rb³ ivBte†d†fb
 `iKvi| Gi Afvte Pg#ivM nq, †Vw I bvK †dvjv †Lvq, †Pv†Li †RvZk³ ¶ZM nq|
 KPzvK, KjgvKvK, c³kvK BZ³ †Z cPz c³igvY ffUvvgb we-2 i†q†Q|

ffUvvgb we-3 ev bqvmb t nRg k³ Ges Pvgovi gmYzv e^x†Z G ffUvg#bi Ae`vb
 i†q†Q| Gi Afvte †c†jMv †ivM nq| gmiag I kvKcvZvq h³ó c³igvY bqvmb cvlqv
 hvq|

ffUvvgb mt ffUvvgb m ††ni †ivM-c†Z†iva ¶gZv e^x K†i| gvm†ckxi †KvImg n†K
 ci³†ii mv†_ msh³ ivL†Z m³nv³h³ K†i Ges K³vj³mqvg I †j†ni wecv†K m³nvqZv K†i| Gi
 Afvte v†f †ivM nq| G †iv†Mi Avug†Y `vZ ¶qcvB nq, `vZi gwo n†Z i³ c†o I
 nvZ-cv d†j hvq| K³vYvi c†Z†iv†a GB ffUvvgb m³nv³h³ K†i| ††ni kZKiv 25 fvm
 ffUvvgb Ômô meR kvK-meR, 15 fvm †Mvj AvjyGes 35 fvm U†g†Uv I †jeRvZxq dj n†Z
 Av†m| A†aK Av†jv†Z Rš†v†bv me†R†Z ffUvvgb Ômô A†aK c³igvY cvlqv hvq|

ffUvvgb ÔBô ev tU†K†dij (Tocoferol)t eÜvZ wev†Y G ffUvvgb m³nvqZv K†i|
 e†vK†c, cvjs kvK, im† I Ku†v gu†i†v†Z ffUvvgb ÔBô cvlqv hvq|

ffUvvgb Ô†Kô t G ffUvvgb Prothrombin bvgK c`v_ ^Z†i K†i hv kixi †K†U †M†j i³
 RgvU e†v†Z m³nv³h³ K†i| Gi Afvte ¶Zv†b n†Z i³ ¶iY mn†R eÜ nq bv| e†vK†c I
 d†jK†c†Z ffUvvgb Ô†Kô cvlqv hvq|

L†bR c`v_

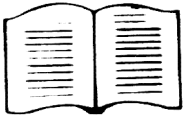
kix†ii m†vMo†bi
Rb³ L†bR c`v_
Ac†invh| kix†ii
†gvU IR†bi kZKiv
4.3-4.4 fvm v†K
L†bR c`v_ | KPz
cvZvq me†P†q te†k
Avqib I K³vj³mqvg
cvlqv hvq|

kix†ii m†vMo†bi Rb³ L†bR c`v\_ Ac†invh| cavb L†bR c`v_, †jv n†jv, K³vj³mqvg,
 †j†n, cU†kqv, g³v†v†bR, †m†Wqv, †K†ib, Zvgv, `v I Av†qvWb| G†i g†a³
 †K†bv, †jv n†o, i³ ev ni†gvb ^Z†ii Kv†R †b†qvRZ Ges Ab³, †jv ††ni Zij c`v†_
 jeYi†c `ex†Z ††K †ckx I †Kv†li e†v†K I i†v†qv†bK Ae†v†K cfveZ K†i|
 Av†qvW†bi Afvte Mjv†dvjv †ivM †Lv ††q| kix†ii †gvU IR†bi kZKiv 4.3 - 4.4 fvm
 v†K L†bR c`v_ | KPzc†vq me†P†q te†k Avqib I K³vj³mqvg cvlqv hvq| GQvov c†Z†U
 me†R†Z †KQyb †KQyL†bR c`v\_ i†q†Q| we†fb kvK-me†R†Z we`gvb we†fb cyô-Dcv†bi
 c³igvY m†v†Y 1.2.2G ††qv n†jv|

**mviY-1.2.2 t ɹeɪfb kɪK-meɪRi cɹZ 100 Mg Aɹvi-DcɹhɹMx Asɹk ɹe ʔgɹb ɹeɪfb cɹɔ
Dcɹ ʔɹbi cɹigɹY**

kɪK-meɪR	kKiv (Mg)	Aɹgl (Mg)	Pie (Mg)	K'ɹɹiɹUb (gɹBɹɹɹMg)	ɹfUɹgb ɹe1 (ɹgt Mɹ.)	ɹfUɹgb ɹe2 (ɹgt Mɹ.)	ɹfUɹgb ɹm (ɹgt Mɹ.)	K'ɹɹmɹqg (ɹgt Mɹ.)	ɹɹɹn (ɹgt Mɹ.)
meɪR KPɹkɹK	6.8	3.9	1.5	10,278	0.22	0.26	12	227	10
Kɹɹjɹ KPɹkɹK	8.1	6.8	2	12,000	0.06	0.45	63	460	38.7
jɹj kɹK	5	5.3	0.1	5,520	0.10	0.13	43	374	-
cɹɹ kɹK	4.2	2.2	0.1	12,750	0.02	0.36	64	164	10
Wɹɹ kɹK	3.3	1.8	0.2	3,500	0.26	0.18	78	80	25.5
gɹj kɹK	2.3	1.7	0.9	5,295	0.04	0.09	148	28	3.6
cɹjɹ kɹK	4	3.3	0.1	8,470	0.03	0.09	97	98	10.9
ɹjUɹ	2.5	2.1	0.3	990	0.09	0.13	10	50	24
Wɹɹ	3.3	1.8	0.2	225	0.26	0.18	78	800	25.5
ɹkg	5.4	3.9	0.1	34	0.05	0.01	2	28	2.6
gUi ɹɹ	23.7	7.4	0.3	-	0.01	0.12	5	26	1.5
UɹgɹUɹ	3.6	1.1	0.1	351	0.17	0.16	125	11	1.2
KɹɹgɹiP	10.5	1.6	0.2	-	0.17	0.16	-	-	-
eɹeɹU	9.0	3.0	0.2	-	0.14	0.03	Aí	33	5.9
eɹaɹKɹc	4.7	1.3	0.2	1,200	0.06	0.05	3	31	0.8
dɹKɹc	7.5	2.6	0.1	-	0.02	0.03	91	41.0	1.5
PɹjKgoɹ	1.9	0.4	0.1	-	0.06	0.01	1	30	0.8
jɹD	15.1	1.1	0.1	0	0.01	0.02	68	26.0	0.7
ɹgɹóKgoɹ	40.5	1.4	0.5	Aí	0.16	0.02	5	14.0	1.5
kmɹ	3.5	1.6	0.1	-	0.16	0.02	5	14	1.5
DɹʔQ/Ki jɹ	10.6	2.1	1.0	126	0.07	0.06	96	23	2.0
ɹPiPɹ½ɹ	3.3	0.5	0.3	90	0.04	0.06	-	26	0.3
KuKɹiɹj	17.4	2.1	0.3	1,620	0.08	0.06	-	30	4.6
cUj	4.1	2.4	0.6	-	0.30	0.03	2	20	1.7
ɹXam	8.7	1.8	0.1	52	0.04	0.16	10	1160	1.5
te , b	2.2	1.8	2.9	74	0.12	0.08	5	28.0	0.9
MɹRi	12.7	1.2	0.2	1,890	0.04	0.05	3	80	2.2
gɹɹKPz	32.4	1.8	Aí	0	0.04	Aí	Aí	22.0	-
I jKPz	18.4	1.2	0.1	-	0.06	0.07	-	50	0.6
gɹj	5.4	1.3	0.1	3	0.43	Aí	34	0.5	10
ɹMɹj Aɹjy	19.1	3.0	0.1	0	0.03	0.03	10	11	0.7
ɹgɹó Aɹjy	21.6	0.7	0.4	-	0.06	0.02	2	17	0.8
ɹcqɹR	11.1	1.2	0.1	0	0.08	0.01	11	47	0.7

Drm t cɹɔ I Lɹʔ ɹeÁɹb BbɹóɹUDU, XɹKɹ ɹeKɹe ʔɹjq



mvigg

- Lv`i wefb cyó Dcv`vb, †jv n†jv Avigl, kKiv, †n c`v\_, wfuwgb I LwbR c`v_ |
- ^`b»`b Lv` ZvjKiq cyó i me Dcv`vb, †jv c†qvRbxq Abzv†Z Dc`Z \_vK†j Zv†K myg Lv` e†j |
- wkgRvZxq meR h_v wkg, eieU, gUi iU BZ`v`†Z D†j-L†hvM` cwigY Avigl i†q†Q |
- †n c`v\_ `eYxq wfuwgbmg n n†jv wfuwgb ÔGÔ, ÔWÔ, ÔBÔ Ges Ô†KÔ |
- g jRvZxq meR, †hgb— †Mvj Avjygió AvjyKPzBZ`v`†Z D†j-L†hvM` cwigY kKiv Av†Q |
- gvbe †`†ni Pvin`vi kZKiv 90-95 fvM wfuwgb ÔmÔ, 60-80 fvM wfuwgb ÔGÔ, 20-30 fvM wfuwgb ÔieÔ Ges D†j-L†hvM` cwigY wfuwgb Ô†KÔ I ÔBÔ kvK-meR I djgj n†Z Av†m |
- wgió Kgov, MvRi I meR kvK-meR wfuwgb ÔGÔ-Gi cavb Drm |
- AvjyKvP giP, U†g†Uv I kvKcvZv wfuwgb ÔmÔ-Gi cavb Drm |
- KPzvZvq me†P†q teik cwigv†Y Avqib I K`vwmqvq cvlqv hvq |



cɹɹVĖi gɹɹvqb 1.2

1. mZ' nɹj ōmō Ges ɹg_ v nɹj ōvǵō ɹjLɹ|

K. kɹK-meɹR ɹfUɹgb I LɹbR jeɹYi cavb Drm|

L. ɹǵó AvjyMɹRi I meɹ kɹK-meɹR ɹfUɹgb ōGō-Gi cavb Drm|

M. gɹRvZɹq meɹRɹZ †cɹUb teɹk cɹigvɹb _vɹK|

2. kɹvɹb cɹY Kiɹb|

K. †n c`vɹ\_ `eYɹq ɹfUɹgbmgn nɹjv ɹfUɹgb , ... Ges |

L. KPɹvZvq AɹaK cɹigvɹY Ges LɹbR c`v\_ ɹe`gɹb|

M. Pg †ivM nq ɹfUɹgb Gi Afvɹe|

3. mVK DĖiɹi cɹk ɹUK ɹPý (✓) ɹ`b|

K. kɹK-meɹR †Kɹb cɹó Dcɹ`vɹbi cavb Drm ?

1. Aɹǵl

2. kKiɹ

3. †n

4. ɹfUɹgb I LɹbR|

L. gɹsmɹckɹ MVb, eab Ges msi ɹY Kɹi †Kɹb cɹó Dcɹ`vɹb ?

1. Aɹǵl

2. kKiɹ

3. †n

4. ɹfUɹgb|

M. DɹjLɹhvM" cɹigvɹY Aɹǵl cɹIqɹ hvq †Kɹb meɹRɹZ ?

1. gUi iɹɹ

2. jvD

4. ɹǵó Kǵov

3. KPɹvZɹq meɹR|

4. GK K_vq eɹ eɹK" DĖi ɹ`b|

K. †Kɹb ɹfUɹgbɹbi Afvɹe ivZKɹbv †ivM nq?

L. †Kɹb ɹfUɹgb i ³ RǵU eɹɹZ mɹvɹh" Kɹi?

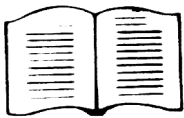
M. ɹKɹmi Afvɹe Mjvɹdvjv †ivM nq?



cvV 1.3 meRi A_bZK I t fIR , iZ

GB cvV t k f I Avci b

- meR Pvl i A_bZK , iZ eYbv KiZ cvi eb|
- Lv`` NvUz c iY meRi fvgKv D+jL KiZ cvi eb|
- cZZ Rvg e`envi K+i meR Pvl evovbvi Dcvq m`uK e`vL`v KiZ cvi eb|
- `e f`kk g`yi Avq evovZ meR Pvl i fvgKv D+jL KiZ cvi eb|
- teKvi mgm`v mgvai b meRi Ae`vbi K_v ejZ cvi eb|
- bZb`k f i m`p I weKv k meR Pvl i c+qvRbxqZv eYbv KiZ cvi eb|
- kvK-meRi t fIR , iZ eYbv KiZ cvi eb|



meRi A_bZK , iZ

cyo gj`` QvovI kvK-meR Pvl evv`i h`o A_bZK , iZ i q f Q| evovZ kvK-meR Pvl evv` K+i GK`k KIKiv thgb Av_K m`QjZvi gj` t`LZ cvi , tZgib Acii`k t`k i A\_bZK ce`xZ h`o Ae`vb i vLZ cvi | b`P kvK-meRi A\_bZK , iZ we`wiz f vte D+jL Kiv n+jv|

1. AaK jv f i Dm

kvK-meR Pvl K+i Avgv`i t`k i `i` KIKMY Ab`vb` gvV dm+jj i Zzbvq AaK A_DcvRb KiZ cvi | AifAZvi Av+jvK t`Lv tM+Q th, GK tn+i RvgZ AvjyU+g+Uv`Ksev d`Kic Pvl Ki+j mKj LiP ev` bxU jvf nZ cvi h_vu+g 19, 11 Ges 16 nRvi UvKv| A_P GKB ciigvY Rvg nZ GKRb KIK avb I Mg Pvl K+i h_vu+g g`l 5 Ges 2.5 nRvi UvKv jvf KiZ cvi | Aek` meR Pvl t`k g ja+bi c+qvRb c`o| Zte eZgvb wefb miKvix-temiKvix c`Zôib t`K mn+RB FY cvlqv h`vq e+j evovZ gjab thvMvo Kiv AvR Avi mgm`v bq|

2. Lv`` NvUz cjY meRi e`envi I `e f`kk g`yi e`q ms+KvPb

evsjv`k c`Z eQi cvq 15-20 j` Ub Lv`` NvUz t`Lv t`q| KówRZ `e f`kk g`yi weibgq we f`k nZ Lv`` km` Avg`vbx K+i cZeQi GB NvUz tgUvZ nq| Gi d+j RvZxq DbZ A+bKvs+k e`vnZ nq| avb I M+gi c`ieZ kKivmgx meR- thgb, tMvj Avjy`igó AvjyBZ`v` tL+q Avgiv GB Lv`` NvUz`igUvq `e f`kk g`yi LiP evv`Z cvi | Pvdj I M+gi Zzbvq tMvj Avjy`igó AvjZ kKivi ciigvY A+bK Kg, Zte tn+i c`Z G`i djb Pvdj I M+gi Zzbvq A+bK t`k nLqvq c`Z tn+i nZ cvi kKivi ciigvY AvjyGes`igó AvjZ Zzbvq jKfvte t`k nq _v+K| D+jL` th, Avjy`igó AvjyDrcv`b av+bi Rvg e`envi i c+qvRb nq bv| ZvQvov Avjy`igó Avjy`vg Kg nLqvq kKivi Pvn`v tgUv+bi Rb` fv+Zi weKí Llevi`wn+mte G`i e`envi h`p msMZI e+U|

3. cZZ Rvg e`envi

evsjv`k Ni ewoi AvbvP KivbvP, A`dm, `z K+jR, iv`v, t`eo eta I tij jvB+bi av+i A+bK cZZ Rvg c`o Avq| Gme Rvg DBznLqvq eQ+i th tKib mgq G_v+jvZ meR Pvl Kiv mpe| GKUzhZ mnKv+i GB me RvqMvq kvK-meR Pvl K+i Avgiv t`k i Lv`` NvUz tgUvZ tek`KQy`mrvh` KiZ cvi Ges GKB mv` tek`KQyevovZ Avqi ms`vb KiZ cvi|

avb I M+gi c`ieZ
kKivmgx meR
thgb, tMvj Avjy
`igó AvjyBZ`v`
tL+q Avgiv Lv``
NvUz`igUvq
`e f`kk g`yi LiP
evv`Z cvi |

eɪs jvʰ`ʰki Rjeɪqymiv
eQie`vcx ɯeɯfb meiR
Pɾɿmi Rb` ɯeʰkl Dcʰhɯx |
GgZve`vq Avɪiv AɯaK
meiR Pɾɿ Kʰi NvUɿZ
ʰ`k ,ʰjvʰZ Zv iβvɯx Kʰi
cPʰ ʰeʰ` ɯkK gɻ ARb
KiʰZ cɯi |

kɿK-meiR
cɯɯqɾvZKiʰYi Dci
ɯbfi Kʰi th
ɯkɿcɯZôvbmgn`Zwi nʰe
ZvʰZ AʰbK ʰjvK LɯUʰq
ʰ`ʰki teKviZ mgvavbɿ
hʰ_ó Ae`vb iɿLv mæe
nʰe |

imɿ iʰ³ i ʰKvʰjʰ÷ ij
Kɯgʰq ü`ʰivʰMi SɿK nvm
Kʰi I evʰZi Dckʰg tek
KvR Kʰi | ɯbqɯZ meiR
ʰLʰj ʰKvôKvɯb` `ʰnq |

4. ʰeʰ` ɯkK gɻ Avq

cɯ_exi AʰbK ʰ`ʰbK cɯZKj Avenɿlqvɿ KviʰY me mgq me aiʰbi kɿK meiR Pɾɿ Kiv mæe nq bv | ɯeʰkl Kʰi Mx@Kvʰj ga`cvʰP` Ges kxZKvʰj BDʰivc gnʰvʰ`ʰki ʰ`k ,ʰjvʰZ GB mgm`v cKU nʰq ʰ`Lv ʰ`q | GB mgq ex Nʰi Kɿlg Avenɿlqv mɯp Kʰi G ʰ`k ,ʰjvʰZ ɯKQy ɯKQyKvK-meiR Drcv`b Kiv nq | GʰZ Drcv`b LiP AʰbK teɯk cʰo | eɪs jvʰ`ʰki Rjeɪqy miv eQie`vcx ɯeɯfb meiR Pɾɿli Rb` ɯeʰkl Dcʰhɯx | GgZve`vq Avɪiv AɯaK meiR Pɾɿ Kʰi NvUɿZ ʰ`k ,ʰjvʰZ Zv iβvɯx Kʰi cPʰ ʰeʰ` ɯkK gɻ ARb KiʰZ cɯi | Aek` eZgvʰb eɪs jvʰ`k ʰ`K ɯKQyKQyKvK-meiR ɯeʰ`ʰk iβvɯx nʰ`Q |

5. teKvi mgm`vi mgvavb

avb, Mg, cvU BZ`wi i Zʰbvq kɿK-meiR Pɾɿlevʰ` AɯaK kʰgi cʰqvRb nq | KviY meiR Pɾɿ cɯZɿU MvʰQi Avjv`vfvʰe hZ ʰbɿqvɿ cʰqvRb cʰo | evRvi e`e`v ɯbɯðZ Kʰi AɯaK kɿK-meiR Drcv`b Kiv ʰMʰj Avɪiv meiR Pɾɿ ʰ`ʰki evɯZ kg KvʰR jvMvʰZ cɯi Ges teKvi mgm`vi tek ɯKQy mgvavbɿ ɯ`Z cɯi | GQvov gnɿjvʰ`iʰK ewoi Avɯʰbvq meiR Pɾɿ DrmɯvN Z Kʰi gnɿjv Rbkɿ³ ʰK Drcv`b I Dbqb KvʰR e`envi KiʰZ cɯi |

6. bZɿ ɯkʰfi mɯp I ɯeKiv

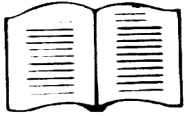
AvenɿlqvMZ KviʰY eQʰii me mgq me aiʰbi meiR Drcv`b Kiv mæe nq bv | ZvB eQie`vcx me aiʰbi meiR cvlqvɿ jʰɿ | DbZ ʰ`k ,ʰjvʰZ AvaybK meiR cɯɯqɾvZKiY ɯkɿ Mʰo DʰVʰQ | DbZ ʰ`ʰki gZ Avɪivɿ hɯ` AɯaK kɿK-meiR Drcv`b Kʰi ɯeɯfb aiʰbi cɯɯqɾvZ meiRi Lv` ``e` ʰZwi KiʰZ mʰPó nB, Zʰe ʰ`ʰk eQie`vcx me aiʰbi meiR mieivn ɯbɯðZ KiʰZ cvɿev | GKB mʰ\_ Gme cɯɯqɾvZ Lv` ɯeʰ`ʰk iβvɯb Kʰi cPʰ ʰeʰ` ɯkK gɻ ARb Kiv hvʰe | ZvQvov, kɿK-meiR cɯɯqɾvZKiʰYi Dci ɯbfi Kʰi th ɯkɿcɯZôvbmgn` n ʰZwi nʰe ZvʰZ AʰbK ʰjvK LɯUʰq ʰ`ʰki teKviZ mgvavbɿ hʰ_ó Ae`vb iɿLv mæe nʰe |

7. meiR Pɾɿli tgšmg cɯvɿZ Kʰi AɯaK gɾv ARb

Avɻvʰ`i ʰ`ʰk Rbɯvʰb meiR ,ʰjvi AɯaKvskB tgšmgɿfɿĖK | A_vr kxZKvʰj Ršvʰb meiR Mx@Kvʰj Pɾɿ Kiv hvq bv | Zʰe B`vɯbs Kʰj MʰeɿYvi gva`g meiRi Ggb AʰbK RvZ D`vveZ nʰqʰQ th ,ʰjv tgšmg Qvov Ab` tgšmgɿ Pɾɿlev` Kiv mæe nʰ`Q | D`vniY`ic UʰgʰUvi K_v ejv thʰZ cvʰi | GQvov tek ɯKQy meiR iʰqʰQ th ,ʰjvi AvMvg I ɯejɯZ Pɾɿ Kiv mæe | Gfvʰe meiR Pɾɿli tgšmgʰK cɯvɿZ Kʰi KɿKiv AɯaK Avʰqi mæevb LʰR ʰcʰZ cvʰi |

kɿK-meiRi ʰfɿR ,iɿZ

cɯp Dcv`vb Qvov I AʰbK kɿK-meiRi DʰjLʰhɯM` ʰfɿR ,iɿZ iʰqʰQ hv Avɻvʰ`i Kj`vʰY cPʰ Ae`vb ʰiʰL\_vʰK | cvjs kɿK I guɿiɯʰZ ɯe`gvb ʰRe GɯmW Ges UʰgʰUv, ʰjUɿ I dʰKɯcʰZ Dcɯ`Z g`vjk GɯmW gvʰɿi Lvɿqvɿ iɯP I nRg kɯ³ ewoʰq ʰ`q | MvRi, ʰcqvR, eɯvKvɿ BZ`wi ʰZ A`vɯUevʰqɯUK c`_ iʰqʰQ | gv_vɿ LʰKx `ʰKiʰY Ges ʰcvKv-gvKʰoi Rvʰv nʰZ Ae`vniZ cvlqvɿ Rb` AʰbʰKB ʰcqvRi im e`envi Kʰi_vʰKb | ʰcqvR ʰLʰj PgʰivM nʰZI Ae`vniZ cvlqv hvq | imɿ iʰ³ i ʰKvʰjʰ÷ ij Kɯgʰq ü`ʰivʰMi SɿK nvm Kʰi I evʰZi Dckʰg tek KvR Kʰi | gɿKpZɿvɿhʰ Lvevi etj Aʰ ʰivʰM Gi e`envi mevi KvʰQ mgv`Z | gvɯKpzevZ ʰivʰMi Dckʰg tek KvR Kʰi | mKj cKvi meiRʰZ Auk iʰqʰQ | ZvB ɯbqɯZ meiR ʰLʰj ʰKvôKvɯb` `ʰnq |



mvigg

- avb I M̄gi Z̄b̄iq meR Pvl jv̄fi c̄igvY teK|
- avb I M̄gi weKí Lv̄'' n̄m̄te Avjyl w̄gíó Avje''envi K̄i t̄`k̄i Lv̄'' NvŪZ cȳY Kiv th̄Z cv̄i|
- emZevoX, ̄q̄ I K̄jR cv̄z̄Y meR Pvl K̄i c̄ZZ R̄gi m̄e''envi Kiv th̄Z cv̄i|
- evsjv̄`k̄i RjevqymeR Pvl i Dc̄thvM̄x ēj ĀaK meR Pvl K̄i Ges Zv̄ iβv̄b K̄i ev̄ōZ ^ē`k̄K ḡv̄ Avq Kiv m̄e|
- ĀaK meR Pvl teKvi m̄gm̄'vi m̄gv̄b̄ Ae`vb̄ ivLv̄ m̄e|
- meR̄K K̄v̄gv̄j n̄m̄te e''envi K̄i bZ̄b̄ w̄kí m̄jó Kiv th̄Z cv̄i|
- meR Pvl i gva`g ḡv̄jv̄ Rbk̄³ K̄i R̄ jv̄M̄v̄b̄ m̄e|
- kvK-meR̄i Drcv̄`b̄ t̄ḡsm̄ḡK cm̄v̄iZ K̄i KĪK̄i Avq ev̄ōv̄b̄ m̄e|
- tek w̄KQykvK meR̄i D̄jL̄thvM̄' t̄fIR̄ , īZ̄ īq̄Q̄|



cv#V#i gj`vqb 1.3

1. mZ` n#j Om0 Ges ig\_`v n#j Om0 #jL#|

K. `vbv dm#ji Z#bvq meiR PivI jvf teik|

L. PivI M#gi #eKí Lvevi #nmv#e Avjy #g#ó Avje`envi Kiv th#Z cv#i|

M. evsjv#`#ki RjevqymeR PivIi Dc#hvMx|

2. ib`vb cyW Kib|

K. evsjv#`#k c#ZeQi Lv` NvU#Z cvq Ub|

L. PivI K#i A#aK jvf#vb nIqv hvq|

M. i#³i #Kivj#÷ij Kgvq|

3. mVK D#i i cv#k #UK #Py (✓) #`b|

K) AvjyPivI #n#ic#Z #bU jvf KZ UvKv ?

- | | |
|-------------|-------------|
| 1. 19 nvRvi | 2. 12 nvRvi |
| 3. 16 nvRvi | 3. 8 nvRvi |

L) meiR PivI gv dm#ji Zybvq #Kgb g jab c#qvRb nq ?

- | | |
|----------------|---------|
| 1. Kg | 2. teik |
| 3. #gvUvgy# Kg | 4. mgvb |

M) avb I M#gi #eKí #nmv#e #Kvb meiR e`envi Kiv hvq ?

- | | |
|-------------------|-----------------|
| 1. Avjy #g#ó Avjy | 2. f#v |
| 3. KgovRvZxq meiR | 4. KP#vZxq meiR |

4. GK K_vq ei e#K` D#i #`b|

K. #Kvb meiR A`vbUev#qv#UK #n#m#e e`eüZ nq ?

L. fv#Zi #eKí Lvevi #n#m#e #Kvb meiR LvIqv th#Z cv#i ?

M. #Kvb #iv#Mi Dck#g gvbKP#Kv#R jv#M ?

cvV-1.4 meR Drcv`b cii`Z I e`envi mgx`v

GB cvV tk`I Avcb



- meR Drcv`b evsjv`tki AZxZ Ae`v eYbv KiZ cvi`eb|
- evsjv`tk meR Drcv`bi eZgvb cii`Z eYbv KiZ cvi`eb|
- wefb meRi tgU Drcv`b, tn±icZ djb Ges G`i Pvlvev` e`eüz Rigi cigvY D`jL KiZ cvi`eb|
- evsjv`tki RbM`Yi meR e`env`ii eZgvb PÎ Zzj aiZ cvi`eb|



meR Drcv`b cii`Z

evsjv`tki meR Drcv`b cii`Z Rvbi AvM G`tki meR Drcv`bi AZxZ I eZgvb Ae`v Rvbi`iKvi hv`bP we`wiZfv`e Av`jvPbv Kiv n`jv|

evsjv`tk meR Drcv`bi AZxZ

cvPxbKvj n`Z G`tki Av` MVQ`n`m`e tek`KQyK-meR Drcv`Z n`q AvM`Q| G,`jv n`"Q jvD,`gíó Kgov, Pvj Kgov,`S½v,`P½v, ay`y, Kijv, cPkvK, te,`b, cUj,`kg I wefb cKvi KP` iagvî N`ivqv Pvn`v tgUv`bvi Rb` Mvg-M`Ä` fUvev`oi Avbv`PKvbv`PB caibZ Gme meR Drcv`Z n`Zv| e`YR`K`fiE`Z we`Z.GjvKvq meR Pvl`i mavev`Qj`PŠ v`fvev`i evB`i| Gme meRi te`kifvM Mx`Kv`j Drcv`Z n`Zv| kxZKv`j RŠv`bv meRi msL`v`Qj`bZv`ŠB Kg| cyógv`bi`K`\_`K Gme meR`Qj`bav`bi Ges G`i djb`bi nvi I`Qj Kg| mivK cšvq exR Drcv`b bv Kivi d`j Rv`Zi`KšjZv`EK AebvZ Ges DbZ Pvlvev` Kjv`Kškj c`qv`Mi Afve Gi cavb KvY e`j g`b Kiv nq| we`kx D`P djbkxj I cyóKi`Kv`bv meR G`tki Pvlvev` G mgq`L`v hvq`b| meRi Pvlvev` e`x Ges Dbq`b miKvix I temiKvix c`Zôv`bi D``vM`Qj bv ej`jB P`j|

evsjv`tk meR Drcv`bi eZgvb Ae`v

cvieviK Pvn`v Ges we`µ GB`B D`İk`K mvg`b`tiL evsjv`tk eZgv`b A`b`KB kvK-meRi Pvlvev` Ki`Q| Z`e cvieviK Pvn`v tgUv`bvi Rb` AvRKvj te`ki f`vM c`ieviB emZev`oi Av`kcv`k mxigZ chv`q meR Pvl Ki`Q emZev`oi Av`b`bvq Drcv`Z meRi g`a` Mx`Kvjxb meRi msL`vB te`k| kxZKvjxb meRi msL`v Kg| Mx`Kvjxb meRi cvq me,`jvB G`tki Av` meR Ges G,`jvi te`kifvM jZv`bv cKvZi MvQ n`lqv G`i`K N`ii P`j, teovi Dc`i ev Ab` Mv`Qi Dci evB`q`v`q RŠv`bv nq| eZgv`b evsjv`tk wefb ai`bi we`kx kxZKvjxb meR ceZ`bi mv`_`mv`_ meR Drcv`b cii`Zi Dbqb N`U`Q| gjv, U`g`Uv, d`Kic, eavKic, kvjMg, cvjskvK BZ`v` we`kx meR Pvlvev` Avmvi d`j kxZKvjxb meRi NvUiz`nvm`tc`q`Q| A`c`vKZ.Kg cPv`j meR— thgb`jJv, MvRi, te`Kij I IjKic BZ`v`i Pvlvev``b`b RbicqZv jvf Ki`Q| eZgv`b G`tki wefb kn`ii Av`kcv`k tek`KQymsL`K KIK e`emv`qK`fiE`Z kvK-meR Drcv`b`ii`K`i`Qb| d`j weMZ`k`Ki`P`q eZgv`b G`tki kvK-meR Drcv`b I Rigi cigvY A`bKv`k e`x`tc`q`Q| we`kl K`i Avj`Rigi cigvY I Drcv`b D`jL`hvm`n`i e`x`tc`q`Q| Gic`iI G`tki meR NvUiz`we`kl K`i Mx`Kvjxb meRi h`\_ó NvUiz`i`q`Q| RyvB-AvMó gv`m AZ`aK e`p`i Kvi`Y tm`P`i-A`±`ei gv`m meRi`iZv`L`v

iagvî N`ivqv Pvn`v
tgUv`bvi Rb` Mvg-M`Ä`
fUvev`oi Avbv`PKvbv`PB
caibZ Gme meR
Drcv`Z n`Zv| Gme
meRi te`kifvM Mx`Kv`j
Drcv`Z n`Zv| kxZKv`j
Rb`bv meRi msL`v`Qj
vbZv`ŠB Kg|

mKj cɪZZ RɪgɪZ meiR
Aveɪɪ`i dɪj ɪeMZ `kɪKi
ɪPɪq eZgɪɪb Gɪ`ɪk kvK-
meiR Drcɪ`b I Rɪgi
cɪigɪY AɪbKɪsɪk eɪx
ɪcɪqɪQɪ

eZgɪɪb eɪsɪɪɪ`ɪk cɪq 3.7
jɪ ɪnɪi RɪgɪZ meiR Pɪl
nɪ`Q hv ɪgvU Pɪlveɪ`ɪhvM`
Rɪgi kZKiɪ 2.62 fɪMɪ

hɪq teɪkɪ ɪXam, te, b, jɪj kvK, Wɪɪ kvK, ɪgɪó Kgov Dfq ɪgšmɪg Pɪl Kɪv ɪMɪjɪ
 AZ`ɪaK eɪóɪ KɪɪY Gɪ`i Drcɪ`b kvZ Aɪmv chš aɪi ɪvLv mɪe nq bɪɪ

eZgɪɪb eɪsɪɪɪ`ɪk cɪq 3.7 jɪ ɪnɪi RɪgɪZ meiR Pɪl nɪ`Q hv ɪgvU Pɪlveɪ`ɪhvM` Rɪgi
 kZKiɪ 2.62 fɪMɪ Gi gɪa` 2 jɪ 92 nɪRɪi ɪnɪi RɪgɪZ cɪq 27.23 jɪ Ub ɪie meiR
 Ges 76.44 nɪRɪi ɪnɪi RɪgɪZ cɪq 4 jɪ Ub Lɪid meiR Drcɪ`Z nɪ`Qɪ eɪsɪɪɪ`ɪk
 kvK-meɪR Pɪl e`eüZ Rɪgi cɪigɪY I Drcɪ`b 3 bs mɪiYɪɪZ ɪ`Lvɪbɪ nɪqɪQɪ jɪYɪq th,
 Avjɪl ɪgɪó Avjɪe`ZɪZ Ab`vb` ɪie meiRi Drcɪ`b Lɪid meiRi ɪPɪq ɪø, ɪbil teɪkɪ ɪgvU
 Drcɪ`Z meiRi kZKiɪ 60 fɪMɪl teɪk Avɪm Avjɪl ɪgɪó AvjɪnɪZɪ MɪeɪYɪi gɪa`g
 DbZRɪZ mɪó, Pɪlveɪɪ` bZɪ chɪe i cɪqM, meiRi cɪógvb mɪɪÜ mɪPZbZɪ eɪx BZ`ɪi
 KɪɪY kvK-meɪRi Pɪlveɪ` eZgɪɪb AɪbKɪsɪk teɪo ɪMɪQɪ Zte AZ`š `ɪLi ɪeɪq GB th,
 meiRi ɪnɪicɪZ Mo dɪb GLbɪ mɪšɪRbK chɪq ɪcɪQɪbɪ meiR Drcɪ`b eɪsɪɪɪ`ɪki
 eZgɪɪb Ae`vb Dcɪjɪä Kɪvi Rb` ɪeɪki KɪqKɪU ɪ`ɪki mɪɪ\_ Gɪ`ɪki Zɪbɪg jK ɪnɪi cɪZ
 Mo dɪb 1.4.1 bs mɪiYɪɪZ Zɪj aɪv nɪqɪQɪ

mɪiY 1.4.1 : 1995-96 mɪj eɪsɪɪɪ`ɪk ɪeɪfb kvK-meɪR Pɪli Rɪgi cɪigɪY, Drcɪ`b I dɪbɪ

ɪie meiR			
meiRi bɪg	Rɪgi cɪigɪY (000 ɪnɪi)	ɪgvU Drcɪ`b (000 Ub)	dɪb Ub/ɪnɪi
Avj	132.38	1442	11.28
ɪgɪó Avjɪ	45.34	435	9.60
te, b	19.02	129	6.72
dɪKɪc	9.71	74	7.60
jɪD	8.90	78	8.64
eɪvKɪc	10.12	98	9.65
ɪgɪó Kgov	8.50	66	7.82
UɪgɪUv	12.14	89	7.33
gɪj	21.45	193	9.06
ɪkg	9.71	46	4.61
cɪjskɪK	4.85	23	4.89
Ab`vb` meiR	10.12	50	4.94
ɪgvU	292.24	2723	

Lid meR			
meRi bvg	Rigi cigvY (000 tn±i)	tgU Drcv`b (000 Ub)	djb Ub/tn±i
¶g¶ó KgoV	5.66	34	5.92
te , b	10.12	60	5.83
cUj	4.45	23	5.35
†Xam	4.85	16	4.39
¶S½V	6.07	24	4.02
KijV	5.26	21	3.90
KPz	14.57	105	7.31
c¶KvK	3.23	16	4.89
¶P¶P½V	2.42	10	4.00
eieU	3.23	8	2.54
kmv	4.04	17	4.32
Pvj KgoV	5.26	32	6.10
WwV	4.45	21	4.71
Ab`vb`	2.83	11	3.90
†gvU	76.44	398	5.20
me†gvU	368.68	3121	

Drm t evsjv`k ciimsL`vb eyjv

**mvigg**

- m¶VK cšvq exR Drcv`b bvi Kivq G†`†k meR Rv†Zi †KšjZ¶EK Aeb¶Z N†U†Q|
- evsjv`†k meR Pvlve†` eZgv†b tek ¶KQymsL`K cyóKi kvZKvjxb meRi ceZb Kiv n†q†Q hvi d†j kvZ tgšm†g meR NvU¶Z nvm †c†q†Q|
- RyvB-AvMó gv†m AZ¶aK e¶ó¶i Kvi†Y meR Drcv`b nvm cvq Ges d†j tm†P¶i-A†±vei gv†m G†`†k meRi ¶íZv †`Lv hvq|
- eZgv†b evsjv`†k Avjyl ¶g¶ó Avjyn meR Pvl gvÎ mv†o 3 j ¶ tn±i Rig e`eüZ n†`Q Ges G†Z gvÎ 28 j ¶ Ub meR Drcv`Z n†`Q|
- evsjv`†k Rbc¶Z `¶bK Drcv`Z meRi cigvY 70 Mvg Ges Pw¶n`v 200 Mvg|



c#V#W#i g#v#qb 1.4

1. mZ' n#j ÔmÔ Ges #g_ "v n#j Ô#gÔ #jL#|

K. G#`#ki A_b#Z K#Li Dci #bfik#j |

L. R#Zi #K#jZ#E#K Aeb#Zi Kvi#Y #`k#q meiRi djb A#bK#s#k Kg |

M. G#`#ki #gvU P#I#ev`#h#M" R#gi kZKi# 3.5 f#M R#g#Z meiR P#I nq |

2. #b' "vb c#Y Ki#b |

K. G#`#ki RbM#Yi cavb Lv`" I |

L. #g#ó K#ov, #S#½#v, P#j K#ov, j#vD BZ`#v` n#j#v meiR |

M. meiRi #íZ#v #`Lv h#q I g#v#m |

3. m#VK D#i i c#k #UK #P#Y (✓) #`b t

K. evs j#v`#k meiRi #íZ#v #K#b g#v#m t#k ?

1. R#b#g#v#x

2. #W#m#i

3. #m#P#i

4. R#v#B

L. m#iv eQi P#I Ki#v h#q #K#b meiR ?

1. g#j#v

2. M#Ri

3. #kg

4. t#e#b

M. c#P#bK#j n#Z G#`#k P#I#ev` n#q A#m#Q #K#b meiR ?

1. #g#ó K#ov

2. U#g#U#v

3. d#K#c

4. e#v#K#c

4. GK K_vq ev ev#K" D#i #`b |

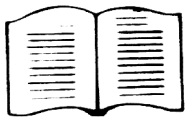
K. evs j#v`#k meiRi #gvU Drcv`b KZ ?

L. evs j#v`#k Drcv`Z meiRi KZ f#M A#j#y# #g#ó A#j#y#Z A#v#m |

M. evs j#v`#k Rbc#Z ^`#bK meiRi P#I#n`v KZ ?

e'enwiK**cV 1.5** wefb meRi fUvgb I LbR c`v`_i cigvYi PvU ^ZiKiY**GB cV tk`I Avcb**

- evsjv`k Drcb wefb kvK-meRi bvg jLZ cvi`eb|
- wefb kvK-meRi ciZ 100 Mvg Avni-Dc`hvMx As`k we`gvb wefb fUvgb h\_v, K`v`iUv, fUvgb we-1, fUvgb we-2 Ges fUvgb-m Gi cigvY D`jL KiZ cvi`eb|
- wefb kvK-meRi ciZ 100 Mvg Avni Dc`hvMx As`k we`gvb cavb LbR c`v`\_ h\_v, K`vjmqvg I t`j`ni cigvY j`ce× KiZ cvi`eb|
- wefb kvK-meRiZ we`gvb fUvgb I LbR c`v`\_i cigvY D`jLceK PvU cYqb KiZ cvi`eb|

**cvm`K Z`vejx**

fUvgb I LbR c`v`_i cavb Drm n`jv kvK-meRi| t`ni Pwn`vi kZKiY 90-95 fVM fUvgb Ôimô, 60-80 fVM fUvgb ÔGô Ges 20-30 fVM fUvgb Ôeô iaygvî kvKmeR I djgj n`Z Av`m| G Z`UKzAvgt`i A`b`Ki Rvbn tbB e`j meR LvIqvi ciZ Avgt`i AvMn Avkbyjcfv`e ev`oib| ciZU kvK-meRi Lv`vc`hvMx As`k thUKzcarb cavb fUvgb I LbR c`v`_ Av`Q Zvi Z` m`jZ PvU Rvbn vK`j meR LvIqvi ciZ Avgt`i AvMn m`p n`e| GKviY wefb meRi fUvgb I LbR c`v`\_i cigvYi PvU ^Zi KiY AveK`K| GB PvU ^Zii wefb Kv`Ri avc mn`R tevSvi meav`\_ PvU Dc`wcZe` k`ivbvgmn Pv`Ui GKU bglvmgx`v v`b`P Z`j aiv n`jv|

kvK-meRi	ciZ 100 Mvg Avni-Dc`hvMx As`k we`gvb cyó Dc`vb (ig. Mv.)					
bvg	K`v`iUv	fUvgb we-1	fUvgb we-2	fUvgb-m	K`vjmqvg	t`j`n

c`qvRbxq DcKiY

1. e · tevW KvMR 2. tciYj 3. Kjg 4. t`j 5. iveri

Kv`Ri avc

1. c`qvRbxq DcKiY nv`Zi Kv`Q vbb|
2. e · tevW KvMRU mgZj tUe`ji Dci ivLb|
3. t`jji mvin`h` tcbmj v`q KvM`Ri mxgvb vUv`b|
4. KvM`Ri Dci j`vj`fv`e mgvb `yZ eRvq ti`L mxgvbvi tfZ`ii AskUKzZ tiLv tU`b mgvb mZU As`k wef<sup>3</sup> Ki`b|
5. Gici meRi msL`v Abym`i mgvb `iZ cici AvovAwo tiLv tU`b c`qvRbxq msL`K mvi vUv`b|

6. c_g m*‖*ii c_g Ni n*‡*Z i*‡* K*‡*i Wb*‖*`K*i* m*v*Z*‖*U N*‡*i h\_v*μ*g me*‖*Ri b*v*g, L*v*‡`v*c*‡h*v*Mx 100 M*v*g me*‖*R‡Z K`v‡i*v*‖Ub, *‖*fU*‖*gb *‖*e-1, *‖*fU*‖*gb *‖*e-2, *‖*fU*‖*gb-*‖*m, K`v*j**‖*m*q*v*g* Ges ‡j*‡*ni c*‖*igv‡Yi *‖*k‡i*v*b*v*g *‖*jL*‡*|
7. me*‖*Ri b*v*g *‖*k‡i*v*bv‡gi *‖*b‡P GK GK K‡i *‖*e*‖*fb k*v*K-me*‖*R, ‡j*v*i b*v*g *‖*jL*‡*|
8. Gici P*v*‡Ui Ab`v*b* *‖*k‡i*v*bv‡gi *‖*b‡P me*‖*R Ab*‖*q*x* c‡q*v*Rb*x*q Z\_`, ‡j*v* me*‖*Ri *‖*fU*‖*gb I L*‖*bR c`v_ m*‡*úKZ Z*‖*ĖK c*v*V n‡Z m*s*Mnc eK *‖*j*‖*ce*x* K*i*‡b|
9. Gf*v*‡e *‖*e*‖*fb me*‖*Ri *‖*fU*‖*gb I L*‖*bR c`v_ i c*‖*igv‡Yi P*v*U ^Z*‖*i K*i*‡b|
10. c*‖*i‡k‡I a*v*i*v*e*v*‖nKf*v*‡e K*v*‡Ri a*v*c, ‡j*v* e`e*v*‖iK L*v*Z*v*q *‖*jL*‡*|

mZKZ*v*

1. c*v*m*‖*‡K Z_`v*e*j*x* *‖*bfi‡h*v*M` Drm ‡_‡K m*s*Mn K*i*‡b|
2. m*v*´úZKKv‡ji Z_` c*‖*i‡ekb K*i*‡b|
3. ‡Kv‡bv cK*v*i N*‖*gvR*v* Q*v*ovB m*y*‡i K‡i Z_` *‖*j*‖*ce*x* K*i*‡b|
4. *‖*bfi*‡* Z_` Dc`vcb K*i*‡b|

msw ¶ ß / iPbv g j K ck t

1. D`vbZ`Ei msÁv jLb|
2. meR weÁvb, dj weÁvb I dʒ weÁbʒbi aviYv eYbv Kiab|
3. gvbeʔ`n w fUwgb Ōwŋ-Gi cʔqRbʒqZv jLb|
4. LwbR c`vʒ\_i, iʒ I Zv mieivʔn meRi fʏgKv e`vL`v Kiab|
5. meR AlaK jvʒfi Drm e`vL`v Kiab|
6. evsjvʒ`k meR Drcv`ʒbi eZgvb Ae`vi cavb cavb w`K, ʒjv wjwceʒ Kiab|
7. fvʒZi weKí wʔmʒe †Kvb †Kvb meR e`envi Kiv mʒe Ges †Kb Zv DʒjL Kiab|
8. kvK meRi †fIR, iʒ eYbv Kiab|
9. Lv`NvUzC iY I ʔeʒ`kK gʏr ARʒb meRi fʏgKv DʒjL Kiab|
10. †Kvb meR †`K Kx w fUwgb cvIqv Zv eYbv Kijb|



CvV 1.1

- | | | |
|---------------|--|---|
| 1. K (m) | 1. L (m) | 1. M (lg) |
| 2. K (90-95) | 2. L (200) | 2. M (horus, cultura) |
| 3. K (3) | 3. L (1) | 3. M (2) |
| 4. K (70 Mlg) | 4. L (meiR i eÁib, d j i eÁib, d ž i eÁib) | 4. M (Landscape Horticulture e i j c i K i b v) |

CV 1.2

- | | | |
|---------------------------------|---|----------------------------|
| 1. $K(m)$ | 1. $L(m)$ | 1. $M(\ g)$ |
| 2. $K(G, \ W, B, \dagger K)$ | 2. $L(A\vee qib, K''\vee j\ mqig)$ | 2. $M(\ fU\ gb\ e-2)$ |
| 3. $K(4)$ | 3. $L(1)$ | 3. $M(1)$ |
| 4. $K(\ fU\ qb\hat{0}G\hat{0})$ | 4. $L(\ fU\ qb\hat{0}\dagger K\hat{0})$ | 4. $M(A\vee\dagger q\ Wb)$ |

c/v 1.3

- | | | |
|---|---|---------------------------|
| 1. $K(m)$ | 1. $L(m)$ | 1. $M(m)$ |
| 2. $(15-20\ j\ \uparrow)$ | 2. $L(me\parallel R)$ | 2. $M(im\downarrow)$ |
| 3. $K(1)$ | 3. $L(2)$ | 3. $M(1)$ |
| 4. $K(MRi, \uparrow co\parallel R, ev\parallel K\parallel c)$ | 4. $L(Av\downarrow\downarrow\ \parallel q\parallel o\ A\downarrow\downarrow)$ | 4. $M(evZ\ \uparrow ivM)$ |

CV 1.4

- | | | |
|------------------------------|---|--|
| 1. $K(m)$ | 1. $L(m)$ | 1. $M(\lg)$ |
| 2. (fvZ, Wvj) | 2. $L(Mx@Kvjxb)$ | 2. $M(\dagger m \dagger p \dagger i \mid A \dagger \pm \vee ei)$ |
| 3. $K(3)$ | 3. $L(4)$ | 3. $M(1)$ |
| 4. $K(28 \ j \uparrow \ Ub)$ | 4. $L(kZKiv \ 60 \ f \dagger Mil \ tenk)$ | 4. $M(200 \ Mvg)$ |

meiRi tkYxefvM

kivK-meiRi tkYxefvM mätÜ Rvbvi , iZ Acimxg| cL_exZ AvbgwbK 80U cievti i
AšMZ kivK-meiRi cVq evikZ cRvIZ iqtQ| Gt`i gta` AatKil tek eb` cRvIZ|
Avgt`i t`tk cVq cÄvki AaK wefb cRvIZi kivK-meiRi Pvlvev` cPijZ AvtQ| Gme
kivK-meiRi Pvlvev` cxIZ wfb wfbvte gtb ivLv KóKi| kivK-meiRi DvTM` ZvĚK `eikó` I
Ršvbtvi fve cVq GKB aibt| tKej wKQvKQvmeiRi t`tĚ t`Lv hvq DvTM` ZvĚK `eikó`
GKB aibt nIqv mätEI Gt`i Pvlvev` cxIZ wfbZi| thgb Avjyl UtgtUv| G Qvov AatK
meiRi `nK MvB, A½R exi cKvZ, wKtoI MfxiZv, RxbKvjji vVqZ, jvMvbtvi tgšm
wefb etj Gt`i Pvlvev` cxIZ I dmj msMn eēvcvbi gta` ZviZg` t`Lv hvq|
GgZv`vq wefb , Yv , tYi Dci wfiĚ Kti kivK-meiRi tkYxefvM Kiv ntj Gt`i cVpQ
mätÜ mg`K avYv jvf Kiv hvq Ges Gt`i Pvlvev` cxIZ mntr gtb ivLv mae nq| GtZ
mdj fvte meiR Pvlvev` Kiv hvq Ges AaK djb wbtZ Kiv mae nq|

G BDvbtUi wefb cVtV kivK-meiRi tkYxefvMi , iZ, mvaY tkYxefvMmgn Ges
DvTM` ZvĚK tkYxefvMmn meiRi evsjv, Bstir I DvTM` ZvĚK bvg ZvĚK I eēnvikmn
AvtjvPbv Kiv ntqtQ|

cV 2.1 meiRi tkYxefvMi , iZ



GB cV tktI Avcb

- meiRi DvTM` ZvĚK tkYxefvMi , iZ eYbv Kitz cviṭeb|
- meiRi Pvlvev` tgšm Ges AvnvthvM` AskwĚK tkYxevvmti Ae`vb DtjL Kitz
cviṭeb|
- meiRi RxbKvj I wKtoI MfxiZvfiĚK tkYxefvMi , iZ we`vviZfvte e`vL`v
Kitz cviṭeb|
- meiRi Pvlvev` cxIZ Ges KvŮi cKvZ I we`vZvfiĚK tkYxefvMi , iZ eYbv
Kitz cviṭeb|
- meiRi ZvcgvŮv mn` Kivi tGZvfiĚK tkYxefvMi , iZ ejtZ cviṭeb|



DvTM` ZvĚK tkYxefvM

cL_exi wefb t`tk GKB meiR wefb bvtg cVvPZ| GgbK GKB tštMvjK GjvVq Pvl
nIqv mätEI tKvbtv tKvbtv meiRi mvaY bvtgi wefbZv t`Lv hvq| ZvB DvTM` ZvĚK
`eikó`K mvgtb titL meiRi DvTM` ZvĚK tkYxefvM Ges bigKiY Kiv ntqtQ| dtj th
tKvbtv meiRtK GK bvtg cL_exi meĚ tPbv I Rvbv mae ntqtQ| GQvov DvTM` ZvĚK
tkYxefvM Avgt`i tK meiRi evn`K I eskMZ , Yvejx, wefb meiR tMvŮi gvšS mv`k` I
`emv`k`, meiRi DrcwĚ`vb, cŮu `eikó, cŮiarcv`x tGZv BZ`v RvbtZ mvinh` KitiQ,
hv mdj fvte meiR Pvlvev` Ges cRbtbi Rb` GKvš fvte ctqvRb nq|

tgšmfiĚK tkYxefvM

eQtii wefb mgtq Avnvlqv wefbZv Ges meiR Pvlvev` AvnvlqvRibZ Pvn`vi
wefbZvi KvtyY wefb tgšm wefb meiRi Pvlvev` Kivi ctqvRbxqZv t`Lv t`q| ZvB
dmjtji Pvlvev` KggmP ev`evqtB, km` chvq cVvKibv I mv\_x dmjtji Pvlvev` KgmP

cYqtb meiR RŠv#bvi mVK tgšmg we#Pbvq Avb#Z nq| GgZve⁻vq meiRi tgšmgf#EK
tkYxefvM Avgv#`i mdj fv#e meiR Pvl mniqvZv K#i|

AvnvithvM" Ask#f#EK tkYxefvM

meiR#f#` Avgiv G#`i wefb Ask thgb— cvZv, KvŪ, d#z, dj, gj BZ⁻v#` tL#q _vK|
AvnvithvM" As#ki wefbZv Abjvqx meiR Pvlvev#` c#qvRbxq mvi, cvlb Ges AšeZx c#iPhv
BZ⁻v#` i Pvn⁻vI wefb n#q _v#K| ZvB AvnvithvM" Ask#f#EK tkYxefvM Rvbv _vK#j Avgiv
mdjZvi mv#_ mVK km⁻chvq c#iK#bv cYqb Ges meiRi Pvlvev⁻ Ki#Z c#i|

kk#oi aib I we⁻Zi
Dci #bfi K#i fvg-
Kl#Yi MfxiZv Ges mvi
I tmP c#qvM e'e⁻vcbv
fbZi n#q _v#K|

RxebKvj#f#EK tkYxefvM

meiR#f#` G#`i RxebKvj A_{vr} exR jvMv#bvi ci n#Z bZb exR cvlqv chš tgvU mg#qi
ZviZg⁻ i#q#Q| ZvB meiRi RxebKvj#f#EK tkYxefvM Rvbv _vK#j km⁻chvq c#iK#bv mNv
I ev⁻evqb, km⁻ I exR mSm#ni mVK mgq baviY Kiv mn#RB m#e nq|

kk#oi MfxiZv#f#EK tkYxefvM

wefb meiR Mv#Qi kk#oi aib I we⁻Z wefb n#q _v#K| Avi GB kk#oi aib I we⁻Zi
Dci #bfi K#i fvg-Kl#Yi MfxiZv Ges mvi I tmP c#qvM e'e⁻vcbv fbZi n#q _v#K|
ZvB kk#oi ,Yv, #Yi Dci #f#E K#i meiRi tkYxefvM meiR Pvl⁻ #Zv evov#Z
mrvh⁻ K#i|

Pvlvev⁻ c#Zi#f#EK tkYxefvM

#KQy#KQymeR Av#Q th, #jv GKB c#iev#i Ašf# nIqv m#Ei G#`i Pvlvev⁻ c#Z
fbZi| thgb U#q#Uv I Avj# ZvB kvK-meR#K Zv#`i Pvlvev⁻ c#Zi Dci #f#E K#i
tkYxef³ Kiv n#q#Q| G#Z #fb #fbfv#e ciZvU kvK-meRi Pvlvev⁻ c#Z g#b bv ti#L
tkYxf#EK meiRi Pvlvev⁻ c#Z g#b ivLvi mnR m#hM m#ó n#q#Q|

Kv#Ūi cK#Z I we⁻Zi#f#EK tkYxefvM

meiRi ^nK Mvb Ges A½R e#x#i cK#Z m#Ü mg#K Ávb dmj Drcv⁻#bi cekZ| meiRi
^nK Mvb I A½R e#x#i cK#Zi Dci #f#E K#i ^Zi tkYxefvM Rvbv _vK#j mn#RB meiR
Pvl#i Rb⁻ R#g ^Zi, jvMv#bvi c#Z, MvQ n#Z Mv#Qi ^#Z, mvi c#qvM, AšeZx c#iPhv,
dmj mSmn BZ⁻v#` KvR m#Zv#e Kiv hvq|

Zvcgv#v mn" Kivi #gZvi
Dci #bfi K#i meiRi
tkYxefvM Rvbv _vK#j
eQ#ii wefb mg#qi
Zvcgv#vi ZviZg⁻ Abjvqx
meiR Pvl Kiv m#e nq|

Zvcgv#v mn" Kivi #gZv#f#EK tkYxefvM

wefb meiR wefb Zvcgv#vq fv#jv Rb#vq Ges G#`i wefb Zvcgv#v mn" Kivi #gZvi
tfZ#iI ZviZg⁻ t⁻Lv hvq| #KQymeR AiaK VŪv mn" Ki#Z cv#i| #KQyAvevi n#jKv VŪvq
fv#jv Rb#vq| Avevi #KQymeR Mig AvenvIqv cQ⁻ K#i| ZvB Zvcgv#v mn" Kivi #gZvi
Dci #bfi K#i meiRi tkYxefvM Rvbv _vK#j eQ#ii wefb mg#qi Zvcgv#vi ZviZg⁻
Abjvqx meiR Pvl Kiv m#e nq|

**mvıgg**

- Dıı™`ZvıĖK †kYııefvı†Mi d†j meiRi Dıı™`ZvıĖK ^eııkó Rıbv †M†Q Ges G†`i cııZııU†K GK bı†g cııexi meı̂ †Pbv I Rıbv mæ n†q†Q |
- †gšmg Ges Avııı†ı†ııM AskııfıĖK †kYııefvıM Rıbv _ıK†j meiRi Pvlıev` Ges km`chvq cııKıııbv eı̄evqb mıR nq |
- RıebKııjııfıĖK †kYııefvıM meiRi km`chvq cııKıııbv eı̄evqb Ges km` I exR mıM†ıı mıVK mgq ııbavı†ıY mıııqZıı K†ıı |
- ııkK†oi MfııZıııfıĖK †kYııefvıM Rıbv _ıK†j meiR Pvlıev†` mııı I †mP c†qııM eı̄eı̄ıcbıı `¶ııZııı mıı†_ mııııb Kııı mæ nq |
- Pvlıev` cıııZıııfıĖK †kYııefvıM cııZııU meiRi Pvlıev` cıııZ mıı†R g†b ıııL†Z mıııııı K†ıı |



cvtWĒi gj'vqb 2.1

1. mZ' n+j ōmō Ges ig_ 'v n+j ōmō jLb|

K. DTM ZvĒK tkY^Xeb'v#mi d+j th tKvb meiR#K c_Lexi meĪ GK bv#g tPbv mæ n#g#Q|

L. U#g#Uv Ges tMvj AvjyGKB c_Liev#ii Ašfŷ meiR|

M. cvZv Ges gj-RvZxq meiRi AšeZx c_LiPhv GKB ai#bi|

2. ĩb'vb c#Y Ki#b|

K. c_Lex#Z cvq U c_Liev#ii AšMZ cvq evikZ meiRi cRvZ i#g#Q|

L. Avgv#`i t`#k Gi AiaK msL`K meiRi Pvlvev` cPvjZ Av#Q|

M. Avjyl U#g#Uv GKB c_Liev#ii Ašfŷ nIqv m#ĒI G#`i c#vZ #fb|

3. mVK DĒ#ii cv#k UK Pý (√) #`b|

K. meiRi DTM ZvĒK tkY^XefvM #K#mi Dci #f#Ē K#i Kiv nq ?

1. Pvlvev` cYvjxi Dci

2. RjevqMZ Pvin`vi Dci

3. DTM ZvĒK #ek#ó'i Dci

4. Pvlvev#`i tgšmgi Dci

L. tKvb tkY^Xeb'vm Rvbv_vK#j mdj meiR Pvlvev#`i Rb` fvg KIY MfxiZv #`i Kiv mnR nq ?

1. DTM ZvĒK tkY^XefvM

2. RxebKvj#f#ĒK tkY^XefvM

3. #K#oi MfxiZv f#ĒK tkY^XefvM

4. tgšmgi f#ĒK tkY^XefvM

M. tKvb tkY^XefvM Rvbv_vK#j meiR dm#ji exR msM#ni mVK mgq #baviY Kiv hvq ?

1. meiRi tgšmgi f#ĒK tkY^XefvM

2. DTM ZvĒK tkY^XefvM

3. Pvlvev` cYvjxi f#ĒK tkY^XefvM

4. RxebKvj#f#ĒK tkY^XefvM

4. GK K_vq ev ev#K' DĒi #`b|

K. c_Lex#Z AvbgybK kvKmeiRi KZU cRvZ i#g#Q ?

L. tKvb tkY^XefvM Rvbv_vK#j meiR Pvlvev#` mvi I t#P c#qvM e'e\_vcbv `#Zvi mv#_ m'úb Kiv mæ nq ?

M. meiR#K tg#U KvU tkYx#Z fvM Kiv n#g#Q ?

cvV 2.2 meiRi mvariY tkYxefvM



GB cvV tkI AvciB

- Pvlvev` tgšmgi Dci wfĒ Kti cYxZ meiRi tkYxefvM eYbv KiZ cviṭeb|
- RxebKv†ji` wq†Zi Dci wfĒ Kti cYxZ meiRi tkYxefvM m†Ü ej†Z cviṭeb|
- ZvcgvĪv mn` Kivi †gZwfĒK meiRi tkYxefvM e`vL`v KiZ cviṭeb|
- Pvlvev` c×ZwfĒK meiRi tkYxefvM eYbv KiZ cviṭeb|
- Avnvi†hvM` A†ki Dci wfĒ Kti meiRi tkYxefvM D†jL KiZ cviṭeb|
- Kv†Ūi cKĪZ I e`Zi Dci wbf i Kti meiR†K tkYxef³ KiZ cviṭeb|
- †kK†oi MfXiZwfĒK meiRi tkYxefvM eYbv KiZ cviṭeb|



tgšmgi fĒK tkYxefvM

wefb kvK-meiR eQ†ii wefb mg†q Pvl Kiv nq| Rb†bv tgšmgi Dci wfĒ Kti kvK-meiR†K w†i†c tkYxef³ Kiv n†q†Q|

kxZKvjxb ev iie meiR t th mKj meiR kxZKvj†j (A†±vei - gvP) Pvl Kiv nq Zv†` i†K kxZKvjxb ev iie meiR ejv nq| Kic †M†Īi wefb meiR, Avjy†jUz, U†g†Uv, †kg, gu†i†U, MvRi, exU, †g†o AvjyBZ`v` kxZKvjxb meiR|

Mx†Kvjxb ev Luid meiR t th mKj meiR Mx†Kvj†j (G†cj-†m†P†i) Pvl Kiv nq †m,†jv†K Mx†Kvjxb ev Luid meiR ejv nq| KgovRvZxq meiR, W†U, c†K†K, KPze†eU, †Xam BZ`v` meiR Mx†Kvj†j Pvl Kiv nq|

Dfq-tgšmgi meiR t te, b, gv†P, †Xam, jvjkvK BZ`v` meiR Dfq tgšmgi RŠ†bv hvq| A_vr eQ†ii th †Kvb mgq Pvl Kiv hvq| Gme meiR†K Dfq-tgšmgi meiR e†j|

RxebKvjwfĒK tkYxefvM

RxebKvj A_vr exR ec†bi ci n†Z Avevi bZb exR cv†qv chš mg†qi Dci wfĒ Kti kvK-meiR†K tkYxef³ Kiv n†q†Q| GB cKvi tkYxefvM w†i†c t

GKeIRxex meiR t A†aKvsk kvK-meiR GKeIRxex, A_vr GK eQ†ii g†a`B G†`i Rxeb Pμ †kl nq| †mvjv†b†m, †j, †g†bv†m, †KDKv†e†U†m BZ`v` c†iev†ii A†aKvsk meiR, †thgb- U†g†Uv, jvD, †g†o Kgov, Pvj Kgov, †S†v, †kg BZ`v` meiR G †kYxf† |

weIRxex meiR t GB †kYxi meiR,†jv c_g tgšmgi Lv†`vc†hvMx Ask (gf, Kv†, cvZv) ^Zi Kti Ges GB me A†k m†ĀZ Lv` †ØZxq tgšmgi Ab†Kj Aven†lqvq meiR Mv†Q c†y†g†ix ^Zi KiZ m†v†h` Kti| e†vKic, kvjMg, †jKic, †c†vR BZ`v` †Ø-eIRxex meiR|

**e†eIRxex meiR t th mg` kvK-meiR`B tgšmgi te†k mgq tetP`\_v†K, †m,†jv†K e†eIRxex kvK-meiR e†j|** GB a†bi kvK-meiRi fDci` Ask kxZKvj†j gv†v hvq| †KŠ G†`i f†b` Ask tetP`\_v†K| kvZ †k†I Avevi bZb M†Qi RŠ††q| Av`v, nj†, g†xKPz kZg†x BZ`v` G †kYxi AŠf† meiR|



cV#VĖi gĵ'vqb 2.2

1. mZ' nĵ ōmō Ges ḡ_ 'v nĵ ōḡō ḡLb|

K. AvjyUḡḡUv, eavKic I dḡKic Mx@Kvjxb meiR|

L. AaKisk kvK-meiR GKeIRxex|

M. KgovRvZxq meiR kvZ-miinòzmeiR|

2. ĩb'vb cĥ Kib|

1. gvĵfīm †Mvĥîi meiR nĵv Ges |

2. AMfxigĵx meiR nĵv , ... BZ'v' |

3. cvZvRvZxq meiR, †ĵv nĵv , ... BZ'v' |

3. mVK DĖĥii cĥk UK Pý (✓) 'b|

K. Ø-eIRxex meiR †KvbU ?

1. UḡḡUv

2. ḡkg

3. S½v

4. eavKic|

L. kvZmiiinòzmeiR †KvbU ?

1. MvRi

2. Avjy

3. dḡKic

4. †cqR|

M. K> RvZxq meiR †KvbU ?

1. Avjy

2. †cqR

3. kvjMg

4. MvRi|

4. GK K_vq ev eĥK' DĖi 'b|

K. eavKic †Kvb RvZxq meiR?

L. †Kvb aiĥbi meiR 25-30 †m. ZvcgvĤvq fvĥĵv Ršvq?

M. mRbv †Kvb RvZxq meiR?

cvV 2.3 meiRi DTM`ZvĖK tkYTMefvM

GB cvV tkTMI AvTMib

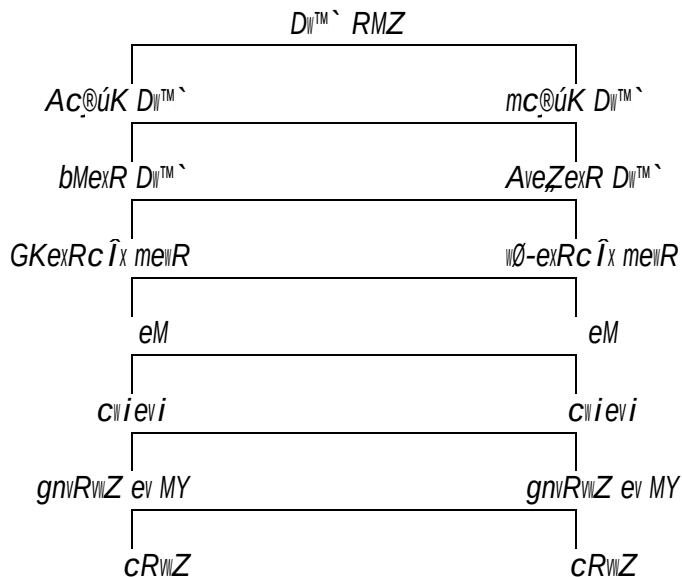
- meiRi DTM`ZvĖK tkYTMefvMi i|cTMiLv eYbv KiTMZ cviTMeb|
- GKexRcÎx meiRi eM I cTMievTMii big ejTMZ cviTMeb|
- ØexRcÎx meiRi eM I cTMievTMii big ejTMZ cviTMeb|

meiRi DTM`ZvĖK tkYTMefvM I bigKiY

DTM`RMZ<sup>TM</sup>K mec<sup>TM</sup>\_tg`TM DcRMTMZ fTMvM Kiv nTMqTMQ| thgb, AcTMúK DTM` (Cryptogams) Ges mc<sup>TM</sup>úK D<sup>TM</sup>` (Phanerogams)| evsjvTM`tk meiR <sup>TM</sup>nm<sup>TM</sup>te Pvl<sup>TM</sup>ev<sup>TM</sup>` nTMQ Ggb meTM,TMjv DTM`B mc<sup>TM</sup>úK | mc<sup>TM</sup>úK meiR<sup>TM</sup>K Avei<sup>TM</sup>`TM efvTMM fTMvM Kiv nTMqTMQ| G efvTMM`<sup>TM</sup> n<sup>TM</sup>jv bMexR D<sup>TM</sup>` (Gymnosperm) Ges AveZexR DTM` (Angiosperm)| meckvi kvK-me<sup>TM</sup>R tk<sup>TM</sup>lv<sup>3</sup> f<sup>TM</sup>vMi Ašf<sup>TM</sup>| AveZexR meiR`TM tkYTMxZ ef³| hTM_v, GKexRcÎx (Monocotyledon) meiR Ges ØexRcÎx (Dicotyledon) meiR| GKexRcÎx Ges ØexRcÎx meiR hTM_vTMtg KZK,TMjv eTMM (Order) Ges eMTMK KZK,TMjv tMTMÎ ev cTMievTMi (Family) fTMvM Kiv nTMqTMQ| cTMZTMK cTMieviTMK KZK,TMjv gnTMRvTMZ ATM_ev MY (Genus) Ges cTMZTMK gnTMRvTMZTMK cRTMvTMZ Species), DccRTMvTMZ (Sub-species) Ges DTM`ZvĖK RvZ TMnmTMte fTMvM Kiv nTMqTMQ|

th tkvb DTM†`i D<sup>TM</sup>`ZvĖK bvTMgi`<sup>TM</sup> Ask \_v<sup>TM</sup>K| c\_g Ask H D<sup>TM</sup>†`i gnTMRvTMZi big Ges ØZxq Ask cRTMvTMZi big| MvTMQi DTM`ZvĖK ev`eÁvTMbK big jTMvTMUb fvlTMv nTMZ tbqv| ZvB tkvTMbv MvTMQi`eÁv<sup>TM</sup>bK big vjL<sup>TM</sup>Z n<sup>TM</sup>j BUv<sup>TM</sup>jK Kvq`vq (Wvb vTMK evTMKv KTMi) vjLTMZ nTMte| tmvRv ATM†i vjLTMj gnTMRvTMZ I cRTMvTMZi bvTMgi vTMbP vTMfbvTMfTMfvTMte vTMM tUTMb vTM`Z n<sup>TM</sup>te| Bš<sup>TM</sup>i<sup>TM</sup>R ev tivgv<sup>TM</sup> A<sup>TM</sup>†i`eÁvTMbK big vjLTMZ nTMte| evsjv ev AbTM`tkv<sup>TM</sup>bv fvl<sup>TM</sup>vq vjL<sup>TM</sup>j Zv fy<sup>TM</sup> e<sup>TM</sup>j MY<sup>TM</sup> n<sup>TM</sup>te| D<sup>TM</sup>vniY<sup>TM</sup> i<sup>TM</sup>c t<sup>TM</sup>q<sup>TM</sup>R Gi D<sup>TM</sup>`ZvĖK bvTMgi c_g Ask ev gnTMRvTMZ nTMjv Allium Ges ØZxq Ask ev cRTMvTMZ nTMj cepa| mTMZivs tTMqTMRi DTM`ZvĖK big GfvTMte vjLTMZ nTMte Allium cepa ev Allium cepa.

vTMbTM DTM`RMZi tkYTMefvMi GKUv i|cTMiLv tTMLvTMbv nTMjv:



kvK-meTMRi eM Ges cTMieviTMgn

GKexRcÎx meiR

eM - Giiqv†jm (Aralias)

cïevi - G†im (Araceae)

GB cïev†ii AŠMZ meiRmgn n†jv gLx KPz cïib KPz cÂgLyx KPz Mv†iv KPz`x KPz
tgšj†f KPzgvb KPz

GKexRcÎxmeiRi eM,†jv
n†jv Giiqv†jm,
Wqm†Kiiqv†jmI
†j†qv†jmI

○ eM - Wqm†Kiiqv†jm (Dioscoriales)

cïevi - Wqm†Kii†qm (Dioscoreaceae)

GB cïev†ii meiR n†jv- tg†U AvjY

○ eM - †j†qv†jm (Liliales)

cïevi - †j†qm (Liliaceae)

GB cïev†ii meiR,†jv n†jv- †cqR, imb, kZgjx|

ØexRcÎx meiR

○ eM - Ggv†ib_v†jm (Amaranthales)

cïevi - Ggv†ib†_m (Amaranthaceae)

GB cïev†ii meiR n†jv - jvjkvK, Wwv|

○ eM - e`vmjv†jm (Basellales)

cïevi - e`vm†jm (Basellaceae)

GB cïev†ii meiR n†jv - cBkvK (mv`v), cBkvK (jvj)|

○ eM - †KiidvBjv†jm (Caryophyllales)

cïevi - †P†bvcW†qm (Chenopodiaceae)

GB cïev†ii meiR n†jv - cvjskvK, exU, e_gv kvK|

○ eM - K†óUvRUv†jm (Compositales)

cïevi - K†óUvRU (Compositae)

GB cïev†ii meiR n†jv - evav†jUz, Aevav†jUz|

○ eM - tevivRbv†jm (Baraginales)

cïevi - Kbfj†jm (Convolvulaceae)

GB cïev†ii meiR n†jv - †gíó AvjyKj†g kvK|

○ eM - †iWv†jm (Rhoedales)

cïevi - μz†dii (Cruciferae)

GB cïev†ii meiR n†jv - evavKc, d†Kc, tevKj, IjKc, kvjMg, gj†|

○ eM - †KDKvievUv†jm (Cucurbitales)

cïevi - †KDKvievU†m (Cucurbitaceae)

GB cïev†ii meiR n†jv - †gíó Kgov, Pvj Kgov, kmv, ev†x, ZigR, jvD,
†S†v, ay†, Kijv, Kv††ivj, cUj, †P††v|

○ eM - †j,†g†bmv†jm (Leguminosales)

cïevi - †j,†g†b†m (Leguminosae)

GB cïev†ii meiR n†jv - gUi†w, †kg, eievU|

○ eM - gvjfv†jm (Malvales)

c_{ievi} - g_{vj}f_m (Malvaceae)

GB c_{iev}i i meiR n_{jv} - X_{am}, P_KBi |

○ eM - t_{cv}j_gm_{bqv}j_m (Polemoniales)

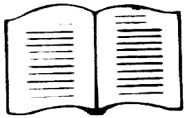
c_{ievi} - t_{mv}j_vb_m (Solanaceae)

GB c_{iev}i i meiR n_{jv} - A_{vjy}te_b, U_gU_v, g_{iP} (igó), g_{iP} (Sij) |

○ eM - A_{vg}te_jv_jm (Umbellales)

c_{ievi} - A_{vg}te_jd_i (Umbelliferae)

GB c_{iev}i i meiR n_{jv} - M_vRi |



m_vigg

• D_{TM} RMZ_K m_{cv}úK I A_{cv}úK GB `y_v D_{CRM}Z f_{vM} K_{iv} n_qQ |

• m_{cv}úK D_{TM} i `y_v e_fvM n_{jv} b_{Mex}R I A_{ve}Z_{ex}R D_{TM} |

• A_{ve}Z_{ex}R D_{TM} K G_{Kex}Rc_Î Ges ∅-e_xRc_Î D_{TM} t_{kY}X_Z f_{vM} K_{iv} n_qQ |

• G_{Kex}Rc_Î me_R Ges ∅-e_xRc_Î me_RK h_vμ_g KZK_{jv} e_M, e_MK KZK_{jv} c_{iev}i, c_{iev}i_K KZK_{jv} g_{nv}R_vZ_Z Ges c_ZK g_{nv}R_vZ_K KZK_{jv} c_Rv_ZZ f_{vM} K_{iv} n_qQ |

• t_h t_{Kv}b_v me_Ri ^e_Áv_bK b_vg_i c_g Ask_U n_{jv} Z_{vi} g_{nv}R_vZ_i b_{vg} Ges `Z_{xq} Ask_U n_{jv} c_Rv_Zi b_{vg} |

• me_Ri ^e_Áv_bK b_{vg} B_si_R A_¶i B_Uv_jK K_{vq} v_q j_LZ n_q A_{ev} B_si_R A_¶i t_{mv}R_v K_i j_L g_{nv}R_vZ I c_Rv_Zi b_¶P A_{vjv} v_{Avjv} v_fv_{te} v_M t_Ub_¶ Z_{nq} |



1. mZ" n†j Ômŏ Ges wg_ "v n†j Ôwgŏ wjLb|

K. mKj cKvi meWRAveZeXR DTM†`i Ašfž |

L. $evsjv\sharp^{\text{`}}\sharp kPvIvev\sharp^{\text{`}}GKexRc\hat{I}xGes\wp\sharp exRc\hat{I}xme\wp R\ i\sharp q\sharp Q|$

M. DwTM i ^eÁw**bK** bvg Bs†i**wR** fvIv †_†K †bIqv n†g†Q|

K. me|Ri DTM Z^WÄK b_v†g_i c_g Ask_U n†j_v Z_{vi} b_vg Ges _WØZ_{xq}
Ask_U n†j_v b_vg |

L. D_WTM Z_VÄK bvg A¶#i ¶jLv nq|

M. $KP \hat{R} \vee Z \times q \text{ me} \parallel R \dots\dots\dots exRc \hat{I} \times \text{me} \parallel R$

K. kvK-meRi exR †Kvb wefv‡Mi AŠMZ ?

1. $AveZ$ 2. bM

3. AveZ I bM 4. AcyúK

L. $M_{\text{V}} \neq Q_i D_{\text{W}}^{\text{TM}} \setminus Z_{\text{W}} \ddot{E}K \text{ bvg } \dagger K_{\text{Vb}} \setminus \text{B}_{\text{W}} U_i \text{ mg}\ddot{S} \neq g M_{\text{W}} VZ ?$

1. $gnvR_{VII}Z \mid cR_{VII}Z$
2. $\dagger M_V \hat{I} \mid cR_{VII}Z$

3. $eM \vdash \dagger M_V \hat{I}$ 4. $\dagger M_V \hat{I} \vdash g_{NV} R_{VV} Z$

M. †Kvb cwi evi wU GKexRcÎx me wRi Ašfÿ ?

1. Compositae

3. Cruciferae 4. Araceae

K. K~~q~~_{ov} RvZxg me||R †Kvb c||iev†ii Ašf,³?

L. $A_v j y K_v b R_v Z_x q m e w R$?

M. $K \nVdash M \nVdash \hat{I}i$ me $\nVdash R \nVdash K \nVdash b$ c $\nVdash i$ e $\nVdash i$ i Ašf,³?



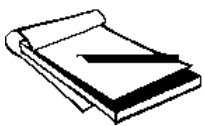
cV 2.4 mvaY kK-meRi evsjv Bs+iR I DTM `ZvEK bvg

GB cV tk+I Avib

- evsjv`tk PVIKZ wefb kK-meRi mvaY bvg ej+z cvi+eb|
- kK-meRi, +jvi Bs+iR bvg D+jL Ki+z cvi+eb|
- ciZU kK-meRi DTM `ZvEK bvg jice× Ki+z cvi+eb|

<u>evsjv bvg</u>	<u>Bs+iR bvg</u>	<u>DTM `ZvEK bvg</u>
g ₁ KPz	Taro	<i>Colocasia esculenta</i>
`g KPz	Cocoyam	<i>Xanthosoma nigra</i>
tgšj ₁ f KPz	Cocoyam	<i>Xanthosoma atrovirens</i>
g/b KPz	Giant Taro	<i>Alocasia indica</i>
I j KPz	Elephant foot	<i>Amorphophallus campanulatus</i>
tg+U Avjy	Winged yam	<i>Dioscorea alata</i>
tgš Avjy	Chinese yam	<i>Dioscorea esculenta</i>
tcqR	Onion	<i>Allium cepa</i>
imb	Garlic	<i>Allium sativum</i>
kZgj _x	Asparagus	<i>Asparagus officinalis</i>
WU	Amaranth	<i>Amaranthus lividus</i>
jvj kK	Red Amaranth	<i>Amaranthus gangeticus</i>
b+U kK	Notey shak	<i>Amaranthus viridis</i>
c ₁ kK (mv`v)	Indian spinach	<i>Basella alba</i>
c ₁ kK (jvj)	Indian spinach	<i>Basella rubra</i>
c ₁ js kK (t`k _x)	Spinach	<i>Beta bengalensis</i>
c ₁ js kK (ie+`k _x)	Spinach	<i>Spinacia oleracea</i>
exU	Beet	<i>Beta vulgaris</i>
e_g ₁ kK	Bathua	<i>Chenopodium album</i>
†jU ₁ (Aetav)	Leaf lettuce	<i>Lactuca sativa</i> var. <i>crispa</i>
†jU ₁ (etav)	Head lettuce	<i>Lactuca sativa</i> var. <i>capitata</i>
ig ₁ ó Avjy	Sweet potato	<i>Ipomoea batatas</i>
Kjg _x kK	Swamp cabbage	<i>Ipomoea aquatica</i>
etavK ₁ c	Cabbage	<i>Brassica oleracea</i> var. <i>capitata</i>
džK ₁ c	Cauliflower	<i>Brassica oleracea</i> var. <i>botrytis</i>
te ₁ vK ₁ j	Broccoli	<i>Brassica oleracea</i> var. <i>italica</i>
I jK ₁ c	Knol-khol	<i>Brassic oleracea</i> var. <i>gongyloides</i>

<u>eiv jv bvg</u>	<u>Bs† iR bvg</u>	<u>DTM ZvĚK bvg</u>
<i>kv j Mg</i>	Turnip	<i>Brassica rapa</i>
<i>gj^v</i>	Radish	<i>Raphanus sativus</i>
<i>Pi j Kgo^v</i>	White gourd	<i>Benincasa hispida</i>
<i>ig^o Kgo^v</i>	Sweet gourd	<i>Cucurbita moschata</i>
<i>Zi gR</i>	Water melon	<i>Citrullus vulgaris</i>
<i>km^v</i>	Cucumber	<i>Cucumis sativus</i>
<i>eiv Mv/dz</i>	Muskmelon	<i>Cucumis melo</i>
<i>is^{1/2}</i>	Ribbed gourd	<i>Luffa acutangula</i>
<i>ay j</i>	Sponge gourd	<i>Luffa cylindrica</i>
<i>jvD</i>	Bottle gourd	<i>Lagenaria vulgaris</i>
<i>Ki jv</i>	Bitter gourd	<i>Momordica charantia</i>
<i>KvK† i v j</i>	Teasle gourd	<i>Momordica cochinchinensis</i>
<i>ip^{1/2}</i>	Snake gourd	<i>Trichosanthes anguina</i>
<i>cUj</i>	Pointed gourd	<i>Trichosanthes dioica</i>
<i>† kx kg</i>	Country bean	<i>Dolichos lablab</i>
<i>gui i^u</i>	Pea	<i>Pisum sativum</i>
<i>eie^u</i>	Yardlong bean	<i>Vigna sesquipedalis</i>
<i>kvKvjy</i>	Yam bean	<i>Pachyrrhizus tuberosus</i>
<i>eKdž</i>	Sesbania	<i>Sesbania grandiflora</i>
<i>†Xam</i>	Okra	<i>Hibiscus esculentus</i>
<i>Pkž</i>	Red sorrel	<i>Hibiscus sabdariffa</i>
<i>mviRbv</i>	Drum stick	<i>Moringa oleifera</i>
<i>kvCjv</i>	Water lily	<i>Nymphaea nouchalli</i>
<i>mxZv jvD</i>	Giant grandilla	<i>Passiflora quadrangularis</i>
<i>te, b</i>	Aubergine	<i>Solanum melongena</i>
<i>Avjy</i>	Potato	<i>Solanum tuberosum</i>
<i>ig^o giⁱ P</i>	Sweet pepper	<i>Capsicum annuum</i>
<i>Svj giⁱ P</i>	Hot pepper	<i>Capsicum frutescens</i>
<i>U†g†Uv</i>	Tomato	<i>Lycopersicon esculentum</i>
<i>MvRi</i>	Carrot	<i>Daucus carota</i>



Abja j b (Activity): Avcbvi eiv oi Av†kv†k th meiR Av†Q Zv† i Bs† iR bvg I DTM ZvĚK bvgmn GK^u Zv j Kv c⁻ Z Ki b |



cv†VĖi gĵ'vqb 2.4

1. mZ' n†j ōmō Ges ‖g_ 'v n†j ōmō ‖jLb|

K. ‖gŏó Avjĵ Dŏ™`ZvĖĖK bvg Ipomoea batatas |

L. Avjĵ Bs†i‖R bvg Potato |

M. Cucurbita moschata PvjKgov Dŏ™`ZvĖĖK bvg |

2. ĩb'v b c†Y Kib|

K. ‖k†gi Dŏ™`ZvĖĖK bvg |

L. cU†ji Bs†i‖R bvg |

M. Raphanus sativus n†jv Gi Dŏ™`ZvĖĖK bvg |

3. mVK DĖ†ii c†k ‖UK (✓) ‖`b|

K. †cq†Ri Dŏ™`ZvĖĖK bvg †KvbU?

1. Allium cepa

2. Allium sativum

3. Basella alba

4. Basella rubra

L. Brassica oleracea var. botrytis †Kvb meiRi Dŏ™`ZvĖĖK bvg?

1. džKc

2. evaKc

3. IjKc

4. tevKj

M. Wax gourd †Kvb meiRi Bs†i‖R bvg?

1. PijKgov

2. ‖gŏóKgov

3. ZigR

4. jvD

4. GK K_vq ev ev†K' DĖi ‖`b|

K. Cauliflower-Gi evsjv bvg Kx?

L. MvR†ii Dŏ™`ZvĖĖK bvg Kx?

M. imĵ-Gi Bs†i‖R bvg Kx?



mswTβ / iPbvgJK ck

1. D^uTM`ZwĖK †kY<sup>x</sup>eb`v†mi , iZ e`vL`v Ki‡b|
2. Av`vq†hwM`As†ki Dci †fwĖ K†i meRi †kY^xeb`v†mi , iZ D†jL Ki‡b|
3. PvIlev`-†gšm†fwĖK meRi †kY^xefvM eYbv Ki‡b|
4. Zvcgvĭv mn`Kivi †gZvwfwĖK meR†K †Kfv†e fvM Kiv n†q†Q Zv D†jL Ki‡b|
5. meRi D^uTM`ZwĖK †kY<sup>x</sup>efv†Mi i†c†iLv c`vb Ki‡b
6. meRi D`vniYmn †œerC†x meR c†ievimg †ni bvg †jce× Ki‡b|
7. K†c c†iev†ii meR, †jvi D^uTM`ZwĖK bvg †jLb|
8. Kgov c†iev†ii meR, †jvi B†i†R I D^uTM`ZwĖK bvg †jLb|
9. PvIlev`c×Z †fwĖK meRi †kY<sup>x</sup>eb`vm D†jL Ki‡b|
10. Kv†Ŭi cK†Z I ve`Zi Dci †fwĖ K†i meRi †kY^xefv†Mi , iZ †jLb|



CvV 2.1

- | | | |
|----------------|---|-----------------|
| 1. $K(m)$ | 1. $L(m)$ | 1. $M(\lg)$ |
| 2. $K(80)$ | 2. $L(50)$ | 2. $M(PvIvev')$ |
| 2. $K(3)$ | 2. $L(3)$ | 3. $M(4)$ |
| 4. $K(eviKvZ)$ | 4. $L(\text{kk} \ddot{o} i M f x i Z v \text{ w f u } \ddot{E} K \ddot{t} k Y x i e f v M)$ | 4. $M(8u)$ |

cV 2.2

- | | | |
|--|---|--|
| 1. $K(\parallel g)$ | 1. $L(m)$ | 1. $M(\parallel g)$ |
| 2. $K(\uparrow Xam, P\downarrow Bi)$ | 2. $L(\uparrow cqr, im\downarrow b)$ | 2. $M(ev\downarrow K\parallel c, j\downarrow v\downarrow k\downarrow K)$ |
| 3. $K(4)$ | 3. $L(1)$ | 3. $M(1)$ |
| 4. $K(c\downarrow V\downarrow R\downarrow Xq)$ | 4. $L(Mig\downarrow m\downarrow n\downarrow \dot{o}\downarrow zne\downarrow R)$ | 4. $M(e, \uparrow)$ |

cV 2.3

- | | | |
|-------------------------------------|--|----------------------------|
| 1. $K(m)$ | 1. $L(m)$ | 1. $M(g)$ |
| 2. $K(gvRvZi, cRvZi)$ | 2. $L(Bs^{\dagger}iR\ ev\ \dagger ivgb)$ | 2. $M(GK)$ |
| 3. $K(1)$ | 3. $L(1)$ | 3. $M(4)$ |
| 4. $K(\lVert KDKvive^{\dagger}Uim)$ | 4. $L(GKexRc\hat{I}x)$ | 4. $M(\mu z^{\dagger}dwi)$ |

cV 2.4

- | | | |
|--------------------------|------------------------|----------------|
| 1. $K(m)$ | 1. $L(m)$ | 1. $M(ig)$ |
| 2. $K(Dolichos\ lablab)$ | 2. $L(Pointed\ gourd)$ | 2. $M(g\ jv)$ |
| 3. $K(1)$ | 3. $L(1)$ | 3. $M(1)$ |
| 4. $K(d\dot{z}K\ c)$ | 4. $L(Daucus\ carota)$ | 4. $M(Garlic)$ |

meiR Drcv`b cxZ

mVK mgq Ges mVK cšvq Pvlvev` Kivi Dci tKv#bv kvK-meRi mdj djb wbfikxj|
meiR Pvlvev` mVK mgq Ges cšv waviY cavb weP` elq, tju nju meiRi A½R Mvb
I exxi cKZ, vbxq RjevqygUi cKZ BZ`w | Dm`i RjevqMZ Pm`vi ZviZg`i
KviY wefb kvK-meR eQi i wefb tšmg thgb- kxZ, MxØ I elvq Pvlvev` Kiv nq|
Avevi wefb kvK-meRi `nK Mvb I A½R exxi cKZ wefb nlqv Gt`i Pvlvev` wefb
cxZtZ múb KiZ nq| Avgv`i t`k maviYZ exR efb, exR cZ Ges Pviv Drcv`b I
tivCY Kti kvK-meR Drcv`b Kiv nq|

GB BDibUi wefb cvV meiR Drcv`b exR ecb, Pviv Drcv`b I tivCY cxZi e`envi,
exRZjvi vbevPb I RxeYgyKiY, Av`k exRZjv`ZiKiY I exR efb, Pivi ciPhv
I KómnòZv eab, Pviv DÈvj b I tivCY Ges meiRi A½R eskwe`vi múbK ZwiEK I
e`enviKmn we`viZfvte AvjvPbv Kiv ntqQ|

cvV 3.1 exR ecb, Pviv Drcv`b I tivCY

GB cvV tktI Avcb

- meiR Drcv`b e`eüZ wefb Pvlvev` cxZi bvg ejtZ cvi`eb|
- tKv#bv cxZtZ Kx Kx meiR jvMv`eb Zvi bvg D+jL KiZ cvi`eb|
- ecb cxZ ejtZ Kx tevSvq Ges KZfvte exRecb Kiv hvq Zv ejtZ cvi`eb|
- gv`vq exRecb cxZ we`viZfvte e`vL`v KiZ cvi`eb|
- meiR Pvlvev` Pviv Drcv`b I tivCY cxZi myear Amyear D+jL KiZ cvi`eb|

exR ecb

nvZ `tq A\_ev weklfvte `Zi hš i mvinth` RvgtZ mivm i exR tevbi cxZB nju exR
ecb| GB cxZ meiR Pvlvev` e`eüZ cxZ, tju gta` mePtq cji#bv Ges mnR|
Gai#bi Pvlvev` LiP Kg jvM Ges A+c¶vKZ.Kg mgq djb cvlqv hvq| gjRvZxq meiR
GB cxZtZ Pvlvev` Kiv nq| exR ecb cxZi cavb Amyear nju-Gi Pvlvev` Rjevqy
Dci wbfikxj| cZKj Rjevqy KviY mgqZ exRecb KiZ bv cvi`j meiRi djtb
weic cfve covi ht_ó mvebv v`K| GQov, mgvb `tZ eRvq titL exR tevbi mae nq bv
ej exRi cigvY tek jvM|

kvK-meRi exR cavbZ `yfvte ecb Kiv hvq| h\_v K. mviZ ecb Kti Ges L. wQu`q ecb
Kti| mviZ ecb Avevi `yfvte Kiv tztZ cvti| c\_g cxZtZ exR t`K exRi gta`
wb`ó tKvb `tZ eRvq bv titL mviZ Abeiz GKUi ci GKU exR ecb Kti GKvRU
múb Kiv hvq| Avi ØZxq cxZiUtz GKU exR t`K Ab` exRi gta` myb`ó `tZ eRvq
titL mviZ exR ecb Kiv nq| mviZ exR ec#bi myear nju, GtZ ecbKZ.mg` exR
gviUi mgMfxiZvq ecb Kiv mae nq ejt GKB mgq exRi Askziv`Mg Avkv Kiv hvq|
t¶tZi meÎ MvQi NbZ mgvb i¶v Kiv hvq, hv wKbv MvQi myg exxi wbdqZv t`q|
MvQi `tZ wqšY Kti exR ecb Kiv hvq ejt wQu#bv cxZi tPtq GB cxZtZ exR Kg
jvM, Ašex ciPhv KivI mnR nq| mviZ exRi gta` myb`ó `tZ eRvq bv titL
jvkvK, Wwv, gjv, cvjskvK, mivlvK, MvRi BZ`w i exR ecb Kiv nq| Ašex ciPhv
Kivi mgq MvQ exxi cv_wgK chvtq ctqvRbxq NbZ eRvq titL mvi nZ AiZi³ MvQ



DuVtq t d j v n q | A b w t K, t X a m, g U i i w, c p k v K B Z " w i ` m m i i Z w b i ` o ` t Z e R v q t i t L
e c b K i v n q | t e i k i f v M k v K - m e i R D r c v t b i t t i e v s j v t t k i K i t K i v c a v b Z w Q u U t q
e x R e c b K t i _ v t K b | e x R t e v b v i c i n v j K v j v t j w t q P v l K t i A _ e v t K v v j w t q
K z t q e x R g w U i m v t _ w g k t q t q v n q | G B c x i Z i m y e a v n t j v - G u U m n R l G t Z K w i M i x
A v t b i c t q v R b n q b v | G B c x i Z i c a v b A m y e a v n t j v - w Q u U t q e x R g w U i m g v b M f x i Z v q
h v q b v | A t b K m g q g w U i D c t i w K Q y e x R t t K h v q, t h t j v t g v U B M R v q b v | A v e v i A t b K
M f x t i c o v e x R t i i Z M R v q e v A t b K m g q M R v q b v | G Q v o v w e w f b M f x i Z i q c o v e x R
G K B m g t q A s K z i v M g n q b v e t j M v t Q i A t R e x t Z m g Z v e R v q _ v t K b v | G i d t j m e i R
m s M t n A m y e a v m j o n q G e s d j b l K g n q | Z v Q v o v, w Q u U t q e x R t e v b v n t j t t t Z i m e i
M v t Q i N b Z m g v b i v L v h v q b v e t j M v t Q i m g e x A v k v K i v h v q b v | G g Z v e v q d j b l K g n q |
j v j k v K, W w U v, c v j s k v K, g t v, t c a v R B Z " w i ` i e x R m i v m m i g w U t Z w Q u U t q t e v b v n t q _ v t K |

mwi#Z Ges wQIU#q exR ecb Qvov I wKQ wKQymeR PvlIev#`i tejq nvZ w`#q GKwU GKwU
K#i wBw`ó RvqMvq exR ecb Kiv nq ev c#Z t`qv nq| GB c#wZ Bst#iR#Z wWe#js
(Dibbling) ev exR t#v b#g ciw#PZ| mva#iYz jZv#v cKwzi me#R hv#`i wKk#oi
c#kwe wZ Ges Kv#ûi kvLv-ckLv#i cmvi L# te#k nq tm mg# me#Ri exR GB c#wZ#Z
jvM#b#v nq| Kgov#M#îi cvq me me#R, wkg, ei#wU BZ#w G c#wZ#Z PvlIev` Kiv nq|
Kgov tM#îi t#kifwM me#R elvKv#j PvlIev` Kiv nq Ges GB mgq cP# ej# nq|
elvKv#j A#Ze#i` i#y Rj#v#Zvi nvZ t_#K G mg# me#Ri MvQ#K i#v Kivi Rb#
PvlIev#`i RvqMvq D#Z#i gv`v`Z#i Kiv nq Ges gv`v#Z exR t#v nq| ZvQvov, cvnwio
GjvKvq Ges AmgZj RvqMvq exR c#Z kvK-me#Ri PvlIev` cP#jz i#q#Q|



P1.3.1 : Weis $c \times Z \rightarrow q \backslash v q \in R \in cY$

Pv jv Drcv `b / † jvcY

$\frac{exR\ mi\ v\ m\ i\ g\ v\ V\ ecb\ b\ v}{K\#i\ c\ _t\ g\ exRZ\ j\ v\ q\ tev\ b\ v}$
 $\frac{nq\ Ges\ t\ m\ L\ v\ b\ P\ i\ v}{Drc\ v\ b\ K\#i\ t\ m\ B\ P\ i\ v}$
 $\frac{cieZ\ x\ Z\ D\ i\ v\ t\ g\ G\#b}{R\ i\ g\ Z\ _v\ q\ f\ v\ t\ e\ j\ v\ M\#b\ v\ i}$
 $\frac{c\ x\ i\ Z\ Z\ K\ t\ i\ v\ c\ Y\ e\ j\ v\ n\ q\ l}{}$

exR mi^{vi}mi gi^v ec^b b^v K[†]i c^{_}g exRZjvq tev^{bv} nq Ges t^mLv^tb P^{iv}v Drc^v`b K[†]i t^mB
P^{iv}v cieZ[†]Z D^{iv}Vtq G[†]b R[†]g[†]Z ⁻vqxfv[†]e j^vMv[†]b^{vi}i c[×]iZ[†]K t^{iv}cY ej^v nq| k^xZK^vjxb
we[†]fb me[†]R, thg^b- d[†]zK[†]c, e[†]u[†]K[†]c, l[†]jK[†]c, k^vjMg, t[†]jU[†], te^{_}, b, U[†]g[†]U[†]v, g[†]iP, w[†]cq[†]R
BZ[†]v[†]` GB c<sup>×</sup>iZ<sup>†</sup>Z P<sup>iv</sup>l<sup>†</sup>ve<sup>v</sup>` K^{iv} nq| t^{iv}c[†]Yi m[†]yea^v n[†]j^v G c[×]iZ[†]Z A^vM[†]g d^mj Drc^v`b
K^{iv} h^vq Ges m^g ⁻k^xZ t^gs[†]m[†]g[†]K me[†]R Drc^v`<sup>†</sup>bi K<sup>†</sup>v<sup>†</sup>R j<sup>v</sup>Mv<sup>†</sup>b<sup>vi</sup> h<sup>v</sup>q| ev<sup>s</sup>jv<sup>†</sup>`[†]ki
`[†]Y[†]v[†]Â[†]†ji t[†]Rj^v, t[†]jv[†]Z A[†]±ve[†]i[†]i c^vq t[†]kl chš e[†]l[†]o[†]c[†]vZ n[†]q ⁻v[†]K| d[†]j G A[†]Â[†]j
b[†]f[†]o[†]i[†]i c[†]e R[†]g [^]Z[†]i K[†]i mi^{vi}mi gi^v exR tev^{bv} m[†]ae nq^{bv}| A[†]vi b[†]f[†]o[†]i exR tev^{bv}
n[†]j R[†]v[†]g[†]mi c[†]e k^xZK^vjxb t[†]K[†]v[†]b^{vi} me[†]R Drc^v`b K^{iv} m[†]ae nq^{bv}| t[†]deg[†]mi gi^v t^m Ave[†]i
A[†]vq[†]v[†]i t[†]`<sup>†</sup>k k<sup>x</sup>Z c<sup>v</sup>qB <sup>-</sup>v<sup>†</sup>K b<sup>v</sup>| d<sup>†</sup>j w<sup>†</sup>b<sup>†</sup>zvcq<sup>†</sup>l<sup>†</sup>vi A<sup>†</sup>f<sup>†</sup>v<sup>†</sup>e Gm<sup>†</sup>g<sup>†</sup>q me<sup>†</sup>R Drc<sup>v</sup>`b Ae[†]v[†]nZ

tivcY c×iZtZ MvQ nztZ
MvtQi `tZ`b`ó ivLv hvq
e+j Rigi cwigZ e`envi
mæ nq| GtZ MvQ KZK
Rigi Lv`cv`vbi myg
MnYI`b`ðZ nq| GB
c×iZtZ meiR exRi
cwigY ecb c×iZi tPtq
Kg jvM|

ivLv mæci nqbv| Dciš, D"P Zvcgvîvq kxZKvjxb meiRi cyôgvb, "v` I Ab`vb" , Yv, Y
 A¶Z`vKbv|

GB cizK j Ae⁻ t₋K DëiYi Rb" AvMó-~~t~~mPai gvfm eþ PjvKvjxb mgtq DëRigZ
 exRZjv`Zii Kti`bqšZ cwi~~t~~ek Priv Drcv`b Kiv nq| Avi eþcvZ Kgvîvî mthvM gZ
 Rig`Zii Kti`bq ZvZ G mgmeZ Priv jvMtg Wtmai-Rvbgvi gvmi kxZi Avenlqv
 meiR Pvl`b`ðZ Kiv mæ nq| GtZ cyiv kxZ tgsmy ftiB kK-meiR Drcv`b Kiv mæ
 nq| Avi t`tki DëivÂ+j thLv~~b~~ eþcvZ tmtPai gvfm Ktg hvq Ges AvMvg Wûv cto
 tmlv~~b~~ AvMfvM exRZjvq Priv Drcv`b Kti kxZKvjxb meiRi AvMg dmj Drcv`b Kiv
 mæ nq| GtZ KI~~K~~i mweKfvte AwaK A~~v~~K gbdv ARb Kitz cti| tivcY c×iZtZ
 MvQ nztZ MvtQi `tZ`b`ó ivLv hvq e+j Rigi cwigZ e`envi mæ nq| GtZ MvQ KZK.
 Rigi Lv`cv`vbi myg MnYI`b`ðZ nq| GB c×iZtZ meiR exRi cwigY ecb c×iZi
 tPtq Kg jvM| exRZjvq`b`eo cwi~~t~~ek exR ecb Kiv nq e+j tgvUgv GKB mg~~t~~q me
 exR Askiz nq Ges Askzi`Mgi nvi I AwaK nq| exRZjvq Privi`b`eo hZ tbqv mæ
 nq e+j m~~g~~fvte Rb~~b~~ Privi Kvû, cvZv, "Qgj mgfvte te~~t~~o Dtv Ges Priv m~~t~~ZR,
 mej I eþô nq| dtj tivcYi ci Priv mntRB RigZ cizôv jvf Kti| GB c×iZtZ
 Drcv`Z Priv`ieZx`v~~b~~ vbiš Kti tivcY Kiv P+j e+j bvmvîvî fîEK e`emv Kti gbdv I
 ARb Kiv mæ nq| Priv gj RigZ jvMvbi cte th mgq cvlqv hvq tm mg~~t~~q Ab` dmj
 Rištg Rigi AwaK e`envi Ges Zv t₋K AwaK gbdv ARb Kiv mæ nq|

tivcY c×iZi AbZg Amyeav n+jv, Priv Dëvjb I tivcYi dtj MvtQi µgMZ eþ
 mvgqKfvte e`vnZ nq| dtj ecb c×iZi Zzbvq GB c×iZtZ meiR Pvlv` Kitz djb
 tctZ A~~c~~¶vKZ.¶KQyb teik mgq jvM| GQovv G c×iZtZ meiR Pvl Kitz Lip teik
 jvM| ¶KQvKQymeRi (Pbv eavKic, kvjMg) ¶kKo`þj nq e+j`vbiš Kti tivcY
 Kitz mntR e~~v~~fv hvqv| AwaKš Priv Drcv`b I`vbiš i`bq¶RZ e`³ AbfÁ n+j
 tivcYKZ. Privi AwaKvskB gviv hvq| h_vh_ ciiPhv Kitz e` n+j Priv`ej I`b`R nq
 Ges dtj meiRi ccyôgÄixi µgieKv k¶KQv`vîNZ nq| tKv~~b~~ Kvity mivK mg~~t~~q Priv
 tivcY Kiv bv tM+j Ges Privi eqm`vfvteKi tPtq teik n+j meiRi djb Ktg hvq|

migg

- RigZ mivmvi exR eþ dmj Drcv`b Kivi c×iZtK exR ecb ejv nq|
- exRecb c×iZ mnR, Kg e`qeûj Ges G c×iZtZ Zzbvq jKfvte Kg mg~~t~~q djb
 cvlqv hvq|
- kvK I g jRvZxq meiR cavbZ ecb c×iZtZ Pvlv` Kiv nq|
- gv`v`Zii Kti Ges gv`vZ exR c~~t~~Z KgovRvZxq meiR, ¶kg, eiev BZ`v`i Pvlv`
 Kiv nq Ges G c×iZtK BstivRtZ Weijš ev exR tcvZv ejv nq|
- exRZjvq Priv Drcv`b Kti cieZtZ gj RigZ tmb Priv jvMtg dmj Drcv`b i
 c×iZtK tivcY ejv nq|
- kxZKvjxb meiR A_vr Kic cii~~v~~ti meiR Ges UtgtUv, te_b, gvîP BZ`v` tivcY
 c×iZtZ Pvlv` Kiv nq|
- kxZKvjxb meiRi AvMg Drcv`b iagvî tivcY c×iZtZB mæ|





cvtVĖi gj'vqb 3.1

1. mZ' n+j Ômô I g_v n+j Ôigô jLb|

K. gjRvZxq meiRi Pvlvev` tvcY c×Z e'eüZ nq|

L. ecb c×Z exRi cigvY Kg jvM|

M. cvnwo I AmgZj RvqMvq exR QUtg meiR Pvl Kiv nq|

2. ĩb'vb cY Kib|

K. gvV mivmvi exR ejb dmj Drcv`bi c×ZK ejv nq|

L. KgovRvZxq meiR..... c×Z Pvlvev` Kiv nq|

M. AvMvg kZKvjxb meiR cvlqvi Rb" c×Zi Pvlvev` AbvZ nq|

3. mVK DĖi i c+k UK (✓) Pý `b|

K. eisjv`k meiR Drcv`b eüj cPjZ c×Z tKvbU ?

1. tvcY

2. Weijs

3. mviZ exR ecb

4. QUtg exR ecb|

L. Weijs c×Z tKvb meiRi exR tevbnq ?

1. KgovMvîi meiR

2. KcMvîi meiR

3. g jRvZxq meiR

4. te,bMvîi meiR|

M. tvcY c×Z Pvlvev` Kiv nq tKvb meiR ?

1. kg

2. eieU

3. UtgUv

4. gjv|

4. GK K_vq ev eK' DĖi `b|

K. Kmi KviY eQi i wefb tgmjg wefb kvK meiR Pvlvev` Kiv nq ?

L. tKvb c×Z exR ecb Ki+j GKB mgtg exRi A¼ziv` Mg nq ?

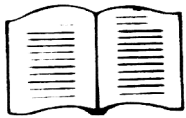
M. MvQ nZ MvQi `iZ b'ó ivLv nq tKvb c×Z ?



cV 3.2 exRZjvi [~]vb ^{||}bevPb I RxeYgy³KiY

GB cV tk†I Avcb

- exRZjv ej†Z Kx tevSvq Zv e[~]vL[~]v Ki†Z cvi†eb|
- exRZjvi cKvi†f[~] m^oú†K D†jL Ki†Z cvi†eb|
- Kx Kx ^{||}elq ^{||}etePbv K†i exRZjvi [~]vb ^{||}bevPb Kiv nq Zv ^{||}j^{||}cex Ki†Z cvi†eb|
- exRZjv Kx fv†e RxeYgy³ Kiv nq Zv eYbv Ki†Z cvi†eb|



exRZjv

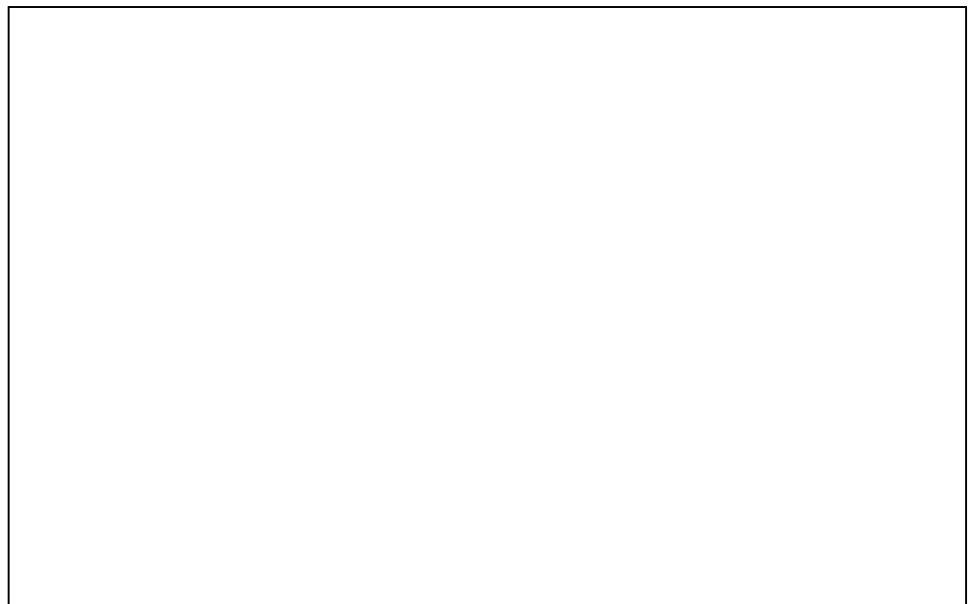
c^{||}ZK j AvenvIqv Ges Ab[~]vb[~] c^{||}i†ek ^{||}bqšY K†i dmj Drcv[~]†bi Rb[~] ^{||}e†kl hZ mnKv†i m[~]y, mej I m†ZR Pviv Drcb Kivi ^{||}b[~]ó[~] [~]vb†K exRZjv e†j| g^{||}v j^{||}vMv†bvi Dchy³ bv nIqv chš exRZjvq Pviv MvQ†K ^{||}e†kl hZ mnKv†i c^{||}iPhv Kiv nq|

exRZjvi cKvi†f[~]

exRZjv [^]Z^{||}ii aib Ab^{||}vqx G†K [~]y^{||}v†M fvM Kiv hvq; h[~]v t **1.** [~]vbvš^{||}i†hvM[~] exRZjv I **2.** [~]vqx ev A[~]vbvš^{||}i†hvM[~] exRZjv|

1. [~]vbvš^{||}i†hvM[~] exRZjv

c^{||}ZKj c^{||}i†ek†ki Kvi†Y A[~]ev ^{||}e†kl c†qvR†b f^{||}c†ô†i g^{||}U†Z exRZjv [^]Zi bv K†i [~]vbvš^{||}i†hvM[~] e^{||}ki [^]Z^{||}ii Sz, g^{||}U, KvV ev c^{||}vó†Ki [^]Z^{||}ii ev[~], c^{||}v^{||} ev tU A[~]ev c^{||}j^{||} b e[~]vM BZ[~]v^{||}†Z g^{||}U I mvi c†qvRb Ab^{||}v†Z ^{||}g^{||}k†q exRZjv [^]Z^{||}ii I Pviv Drcv[~]†bi e[~]e[~]v Kiv n†j tm[~]†jv†K [~]vbvš^{||}i†hvM[~] exRZjv e†j| A^{||}aK eb[~]vi Kvi†Y f^{||}c†ô†i iK†bv RvqMvi Afve t[~]Lv ^{||}†j, evioi A^{||}v†bvq mxigZ msL[~]K Pviv Drcv[~]†bi Rb[~] Ges kni^{||}f^{||}ĖK Mto DV D[~]vb bvmvvi[~]†jv†Z Pviv Drcv[~]†bi t^{||}†^{||}Ė GB ai†bi exRZjv [^]Zi Kiv n†q[~]v†K|



^{||}PĖ 3.2 : Kv†Vi ev†· exRZjv

kni f₁ĒK M₁o DV₁ D[~]vb
bvmv₁i₁ t₁jv₁Z P₁iv
Drcv[~] t₁bi t₁q₁ t₁Ī
vbv₁šihvM[~] exRZjv₁ ^Z₁i
Kiv n₁q₁ v₁†K₁

A₁dm M₁ni KvQvKvQ D₁B₁
t₁iš[~] v₁4j₁ t₁mPm₁yeavh₁?
Dei₁ nvjKv₁ t[~] v₁Avk gvU
m₁u₁† R₁ig exRZjvi₁ Rb[~]
Dch₁?

Qvqhy₁ m[~]vZ₁t₁mt₁Z
Kv[~]vgvU₁Z exRZjv₁ ^Z₁i
Kiv D₁Pr bq₁

m₁̄ mej P₁iv t₁c₁Z n₁j
exRZjvi₁ gvU₁ exR tev₁vi
c₁†eB R₁exYgy₁ K₁i t₁b₁Z
nq₁ exR tev₁vi c₁†e
exRZjvi₁ gvU₁†K R₁exYgy₁
K₁i t₁bq₁†K exRZjv₁
R₁exYgy₁ KiY ej₁ nq₁

2. vq₁ ex A[~]vbv₁šihvM[~] exRZjv₁

mivm₁i f₁c₁†ô₁i Dci th exRZjv₁ ^Z₁i Kiv nq Zv₁†K vq₁ ex A[~]vbv₁šihvM[~] exRZjv₁ e₁j₁ |
 evY₁R[~]Kf₁†e P₁iv Drcv[~] t₁bi Rb[~] GB ai₁†bi exRZjv₁ e[~]envi Kiv nq | Avgv₁† i t[~]†k meiR
 Drcv[~] t₁bi GB ai₁†bi exRZjv₁ t₁ek e[~]eüZ n₁q v₁†K |

exRZjvi₁ v₁b v₁bevP₁b

m₁̄y, mej I m₁†ZR P₁iv Drcb Ki₁Z n₁j exRZjvi₁ Rb[~] m₁VK gvU I v₁b v₁bevP₁b Kiv
 i₁Kv₁ | exRZjvi₁ gvU I v₁b v₁bevP₁b cavb v₁†e†P[~] v₁elq₁ t₁jv₁ n₁jv₁—

1. Z[~]v₁i₁Ki₁ m₁yeav₁† exRZjvi₁ Rb[~] v₁bi₁ ó R₁ig dv₁g A₁dm ev evmM₁ni KvQvKvQ n₁Z n₁†e |
2. e₁ó₁i c₁wb R₁†gbv A₁ev eb[~]v₁i c₁wb D₁Vbv Ggb ai₁†bi D₁B₁R₁ig₁Z exRZjv₁ Ki₁Z n₁†e |
3. evZ₁m P₁jvP₁ K₁†i Ges t₁iš[~] me mgq c₁†o Gi₁c t₁Lv₁jv₁†g₁jv RvqMvq exRZjv₁ Ki₁Z
 n₁†e |
4. c₁†qvRb gZ P₁ivq t₁mP t[~]qv₁i m₁yeav₁† c₁†k₁† c₁†o A₁ev c₁wbi Dr₁†mi KvQvKvQ RvqMvq
 exRZjv₁ Ki₁Z n₁†e |
5. Dei₁ nvjKv₁ t[~] v₁Avk gvU exRZjvi₁ Rb[~] Dc₁†hvM₁ |
6. exRZjv₁ iv[~]v₁i c₁†k n₁Z n₁†e t₁hb m₁†R hvZvqvZ Kiv hvq |

Z₁†e exRZjvi₁ Rb[~] v₁b v₁bevP₁b v₁b†Pi v₁elq₁ t₁jv₁ G₁o₁†q P₁j₁Z n₁†e—

1. t₁Kv₁ Qvqhy₁ v₁†b exRZjv₁ ^Z₁i Kiv D₁PZ bq₁ | Qvqhy₁ v₁†bi P₁iv v₁†j nq₁ | Z₁vQvov
 Gi₁c v₁†b gvU₁i DeiZ₁v k₁†³ I Kg₁ v₁†K |
2. exRZjv₁ ^Z₁i Kivi Rb[~] m₁üZm₁ü₁Z RvqMv c₁winv₁i Ki₁Z n₁†e | Gme RvqMvq P₁ivi Kv₁Ü
 cP₁v, t₁Mvov cP₁v, g₁† cP₁v BZ[~]w₁ t₁ivM t[~] Lv t[~]q Ges G₁Z P₁iv gviv hvq |
3. Kv[~]v gvU₁ v₁†q exRZjv₁ ^Z₁i Kiv hv†ebv₁ | Kv[~]v gvU₁†Z m₁†R evZ₁m P₁jvP₁ Ki₁Z c₁†i
 bv₁ | c₁wb m₁†R m₁†ibv₁ | P₁ivi v₁kK₁†oi v₁†e[~] v₁Z. e[~]vnZ nq₁ |

exRZjv₁ R₁exYgy₁ KiY

P₁iv m₁†ZR mej n₁lqv m₁†Ē₁I A₁†bK mgq t[~] Lv hvq th, t₁Mvov cP₁vi Rb[~] X₁†j c₁†o†Q₁ | Gi
 Kv₁Y n₁jv gvU₁†Z v₁†e[~]gv₁b v₁†e[~]fb c₁Kv₁ Q₁†vK h₁v- v₁c₁w₁qv₁g, ivB₁†RvK₁†Uvibqv₁, tevUvB₁Um,
 dvB₁†Uvc₁†v₁v, AjUvibqv₁ cf₁w₁Zi Av₁μgY₁ | GQvov KL₁†bv KL₁†bv t₁bg₁†Uw₁ ev K₁agi Av₁μg†Y
 P₁ivi v₁kK₁†o v₁MU₁nq, P₁ivi e₁× K₁†g hvq₁ | ZvB m₁̄ mej P₁iv t₁c₁Z n₁j exRZjvi₁ gvU₁, exR
 tev₁vi c₁†eB R₁exYgy₁ K₁i t₁b₁Z nq₁ | exR tev₁vi c₁†e exRZjvi₁ gvU₁†K R₁exYgy₁ K₁i
 t₁bq₁†K exRZjv₁ R₁exYgy₁ KiY ej₁ nq₁ |

R₁exYgy₁ KiY c₁×Z

exRZjv₁ v₁†v†e R₁exYgy₁ Kiv t₁†Z c₁†i | h₁v- K. Z₁vc c₁†qv†Mi g₁va†tg Ges L. ivm₁vqibK
 v₁†e c₁†qv†Mi g₁va†tg |

K. Z₁vc c₁†qvM t GB c₁×Z₁Z exRZjvi₁ gvU₁i Dc₁†i LoK₁†v v₁†eQ₁†q v₁†q Zv₁†Z Av₁b t₁R₁†j
 v₁†Z n₁†e | Av₁†bi Z₁vc gvU₁†Z v₁†e[~]gv₁b R₁exYya₁†sm Ki†e | exRZjv₁ t₁QvU AvKv†i₁i n₁j
 exRZjvi₁ 10 t₁m.ig. c₁†e gvU₁ D₁v†q G₁†b W₁†gi v₁U†bi ^Z₁i KovB₁Z t₁†L P₁†vi g₁va†tg Z₁vc
 c₁†qvM K₁i R₁exYgy₁ Kiv t₁†Z c₁†i | P₁†vi DĒB Av₁b 5-10 v₁gibU c₁†qvM K₁i

RxeYgy KiYi Kiv maúv`b Kiv nq| Zvc c`qvMKvjxb Ae`vq gwU thb c`to bv hvq
tmú`K j`q` ivL`Z n`e| Zvc c`qvMKZ.gwU Wúv K`i exRZjvq weQ`q w`Z n`e|

L. **ivmqibK`e` c`qvM t digvjWnvBW bigK** ivmqibK`e` w`q gwU RxeYgy Kiv DbZ
KwL.e`vq AvRKvj **LpB** cPijZ| c`Z GKfvM Kgwkqvj digvjWnvBW 50 fvM c`vbZ
`exfZ K`i `eY c`Z KiZ nq| G`eY w`q exRZjvi gwU 10-15 tm.wg. Mfxi chš
fv`jvfv`e w`R`q w`Z n`e| digvjWnvBW DØvqx ivmqibK c`v\_ nIqvq GwU c`qv`Mi
cici exRZjvi gwU w`icj ev c`j`b KvMR w`q maúYfv`e tX`K w`Z n`e| Gfv`e AšZ
48 N`Uv Kvj tX`K t`iL AveiY m`i`q tdjZ n`e| AveiY miv`bri ci gwU`K mvgvb`
tb`oP`o i`K`q w`bZ n`e Ges w`b`δZ n`Z n`e th, digvjWnvBW gwU t`K maúYfv`e
D`e tM`Q| Gici exRZjvq exR tev`v hv`e| digvjWnvBW c`qvM QvovI exR t`kva`bi Rb`
e`envh th t`Kib Q`i`Kbikk Jla w`qI exRZjv t`kvab Kiv P`j|



migg

- m`ZR, mej, m`y Piv c`Iqvi Rb` th v`b exR ecb Kiv nq Zv`K exRZjv e`j|
- meiR Piv Drcv`bi Rb` `jai`bi exRZjv h_v- v`bš`i`hM` Ges A`v`bš`i`hM`
exRZjv ^Zii Kiv thZ cv`i|
- evmM`ni Kv`Q DpZ t`i`š`v`j, tmP m`eavhy` Dei t`v`Avk gwU exRZjv ^Ziii Rb`
w`bevPb Kiv D`PZ|
- müZmüZ I Qvqvyh` v`b exRZjv ^Ziii Rb` c`invi Kiv D`PZ|
- Zvc A`ev digvjWnvBW c`qvM K`i exRZjvi gwU RxeYgy Kiv hvq|



cvtWĖi gj`vqb 3.2

1. mZ` n+j Ômô Ges ig\_`v n+j Ôigô jLb|

K. exRZjvq Pvlvi mVK hZ tbiqv mæ nq bv|

L. eYR`Kfve Pvlv Drcv`b Rb`vbvšihvM` exRZjv e`envi Kiv nq|

M. Qiqvhy, fRv, müZmüZ gvU exRZjvi Rb` Dchy|

2. ĩb`vb cY Kiab|

K. exRZjvq Drcv`b Kiv nq|

L. cZK j cĭitek mxigZ msL`K Pvlv Drcv`b exRZjv e`eüZ nq|

M. Rxevbgy KiY cXZ n+jv I |

3. mVK DĖii c+k UK Pý (✓) `b|

K. exRZjvq Kx KvR Kiv nq ?

1. Pvlv Drcv`b Kiv nq

2. Pvlv jvMv+bv nq

3. meiR Drcv`b Kiv nq

4. exR Drcv`b Kiv nq|

L. vbvšihvM` exRZjv tKb ^Zii Kiv nq

1. cZKj cĭitek mxigZ msL`K Pvlv Drcv`b Kivi Rb`

2. A+bK msL`K Pvlv ^Ziii Rb`

3. tivMienxb Pvlv Drcv`b Kivi Rb`

4. Kg Li+p Pvlv Drcv`b Kivi Rb`|

M. exRZjvi Rb` tKvb ai+bi gvU fv+jv ?

1. nvjKv t`v-Avkv gvU

2. cĭj gvU

3. te+j gvU

4. Kv`v gvU|

4. GK K_vq ev e+k` DĖi `b|

K. Rxevbgy KiY Jla t`Iqvi ci gvU KZ N>Uv tX+k ivL+Z nq ?

L. Qiqvhy vb Drcv`Z Pvlv tKvb ai+Yi nq ?

M. tKvb ivmivqibK `e` Øviv gvU Rxevbgy Kiv hvq ?



cV 3.3 Av`k exRZjv`ZiKiY I exR ecb

GB cV tKtI AvciB

- exRZjv c⁻ZKiY c×Z mαÜ e⁻wiZ ejtZ cviṭeb|
- exRZjvq Kx Kx meiRi exR eḡṭeb Zvi bvg ejtZ cviṭeb|
- exRZjvq wefb meiR exR ecṭbi nvi DṭjL KiṭZ cviṭeb|
- exR ecb c×Z eYbv KiṭZ cviṭeb|



exRZjv c⁻ZKiY

exRZjvi Rvg AšZ 12-15 tṡ.ṡg. Mfxi Kṭi jv½j w`ṭq ev tKv`vj w`ṭq mec_g Kzṭq
 wḡṭZ nṭe| Gici Rigi gṡU gyi w`ṭq ,ov I SzSzi Kṭi wḡṭq mg⁻ AvMvQv fvṭjfvṭe
 teṭQ tḡjṭZ nṭe| Av`k exRZjv mvaYiYZ ^ṭN` 3 ṡgUvi Ges cṭ⁻ 1 ṡgUvi nṭq vṭK|
 ^ṭN` Gi tṭṭq Kgṭeik nṭZ cviṭi| Zṭe tṡš`ṭhi ⁻vṭ Ges PjvPṭji m⁻yeavṭ⁻ ṡN`
 Avi bv evovṭbvB fvṭjv| exRZjvi c⁻ GK ṡgUvṭii gṭa⁻ mṡgve× ivLv evAbxq| KviY c⁻
 evovṭbv nṭj exRZjvi Dci cv tṭiṭL wefb AšeZx cwiPhv, thgb- AvMvQv evQvB, cvḡb tṡP,
 Priv DṭĖjB BZ⁻ mṡúb KiṭZ ṡMṭq Privi hṭ_ó ṡṡZ nṡqvi mṡvebv vṭK| DḡzAĀṭj
 thLvṭb ejṭi cvḡb Rgvi mṡvebv vṭKbv ev cvḡb wḡḡvKṭbi DĖg e⁻v iṭqṭQ, tṡLvḡKvi
 gṡU hṡ⁻ teṭj-t⁻vAuk nq Zṭe exRZjvi D⁻PZv 10 tṡ.ṡg. nṭZ cviṭi| Ab⁻vq D⁻PZv v Avṭiv
 teḡk nṭZ cviṭi| ⁻ṭḡv exRZjvi ga⁻eZx ⁻vṭb 60 tṡ.ṡg. Ges Privavṭi 25 tṡ.ṡg. Kṭi Lvṡj
 RvqMv ivLṭZ nṭe| Lvṡj RvqMvi gṡU 5 tṡ.ṡg. Mfxi Kṭi tKv`vj w`ṭq Kzṭq
 exRZjvi Dci DṡVṭq w`ṭZ nṭe| GṭZ exRZjvi Privcṭk 25 tṡ.ṡg. Ges ⁻ṭḡv exRZjvi
 gṡS 60 tṡ.ṡg. Plov I 10 tṡ.ṡg. Mfxi bvjv ^Zi nṭe| ṡPĪ 3.3-G exRZjvi bKkv c⁻vb
 Kiv nṭjv| 15 tṡ.ṡg. MfxiZv chš exRZjvi gṡUi mṡ⁻ mṡcṡigvY cPv tṡvei Ges 100
 Mvg Pḡ fvṭjfvṭe ṡgṡṭq exRZjvi gṡU ^Zi Kṭi wḡṭZ nṭe| ^Re mvi tṡkvṭbvi ci
 exRZjvi gṡU gyi I nṡZ w`ṭq ṡgṡn Kṭi w`ṭZ nṭe|



ṡPT 3.3 : teṭj t⁻vAvk gṡU t Rb⁻ exRZjv

Kv`vgvUz`Z`ZiKZ
exRZjvq`ZbiU`i`v`K|
me`b`i`B`Ui`L`vq,
g`a`i`i`mgc`igvY`ewj
I`gvU`Ges`Dc`ii`i
mgc`igvY`gvU`I`c`v
†Mve`ii`gk`Y`Z`i`Ki
nq|



†ivcY c`x`Z`Z`j`v`Mv`bv`nq`Ggb`meiR`exR`mvaviYZ`†QvU`Av`Kv`ii`|`ZvB`exRZjvi`gvU`hZ`
 v`g`in`n`te`ex`†Ri`AsK`zi`v`MgI`ZZ`te`k`v`b`i`d`Z`n`te`|`exRZjvq`KLbI`Kv`v`†Mvei`c`†qvM`
 Ki`†Z`†bB|`Kv`v`†Mvei`n`†Z`v`g`†_b`M`v`m`†ei`nq`hv`Pvivi`v`kKo`„Q`†K`bó`K`†i`|`
 exRZjvq`mvaviYZ`A`Re`mvi`c`†qvM`bv`KivB`fv`†jv`|`GvU`c`†qv†M`Pvivi``Z`A`½R`e`x`nq`|`
 d`†j`Pvivi`v`jK`v`†K`nq`Ges`G`ai`†bi`Pvivi`†ivcY`Ki`†j`g`†i`hvI`qv`i`m`v`ebv`_v`†K|`
 exRZjvi`gvU`Kv`v`ai`†bi`n`†j`v`Zb`_`†i`i`exRZjv`^Z`i`Ki`v`n`†q`_v`†K|`c`†Z`K`\_`†i`i`D`PZv`
 10`†m`v`g.`n`†Z`n`te`|`mei`b`a`_`i`v`U`†Z`B`†Ui`m`y`K`v`e`i`Q`†q`v``†Z`n`te`|`G`†Z`c`v`b`v`b`v`k`b`mnR`
 n`te`|`GB`_`†i`i`Dc`†i`i`_`i`v`U`A`†aK`ewj`I`A`†aK`gvU`i`ms`gk`†Y`^Z`i`Ki`†Z`n`te`|`me`†P`†q`
 Dc`†i`i`\_`i`v`U`mg`Abv`†Z`c`Pv`†Mvei`Ges`†`v`Av`k`gvU`v`g`v`k`†q`^Z`i`K`†i`v`b`†Z`n`te`|`v`P`^`3.4-`
 G`Kv`v`gvU`i`Rb`_`^Z`i`Av`k`exRZjv`†`Lv`bv`n`†q`†Q|`



v`P`^` : Kv`v`gvU`i`Rb`_`^Z`i`Av`k`exRZjv`

exRZjvq`v`fb`meiRi`exR`ec`†bi`nvi

m`y`mej`meiR`Pvivi
Drcv`b`A`†bKUv`v`bfi`K`†i
exRZjvq`exR`ec`†bi`m`v`K
n`v`†i`i`Dci|

m`y`mej`meiR`Pvivi`Drcv`b`A`†bKUv`v`bfi`K`†i`exRZjvq`exR`ec`†bi`m`v`K`n`v`†i`i`Dci|`
 exRZjvq`Ai`Z`i`^3`exR`ecb`Ki`†j`gv`I`v`Z`i`^3`Pvivi`RŠ`vq|`d`†j`Lv`\_`I`RvqMvi`Rb`\_`Pvivi`
 g`†a`_`c`v`Z`†h`v`MZv`†e`†o`hvq|`G`†Z`Pvivi`\_`g`j`I`v`jK`v`†K`nq|`GKB`mv`†_`ex`†Ri`AcPq`N`†U`
 hv`i`d`†j`Drcv`b`LiPI`†e`†o`hvq|`Avevi`exR`Kg`msL`vq`ewj`RvqMvi`AcPq`nq|`A`í`
 Pvivi`Rb`_`A`v`aK`msL`K`exRZjv`^Z`i`i`c`†qv`Rb`c`†o`|`Gi`d`†j`kg`A`\_`I`RvqMv`mei`KQ`y`
 Ace`envi`nq|`ZvB`m`v`K`nvi`†R`†b`v`b`†q`exRZjvq`exR`†e`v`bv`D`v`PZ|`

3 × 1 eMigUvivekó Av`k exRZjvq wefb kvK-meRi exR ec#bi nvi b# D#jL Kiv n#jv—

meiRi bvg	3 × 1 eMigUvi AvKv#i exRZjvq exRi cigvY (Mg)	tn±icZ exRi cigvY (Mg)
dž K#c, eavK#c, tevKij	10-12	200-220
I jK#c	15-20	500-550
kvjMg	12-14	300-350
U#g#Uv	8-10	150-200
te_b	10-12	250-300
g#iP	18-24	180-200
†jU#	8-12	90-120
†cq#R	18-24	1-1.5 †K#R

exRi mv# Gi #Y
cigvY iK#b I c#i@vi
evij ev QvB fv#jvf#e
g#k#q #Q#U#q tebv D#PZ|
maviYZ exRi e#mi
#Y cigvY MfxiZvekó
mvi#Z exR tebv nq| Z#e
te#ki f#M †#i#i A#Kvsk
meiRi exR 1.3 #m.#g.
MfxiZvq tebv n#q_v#K|

exR-ecb cx#Z

exRZjvq exR #Q#U#q ev mvi#Z tebv hvq| #Q#U#q tebvvi tejvq hZ` i m#e mgvb NbZ eRvq †i#L exRZjvq exR #Q#U#b D#PZ| #KQvKQyme#Ri exR GZ †QvU th nvZ #`#q #Q#U#q ecb Ki#j mgvb NbZ eRvq ivLv K#Vb n#q c#o| ZvB GB mg` exR ec#bi c#e exRi mv# Gi #Y cigvY iK#b I c#i@vi evij ev QvB fv#jvf#e g#k#q #Q#U#q tebv D#PZ| exRi mv# evij ev QvB tgk#bvi d#j exRmn evij cigvY te#o hvq| Zv#Z K#i exRZjvi me# mgvb Nb#Z exR tebv m#e nq| exRZjvq mvi K#i exR ec#bi †#i#i GK L#U ciZjv KvV ev e#ki d#j #`#q 3-5 #m.#g. `#i `#i mvi #Z#i K#i exR tebv nq| maviYZ exRi e#mi #Y cigvY MfxiZvekó mvi#Z exR tebv nq| Z#e te#ki f#M †#i#i A#Kvsk meiRi exR 1.3 #m.#g. MfxiZvq tebv n#q_v#K| exRZjvi g#U h# te#k nvjKv nq Z#e exR GKUZMfx#i tebv D#PZ| Zv#Z K#i exR mn#R g#EKv c#bi ms`ú#k Avm#Z cvi#e| exRZjvq exR tebvvi ci iK#b evij #`#q nvjKvfv#e exR †X#K #`#Z n#e| Z#e j#i` ivL#Z n#e thb †K#b mgq evij i exRi e#mi #Y #Yi †P#q te#k b# nq| AZ:ci GK#U Plov Kv#Vi U#i#v #`#q exRZjvi Dc#i fv#Mi g#U#K nvjKvfv#e †P#c #`#Z n#e thb exR g#UKYv A_vr c#bi ms`ú#k Avm#Z cvi#i|

ecb cieZx hZ

exR ec#bi ci So, e#o I
†iv` †#K e#b#vi Rb`
exRZjv#K P#UvB #`#q †X#K
#`#Z nq| c#Z#`b #eKv#j
GB XvK#b mvi#q †dj#Z
n#e thb iv#Zi #k#i
exRZjvi Dci c#o|

exR ec#bi ci So, e#o I †iv` †#K e#b#vi Rb` exRZjv#K P#UvB #`#q †X#K #`#Z nq| c#Z#`b #eKv#j GB XvK#b mvi#q †dj#Z n#e thb iv#Zi #k#i exRZjvi Dci c#o| mKv#j †i#` DVvi Av#MB exRZjv Avei †X#K #`#Z n#e| exR ec#bi ci exRZjvq c#b b# †Iqv fv#jv| KvY A#Zi<sup>3</sup> c#b g#U#Z A#`#R#bi Afve NUvq| d#j A#`#R#bi Afv#e AsK#iv`Mg e#v#Z nq| exRZjvq exR ec#bi ci #caov A#bK mgq exR #b#q hvq ev †L#q †d#j| #caovi nvZ †#K exR#K i#i Kivi Rb` exRZjvi P#i#`#K †K#i#mb g#kZ QvB A_ev M#vg#`b cvDWvi #Q#U#q #`#j #caovi Av#ugY †iva Kiv hvq|

**mvigg**

- Av`k exRZjvi ^`N` 3 igUvi, c` 1 igUvi Ges D`PZv 10 tm.ig. nIqv DiPZ|
- mgcigvY t`v-Avka gvu Ges cPv tMei`ii igkY te`j t`v-Avka gvuU`Z exRZjv ^Zi Kiv nq|
- Kv`v gvuU`Z ^ZiKZ.exRZjvi ZbU`i \_v`K hvi g#a` meiBa` i tLvqv, g#a`i`i mgcigvY gvu I evj Ges meP`q Dc`ii`i mgcigvY t`v-Avka gvu I cPv tMei e`envi Kiv nq|
- exRZjvq ARe mvi c`qvM Ki`j Piv`vj I j`Kj`K nIqv mavebv`v`K|
- ex`Ri e`v`mi Ø,Y MfxiZiq exR tevbn DiPZ|
- A`Z`QvU exR ec`bi mgq Gi mv`_ Ø,Y cigvY evj`gik`q`b`Z nq|
- t`iv` I evj`\_`K evb`i Rb` exR ec`bi ci exRZjv PvUvB``q`X`K``Z nq|
- caovi nvZ t`\_`K exR i`vi Rb` exRZjvi Pvi``K tK`i`mb-`gikZ QvB`Ksev M`vgv`·b cvDWi`QvU`q``Z nq|



cv#VĖi gj'vqb 3.3

1. mZ' n#j 'm' Ges ¶g_ 'v n#j '¶g' ¶jLb|

K. exRZjvi c⁻ 1 ¶gUv#i i te¶k n#j I Kv#Ri tKvb Amyeav nq bv |

L. exR ec#bi ci exRZjvq c¶vb t` Iqv fv#jv |

M. U#g#Uv Pvl tñ±ic¶Z ex#Ri c#qvRb nq 500-600 Mg |

2. ĩb' v b c#Y Ki#b|

K. `¶Uv exRZjvi ga'eZx v#b tm.¶g. I Pviav#i tm.¶g. L¶j RvqMv ivL#Z n#e |

L. exRZjvq c#qM bv Ki v fv#jv |

M. eavK¶c Pvl GK tñ±#i exR jv#M cvq Mg |

3. m¶VK DĖ#i i c#k ¶UK ¶Pý (✓) ¶`b|

K. Av`k exRZjvi AvKvi ¶K ai#bi ?

1. 2×1 ¶gUvi

2. 3×1 ¶gUvi

3. 3×2 ¶gUvi

4. 4×2 ¶gUvi |

L. exRZjv ^Zi i Rb tKvb ai#bi g¶U fvj ?

1. te#j t`v-Av¶k g¶U

2. evj g¶U

3. c¶j g¶U

4. Kv`v g¶U |

M. exRZjvi v b tKgb n Iqv D¶PZ ?

1. ¶bPy

2. gvSviX

3. D¶z

4. D¶zbP#

4. GK K_vq ev e#K' DĖi ¶`b|

K. ex#Ri e`v#mi Kx c¶igvY MfXiZvq exR tevbn D¶PZ ?

L. ¶cao v t_#K exR i ¶vi Rb exRZjvi Pvi ¶K Kx ¶`#Z nq ?

M. Kv`v g¶U#Z ^ZiX exRZjvq Kq¶U i _v#K ?

cvV 3.4 Pivvi ciiPhv I KóminòZv eaY



GB cvV tkI Avcb

- DrKó.Pviv Drcv`b Kx Kx ciiPhv Kiv`iKvi Zv ejZ cviteb|
- exRZjvq Kxfvte Pivvi Kó minòZv evovbv hvq Zv DZjL KiZ cviteb|
- `jevi Pviv tivcY ejZ Kx tevSiq Ges tKb GiiU Kiv nq Zv e`vL`v KiZ cviteb|
- `jevi Pviv tivcY Kiv cxWZ eYbv KiZ cviteb|

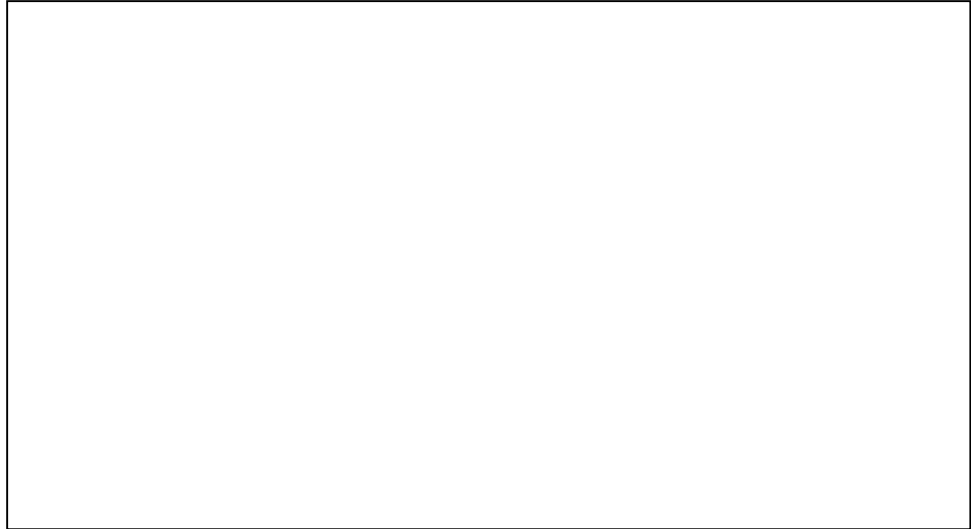


exRZjvq Pivvi ciiPhv

DrKó.Pviv Drcv`b Rb` c`qvRb` `qZv| wefb mgq wefb KvR mVKfvte m`úv`b| gva`g GB` `qZv ARb Kiv mae| exR Askziv`Mgi ci exRZjvq SvSi i`q c`qvRbgZ cvib` `Z nte| Zte j`i` iVLZ nte thb exRZjvq cvib Rtg bv hvq| A`Zi`<sup>3</sup> cvib Pivvi Rb` `qZKi| A`Zi`<sup>3</sup> cvib c`qvM Ki`j gviUi tfZ`i evqPjvPj e`vnZ nq| DciŠ, gviU teik tfrv`vKvi d`j Pivvq ÔKv`Û cPv` tivM t`Lv t`q Ges Pviv tbiZ`q cto| cvib t`qvi ci Rig` i`Ktg Avm`j wbovb` `q ev eak`i Kiv`v `q nvjKfvte Pivvi Piv`Ki gviU SzS`i K`i `Z nq| cv`gK Ae`vq Pviv L`g Kiv`v`vK e`j G`i`K `b`i tejvq m`KiY n`Z ev`bvi Rb` PivvB` `q tX`K iVLZ nte| Avevi i`Zi tejvq Pivv Mv`Q thb`kiki coZ cv`i GRb` XvKbv mvi`q t`d`jZ nte| c`ii`b mKv`j t`iŠ` Dvi ci Avevi XvKbv `q tX`K `Z nte| A`Z Aí eq` Pivvi gviU n`Z cvib t`kviY `gZv Kg`vK| G Ae`vq cLi t`v` Db`j`vK`j Pivv Zvi cvib t`kviY I c`b`nvi fvimv`Zv i`v KiZ e`nq| d`j Pivv tbiZ`q cto| eqm evovi mv`\_ mv`_ hLb Pivvi`kKocYvjx h`ó m`eb`nq, ZLb PivvK Aí Aí K`i t`v` DŠ`j` K`i `Z nte| Qvqv`Z Rb`bv ev Aí Av`jv`Z RŠ`bv Pivv h`ó c`igv`Y Kv`evnB`WU`Zi` K`i t`n tKv`I m`Âq KiZ cv`ibv e`jB Pivv j`av` jKv`jK I`j`j n`q hvq Ges Gme Pivv g`j Rig`Z jvMv`bvi ci tivcYRvBZ AvNvZ mn` KiZ cv`i bv|

Qvqv`Z RŠ`bv ev Aí
Av`jv`Z RŠ`bv Pivv h`ó
c`igv`Y Kv`evnB`WU`Zi`
K`i t`n tKv`I m`Âq KiZ
cv`ibv e`jB Pivv j`av`
jKv`jK I`j`j n`q hvq|

exRZjvq tKv`bv mgq AvMvQv RŠ`vZ t`Iqv`VK bq| KviY AvMvQv Pivvi mv`\_ Lv`_, Av`jv, evZvm BZ`v`i Rb` c`Z`hvmZv Kiv Qvov I tcvKivKto`i Avkq`j` n`mte KvR K`i Ges G`i`i Dc`e evovq| GBRb` exRZjvq AvMvQv RŠ`bv gv` Zv c`i`vi K`i t`djv DvPZ| exRZjvq Pivv teik Nb n`j cvZjv K`i `Z nte| Av`MB evj n`qQ th, exRZjvi gviU teik`vfrv`vK`j Pivvi Kv`Û cPv` tivM nq| G t`v`Mi d`j Pivvi Kv`Û gviU msjM`v`b c`P`M`q Pivv tbiZ`q cto| eo Pivv Avm`š` n`j maviYZ g`ibv`KŠ` G`i`i`kKo`j`j n`q hvq| GB t`v`Mi n`Z n`Z PivvK i`v`i Rb` K`v`bv, Kcvi A`vBW, gviKDv`iK tKv`vBW BZ`v` c`Z`jUvi cvib`Z 1 Mvg c`igv`Y`gik`q c`qvM Kiv th`Z cv`i|



¶PÎ 3.5 : K¶P Pvlvi Dci PvlvB ¶`tq XvKv exRZjv

Pvlvi KóminòZv eab

exRZjvq Pvlv e¶xKvjxb
mgtq Gt`i e¶xK
mgv¶qKfvte evavM Kti
Pvlvi KóminòZv e¶x Kiv
hvg| exRZjvq μgvštq
cmb tmtPi cigvY Kigtq
ev `B tmtPi ga'eZx
mgqi e'eavb ewotq
PvlvK KóminòZv tZvjv
nq|

tivcYi ci gv¶Vi cizKy c¶itek thgb- WÜv AvenvIqv, D"P ZvcgvÎv, c¶ibi ¶íZv, i®
 eivm Ges tivcYi aKj I tivcYKvjxb mgtq boiPovq mp ¶Z BZ"¶ hvZ mnRB
 KvUtg Dtv ZvovZvwo Pvlv cizôZ nZ cvti tmtRb" exRZjvq _vKvjxb mgtq Pvlvi Kó-
 mn"-¶gZv ewotq tZvjv nq| Avi GtK Pvlvi KóminòZv eab etj| exRZjvq Pvlv
 e¶xKvjxb mgtq Gt`i e¶xK mgv¶qKfvte evavM Kti Pvlvi KóminòZv e¶x Kiv hvq|
 exRZjvq μgvštq cmb tmtPi cigvY Kigtq ev `B tmtPi ga'eZx mgqi e'eavb ewotq
 PvlvK KóminòZv tZvjv nq| KóminòZv eab c¶μqv d¶j Pvlvi t`nKv¶l kKiv A¶aK
 cigvY Rgv nq| G RgvKZ.kKiv cieZxKv¶j mnR tivcYi aKj Ges tivcYi ci bZb
 ¶kKo MRvZ PvlvK mivnh" Kti| mivviYZ 7-10 ¶`b GB c¶μqv Pvlv¶bv nq| tev¶k ¶`b GB
 c¶μqv Pvlv¶j meiRi dj¶bi ¶¶Z nZ cvti| kvZcarb AÂ¶j KvPNti Zvci gvÎv μgvštq
 Kigtq Pvlvi KóminòZv e¶x Kiv nq|

¶jevi Pvlv tivcY

gj exRZjv t`K Zzj
¶Zxq exRZjvq Pvlv tivcY
Kti cieZxZ tmb Pvlv
¶vqfvte gj ¶¶Z
jvMv¶bv c¶xZK ¶jevi
Pvlv tivcY ev Wej
UvYc¶Us etj|

g j exRZjv t`K Zzj ¶Zxq exRZjvq Pvlv tivcY Kti cieZxZ tmb Pvlv ¶vqfvte g j
 t¶¶Z jvMv¶bv c¶xZK ¶jevi Pvlv tivcY ev Wej UvYc¶Us etj| kvZcarb t`K G c¶xZ
 e'vKfvte c¶¶jZ Av¶Q| AvMg dmj Drcv`bi Rb" tmlv¶b tgšmgi c_gvta h¶ó kvZ
 ¶e`gvb \_vKv gv¶V mivm¶i exRZjv ^Zvi Kti Pvlv Drcv`b Kiv mæ nq bv| GgZie¶vq,
 KvPNti ¶bqvšZ c¶itek exRZjv ^Zvi Kti Pvlv Rb¶bv nq| ¶vbi Afve¶nZzA¶Zi³ Nb
 Kti KvPNti exR tev¶v nq| Pvlv GKUz eo n¶jB cieZxZ Ab" GK¶U m¶eavRbK ¶v¶b
 Pvlv ¶v¶ši Kiv nq|

Pvlvi Drcv`b LiP Kgv¶bv Ges RvqMvi me¶aK e'envi Gi carb D¶¶K" | Avgv¶`i t`K
 Dc¶hvMx AvenvIqv ¶e`gvb \_vKv tLv¶v RvqMvq Pvlv Drcv`b Kiv nq| tLv¶v gv¶V h¶ó
 RvqMv cvIqv hvq etj c_¶gB gj exRZjvq cvZjv Kti exR tev¶v n¶j ¶Zxq exRZjvq Pvlv
 ¶v¶vš tii c¶qvRb c¶o bv| Zte eb¶vi Kv¶Y tKv¶b tKv¶b t¶¶¶ mgqgZ exRZjv ^Zvi
 KiZ Am¶eav t`Lv ¶`j c_¶g D¶RvqMvq exRZjv ^Zvi Kti tmlv¶b Nb Kti exR ecv Kiv
 nq| cieZxZ Pvlv eo nZ nZ eb¶vi cmb Ktg tM¶j ¶Zxq exRZjv ^Zvi Kti tmlv¶b Pvlv

Pviv $\bar{v}$ bvš*i* c μ qv
hZvh fvte m $\acute{u}$ b Ki $\ddot{Z}$
nq| exRZjv t $_$ K Pviv
D $\ddot{E}$ vj $\ddot{b}$ i c $\acute{e}$ nvjKvf $\acute{e}$
tmP $\acute{w}$ $_$ $\acute{t}$ q gvU $\acute{w}$ f $\acute{w}$ $\acute{t}$ q $\acute{w}$ b $\acute{t}$ q
mi $\acute{z}$ ev $\acute{w}$ PKb e $\acute{a}$ ki ev Kv $\ddot{V}$ i
KvV $\acute{w}$ $_$ $\acute{t}$ q Pviv DV $\ddot{t}$ Z nq|

$\bar{v}$ bvš*i*Z Kiv nq| G Qvov tKvb Kvi $\acute{Y}$ c $_$ g exRZjvq exR Nb K $\ddot{i}$ tev $\acute{v}$ n $\acute{t}$ j $\acute{w}$ ØZxq
 exRZjvq Pviv $\bar{v}$ bvš $\ddot{i}$ i c $\acute{t}$ qvRb $\acute{x}$ qZvI t $_$ Lv t $_$ q| $\bar{v}$ bvš $\ddot{i}$ i GB c μ qv i d $\acute{t}$ j Pvivi
 KóminòŽv ev $\acute{o}$ I Pviv mn $\acute{t}$ R t $\acute{v}$ c $\acute{t}$ Yi aKj KvU $\acute{t}$ q DV $\ddot{t}$ Z c $\acute{v}$ $\acute{i}$ | t $_$ Lv t $\acute{M}$ $\acute{t}$ Q $\acute{w}$ ØZxq exRZjvq
 $\bar{v}$ bvš*i*Z Kiv n $\acute{t}$ j K $\acute{c}$ t $\acute{M}$ $\acute{t}$ $\acute{f}$ i meiR I U $\acute{t}$ g $\acute{t}$ Uvi Pvivi $\acute{w}$ kKo A $\acute{w}$ aK $\acute{w}$ e $\bar{Z}$.I k $\acute{3}$ nq|

Pviv $\bar{v}$ bvš*i* c μ qv h $_$ vh $_$ fvte m $\bar{u}$ b Ki $\ddot{Z}$ nq| exRZjv t $_$ K Pviv D $\ddot{E}$ vj $\ddot{b}$ i c $\acute{e}$
 nvjKvf $\acute{e}$ tmP $\acute{w}$ $_$ $\acute{t}$ q gvU $\acute{w}$ f $\acute{w}$ $\acute{t}$ q $\acute{w}$ b $\acute{t}$ q mi $\acute{z}$ ev $\acute{w}$ PKb e $\acute{a}$ ki ev Kv $\ddot{V}$ i KvV $\acute{w}$ $_$ $\acute{t}$ q Pviv DV $\ddot{t}$ Z
 nq| $\acute{w}$ ØZxq exRZjvq 5 tm. $\acute{w}$ g. $\acute{w}$ $_$ $\acute{t}$ i $\acute{w}$ $_$ $\acute{t}$ i m $\acute{w}$ i K $\ddot{i}$ m $\acute{w}$ i $\acute{t}$ Z 2.5-4 tm. $\acute{w}$ g. $\acute{w}$ $_$ $\acute{t}$ i $\acute{w}$ $_$ $\acute{t}$ i Pviv j $\acute{v}$ Mv $\acute{t}$ bv
 nq| Pviv j $\acute{v}$ Mv $\acute{t}$ bvi ci S $\acute{t}$ $\acute{d}$ i $\acute{w}$ $_$ $\acute{t}$ q nvjKvf $\acute{e}$ c $\acute{w}$ b $\acute{w}$ $_$ $\acute{t}$ Z nq| Pviv j $\acute{v}$ Mv $\acute{t}$ bvi ci f $\acute{v}$ $\acute{t}$ j $\acute{v}$ f $\acute{e}$
 te $\acute{o}$ DV $\acute{i}$ AvM chŠ $\acute{w}$ $_$ $\acute{t}$ i tejvq t $\acute{X}$ $\acute{t}$ K i $\acute{v}$ L $\acute{t}$ Z nq, t $\acute{h}$ b m h $\acute{w}$ KiY Pvivi $\acute{w}$ $_$ $\acute{t}$ Z Ki $\ddot{Z}$ bv
 c $\acute{v}$ $\acute{i}$ |



m $\acute{v}$ igg

- m $\bar{y}$, mej I m $\acute{t}$ ZR Pviv Drcv $\acute{b}$ i Rb $\acute{w}$ exRZjvq c $\acute{t}$ qvRbgZ $\acute{w}$ bq $\acute{g}$ Z c $\acute{w}$ b tmP $\acute{w}$ $_$ $\acute{t}$ Z
 n $\acute{t}$ e| A $\acute{w}$ Zi $\acute{3}$ c $\acute{w}$ b c $\acute{t}$ qvM Pvivq Kv $\acute{U}$ cPv t $\acute{v}$ $\acute{t}$ Mi RŠ $\acute{t}$ t $_$ q|
- Qvqv $\acute{t}$ Z RŠ $\acute{v}$ $\acute{t}$ bv Pviv $\acute{w}$ $_$ $\acute{t}$ j I $\acute{w}$ $_$ $\acute{t}$ jK $\acute{w}$ $\acute{t}$ K nq e $\acute{t}$ j t $\acute{i}$ Š $\acute{t}$ $\acute{v}$ $\acute{3}$ $\acute{t}$ j exRZjvq Pviv Drcv $\acute{b}$ Kiv
 D $\acute{w}$ PZ|
- m h $\acute{w}$ KiY t $_$ $\acute{t}$ K A $\acute{i}$ eq $\bar{c}$ Pviv i $\acute{w}$ $_$ Kivi Rb $\acute{w}$ exRZjv $\acute{w}$ $_$ $\acute{t}$ i tejvq PvUvB $\acute{w}$ $_$ $\acute{t}$ q t $\acute{X}$ $\acute{t}$ K
 $\acute{w}$ $_$ $\acute{t}$ Z n $\acute{t}$ e Avi i $\acute{v}$ $\acute{t}$ Zi tejvq GB PvUvB m $\acute{w}$ i $\acute{t}$ q Pvivq $\acute{w}$ kiki j $\acute{v}$ Mv $\acute{t}$ Z n $\acute{t}$ e|
- c $\acute{w}$ b $\acute{t}$ m $\acute{t}$ Pi c $\acute{w}$ igvY K $\acute{g}$ $\acute{t}$ q ev $\acute{w}$ $_$ $\acute{t}$ tm $\acute{t}$ Pi ga $\acute{e}$ Z $\acute{x}$ mg $\acute{t}$ qi e $\acute{e}$ avb $\acute{w}$ g $\acute{v}$ Š $\acute{t}$ q e $\acute{w}$ $\acute{o}$ $\acute{t}$ q Pvivi
 KóminòŽv e $\acute{w}$ $\times$ Kiv nq|
- c $_$ g exRZjv n $\acute{t}$ Z $\acute{w}$ ØZxq exRZjvq Pviv t $\acute{v}$ cY K $\ddot{i}$ cieZ $\acute{t}$ Z tmB Pviv g $\acute{t}$ R $\acute{g}$ $\acute{t}$ Z
 j $\acute{v}$ Mv $\acute{t}$ bv $\acute{t}$ K $\acute{w}$ $_$ $\acute{t}$ evi Pviv j $\acute{v}$ Mv $\acute{t}$ bv c $\times$ $\acute{w}$ Z e $\acute{t}$ j| Pvivi KóminòŽv e $\acute{w}$ $\times$ Gi g $\acute{t}$ -D $\acute{t}$ $\acute{t}$ k $\acute{w}$ |



cv#VĖi gj`vqb 3.4

1. mZ` n#j Ômô Ges ¶g\_`v n#j Ô¶gô ¶jLb|

K. A¶Zi i 3 t¶P Pivi Rb` fv#jv|

L. t¶vcYR¶bZ AvNvZ mn` Kivi Rb` Pivi Kóm¶nòZv evov#bv D¶PZ|

M. `jevi Piv t¶vcY Ki#j Drcv`b LiP evto I R¶g bó nq|

2. ĩb`vb c#Y Ki#b|

K. Q¶qv#Z Ršš#bv Piv nq|

L. Kóm¶nòZv eab c¶µqv ¶b Pjv#bv D¶PZ|

M. `jevi Piv t¶vcY c×¶Z AĖ#j te¶k cP¶jZ|

3. m¶VK DĖi i c#k ¶UK ¶Pý (✓) ¶`b|

K. exRZjvi g¶U ¶fRv ¶vK#j ¶K t¶vM nq ?

1. KvŪ cPv

2. cvZv cPv

3. ¶kKo cPv

4. cvZv t¶K¶Ko#bv|

L. Q¶qv#Z ev Aí t¶š#` Ršš#bv Piv ¶K iKg nq ?

1. m#ZR I mej

2. j¶v I ¶jK¶j#K

3. Lv#Uv I m#ZR

4. j¶v I mej|

M. exRZjvq Piv#K KvŪ cPv t¶v#Mi nvZ t_#K i¶v Kivi Rb` t¶Kvb JIa c#qvM Kiv D¶PZ ?

1. K`vPvb

2. t¶Pv#Kvi

3. bMm

4. digvj¶WnvBW|

4. GK K_vq ev ev#K` DĖi ¶`b|

K. Kó m¶nòZv ea#bi d#j Pivi t`n#Kv#I Kx Rgv nq ?

L. `jevi Piv t¶vc#Yi d#j Kx DcKvi nq ?

M. iv#Zi ¶k¶ki Piv#K Kx K#i ?

¶kKo M#Z tXvKv#bv DiiPZ| PviU M#Z v#bi ci Av½y ¶q PviU tMvov gviU Av#
K#i tP#c ¶KtoI M#q jvM#q ¶#Z n#e| G#Z L# mn#R ¶kKo gviU ms_ú#k Avm#Z
cvi#e| tLqv j iVL#Z n#e thb tivcYKvjxb mg#q PviU KvU tmiRv _v#K|

meiRi tivcY `iZ

Pviv tivcYKvjxb mg#q GK MvQ t_#K Ab" Mv#Qi Ges GK mvi Ab" t_#K mvi i `iZ Ggb
nIqv DiiPZ thb c#ZiU MvQ Zvi c#ic# A½R ex#i mgq G#K A#b"i mv#_ Av#jv, evZvm,
Lv", vb BZ"i Rb" c#Z#hvmZv bv K#i mn#R te#o DV#Z m#g nq| Avevi A#aK `#i
MvQ jvM#j RvqMvi thgb Ace"envi nq tZg#bfv#e djbl K#g hvq| ¶b#jLZ ¶elq, #jv
¶etePbvq t#L PviU tivcY `iZ ¶baviY Kiv DiiPZ t

1. Mv#Qi A½R MvB I Mob cK#Z.
2. gviU DeiZv k#³
3. meiRi AvKvi (gjRvZxq meiR, evK#c, t#U# BZ"i i t#i)
4. Pvlv#`i Kvj#Kskj
5. Pvlv# mg#qi `N"
6. A#eZx c#iPhvi aib|

tivcY cieZx hZ

Pviv tivc#Yi ciciB tMvovq c#b t`qv DiiPZ| Gici cieZx 3-4 ¶b chš c#Zi`b mKv#j
GKBfv#e c#b t`qvi e#`ve_ Ki#Z nq| c#b t`qvi d#j PviU ¶kKo gviU Av#iv A#aK
ms_ú#k Avm#Z m#g nq Ges ZvovZmo c#Zôv jvf Ki#Z c#i| tivc#Yi c#i i ¶b t_#K
mhKiY n#Z i¶vi Rb" Pvivq Qvqv c`v#bi e#`v Ki#Z n#e| Qvqv c`vb bv Kiv n#j
mhKi#Yi d#j m#p A#aK Zvcgv#q PviU c#`#bi nvi te#o hvq| d#j Pviv c_#g
tb#Z#q c#o Ges c#i i#K#q gvi hvq| m" tivcYKZ. PviU ¶kKo gviU#Z ¶Kgz
c#ZôZ nIqv Av#MB ev#Z GB c#`b n#i i mv#_ Pviv Zvi c#b tkvIY n#i i g#a"
fvimv#g" i¶v Ki#Z c#i bv e#j Pviv gvi hvq| iv#Zi ¶k#ki Pviv#K m#ZR I c#ZôZ Kivi
Rb" L#B c#qvRbxq| ZvB c#Zi`b ¶e#K#j PviU Dci n#Z Qvqv c`vbKvix XvKbv mvi#q
iVL#Z n#e| Pviv gviU#Z c#ZôZ nIqv ci Gi Pvi#`Ki gviU SzSzi K#i ¶#Z nq|
te, b, tcaR, gviP, kvjMg I c#Kv#Ki Pviv tivcYKv#j ¶e#kl hZ bv ¶b#j g#i hvIqv
m#evb _v#K| Z#e exU, tevK#j, evK#c, d#K#c, t#U# I U#g#vi Pviv mn#RB
tivcYRiBZ AvNvZ mn" K#i t#P DV#Z c#i|

migg

- A#aK eq_ Pviv tivc#Yi ci Kg djb t`q Ges AvZ Kgeqm Pviv tivc#Yi ci U#K _v#K bv|
- PviU KvU I cvZv hLb k³ I m#ZR MvB cK#Zi nq ZLb Pviv tivc#Yi Dch# n#q#Q
e#j ¶etePbv Kiv hvq|
- ¶e#Kj tejvq mh tWevi c#e gv#V Pviv tivcY Kiv DiiPZ|
- Pviv D#Evj#bi c te exRZjv nvjKvfv#e ¶f#R#q ¶b#Z n#e Ges gviU ¶KQv i#K#q G#j
hZ`i m#e ¶kKo bv ¶Qto ¶KQv gviU#gz Pviv DV#Z n#e|
- gviU DeiZv, meiRi aib BZ"i Dci ¶bfi K#i PviU `iZ ¶i Kiv DiiPZ|
- Pviv D#Evj#bi ci hZkxN m#e gv#V tivcY Kiv DiiPZ Ges tivc#Yi ci 3-4 ¶b PviU
tMvovq c#b t`qv DiiPZ|
- Pviv gv#V jvM#bi ci 3-4 ¶b ¶#bi tejvq XvKbv ¶#q Pviv#Z Qvqv c`v#bi e#`v Kiv
DiiPZ Ges c#Zi`b iv#Zi tejvq GB XvKbv mvi#q ¶#q PviU M#q ¶k#ki co#Z ¶#Z nq|

Pviv tivc#Yi ciciB
tMvovq c#b t`qv DiiPZ|
Gici cieZx 3-4 ¶b
chš c#Zi`b mKv#j
GKBfv#e c#b t`qvi
e#`ve_ Ki#Z nq|





cv#VĖi gj`vqb 3.5

1. mZ" n#j ōmō Ges ¶g_ "v n#j ō¶gō ¶jL¶|

K. Priv †ivc†Yi Dchy# n#j ¶KQy`b exRZjvq ivLv fv#jv|

L. ¶eKvj tejv n#jv Priv †ivc†Yi Dchy# mgq|

M. Priv DV#bvi c#e exRZjvq nvjKv †mP ¶`#Z nq|

2. ĩb"vb c#Y Ki#b|

K. eq#mi Priv †ivc†Yi ci ¶U#K bv|

L. kvK-meRi Priv †m.¶g. j#v n#j †ivc†Yi Dchy# nq|

M. †c¶#Ri Privi †ivcYKvjxb eqm n#jv ¶`b|

3. mVK DĖ#ii cv#k ¶UK ¶Pý (✓) ¶`b|

K. Kg eq#mi Priv †ivcY Ki#j ¶K nq ?

1. Priv gviv hvq

2. djb tewk nq

3. djb †`i#Z d#j

4. djb AvMvg Av#m

L. eq# Priv †ivcY Ki#j ¶K nq ?

1. Priv gviv hvq

2. djb Kg nq

3. djb tewk nq

4. djb †`i#Z Av#m

M. K¶cRvZxq meR Privi †ivcYKvjxb eqm KZ ?

1. 50-60 ¶`b

2. 28-35 ¶`b

3. 20-25 ¶`b

4. 40-50 ¶`b

4. GK K_vq ei ei#K" DĖi ¶`b|

K. ¶e#Kj tejv Priv †ivcY Ki#j ¶kKo c¶Zôvi Rb" KZ¶Y mgq cvq ?

L. A¶aK `#i MvQ jvMv#j ¶K nq ?

M. †ivc†Yi ci Privi †Mvovq Kx †` Iqv D¶PZ ?



cvV 3.6 meiRi A½R eskie-vi

GB cvV tKtI Avclb

- meiR Drcv`b A½R eskie-vi e`envi i fvgKv DþjL KiþZ cviþeb|
- A½R eskie-vi e`eüZ DcKiYmg þni bvg ejþZ cviþeb|
- A½R eskie-vi e`eüZ DcKiYmgþni `ekó" eYbv KiþZ cviþeb|
- tKvb tKvb meiRi eskie-vi A½R Dcvþq Kiv nq Zv DþjL KiþZ cviþeb|



meiR Drcv`b A½R eskie-vi fvgKv

kiv-meiR Drcv`b A½R ev Aþhšb eskie-vi i weþkl GKUv fvgKv AvþQ| Ggb AþbK meiR AvþQ th, þjvi eskie-vi i Rb" GKgvî Dcvq nþjv Aþhšb c×iZ ev A½R Aþki e`envi| KviY Gme meiR tgvþUB exR Drcv`b KiþZ cviþi bv A\_ev Gþ`i exR Drcv`b

AþbK Kómvā| ZvB GB mg- meiRi eskie-vi exþRi cwieþZ A½R Aþki e`envi Kiv nq| Aþhšb eskie-vi c×iZ A½R Ask e`envi i weþkl myeav GB th, GB c×iZ eskie-vi dþj Dmþ`i tKšjZwĖK weixZv eRvq \_vþK| AþbK mgq Kg LiþP Ges Lp mnþRB eskie-vi KviX DcKiY Drcv`b I msiY Kiv hvq| thgb- wó Avjy jZvi bvg DþjL Kiv thþZ cviþi| Avei AþbK tþî Gc×iZ eskie-vi tek e`qeûj Ges eskie-vi KviX DcKiY Drcv`b I msiY tek Kómvā| D`vniY-iþc tMvjAvjyUDevþi bvg DþjL Kiv hvq|

A½R eskie-vi e`eüZ DcKiþYi bvg

meiRi A½R eskie-vi MvþQi kivLv Ges AþbK tþî Dmþ`i iþcvšwiz weifb A½ e`envi Kiv nþq _vþK| wþþ cavb cavb DcKiYmg þni bvg t`Iqv nþjv|

- | | |
|-----------------------------|--------------------------------|
| 1. kivLv Kjg (Stem cutting) | 2. kéK` (Bulb) |
| 3. wO K` (corm) | 4. ivBþRvg (Rhizome) |
| 5. K` (Tuber) | 6. wDevikj ev eynej (Tubercle) |
| 7. wOPiv (Sucker) | 8. K` gþ (Tuberous root) |

Dmþ` KvþUi Uþþiv Ask

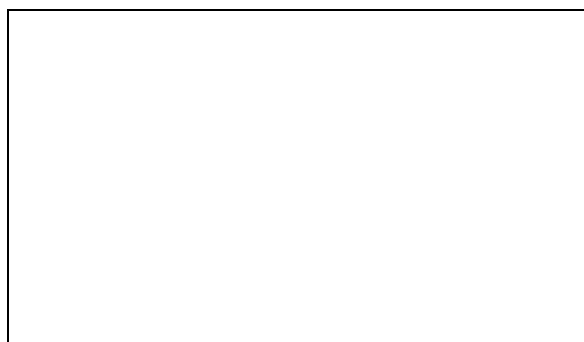
e`envi Kþi bZb MvQ

Drcv`b Kþi AþbK meiRi

eskie-vi Kiv nq|

A½R eskie-vi KviX DcKiY, þjvi `ekó"

A½R eskie-vi KviX DcKiY, þjvi `ekó" Ges tKvb tKvb meiR Pvlvþ` G, þjv e`eüZ nq Zv wþþ eYbv Kiv nþjv|



1. kivLv Kjg (Stem cutting) t
Dmþ` KvþUi Uþþiv Ask e`envi Kþi bZb MvQ Drcv`b Kþi AþbK meiRi eskie-vi Kiv nq| D`vniY-iþc wó Avjy cþK, KjgvkK, cUj BZ`i bvg DþjL Kiv thþZ cviþi| eskie-vi e`eüZ KvþUi Uþþiv Ask Kgcþ 2-3 w AvBKmn 30 tm.wg. jþv nþZ nq hvi 2/3 Ask gwUi wþþP cþZ Ges

wPI 3.6 : kivLv Kjg

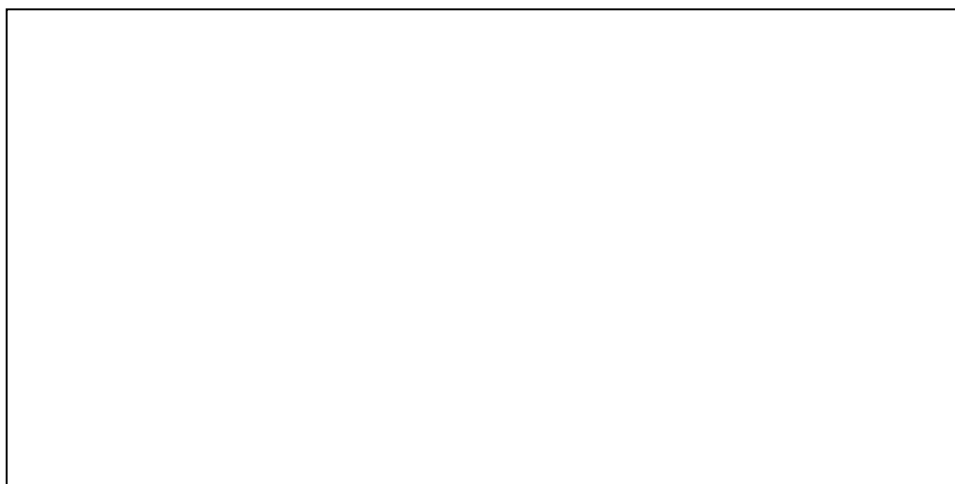
1/3 Ask gwiUi Dc†i †i†L eskwe⁻vi KvR maúb Kiv nq|

$$\frac{k\acute{e}K^{\vee} GK^{\cup} we\sharp kl ai\sharp bi}{f_{yb\sharp} i|c^{\vee} iZ K^{\cup} hv}$$

AZ'š Lv#Uv cK#Zi Ges
†MvjKvi PvK#Zi gZ|
kécî cVZi i|cVš|iZ
#bavsk|



2. **kék** (Bulb) t kék GKU we+kl ai+bi f₁ib₂ i+cšwiz Kvû hv AZ"š Lv+Uv cKiz i Ges tMvjvKvi Pvkiz i gZ| GiU imv+jv kécî Øviv AveZ_v+K| kécî n+jv ciZvi i+cšwiz w₂vsK| kék+ GKU kx- gkz_v+K hv t_+K bz₂ Mv+Qi m₂o nq| tKv+bv tKv+bv t₁î kék+ i Kv₁K k₂l_vK+Z ci+ i hv ₁z₂Kvi K+ c₁iyZ nq, G₂+jv+K ejv nq tKivn (Clove or bulblet)| kék I tKivn e"envi K+i t₁q₁R I im₂bi esk₂vi Kiv nq|



PI 3.7 : ké K₁

Kv#Ūi A#¶i w̄bavsk w̄b#iU
I gvs̄mj A#½ cwiYZ n#j
Zv#K ejv nq, w̄K>`|



Case No.	Case Name	Case Type	Case Status	Case Date	Case Time	Case Location	Case Description	Case Notes	Case Comments
1	John Doe	Medical	Open	2023-01-01	10:00	Room 101	John Doe, 45 years old, male, presented with chest pain and shortness of breath. ECG showed ST-segment depression. Initial treatment with aspirin and nitroglycerin was administered. Patient was transferred to the cardiac catheterization lab for further evaluation.	ECG: ST-segment depression in leads II, III, aVF, and V4-V6. Troponin T: 0.05 ng/mL. Creatinine: 1.2 mg/dL. HbA1c: 6.5%.	Cardiologist: Dr. Smith. Nurse: Jane Doe. Technician: John Doe.
2	Jane Smith	Medical	Closed	2023-01-02	11:00	Room 102	Jane Smith, 52 years old, female, presented with abdominal pain and nausea. Physical exam showed tenderness in the right upper quadrant. Ultrasound showed gallstones. Patient was scheduled for laparoscopic cholecystectomy.	Ultrasound: Gallstones, 2 cm in size. Liver enzymes: ALT 45 U/L, AST 35 U/L, ALP 120 U/L, GGT 80 U/L. Bilirubin: 1.5 mg/dL.	Surgeon: Dr. Brown. Nurse: John Doe. Technician: Jane Smith.
3	Michael Johnson	Medical	Open	2023-01-03	12:00	Room 103	Michael Johnson, 60 years old, male, presented with difficulty swallowing and weight loss. Endoscopy showed a large polypoid lesion in the descending colon. Biopsy showed adenocarcinoma. Patient was scheduled for colectomy.	Endoscopy: Large polypoid lesion in the descending colon. Biopsy: Adenocarcinoma. Staging: CT scan showed no distant metastases.	Oncologist: Dr. White. Nurse: Jane Doe. Technician: Michael Johnson.
4	Sarah Lee	Medical	Closed	2023-01-04	13:00	Room 104	Sarah Lee, 38 years old, female, presented with joint pain and fatigue. Blood tests showed elevated rheumatoid factor and ANA. Patient was started on prednisone and hydroxychloroquine.	Blood tests: Rheumatoid factor: 1:160. ANA: 1:80. ESR: 45 mm/hr. CRP: 10 mg/L. Prednisone 10 mg daily. Hydroxychloroquine 200 mg daily.	Rheumatologist: Dr. Green. Nurse: John Doe. Technician: Sarah Lee.
5	David Kim	Medical	Open	2023-01-05	14:00	Room 105	David Kim, 55 years old, male, presented with persistent cough and hemoptysis. Chest X-ray showed a mass in the right lung. CT scan showed a 4 cm mass in the right lung. Patient was scheduled for lobectomy.	Chest X-ray: Mass in the right lung. CT scan: 4 cm mass in the right lung. Biopsy: Adenocarcinoma. Staging: PET scan showed no distant metastases.	Oncologist: Dr. White. Nurse: Jane Doe. Technician: David Kim.
6	Emily White	Medical	Closed	2023-01-06	15:00	Room 106	Emily White, 42 years old, female, presented with chronic constipation and abdominal pain. Colonoscopy showed a large polypoid lesion in the sigmoid colon. Biopsy showed adenocarcinoma. Patient was scheduled for colectomy.	Colonoscopy: Large polypoid lesion in the sigmoid colon. Biopsy: Adenocarcinoma. Staging: CT scan showed no distant metastases.	Oncologist: Dr. White. Nurse: Jane Doe. Technician: Emily White.
7	Robert Brown	Medical	Open	2023-01-07	16:00	Room 107	Robert Brown, 68 years old, male, presented with difficulty swallowing and weight loss. Endoscopy showed a large polypoid lesion in the descending colon. Biopsy showed adenocarcinoma. Patient was scheduled for colectomy.	Endoscopy: Large polypoid lesion in the descending colon. Biopsy: Adenocarcinoma. Staging: CT scan showed no distant metastases.	Oncologist: Dr. White. Nurse: Jane Doe. Technician: Robert Brown.
8	Lisa Green	Medical	Closed	2023-01-08	17:00	Room 108	Lisa Green, 35 years old, female, presented with joint pain and fatigue. Blood tests showed elevated rheumatoid factor and ANA. Patient was started on prednisone and hydroxychloroquine.	Blood tests: Rheumatoid factor: 1:160. ANA: 1:80. ESR: 45 mm/hr. CRP: 10 mg/L. Prednisone 10 mg daily. Hydroxychloroquine 200 mg daily.	Rheumatologist: Dr. Green. Nurse: John Doe. Technician: Lisa Green.
9	James Black	Medical	Open	2023-01-09	18:00	Room 109	James Black, 50 years old, male, presented with persistent cough and hemoptysis. Chest X-ray showed a mass in the right lung. CT scan showed a 4 cm mass in the right lung. Patient was scheduled for lobectomy.	Chest X-ray: Mass in the right lung. CT scan: 4 cm mass in the right lung. Biopsy: Adenocarcinoma. Staging: PET scan showed no distant metastases.	Oncologist: Dr. White. Nurse: Jane Doe. Technician: James Black.
10	Amanda Taylor	Medical	Closed	2023-01-10	19:00	Room 110	Amanda Taylor, 40 years old, female, presented with chronic constipation and abdominal pain. Colonoscopy showed a large polypoid lesion in the sigmoid colon. Biopsy showed adenocarcinoma. Patient was scheduled for colectomy.	Colonoscopy: Large polypoid lesion in the sigmoid colon. Biopsy: Adenocarcinoma. Staging: CT scan showed no distant metastases.	Oncologist: Dr. White. Nurse: Jane Doe. Technician: Amanda Taylor.

wPÎ 3.8: uwok>

3. ,wK>` (Corm) t GiU GKU
f₁ba⁻ i|cVširZ KivU| KvŋŮi
A₁ŋi | b^oavsk w₁ŋiU | gvsmj A₁½
ciŋYZ n₁j Zv₁K ejv nq
,wK>` | Gi Mv₁q mgvšivj tiLvi
AvKv₁i cĤ`vM (leaf scar) _v₁K|
,wK₁`i Kŋ t_₁K th me
ŋ₁žvKvi kvLv tei nq tm₁ j₁v g₁x
ev ,wK>`Kv (cormel) b₁ŋg
ciŋPZ| g₁x i Mv₁q kéc₁Ĥi`vM
_v₁K| w₁fb Rv₁Zi KPzthgb-
I jKpž esk w₁v₁i ,wK>` | g₁x
e₁envi Kiv n₁q _v₁K|

ivB†Rvg GK ai†bi
i|cvšiiZ KvŪ hv gwU
msjM ev gwUi †fZ†i
cv†ki ‖†K ‖e⁻vi jvf
K†i mgvšivj fv†e Ae⁻vb
K†i|



4. ivB†Rvg (Rhizome) t
 ivB†Rvg GK ai†bi i|cvšiiZ
 KvŪ hv gwU msjM ev gwUi
 †fZ†i cv†ki ‖†K ‖e⁻vi jvf
 K†i mgvšivj fv†e Ae⁻vb K†i|
 KvŪ myúo ce, cega, kécí,
 kéc†îi K†i| K†i|gkz Ges
 AMfv†M AMgkz ‖v†K| Av⁻v,
 njy BZ⁻vi eskie⁻vi
 ivB†Rv†gi mvn†h⁻ Kiv nq|

‖PÎ 3.9 : ivB†Rvg

5. K⁻ (Tuber) t GwU GKwU f;
 ‖bα⁻ i|cvšiiZ KvŪ| KvŪi
 f‖bα⁻ kvLvi AMfvM Lv⁻ m‖ÂZ
 nIqvi ‖i‡b ùxZ n†q ‖UDevi
 Drcv⁻b K†i| Gi M†q Ae⁻Z
 †PvLmg† KvŪi K‖†K K‖i
 Ae⁻vb ‖b†⁻k K†i| mvaviYZ
 †Pv†Li ‖b†P kéc†îi ‖M ‖v†K|
 ‖UDevi ‖†q Avjy eskie⁻vi Kiv
 nq|

‖PÎ 3.10 : K⁻

6. ‖UDeviKj (Tubercle) t
 KvŪi fpci⁻ As†ki K‖†K
 K‖ A†bK mgq ‖fvieK kvLvq
 c‖iYZ bv n†q i|cvšiiZ n†q
 ùxZ, †MvjvKvi, g‖smj A½ m‖ó
 K†i| G†⁻i†K ‖UDeviKj ev
 eyieej (Tubercle or bulbil)
 ejv nq| tg†U Avjy ‖efb RvZ
 ‖UDeviK†ji mvn†h⁻ eskie⁻vi
 Kiv nq|

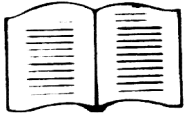
‖PÎ 3.11 : ‖UDeviKj



thgb- gvbKPz, wPviv Drcv`b K†i | evwKw, dzKwci dmj msM†ni ci Kv†ûi cwiZ`³
Ask †_†K, wPviv tei nq| G, †jvw`†q eskwe`vi Kiv hwiq|



WPI 212 - K\`n i

**mvigg**

- *th mg⁻ meiR tgv#UB exR Drcv`b Ki#Z cv#i bv ev hv#`i exR Drcv`b Kómvã`
Zv#`i eskwe⁻vi A½R Dcv#q Kiv nq|*
- *A½R eskwe⁻v#i i d#j meiRi tKšjZv#ĖK ^eikó` A¶b⁻v#K|*
- *t¶Î ¶e#kI Qvov A½R eskwe⁻vi e`qeûj Ges Gi eskwe<sup>-</sup>viKvix DcKiY Drcv`b I
msi ¶Y tek Kómvã`|*
- *A½R eskwe⁻v#i e`eüz DcKiY, #jv n#jv kvLv Kjg, kéK>` , ,wK>` , ivB#Rvg, K>` ,
¶UDeviKj, ,wPviv Ges K>`g#|*
- *kvLv Kjg ¶`#q ¶gíó Avjy cUj; kéK>` ¶`#q tcq¶R, imb; ,wK>` ¶`#q I jKPz
ivB#Rvg ¶`#q Av`v, njy; K>` ¶`#q tMvj Avjy¶UDevi ¶`#q tg#U Avjy ,wPviv ¶`#q
cvib KPzGes K>`g# ¶`#q ¶gíó AvjyKv#i#j i eskwe⁻vi Kiv nq|*



cv#VĖi gĵ`vqb 3.6

1. mZ` n#j Ômô Ges ig\_`v n#j Ôvgô jLb|

K. A½R Dcv#q esk we`v#i Dm#` i tKšjZvĖK weixZv eRvq_v#K bv|

L. tcaR I im#bi eskwe`vi K#` i mrv#h` Kiv nq|

M. tg#U AvjyUDevIKj Drcb K#i |

2. ĩb`vb c#Y Kiĵ|

K. cUj I igiô Avjy eskwe`vi Kiv nq ..... gva`tg|

L. kéK>` GKU we#kl ai#bi i|cšiz |

M. UDevI Øviv eskwe`vi Kiv nq|

3. mVK DĖi i c#k UK Pý (✓) `b|

K. kvLv Kj#gi mrv#h` tKvb meiRi eskwe`vi Kiv nq ?

- | | |
|--------|--------------|
| 1. cUj | 2. Avjy |
| 3. KPz | 4. tg#U Avjy |

L. tca#Ri eskwe`vi Kx Øviv Kiv nq ?

- | | |
|----------|----------|
| 1. K>`   | 2. kéK>` |
| 3. ,wK>` | 4. K>`gĵ |

M. K#>` i gva`tg tKvb meiRi eskwe`vi Kiv nq ?

- | | |
|--------------|--------------|
| 1. Avjy | 2. igiô Avjy |
| 3. tg#U Avjy | 4. tcaR |

4. GK K_vq ei ei#K` DĖi `b|

K. kvLv Kj#gi KZ Ask gU i b#P_v#K ?

L. ivB#Rvq tKvb ai#bi KvŮ ?

M. Kx#mi gva`tg Kv#iv#ji eskwe`vi Kiv nq ?

e'enwiK

cV 3.7 exRZjv I gv`v ^ZiKiY I Priv Drcv`b ch#e¶¶Y



GB cV tK#I AvciB

- exRZjv I gv`v ^Zi KiYi DcKi#Yi bvg ej#Z cvi#eb|
- exRZjvi gwiU c⁻ZKiY c×Z ¶jL#Z cvi#eb|
- exRZjvi PrivtK cwiB wBwK#bi bvjv ^Zi Ki#Z cvi#eb|
- exRZjqv ^Re mvi c#qM Ki#Z cvi#eb|
- gv`vi AvKvi KZ n#e Zv ej#Z cvi#eb|
- gv`v ^Zi KiYi c×Z ¶jL#Z cvi#eb|
- gv`vq e`eüZ wefb m#i i bvg I c#qM c×Z ej#Z cvi#eb|
- exRZjqv Ges gv`vq Kxfv#e I KZ MfxiZvq exR ecb Ki#Z nq Zv ej#Z cvi#eb|
- exRZjv I gv`v ^Zi K#i t`Lv#Z cvi#eb|
- exRZjqv I gv`vq Privi hZ #bqv m#Ü ej#Z cvi#eb|



cvmi#K Z_`vejx

te#ki fVM kZKvjxb meiR Pvlvev`i t¶#î c<sub>tg</sub> exRZjv ^Zi K#i wB#q Zv#Z m# mej I wB#iVM Priv Drcv`b K#i tmB Priv cieZ#Z gv#V jvM#bv nq| ¶kg I KgovRvZxq meiR, hv#`i ¶kKo I Kv#Üi kvLv-ckvLvi cvk#e<sup>-</sup>IZ. te#k Ges m#aviYZ elv tgsm#q Pvlvev` Kiv nq Zv#`i t¶#î Priv I MvQ#K ej#ó Rb" m# Rjve×Zv n#Z eu#bvi <sup>-</sup>v#\_ R#g#Z D#ZK#i gv`v ^Zi K#i wB#q Zv#Z exR jvM#q Pvlvev` Kiv nq|

c#qRbxq DcKiY

1. tKv`vj 2. AvBov 3. U#wi 4. tUc 5. i#k 6. L#v 7. ^Re mvi I ivmvqwbK mvi 8. P# 9. exR 10. cwiBi SvB#i|

Kv#Ri avc

1. exRZjv I gv`v ^Zi i Rb" c#qRbxq DcKiY nv#Zi Kv#Q wbb|
2. exRZjvi Rb" wbevPZ R#g tKv`vj ¶`#q 15 tm.wg. Mfxi K#i fv#jvfv#e K#q#q wbb|
3. AvBov I tKv`vj ¶`#q gwiU SzSzi, AvMvQvgy I mgZj K#i wbb|
4. Gici ^Zi R#g#Z 3 ¶gUvi `xN Ges 1 ¶gUvi ck⁻ AvKv#i i exRZjv tg#c wbb|
5. exRZjvi Rb" gvcv R#gi Priv`#K 25 tm.wg. Plov Ges 15 tm.wg. Mfxi cwiB wBwKb bvjv ^Zi Ki#b| bvjvi gwiU exRZjvi R#gi Dci tKv`vj ¶`#q DvV#q ¶`b|
6. bvjvi Zjv n#Z exRZjvi te#Wi D"PV 15 tm.wg. t_{#K} 20 tm.wg. K#i wbb|
7. A#ak mSL"K exRZjv ^Zi KiYi t¶#î `B exRZjvi te#Wi gvSLv#b 60 tm.wg. Plov Ges 10 tm.wg. Mfxi bvjv ^Zi Ki#b|
8. ciZwU exRZjvi te#W 20 tK#R ^Re mvi I 100 Mvg P# c#qM Ki#b Ges gwiUi mv#_ fv#jvfv#e ¶gk#q ¶`b|

9. $\text{tKv}^{\text{v}} \text{vj } I \text{ nvZ } \text{w}^{\text{t}} \text{q exRZjvi gvu hZ}^{\text{y}} \text{ mæ } \text{wgn K}^{\text{t}} \text{i } \text{wbb Ges } \text{te}^{\text{t}} \text{Wi Dc}^{\text{t}} \text{ifvM mgZj Ki}^{\text{t}} \text{b|}$
10. $\text{exR } \text{eb}^{\text{t}} \text{bi Rb}^{\text{t}} \text{ exRZjv Gevi c}^{\text{t}} \text{Z e}^{\text{t}} \text{j MY}^{\text{t}} \text{ Ki}^{\text{t}} \text{b|}$
11. $\text{meiR Ab}^{\text{t}} \text{v}^{\text{t}} \text{i } 3 \text{ } _1 \text{ wguvi AvK}^{\text{t}} \text{i } \text{exRZjvi Rb}^{\text{t}} \text{ w}^{\text{t}} \text{b}^{\text{t}} \text{ } \acute{o} \text{ c}^{\text{t}} \text{w}^{\text{t}} \text{igvY exR nv}^{\text{t}} \text{Zi Kv}^{\text{t}} \text{Q wbb|}$
12. $\text{exRZjvq exR } \text{w}^{\text{t}} \text{Q}^{\text{t}} \text{U}^{\text{t}} \text{q A}^{\text{t}} \text{ev } 3 \text{ } \text{t}^{\text{t}} \text{K } 5 \text{ } \text{tm}^{\text{t}} \text{w}^{\text{t}} \text{g}^{\text{t}} \text{. } \text{`tj } \text{`tj } \text{m}^{\text{t}} \text{v}^{\text{t}} \text{i } \text{K}^{\text{t}} \text{i } \text{ex}^{\text{t}} \text{Ri e}^{\text{t}} \text{v}^{\text{t}} \text{mi } \text{w}^{\text{t}} \text{Y MfxiZvq m}^{\text{t}} \text{v}^{\text{t}} \text{i } \text{Z exR } \text{eb}^{\text{t}} \text{b|}$
13. $\text{exR } \text{te}^{\text{t}} \text{v}^{\text{t}} \text{vi ci Plov Kv}^{\text{t}} \text{Vi U}^{\text{t}} \text{K}^{\text{t}} \text{iv } \text{w}^{\text{t}} \text{tq exRZjvi Dc}^{\text{t}} \text{ifv}^{\text{t}} \text{Mi gvuU}^{\text{t}} \text{K } \text{t}^{\text{t}} \text{P}^{\text{t}} \text{c } \text{w}^{\text{t}} \text{b Ges Gici PvUvB } \text{w}^{\text{t}} \text{tq exRZjv } \text{t}^{\text{t}} \text{X}^{\text{t}} \text{K } \text{w}^{\text{t}} \text{b|}$
14. $\text{gv}^{\text{t}} \text{v } \text{Z}^{\text{t}} \text{vi Kivi Rb}^{\text{t}} \text{ Pvl Kiv R}^{\text{t}} \text{ig}^{\text{t}} \text{Z } \text{tKv}^{\text{t}} \text{v}^{\text{t}} \text{ } \text{w}^{\text{t}} \text{tq } 60 \text{ } \text{tm}^{\text{t}} \text{w}^{\text{t}} \text{g}^{\text{t}} \text{. e}^{\text{t}} \text{vm Ges } 60 \text{ } \text{tm}^{\text{t}} \text{w}^{\text{t}} \text{g}^{\text{t}} \text{. MfxiZv m}^{\text{t}} \text{v}^{\text{t}} \text{b MZ Ki}^{\text{t}} \text{b|}$
15. $\text{M}^{\text{t}} \text{Zi Dc}^{\text{t}} \text{i } \text{gvu } I \text{ w}^{\text{t}} \text{b}^{\text{t}} \text{Pi gvu Avjv}^{\text{t}} \text{v Avjv}^{\text{t}} \text{v } \text{K}^{\text{t}} \text{i } \text{Z}^{\text{t}} \text{Zj i}^{\text{t}} \text{Lv}^{\text{t}} \text{b| G Ae}^{\text{t}} \text{v}^{\text{t}} \text{q } 2/3 \text{ } \text{w}^{\text{t}} \text{b MZ } I \text{ gvuU}^{\text{t}} \text{Z m h}^{\text{t}} \text{KiY jvM}^{\text{t}} \text{Z } \text{w}^{\text{t}} \text{b|}$
16. $\text{M}^{\text{t}} \text{Zi Dc}^{\text{t}} \text{i } \text{As}^{\text{t}} \text{ki gvuUi m}^{\text{t}} \text{v}^{\text{t}} \text{ } \text{meiR Ab}^{\text{t}} \text{v}^{\text{t}} \text{i gv}^{\text{t}} \text{v}^{\text{t}} \text{ciZ Ab}^{\text{t}} \text{gv}^{\text{t}} \text{v}^{\text{t}} \text{Z } \text{Re mvi } I \text{ w}^{\text{t}} \text{U}^{\text{t}} \text{Gm}^{\text{t}} \text{w}^{\text{t}} \text{c}^{\text{t}} \text{i } \text{m}^{\text{t}} \text{v}^{\text{t}} \text{b } \text{c}^{\text{t}} \text{w}^{\text{t}} \text{igvY Ges Gg}^{\text{t}} \text{w}^{\text{t}} \text{c}^{\text{t}} \text{i } \text{A}^{\text{t}} \text{aK c}^{\text{t}} \text{w}^{\text{t}} \text{igvY w}^{\text{t}} \text{g}^{\text{t}} \text{k}^{\text{t}} \text{q wbb|}$
17. $\text{GB w}^{\text{t}} \text{g}^{\text{t}} \text{kZ gvu } I \text{ mvi M}^{\text{t}} \text{Z } \text{t}^{\text{t}} \text{dj}^{\text{t}} \text{b|}$
18. $\text{Gici M}^{\text{t}} \text{Zi w}^{\text{t}} \text{b}^{\text{t}} \text{Pi As}^{\text{t}} \text{ki gvu } \text{w}^{\text{t}} \text{tq M}^{\text{t}} \text{Zi ew}^{\text{t}} \text{K Ask f}^{\text{t}} \text{iZ Ki}^{\text{t}} \text{b|}$
19. $\text{gv}^{\text{t}} \text{vi g}^{\text{t}} \text{v}^{\text{t}} \text{ R}^{\text{t}} \text{igi } \text{t}^{\text{t}} \text{j}^{\text{t}} \text{f}^{\text{t}} \text{j}^{\text{t}} \text{i Z}^{\text{t}} \text{zbvq } 10\text{-}15 \text{ } \text{tm}^{\text{t}} \text{w}^{\text{t}} \text{g}^{\text{t}} \text{. D}^{\text{t}} \text{B}^{\text{t}} \text{K}^{\text{t}} \text{i } \text{w}^{\text{t}} \text{b Ges Kgc}^{\text{t}} \text{t}^{\text{t}} \text{ m}^{\text{t}} \text{vZ } \text{w}^{\text{t}} \text{b Gfv}^{\text{t}} \text{te } \text{t}^{\text{t}} \text{i}^{\text{t}} \text{L } \text{w}^{\text{t}} \text{b|}$
20. $\text{Z}^{\text{t}} \text{vici ex}^{\text{t}} \text{Ri e}^{\text{t}} \text{v}^{\text{t}} \text{mi } \text{w}^{\text{t}} \text{Y MfxiZvq ciZ gv}^{\text{t}} \text{v}^{\text{t}} \text{q } 4/5 \text{ w}^{\text{t}} \text{U exR c}^{\text{t}} \text{t}^{\text{t}} \text{Z } \text{w}^{\text{t}} \text{b|}$
21. $\text{exR } \text{t}^{\text{t}} \text{cv}^{\text{t}} \text{Zi ci gv}^{\text{t}} \text{vi Dc}^{\text{t}} \text{i ew}^{\text{t}} \text{j w}^{\text{t}} \text{Q}^{\text{t}} \text{U}^{\text{t}} \text{q } \text{w}^{\text{t}} \text{b Ges Gici K}^{\text{t}} \text{jvcvZi ev Ab}^{\text{t}} \text{ } \text{t}^{\text{t}} \text{Kv}^{\text{t}} \text{bv XvKbv } \text{w}^{\text{t}} \text{tq gv}^{\text{t}} \text{v } \text{t}^{\text{t}} \text{X}^{\text{t}} \text{K i}^{\text{t}} \text{Lv}^{\text{t}} \text{b|}$
22. $\text{ciZ } \text{w}^{\text{t}} \text{b exRZjv } I \text{ gv}^{\text{t}} \text{vi XvKbv m}^{\text{t}} \text{v}^{\text{t}} \text{i } \text{t}^{\text{t}} \text{q exR A}^{\text{t}} \text{z}^{\text{t}} \text{v}^{\text{t}} \text{Mg n}^{\text{t}} \text{q}^{\text{t}} \text{Q w}^{\text{t}} \text{Kbv Zv } \text{t}^{\text{t}} \text{L}^{\text{t}} \text{b|}$
23. $\text{exR A}^{\text{t}} \text{z}^{\text{t}} \text{v}^{\text{t}} \text{Mg n}^{\text{t}} \text{Iqv i m}^{\text{t}} \text{v}^{\text{t}} \text{ } \text{m}^{\text{t}} \text{v}^{\text{t}} \text{XvKbv Ac}^{\text{t}} \text{mviY Ki}^{\text{t}} \text{b|}$
24. $\text{cv}^{\text{t}} \text{w}^{\text{t}} \text{gK Ae}^{\text{t}} \text{v}^{\text{t}} \text{q exRZjv Ges gv}^{\text{t}} \text{v}^{\text{t}} \text{q A}^{\text{t}} \text{z}^{\text{t}} \text{v}^{\text{t}} \text{Pv}^{\text{t}} \text{iv } \text{t}^{\text{t}} \text{v}^{\text{t}} \text{ n}^{\text{t}} \text{Z ew}^{\text{t}} \text{v}^{\text{t}} \text{bv}^{\text{t}} \text{Rb}^{\text{t}} \text{ Qvqv } \text{t}^{\text{t}} \text{qvi e}^{\text{t}} \text{v}^{\text{t}} \text{e}^{\text{t}} \text{ Ki}^{\text{t}} \text{b|}$
25. $\text{i}^{\text{t}} \text{v}^{\text{t}} \text{Zi te}^{\text{t}} \text{jvi w}^{\text{t}} \text{ki } \text{Pv}^{\text{t}} \text{vi M}^{\text{t}} \text{v}^{\text{t}} \text{q jvM}^{\text{t}} \text{bv}^{\text{t}} \text{Rb}^{\text{t}} \text{ XvKbv Ac}^{\text{t}} \text{mviY Ki}^{\text{t}} \text{b|}$
26. $\text{Pv}^{\text{t}} \text{vi eqm } 10 \text{ } \text{t}^{\text{t}} \text{K } 15 \text{ } \text{w}^{\text{t}} \text{b n}^{\text{t}} \text{j XvKbv Avi e}^{\text{t}} \text{envi Ki}^{\text{t}} \text{eb bv|}$
27. $\text{c}^{\text{t}} \text{q}^{\text{t}} \text{vRb gZ Pv}^{\text{t}} \text{ivq Sv}^{\text{t}} \text{B}^{\text{t}} \text{i } \text{w}^{\text{t}} \text{tq c}^{\text{t}} \text{w}^{\text{t}} \text{b c}^{\text{t}} \text{q}^{\text{t}} \text{vM Ki}^{\text{t}} \text{b|}$
28. $\text{exRZjvq AvMvQv } \text{t}^{\text{t}} \text{Lv}^{\text{t}} \text{gv}^{\text{t}} \text{Zv Z}^{\text{t}} \text{Zj } \text{t}^{\text{t}} \text{dj}^{\text{t}} \text{b|}$
29. $\text{Gfv}^{\text{t}} \text{te exRZjv } I \text{ gv}^{\text{t}} \text{v } \text{Z}^{\text{t}} \text{vi K}^{\text{t}} \text{i } \text{Pv}^{\text{t}} \text{iv Drcv}^{\text{t}} \text{b Ki}^{\text{t}} \text{b|}$

mZKZv

1. $\text{exRZjvi gvu } \text{fv}^{\text{t}} \text{jvfv}^{\text{t}} \text{te K}^{\text{t}} \text{z}^{\text{t}} \text{q } \text{Z}^{\text{t}} \text{vi Ki}^{\text{t}} \text{eb|}$
2. $\text{exRZjvq K}^{\text{t}} \text{v}^{\text{t}} \text{v } \text{Re mvi e}^{\text{t}} \text{envi Ki}^{\text{t}} \text{eb bv|}$
3. $\text{exRZjvq AvMvQv R}^{\text{t}} \text{S}^{\text{t}} \text{v}^{\text{t}} \text{Z } \text{t}^{\text{t}} \text{eb bv|}$
4. $\text{gv}^{\text{t}} \text{vi gvuUi m}^{\text{t}} \text{v}^{\text{t}} \text{ } \text{Ab}^{\text{t}} \text{gv}^{\text{t}} \text{v}^{\text{t}} \text{Z mvi } \text{fv}^{\text{t}} \text{jvfv}^{\text{t}} \text{te w}^{\text{t}} \text{g}^{\text{t}} \text{k}^{\text{t}} \text{q e}^{\text{t}} \text{envi Ki}^{\text{t}} \text{eb|}$
5. $\text{gv}^{\text{t}} \text{vi g}^{\text{t}} \text{v}^{\text{t}} \text{ te}^{\text{t}} \text{Wi Z}^{\text{t}} \text{zbvq } 10\text{-}15 \text{ } \text{tm}^{\text{t}} \text{w}^{\text{t}} \text{g}^{\text{t}} \text{. D}^{\text{t}} \text{B}^{\text{t}} \text{Ki}^{\text{t}} \text{eb|}$

e'enwiK

cV 3.8 meiRi weifb A½R eskie⁻viKviX DcKiY wPýZKiY

GB cV tKtI AvciB

- A½R Dcvtq eskie⁻viKviX weifb meiRi bvg wjLZ cvi#eb|
- meiRi weifb A½R eskie⁻viKviX DcKiY kbv³ Ki#Z cvi#eb|
- tKvb meiRtZ tKvb A½R DcKiY e'envi Kiv nq Zv D#jL Ki#Z cvi#eb|
- A½R DcKiYU MvQ n#Z KLB mSMn Kiv nq Zv ej#Z cvi#eb|
- meiRi eskie⁻v#i i Rb" A½R AskU KLB R#g#Z jvM#eb Zv ej#Z cvi#eb|
- meiRi A½R eskie⁻v#i e"eüZ weifb DcKiYi wPÎ Auk#Z cvi#eb|
- A½R DcKiYUi DTM ZvËK ^eikó" wjLZ cvi#eb|



cvm½K Z_`vejx

exRi e'envi bv Kti tKv#v ^`wnK A½ (cvZv, Wvj, wKko BZ`w) e'envi Kti hLb DTM i eskie⁻vi Kiv nq ZLb Zv#K A½R eskie⁻vi ej#| Ggb KZK, #jv meiR Av#Q th, #jv tgv#U exR Drcv`b Kti bv A\_ev exR Drcv`b Ki#jI G`i ,Yv, Y DrKógv#bi nq bv| G`i tKtI A½R Dcvtq eskie⁻vi LpB mjeavRbK I djcm |

A½R Dcvtq eskie⁻v#i gvZM#Qi ûeû ,Yvejx A`Z _v#K| Zv#Z KvsLZ ,Yv, Yweikó meiR cvIqv m#e nq| mvaviYZ wBw jwLZ KtqK cKvi DTM DcKiYi gva#g A½R Dcvtq eskie⁻vi Kiv ntq _v#K:

K. kvLv Kjg, L. K>, M. K>g j, N. ké K>, O. w K>, P. ivB#Rvg, Q. w Pviv I R. ej#ej|

c#qvRbxq DcKiY

1. e'enwiK LvZv 2. tcvYj 3. A½R eskie⁻viKviX weifb DcKiY 4. ivevi|

KvRi aic

1. meiRi A½R eskie⁻v#i e"eüZ weifb DcKiY, #jv mSMn Kti nv#Zi Kv#Q wbb|
2. DcKiY, #jvi ,Yv, Y GKU GKU Kti ch#eY Ki#|
3. DcKiY, #jvi DTM ZvËK ^eikó" ZvËK cvV Av#Z wPÎ t`Lv#v ^eikó"i mv#_ wgvj#q wbb|
4. Gevi cvZU DcKiYi wPÎ wfb wfbfv#e e'enwiK LvZvi evg cv#ki c#vq Auk#|
5. Aukv wPÎ weifb ,i#ZcY Ask wPýZ Ki#b|
6. Gici cvZU DcKiYi wPÎ i weci#Z LvZvi Wwb cv#k DcKiYi bvg Ges tKvb meiRi eskie⁻v#i DcKiYU e'envi Kiv nq Zvi bvg wjL#|

7. GKB m_v†_ DcKi†Yi DTM`Z_vĖK ^e_vkó“, msM†ni mgq Ges esk_ve⁻_v†i i Rb“ R_vg†Z j_vM_v†b_vi mgq ZĖq c_vV †_†K †R†b †b†q L_vZ_vq †j_vce× Ki†b|
8. Gf_v†e meiR P_v†I e“eüZ †e_vfb A½R esk_ve⁻_viK_viX DcKi†Yi b_vg I DTM`Z_vĖK ^e_vkó“ †R†b †bb|

mZKZ_v

1. hZ`y m_vse m_y†i, †úó I †bL_v†f_v†e c_vZ_vU DcKi†Yi †PĖ AsKb Ki†b|
2. †PĖ AsK†bi mgq A_vZ_vi³ N_vg_vR_v c_v†in_vi Ki†b|
3. c_vZ_vU DcKi†Yi ^e_vkó“ g†b_v†h_vM mnK_v†i ch†e†Y Ki†b|
4. L_vZ_vq ^e_vkó“ †j_v †P_v†yZ Kivi mgq m_vVKf_v†e †P_v†yZ Ki†b|
5. DcKiY m_vÜ_vq m_vVK Z_“ c_v†i†ekb Ki†b|



cV 3.9 meiR exR kbv³ KiY I exR A^vjevg ^ZiKiY

GB cV tk[†] I Avicb

- exR A^vjevg ^ZiKiYi Rb[~] c[†]qvRbxq DcKiYi bvg ej[†]Z cvi[†]eb|
- ex[†]Ri eY, AvKvi-AvK^uZ, IRb BZ[~] ch[†]te Y Ki[†]Z cvi[†]eb I j^uce^x Ki[†]Z cvi[†]eb|
- tgšmg[†] fi[†]Ek[†] e[†]fb exR mn[†]RB P[†]b[†]Z cvi[†]eb|
- meiR kbv³ Ki[†]Z I exR A^vjevg ^Zi Ki[†]Z cvi[†]eb|



cVmi[†] K Z[~] v[†]ejx

meiR exR A^vjevg meiR exR tPbvi I kbv³ Ki[†]Yi GK^uU mnR c^xuZ ev gva[~]g| meiR exR A^vjevg FZzAbj[†]qx e[†]fb meiR exR m[†]eb[~] f[†]v[†]e j[†]vM[†]b[†]v[†] v[†]K Ges c[†]k ex[†]Ri bvgmn kbv³ Ki[†]Yi ^e[†]kó[~] mgn[~] j^uce^x v[†]K| G[†]Z e[†]fb meiR ex[†]Ri bvg R[†]b[†]v, tPb[†] I kbv³ KiY A^uZ mn[†]R Ges A[†]i mg[†]q m[†]ae nq| exR A^vjevg ^Zi[†]i c^xuZ mn[†]R Dc[†]j[†] Kivi m[†]ea[†]v[†] nb[†] GK^uU b[†]g[†]v-A^vjevg[†]i i[†]c[†]iL[†] Z[†]j aiv n[†]jvt

exR b [†] g [†] v	ex [†] Ri bvg	Drc [†] b tgšmg [†]	eY	AvKvi AvK ^u Z	Mo IRb (Mvg)
□	d [†] zK ^u c	i [†] e	ami	tQvU I tMvjvKvi	0.002222

c[†]qvRbxq DcKiY

1. k[†]z I Mx[†]Q[†]Kv[†]xb e[†]fb meiRi exR, 2. AvZ[†]k Kv[†]P, 3. e[†]·[†]eW Kv[†]MR, 4. tci[†]Yj, 5. Kjg, 6. AvBK[†]v Mvg, 7. t[†]j i[†]evi|

Kv[†]Ri aic

1. c[†]qvRbxq DcKiY msMn K[†]i n[†]z[†]Zi Kv[†]Q[†] bb|
2. 30 t[†]m. g. × 25 t[†]m. g. g[†]v[†]ci e[†]·[†]eW tU[†]e[†]j[†]i Dc[†]i v[†]cb Ki[†]b|
3. t[†]j I tci[†]Y[†]j[†]i m[†]nv[†]h[†] Kv[†]M[†]Ri m[†]g[†]v[†] Uv[†]b[†]|
4. Gici t[†]j[†]i m[†]nv[†]h[†] tci[†]Y[†]j[†] w[†]q Kv[†]M[†]Ri c[†]vk[†] K 3 t[†]m. g. y[†] i[†] j[†]avj[†] 7[†]U t[†]iL[†] Uv[†]b[†]|
5. meiR ex[†]Ri msL[†]v Abj[†]qx Kv[†]M[†]Ri ^[†]N[†]i w[†]q AvovA[†]of[†]v[†]e 2.5 t[†]m. g. ci ci m[†]vi Uv[†]b[†]|
6. c[†]g m[†]vi c[†]g Ni n[†]z[†] i[†]i K[†]i m[†]g[†]bi Ni[†], t[†]j[†]v[†]Z h[†]v[†]μ[†]g exR b[†]g[†]v, ex[†]Ri bvg, Ave[†] tgšmg[†], eY, AvKvi-AvK^uZ I Mo IRb w[†]k[†]ivbvg j[†]L[†]|
7. c[†]g i[†]e tgšmg[†]gi meiR exR[†], t[†]j[†]v n[†]z[†]Zi Kv[†]Q[†] bb|
8. exR b[†]g[†]v w[†]k[†]ivbvg[†]i w[†]b[†]P i[†]e tgšmg[†]gi meiR exR G[†]Ki ci GK c[†]g tQvU, Ziici gvSw[†]i I me[†]k[†]I eo exR AvBK[†]v Mvg ev[†] P tUc w[†]q j[†]vM[†]q bb|
9. AvZ tQvU exR 10-12 U, gvSvix exR 2U Ges eo exR 1U K[†]i j[†]vM[†]b|
10. Gevi AvV w[†]q j[†]vM[†]b[†] c[†]uZ[†]U ex[†]Ri m[†]g[†]bi Ni[†], t[†]j[†]v[†]Z w[†]k[†]ivbvg Abj[†]qx ex[†]Ri ^e[†]kó[~] f[†]v[†]j[†]v[†]e ch[†]te Y K[†]i j[†]L[†]|

11. †QvU ex†Ri ^eikó", †jv mn†R ch†e ¶Y Kivi mjeav†_ AvZik KvP e"envi Ki#b |
12. ciZvU ex†Ri we†kl K†i †QvU ex†Ri Mo IRb †ei Kivi Rb" AwaK msL"K ex†Ri IRb wbb Ges GB IRb†K ex†Ri msL"v w`†q fvM K†i Mo IRb †ei Ki#b |
13. GB e · †evWvU†Z mKj ex†Ri †vb msK†vb bv n†j GKB gv†ci wØZxq GKvU †evW e"envi Ki#b |
14. Gfv†e exR A"vjevg ^Zvi Ki#b |

mjeavbZv

1. exR fv†jvfv†e ch†e ¶Y K†i ^eikó", †jv wjLb|
2. GKvU ex†Ri Dci Ab" exR jvM†eb bv|
3. DbZ AvBKv Mvg e"envi Ki#b |
4. iagvî iK†bv exR jvMvb|



Povš gj'vqb— BDibU 3

msiB I iPhvgjK ck

1. meiR Pvlvev` ec b c×Zi mjeav I Amjeav, †jv †jvce× Ki:b|
2. exR †cuZv ej†Z †K ešvq ? †Kv†bv †Kv†bv meiR G c×Z†Z Pvlvev` Kiv hvq Ges Kxfv†e Zv Kiv nq eYbv Ki:b|
3. te†j †v-Auk gvU†Z exRZjv ^Zii c×Z eYbv Ki:b|
4. exRZjvq ec b cieZx ciPhvmgn eYbv Ki:b|
5. exRZjv Kv†K e†j? exRZjvi †vb †bevp†b †e†eP †elq, †jv †jvce× Ki:b|
6. exRZjv RxeYvgy KiY Kivi †efb cKvi c×Z eYbv Ki:b|
7. exRZjvq Pivi KómnòZv ea†bi Dcvq eYbv Ki:b|
8. ††bi tejq Piv †ivc†Yi Dchy mgq KLb Ges †Kb Zv Av†jvPbv Ki:b|
9. †ivc†Yi ci Pivi Kx Kx hZ †bIqv ` iKvi Zv eYbv Ki:b|
10. A½R Dcv†q eskie†v†i e'eüZ DcKiY, †jvi bvg D†jL Ki:b|



DĖigvj— BDibU 3

cv 3.1

- | | | |
|--|--------------|--------------|
| 1. K (ig) | 1. L (ig) | 1. M (ig) |
| 2. K (ecb) | 2. L (ecb) | 2. M (†ivcY) |
| 3. K (4) | 3. L (1) | 3. M (3) |
| 4. K (Rjevqy Pwin`vi ZviZ†g`i Kvi†Y) (†ivcY) | 4. L (mvi†Z) | 4. M |

cv 3.2

- | | | |
|----------------|----------------------|--------------------------------------|
| 1. K (ig) | 1. L (ig) | 1. M (ig) |
| 2. K (Piv) | 2. L (†vbvš†hviM) | 2. M (Zvc c†qvM, ivmvqibK `e` c†qvM) |
| 3. K (1) | 3. L (1) | 3. M (1) |
| 4. K (48 N>Uv) | 4. L (†jK†j†K I `†j) | 4. M (digvj†WvBW) |

cv 3.3

- | | | |
|---------------|------------------------|----------------|
| 1. K (ig) | 1. L (ig) | 1. M (ig) |
| 2. K (60, 25) | 2. L (ivmvqibK mvi) | 2. M (200-220) |
| 3. K (2) | 3. L (1) | 3. M (3) |
| 4. K (†Ø, Y) | 4. L (M†vgv†b c†vDWvi) | 4. M (†Zb†U) |

cV 3.4

- | | | |
|-------------------|----------------------------|-----------------|
| 1. K (lg) | 1. L (m) | 1. M (lg) |
| 2. K (Kv#evnB#WU) | 2. L (7-10) | 2. M (kZcavb) |
| 3. K (1) | 3. L (2) | 3. M (1) |
| 4. K (kKiv) | 4. L (Pvivi KóminòZv evto) | 4 M (m#ZR iv#L) |

cV 3.5

- | | | |
|----------------|---------------------------------------|--------------|
| 1. K (lg) | 1. L (m) | 1. M (m) |
| 2. K (Kg) | 2. L (10-15) | 2. M (50-60) |
| 3. K (1) | 3. L (2) | 3. M (2) |
| 4. K (14 N>Uv) | 4. L (RvqMvi AcPq nq Ges djb I Kg nq) | 4. M (c#b) |

cV 3.6

- | | | |
|---------------------------|-----------------------------|------------------|
| 1. K (lg) | 1. L (lg) | 1. M (m) |
| 2. K (kLv Kj#gi) | 2. L (fjb ⁻ KvÔ) | 2. M (†Mvj Avjy) |
| 3. K (1) | 3. L (2) | 3. M (1) |
| 4. K ($\frac{2}{3}$ Ask) | 4. L (i c š iZ) | 4. M (K>`gf) |

meiR P#Ii t#šj weiqw`

meiRi Rb` GKU ubreo P#Ivev` c#qvRb| mdj meiR P#Ivev` i Rb` dmj Abjvqx e#x i
weifb chv#q weifb ai#bi hZ t#lqvi c#qvRb| P#Ivev` m#uKZ t#šj weiq h#_ó Ávb
_vK#jB GKVRU m#vi#fv#e m#u`b Kiv m#e| weiqmgn n#`Q m#VK R#ig weivPb, g#U
weivPb I Zvi ^Z#i, m#vii ,Yv, Y, g#v I Gi h_vh_ c#qvM, c#vb t#mP, weivkb e#e`vcbv,
A#eZx c#iPhv, meiR dmjchvq, meiR msMn, msM#nvEi e#e`vcbv BZ`w`| GB BDibU
t#k#I Av#b meiR P#Ii Rb` R#ig I g#U weivPb, g#U c`ZKiY, m#vi, m#vi c#qvM, c#vb t#mP
I weivkb, A#eZx c#iPhv, meiRchvq, meiR msMn I msM#nvEi e#e`vcbv m#uÜ RivbZ
cvi#eb|

c#V 4.1 R#ig I g#U weivPb Ges g#U ^Z#i

GB c#V t#k#I Av#b

- meiR P#Ii Rb` Kx iKg R#ig weivPb Kiv D#PZ Zv eYbv Ki#Z cvi#eb|
- meiR P#Ii Rb` g#U Kx ai#bi n#lqv D#PZ Zv ej#Z cvi#eb|
- meiR P#Ii Rb` g#U i A#v#Z KZ n#lqv c#qvRb Zv ej#Z cvi#eb|
- meiR P#Ii Rb` R#ig ^Z#i c#qvRb#qv eYbv Ki#Z cvi#eb|
- meiR P#Ii Rb` R#ig ^Z#i Kivi c#vZ e#vL`v Ki#Z cvi#eb|

R#ig weivPb

meiR P#Ii Rb` R#ig weivP#bi c#e weivPi weiq, #jv weivPbqv ivL#Z n#e-

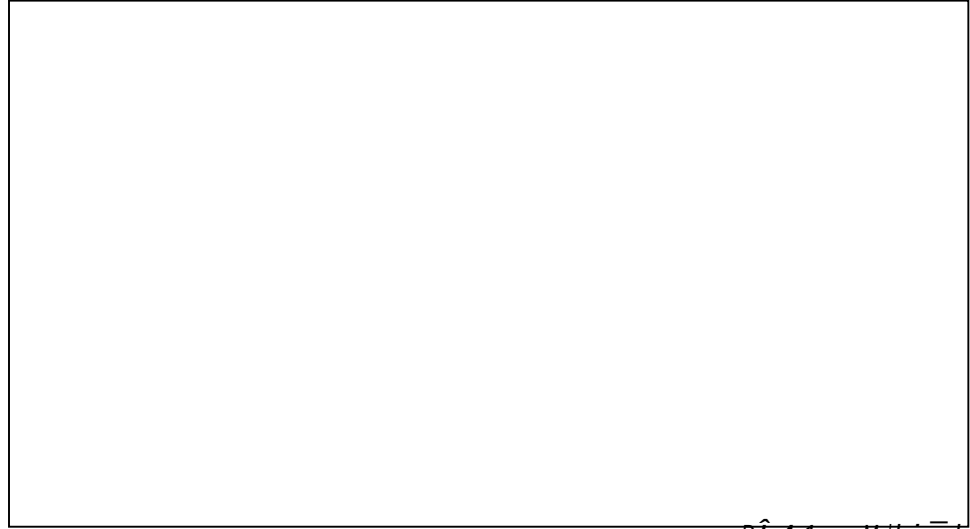
- R#ig D#v#Z n#e Ges emZ emoi Kv#Q n#j fv#jv nq| (wP 4.1)
- R#igZ c#vb t#mP t` Iqv I weivk#bi m#eav \_vK#Z n#e| GRb` R#ig tgvUg#v mgZj I
GK` #K #KQ#v Xvj#vKv fv#jv|
- R#igZ m#v#b m#hi Av#jv co#Z n#e| t#qvj ivL#Z n#e thb eo MvQ ev emoi N#i i
Qvqv R#igZ bv c#o|
- meiR evRvRvZ Ki#Yi m#eav _vK#Z n#e|

g#U weivPb

meiR P#Ii Rb` g#Z t`v-Auk g#U D#Eg| G#v#j t`v-Auk I te#j t`v-Auk g#U#Z I meiR
fv#jv R#vq| Avevi #KQ#vKQ#vmeiRi Rb` Aek`B G#v#j t`v-Auk g#U c#qvRb; thgb- c#vb
KPz Kjg# kvK| Z#e meiR P#Ii Rb` g#U weivP#b me#P#q , i#Zc# weiq n#jv g#U#Z
Aek`B ^Re m#vi \_vK#Z n#e| ^Re-m#vimg# t`v-Auk g#U D#v#` i cy#-Dcv`v#bi Avavi e#j
weivPZ| KviY GB g#U `xN#b R#igZ c#vb a#i ivL#Z cvi#e Ges evZvm P#jvP#j m#vnh`
K#i| g#j ev K> RvZxq meiRi Rb` Aek` ^Re m#vi mg# te#j t`v-Auk g#U D#Eg| nvjKv
e#vUi GB g#U#Z g#j I K> RvZxq meiR m#vRB e#x jvf K#i Ges d#jv fv#jv nq|



D#v#v#g³ t#š#`v#j,
m#v`v#kZ t#mP e#e`v
m#u#b R#ig meiRi Rb`
fv#jv



PI 4.1 : eMvbi vb

AaKvsk meiRi Rb
Dc+hvMx p^H-Gi gvb n+jv
6-7 GKK

gviUi Aa^qviZ meiR Drcv`bK wekIfv#e cfveZ K+i | AaKvsk meiRi Rb` 6 t_K 7
 GKK c.GBP (p^H) meP+q tek Dc+hvMx | gviU tek Aq (7 Gi vbP) ev viq (7 Gi
 Dc+i) n+j DvTM+`i K+qKU Lv<sup>TM</sup>`vcv`vb tkvIY+hvM Ae<sup>-</sup>vq \_vK bv | AaZ Kgvevi Rb`
 gviU+Z Pb Ges eTMx i Rb` mvjdvi c+qM Ki+Z nq |

Rig c⁻ZKi+Yi DckwiZv

1. kvK-meiR P+li Rb` Rig DEgi+c Pvl I gB w`+q c⁻Z Kiv nq | meiR P+li Rb`
 gviU SzSzi Kiv nq weavq M+Qi kKo mn+R gviUi Af⁻Szi ctek K+i c+qRbq
 LvTM`vcv`vb I cwb AvniY Ki+Z cv+i |
2. DEgi+c Pvl Kiv Rig+Z mn+R evZm PjvPj K+i | d+j M+Qi kKo c+qRbq kmb-TMμqv
 Pm+jq th+Z cv+i | ZQvov gviU+Z Dckvix AbRe, +jv⁻vfweK KvRKg Ki+Z cv+i |
3. Pvl Kiv Rig+Z mn+R Av+jv-evZm ctek K+i weavq gviUi⁻vfweK Zvc eRvq _vK |
 G+Z ex+Ri mnR ATMzi`Mg Ges kK+oi`TMwe⁻Z.N+U |
4. gviUi im Ges Deiv kTM3 I P+li gva`tg eTMx cvq |
5. DchTM im Ges Zvc gviUi Af⁻Szi b+B+Uv+Rb Ave×KiY e⁻vK+UliqvK (ivB+Rveqvq)
 KgTMg iv+L |
6. fv+jvfv#e Pvl I gB t`qv Rig+Z tgvUgvTM mgvb MfxiZvq meiR exR ecb Kiv mae nq |
7. SzSzi gviU+Z exR gviUKYvi ms⁻ú+k Avm+Z cv+i Ges cwb MnY K+i ATMzi`Mg
 wTMbTMöZ I`TMZZi K+i |
8. gviUi KYv tQvU n+j ec+bi ci mn+RB exR+K gviU w`+q tX+K t`qv hvq |
9. Pvl Kiv Rig A+cTMq A-Pvl Kiv Rig n+Z Kg cTMigvY cwb ev@úxfZ nq |
10. P+li gva`tg gviUi m+<sup>-</sup>Re mvi I ceeZx dm+jj Aeikóvsk w<sup>TM</sup>gk+q t`qv mae nq |
11. AvMqv Ges gviU+Z we⁻gvb qTMZKi tcvKiv-gvKo Rig P+li gva`tg`gb Kiv mae nq |

Rig ^Zi

kvK-meiRi Rb` mva+iYZ
20-25 tm.wg. Mfxi K+i
Rig Pvl Ki+jB P+jj

mvdj`RbKfv#e meiR Drcv`+bi Rb` c+qRb mVkf#e Rig ^Zi Kiv | Rig Pvlvev`i
 Av+M Rig+K mgZj K+i wTMbZ n+e | Rig+Z hv` AvBj ^Zi Kiv _vK Z+e Zv tTMf+Z tTMdj+Z
 n+e |

me|R Drcv`#bi Rb" Rig ^Z||i c×||Z#K `Mv#M Ki v hvq| h_v-

K. **cv** **gKf** **v** **e** **R** **g** **^Z** **i** **K** **i** **Y** **t** *mvaviYZ gwiU ô†Rvô Avmvi mv‡ mv‡ cvlqvi wUjvi ev tiv†Uv†fUi ev jv½‡ji mvrn†h” evievi Mfxi fv‡e PvI K‡i I gB w`‡q gwiU SzSzi I †Xjvgy Ki‡Z n‡e |*

teɪkɪfɪM kɪK-meɪRi Rb" mɪvɪYZ
20-25 tɪ.ɪg. Mfɪ Kɪ Rɪg Pɪl
KɪɪjB Pɪj | gɪRɪZɪq mɪRi tɛjvq G
MfɪZɪ 30-35 tɪ.ɪg. nɪZ cɪɪ | Zɛ
GK tɔ̃sɪtɔ̃g Rɪg Mfɪ Kɪ Pɪl bɪ ɪ̃tɔ̃
KɪqK tɔ̃sɪtɔ̃g Aɪ Aɪ Kɪ MfɪZɪ
eɪvɪbɪ tɪq | KɪY GKɛɪɪB Mfɪ Pɪl
ɪ̃qɪ nɪj ɪbɔ̃ɪɪ gɪU AɪK cɪɪɪY
DɔɪfɪM Pɪj Aɪm Ges tɪ tɪɪɪ
fɪɪjv dɪb AɪKɪ Kɪv hɪq bɪ | Rɪg tɪRɪ
ɪ̃KɪVɪjɪb Aẽvq Pɪl ɪ̃qɪ DɪPZ bɪ
tɪRɪ Aẽvq Pɪl ɪ̃ɪj Kɪ ɪ̃gɪU ɪ̃ɪKɪq
k³ nɪq cɪo Ges cɪɪ gB ɪ̃tɔ̃ PɪKɪ
fɪɪv KóKɪ nɪq ɪ̃vɪq | ɪ̃v-AɪKɪ gɪU
GKUɪtɪRɪ tɪRɪ Aẽvq Pɪl Kɪv Pɪj |
Zɛ G gɪU ɪ̃KɪɪjB tɪKɪ Zɪ gB ɪ̃qɪ
Dchɪ nɪ |

¶PÎ 4.2: jv⁴2j ev cv lqv i ¶Ujvi ¶`†q
g¶U Pvl l †Xjv g³ KiY

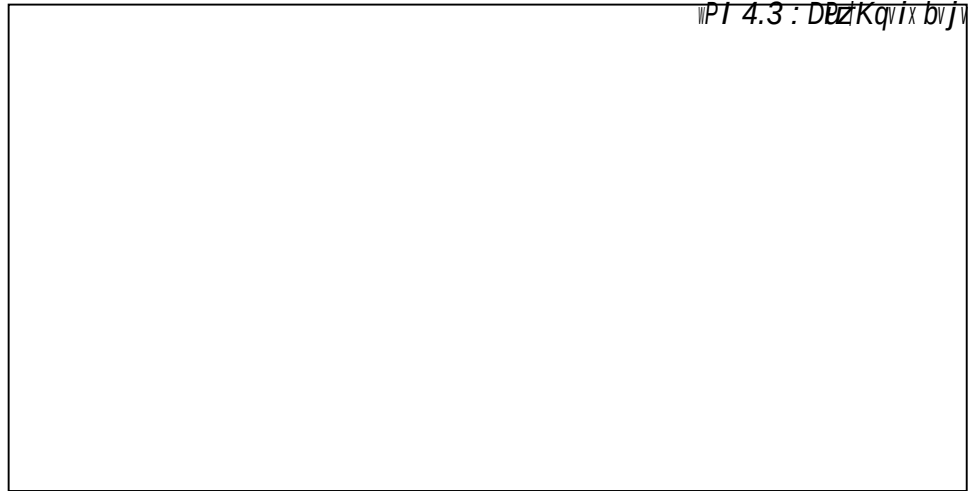
L. ØZxq chtq Riq ʔniKiYt teiki fWm meIR dmj RjveXZv tgʷUB mn̩ KiʔZ cvʔi
bv | G Rb̩ tm̩Pi cv̩bi mʷyɡ eʔenvi Ges ʔZ b̩@kb Ges Ab̩v̩ c̩iPhvi mʷeavi Rb̩
cv̩_ɡKf̩te Riq P̩l Kivi ci dm̩ʔji tiv̩Y/ecb̩ ʔʔZi mv̩ʔ m̩ʔZ tiʔL ØZxq chtq
Riq ʔni KiʔZ nq | G̩U we̩ fb̩ meIR dm̩ʔji Rb̩ we̩ fb̩ iKɡ nq | thɡb-

1. DPz(20 fm.ig.) †Kqvi x bvjv (¶PÎ 4.3) c×iZt U†g†Uv, †e, b, evaivKic, dZKic, WwUv, jvjKvK BZ"v" |
2. DPz(20 fm.ig.) †Kj bvjv (¶PÎ 4.4) c×iZt †jUk gUiivU, †Xak, gviP, eievU BZ"v" |
3. †Xve ev g`v c×iZ (¶PÎ 4.5) t jvD, †góKgov, PvjKgov, †kg BZ"v" |
4. Rvj c×iZt †MqvKjgx, Av`v, njy BZ"v" |

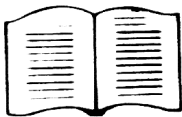
WPI 4.3 : DEZ Kqvi x bvi v



PI 4.3 : DēzKqvix bvjv



PI 4.4 : Xie ev gv v c×IZ



migg

- meiR Pvl*li* Rb^o Rlg Dēzēb^ogy^o, c^oib t^omP I ^ob^ov^ok^obi m^oea^omn mgZj I t^oiš^ov^o4j n^olqv D^oIPZ| R^ogi m^ot^o evR^ot^oi i t^oh^oM^ot^oh^oM e^oe^ov D^obZ n^otZ n^ote|
- ^oRe-m^ovimg^o t^ov-A^ov^ok g^oU meiR Pvl*li* Rb^o Dēg| g^oU^oi c.GBP 6 t^ot^oK 7 Gi g^ot^oS ^ovK^o f^ov^ojv|
- meiR Pvl*li* Rb^o Rlg Dēgi^ot^oc Pvl Kiv c^otqvRb| Pvl Kiv Rlg^oZ m^on^ot^oR Av^ot^ojv-evZ^ovm c^otek K^oi Ges ex^ot^oRi ^ov^of^ov^oek AsK^oz^ov^o Mg N^otU|
- Pvl*li* gva^ot^og ^oRe-m^ovi I c^oyeZ^o dm^ot^oji Ae^ok^oó^osk ^og^oj^ot^oq t^oqv m^oae nq, Z^ov^oZ Av^oM^ov^oq I g^oU^ot^oZ ^oie^og^ovb ^oz^oKi t^oc^ov^oK^ov-g^oko ^ogb Kiv h^ovq|
- t^oe^oki f^ovM meiR Pvl*li* Rb^o 20-25 t^om.g. Mf^oxi K^oi Rlg Pvl Ki^ot^ojB P^ot^oj| g^oj^oR^ov^oZ^oq meiRi t^oejvq G Mf^oxiZ^o 30-35 t^om.g. n^olqv c^otqvRb|



cvtWĖi gj`vqb 4.1

1. mZ` n+j Ômô Ges ¶g\_`v n+j Ô¶gô ¶jLb|

- K. meiR PvlIi Rb` DĖzeb`vgŷ R¶g `iKvi |
 L. meiR PvlIi Rb` te+j gvU meþPþq DĖg |
 M. meiR PvlIi gvUi ^Re mvi mgx nIqv D¶PZ |

2. ĩb`vb cþY Kiab|

- K. meiR PvlIi Rb` gvUi ¶c.GBP nIqv D¶PZ þ_þK |
 L. maviiY gvU Avmvi mvt_ mvt_ SžSžI I þXjvgŷ KiþZ nþe |
 M. te¶kifvM meiRi Rb` gvU þm.¶g. Mfxi Kþi Pvl Kiv D¶PZ |

3. mVK DĖþii cþk ¶UK ¶Pý (√) ¶`b|

- K. gvUi AþZ evovþbvi Rb` Kx cþqvM Kiv D¶PZ?
 1. Pþ 2. mvjdivi
 3. ^Re mvi 4. `v
- L. Pvl Kiv R¶gþZ Avþjv evZvm cþek Kivi dþj gvUi þKvb , Yv, Y eRvq _vþK?
 1. ¶c.GBP 2. jebv³Zv
 3. Zvc 4. is
- M. gvUþZ Dchy DòZv eRvq _vKþj þKvbU Kg¶g _vþK?
 1. e`vKþU¶iqv 2. QĖK
 3. K¶g. 4. fvBivm

4. GK K_vq ev evþK` DĖi ¶`b|

- K. jvD, Kgoi Rb` ¶ØZxq chvþq þKvb c×¶ZþZ R¶g ^Zii Kiv `iKvi?
 L. gj-RvZxq meiRi þ¶þĖ KZUkMfxi Kþi R¶g Pvl Kiv D¶PZ?
 M. meiR Drcv`þbi Rb` R¶g ^Zii c×¶ZþK KZfvþM fvM Kiv hvq?

c_vV 4.2 m_vi / m_vi c_qvM



GB c_vV †k‡/ A_vc_wb

- $me\|R\ P\|I\ \|e\|f\ b\ ^\circ Re\ I\ i\ v\ m\ v\ q\|b\ K\ m\ v\ i\ e\ ^\circ en\ v\|i\ i\ c\|q\ v\ R\ b\ x\ q\ Z\ v\ e\ ^\circ v\ L\ ^\circ v\ Ki\|Z\ c\ v\ i\|e\ b\|$
- $m\ v\|i\ i\ P\|w\ n\ ^\circ v\ \|b\|i\|c\|Y\ \|e\|e\|P\| ^\circ \|e\|l\ q\|_3\|j\ v\ e\ Y\ b\ v\ Ki\|Z\ c\ v\ i\|e\ b\|$
- $m\ v\ i\ c\|q\ v\ M\ c\ x\|Z\ e\ Y\ b\ v\ Ki\|Z\ c\ v\ i\|e\ b\|$



gwiUzZ Lv³`vcv`v³bi Afve tglv³bvi Rb³, gwiUi DeiZv k³ e³x³i Rb³ Ges KLbI KLbI
gwiUi t f³SZ I ivmvqibK Ae⁻vi DbvZ NvU³q dmj Drcv³ t³b m³nvh³ Kivi Rb³ R³ig³Z t³h³ e³
c³q³vM Kiv nq t³m, t³jv³tK mvi e³t³j | mvi g³f³Z t³ai³t³Yi n³q³ v³t³K | h³v-³Re mvi I A³%Re
ev ivmvqibK mvi | ^Re m³v³t³i Drm n³t³jv D³TM³ I cvYxRvZ³ e³ | Av³i A³%Re mvi L³wB³R c³v³
t³t³K ivmvqibK c³v³uq³q Kv³iLv³bvq ^Z³vi Kiv nq |

^Re mvi e"env‡ii c‡qvRbxqZv

hni 1 1Re mvi1 Dm1m1 1 Lf1 1vcv1vb Kg c1igv1Y 1v1K1 1Kš me1R Dr1V1 1b Gi 1i1Z
Ac1im1g1 1Re mvi n1 1Q g1m1Ui cv1Y1 L1gv1R1Z mvi (1tM1ei, 1tM1Pbv, M1zev1Q1i L1ev1ii
Dm1Q0, K1 1úv0, n1n1-g1m1xi we0n, 1Lj) me1R mvi, K1p1c1vb cf1Z 1Re mvi1i Dm1 1b1P
1Re mvi e1en1v1ii c1gv1Rb1q1Z Av1j1v1Pbv Ki1v n1j1v1

^Re mvi e"env†ii .iaZ

- K. $\sim$ Re mvi e $\sim$ env*i* gwiU $\ddot{Z}$ $\sim$ Re c $\dot{v}\dot{\vdash}$ $_i$ ciwigvY te $\dot{o}$ hvq|
- L. $\sim$ Re mvi Mv $\dot{Q}i$ Lv $\sim\sim$ f v $\dot{U}i$ wntm $\dot{e}$ GK , i $\ddot{z}$ Cc $\dot{y}$ fvgKv cvjb K $\dot{i}$ $_v\dot{\vdash}$ K, hv `xNw`b a $\dot{i}$ MwQ e $\sim$ env*i* Ki $\dot{z}$ Cv $\dot{i}$ |
- M. $\sim$ Re mvi e $\sim$ env*i* gwUi , Yv , Y DbZ nq| G $\dot{z}$ Mv $\dot{Q}i$ cy $\acute{o}$ Dcv`vb I cwib aviY ¶gZv ew $\times$ cvq; GgbwK te $\dot{j}$ I t $\dot{v}$ -Awk gwU $\dot{z}$ Cwib I mv $\dot{i}$ i AcPq K $\dot{g}$ hvq|
- N. Mv $\dot{Q}i$ Abw $\sim$ -Dcv $\dot{v}\dot{\vdash}$ bi Drm wntm $\dot{e}$ $\sim$ Re mv $\dot{i}$ i fvgKv i $\dot{q}\dot{q}$ |
- O. $\sim$ Re mvi e $\sim$ env*i* gwU $\dot{z}$ evqyPjvpJ te $\dot{o}$ hvq, Ges gwU $\bar{ }$ DckVix RxevYy ¶mqvKjvcI te $\dot{o}$ hvq|
- P. gwUi im aviY ¶gZv ewo $\dot{q}$ t $\dot{`q}$ | G $\dot{z}$ dm $\dot{j}$ i Liv-mnbkxjZv te $\dot{o}$ hvq Ges tm $\dot{t}$ Pi cwibI mwVKfv $\dot{e}$ e $\sim$ eüZ nq|
- Q. Mx@ $\dot{s}$ Kv $\dot{j}$ gwUi ZvcgvÎv Kw $\dot{g}\dot{q}$ t $\dot{`q}$ Ges kxZKv $\dot{j}$ gwU $\dot{z}$ K Dò ivL $\dot{z}$ mnrvh $\sim$ K $\dot{i}$ |
- R. Rig $\dot{z}$ KxUbvkK Jla I ivmvqwBK mv $\dot{i}$ i AwiaK $\bar{ }R$ wBz tkv $\dot{v}$ bv weI¶mqv mw $\acute{o}$ nt $\dot{j}$ $\sim$ Re mvi H weIv ^{3} Zv Kgq $\dot{z}$ mnrvh $\sim$ K $\dot{i}$ |

L. *i v m v q w b K m v i e " e n v ‡ i i c ‡ q v R b x q Z v*

ivmqwbK mv*i* carbZ GK ev GKwaK Lv^ˆvcv^ˆvb tekk ciigvY_v^ˆK| AiaKvsk †¶^ˆI
G,†jv cwb†Z `eYxq nliqv gwU†Z c†qvMi mv_† mv_† G^ˆˆi Lv^ˆˆvcv^ˆvb Dm^ˆ†ˆi wBKU
Mny†hm^ˆ nq| gwU†Z Lv^ˆˆvcv^ˆv†bi Afve `yKiZ n†j ivmqwbK mvi e^ˆen†i ZiZ dj
cvlqv hvq| Z†e gwU†Z ivmqwbK mv†ii cfve ¶Y^ˆvqx| evsjv††k e^ˆeüZ carb ivmqwbK
mvi,†jv n†jv BDwiqv, ¶Ucj m†vi dm†dU (¶U.Gm.¶c), ¶gD†iU cUvk (Gg.¶c), ¶Rcmvg
BZ^ˆv^ˆ|

meR Pv#I mv#ii Pvn`y wbiCY

g_wU_‡Z D_w™_‡`i L<sub>v‡</sub>`"vcv`vb
mieiv_‡ni Rb" th mKj
`e" c_‡q_vM Kiv nq Z_{v‡}K
mvi e_‡j |

^Re mvi n†"Q gwiUi cvY
LvgviRvZ mvi ^Lj, meR
mvi, KPzicbv cfwZ.^Re
mv†jj Drml

gwlU†Z Lv†`"vc`v†bi Afve
`†Ki†Z n†j ivmvqllbK
mvi e"env†i ZwiZ dj
cv lqv hvq l

meiR Pvl*i* c#e mvi*i* Pwin`v wbi|cY Kiv AZ`Š , iZcY KvR| meiRi Pwin`v A#c¶v Kg mvi c#qM Ki+j GK`K thgb meiRi djb K#g hvte| Ab`K tek e`envi Ki+j mvi*i* AcPq nte Ges Rigi , Yv, Y bó nte| th weIq, jv wePbv K+i meiR Pvl mvi*i* Pwin`v wbi|cY Ki+Z nq tm, jv n+jv—

cvZvRvZxq meiR+Z
bvB+Uv+Rb, dZ I dj
RvZxq meiR+Z dmdim
Ges g+j ev K>` RvZxq
meiR+Z cUvk mvi tek
jv+M|

AoZ Kgvevi Rb` Pz Ges
AoZ evovevi Rb`
mjdvmgx mvi c#qM
Ki+Z nq|

- meiR Pvlvef`i c#e gvuU+Z KZUKZLv`vcv`vb i+q#Q Zv gvuU cix¶v K+i tei K+i wB+Z nte| tKv+bv Lv`vcv`vb vfwek cwigvYi tP+q Kg vK+j Zv mvi c#qM+Mi gva#g c+iY K+i w`+Z nte| Gici dmj RŠv+Z nte| dmj msM+ni ci Avevi gvuU cix¶v K+i Rv+Z nte D³ dmj Rig t+K KZUKZwfb Lv`vcv`vb tkvIY K+i+Q| GB tkvIYKZ.cwigvYB n+jv D³ dm+jj mvi*i* Pwin`v|
- wefb ai+Yi meiRi mvi*i* Pwin`v wefb iK+gi n+q v+K| thgb - **1.** cvZvRvZxq dm+j bvB+Uv+Rb tek`iKvi, **2.** dZ I dj RvZxq meiRi Rb` tek`iKvi dmdim Ges **3.** g j RvZxq dm+jj Rb` tek`iKvi cUvkqg|
- meiR Pvl*i* tgqv`etePbvq G+bl mvi*i* Pwin`v wByq Kiv th+Z cv+i| Aí-mgq tgqv`x meiRi tejq tek-mgq tgqv`x meiR n+Z Kg cigvY mvi*i* c#qRb nq| gvuU+Z AoZ ¶vi+Zi fvimv+g`i DciI mvi*i* Pwin`v wbf i K+i| AaKvsk meiRi Rb` 6-7 GKK Aa-¶viZ A\_vr mvgvb` AoZ me+P+q tek Dc+hvMx| AoZ Kgvevi Rb` Pz Ges AoZ evovevi Rb` mjdvmgx mvi c#qM Ki+Z nq|

me+k+l g+b ivL+Z nte mvi*i* Pwin`v tgvU+vi Rb` c+jvcyi ivmvqibK mvi*i* Dci wbf i bv K+i Re mvi e`envi Kiv DiPZ| meiRi gZ Lv`vcv`vb, jvi tgvU Pwin`vi AŠZ 10-15% Lv`vcv`vb Re mvi t+K Avmv DiPZ|

mvi c#qM c×Z

mvi c#qM Kvμg+K
mvaviYZ tgšj c#qM Ges
Dcic#qM GB`f+vM
fVM Kiv hvq|

meiR Drcv`tb mvi c#qM c×Z , iZcY fvgKv ivL| gvuU t+fšZ I ivmvqibK Ae<sup>-</sup>v, AvenvIqv, mvi*i* cKvi, cigvY, meiRi aib I wK+oi cK+Zi Dci wbf i K+i mvi*i* c#qM c×Z wefb iKg n+q v+K| mvi c#qM Kvμg+K mvaiYZ tgšj c#qM Ges Dcic#qM GB`f+vM fVM Kiv hvq| cvwgK Rig Zii mgq mvi c#qM Kiv+KB tgšj c#qM e+j| Dcic#qM ej+Z Rig+Z meiR dmj tivcy/ecb Kivi ci mvi c#qM Kiv+K tevSvq|

¶Qu+q mvi c#qM

tgvU+gvuU Mv+Qi myeb`
wkKo cYvjx`Zii nevi
c+iB ¶Qu+q mvi c#qM
Ki+j Zvi`¶ e`envi nq|

mvaviYZ`jev+i ¶Qu+q mvi c#qM Kiv n+q v+K| tgšjc#qM wntm+e Rig Pvl*i* ci mvi ¶Qu+bv n+q v+K Ges gB w`+q gvuU mvi wgvk+q t`qv nq (¶PÍ 4.6)| Avi Dcic#qM wntm+e Mv+Qi A½R e½xKvxb mg+q mvi ¶Qu+bv n+q v+K Ges tm+Pi cvb ev wbowb w`+q gvuU+Z wgvk+q t`qv nq (¶PÍ 4.7)| ¶Qu+q mvi c#qM c×Zi myeav n+jv mvi c#qM mnRZi Ges Kg e`q e+j| Avi Amyeav n+jv dmdim I cUvk gvuU+Z AaK cigvY Ave× n+q c+o e+j Mv+Qi wBKU MnY+hvM Ae⁻vq v+K bv| tgvU+gvuU myeb`Š wkKo cYvjx`Zii bv nIqv chŠ MvQ`¶Zvi mvi G c×Z+Z c#qM Kiv mvi e`envi Ki+Z m¶lg nq bv| GQvov A½R e½xi mgq Dcic#qM+Mi gva#g mvi ¶Qu+q t`qv n+j Mv+Qi cvZv R+j hvevi mavbv v+K|

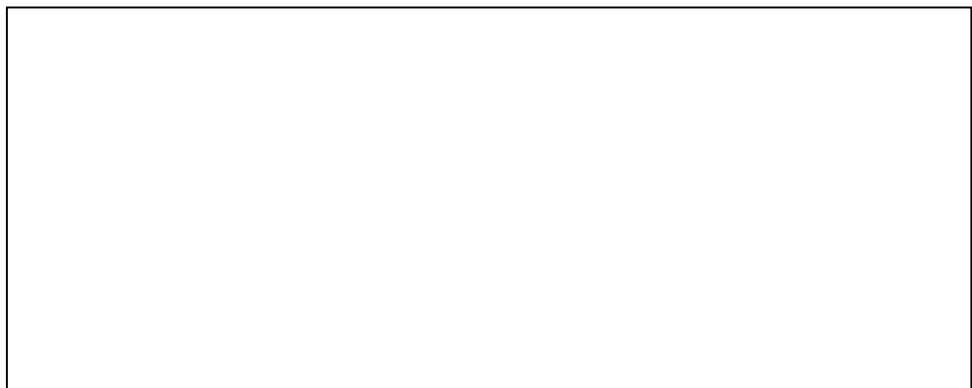




PÎ 4.7 Dc||i c†qvM

gvU†Z ||b||ó RvqMvq mvi c†qvM

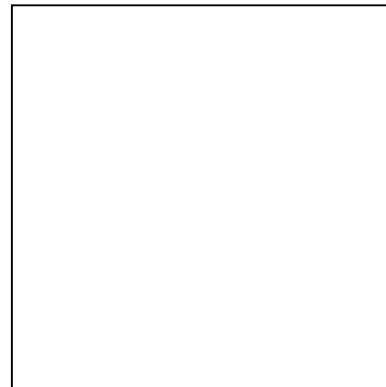
G c×||Z†Z mvi c†qv†Mi d†j exR ev Mv†Qi hv†Z †Kv†bvijc ¶||Z bv nq †mRb" ||bivc` `†Z eRvq †i†L gvU|| ||b†P mvi c†qvM Kiv n†q _v†K (PÎ 4.8)| ex†Ri ||bKU mvi c†qv†Mi †¶††† cv†k I MfxiZvq h_vμ†g 8-10 †m.†g. `†Z eRvq ivLv D||PZ| Avi Mv†Qi tejvq mvi c†qv†Mi †¶††† ||kK†oi ||e`||Z j ¶" †i†L mvi c†qvM Kiv D||PZ| G c×||Z†Z A†c¶||vKZ.Aí c||igvY mvi c†qvM K†i A||aK c||igvY djb cvlqv hvq| Amyea n†"Q GKUze||k e"qeûj |



PI 4.8 K. cvk c†qvM

**mvi c†qv†Mi gvîv**

meiR dm†ji cKvi, cKlZ, djb I Rigi
 DeiZvi Dci mvi c†qv†Mi gvîv ‖bfi K†i|
 ‖elqU KviMvi Z_ ‖bfi Ges ev̄e
 A†fÁZvi ‖f‖Ē†Z ‖baviY Ki†Z nq| cieZx
 cvV, †jv†Z (cvV-5,6,7) evsjv†`†ki ‖eifb
 meiR dm†ji ivmvq†bK I ^Re mv†ii gvîv
 eYbv Kiv n†q†Q|



‖PI 4.8 L. ‖is c†qvM

mvi c†qv†M mveavbZv

1. cvZv †fRv _vK†j Dc†ic†qvM K†i mv†ii ēenvi meiRi Rb̄ †‖ZKi|
2. †m†Pi ce g††Z BD†iqv mvi c†qvM Kiv D†PZ bq| G†Z BD†iqv mvi gvU†i eû ‖b†P P†j hv†e|
3. meiR dm†j mivmvi KivD† ^Lj, †Mvei, Pz, nv†oi ,ov c†qvM Kiv D†PZ bq| Ggb†K
 Gmḡ mvi KivD† Aēvq Lv†j R†g†Z c†qvM Kivi GK gv†mi g†ā exR/Pv†v †ivcY Kiv
 D†PZ bq|
4. gvU†i A†Z -†‖v†Zi mv†_ msM†Z †i†L mvi c†qvM Kiv D†PZ|
5. ‖b†j ‖LZ mvi ,†jv†i cv†_ú†iK ‖gk†Y c†Z†μqv nq Ges †mfv†e c̄`††c †bqv D†PZ:
 ○ Pz, m†vi dm†dU, nv†oi ,ov, Ḡv†g†bqv m†j†dU, †Mvei mvi, K†áúv÷, ‖eifb
 ‖eōv mv†ii mv†_ ‖g†k†q ēenvi Kiv D†PZ bq|
 ○ K̄v†m†qv bvB†UU KLB† Ḡv†g†bqv m†j†dU, †Mvei mvi, Lv†vi mvi ‖Ksev ‖eifb
 ‖eōv mv†ii m†½ †gk†bv ‖VK bq|
 ○ Pz cUvk RvZxq mv†ii mv†_ †gk†j m†½ m†½B c†qvM Ki†Z n†e|

**mvi gg**

- mvi `B cKv†ii; h_v- ^Re I A%Re mvi|
- dmj RŠ†bv†i c†e I c†i gvU†i c†x††v K†i mv†ii P†n̄v ‖bi†cY Kiv hvq|
- mvi mvav†YZ gvU†Z ‖Q†U†q I gvU†i ‖b†`ó RvqM†q c†qvM Kiv n†q _v†K|
- mvi c†qv†Mi mgq M†Qi cvZv †fRv _vKv D†PZ bv|
- ^Re mvi KivD† Aēvq mivmvi dmj †††Z c†qvM Kiv ‖VK bq|



cvtWĖi gj'vqb 4.2

1. mZ' n+j Ômô Ges ig_ 'v n+j Ôigô jLb|

K. MvQi RxbPμ m'ú¥KiZ †gvU 20U Lv'`vcv`vb Avek`K|

L. gvuU†Z †QvU†q mvi c†qvM c×iZ me†P†q mnR Ges Kg e'qeûj|

M. cvZv RvZxq meiR gvuU †_†K dmdivm mvi teik c†igv†Y msMn K†i|

2. ĩb'vb c†Y Kiib|

K. c×iZ†Z Aí mvi c†qvM K†i AiaK djb cvIqv hvq|

L. dmj RŠ†v†bvi I gvuU cix†v K†i mvi i Pvn`v †bi|cY Kiv hvq|

M. Pz RvZxq mvi i mvi †gkv†j m†½ m†½B c†qvM KiZ nq|

3. mVK DĖ†ii c†k †UK †Pý (√) †b|

K. †KvbiU gvuUi †fŠiZK I i vmvqibK Ae`vi Db†Z NUvq bv?

- | | |
|-------------|----------|
| 1. A%Re mvi | 2. cvib |
| 3. ^Re mvi | 4. evZvm |

L. gvuUi bvB†Uv†R†bi Afve `†KiZ n+j †Kvb mvi c†qv†M `Z dj cvIqv hvq?

- | | |
|--------------|-----------|
| 1. nv†oi ,ov | 2. †Mvei |
| 3. K†púvó | 4. BD†iqv |

M. dž I dj RvZxq meiRi Rb' †Kvb mvi teik c†qvRb?

- | | |
|-----------|-------------|
| 1. BD†iqv | 2. †Mvei |
| 3. dmdivm | 4. cUv†kqvq |

4. GK K_vq ev e†K' DĖi †b|

K. D†™` gvuU n†Z †Kvb Lv†`vcv`vb teik c†igv†Y MnY K†i?

L. †U.Gm.†c n†Z MvQ cavbZ †Kvb Dcv`vbU MnY K†i?

M. Klb mvi c†qvM Kiv D†PZ bq?

cvV 4.3 cwb tmP I wb@vkb**GB cV tkI Avcb**

- meiR PvI cwb tmP I wb@vkb¹ iZ eYbv KiZ cvi²eb|
- tmPi mVK mgq w³baviY we⁴teP⁵ we⁶lq, jv m⁷atÜ ejZ cvi⁸eb|
- we⁹fb ai¹⁰bi tmPc¹¹xZ m¹²atÜ w¹³jLZ I ejZ cvi¹⁴eb|
- meiR PvI e¹⁵eüZ we¹⁶fb tmPc¹⁷xZ eYbv KiZ cvi¹⁸eb|
- meiR e¹⁹x i tkv²⁰ tkv²¹ chv²²q cwb Avek²³K Zv eYbv KiZ cvi²⁴eb|

**meiR PvI cwb tmP I wb@vkb¹ iZ**

A²vaK³sk meiR M⁴atQi kZK⁵iv cvq 90 f⁶vMB cwb| tmRb⁷ meiRi m⁸atze⁹x i Rb¹⁰ cwb Ac¹¹inh| Ave¹²vi meiR dmj 2-3 w¹³bi te¹⁴k mg¹⁵qi Rb¹⁶ Rj¹⁷exZv tg¹⁸vUB mn¹⁹ KiZ cv²⁰i b²¹| GRb²² meiR t²³qZ cwb tmP I wb@vkb²⁴ m²⁵at e²⁶e²⁷vcb²⁸ GK²⁹vš Avek³⁰K| Av³¹gv³² i t³³tk k³⁴vZ t³⁵g³⁶m³⁷g Rb³⁸atbv meiRi m³⁹sL⁴⁰v te⁴¹k| w⁴²Kš Gmg⁴³q e⁴⁴at⁴⁵cv⁴⁶Zi c⁴⁷ig⁴⁸vY Kg| ZvB Gmg⁴⁹q cwb tmP Q⁵⁰ov meiR Drc⁵¹v⁵² b Kiv m⁵³ae bq| Ave⁵⁴vi M⁵⁵x⁵⁶òK⁵⁷v⁵⁸j meiR Drc⁵⁹v⁶⁰ b Li⁶¹vR⁶²ibZ K⁶³vi⁶⁴Y Li⁶⁵ic-1 G cwb tmP Ac⁶⁶inh n⁶⁷q c⁶⁸to| t⁶⁹Kej g⁷⁰v⁷¹ el⁷²vK⁷³v⁷⁴j (Li⁷⁵id-2) we⁷⁶bv tm⁷⁷P meiR Drc⁷⁸v⁷⁹ b m⁸⁰ae nq| Z⁸¹te G mg⁸²q A⁸³vZi⁸⁴ e⁸⁵at⁸⁶cv⁸⁷Zi Rb⁸⁸ cwb wb@vkb⁸⁹ m⁹⁰at e⁹¹e⁹²v⁹³ v⁹⁴K⁹⁵Z n⁹⁶te|

tmPi mgq

cwb tmPi Dch¹ mgq w²baviY i Rb³ w⁴at⁵ we⁶teP⁷ we⁸lq, jv g⁹tb i¹⁰vL¹¹Z n¹²te|

K. P¹iv MR²v³bvi ci t⁴ K d⁵z aiv chš meiRi c⁶wbi P⁷in⁸v m⁹gvš¹⁰q evo¹¹Z v¹²K| Z¹³vici G P¹⁴in¹⁵v Ave¹⁶vi Kg¹⁷Z v¹⁸K| ZvB D¹⁹at²⁰ i e²¹x i m²²at²³ Z²⁴vj w²⁵gv²⁶j²⁷q tmP KLb Ges KZ²⁸evi w²⁹ Z n³⁰te Zv w³¹VK K³²i w³³at³⁴Z nq (P³⁵l 4.9)| m³⁶vaviY³⁷ e³⁸at³⁹ bv v⁴⁰Kv Ae⁴¹vq meiRi d⁴²z Av⁴³mv chš R⁴⁴ig⁴⁵Z c⁴⁶vZ 10 w⁴⁷ b A⁴⁸š i tmP t⁴⁹ lq⁵⁰ t⁵¹h⁵²Z cv⁵³i|

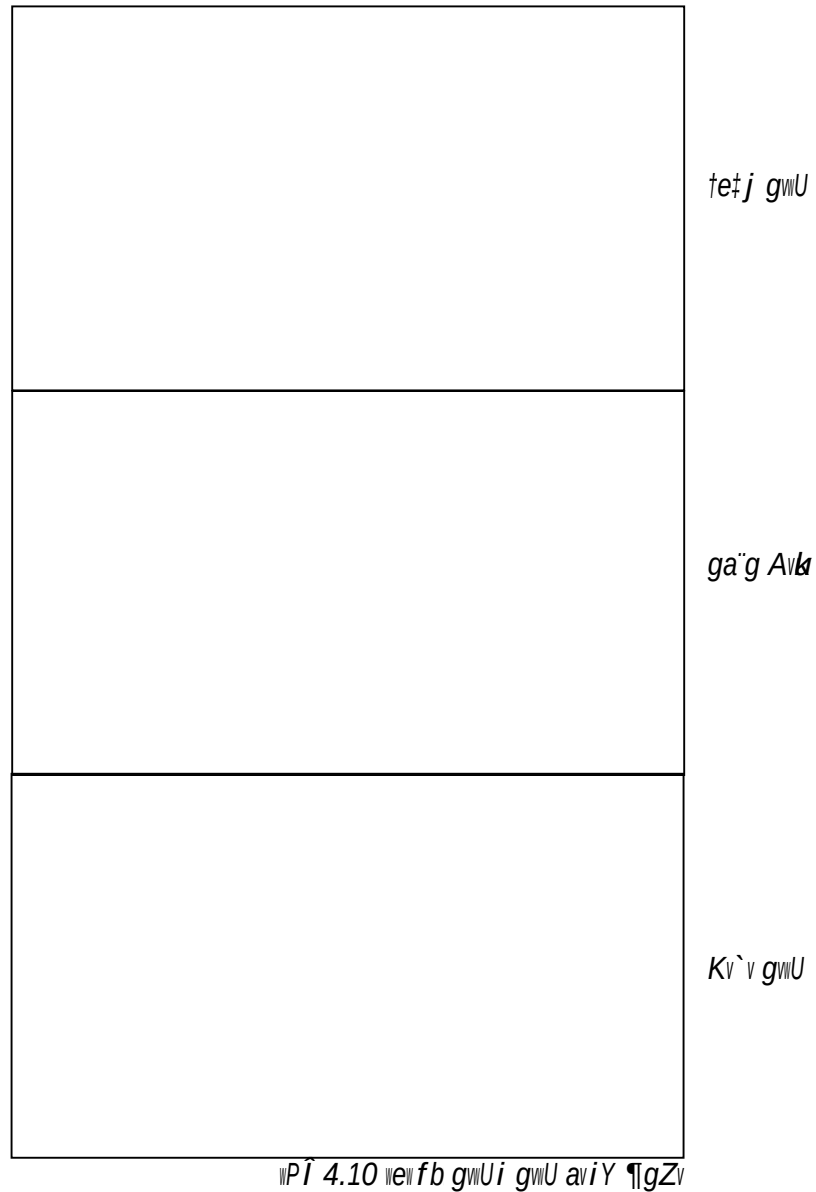
P¹iv MR²v³bvi ci t⁴ K d⁵z

aiv chš meiRi c⁶wbi

P⁷in⁸v m⁹gvš¹⁰q evo¹¹Z
v¹²K¹³I

w¹l 4.9 av²ub c³at⁴at⁵Mi m⁶at

- L. R_ggZ c_wbi Afve _vK_j g_wUi is nvjK_v ai₊bi nq| Ab_{''}_vq is Mvp _v₊K| g_wU iKb_v nvjK_v is aviY Ki₊j t_mP t_{''} Iqv D_wPZ|
- M. te₊j g_wUi c_wbaviY ¶gZ_v L_g Kg| G R_vZ_xq g_wU₊Z Nb Nb t_mP ¶₊Z n₊e (¶P_î 4.10)|



- N. ¶b₊Pi m ₊¶i m_vn₊h_{''} g_wU₊Z ¶e_{''}g_vb c_wbi c_wig_vY t_R₊b ¶b₊q meiR t_¶₊Z t_mP c₊q_vM Kiv t_h₊Z c_v₊i|

$$g_{w\&+}Z\ c_{w\&+}\ c_{w\&+}g_{v\&+}(\%) = \frac{1\ t_{K\&+}R\ g_{w\&+}\ I\ R_b - P_{\&+}j\ v_{\&+}Z\ i\ K_{v\&+}b_{v\&+}\ c_{v\&+}\ H\ g_{w\&+}\ I\ R_b}{i\ K_{\&+}b_{v\&+}g_{w\&+}\ I\ R_b} \times 100\ m\ \hat{I}$$

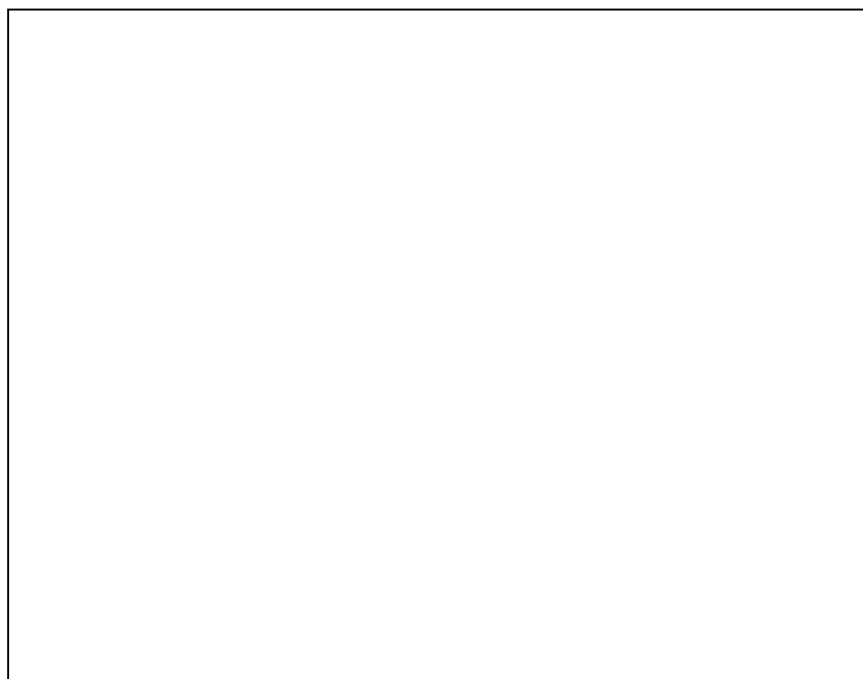
Ab_vq_x c_wbi kZKi_v nvi 50 Gi ¶b₊P G₊jB meiR t_¶₊Z t_mP t_{''} Iqv D_wPZ|

meiR Drc_v_{''}bi t_K_vb ch_v₊q g_wU₊Z meiR₊ K_x c_wig_vY c_wb _vK_v Avek_{''}K Z_v m_vi_w-1 G t_{''}L_v₊b_v n₊q₊Q|

meiY 1 : dm†ji †Kvb bRq Ae⁻vq cmbi Afve `†Kiv Avek'K

dmj	M†Qi e ₁ x ₁ th ch†q cmbi Afve `i Ki†Z n†e	G Ae ⁻ vq gvi meib ^a evAb†q gvi (%)
g ₁ KPzg:jv, MvRi	dm†ji c†i RxbKvj	50
Avj.	tóvj b n lqv chš Ges Avjyn lqv mgq	70
g ₁ ó Avj.	jZv jvMv†bv †_†K Pviv MRv†bv chš	50
U†g†Uv, te, b, WvUv kvK, c† kvK, †Xam, eieUx, †kg	dm†ji c†i RxbKvj	65
jv kvK	Pviv Ae ⁻ v I M†Qi e ₁ x ₁ cv_†gK ch†q	65
Kijv, Kv†ivj, kmv, cUj, jvD	dm†ji c†i RxbKvj	50
g ₁ ó Kgov, ZigR	dž †dvUv I d†ji e ₁ x ₁ Ae ⁻ vq	50
evK†c/dž K†c	evK†ci g ₁ v ev †i† ev džK†ci KvW n lqv †i† †_†K eo n lqv chš Ges Pviv jvMv†bv i cieZx 10 †`b chš	65

0. gvi im cix†v K†i I †m†Pi c†qvRbxqZv †bYq Kiv hv†e (†PÎ 4.11)



†PI 4.11 cmbi c†qvRbxqZv †bYq

†mP c†Z

†Kjx I bvjv †Ksev teW I
bvjv c†ZB meiR†Z
†m†Pi Rb† teik Dc†hvMx

evsjv†`k meiR Drcv`†b cveb (Flooding), †Kjx I bvjv (Ridge and Furrow), teW I
bvjv (Bed and Furrow) Ges SYv †mÂb c†Z†Z †mP †` Iqv nq| Z†e †Kjx I bvjv †Ksev

teW l bvjv c×ZB meIR‡Z †m‡Pi Rb" teWk Dc‡hWmX | emZ evox‡Z meIR P‡iIi †¶†I Aí
c‡igvY c‡v‡b Nb Nb c‡qvM Ki‡Z nq e‡j SYv mÂb c×Z DĖg | carbZ ‡Zb‡U c×Zi
gva‡g meIR †¶†I‡Z †mP †`qv n‡q _v‡K | c×Z ‡jv m‡‡Ü ‡b‡‡ eYbv Kiv n‡jv |

K. cộng hưởng từ

mgZj Rigi tŋi cveb
c×Z AbmY Ki v f v j v
bZv c v bi mge Ub mæ
ng bv

cəp̚ k̚ t̚mP ej̚Z meɪR t̚ʔ̚Z cveb A_ev meɪRi ʔ̚m̚vii gvSLv#b bvjv K̚i t̚mP t̚q̚K̚
tevSiq (ʔ̚P̚î 4.12) | G c̚x̚iZ̚Z̚ t̚vb̚ I t̚m̚D̚Zi m̚v̚v̚h̚ c̚k̚Z̚, Lvj-vej Ges b̚x̚ t̚_̚K̚ c̚v̚b̚
Z̚z̚j A_ev M̚f̚xi I A̚M̚f̚xi b̚jK̚ci m̚v̚v̚h̚ f̚_̚v̚b̚ c̚v̚bi m̚v̚v̚h̚ t̚mP t̚l̚q̚v̚ n̚q̚_̚v̚K̚ |
Ab̚vb̚ c̚x̚iZi t̚P̚q̚ G c̚x̚iZ m̚n̚R Ges Z̚z̚bv̚g j̚K̚f̚v̚e Kg LiP c̚o̚ | mgZj R̚gi t̚ʔ̚î̚
cveb c̚x̚iZ Ab̚m̚iY Ki̚v f̚i̚v̚j̚v | b̚Z̚v̚ c̚v̚bi m̚ge̚Ub̚ m̚æ̚ n̚q̚ bv̚ Ges t̚m̚Pi̚ ci̚ g̚v̚U̚
m̚n̚RB̚ K̚g̚v̚³ n̚q̚ c̚o̚ | bvjv K̚i t̚mP t̚q̚vi t̚ʔ̚î̚ R̚g GK̚ ̚K̚ A̚i̚ ʔ̚KQ̚v̚ X̚vj̚yn̚t̚j̚
c̚v̚bi̚ A̚c̚P̚q̚ Kg̚ n̚q̚ | Aek̚ te̚w̚K̚ X̚vj̚yn̚t̚j̚ t̚m̚Pi̚ d̚t̚j̚ g̚v̚U̚ a̚t̚q̚ h̚ve̚i̚ m̚æ̚v̚b̚_̚v̚K̚ |
A̚vg̚v̚i̚ t̚_̚k̚ A̚w̚K̚v̚sk̚ k̚v̚K̚-meɪRi t̚ʔ̚î̚ G c̚x̚iZ̚Z̚ t̚mP t̚q̚v̚ n̚q̚_̚v̚K̚ |

L. wba cõ#`k †mP

SiYv t̄mP c̄mb t̄m̄Pi
m̄t̄eRkÓ.c̄x̄Z| kni
ēx̄`ī emZev̄oi Ām̄½bvq
ī̄ c̄iim̄ī m̄ēR P̄r̄I G
c̄x̄Z Aek̄ Ab̄ȳiY Kīv
ng|

G c×||Z‡Z gwiUi ||bɔt`k n‡Z
me||R Mv‡Qi ||kKovÂ‡j cv||b
tciU‡q t`qv nq| G Ki‡R tQvU
||Q`hy cvB‡ci mvinh` tbqv nq
e‡j LiP tewk c‡o| Avgv‡`i t`‡k
G c×||Z‡Z me||R t¶||Z cv||b t‡mP
Ki v nq bv e‡j‡b P‡j| G c×||Zi
myea n‡jv gwiU K`gv³ nq bv|
d‡j gwiU‡Z evqyPjvPj Ae`vnZ
_v‡K|

M. SjYy tmP

G c×wZtZ cVb+ci wfi w`tq
 cwb mieivn Kti ei oi gZ wQvUtg
 cwb ctqvM Kiv nq (wPÎ 4.13)|
 Gu cwb tm+Pi mtevrKó..c×wZ|
 wKŠ e`qeúj etj G c×wZ AbwY
 Kiv mæ nq bv| kni e`ti
 emZewoi Aw½bvq í cwm+ti
 mewR Pw+I G c×wZ Aek` AbwY
 Kiv nq| SiYv tmP c×wZi mæav
 ntjv G c×wZtZ cwb mn+R
 mqvte eVub Kiv mæ nq| tm+Pi

--

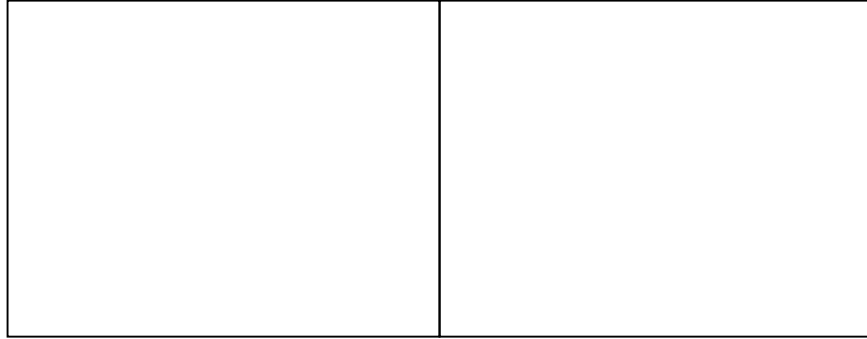
c- veb tmP

--

 $\dagger eW\ b_v\ j_v$

--

mgf vte e>Ub Kiv mæe nq| t̃m̃P̃i ̃P̃Î 4.12 c̃p̃t̃ k̃ t̃m̃P̃ c̃x̃Z̃ (ñṽZ̃ ̃t̃q̃ t̃K̃j)
d̃t̃j g̃w̃U ̃l̃q̃ eṽ ãt̃m̃i m̃æ̃eṽ ̃ṽt̃K̃ b̃ṽ| SiYṽ t̃m̃P̃ c̃x̃Z̃i t̃ej̃ṽq̃ R̃gi c̃p̃t̃ k̃ Ã eṽ
R̃gi D̃ci ̃t̃q̃ L̃ỹi D̃c̃t̃i c̃ṽB̃c̃ em̃ṽb̃ṽ nq| G̃ici G̃K̃ ̃g̃Ũvi c̃ici Ñỹq̃g̃ṽb̃ SiYṽ
j̃m̃M̃t̃q̃ t̃ l̃q̃ṽ nq| G̃i g̃ṽãt̃g̃ c̃w̃b̃ ẽj̃õ ÃiṽK̃t̃i R̃gi P̃ṽĩĩ k̃K̃ Q̃õt̃q̃ t̃ l̃q̃ṽ nq| M̃ṽQ̃ d̃x̃
ãiṽ Ãẽṽq̃ SiYṽ c̃x̃Z̃t̃ t̃m̃P̃ ̃t̃j̃ c̃iṽM̃q̃b̃i ẽṽÑṽZ̃ Ñt̃Ũ l̃ d̃j̃ K̃g̃ãt̃i|



MvQi tMvoq cwb Rtg
vKj km#bi Rb
c#qvRbxq A· #Rb bv t#q
kkKo A#K#Rv n#q c#o

gvU#Z A· #R#bi Afv#e
AcKvix RxeYy eske#x
N#U Ges DcKvix RxeYy
eske#x#Z e#vNvZ N#U

cwb b@kb

evsjv#`k elvKvj meiR t#Z RjvexZv GKU weivU mgm#v| AaKvsk meiR RjvexZv
 tgv#UB mn# Ki#Z cv#i bv| MvQi tMvoq cwb Rtg vKj km#bi Rb# c#qvRbxq A· #Rb
 bv t#q kkKo A#K#Rv n#q c#o| teik#Y G Ae#v weivR Ki#j jR meiR tetP vK#Z
 cv#i bv| b#Pi cvZv jvj n#q S#i cov RjvexZvi j#Y| gvU#Z A#Zi³ cwb vK#j
 meiR MvQi th #Z nq tm, #jv n#jv-

- 1) gvUi i#Ü evqyPjvPj weNZ nq Ges cwb#Z c# vK#j kK#oi kvm e#vNz nq e#j
 MvQi e#x nvm cvq Ges tivM-evjvB#qi AvμgY teik nq Ges c#i#k#l kkKo g#i hvq|
- 2) kkKo gvUi Mf#i c#ek Ki#Z cv#i bv|
- 3) gvU#Z A· #R#bi Afv#e AcKvix RxeYy eske#x N#U Ges DcKvix RxeYy eske#x#Z
 e#vNvZ N#U|
- 4) MvQi MnYthvM# bvB#UU (NO₃) bvBUvBU (NO₂) Ges mvj#dU (SO₄) mvjd#B#W
 (SO₂) c#ie#ZZ nq| G, #jv MvQ MnY Ki#Z cv#i bv|
- 5) gvUi Zvcgv#v nvm cvq, d#j MvQi e#x/djb fv#jv nq bv|
- 6) RjvexZv n#j gvUi jeY# we#a#Z I #b:miY n#Z cv#i bv|

meagZ b@kb c#Z MnY Ki#j A#Zi³ tmP ev ej#i c#bi RjvexZv mgvab Kiv m#e|
 G, #jv n#Q b@kb bvjv #Zi Kiv, ea #bgvY, c#bi MvZ c#ieZ#bi Rb# bvjv #Zi I cvKv
 tmP bvjv Ges D#teW #Zi Kiv| G#Z K#i R#gi Dci A#Zi³ cwb Rgv n#Z cv#i bv|
 fv#i Kv#v gvU#Z mn#RB cwb Rtg| Gi#c gvU#Z #Re mvi A#ev b#x evNz cij gvU c#qvM
 K#i gvUi #b:miY I Abyeb #gZv e#x Kiv th#Z cv#i|

**migg**

- meiR Mv†Qi mōze,×i Rb" cwb Acinh|
- kxZ I Mx@Kvxb meiR Drcv`†b cwb tm†Pi c†qvRb| †Zgib elvKvxb meiR Drcv`†b cwb †b@vK†bi c†qvRb|
- Pvlv MRv†bvi ci †_†K d† ai v chš meiRi Rb" cwb Pvlv`v μgvš†q e,× cvq Ges cieZ†Z Pvlv`v Kg†Z _v†K|
- R†g†Z cwb Afve _vK†j gvUi is nvjKv ai†bi nq Ges D†™†`i cvZv †b†Z†q c†o|
- †íMfxi †kKoeikó meiR Drcv`†bi tejvq R†g†Z cwb c†igvY gvUi cwb aviY ††gZvi kZKiv 70 fv†Mi †b†P G†jB tmP †`Iqv D†PZ|
- meiR †††Z c††`k, †b@c††`k I SiYv tmP c×†Z†Z cwb tmP †`Iqv †h†Z cv†i|
- RjvexZv n†j gvUi jeYv` †e†ašZ I †b:miY n†Z cv†i bv|
- †b@vkb bv n†j gvU†Z Av · †R†bi Afv†e Ackvix RxeY† esk e,× N†U Ges DcKvix RxeY† esk e,×†Z e`NvZ N†U|
- †b@vkb bvjv ^Z†i, e†a †bgvY, cwb M†Z c†ieZ†bi Rb" bvjv ^Z†i Ges cvKv tmP bvjv I D††eW ^Z†i K†i AvZ†i³ tmP ev e††i cwb RjvexZv `†Kiv m†e|



cvtWĖi gj'vqb 4.3

1. mZ' n+j ōmō Ges ṽg_ 'v n+j ōgō ṽjLb|

K. t'vAvk gviUi cvib aviY ṽlgZv teik|

L. MvQi tMvovq cvib Rg+j c+`b cμqv e'vnZ nq|

M. RvgZ cvibi Afve n+j gviUi is mv`v Ges cvZv jvj nte|

2. ĩb'vb cĭY Kib|

K. AaKvsk meiR+Z kZKiv fVM cvib _v+K|

L. ejóenxb Ae`vq ..... ṽ`b cici meiR tṽ+Z tMP t' Iqv DiPZ|

M. evsjv`k teiki fVM tṽ+Ĥ tMP c×Z Aejab Kiv nq|

3. mVK DĖi i c+k ṽUK ṽPý (√) ṽ`b|

K. RvgZ cvibi Afve bv_vK+j gviUi is Kx iKg nq?

1. nvjKv

2. Mvp

3. Kvj+P

4. ev`vgx

L. ĩKvjxb meiRi tejvq gviUi cvib aviY ṽlgZv kZKiv KZ fvMi ṽb+P G+j tMP t' Iqv DiPZ?

1. 50 fVM

2. 60 fVM

3. 70 fVM

4. 80 fVM

M. Rjv×Zvi jṽY Kx?

1. Dc+ii cvZv jvj nIqv

2. ṽb+Pi cvZv jvj n+q Stō cov

3. ṽb+Pi cvZv Mvp meṽ nIqv

4. Dc+ii cvZv Mvp meṽ nIqv

4. GK K_vq ev ev+K' DĖi ṽ`b|

K. evsjv`k tKvb mgq cvib tMP Qvov meiR Drcv`b mæ bq?

L. tKvb dmj Rjv×Zv mn' Ki+Z cv+i bv?

M. MvQ dż aiv Ae`vq SiYv c×Z+Z tMP ṽ`+j Kx nq?



c_vV 4.4 Ašez_x c_wiPh_v

GB c_vV †k‡/ A_vc_wb

- *AšeZx cwiPhv ej+Z Kx tevSiq Zv ej+Z cvi+eb|*
- *we+kl we+kl AšeZx cwiPhv Ges t+m, +jvi c+qvRbxqZv m+ú+K ej+Z l wjL+Z cvi+eb|*
- *we+fb AšeZx cwiPhv, +jv KLb Ki+Z nq Zv eYbv Ki+Z cvi+eb|*



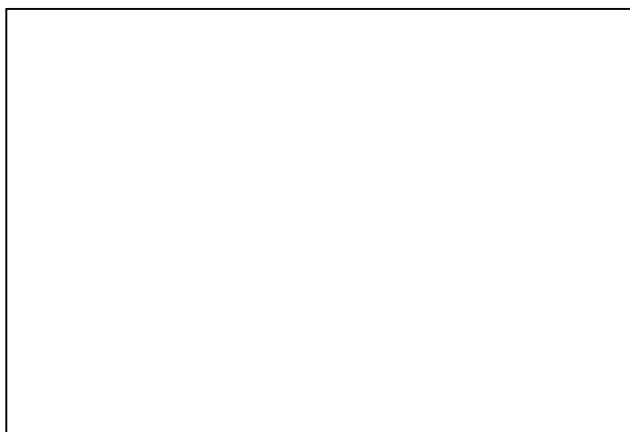
AšeZ_x c_WiPh_V

meiR exR ecb ev Pviv t+ivc†Yi ci n‡Z dmj msMn chŠ meiR Mv†Qi h_vh_ e|x, d‡ I
 djvq‡bi Rbˉ th mgˉ c‡iPhv Kiv nq t_m_‡jv‡K AŠeZx c‡iPhv e‡j| meiR Mv†Qi
 vfvieK e|x i Rbˉ Dch‡ c‡i‡ek m‡ó KivB n‡jv Gme c‡iPhvi D‡İkˉ| w‡‡P wefb
 AŠeZx c‡iPhv w‡‡q Av‡jvPbv Kiv n‡jv|

1. A_vŠ :K/Ÿ

meiR Riq#Z _vKvKvxb Ae⁻vq gwiU#K SzSzi i vLv i Rb" weifb mg#q Riq#Z th KIY Kiv
nq Zv#K Avš :KIY ejv nq| ciZevi epó I t#m#Pi ci gwiU i iK#q G#j gwiUi Dcwi fiv#M
k³ Av⁻iY c#o| d#j gwiUi Afš#i evZvm I cwib PjvPj e⁻vnZ nq| G#Z iKk#oi gva⁻tg
Mv#Qi kmb iμqv evavM⁻ nq| gwiU#Z we⁻gib DcKvix RxeYyZv#` i⁻vfweK KvRKg Ki#Z
c#i bv| Avš:KI#Yi d#j gwiUi⁻vfweK Zvcgvi v eRvq _v#K hv iK-bv meiRi⁻vfweK
e#x I DcKvix RxeYy esk we⁻vi Ae⁻vnZ ivL#Z mrvnh⁻ K#i| GQov Avš:KI#Yi d#j
AvMvQv⁻gbI n#q hvq| Avgv#` i⁻†#k mvaviYZ †RuAvmvi mv#⁻ mv#⁻ nvZ-Atov, †Kv⁻vj,
ibovib BZ⁻w⁻ i⁻†q 2-5 †m.ig. Mfxi K#i gwiUi⁻ i⁻†f#½ i⁻†q Avš:KIY Kiv n#q _v#K (iPí
4.14)|

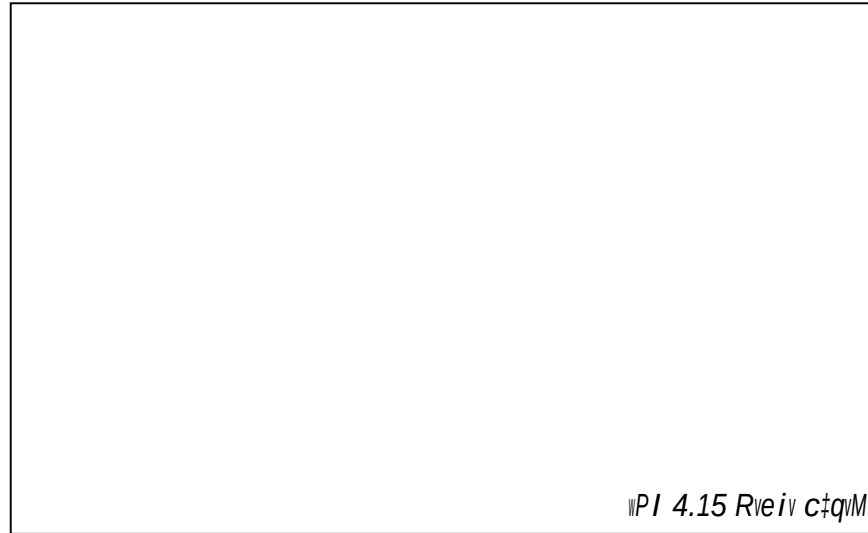
AvŠ:Kl†Yi d†j gwUi
 -vfweK Zivcv†v eRvq
 -v†K hv w†K-bv mewRi
 -vfweK e_u× I DcKvix
 RievYy esk we -vi Ae“vnZ
 ivL†Z mnvvh“ K†j | GQvor
 AvŠ:Kl†Yi d†j AvwMvQ
 `qbI n†q hvqI



WPI 4.14 AvPov t`qv

2. $g_{\nu} j_{\mu} P_{\sigma} e_{\nu} R_{\nu} i_{\nu} c_{\mu} q_{\nu} M$

meiR Pviiv tivc†Yi VK c†e (PÎ 4.15K) ev c†i (PÎ 4.15L) gwU†Z im msi†Y, AvMvQv
`gb, ZvcgvÎv bqšY BZ`w D†î†k` Mv†Qi ga`eZx`vb, †jv†K †X†K †`Iqv†K Av`iY ev
qvjPs e†j |



PI 4.15 Reiv c†qM

gvjPs†qi †bqg

ˆRe c`v\_ ev Kv†jv c†óK e`envi K†i R†g†Z gvjPs Kiv hvq| Kv†jv c†ó†Ki gvjPs GK†U DbZ c×†Z| Kv†jv c†ó†Ki Av†iY c_†g te†Wi Dc†i †`†q Zvi Dci P†iv t†vcY Kiv nq| G†Z gvU†Z im msi†Y I AvMvQv `†gZ nq| G†U e`env†i gvU h†I †KQY DĖß nq †KŠ Zvi Dci ˆRe Av†iY e`envi K†i I Z†c †bqŠY Kiv hvq|

gvjPs†qi DcK†iZv

- K. gvUi i†mi ev†úxqfeb t†va Kiv Ges im msi†Y mnvqZv Kiv|
- L. gvUi RgvU e†v t†va Kiv|
- M. AvMvQv `gb nq, d†j k†gK LiP evPv†bv hvq|
- N. gvUi ms†ú†k Ø†iv MvQ t†b†iv n†Iqv t_†K i†Y Kiv hvq Ges cvZ†K A†bK t†vM t_†K e†v†bv hvq|
- O. iOxb c†ó†Ki PKP†K is†qi SjKvbx †`†q A†bK A†bóKv†x t†cvK†K (R†e†cvKv) `†i m†i†q ivLv hvq|
- P. gvUi ††q t†va Kiv hvq|
- Q. LiK†v I KP†c†bv k†ZKv†xb mg†q †k†ki t†k†IY K†i gvU t†fRv iv†L|
- R. ˆRe c`v†_i gvjPs c†P †M†q gvU†Z h†y nq|
- S. t†h mg†_ dj R†vZ†q jZ†v†bv meiR gvPv Q†ov m†v†m†i gvUi Dci Kiv nq t†m_†j†vi A†aK d†jb I meiRi DbZ gv††v eR†q ivL†Z gvjPs mnvqK|
- T. ˆRe c`v†\_i gvjPs gvUi Z†vcgv††v K†g†q t`†q|
- U. ††Q c†óK †d†j†i gvjPs - AvMvQv `g†b m†v†h K†i (PI 4.16)

$g_V j_W P_S e^-$

Avɣɣʰ i tʰ k ɣv, eo
 Pɛv, f v ʋ B j v, kʰ v ɣv, P v cov
 N v m, e ɣv, b ɣb, ʰ ɣv
 BZʷ vʷ A v M v Q v m e r X
 d m tʰ j i R ɳ tʰ Z tʰ L v h v q l

[illegible]

eḫˁ veˁ KiṯZ nq (P1
4.17) | Avgvˁ i ṯṯk
gyv, eo P2v, fvˁBjv,
kˁvgv, Pvcov Nvm, e_gv,
bṯb, ḡv BZˁvˁ AvMvQv
meRx dmṯji RgṯZ ṯˁLv
hvq | AvMvQv ḡṯbi Rbˁ
mvaviY Dcvq, ṯjv nṯjv-
(K) AvMvQvi exRgṯ
dmṯji exR eˁenvi; (L)
DĒgiṯc fvḡ KIY; (M)
ṯKvj-bvjv cˁiZṯZ Pvl;
(N) kmˁchvq cˁiZ
Aejab Kiv; (O) ˆRe
A_ev cˁvóṯKi gvjPs
Kiv; Ges (P) vˁbovbˁ
ṯˁ lqvṯKvcvṯbv |

t¶Z MvQi fveK NbZ
eRvq tiL mewaK djb
cvlqv j¶ gti hvIqv
Pvivi kbvb bZb Pviv
jvMvZ nq|

cvwgK chvq MvQK Qvqv
eēv bv Ki+j cLi tiš`
c¶`b nvi te-to hvq Ges
Piv MvQ gti hvq|

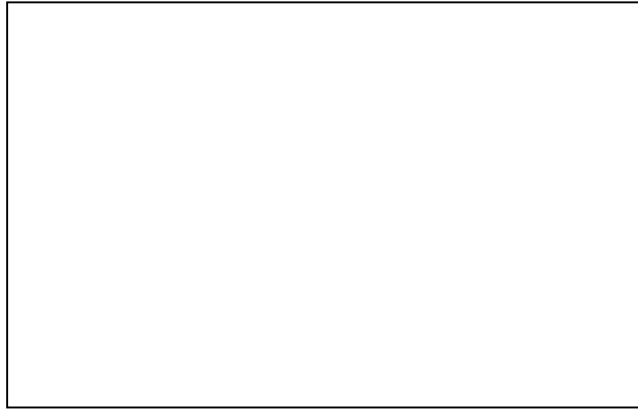


4. MvQi ga'eZx ibvb c¶Y

tivcY c×Z Z Pvlvev`KZ.meRi tejvq AþK mgq Pviv wefb KviY gviv thZ cvti|
 G¶¶i t¶Z MvQi fveK NbZ eRvq tiL mewaK djb cvlqv j¶ gti hvIqv Pvivi
 kbvb bZb Pviv jvMvZ nq| mvaviYZ tivcYi 3-5 w`b ci G KivR mgvav Kiv DvPZ|

5. Pviv tivcY cieZx mþhi Avjv t_K i¶v

dþKic, eavKic, tjUw, IjKic, tevKij BZ`i Pviv jvMvbi ci Kiv MvQi tLv ev



¶PI 4.18 tivcY cieZx mþhi Avjv t_K Pviv i¶v

KvMvRi Uzc embq mivmvi
 mþhi Avjv t_K 3/4 w`b
 i¶v KiZ nq (¶PI 4.18)|
 KviY cvwgK chvq G
 eēv bv wþj cLi tiš`
 c¶`b nvi te-to hvq Ges
 Pviv MvQ gti hvq|

6. Pviv cvZjvKiY

ecb c×Z Z Pvlvev` Kivi
 t¶i mVK `iZ eRvq
 tiL RvqZ exR tevbmæ
 nq bv| G¶¶i Pviv jcvZv

wekó nþ Nb RvqMv nþZ mvaviYZ `þj Pviv DvVq cvZjv Kþi w`Z nq| bZv meiR
 MvQ, þjv GþK Acþii mvþ Avþjv, evZvm I vþbi Rb` cVZhvMZv Kþi Avkbyc djb
 w`Z e` nq| mvaviYZ nvZ w`q GKvR mæub Kiv nq vþK|

7. Abvb` c¶iPhv

djb eþ Ges Gi YMZgvb i¶v Kivi Rb` KZK, þjv meiRi tejvq wekl wekl c¶iPhvi
 cþqvRb nq| thgb, jZvþv cKvZi meiRi tejvq evDv I gvPv `ZiKiY, UþgþUvi tejvq
 A½ QvUVB I Lw t`qv, ci-civMvqZ meiRi tejvq KvIg civMvqþbi eēv Kiv, tMvAvjþ
 tejvq MvQi tMvovq gvU DvVq t`qv, wgvó Avjþ tejvq gvS gþa` jZv Zþj aþi chvq
 RvqZ ivLv BZ`|

K. meiR dmþj tUbs

evDv w`q MvQi eþxi w`K wþ`kbv t`Iqv GKaiþYi tUbs| tUbs-Gi cavb DþiK` nþQ
 jZvþv MvQv hvZ GKvU wþ`ó AvKvZ. cvq Ges mnþRB eþ tcz cvti| MvQi GKvU
 WvþK teukq, tcvq A_ev evDvxi mvþ teta w`q GKvR Kiv hvq| jZvþv meiR MvQþK
 Aek`B tVm (Staking) ev evBq w`q tUbs w`Z nq| tVm t`qv `iKiv nq Ggb wZb
 aiþbi jZvþv MvQ iþqþQ| thgb- (1) Kgov c¶ievþii MvQ, hv`i AvKv (¶PI 4.19K)
 AvþQ Ges hviv wþRivB teþq DVZ cvti, (2) eiev Giv tcvq Dcþi Dþv (¶PI 4.19L),
 (3) thgb-UþgþUv Gþi Dcþii w`K teþq Dvvi fveK ¶lgZv tbB Ges tmRb` MvQi
 cvþkB tVm t`qv eēv KiZ nq (¶PI 4.19M)| XvjvI fve gvPv bv w`q cVZv MvQþK
 Avjv vfvte tVm t`qv DbZ chyþ wntmte weþvPZ| BþiR A A¶þii b`vq tKþYK gvPv
 t`qv GKvU mæavRbK DbZ chyþ (¶PI 4.19N)|

jZvþv meiR MvQþK
Aek`B tVm (Staking) ev
evBþi w`q tUbs w`Z nq|

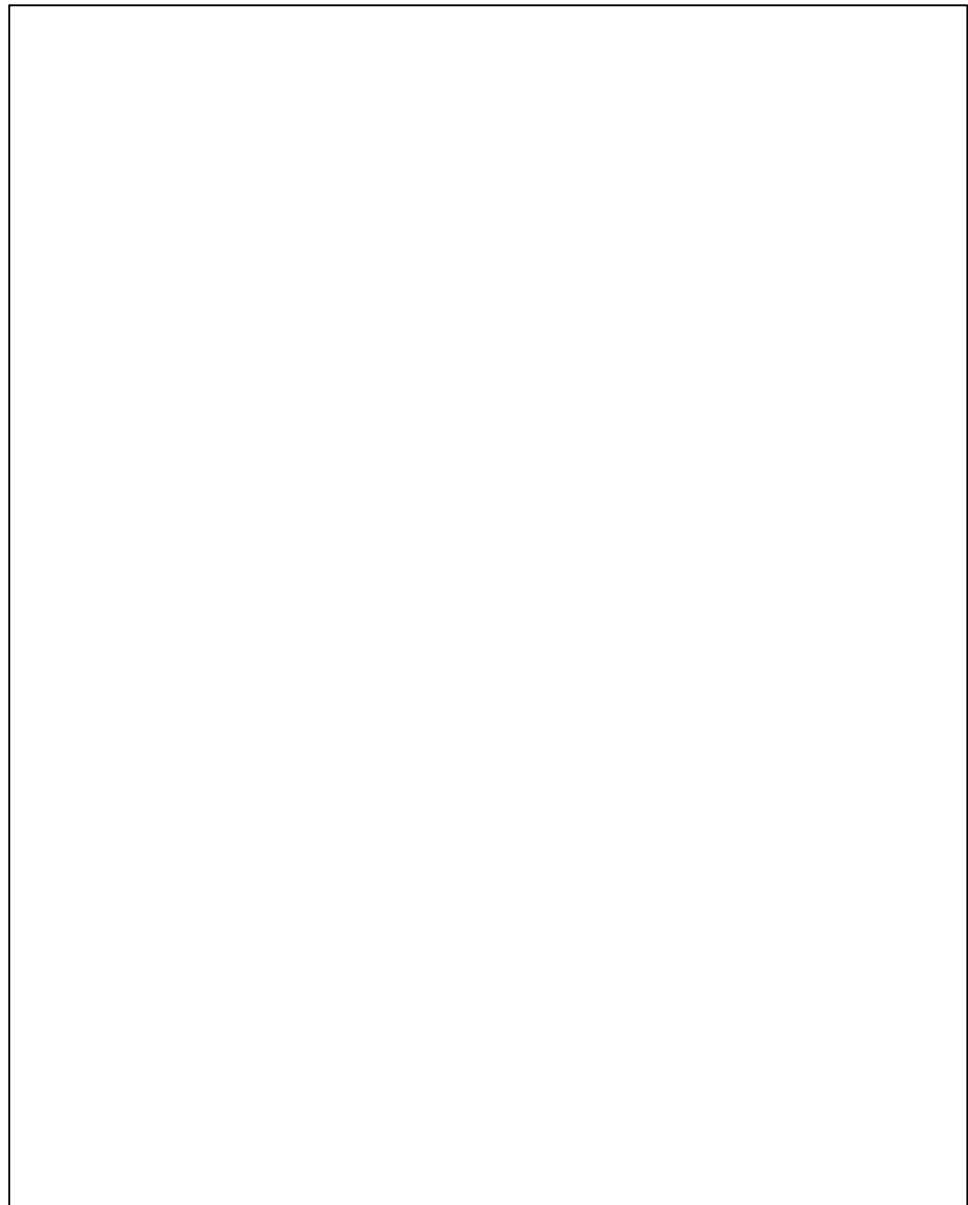
†U_{bs}†q_i m_{ya}v

L. A^{1/2} QvUBKiY (c_Ns)/dj c_VZj_VKiY

1. $m_{\text{vav}} i Y Z U \# g \# U v M \# Q i K v \# \hat{U} i \# K Q y \# D c i _ \# K c a v b _ \# j \# U v k v L v t i \# L e v K x _ \# j Q v U v B$
 $K i \# Z n q \# K v \# \hat{U} i \# M v o v i _ \# \# K A \# Z i i^3 k v L v _ \# j \# K K \# P A e _ \# v q \# f \# \frac{1}{2} e v Q y i _ \# \# q$
 $\# K \# U _ \# \# Z n q (P \hat{I} 4.20 K) \#$

MvQi ^`nK eix ibqšY
Kivi DŕĪk" Ac†qvRbxq
kvLv, ckvLv, jZv-cvZv
GgbK kKo BZ" QvUB
Kiv†K A½ QvUB e†j |

2. *ZigR*, gŕó *Kgov* BZ"†Z`†Uv cavb kvLv 10-12 bŕi MvLi dj ivLv n†q \_v†K (PI 4.20L-M), G†Z GKB AvKv†ii dj cvIqv hvq| AŕZii<sup>3</sup> evoš jvD MvQi WM†K†U†`Iqv fv†jv|
3. te,b ev †Xam MvQ cieZ†gšm†g ivL†Z n†j, 2-3 U MvU†i†L evK†c†jv MvQvU KvUv n†q _v†K (PI 4.20N)|



PI 4.20 dm†ji A½ QvUB

dj cvZjvKiY

dj RvZxq meiR, thgb- U†g†Uv, te,b, gŕó *Kgov* BZ"†i†Kv†bv GKvU MvQ ev †_vKvq AŕZii³ dj _vK†j†m,†jv c†jv Afv†e h_vh_fv†e eixcv†B n†Z cv†i bv| d†j dj AvKv†i†QvU, eKZ.Ges bKó.gv†bi nq| dj †QvU _vK†ZB dj cvZjvKi†Yi KvR maúb Ki†Z nq|

**mvıgg**

- exR ecb ev Pııv tıvc†Yi ci n†Z dmj msM†ni ce chš th mg[¯] cııPhıı gva†g Mı†Qi [¯]vııek eıı×i Rb[¯] Dchŷ cıııtek mııó Kiv nq Zı†K AšeZx cıııPhıı e†j |
- Kııc †Mı†ıı Pııv tıvc†Yi ci Qııv c`k†bi Rb[¯] KjııMı†Qi †Lvıj e[¯]envı Kiv th†Z cv†ı |
- Avš:KIY GKııU AšeZx cıııPhıı hv gııU†Z evZıım PjııP†j mıııvıı[¯] K†ı Ges gııUı [¯]vııek Zııcgıııv eRııq iv†L |
- gvıjııPs gııU n†Z cıııb evııúx feb †ııa K†ı |
- Mı†Qi [^]ıııK eıı×ıııbqšY Ges AııaK dj†bi Rb[¯] A½ QıııB Kı†Z n†e |
- jZı†bv RııZııq Mı†Q †Vm A_{ev} evDııbıı[¯] †Z nq |
- AııMııQıı[¯] gb, Mı†Qi ga[¯]eZx ĩb[¯]ııb c†Y, Pııv cııZjııKııY BZ^{ııı} meıR Pı†ı e[¯]üZ D†jL†ııM[¯] Avš:cıııPhıı, hv dııb evııv†Z mıııvıı[¯] K†ı |



cvtWĖi gj'vqb 4.4

1. mZ' n+j ōmō w_g_ "v n+j ōgō wjLb|

K. exR ev Pvlv tlvYce-KvR, +jvK AšeZx cwiPhv e+j |

L. meiR t†Z Avš:KIY Kivi D+ĭk" n+"Q gvuU SzSzi ivLv |

M. eþó I t†Pi ci gvuU iŭK+q Dci f†M k³ Av⁻iY co+j MvQ gviv hvq |

2. ĭb'vb cŷY Kiab|

K. gvuU t_+K cvvb ev@úx feb w bqš+Yi e'e⁻vK e+j |

L. meiRi djb evov†bvi Rb" Mv†Qi tMvovq gvuU Zzj w`+Z nq |

M. Pvlv tlv†Yi w`+bi g†a" g†i hvIqv Mv†Qi ĭb'vb cŷY Kiv DvPZ |

3. mVK DĖiU†Z cv†k wUK wPý (√) w`b|

K. ecb K†i jvM†bv meiRi tejvq Pvlv KZ cvZwewkó n+j cvZjvKi†Yi ⁻v_`ej
Pvlv DvV†q t†dj†Z nq ?

1. `ĭcvZv

2. wZbcvZv

3. PvicvZv

4. cv†civZv

L. cicivMvqZ meiRi tejvq djb evov†bvi Rb" tKvb cwiPhvuU Kiv c†qvRb ?

1. tMvovq gvuU Zzj t`Iqv

2. A½ QvUvB Kiv

3. Kwĭg civMvq†bi e'e⁻v Kiv

4. Lŷ t`Iqv

M. te,b ev tXamMvQ cieZx tgšmŷg ivL†Z n+j KqvU MvuU ivL†Z nq?

1. 3-4 wU

2. 4-5 wU

3. 2-3 wU

4. 6-7 wU

4. GK K_vq ev ev†K" DĖi w`b|

K. gvjwPs w†m†e Kx e"envi tewk djcm ?

L. tKvb is†qi cvwóK w`†q gvjwPs Ki†j Zvcgvĭv ev†o ?

M. Kwc tMv†ĭi Pvlv MRv†bvi ci m†hi Av†jv n†Z i†vi Rb" Kx e"envi Kiv nq ?

cV 4.5 meW R chVq I AšeZx



GB c_vV †k‡/ A_vc_wb

- *me||R chvq ej†Z Kx tevSvq Zv ej†Z cvi†eb|*
- *me||R chv†qi , i†Z eYbv Ki†Z cvi†eb|*
- *me||R chvq c||iKÍbv cYq†bi c×Z eYbv Ki†Z cvi†eb|*
- *AšeZx Pvlvev` ej†Z Kx tevSvq Zv e˘vL˘v Ki†Z cvi†eb|*
- *eŭ⁻i dmj l w††j dmj c×Z m†ŭ ej†Z l wkl†Z cvi†eb|*



meR chvg

eQ†i i ci eQi GKB Rn†Z GKB meR Pvlv` Kiv n†j μgvŠ†q djb Kg†Z _v†K Ges
Ab`vb` mgm`v †Lv †q| gwUi GKB MfxiZvq ‖e`gvb Lv†`vcv`v†bi AwaK e`env†i i d†j
mvaviYZ G iKg NUbv N†U _v†K| G Ae`v n†Z DĖi†Yi Rb` c†Z eQi GKB Rn†Z GKB
dmj bv K†i chvqμg ‖fb †gsm†g ‖fb dmj Kiv†K meR chvq ev km` chvq e†j
(Crop rotation)|

meR chv†qi . iəZ

meiR PrIlev` meiR chivqi iZ Acimxg| wefb meiR MvQ gwU nZ wefb Lv`vcv`vb
Mny K+i| G`i kKtoi e`Zi wefbZvi Rb` KZK, jv gwUi Dcwi nZ Ges
KZK, jv gwUi b`i nZ Lv`vcv`vb Mny K+i vK| Zv cwigv ^Zi K+i GKB
RigZ wefb tgsig wefb meiR PrIlev` Kiv nZ Rigi DeiZv k<sup>3</sup>i mewak e`envi
b`dZ nq Ges meiRi mšvIRbK djbI Avk Kiv hvq| GQvov GKB ai#bi tcvKv-gvKo
I tivM Øviv Avμš nq Ggb meiR GKUi ci Aciu bv jvMq Ab` meiR PrIlev` Kiv
nZ tivM-evjvB I tcvKv-qvKtoi Dc`eI Kvqbv mae nq|

meR chvq bxwZgvjv

K. meŋR chvq ʔzi Kivi mgq Rŋi DeiZv kŋ³i meŋaK eʔenʔii K_v ʔeʔePbvq AvbʔZ
nʔe | GRbʔ ʔKvb aiʔYi meŋR cavbZ bvBʔUvʔRb, dmdivm I cUvk teŋk MnY Kʔi Zv
Rvbv ʔiKvi | ʔhqb—

- *cVZv RvZxq meŋR cavbZ bvB†Uv†Rb tɛk MnY K†i _v†K, thgb- euaKic, tʃUɔ, cɔkVK, cVjskVK*
- *dj RvZxq meŋR cavbZ bvB†Uv†Rb l dmdivm tɛk MnY K†i _v†K, thgb- dʒKic, tɛvKɯj, U†g†Uv*
- *cavbZ Kg†ɛk ev mgcɯigv†Y bvB†Uv†Rb, dmdivm l cUvk MnY K†i _v†K Ggb meŋR, thgb- tɕqŋR, dʒKic, Avjyimɔ, KPʒ*
- *ɯkgRvZxq meŋR cavbZ dmdivm l cUvk MnY K†i _v†K, thgb- gUiɯɯ, ɯkg, eieU*
- *gj RvZxq meŋR cavbZ bvB†Uv†Rb l cUvk MnY K†i _v†K, thgb- weU, MvRi, gjv, kvjMg, ɯgŋó Avjɔ*

mZiivs kvK I djRvZxq me||Ri ci ||kgRvZxq me||R Ges Gici gj I KvÛRvZxq me||R
jvMv|bv thtZ c|t| KtqK tgsmg Gfvte me||R Pv|vet`i ci Mx@Kvj GKevi RigtZ me||R
mvi ^Zwi Kivi e`e^{-v} ivLtZ nte|

L. †Kv†bv GKwU dm†ji †kKo †bw`ó MfxiZv †\_†K Lv` MnY K†i _v†K| d†j †b†Pi †_ii
Lv` †vcv`vb qvU†Z †_†K hvq| cieZx ch†qi Rb` Gqb dmj †bevPb Ki†Z n†e hvi

ci i μgv ʔzi Kʰi GKB
RiŋtʰZ ɛɛfb tʰgʰtʰg ɛɛfb
meɪR P lvev ʰKiv ntʰj
Riŋi DeiZv kɪ³ i meɪvAk
eʔenvi bɪðZ nq Ges
meɪRi mtʰʂv lRbK dʒbɪ
Aɪkv Ki v hvɪl

k_vK I d j R_vZ_{xq} me_WRi
ci_WkgR_vZ_{xq} me_WR Ges
Gici g_j I K_vŪ_RV_{Zxq}
me_WR j_vM_v†b_v †h_‡Z c_v†i_l

«kKo «fb ˉi t_#K Lv#`ˉvcv`vb msMn Ki#Z cv#i| mviY 4.5.1 Gi mvrnh` «b#q km`
chv#qi c«iKÍbv Ki#j fv#jv djvdj cvlqv mæ|

mviY 4.5.1 t «kKtoí ^N`f«ĖK meiR dm#ji tk«Yieb`vm

mv_x dm#ji t«#î km`
gv#V vK#Z vK#ZB
Av#iK«U km` H R#g#Z
tivcY K#i t`qv nq|

meiRi bvg	«kKtoí MfxiZv
K. ev«K«c, dyK«c, jvjkvK, c«K«K, PxbvkvK, ev«U kvK, g«K KPz	AMfxi (cvq 50 tm.ig.)
L. MvRi, gjv, Avjy, W«U kvK, D#Q/Kijv, eie«U, «kg, K«K#ivj, cUj, U#g#Uv	gvSvix Mfxi (cvq 100 tm.ig.)
M. te,b, tXam, Kgov, jvD, «g«ó Avjykmv, ZigR	Mfxi (100 tm.ig. Gi Dc#i)

M. Ab`vb` th me «elq, #jv
meiRchvq c«iKÍbv
^Zi#Z «e#ePbvq Avbv
D«PZ Zv n#jv- meiRi
t#vM I tcvKv-gvKo
c«Z#iva «lgZv, ˉvbxq
Rjevqy gv«Ui cKvi#f`,
k«g#Ki cvc`Zv Ges
evRv#i meiRi P«n`v I
gf`|

AšeZx Pvlvev`

meiR chvq m«VKfv#e
c«iKÍbvi Rb` ««fb ai#Yi
AšeZx Pvlvev#`i K_v
«e#ePbv Kiv th#Z cv#i|
G, #jv n#jv-

Aby«gK Pvl t GKB R#g#Z
cici`« ev Z#Z«aK km`
ecb/tivcY Kiv|

mv_x dm#ji Pvl t GB
c«Z#Z GK«U km` gv#V
vK#Z vK#ZB Av#iK«U km`
H R#g#Z tivcY K#i t`qv
nq| thgb- ev«K«c msM#ni
c#eB m«iii dv«K ZigRi
Pviv j«M#q t`qv A_ev
tXa#mi gv#S t«dÂexb ecb
Kiv («PÎ 4.21)| Gme t«#î

G#Z Drcv`b LiP K#g Av#m| eZgv#b Avgb t«#Z gmy, m«ilv, AvjyBZ`« ai#bi dmj
Gfv#e Pvl Kivi cPjb evo#Q|

«gk Pvl t GB c«Z#Z GKB R#g#Z GKB mv#_ m«aviYZ`«U ev Z#Z«aK km` tivcY Kiv
nq| thgb- tXa#mi mv#_ W«U ev gv#i#Pi Pvl Kiv|

«PI 4.21 Avš-: Pvl c«Z

P. $\mathbb{K}g$ RvZxq dmj Rššq ev meR mviⁱⁱ Pvl Kšⁱ gwUšZ ^Re c`v_ thvM Kšⁱ gwUi
 Deizv evovbv hvq| tKvb GKU AAšji Rgi Ae^{vb} I gwUi cKiz. Ges Rjevqy mvt_
 Lvc LvBšq km^{chvq} $\mathbb{W}$ ⁱ KišZ nq| th mg[—] dmj ^Re c`v_ Kg thvM Kšⁱ
 (thgb—tjUš, tcaR, gj^v, cvjskvK BZ^v) tm_{šjvi} ci tmB RgšZ Pvl KišZ nše
 Ggb dmj th_{šjv} ^Re c`v_ tewk thvM Kšⁱ, thgb— evaKic, $\mathbb{K}g$, gUiš^v BZ^v |



migg

- eQšii ci eQi GKB RgšZ GKB dmj Kišj djb Kšg hvq|
- cšZ eQi GKB RgšZ GKB dmj bv Kšⁱ chvqμšg $\mathbb{W}$ fb tgššg $\mathbb{W}$ fb dmj Drcb
 KivšK meiRchvq ešj |
- meiRchvšqi gva^{šg} Rgi Deizv k³ⁱ mevaK e^{envi} I msi^Y, tivM-evjvB I
 tcvKv-gvKo `gb Ges A_Kix djb $\mathbb{W}$ šZ Kiv hvq|
- meiRchvq ciKibv cYqbKvšj dmšji mvi Pvn^v, $\mathbb{W}$ Kšoi cKšZ, tivM I tcvKv-gvKo
 cšZšiva $\mathbb{W}$ gZv, ^{vb}q RjevqygwUi cKivšf[—], kšgšKi cvc[—]Zv, meiRi Pvn^v I gj[—]
 BZ^v $\mathbb{W}$ ššPbvq AvbšZ nše |
- meiR msMšni mgq GšMšq Gšj t^{šZ} Ab[—] GKU meiRi exR ecb ev Pviv tivcY Kšⁱ
 Pvlvev[—] Pvjšq hvvⁱ c[—]šZK mv_x dmj Pvlvev[—] c[—]šZ ejv nq|



cv#WĖi gj`vqb 4.5

1. mZ` n#j ÔmÔ Ges ig\_`v n#j ÔvgÔ jLb|

- K. c#Z eQi GKB Rig#Z chvqμ#g #e#fb tgšm#g #e#fb dmj Drcv`b Kiv#K meiR #eb`vm e#j |
- L. meiR chv#qi gva`#g e`vK#U#iqv`gb Kiv hvq |
- M. meiR chvq ^Z#i Kivi mgq Rig#i DeiZv k#³i me#aK e`env#i K_v #e#Pbvq Avb#Z n#e |

2. ĩb`vb c#Y Ki#b|

- K. e#K#c#i #kK#oi MfxiZv hvq #m.#g. |
- L. k#K I dj RvZxq meiRi ci RvZxq meiR jvM#bv #h#Z cv#i |
- M. dm#ji #kKo #b#`ó MfxiZv #_#K MnY K#i _v#K |

3. mVK DĖ#i#i cv#k #UK #Pý (√) #`b|

- K. GKB Rig#Z #e#fb tgšm#g #e#fb meiR Pvlver` Kiv n#j Rig#i #Kvb #R#b#mi me#aK e`envi #b#đZ nq ?

- | | |
|----------------------------|----------|
| 1. c#b | 2. e#Zvm |
| 3. DeiZv k# ³ i | 3. L#bR |

- L. cavbZ bvB#Uv#Rb I dmdivm cQ>`Kvix meiR #Kvb#U ?

- | | |
|--------------------|-------------------|
| 1. cvZv RvZxq meiR | 2. dj RvZxq meiR |
| 3. KvŮ RvZxq meiR | 4. gj` RvZxq meiR |

- M. #Kvb dmj Rig#Z ^Re c`v_ Kg thvM K#i ?

- | | |
|----------|-----------|
| 1. e#K#c | 2. #cqvR |
| 3. #kg | 4. gUi`i# |

4. GK K_vq e# e#K` DĖi #`b|

- K. cvZv RvZxq meiR cavbZ Kx MnY K#i _v#K ?
- L. GK#U km` gv#V \_vK#Z \_vK#ZB Av#iK#U km` H Rig#Z #ivcb Kiv#K Kx e#j ?
- M. #e,#bi #kK#oi MfxiZv KZ ?

cV 4.6 *meWR msMn, wecYb* / *ZVRV meWR msiT*Y



GB c_vV †k‡/ A_vc_wb

- $KLb\ meiR\ msMn\ Ki\#eb\ Zv\ ej\#Z\ cvi\#eb\|$
- $mei\#Ri\ c\#ic^{\circ}Zv\ ma\#U\ eYbv\ Ki\#Z\ cvi\#eb\|$
- $Kxfv\#e\ mei\#R\ msMn\ Ki\#eb\ Zv\ ej\#Z\ cvi\#eb\|$
- $mei\#R\ msMn\#n\#Ei\ e\#e^{-}cbv\ ma\#U\ e\#L\#v\ Ki\#Z\ cvi\#eb\|$



meR msMn chvg

meiR Drcv`tbi me+kfI Ges ,iZcY GKU avc n+jv meiR msMn chvq, meiRi msMn
chv+qi Dci wbfI Kfi meiRi v, cYgvb Ges msiY tlgZv| meiR msM+nI DchY
chvqU n+jv: bv KllP bv cwic° | A_vr meiR ZLbB msMn Ki+z nte hLb Zv LvIqvI Rb`
mtevrKó.chv+q tciQte| teik KllP Ae_vq meiR msMn Ki+j djb Kg n+z cv+i| Avevi
t`wi+z msMn Ki+j ,YMZ gvb bó n+q hvq| tLqvj iVL+z nte, th chv+q meiR msMn Kiv
nte Zv thb tμZv ev tfv³vi cO>`bxq nq|

meR ZLbB msMn KiZ
n†e hLb Zv LvIqv i Rb
m†evrKó.chv†g †ci†v†e†

meRi c ic °Zv

meR Kxfvte e'envi Kiv nte Gi Dci wbf i Kti meR K wfb c wic°Zvq msMn Kiv ntq
_v#K| G, jtv nt"Q Lv lqvi Dc#hMx c wic°Zv, kvixie EK c wic°Zv Ges c wuqvRvZKiY
c wic°Zv|

K. L_vlq_vi Dc[‡]h_vM_x c_{||}i c°Z_v

meiR Lvlqvi Dc#hMx c#ic°Zvq ZLbB tctQ hLb Zv mtevrKó.~` , AvKvi, is I Ab"vb"
 , Yv, Y ARb K#i| | wefb meiR exi wefb chv#q Lvlqvi Dc#hMx nq| KvB Ae~vq ev
 m~úY c#ic° nlqvi c#eB kmv, #kg, tXam BZ~w` Lvlqvi Dc#hMx Ae~vq tctQ
 Ab~`#K U#gUv, ZigR, dZ BZ~w` m~úYi#c c#ic° nlqvi c#iB ragv Lvlqv n#q
 _v#K| G mg~ meiRi tejvq c#ic°Zv #baviY Kiv nq d#ji is Ges AvKiZ t~#L| tMvj
 Avj# tejvq Mv#Qi Dc#i fVM i#K#q G#j Ges Avj# tLvmv mn#RB Qvovbv tM#j Avj#Lvlqvi
 Dc#hMx nq| tcaR I im# Mv#Qi Dc#i fVM i# fvevcb n#q b#q co#jB mSMn Kiv nq|
 evaK#ci g_v Vv# I k^3 n#jB Lvlqvi Rb~ mSMn Kiv nq| #g#ó Kgov, PvjKgov, BZ~w`
 K#P I c#ic° `#Ae~v#ZB Lvlqvi Rb~ mSMn Kiv n#q _v#K|

meW L v I q v i D c # h v M x
c w i c ° Z v q Z L b B † c ũ Q
h L b Z v m † e i r K ó . ¯ v ` ,
A v K v i , i s I A b ¨ v b ¨
Y v . Y A r b K † i |

L. kɪxje^wĖK c^wic^oZ^v

meR kvixieĖK cġic°Zġq ZLbB tġuQ hLb meRi Drcw`Z exR cġic° nġq
AsKzġv`Mg ġġZv Arb Kġi| mġavġYZ exR Drcv`ġbi Rb` meR G chvġq msMn Kġv nġq
_vġK| tġekġfġvM meR thgb te,b, dġKġc, tġjUġ BZ`w` kvixieĖK cġic°Zġq Lvġqvi
AbġthvMx nq| ġkg, ġġó Kġov BZ`w` meR Lvġqvi DcġthvMx I kvixieĖK Dġq
cġic°Zġq Lvġqv Pġj|

me^WR ki^Wixie^WĖK
 c^Wic°Zvq ZLbB tci^WQ
 hLb me^WRi Drc^W°Z exR
 c^Wic° n^Wq AsKzi^W Mg
 ¶qZv ARb K^Wi

M. cμqVRvZKiY c¶ic°Zv

G*[†]î meir#K LvIqvi Dc#hMx ev kvixieĖK cūic°Zvq mSMn bv K†i weifb
cūqRvZKiY ‖kī I cūZōvbm q†ni Pwñ` AbbqX weifb eq†m mSMn Ki v n†q _v†K|

D`vniY`i|c ejv hvq th, AvPvi c`Z Kivi Rb` 7-8 tm. ¶g. j¶v I Av^{1/2}¶ji b`vq e`vmva
 ¶ekó K¶P kmv Lv Iqvi Dc`hvMx chv¶q Avmvi c ¶eB msMn Kiv nq| Avevi U¶g¶Uvi im ev
 mm ^Z¶iK¶i U¶g¶U¶K c¶ic Y cvKv Ae`vq msMn Kiv nq|

meiR msM¶ni mgq I cvi¶ek

meiR mvaiviYZ VvÜv I i®
 Ae`vq msMn Kiv D¶PZ|

meiR mvaiviYZ VvÜv I i® Ae`vq msMn Kiv D¶PZ| k¶KRvZxq meiR thgb- tju¶, cvjskvK BZ`v¶` A¶aK Zvcgv¶vq ¶e¶kl K¶i `¶y¶ tejvq msMn Kiv n¶j kmb, c¶v`b Ges Ab`vb` ivm¶q¶bK ¶e¶μqv `¶M¶Z¶Z Pjvi d¶j IRb K¶g hvq| Aek` dj RvZxq meiR thgb- U¶g¶Uv, ZigR, d¶B BZ`v¶` `¶y¶ tejvq| msMn Kiv th¶Z cvi¶i| ej¶i ci Ges ¶k¶iki covKvjxb mg¶q meiR msMn Kiv D¶PZ bq|

meiR msM¶ni b¶Zg¶jv

- K. h_vmae evRv¶ii P¶v¶v Ges k¶gK I hšc¶vZ c¶vß m¶c¶¶¶ chvqμ¶g meiR msMn Kiv D¶PZ|
- L. msM¶ni mgq meiRi AvKIYxqZv, ¶Yv, Y BZ`v¶` ¶hb bó bv nq|
- M. meiR Mv¶Q AvNvZ ev ¶¶vZ mvab bv Kiv|
- N. Avenv Iqvi ¶`¶K j ¶¶¶ ti¶L meiR msMn Ki¶Z n¶e| m¶ZR I big meiR mKv¶j VvÜv Avenv Iqvi msMn Ki¶Z n¶e|
- O. msM¶ni Kv¶R e`eüZ hšc¶vZ- thgb, tKv`vj, K¶v¶, Qy BZ`v¶` aviv¶jv n¶Z n¶e|
- P. msM¶ni ci evRviRvZKi¶Yi c ¶e Aek`B evQvB Ki¶Z n¶e|

meiR msMn c¶vZ

meiR msM¶ni KvR nvZ
 ¶`¶q ev h¶vŠK Dcv¶q Kiv
 hvq| Z¶e GKvR¶U AZ`š
 mveav¶b Kiv D¶PZ|

meiR msM¶ni KvR nvZ ¶`¶q ev h¶vŠK Dcv¶q Kiv hvq| Z¶e GKvR¶U AZ`š mveav¶b Kiv D¶PZ| Ab`\_vq gvZM¶¶Qi RLgRvZxq ¶¶vZ n Iqvi m¶vebv \_v¶K| tXam, jvD, Kgov BZ`v¶` meiR tKv¶bv¶ZB ¶Qto ev g¶¶o¶q msMn Kiv D¶PZ n¶e bv| mvi¶Y 4.6.1 Ges ¶PÎ 4.22G ¶e¶fb meiRi msMn c¶vZ t`Lv¶bv n¶jv—

mvi¶Y 4.6.1 ¶e¶fb meiRi msMn c¶vZ

meiRi bvg	msMn c¶vZ
te, b, kmv, Kgov BZ`v¶`	aviv¶jv Qy ¶`¶q Mv¶Qi tev¶v t_¶K tK¶U msMn Ki¶Z n¶e
¶MgvK jg¶, Wv¶, jvjkvK BZ`v¶`	c¶jiv MvQ¶U ¶kKomn Dc¶o t d¶j msMn Ki¶Z n¶e
c¶k¶K, jvD¶qi Wv¶ BZ`v¶`	Mv¶Qi Ask tK¶U msMn Ki¶Z n¶e
U¶g¶Uv, g¶iP, ¶kg BZ`v¶`	nvZ ¶`¶q Z¶j msMn Ki¶Z n¶e



$n_V Z \cdot \nabla \cdot \nabla q \text{ } m s M n \quad K.$	$\dagger K \nabla U \text{ } m s M n \quad L.$
$g_{V U} L \cdot \nabla \cdot \nabla Z \cdot \nabla j \cdot \nabla \quad M.$	$\dagger U \nabla b \cdot \nabla Z \cdot \nabla j \cdot \nabla \quad N.$

miVK msM#nvi Ei e'e-wi` bv
tbqi d#j Drcwi` Z me#Ri
M#o kZKi v 26-40 f#M
A_vr GK PZzvs#ki telk
bó n#g hvq]

meR msM†nEi e"e⁻cbv (ecYb I ZVRv meR ms i¶Y)

AiaKvsk meW RþZ cwbI cwigvY kZKiv 80-90 fVW| evsjvþþk GKU mgx¶lvq (RvBKv cwiPwJZ) þ¹Lv hvq, mWVK msMþnvEi e'e'wþ bv tbqvI dþj DrcwþZ meW Ri Mþo kZKiv 26-40 fVW A_vr GK PZzvþki tþk bó nþq hvq| wþP meW R msMþni cþii e'e'wcbv wþq AvþjvPbv Kiv nþjv|

msM#nvEi chv#q , Yv , Y eRvq i vLvi e"e⁻vu`

tfšZ Ges cyó , Yv, Y eRiq ivLvi Rb" msM†niĖi chv†q ‖bawj‖LZ eĖĖvcbv MnY Kiv ††Z
cv†i |

ci@wi Kiv: g_v†V _vK_v Ae⁻vq Ges msM†ni mgq me_wRi M_v†q a†jve_wj j_vM†Z c_v†i | GRb^r msM†ni ciciB ci@wi c_v†b†Z me_wR a†q ‖b†j AvKIY e_v†o Ges t_b†Z†q covi m_v†eb_v Kg _v†K |

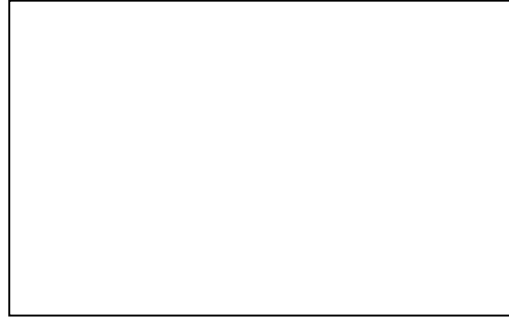
Q1uB: $\parallel bK UeZx \parallel Ksev \text{ ` } \ddagger i i \text{ e}iRv\ddagger i \text{ } \ddagger ci\ddagger Yi \text{ } Av\ddagger M \text{ } AvKIY \text{ } evov\ddagger evi \text{ } Rb\text{''}$ $QvUvB \text{ } c\ddagger q\parallel Rb\mid$
 $\parallel e\ddagger kl \text{ } K\ddagger i \text{ } c\ddagger vZv \text{ } RvZxq \text{ } me\parallel Ri \text{ } g\ddagger \text{ } I \parallel b\ddagger f\ddagger vMi \text{ } eq\text{''}$ $(\text{ } c\ddagger vZv \text{ } QvUvB \text{ } Ki v \text{ } D\parallel PZ\mid$ $L\ddagger g \text{ } av\ddagger i\ddagger j\ddagger v \text{ } Q\ddagger i$
 $\parallel \text{ ` } \ddagger q \text{ } QvUvB \text{ } Ki v \text{ } D\parallel PZ\mid$

eIQvB: AvKIY Ges *gf* evovbvi c†qvR†b eIQvB GKU , iZcY KvR | meIR †f†` AvKvi
AvKIz, eY, c†ic°Zv Abyn†i weIfb †M†W fVM Kivi Rb` DbZ †`k, †jv†Z myb†ó †bqg
i†q†Q | Avgv†`i ††`k† †M†Ws Kiv`iKvi |

ʷKQynsLˀK meɪR msMʔni
 ciciB ʔ cɪwB cɪiZˀVM
 Kʔi Ges tbiZʔq cʔoɪ
 ZvB G ʔjv LɔB cvZjv l
 ˀQ cɪjw ˀbi tcvUjvq
 iɪl ʔi tbiZʔq cɔvi mɔvɛv

RLg miv#b: Avjy^{ig}ó Avjy^{tcq}R BZ^W`i RLg miv#bvi Rb<sup>~</sup> A#bK mgq giv<sup>V</sup> Qvq<sup>hy</sup> <sup>~</sup>v#b A<sub>ev</sub> A#c<sup>¶</sup>vKZ.D<sup>~</sup>P Zvcgv<sup>Î</sup>v (20<sup>0</sup>-40<sup>0</sup> tm.) Ges D<sup>~</sup>P Av<sup>~</sup>Zvq (Kgc<sup>¶</sup>¶ 80%) K#qK<sup>W</sup>`b #i#L ^W`#q RLg miv#b^v hvq|

tgvoKvqb: evsjv[~]#k meiRi tgvoKvqb e[~]e[~]v L^gB Ab^gZ| `#i c^vW[~]#Z ev A#bK[¶]¶Y meiR UvUK^v ivLvⁱ Rb[~] tgvoKvqb L^gB ,i#Zc[¶]¶| ^WKQymsL[~]K meiR msM#ni ciciB [~]z c^vWb c^viZ[~]W K#i Ges tbiZ[~]q c[~]o| GB



¶PÎ 4.23 meiR evRvⁱRvZKiY

mg[~] kvK-meiR evRvⁱRvZ Kiv L^gB Am^yea^vRbK| ZvB G[~],#jv L^gB c^vZjv I [~]Q c^vj[~]bi t^cvUjvq ivL[~]j tbiZ[~]q covi m[~]vebv [~]v#K bv| kvK, t^evKj^x, d[~]zK^Wc, ea^v K^Wc, t[~]k^Wkg, t^jU[~], a^Wbqv c^vZv BZ^W` Gfv[~]te tgvoKRvZ Kiv th[~]Z c^v#i| tgvoKvqb Kivi ci [~]yⁱ evRvⁱ c^vien[~]Yi mg[~]q meiR[~]Z hv[~]Z AvNvZ bv jv[~]M tmRb[~] e[~]v e[~]x bv K#i evq[~]PjvP[~]ji m^yea^vhy[~] c^vWóK, KvV,

ea^vKi L^gB A_{ev} K^WW[~]ev[~]Wi ev[~]. K#i meiR Pjv^b t[~]qv D[~]PZ (¶PÎ 4.23)| c^vien[~]Yi mgq Uv[~]Ki I t[~]U[~]bⁱ e[~]M[~]Z c^vi[~]Qb evZ[~]m PjvP[~]ji ^We[~]kI e[~]e[~]v [~]vKv c[~]q[~]Rb|

msM#ni ci imv#jv meiR
A#c[¶]¶vKZ.¶b[~] Zvcgv^Îv
msi[¶]¶Y ¶gZ^v evov#bv
m[~]ae|

ZvRv meiR msi[¶]¶Y

msM#ni ci imv#jv meiR A#c[¶]¶vKZ.¶b[~] Zvcgv^Îv msi[¶]¶Y ¶gZ^v evov#bv m[~]ae| ^WngvMv[~]i Gfv[~]te msi[¶]¶Y Kiv nq| Ave^vi W[~]c ^Wd[~]Ri ^Wkg, MvRi, d[~]zK^Wc, ea^vK^Wc, gUi, U[~]g[~]Uv BZ^W` msi[¶]¶Y Kiv hvq|

m^vigg

- meiR msM#ni Dch[~] chvq^WU n[~]jv bv K^WP bv c^vi[~]c[~]°Zv|
- meiR mvaviYZ ^WZb ai#bi c^vi[~]c[~]°Zvq h[~]v- Lv[~]#[~]vc[~]hvM^x, kvixie[~]ÊK Ges c^vμqvRvZKiY c^vi[~]c[~]°Zvq msMn Kiv n[~]q [~]v#K|
- mvaviYZ Wûv I [~]i[~]® Avenv[~]Iqvq meiR msMn Kiv D[~]PZ|
- tⁱvMv[~]š , t^cvKvq Lv[~]Iqv Ges Abv[~]KIYxq Av[~]K^WZi meiR ev[~] ^W`#q ev<sup>~</sup>K<sup>~</sup>,#jv Av<sup>~</sup>Kvi, eY, Av<sup>~</sup>c<sup>~</sup>¶K NbZ BZ<sup>W</sup>`i [~]e[~]k[~]ó[~]i ^Wf[~]Ê[~]Z t[~]k[~]Yef[~]³ K#i evRvⁱRvZ Kiv D[~]PZ|
- D[~]P Zvcgv^Îv I D[~]P Av[~]Zvq Avjy^{ig}ó Avjy^{tcq}R BZ^W`i RLg miv#b^v D[~]PZ|
- A#bK[¶]¶Y meiR UvUK^v ivLvⁱ ev [~]yⁱ c^vW[~]#bvi Rb[~] tgvoKvqb GK[~]š c[~]q[~]Rb|
- meiR ^WngvMv[~]i t[~]i#L msi[¶]¶Y Kiv hvq|





cṽṽWĒi gĵ'vqb 4.6

1. mZ' nĵ ōmō Ges ig_ 'v nĵ ōngō ṽjLb|

K. kvK RvZxq meiR `gĵ tejvq msMn Kiv DīPZ|

L. meiR ṽngvMvṽi msi ¶Y Kiv DīPZ bq|

M. meiR msMṽni Dchġ chvqU nĵjv bv KīP bv cīic°Zv|

2. ĩb'v b cĥY Kib|

K. teĥk KīP Aeṽvq meiR msMn Kīĵj Kg nĵZ cṽṽi|

L. dj RvZxq meiR tejvq I msMn Kiv hvq|

M. Avgvṽ' i ṽ'ṽk meiRi Kiv DīPZ|

3. mVK DĒṽii cĥk ṽUK ṽPý (√) ṽ' b |

K. ṽgvōKvqṽbi Rb' ṽKvb e'eṽ MnY Kiv fvṽjv ?

1. PṽUi eṽ

2. Kvco

3. cṽZjv I 'Q cṽjṽb

4. ṽgvUv cṽjṽb

L. KZ Av`Zvq RLg mṽivṽbv DīPZ ?

1. Kgcṽ¶ 80%

2. Kgcṽ¶ 60%

3. Kgcṽ¶ 50%

4. Kgcṽ¶ 20%

M. mVK msMṽniĒi e'eṽvcbvi Afvṽe Drcv`Z meiRi KZ fvM bó nq?

1. Mṽo 26-40 fvM

2. Mṽo 30-36 fvM

3. Mṽo 25-36 fvM

4. Mṽo 26-30 fvM

4. GK K_vq ev eṽK' DĒi ṽ' b|

K. UṽgṽUv Kṽfvṽe msMn KīṽZ nq ?

L. ṽKvb aiṽYi meiRi gĵ I ṽbṽfvṽMi eq' cṽZv QṽUvB Kiv DīPZ ?

M. KZ ZvcgvĪvq RLg mṽivṽbv DīPZ ?

e'enwiK

cV 4.7 GK GK i Rigi Rb" Zb eQi tggv`x meiR chvq ciμgv`ZiKiY



GB cV tkfI AvciB

- GK GK i RigtZ mvi eQi a#i Pvn`v Abjvq meiR Drcv`b KiZ cvi#eb|
- RigtZ meiR chvq ciμgvq Kx Kx meiR A⁻f,³ Ki#eb Zvi bvg ej#Z cvi#eb|
- tKvb meiR tKvb gv#m jvMv#eb Ges KLB mSMn Ki#eb Zv ej#Z cvi#eb|
- RigtZ meiR evMv#bi bKkv cYqb KiZ cvi#eb|



cvm#K Av#jvPv

cVZ eQi GKB RigtZ GKB dmj bv K#i chvqμ#g weifb tgšmg weifb dmj Drcb Kiv#K meiR chvq ej#j| meiR chv#qi Øivv Rigi DeiZv k³i mevaK e'envi wB#Z nq, djB teik t`q, tivMevjvB I tcvKivK#oi Dc`e Kgv#bv hvq|

ciKíbv cYqb we#P" ieq

- K. Rigi DeiZv k³i mevaK e'envi we#Pbv KiZ n#e weavq tKvb meiRi tKvb Lv#`vcv`vb teik c#qvRb Zv Rvb#Z n#e; thgb cvZvRvZxq meiR#Z bvB#Uv#Rb; d# I dj RvZxq meiR#Z dmdim Ges gj ev K` RvZxq meiR#Z cUvk teik jv#M| Kv#RB gvUi DeiZv k<sup>3</sup> eRvq ivLv i D#i#k` kvK ev djRvZxq meiRi ci wkgRvZxq meiR Ges Zvici gj I KvU RvZxq meiR jvMv#bv D#G|
- L. Dc#iv³ wbg#g K#qK tgšmg Pvlv#` i ci MxØKv#j GKevi meR mvi Drcv`b KiZ n#e|
- M. meiR chvq ciμgv Kivi mgq Mv#Qi wK#oi cK#Zi cVZ j` iLv#Z n#e, thgb-caib gy wekó meiRi ci „Q gj RvZxq meiR Pvl Ki#j gvUi weifb` i n#Z Lv#`vcv`vb wB#Z cvi#e|
- N. meiRi tivM I tcvKgvKo cVZ#iva qgZv, vbxq RjevqygvUi cKvi#f`, kvg#Ki cvc`Zv Ges evRv#i meiRi Pvn`v I g j` we#Pbv KiZ n#e|
- O. meiR chvq ciKíbvq Avš:dmj thgb w#j, Ašez, AbjvqK I eü`i c#Z, #jv GK thv#M e'envi K#i GKB eQ#i GKB Rig n#Z A#bK ai#bi meiR Drcv`b m#e| GB tcv`q#Z DbZ RvZ, Pvlv#` i DbZ Kjv tKškj, mgšZ tcvKgvKo I tivMevjvB`gb e'e`vcv Ges m#evci mVK Z#eav#bi gva#g meiR Drcv`b evov#bv m#e|
- P. wkg RvZxq meiR Rlv#q gvU#Z`Re c`v_ thvM K#i I DeiZv evov#bv m#e|
- Q. Rigi Ae`vb I gvUi cK#Z Ges Rjevqygv#\_ Lvc LvB#q km` chvq w` i KiZ n#e|
- R. th mg` meiR gvU#Z`Re c`v\_ Kg thvM K#i, thgb- tjuw, gjv, tcvR, cvjskvK BZ`w` i ci th mg` meiR teik`Re c`v_ thvM K#i, thgb- wkg, gviiw, evaKic tm, #jv Pvl KiZ n#e|

c#qvRbxq DcKiY

K. KvMR

L. Kjq

M. †c_WÝj

 $N. \quad t^{-} \langle j$

0. *ivevi*

P. *K^v jKz jUi*

Kv†Ri avc

K. KMR tUet#ji Dc#i iVLy| GK GK i Rigi meR chv#qi bKkv Kivi Rb" GKU eo
cU AvKz|

L. 100 $\text{wg.} \times 40 \text{wg.}$ AvKv $\dagger$ ii GK wU eo c $\dagger$ Ui mxqvbv AvK~~z~~

M. eo c#Ui e:n:~ m#gvbv n#Z #fZ#ii ~#K 50 t:m. #g. P lo v R i q M v t e o v G e s b i j v t`qvi
Rb" #b#`ó i v L b |

N. Gici eo $cU^{\dagger}K 100 \text{ } \mathbb{W}q. \times 8 \text{ } \mathbb{W}q. AvKv^{\dagger}i 5 \mathbb{W}U c^{\dagger}U f vM Ki \# b|$

0. $c^{\dagger}Z c^{\dagger}U i q v S L v^{\dagger} b 20^{\dagger} m. w. P l o v$ Ges $20^{\dagger} m. w. M f x i q^{\dagger} c i b v j v i v L b l$

P. cWZ †QvU cU‡K 1, 2, 3, 4 | 5 bv‡g WpWyZ Kiab|

Q. 1bs c#U U#g#Uvi mv#_ g jv kvK #i#j-dmj (A#±vei- †degvix), jvjkvK (#degvix-qvP); †Xam (qvP-Rb) I cBkvK (Rb- †m#Pai) Drcv`b#i Rb` #P#Yz Ki#b|

R. 2 bs c†U c†j sk†K (A†±vei- ga" b†f†ai), †g†óA†jy††kl b†f†ai - G†icj), †a†V me†R
m†i †nm††e (ga" G†icj-R†y†B) † †M†g†v K†j†g (R†y†B- ††m†††ai) Drc†v †bi Rb" †P†v†Y†Z
K†i†b†

S. 3bs cʰU gʲiːkʷK (Aʰʷei-gaː bʰfɔi), tɕɔR (Kʰ nʰZ) Ges tʰmʲ Avjyːiʲj (bʰfɔi - tʰdɛvʲix) l DʰʷQː Kijv ev ɰgʷó Kgov ːiʲj ːnmvʲe Avjyːfʲzi (tʰdɛvʲix-tʰtʰpɔi) Drcvː ʰbi Rbː ːPːiːʲz Kiːbʲl

T. 4 bs c#U jvjK I te,b (A±±ei- tdegrix), WwU (gP-tg) I eieU (Rb-tmtPai)
Drcv`#bi Rb` WPyZ Ki#b|

U. 4 bs c#U imj (A#±vei-ga" Gllcj) I KPz(ga" Gllcj-†m#P□i) Drcv`#bi Rb" #PllYz
Kj#b

V. GLb 2q eQ†ii me|R web˘vm 1g eQ†ii c†U ,†jv†K chwqμ†g ˘vb c˘ieZb K†i Rb˘†b†v †˘Lv†Z n†e, †hgb- 1g eQ†ii 2q c†U i me|R web˘vm 2q eQ†ii 1bs c†U U, Z˘€c 3q c†U 2q c†U , 4_ c†U 3q c†U , 5g c†U 4_ c†U Ges me †k†l 1g eQ†ii 1bs c†U 2q eQ†i 5g c†U †˘Lv†b|

W. 3q eQi ÔV0 G ewYZ 1g I 2q eQ†ii Abȳc 2q I 3q eQ†ii chwqμ†g mewR
 web̄vm, †jv mwRv†Z n†e, thgb- 2q eQ†ii 2q c†U 3q eQ†ii 1g c†U, Z`x 3q c†U
 2q c†U 4_ c†U 3q c†U, 5g c†U 4_ c†U Ges me†kl 2q eQ†ii 1g c†U 3q eQ†ii
 5g c†U †`Lvbl

X. $Gf_{\text{te}} 3 eQ_{\text{ii}} m_{\text{ell}} R \text{ chvq Ges } bKk_{\text{v}} Ki_{\text{ab}} (m_{\text{vii}} Y 4.8.1) | D^3 bKk_{\text{v}} U e\ddot{e}n_{\text{vii}} K$
 $L_{\text{vZvq}} AsKb Ki_{\text{ab}} |$

meiY 4.8.1 3 eQi tggv`x meiR chvq

mgq												
cU	c_g eQi				ØZxq eQi				ZZxq eQi			
bs	A±iei n±Z W±mai	Ribgix n±Z gP	Gicj n±Z Rg	RyB n±Z tm±pai	A±iei n±Z W±mai	Ribgix n±Z gP	Gicj n±Z Rg	RyB n±Z tm±pai	A±iei n±Z W±mai	Ribgix n±Z gP	Gicj n±Z Rg	RyB n±Z tm±pai
1	g jv - jvj kvK - tXam - cBkvK - U±g±Uv				c vjs kvK - gó Avjy- ^aAv (meR mvi) - MgV Kjg				g jv kvK - tcaR (K` n±Z) - Avjy(i±j) - Kijv ev gó Kgov (i±j)			
2	c vjs kvK - gó Avjy- ^aAv (meR mvi) - MgV Kjg				kvK - tcaR (K` n±Z) - Avjy(i±j) - Kijv ev gó Kgov (i±j)				jvj kvK - te, b - WUv - eieU			
3	g jv kvK - tcaR (K` n±Z) - Avjy(i±j) - Kijv ev gó Kgov (i±j)				jvj kvK - te, b - WUv - eieU				imb - KP.			
4	jvj kvK - te, b - WUv - eieU				imb - KP.				g jv - jvj kvK - tXam - cBkvK - U±g±Uv			
5	imb - KPz				g jv - jvj kvK - tXam - cBkvK - U±g±Uv				c vjs kvK - gó Avjy- ^aAv (meR mvi) - MgV Kjg			

GB meiR eb`vm, ±jv b±`kbv i|c| Ae`v tft` Gi cieZb K±i Dc±hV Mx meiR beivPb
Kiv hvte| Rahim (1995) Gi Avsikk i|c|všiz|



mswTβ / iPbvgJK ck

1. meR P*†*l*i* Rb Rv*g* wbevP*†*b K K K e*†*ePbv*q* Avbv c*†*qvRb Zv wj*ice*× Ki*†*b|
2. meR Rv*g* c⁻ZKiY c×iZ eYbv Ki*†*b|
3. gwU*†*Z ^Re m*v*i c*†*qv*†*Mi DcKv*i*Zv eYbv Ki*†*b|
4. mv*†*i*i* Pvv*n*`v wbi|cY e*†*eP` weIqv` wj*ice*× Ki*†*b|
5. meR P*†*l c*v*ib t*m*P l w*b*@vk*†*bi , i*†*Z eYbv Ki*†*b|
6. wef*b* t*m*P c×iZ eYbv Ki*†*b|
7. A*†*S:KiY meR P*†*l D*†*jL*†*h*v*M` Ae`vb iv*†*L - e`vL`v Ki*†*b|
8. meR P*†*l gvj*†*Ps e`envi Kivi c*†*qvRb*q*Zv wjL*†*y|
9. meR P*†*l meR chv*†*qi , i*†*Z eYbv Ki*†*b|
10. meR msMn*†*E*†*vi KvR , *†*jv eYbv Ki*†*b|



cV 4.1

- | | | |
|--|---------------------------------------|-------------------------------|
| 1. $K(m)$ | 1. $L(q)$ | 1. $M(m)$ |
| 2. $K(6, 7)$ | 2. $L(\hat{0} \dagger R \hat{0})$ | 2. $M(20-25)$ |
| 3. $K(2)$ | 3. $L(3)$ | 3. $M(1)$ |
| 4. $K(\text{DEZ}K \parallel j \text{bv} jv)$ | 4. $L(30-35 \dagger m. \parallel q.)$ | 4. $M(2 \text{fv} \dagger M)$ |

CV 4.2

- | | | |
|---|------------------------------|---|
| 1. $K(\parallel g)$ | 1. $L(m)$ | 1. $M(\parallel g)$ |
| 2. $K(g_{\parallel}U\sharp Z\parallel b\parallel`oRvqM\parallel q\ c\sharp q\parallel M)$ | 2. $L(c\sharp e, c\sharp i)$ | 2. $M(cU\parallel m)$ |
| 3. $K(1)$ | 3. $L(4)$ | 3. $M(3)$ |
| 4. $K(b\parallel B\sharp U\parallel\sharp Rb)$ | 4. $L(dmd\parallel im)$ | 4. $M(c\parallel Z\parallel\sharp fR\parallel\parallel K\sharp\parallel j)$ |

cV 4.3

- | | | |
|-------------------------|-------------------------------------|---|
| 1. $K(m)$ | 1. $L(\ g)$ | 1. $M(\ g)$ |
| 2. $K(90\text{ fM})$ | 2. $L(10)$ | 2. $M(c\text{-}v\text{eb})$ |
| 3. $K(2)$ | 3. $L(4)$ | 3. $M(2)$ |
| 4. $K(k_{\text{ZK}}/j)$ | 4. $L(d_{\text{ZK}}/A_{\text{vj}})$ | 4. $M(c_{\text{ivM}}q_{\text{t}}b_{\text{e}}v_{\text{NvZ}}I_{\text{dj}}K_{\text{ga}}i)$ |

CV 4.4

- | | | |
|---------------------------------|---|-----------------------------------|
| 1. $K(\parallel g)$ | 1. $L(m)$ | 1. $M(\parallel g)$ |
| 2. $K(kmb)$ | 2. $L(\dagger Mvj \text{ } Avj \text{ } j)$ | 2. $M(3-5)$ |
| 3. $K(1)$ | 3. $L(3)$ | 3. $M(2)$ |
| 4. $K(C\parallel j\parallel b)$ | 4. $L(Kv\ddagger jv)$ | 4. $M(Kjvi \text{ } \dagger Lvj)$ |

cV 4.5

- | | | |
|------------------|------------------------|--------------------------|
| 1. K (ig) | 1. L (ig) | 1. M (m) |
| 2. K (50) | 2. L (ikg) | 2. M (Lv`") |
| 3. K (3) | 3. L (2) | 3. M (2) |
| 4. K (bvB†Uv†Rb) | 4. L (mv_x dm†j i Pvl) | 4. M (100 †mig. Gi Dc†i) |

cV 4.6

- | | | |
|-------------------|-------------------|-------------------|
| 1. K (ig) | 1. L (ig) | 1. M (m) |
| 2. K (djb) | 2. L (`ȳ) | 2. M (†MWS) |
| 3. K (3) | 3. L (1) | 3. M (1) |
| 4. K (nvZ †q Zzj) | 4. L (cvZv RvZxq) | 4. M (20°-40°†m.) |

Mx@Kvjxb meR Pvl

evsjv`tk cWZ eQi cvq 56 nVRvi tn±i RigZ 284 nVRvi Ub Mx@Kvjxb meR Drcv`b nq (iik`, 1993)| gZ: kxZKvj A+c¶v Mx@Kvj LgB Kg meR Drcv`Z nq _vK| Mx@Kvj i cavb cavb meR n±jv t te, b, igó Kgov, S±½, Kijv, Pvj Kgov, cUj, kmv, ayý, PIP½v, Kvikivj, WUv, cBkK, tXam, eievU I wefb aiYi KPzBZ`v | Mx@Kvj 1jv Gwcj t\_K 30tk tm±pai chš e-Z| Mx@Kvjxb meRmgR Dò I Av` cwiþk RšvZ m¶g|

cV 5.1 Kgov RvZxq meR Pvl igó Kgov

GB cV tk¶I Avcb

- igó Kgov P¶li , iZ eYbv KiZ cviþb|
- igó Kgov Drcv`b tgsmg I Rjevqy Pwn`v ejZ cviþb|
- igó Kgov P¶lev` cYvjx wjLZ I ejZ cviþb|
- igó Kgov mSmn I djb m±Ü eYbv KiZ cviþb|

Bs¶iRx bvq : Sweet Gourd

^eÁwbK bvq : Cucurbita moschata

Kgov cwiþii meRmg tni g¶a` igó Kgov meP¶q , iZc¶| cwiLvb eYvi nmve Abvq 1995 mvj evsjv`tk cvq 10 nVRvi tn±i RigZ 62,000 Ub igó Kgov Drcv`Z nq (ie.ie.Gm, 1996)| igó Kgov fUwgb G I Lwb mgx|

RjevqyRig I gwU

igó Kgov Rb` iR I Dò Rjevqyq¶Rb| fvjv djþbi Rb` Kgc¶¶ Pvi gvme`vcx 15<sup>0</sup> t\_K 30<sup>0</sup> tm. Zvcgv¶ I cPz m¶hi Avjv c¶q¶Rb| eb`vi cwb D¶V bv A_P wbwkþbi m¶e`v i¶q¶Q Gi¶c Rig i`v-Av¶ gwU A_ev G¶Uj t`v-Av¶ gwU igó Kgov P¶li Rb` Dc¶hvMx| igó Kgov Rb` m¶evEg AayviZ (pH) n±jv 5.5-5.8|

RvZ

evsjv`tk mvaviYZ vbxq RvZi Avev` Kiv nq| G¶i teikifvMB Cucurbita moschata cRvZi AšfZ|

esk we`vi

igó Kgov esk we`vi mvaviYZ exR ØvivB Kiv nq|

exR jvMþvi mgq

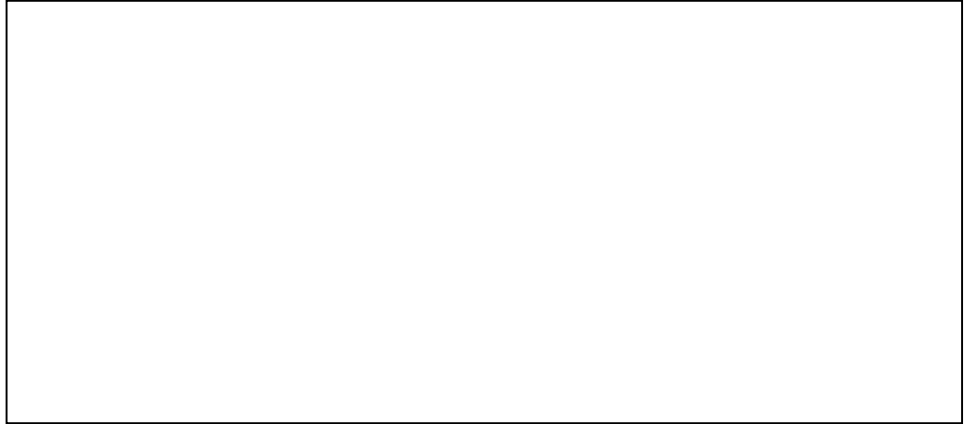
igó Kgov P¶li Rb` Gi exR ^ekvL-¶R`ô gv¶m e¶Z nq| Zþe mviv eQ¶iB igó Kgov Pvl Kiv hvq| iwe tgsmg Avkb-KvZK gv¶m igó Kgov exR e¶Z nq|





exRi ciiigY

igó Kgov Avev` i Rb` cZ tn±i 300-500 Mlg exR c±qvRb nq|



PI 5.1 igó Kgov ecb c×Z

Rig ^Zii I exR ecb

emZ evoxZ Aí ciiigY PvlIi Rb` Qvqvxb RvqMvq gv`v K±i exR jvMvZ n±e| gv±V PvlIi tejqv c_±g Pvl I gB `±q Rig ^Zii K±i cZ te±W mvi±Z gv`v ewb±q gv`vq exR e±Z n±e| exR ec±bi c×Z b±a PÍ 5.1 G t`Lv±bv nj|

mviY 5.1.1 igó Kgov PvlIi Rb` Rig ^Zii I exR ec±bi bqq

Kvhvejx		ciiigv/ciiigY
te±Wi AvKvi	c [¯] ^N [¯] D"pZv	5-6 ig. Rigi ^N [¯] Abv±i 10-15 tm. ig.
cviib vb±kb bvjv	c [¯] MfxiZv	30 tm. ig. 20 tm. ig
cZ te±W mvi±i msL`v		2u
cZ mvi±Z gv`v ^Zii`iZ		2.5-3.0 ig.
gv`vq exR ec±Yi MfxiZv		4-5 tm. ig.
cZ gv`vq exRi msL`v		3-5 u
cZ tn±i gv`vi msL`v		1600-1111 u

gv`v ^Zii Kivi mgq tmei I Ab`vb` mvi±i teQvj tWvR c±qM K±i fv±jv K±i gvUi m±½ igk±q `±Z n±e| mvi I tmei t`qvi 15-20 `b ci exR gv`vq e±Z n±e| cZ gv`vq 3-5 u exR baw±iZ MfxiZvq jvMvZ n±e Ges MRv±bvi ci 2-3 u my I mej Pviv t±L evKx Pviv Z±j t±j±Z n±e|

mvi c±qM

te±W ev gv`vq vb±i mviY 5.1.2 tZ D±jvLZ mvi,±jv teW A\_ev gv`v ^Zii mgq fv±jv K±i gvUi m±½ igk±q `±Z n±e| BDiqv I Ggic mvi Pviv MRv±bvi h\_vμg 20-25 I 40-45 `b ci gv`vi Pvi±K QvU±q gvUi ms±M fv±jv K±i igk±q `±Z n±e| Dcic±qv±Mi ci nvjKv t±P t`Iqv fv±jv|

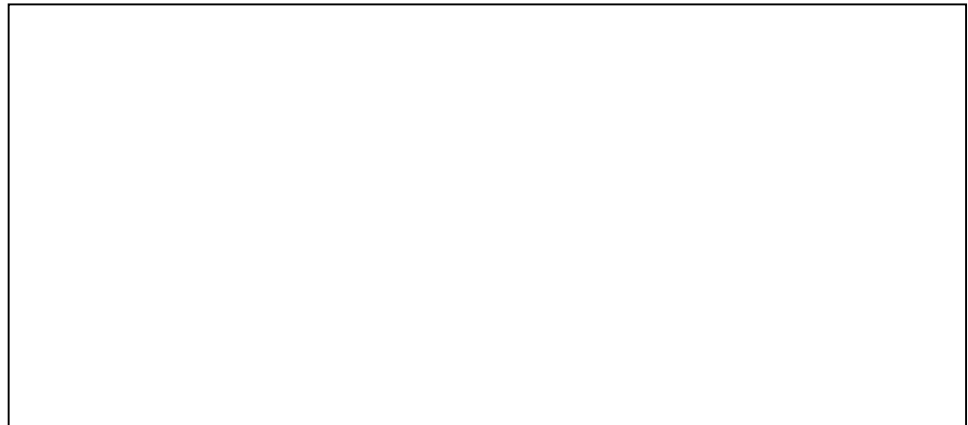
meiY 5.1.2 Kgoi RiZxq dmtj mei c†qv†Mi mgq I ciigvY

mṽi i bvg	gvSṽi Deiv kṽ³ mǎúb gvU				mvi t`qvi mgq
	iie tgšmg		Lwid tgšmg		
	†KṽR/ †n±i	Mvg/gv`v	†KṽR/ †n±i	Mvg/ gv`v	
†Mvei	5 Ub	-	5 Ub	-	teW ^Zṽii mgq
	-	6 †KṽR	-	9 †KṽR	gv`v ^Zṽii mgq
BDṽiqv	130	-	130	-	teW ^Zṽii mgq
	-	53	-	76	Priv MRṽbvi 20-25 ṽ`b ci
	-	53	-	76	Priv MRṽbvi 40-45 ṽ`b ci
ṽU.Gm.ṽC	50	-	50	-	teW ^Zṽii mgq
	-	78	-	112	gv`v ^Zṽii mgq
GgvṽC	50	-	50	-	teW ^Zṽii mgq
	-	45	-	62	Priv MRṽbvi 20-25 ṽ`b ci
	-	45	-	62	Priv MRṽbvi 40-45 ṽ`b ci

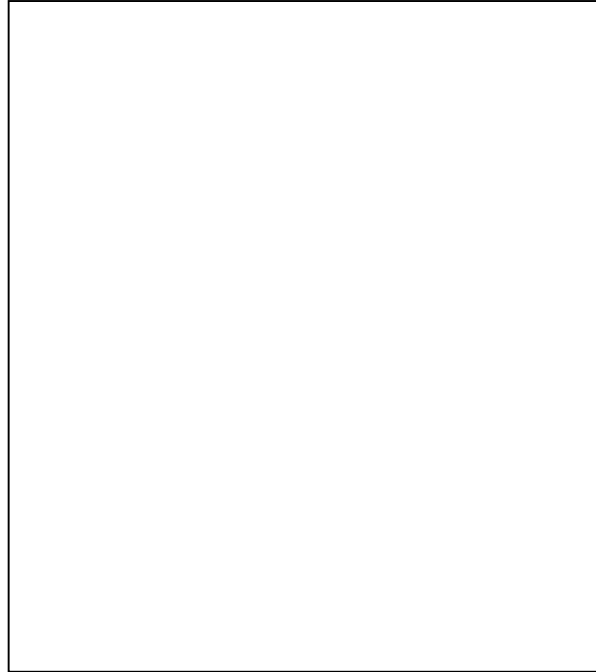
Ab`vb` ciPhv

tmP I v†vkb: i†v tgšmg vgvó Kgoi t†vZ tm†Pi c†qvRb nq| v†kl K†i d† tdvUv
 Ges d†ji evx Ae⁻vq tmP GKvš c†qvRb| te†Wi 2 cv†ki bvjv v`†q Rvg†Z tmP t`Iqv
 meavRbK| elvKv†j cvb v†vkb†bi e⁻v Kiv LvB c†qvRb|

evDbx t`qv ev gvU†Z Lo v†v†bv: Rvg†Z ev emZ evov†Z Kgoi P†I mevaviYZ evDbx
 e`envi Kiv nq| evDbxi Dci KvŮ Z†j v`†j djb tevk nq I d†ji ,Yv,Y fv†jv nq| vKš
 evDbx ^Zvii Ki†Z LiP tevk c†i v†vq gv dmj vnmv†e jZv†bv Rv†Zi meiR (vgvó Kgoi)
 P/I Kivi t†v†v evDbxi cv†e†Z Rvg†Z av†bi Lo v†v†Q† t`qv nq| dj aivi mgq d†ji
 v†v†P vKQvLo KvUv v†v†Q† t`qv nq hv†Z dj gvUv ms⁻ú†k G†m tivMvμš bv nq|

**vPí 5.2 Kvlg civMvqb**

Kvlg civMvqb: Kvlg civMvqb vgvó Kgoi Avak dj av†Y LvB mnvqK| Kvlg civMvq†bi
 Rb` t†vi tejv (6-7 Uvi g†a) GKvU m` tdvUv cv†l d†ji civMavbx nv†Z v†v†Q† x d†ji



PI 5.3 dʒi gwiQ aivi dũ

Wdib ʒjWD: cVZv aʔi is
aviY Kʔi, cVZvq mʔv mʔv
cVDWi tʔLv hvq| cVDWix
ʒjWD Gi bʔvq `gb cXZ
eʔenvi Kiv hvʔe A_ev 2.25
tKIR gʔvKʔv· 65% 1000
ʒjUvi cʔbi mʔ_ ʒkʔq GK
tnʔi RigʔZ tʔú KiʔZ nʔe|

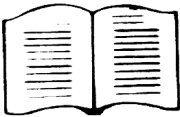
dmʔji Rʔeb Kvj

cVq me vʔxq RvʔZi ʒó
Kgov i RʔebKvj 120-170 ʔb
chš nʔq _vʔK|

dmj msMn I djb

mʔaviYZ Pvi MRvʔbvi 60-70
ʔb ci dʒ Avmv iʔi nq Ges
c_g dʒ Avmvi 60-70 ʔb
chš dʒ AvmʔZ _vʔK| dʒ
Kiv I cVkv Dfq Ae vq LvIqv

Pʔj| cʔic°Zv jvʔfi Rbʔ dj MvʔQ tʔiʔL ʔʔj AʔaK msLʔvq dj Drcvʔb evav cVʔ nq|
ZvB LvIqv i DcʔhvMx nIqv gvʔB dj cʔov DʔPZ| msi ʔY KiʔZ nʔj dj mʔúʔ cVkv i ci
ZʔʔZ nʔe| cʔZ tnʔʔi 15-20 Ub chš djb cVqv hvq|



migg

- ʒó Kgov GKU ʔfUʔgb ôGô I LʔbR mʔú` mgx meiR|
- ʒó Kgov mʔiv eQi Pvl Kiv hvq Ges 15-30° tm. Zvcgvʔvq evi Rʔš|
- ʒó Kgov Pʔli Rbʔ mʔbʔkZ tʔv-Aʔk A_ev GʔUj tʔv-Aʔk gwiU mʔevĖg|
- ʒó Kgov i Rbʔ Lʔid dmj ʔnmvʔe ^ekvL-ʔRô gvʔm Ges iʔe dmi ʔnmvʔe Avʔkb-
KvʔZK gvʔm exR eʔʔZ nʔe|
- ʒó Kgov Pʔli Rbʔ cʔZ tnʔʔi 300-500 Mvq exʔRi cʔqvRb|
- ʒó Kgov djb eʔxi Rbʔ Kvʔg ci vMvqb cʔqvRb|
- ʒó Kgov ʔeʔfb tʔvKv-gvKʔoi gʔaʔ RvʔcVkv, gwiQ tʔvKv, BʔcjʔvKbv I jvj Kgov
ʔeUj AbʔZg|
- cVlWix ʒjʔfD I Wdib ʒjʔfD tʔvM ʒó Kgov i tʔLv tʔq| G_ʔj mgqgZ Jla
ʔʔq `gb KiʔZ nʔe|



cvtWĖi gj`vqb 5.1

1. mZ` n+j Ômô Ges ig\_`v n+j Ôngô jLb|

K. igló KgovZ fUvlgb ÔGô AaK cıgvY_vK|

L. igló Kgov Pvl i Rb` DchZ ZvcgvÎv n+jv 20°-25° tm.

M. Lid dm+j i Rb` PÎ-^ekvL gv+m exR ecb KiZ n+e|

2. k b`vb c iY Ki:b|

K. jZv+bv RvZi igló Kgov Pvl i Rb` GK gv`v t_K Ab` gv`vi `iZ
..... ivLZ n+e|

L. igló Kgov Pvl i Rb` tn+i cıZ exRjvM|

M. Kgov exR kZKi v fvm Avıgl_vK|

3. mVK DĖi i cık UK Pý (√) `b|

K. igló Kgov Pvl i Rb` Dc+hvmx gvıU tKvbıU ?

1. t`v-Avı-GtUj t`vAvı

2. te+j t`v-Avı

3. GtUj t`v-Avı

4. cıj t`v-Avı-ewıjgvıU

L. iıe igló Kgoi exR tKvb gv+m ecb Ki v nq ?

1. fv`-Avıkb

2. Avıkb-KvıZK

3. AMnvqb-tcšI

4. Avıvp-kıeb

M. mvaviYZ igló Kgoi djb KZ ?

1. 10-15 Ub/tn.

2. 15-20 Ub/tn.

3. 20-25 Ub/tn.

4. 25-30 Ub/tn.

4. GK K_vq ei eıK` DĖi `b|

K. igló Kgov Pvl vevt` tMvei mvi Kxfvıe cıqvM KiZ n+e ?

L. gvıQ tıvıKv Kgov MvıQ vıK vııZ K+i ?

M. igló Kgoi djb eıxıZ vıKımi mıvıh` vıbıZ nq ?

cV 5.2 Kgov RvZiq meiR Pvl**GB cV tk! AvciB**

⇒ *Kuk†iv†ji* , i:Z eYbv Ki†Z cvi†eb|

⇒ *Kuk†iv†ji* Drcv`b †gšmg I cwi†ekMZ Pwn`v ej†Z cvi†eb|

⇒ *Kuk†iv†ji* Pvlvev` cYvjx †jL†Z I ej†Z cvi†eb|

⇒ *Kuk†iv†ji* dmj msMn I djb m†Ü eYbv Ki†Z cvi†eb|

***Kuk†ivj***

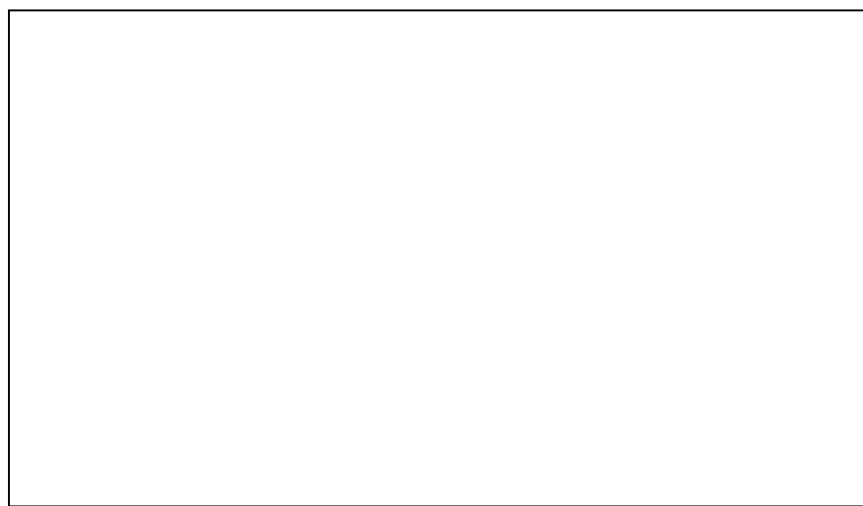
Bs†iR bvg: Teasle gourd

^eÁmbK bvg: *Momordica cochinchinensis*

Kuk†ivj GKU `vgx *Kgov RvZiq* dmj | *Kuk†ivj* A†bK †`b chš `vfvweK Ae`vq msi†Y
Kiv hvq | ciZ eQi evsjv†`k †\_†K D†jL†hvM` cwigvY *Kuk†ivj* ga`ciP` I hy†iv†R` iBmb
nq | mvaúZK eQi , †jv†Z *Kuk†iv†ji* Pvlvev` evsjv†`†ki †eifb RvqMvq †e`Z. jvf Ki†Q |
Z†e evpbevoxv †Rjvi m`i I AvLvDov `vbxq e`vcKfv†e *Kuk†iv†ji* Pvl n†`Q |

RjevqyRig I gvu

Kuk†iv†ji Rb` Dò I Av` *Rjevqyc†qvRb* | Avs†kK Qvqv†Z Gi Pvl Kiv hv†e, Z†e cY
Av†jwKZ `v†b djb te†k n†e | evsjv†`†k †Kej L†id †gšmgB *Kuk†ivj* Rš†v†bv m†e |
eb`vgy Ges cwb †b†k†bi m†e`v Av†Q Ggb gvSwi D†z†_†K D†zR†ig *Kuk†ivj* Pvl i
Rb` Dc†hvMx | †`v-Auk †_†K G†uj †`v-Auk gvu†Z *Kuk†iv†ji* Pvl fv†jv nq | *Kuk†iv†ji*
Rb` †K†Ar A†Z gvu (acid soil) fv†jv |



†PI 5.4 *Kuk†iv†ji* RvZ

RvZ

`vbxq DbZ Rv†Zi g†a` Avmvgx, g†bc†y, g†z†c†y I g†z†y D†jL†hvM` | Avmvgx Rv†Zi
dj , †jv m†y`y†MvjvKvi I tetu n†q `v†K (†PI 5.4) | g†bc†y i dj j†v†U I A†c†vKZ.
†PKb Z†e djb te†k †`†q `v†K |

dm†ji R†ebK†j

KvKivji djb tcz cvq 200-270 w`b jvM

esk we⁻vi

KvKivji esk we⁻vi wefb cwxZz Kiv hvq, thgb - K>`gj, cKZ.exR Ges KvUⁱ KwiUs

Øviv| maviYZ K>`g +ji mvinh<sup>-</sup>B esk we<sup>-</sup>vi Kiv nq<sub>-</sub>vK| K>`gj Øviv esk we⁻vi LpB mnR Ges Gz gvZ₃bv, bl eRvq₋vK|

cKZ.exR t₋KI Pviv cvIqv hvq Zte Gi A+bK Am^{yeav} AvQ| thgb- exR kZKiv 50 fvMi tek MRvq bv Ges MRv^{bv} exR t₋KI kZKiv 50% cy^l MvQ nIqvⁱ m^{avebv} vK|

KvUⁱ kvLv tK^U I bZ^{lv} MvQ Kiv hvq| G[†]†[†] AMq K^{wo} Ges `jGK<sup>U</sup> cvZmn KwiUs w<sup>b</sup>q Av<sup>-</sup> I Qvqgq<sup>-</sup> v<sup>b</sup> evj<sup>ev</sup> nvjKv gwiU<sup>z</sup> c<sup>z</sup> ivL<sup>z</sup> 15-20 w`bi g^a KwiUs Gi tMvovq bZ^{lv} kKo MRv^{te}l

MvQ jvM^{bvi} mgq

maviYZ ^PÎ-^{ekvL} gvm t₋K fv⁻-Av^{kb} gvm chš KvKivji Pvl Kiv nq₋vK| Zte dvê^{lv} t₋K ^ekvL gvm n[†]Q MvQ jvM^{bvi} DĖg mgq| K>`gj t₋K Pviv jvM^{bvi} Rb⁻ Dò I Av⁻ cⁱⁱek⁻iKvi|

ex^{Ri} ci^{igv}

KvKivj P[†]li Rb⁻ w^b j^l LZ QK Ab^{lv}qx ex^{Ri} K>`gj i c[†]qvRb|

<i>K>`gj</i>	<i>150 tKwR/tn. A<sub>-</sub>ev 1600-2500w K>`gj/tn. `iKvi n<sup>†</sup>e c<sup>†</sup>Z<sup>-</sup>Kw K>`g j 15-20 tm.wg. j^{av} nIqv⁻iKvi </i>
<i>K>`g +ji msL⁻v</i>	<i>x: 1440-2250w/tn. c[†]l: 160-250w/tn.</i>
<i>K>`gj i IRb</i>	<i>x: 142.5 tKwR/tn. c[†]l: 7.5 tKwR/tn.</i>

Rig ^Zi I K>`gj t^{iv}cY

w^b i QK Ab^{lv}qx KvKivji Rb⁻ teW I gv⁻ ^Zi KiZ n[†]e|

<i>teWi AvKvi</i>	<i>c⁻ %`N<sup>-</sup></i>	<i>45 tm.wg. Rigi ^`N⁻i Dci w^bfi K[†]i</i>
<i>bjvi AvKvi</i>	<i>c⁻ MfxiZv</i>	<i>30 tm.wg. 20 tm.wg.</i>
<i>gv⁻vi AvKvi</i>		<i>45 × 45 × 45 tm.wg.</i>
<i>cwZ teW mⁱⁱⁱ msL⁻v</i>		<i>2</i>
<i>`iZ</i>	<i>mwi t₋K mwi MvQ t₋K MvQ</i>	<i>200-250 tm.wg. 200 - 250 tm.wg.</i>
<i>cwZ tn[†]i gv⁻vi msL⁻v</i>		<i>1600-2500 w</i>
<i>MvQi msL⁻v</i>	<i>x cy^l</i>	<i>1440-2250 w 160-250w (tg^U MvQi msL⁻vi kZKiv 5-10 fvM) </i>

Dc[†]i t⁻qv gvc Ab^{lv}†i MZ K[†]i gv⁻ ^Zi KiZ n[†]e (wPÎ 5.5)| gv⁻ ^Zi Kivi mgq c[†]qvRbxq mvi, tMei, KxUbvkK cf^{iz} gv⁻vq w`q fv<sup>†</sup>jv K<sup>†</sup>i gwi m<sup>†</sup>½ w<sup>†</sup>kvq w`z n[†]e| gv⁻vq gv[†]S gv[†]S Aí ci^{igv}Y c^{wb} w`z n<sup>†</sup>e Ges gwi b<sup>rov</sup>Pro<sup>v</sup> K<sup>†</sup>i D<sup>†</sup>eq w`z n[†]e|

*maviYZ K>`g[†]i
mvinh⁻B esk we⁻vi Kiv
nq₋vK| K>`gj Øviv
esk we⁻vi LpB mnR Ges
Gz gvZ₃bv, bl eRvq₋
vK|*

*dvê^{lv} t₋K ^ekvL gvm
n[†]Q MvQ jvM^{bvi} DĖg
mgq|*

*cy^l MvQ x MvQ jvM^{bvi}
15-20 w`b c[†]e jvM[†]Z
n[†]e, KviY cy^l MvQi d^z
x MvQi d^zi 15-20
w`b ci Av^ml*

K> g⁺ jvM⁺bvi 2-1 w⁺b Av⁺M tkl ev⁺ii gZ Avevi GKe⁺vi gwU t⁺bo⁺P⁺o w⁺q nvjK⁺ t⁺mP
w⁺q f⁺v⁺ n⁺e| gv⁺vq t⁺Mei mvi w⁺q R⁺g ^Z⁺ii Kivi 10-15 w⁺b ci K> g⁺ jvM⁺bvi
mgq nq| K> g⁺ 4-6 t⁺m. w⁺g. Mf⁺x⁺i jvM⁺q SzSz⁺ gwU w⁺q t⁺X⁺K w⁺q Ges gwU⁺i Dci
av⁺bi Lo w⁺q t⁺X⁺K w⁺q Z⁺ n⁺e| cy⁺l MvQ R⁺gi avi w⁺q jvM⁺bv f⁺v⁺ jv| cy⁺l MvQ ⁻x MvQ
jvM⁺bvi 15-20 w⁺b c⁺e jvM⁺Z n⁺e, KviY cy⁺l Mv⁺Qi d⁺z ⁻x Mv⁺Qi d⁺z i 15-20 w⁺b
ci Av⁺m| cy⁺l MvQ 15-20 w⁺b Aš⁺i 2-3 w⁺K⁺ Z jvM⁺Z n⁺e| KviY GKe⁺vi i jvM⁺bv
cy⁺l d⁺z w⁺q ⁻x Mv⁺Qi me, t⁺jv d⁺z i ci vM⁺qb m⁺e nq bv|

PI 5.5 K⁺kv⁺ jvM⁺bvi c⁺xZ

m⁺ii c⁺igY I c⁺qM c⁺xZ (m⁺ R⁺gvb, 1992)

w⁺b⁺zi Q⁺tK K⁺kv⁺ jv⁺ Rb⁺ c⁺q⁺Rb⁺xq m⁺ii c⁺igY I c⁺qM c⁺xZ D⁺jL Kiv n⁺jv|

m ⁺ ii bvg	ga ⁺ g Deiv ⁺ k ⁺ ³ m ⁺ ub R ⁺ g		mvi t ⁺ qvi mgq
	tK ⁺ R/t ⁺ n.	Mg/gv ⁺ v	
BD ⁺ iqv tgvU: 300-400 tK ⁺ R/t ⁺ n. 1g Dci c ⁺ qM cieZ ⁺ c ⁺ Z ⁺ U Dci c ⁺ q ⁺ Mi gv ⁺ lv (m ⁺ ev ⁺ P 6 ⁺ U w ⁺ K ⁺)	— —	20 25	Piv MR ⁺ bvi 1 gvm ci cieZ ⁺ 25 w ⁺ b cici
w ⁺ UGm ⁺ c tgvU: 150-200 tK ⁺ R/t ⁺ n. 1g avc 2q avc	100 —	— 50	tkl P ⁺ li Av ⁺ M gv ⁺ v ^Z ⁺ ii mgq
Gg ⁺ c tgvU: 300-400 tK ⁺ R/t ⁺ n. 1g avc 1g Dci c ⁺ qM cieZ ⁺ c ⁺ Z ⁺ U Dci c ⁺ qM (m ⁺ ev ⁺ P 6 ⁺ U w ⁺ K ⁺)	— — —	50 15 14	gv ⁺ v ^Z ⁺ ii mgq Piv MR ⁺ bvi 30 w ⁺ b ci 25 w ⁺ b cici
m ⁺ ilvi ^Lj tgvU: 500 tK ⁺ R/t ⁺ n. 1g avc 2q avc	250 —	— 125	tkl P ⁺ li Av ⁺ M gv ⁺ v ^Z ⁺ ii mgq
t ⁺ Mei tgvU: 1500 tK ⁺ R/t ⁺ n. 1g avc 2q avc	7500 —	— 4000	tkl P ⁺ li Av ⁺ M gv ⁺ v ^Z ⁺ ii mgq

BDiIqv Ges Ggic mvi
gv`vi Kbvivq Pvi`K
cqvM Kti gvi mvi
fvjvfvte gikq`Z
nze|

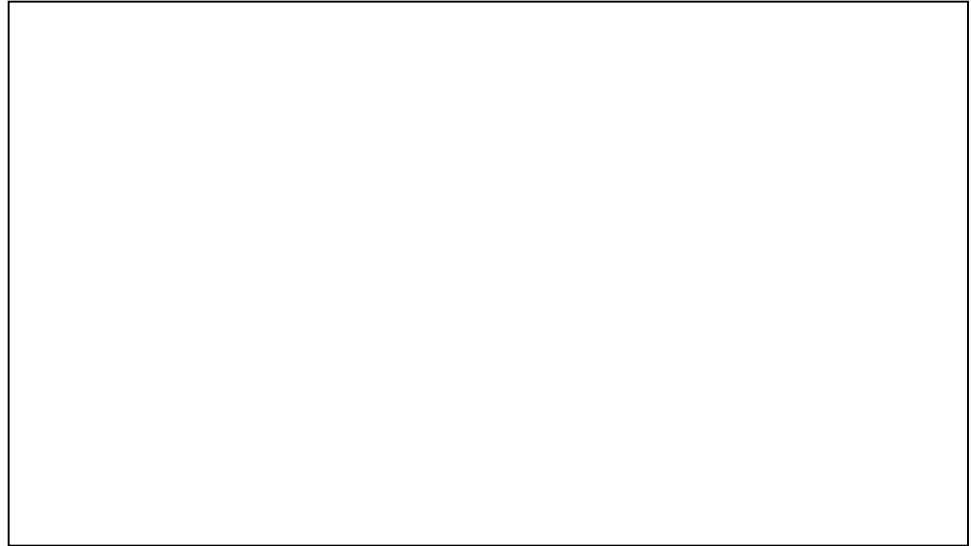
th me dmj (jvjkvK,
WvkvK) Lg ZvovZvvo eo
nq tmme dmj Kvktivj
MvQi`jvii gvS jvMq
evovZ Avq Kiv hvq|



BDiIqv Ges Ggic mvi gv`vi Kbvivi Pvi`K cqvM Kti gvi mvi fvjvfvte gikq`Z nze| c\_g DcicqvMi ciZ 25 `b cici cieZ DcicqvM KiZ nze| Gfvte fv` 15 t\_K Avkbi 15 chš DcicqvM KiZ nze| BDiIqv Ges Ggic mvi DcicqvMi gviv Ges `DcicqvMi gvSLvbi mgqi cv_K` (`bi msL`v) bfi KiZe MvQi evo-eovZ I eqmi Dci| UGmic, milvi `Lj I tmei mvi AaK RigZ I evK AaK gv`vq teQvj tWvR ntmte `Z nze|

Ab`b` ciPhv

th me dmj (jvjkvK, WvkvK) Lg ZvovZvvo eo nq tmme dmj Kvktivj MvQi`jvii gvS jvMq evovZ Avq Kiv hvq| Zvov Kvktivj MvQi gvPv bP Qvqv cQ`Kvix gmjv dmj, thgb- Av`v jvRbKfvte Pvl Kiv hvq (Rahim, 1995) (PÎ 5.6)|



PI 5.6 Kktivji gvS Av`vi Pvl

tmP I bkb e`v

teWi`jvki bvi mivth` Kvktivji RigZ tmP t`qv meavRbK| Gme bvi mivth` mg` RigZ me RvqMq mgfvte tmP Ges Rig t\_K AvZi<sup>3</sup> cvb tei Kti t`qv mae| dmji cji RxbKvjB cvbi Afve GovZ nze| G Ae`vq gvi i`mi meiba evÃbxq gib 50%|

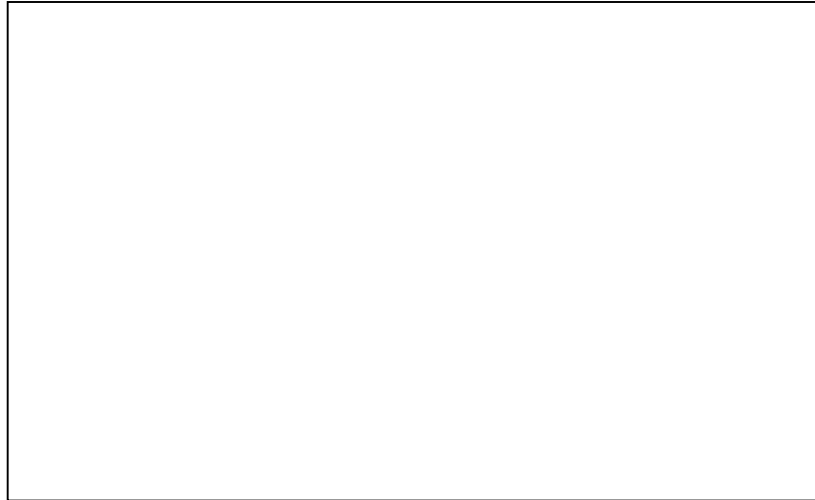
evDib t`qv

Kktivji MvQ 10-15 tm.wg. j`v n`jB MvQi tMvovq GK`K t`j`q evk A\_ev KiÂ ciz `Z nze| MvQ hLb 50 tm.wg. j`v n`e ZLb 1.5 gUvi Dgvpv `Z nze|

KiIg civMqb

Kktivj GKU fbevmx dzji MvQ, A_vr`x I cy`l dz`fb`fb MvQ nq| KvRB Kktivji fvjv dj`bi Rb` KiIg civMqb`iKvi (PÎ 5.7)| h`I tgšgviQ Øviv civMqb mae Ze elvKvj tgšgviQ Avak` Kg`vK, GQvov KxUbvK JIa cqvMi d`j tgšgviQ AvMgb K`g hvq| GRb` KiIg civMqb mKvj KiZ nze|

Kktivji GKU fbevmx
dzji MvQ, A_vr`x I
cy`l dz`fb`fb MvQ
nq| KvRB Kktivji
fvjv dj`bi Rb` KiIg
civMqb`iKvi|



PI 5.7 Kuk†iv†ji Kulg civMvqb

†civKv†Ko `gb

¶g¶ó Kgov i gZ Kv††iv†ji d†ji g¶Q †civKv, Rve †civKv, jvj Kgov ¶eUj I B¶cj`vKbv
 ¶eUj Gi AvμgY nq| AvμgY j ¶Y, ¶¶Z I `gb c×¶Z ¶g¶ó Kgov i Abýc (civ 5.1)|
 GQvov †civKvi AvμgY I Kv†ûi gvRiv †civKv Kv††iv†ji †`Lv hvq| G †civKvi KxovU Kv†ûi
 K¶P As†ki ¶fZ†i X†K big Ask †L†q bó K†i †`q| Gi `gb c×¶Z d†ji gvRiv †civKvi
 Abýc|

†ivMeivjvB

Pviv X†j †ivM mvaviYZ
K¶P Mv†Qi †Mvovi Ask†K
AvμgY K†i| Avμvš Ask
c†P ¶M†q Pviv X†j c†o
Ges g†i hvq|

Pviv X†j cov †ivMt G¶U GK¶U Q¶vKR¶bZ †ivM| G †ivM mvaviYZ K¶P Mv†Qi †Mvovi Ask†K
 AvμgY K†i| Avμvš Ask c†P ¶M†q Pviv X†j c†o Ges g†i hvq| G †ivM `g†bi Rb`
 †ivMgy K>`g††ivcb, Avμvš MvQ Dc¶o†q †djv Ges civb ¶b¶wk†bi e`e`v Kiv|

civDWix ¶gj¶fDt G¶U GK¶U Q¶vKR¶bZ †ivM| civZvi Dc†i mv`v mv`v am i civDWi †`Lv
 hvq Ges civZv g†i hvq| G †ivM `g†bi Rb` 2 Mvg ¶_I¶fU c¶Z 1 ¶jUvi civbi m†½ ¶g¶K†q
 15 ¶b cici †`ú Ki†Z n†e|

†gvRvBK fvBivmt G †iv†Mi Avμg†Y Mv†Qi civZv meR I nj†` is-Gi †gvRvBK avib K†i
 | Gi d†j Mv†Qi evo-evoiz K†g ¶M†q djb K†g hvq| †ivM c¶Z†iva ¶lgZv m¶úb RvZ
 e`envi Kiv, †ivMgy MvQ jvMv†bv Ges Avμvš MvQ Zzj cyo†q †dj G †ivM `gb Kiv hvq|

†iU¶ dmj

kx†Zi ¶i†ZB Kuk†ivj MvQ g†i hvq Ges cieZx elv bv Avmv chš gwUi ¶b†P m¶úv
 ¶b¶iq Ae`vq \_v†K| m¶Zivs kxZKv†j Ab` dmj Kivi ci cieZx elvi Av†MB H ¶b¶iq
 Kuk†iv†ji K>`g†,†jv†K m¶μq Kivi Rb` Kv††ivj P¶li ¶e¶a e`e`v,†jv tg†b Pj†Z
 n†e| ZvntjB cieZx tgšm†g G Kuk†iv†ji †iU¶ dmj †_†K fv†jv dmj civlqv hv†e|
 mvaviYZ †iU¶ dm†ji d†-dj Av†M nq|

ii+j dmj

Av#MB ejv n#q#Q, kxZK#j K#K#iv#ji K>`gf g#Ui #b#P #b#q _v#K Ges G mgq gvPvq
 Ab` dmj Pvl Kiv hv#e| tm mgq K#K#iv#ji K>`gf b# bv K#i H teW ev tKq#i#Z Ab`
 i#e dm#ji Pvl Kiv hvq, G#K #i+j dmj ejv nq (Rahim, 1995)| i#ng Zvi M#eIYvq
 K#K#iv#j MvQ KvUvi 1 gvm c#e t`kx mx#gi exR j#M#q kx#Z fv#jv dj cvb|

K#K#iv#ji R#ebKvj

KvK#iv#ji K>`g j jvM#bv t\_#K dj t#Z cvq 200-270 #`b mgq jv#M|

dmj m#Mn I djb

KvK#iv#j hLb meR#f nj#` nq ZLbB KvUvi mgq nq| mvaviYZ civMq#bi 10-15 #`b
 ciB KvK#iv#j tZvjvi Dch# nq| Gi djb tn#i c#Z 10-20 Ub|

**m#igg**

- KvK#iv#j GK#U cy#Ki I A_Kix meiR| msi#Y ,Y tek #eavq GiU idZ#b Kiv mnR|
- D# I Av` RjevqyGes myb#kZ t`v-Av# t_#K G#uj t`v-Av# g#U KvK#iv#ji Rb`
 Dc#h#Mx|
- d#p-#ekvL gv#m 2.5 #g. `#i `#i m#i K#i 2 #g. `#i gv`v ^Zix K#i KvK#iv#ji
 K>`g j jvM#Z n#e|
- KvK#iv#j GK#U #fbv#x MvQ #eavq K#i#g civMq#b c#qvRb| G j#` 5-10% cy#I MvQ,
 #x MvQ jvM#bvi 15-20 #`b c#e jvM#Z n#e|
- KvK#iv#ji gvPri #b#P Av`v Ges KvK#iv#ji t#k#I #i+j dmj #nm#e t`kx mx#gi Pvl
 Kiv hv#e|
- c#Z tn#i 20-25 Ub KvK#iv#j cvIqv hvq|



cvtVĖi gj`vqb 5.2

1. mZ` n+j ōmō Ges ig\_`v n+j ōvgō jLj|

K. Avgv` i t`k mvaivYZ exRi Øviv Kvkv+jj eskie`vi Kiv nq|

L. Kvkv+jj Rb` Dō I Av` RjevqyDc+hMx|

M. Kvkv+jj PvlI Rb` SzSzi tej gviUi c+qvRb|

2. iY`vb c+Y Kib|

K. Kvkv+jj GKU A_Kix`vgx dmj hv nq|

L. Kvkv+jj K>gj gv+m tivcY Kiv nq|

M. Kvkv+jj PvlI Rb` RigZ kZKiv fVM cyel MvQ_vKv DPr|

3. mVK DĖii c+k UK Py (✓) `b|

K. gv`v c×Z Z Kvkv+jj Pvlver` Kiv n+j GK MvQ n+Z Ab` MvQi` +Z KZ ivL+Z n+e ?

1. 1-1.5 gUvi

2. 2-2.5 gUvi

3. 3-3.5 gUvi

4. 3.5-4 gUvi

L. Kvkv+jj Kîlg civMvq+bi DĖg mgq +KvbU ?

1. mKvj tejv

2. `py tejv

3. weKj tejv

4. iîl tejv

M. Kvkv+jj tn+i cZ djb KZ ?

1. 20-30 Ub

2. 20-25 Ub

3. 15-20 Ub

4. 5-10 Ub

4. GK K_vq ev evK` DĖi `b|

K. Kvkv+jj djb e×Z D+jL+hM` AšeZx c+iPhv K?

L. Kvkv+jj RigZ Avšdmj n+m+e +Kvb ai+Yi dmj Pvl Kiv jvfRbK?

M. Kvkv+jj ZbU`vbxq DbZ RvZi bvg jLj|

cV V 5.3 KgoV RvZxq meW R Pv I



GB c_vV †k‡/ A_vc_wb

- *Zigʁi iːZ eYb KiːZ cviːeb*
- *Zigʁi Drcvˈb tʁʁmɔ I cwiːekMZ Pwɪnˈv ejːZ cviːeb*
- *Zigʁi Pvlvɛrˈ cYvjx ɯjLːZ I ejːZ cviːeb*
- *Zigʁi dmj mSMn I djb maːÜ ejːZ cviːeb*
- *Zigʁi tɕvKvqKo I tivMevjvB Ges Zɪtˈi ˈqb maːÜ ejːZ cviːeb*

**ZigB**

Bs†i‖R bvq: Water melon

^eÁwibK bq: *Citrullus Vulgaris*

ZigR GK«U mȳv`yGes A\_Kix dmj| eivjv`#k e,IRvZxq`xNRxie dj MvQ ax#i ax#i K#g
Avm#Q Ges cKZ.c#¶`xN#ggv`x d#ji Rb` Rigi Afve| tm#¶#î`î`†ggv`x dj wnm#te
Zig#Ri ,i#Z A#bK t#k| Zig#R h#_ó c#igvY`fUwıgb ÔGÔ, _vqıgb l tccıUb Av#Q|
ZigR Øviv mieZ, R`vq l wııvc`Zıi Kiv hvq|

RjevgyRwg I gwU

i@, Dò l cPz Avjvhy ̄v#b Zigr me#Pq fv#jv R#š| ejocvZ l AaK AvZv
ZigrRi Rb ̄vZKi| dj cwc° nIqvi mgq Avjv Kg n#j d#ji , Yv, Y thgb- ̄v,
wGóZv l Nvb K#g hvq| ZigrRi Liv l Dò Zvcgv̄v mn̄ Kivi ̄vGZv Lp temk| Zvcgv̄v
40° tm. Gi Dci n#j dmj tZgb ̄vZ nq bv| Z#e 25° tm. Gi w#P Mv#Qi ejx l
djaviY e#nZ nq| 30-40° tm. Zvcgv̄vq Zigr fv#jv djb t#q| kvZ cavb t#k
Mx@Kv#j Ges Avgv̄i t#k tKej gv̄i iwe tGsm̄gi tkl fvM Ges Lw#di c_g fvM
Zigr fv#jv nq| cwb w#vK#bi m#e ̄v AvQ Ggb te#j t#v-Auk t#K t#v-Auk gvwU
Zigr Pv#li Rb Dc#hMx| b#xi Z#i te#j t#v-Auk gvwU#Z Zigr fv#jv R#š| gvwUi
AvgZv ̄vvi#Zi qv̄v 5.0 t#K 6.8 nIqv fv#jv|

R_VZ

eûc#e evsjv#`#k c#Z#v I †Mvqvj>` bvgK`yU Rv#Zi H`B RvqMvq PvI nZ| eZgvb RvZ
UcBì, †Mvix, ZvBIqvb, IqvJW K#b, m#vi teex, P`w#úqb Ges Ggkqv#i | B`v#bs evsjv#`k
K#L.M#eIYv Bb#ó#UDU c#v I mvMi bvg`yU RvZ mviv †`#k PvI Kivi Rb` Abgv`b
K#i#0|

esk we⁻vi

Zig[†]Ri esk we⁻vi mva^viYZ exR Øv^vB Ki^vn[†]q₋v[†]K|

exR ec†bi mgq

evsjvʔtʰk tdegwi t_ʔK Gwɔj gvm GB mgʔqi AvenvIqv Zigr Pɔʔli Dcʰvmx| AZʷak
eɔpɔcZ I Avʔjvi AcZʔzi Rbʷ eIvKvʔj Pvl mæ bq| ʔkʔzi KviʔY iie tgʂmʔgi c_g
fvʔMI Gi Pvl dʒcmɔq bv| exR tevʔvi Rbʷ tdegwi gvʔmi c_g cʰ mʔevEg, Gi AvʔM
evʔj exR t_ʔiʔZ MRvq| AvMvg dmj tɔʔZ nʔj Rvbwi gvʔm exR evʔ kʔʔzi nvZ t_ʔK
KɔP Pɔv i ʔvi eʷeʷ Kiv hvʔe|

exRi cwigY

ZigR mvaY Z mvi iZ jvMvbi nq| Gi Rb" cWZ tn±i 850-1000 Mvg exRi c±qvRb nq|

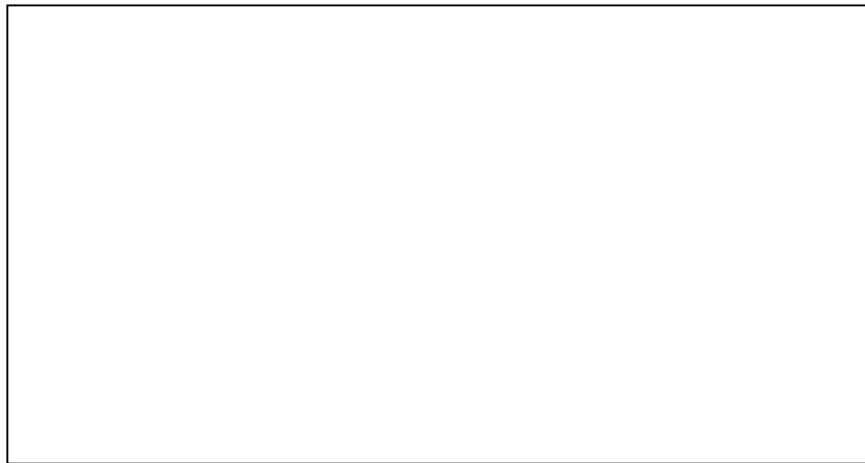
Rig ^Zi I exR ecb

teWi AvKvi	c %`N"	250-300 tm.ig. Rigi ^`N"i Dci wbf i Ki te
bjvi AvKvi	c MfxiZv	35 tm.ig. 25 tm.ig.
cWZ teW mvi i msL"v		2 wU
`iZ	MvQ n±Z MvQ mvi i n±Z mvi i	200-250 tm.ig. 200-250 tm.ig.
gv`vi AvKvi	c ^`N" MfxiZv	45 tm.ig. 45 tm.ig. 45 tm.ig.
exRi msL"v	gv`vq mivmvi ecb cWje"vM	2wU A¼Z exR 1wU A¼Z exR
cWZ tn±i RigZ gv`vi msL"v		1600-2000wU
exRi cwigY	mvi i K±i eby cWje"vM	850 - 1000 Mvg/tn. 200 - 300 Mvg/tn.

exR ecb ev Pviv jvMvbi
2-3 mBvn AvM gv`v ^Zi
KiZ nte| gv`vi gWUi
mv`_ teQvj mvi I tMvei
fv`jv K±i wgiKq wBZ
nte|

exR ecb ev Pviv jvMvbi 2-3 mBvn AvM gv`v ^Zi KiZ nte| gv`vi gWUi mv`_ teQvj mvi
I tMvei fv`jv K±i wgiKq wBZ nte| `iKvi n±j nvjKvfvte cwb tmP w`±Z nte| G±Z K±i
mvi ,±jv fv`jvfvte c±P gWUi mv`_ wgiK hte| gv`vi gWUi gv`S gv`S Dv`±q w`±Z nte Ges
exR ev Pviv jvMvbi 2-3 w`b AvM tkl evi i gZ Avevi gWUi tbo w`±Z nte| w`±bi tkl ev
wteK±ji w`±K 2wU A¼Z exR wBwv iZ MfxiZvq jvMvq w`±Z nte| exR A¼Z bv n±j cWZ
gv`vq 4-5wU exR jvMvZ nte Ges MRvevi mgq gv`v cWZ 2-3wU Pviv ti±L evKx ,±jv Z±j
tdj±Z nte| AvM tgsMtg exR eby gv`vq LoKv w`±q tX±K w`±j exR `Z MRvte|

`yfvte exR MRvbv hvq| GKwU _vjvq ev Kv±Vi mgZj tU±Z ewj wB±q Nb K±i exR eby
ewj cwb w`±q wR±q w`±Z nte| A_ev exR ,±jv 24 NvUv cwb±Z wR±q ivL±j exRi A¼Z
tevi±q Avmte| exR gv`vq I cWj _b e"vM eby ev jvMvbi AvM Gfvte exR MvR±q tbiqv
DEg|



ZigR Pvl mvi i gv`v I c±qM (Rvgv, 1992)

PI 5.8 ZigR ecb c×Z

125 ■

ZigR MvQi QuB KiY

ZigR hLb GKU tctc
dji gZ eo nte ZLb
ZigRi wbp awbi Lo
AekB w`tZ nte hvZ
ZigRi m½ gwUi
ms`uk bv vK

ZigRi fvjv djbi Rb` ZigR MvQ gvî 4u kvLv ivLjB Pjete| Gi teik kvLv
 K, jv c_g w`tKB tft½ w`tZ nte hvZ H`vb t`K tKv bv kvLv tei bv nq| ciz kvLv
 tKv bv ckLv nZ t`qv hvte bv| ckLv K, jv Aw`tZB bó KiZ nte| ciz kvLv
 GKU ZigR ivLjZ nte hvZ cizU dj myi I mgfvte eo nZ cvti| G PviU kvLv
 Ggbfvte RigZ mvrq w`tZ nte hvZ GKU kvLv Ab`Ui Dci w`tq thZ ev Rtoq thZ
 bv cvti| ZvQov tcvKv Kgovbv Ges Amg AvKzi me dj eo nIqvi cteB mviq
 tdjZ nte| ZigR MvQ tvmvjv I tcvKvKtoi nvZ t`K iKivi Rb` RigZ
 Lo weiq w`tZ nte| ZvQov ZigR hLb GKU tctc dji gZ eo nte ZLb ZigRi wbp
 awbi Lo AekB w`tZ nte hvZ ZigRi m½ gwUi ms`uk bv vK| dmj tZvjvi 10 w`b
 AvM ZigRi th Ask Ltoi m½ tJM vK tm Ask mveavb Dv`eq tiš`i w`tK w`tZ
 nte| Gi dji ZigRi is me`K GKB iKg nte| Zv bv nji dji th Ask gwUi m½
 tJM vK tm Ask`v fweK eY Drcb bv nq mv`v nq hvq hv evRvi gj`Kigq t`q|

tcvKvKo`gb

cvZi weUj tcvKt weUj tcvKv`j ai bi nq| GKU KvjP Ab`U jvj| Gme tcvKvi cY
 eq`i jc Ges weQv DftqB cvZv tLq MvQi mgr`qZ Kti| c_g w`tK tcvKv, jvi msL`v
 hLb Kg vK ZLb Gme tcvKv, Wg I ev`Pv BZ`w` a`i bó Kti tdjZ nte| cieZtZ
 tcvKvi msL`v teik nji g`vjw`qb 57 Bim 1.12 wjUvi/n. gvîvq t`ú KiZ nte|

Rve tcvKt G tcvKv MvQi KIP KvU, Wm Ges cvZi im i`l tLq dmj mgr`qZ Kti|
 tcvKv`g bi Rb` g`vjw`qb 1.12 wj./n. gvîvq t`ú KiZ nte|

ZigRi gRiv tcvKt x tcvKv dji tLmvi wbp Wg cvto| Wg dZ Kxov, jv tei nq
 dj tLq bó Kti tdj Ges dj, jv maviYZ cP hvq| weUj tcvKvi gZ g`vjw`qb cqvM
 Kti`gb Kiv hvte|

**tiW`ú BWi gvBut** tQvU tQvU gvKo, jv cvZi wbp w`tK evm Kti Ges cvZi im tLq
 tdj| cvZv Kto hvq, MvQi ex`Ktg Mq djb Ktg hvq| wD`ivb 500 Bim 1.12
 wjUvi/n. t`ú KiZ nte| w`bi tk`l cvZi wbp w`tK t`ú Kiv`iKvi|

tivMvjvB

KvÊcP tivMt G tivMi Avµg`b ZigR MvQi tMvov cP MvQ gti hvq| cizKvii Rb`
 2.5 Mvg WvB`b Gg-45 ciz 1 wjUvi cwbZ w`tq 10-15 w`b ci ci MvQ t`ú Kti`gb
 KiZ nte|

**G`vb vKbRt** cvZv, cvZi tevU, KvU Ges dji ev`vgx t`K KvjP`vM t`Lv hvq| G tivM
 ZvovZv w`vi jvf Kti Ges MvQ I dji gvi`K qZ Kti| Dc`ii wbgg Abv`i
 WvB`b Gg-45 MvQ t`ú KiZ nte|

**wdD`Riqg DBë tivMt** G tivMi Avµg`b MvQ Xj cto gvi hvq| G tivMi cizKvii
 Rb` t K) tivM ciz`ivaK RvZi Pvl Kiv fvjv L) Avµš MvQ Zj cyoq tdjZ nte
 M) 2.5 Mvg w`fUv`f · -200 Jla Øviv ciz tK`R exR tkvab KiZ nte N) 1 Mvg teb`ju ciz
 wjUvi cwi mv`\_ gikq 10 w`b cici t`ú KiZ nte O) w`b`kbi m`e`v KiZ nte|

mvaviYZ dj cvKtZ exR
tevvi ci t_K 80-110
||b Ges dzji civMq#bi
ci t_K 30-45 ||b
jv#M|

dmj msMn I djb

RvZ I AvenvIqvi Dci ||bfi Kti ZigR cvK| mvaviYZ dj cvKtZ exR tevvi ci t_K
 80-110 ||b Ges dzji civMq#bi ci t_K 30-45 ||b jv#M| Rvgvb (1992) ||b||j||LZ
 fvte ZigR cvKvi eybv ||tq#Qbt
 1g dj||U cvK civMq#bi 35 - 40 ||b ci,
 2q dj||U cvK civMq#bi 30 - 35 ||b ci,
 3q dj||U cvK civMq#bi 25 - 30 ||b ci,
 4_ dj||U cvK civMq#bi 20 - 25 ||b ci|

ZigtRi dj cvKvi mVK mgq ||byq Kiv GKUZK||Vb| KviY AaKvsk dj cvKvi tKv#bv
 e||n"K j ||Y t`Lv hvq bv| MvQ t\_K dj Avjv`v Kivi m#½ m#½ dj cvKvi c||μqv eÜ n#q
 hvq (i||k`, 1993)| GRb" m`ú¥ cvKvi c#e dmj msMn Ki#j d#ji gvb Lvi#c nq I

c||vš #i te||k cvKt#j d#ji msi||Y I c||ienY ,Y bó n#q hvq| eZgv#b thme ZigtRi
 RvZ Gt`#k Pvl Kiv nq Zvi me, #jvB nq L# meR A_ev nvjKv meR (||PÎ 5.10)|
 mvaviYZ cvKvi ci G i#½i tZgb tKv#bv ZviZg" nq bv| d#j ZigR cvKv ||Kbv Zv mn#RB
 tevSv hvq bv| Z#e ||b||j||LZ j ||Y, #jvi Øviv cvKv ZigR te#Q tbqv hvq (Rvgvb, 1992)t

K. d#ji tev||vi m#½ th AvK||k Av#Q Zv

i||Ktq ev`vgx is nq|

L. tLvmvi Dc#i m||t# t#vg, #jv g#i c#o
 ||M#q ZigtRi tLvmv PKP#K nq|

M. ZigtRi th Ask||U g||Ui Dci t#M_v#K
 Zv meR t_K D#j nj#i ist#qi nq|

N. ZigtRi k||v jvj UKU#K nq|

i||k` (1993) D#jL Kti#Qb, Av#½y ||tq
 tUvKv ||t#j Ac° d#ji kã n#e avZe e`i
 k#ãi b`vq ||Kš cvKv d#ji kã n#e
 W`ve#W`te| Z#e G ||el#q AfÁZvi
 c#qvRb|

||PI 5.9 ZigtRi RvZ

djb

mh#Z Pvl Ki#j fv#jv Rv#Zi ZigR t_K c||Z t#n#i 40-70 Ub djb cvIqv hvq|

migg

- ZigR GK||U m||gó A_Kix dmj|
- cLi m hv#jvK I 30-40 tm. ZvcgvÎv ZigR PvlIi Dc#hvMx|
- m||b`||KZ te#j t`v-Av||k t_K t`v-Av||k g||U DĖg|
- exR ec#bi Dchy# mgq tdeg||i gvm|
- ||gUvi ` #i m||vi Kti 2.2-5 ||g. ` #i gv`vq 4-5||U ZigR exR ecb Ki#Z n#e|
- c||je`v#M Pvlv ^Z||i Kti jvM#j AvMvg dmj cvIqv hvq|
- fv#jv dj#bi Rb" c||vb ||b@vkb, dj cvZjvKiY Ges c#qvRbgZ tcvKvgKo I
 tivMevjvB `gb Kiv c#qvRb|
- exR ec#bi 80-110 ||#bi g#a" ZigR msMn Kivi Dc#hvMx nq|



- cIZ †n±i 40-70 Ub djb c/I qv h|q|



cv#VĖi gĵ`vqb 5.3

1. mZ` n#j ōmō Ges ig\_`v n#j ōvgō #jLb|

K. ZigR #fUv#gb ōmō tēk c#igv#Y_v#K|

L. DbZ gv#bi ZigR djv#bvi Rb` nvjKv mh#jvK`iKvi|

M. ZigRi exR ec#bi DĖg mgq n#jv tdeg#i gvm|

2. ĩb`vb c#Y Ki#b|

K. ZigR Pv#li Rb` ai#Yi Rjevqyc#qvRb|

L. ZigR g#U#Z fv#jv R#Š|

M. ZigRi Kĭg ci#Mvqb Ki#nq|

3. mVK DĖi#U#Z #UK #Pý(√) #`b|

K. ZigRi Rb` Dc#h#Mx Zvcgvĭv tK#b#U ?

1. 15-20 tm. 2. 20-30 tm.

3. 30-40 tm. 3. 40-50 tm.

L. ZigR Pv#li Rb` c#Z gv`vq Kq#U P#iv i#L#Z nq ?

1. 1 #U 2. 2-3 #U

3. 3-4 #U 4. 4-5 #U

M. ep`vKvi dja#iv Rv#Zi tejvq c#Z Mv#Q Kq#U dj i#L#Z nte ?

1. 2 #U 2. 3 #U

3. 3-4 #U 4. 4-5 #U

4. GK K_vq ei e#K` DĖi #`b|

K. ZigRi tn#i c#Z djb KZ ?

L. Av#tji m#n#h` ZigR c#ic°Zv e#vi Dcvq #K ?

M. eisjv#`k K#L.M#eIYv B#b#ó#UDU KZK.D™#eZ ZigRi Rv#Zi bvg #K?



cvV 5.4 K> `RvZxq meW R PvI

GB $c_V V \dagger k \dagger I$ $A_V c_W b$

- *g₁KPž , iž I e'envi maÜ RvbžZ cvižeb|*
- *g₁KPž Rjevqm gwUi Pwin`v RvbžZ cvižeb|*
- *g₁KPž P/Ivev` cYvjx ejžZ cvižeb|*
- *g₁KPž AšeZxKvjxb cwIPhv maúK wjLžZ I RvbžZ cvižeb|*
- *g₁KPž dmj tZvjv I djb maúK RvbžZ cvižeb|*



glyxKPz

$Bs \nvdash i \Vdash R \quad b \Vdash q$: Taro

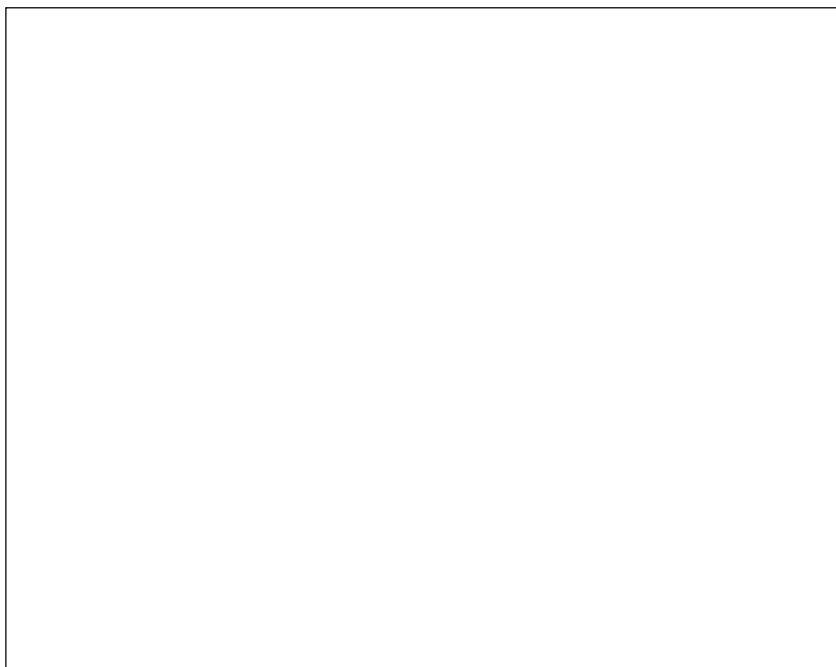
^eÁwbK bvg: *Colocasia esculenta* var. *antiquorum*.

gJvKPz(Colocasia esculenta var. antiquorum) Gviiw (Araceae) cievii
meR| Drcv'bi v'K v'q gJvKPzevjv'tk meP+q ,iaZcY| t'tki me GJvKvq
e'emvqK vfiEz Gi Pvl nq| wmtjU, htkvni l e,ovi gJvKPzeLvZ| tKv'bv tKv'bv v'v
GvU QovKPzv'q l c'vPZ|

KPZ, iZ

cyógvbi ʷK ʷtq KPzGKʷU DrKó.merI Gi i|cvšʷiZ Kvʷûi ivmʷiqibK MVb Avjý
 Abyc| eis AvjA+cIv KPz cyó Dcvʷvbmgr GKUzʷenkB ʷvK| ʷekIʷY tʷLv tMʷQ,
 tKvʷbv tKvʷbv RvʷZi KPz ÷vʷPi nRgʷhMʷZv Abʷvbʷ Drʷmi ÷vP A+cIv AʷbK tewk|
 KPz cvZvq th cʷigʷvY ʷefb Lvʷ cvY I LwbR ʷeʷ AvʷQ Zv Abʷ tKvʷbv merʷz tʷbI

KPz g#a" I lja i ,Y A#Q e#j A vqye` kv# D i j l L Z n#q#Q | ¶ i r V Z x q L v`" ¶ e a v q A #
 A v k # j G U D c K v i x |



WPI 5.10 g/L x KPZ RVZ

wejvmx GKU D"P djbkxj
I DrKó.RvZ| ciZ tn±i
25 U±bi AwaK gLKP,
djb t`q|

RjevqyRig I gWU

gLKPžDò I Av` RjevqycQ>` K±i| 25⁰-40⁰ tm. Zvcgvîv gLKPž Rb" fivjv| h" I
 gLKPžAvsK Qvqv Rb"bv hvq Zte cY AvjvZ meP±q teik djb t`q| eb"gy te±j
 t`v-Auk t`K t`v-Auk gWU gLKPž Rb" Dc±hVMx|

RvZ

evsjv`k gLKPž AmsL" RvZi Pvl nq| vbxqfvte WKQyRvZ thgb- jvjgvB, m±jiU,
 e, oiv, j QKôzhkviK KPžD±jL±hVM" | wejvmx GKU D"P djbkxj I DrKó.RvZ| Gi MvQ
 LvoV, meR Ges cPž mSL"vq, woviv Drcv`b K±i| ciZ tn±i 25 U±bi AwaK gLKPždjb
 t`q| GQov cÂg LKPžMv±iv KPž_vgv KPžMv±iv _vgv KPžR½jx KPžBZ" I GB Mjc
 c±o (PÎ 5.10)|

esk ie"vi

gLKPž esk wešvi mvariYZ fvb" iicv"iZ Kvû hv Kg (corm) ev gL bvg ciwPZ
 tm, ±jv Øviv Kiv nq| tQvU I gvSvix AvKv±ii exR (20-25 Mg) A_bwZK w`±q AwaK
 jvfRbK|

gLKPžjvMv±vi mgq

gLKPžLwid tgšmgi dmj| kx±zi tkl fVM Rvbywi t`K tg gvm chš dmj jvMv±v
 th±Z cv±i| Zte gvP gvmB jvMv±vB m±evĖg| gv±Pi AvM jvMv±j Pviv t`wi±Z MRvq Ges
 djb Kg nq| cQvš±i gv±Pi c±i jvMv±j I djb K±g hvq| exR t±vc±Yi ci gWU AveRbv
 (mulching) w`±q tX±K ivL±j Pviv `Z MRv±e|

e±Ri (gLi) ciigvY

gLKPžP±Ii Rb" ciZ tn±i 800-1000 tKvRi gZ gL exR jvM|

Rig ^Zi

gLKPž Rb" gWU Mfxi fvtē KIY I SzSzi K±i c"Z Kiv Avek"K| exR GKvwaK c×wZ±Z
 ecB Kiv th±Z cv±i| AwaKvsk tQ±î mgZj Rwg±Z Ryj (Furrow) K±i w"ó `±±Z exR
 ecB K±i gWU w`±q tX±K t`qv nq Ges MRvvi ci µgvš±q mvi eivei AvBj Z±j t`qv
 nq| Aci c×wZ n±jv mgZj Rwg±Z exR AvsK ecB K±i mvt_ mvt_ AvBj Z±j t`qv nq|
 60-75 tm.wg. `±±Z mvi±Z 40-50 tm.wg. `±i `±i gL KPž exR jvMv±Z nq|

wb± c×wZ `w AvjvPbv Kiv n±jv-

mvariY c×wZ: jv½j ev KvVi mvin±h" w"ó `±±Z 4-5 tm.wg. Mfxi Lv` ^Zi K±i w"÷
 `y±Z gL exR, ±jv jvMv±q SzSzi gWU w`±q tX±K Rig mgvb K±i w`±Z n±e (PÎ 5.11 K)



PĪ 5.11 glx KPæcb

60-75 t_m.wg. `i jvBb
K+i 40-50 t_m.wg. `i
exR-gl_x jvMvZ nte|

tK+jZ jvMvZ: Rlg ^Zii Kivi ci 6-75 t_m.wg. `i jvBb K+i cWZ jvBb 40-50
t_m.wg. `i `yi gl_x exR jvMvZ nte(PĪ 5.11 L)|Gici jvBb `jcvk t₊K gWU Zj
10-15 t_m.wg. Dæte`x K+i gl<sub>x</sub> exR ,+jv tX+K `Z nte|mæ n+j Lo ev cvZv `q gWU
tX+K `+j fvj nte|ikbv \_vK+j gl<sub>x</sub> exR jvMvZ nte ci ciB gWU t<sub>m</sub>P `Z nte| gl_x
exR ,+jv Ggb fvte jvMvZ nte hvZ exRi tPvL ,+jv Dc+i i `K _vK|

glxKPæI m+i i gvĪ I c+qM cXZ (tKIR/n.)

m+i i bvg	m+i i cWigY (gWUi Deiv k ³ Kg t ₊ K ga'g)	m+i c+qvMi mgq
BDiqv 1g avc	40	Pviv MRv+bvi 15-30 `b ci
2q avc	40	Pviv MRv+bvi 60-90 `b ci
UGmic	50	Rlg ^Zii mgq
Ggic c_g avc	50	Rlg ^Zii mgq
1g Dc+ic+qM	50	Pviv MRv+bvi 15-30 `b ci
2q Dc+ic+qM	50	Pviv MRv+bvi 60-90 `b ci
tMvei	10,000-12,000	Rlg ^Zii mgq
m+i lvi ^Lj	500-800	Rlg ^Zii mgq

Mg⁻ tMvei m+i I m+i lvi ^Lj Dc+i DvjLZ Rlg ^Zii mgq m+i P+i i tkl fvM RlgZ
`q fv+jv K+i gWUi m+½ gik+q `Z nte|

Ab'ib" ciPhv

K. t_mP e'e⁻: gl_x KPæ RlgZ c+qvRb tevta nvjKv t_mP `Z nte| tivcYi ci nvjKv
t_mP `Z Pviv MRv+bvi mnvqK| GQvov h¹ tKv+bv mgq e₁ocvZ bv nq Ges gWUi im Ktg hvq
ZLb `ye`xi gvSLv+b bvjv `q t_mP t₊qv m₁earBk| PĪ 5.14 Abjvqv bvjv Ges teW
^Zii KiZ nte| Gmg⁻ bvjv `q RlgZ me RvqMv mgfvte t_mP A₋ev AZ'iaK e₁o ev
tm+Pi cvb tei K+i t₊qv mæ|

fv#jv djb cvlqvi R#b
ibovbx ev tQvU tKv`v#ji
mnv#h Mv#Qi tMvovi gvU
Kz#q SzSzi K#i tMvovi
gvU DkKi#Z n#e

**L. Mv#Qi tMvov gvU c`vb Ges Rig#Z Lo ieq#b:** AvBj Lvov K#i t`qv gK#Pz cavb c#iPhv| AvBj G#Kev#i bv Z#j 2-3 ev#i tZvjv D#Eg| Mv#Qi tMvov fv#jv K#i tX#K i`#j ,iOPvivi msL`v iKQyK#g Av#m| fv#jv djb cvlqvi R#b ibovbx ev tQvU tKv`v#ji mnv#h Mv#Qi tMvovi gvU Kz#q SzSzi K#i tMvovi gvU DkKi#Z n#e| gvj#Ps gK#Pz R#b DcKvix| Rig#Z Lo ev cvZv ieq#q i`#j Rig#Z AvMvQv Kg n#e, gvUi imaviY i#gZv evo#e Ges Gme cvZv ev Lo cieZ#Z c#P ev gvUi mv# i#g#k Rig#i Deiv k#³ evov#Z mnv#h Ki#e|

M. tcvKv-gvKo I tivM-evjvB: cvZv Sjm#bv tivM GK#U giv³K tivM hv Kcvi RvZxq Q#vK b#kK i`#q `gb Kiv hv#e|

dm#ji RxbKvj : gK#PzmnvaviYZ 150-210 i`#bi dmj|

gK#PzMv#Qi gvUi Dc#ii
Ask ev cvZv jvj I nj#
n#q i#K#q g#i hvq| G
Ae`vq gK#PzZvjvi
mgq nq|

dmj m#Mn I djb : elv tgsm#gi tk#l gK#PyMv#Qi gvUi Dc#ii Ask ev cvZv jvj I nj# n#q i#K#q g#i hvq| G Ae`vq gK#PzZvjvi mgq nq| mnvaviYZ K#iZK-AMnvqY g#m G dmj tZvjv th#Z cv#i| tKv`vj i`#q Av# Av# gK#PzZ#Z n#e| gK#Pz#R i#m#e e`envi Ki#j m#uY MvQ g#i hvevi ci dmj Z#Z n#e| tZvjvi ci c#i#vi K#i ,`vgRvZ ev evRvRvZ Kiv hv#e|

djb (ciZ tn#i): djb i#bfi K#i AvenvIqv, RvZ I c#iPhvi Dci| 20 U#bi Dci n#j djb m#`vIRbK g#b Ki#Z n#e| RvZ Ab#vq gK#i djb K#`i tgvU dj#bi $\frac{1}{3}$ t#K $\frac{1}{2}$ fvM| Mo djb 20-25 Ub|



mvigg

- gK#PzGK#U cy#Ki I A_Kix dmj|
- gK#Py cvZvq Ab`vb` e# meiRi Z#bvq A#aK Lv`cvY I L#bR c`v_`v#K|
- gK#PzD# I Av` RjevqycQ>` K#i| gK#PzRb` te#j t`v-Auk t#K t`v-Auk gvU Dc#hvMx|
- gK#`#qB gK#Pz esk i#v#i Kiv nq|
- i#jvmx GK#U gK#Pz DbZ RvZ|
- gvP gvm gK#Pz Rb` jvM#bvi D#Eg mgq|
- 60-70 tm.#g. `#i jvBb K#i 45-50 tm.#g. `#i gK#i jvM#Z n#e|
- gK#PzZ gvU DV#bv GK#Š c#qvRb|
- cvZv Sjm#bv tivM Wb#_b Gg-45 i`#q `gb Kiv th#Z cv#i|
- K#iZK-AMnvqY g#m cavb dmj tZvjv nq; Z#e AvMvg dmj A#bK mgq fv` gvm n#Z DV#bv nq| gK#i djb c#iZ tn#i 20-25 U#bi gZ|



cVtWĖi gĵ'vqb 5.4

1. mZ' nĵ Ōmō Ges ĩg_ 'v nĵ Ōġō ĩjLb|

K. KPzP/I i Rb" Dò I Av` Rjevqy cġqRb|

L. ĩejvMx RvġZi KPzn±i cġZ 25 Uġbi Dcġi djb t`q|

M. ĩejvMx GKġU D"P djbkxj I DrKó.RvZ|

2. ĩb'vb cġY Kiġb|

K. KPzcvZvq Ab"vb" dmġji Zġbvq cyó Dcv`vb teġk iġqġQ|

L. KPz Rb" DcġhvMx ZvcgvĤv |

M. KPzP/I i Rb" aiġYi gġU DĖg|

3. mVK DĖġii cġk ĩUK ĩPý (√) ĩ`b|

K. gġKPzjvMvġbvi `ġZ KZ ?

1. 60-70 tġ.ġg×40-50 tġ.ġg 2. 60-70 tġ.ġg×40-50 tġ.ġg

3. 50-60 tġ.ġg×30-40 tġ.ġg 4. 60-75 tġ.ġg×50-60 tġ.ġg

L. A_ġbġZK ĩ`K ĩ`ġq exġRi IRb KZ nIqv DġPr

1. 10-15 Mvg 2. 20-25 Mvg

3. 15-20 Mvg 4. 25-30 Mvg

M. gġKPz tġn±i cġZ Mo djb KZ ?

1. 15-20 Ub 2. 20-25 Ub

3. 25-30 Ub 4. 30-35 Ub

4. GK K_vq ev evġK" DĖi ĩ`b|

K. gġKPzjvMvġbvi Dchyġ mgq KLb ?

L. gġKPz gvi v³K ġiġMi bġg Kx ?

M. gġKPzR ĩnġmġe eġenvi Kiġj KLb dmj ZġġZ nq ?



cV 5.5 kvKRiZiq meiR Pvl

GB cV tk†I AvciB

- c~~q~~kv†Ki , iZ eYbv Ki†Z cvi†eb|
- c~~q~~kv†Ki Drcv`b tgšmg I cwi†ekMZ Pwin`v ej†Z cvi†eb|
- c~~q~~kvK Pvlvev` cYvjx wjL†Z I ej†Z cvi†eb|



c~~q~~kvK

Bs†iR bvg: Indian Spinach

^eÁwibK bvg: Basella alba

c~~q~~kvK evsjv†`k cîeûj meWRi w†ZI Ab`Zg, c~~q~~Lwid tgšmggi mecavb kvK, Gi `v`
DrKó.I cyógvb teik| c~~q~~Gi WMv†`L†Z LgB AvKIYxq| Gi cvZvq cPž tcwUb, w†Uwgb
- G. we. wm., K`vjwmgv, †jŠn I jeY Av†Q|

RjeqyRig I gwU

c~~q~~kvK Dò I Av` RjeqyZ fv†jv R†Š!| GiU AZ`š KóminòzD™, Avsikk Qvqv†ZI
Rb†bv hvq| ††j†`vAvk gwU c~~q~~kv†Ki Rb` Dc†hvMx| tgvUgvy Dyrig thLv†b elvi
cvib D†V bv ev cvib R†g _v†K bv Ggb Rig†ZI c~~q~~kv†Ki Pvl Kiv th†Z cv†i|

R†ZI bvg

˘vbxq meR I jvj G `yU RvZ (¶Pî 5.12) †`Lv hvq| meR RvZ `z eabkxj Ges djb
teik| jvj RvZ axi eabkxj Ges Kg djb†`q, Z†e `v` teik Ges evRvi gy` teik|

eskie`vi

exR A_ev Kv†ûi KwUs Øviv c~~q~~Gi eskie`vi Kiv hvq| KwUs mvaviYZ elvi Rb` Dc†hvMx|
KIKiv mvaviYZ ex†Ri gva†gB Avev` K†i _v†K|

exR jvM†bvi mgq

c~~q~~kvK mvaviYZ Lwid
tgšmg Pvl Kiv nq,
Z†e cvib tm†Pi e`e`v
_vK†j iwe tgšmgI
Kiv hvq| DĖg mgq
n†jv diēy†_†K ^R`ô
gvm|

ex†Ri c†igY

¶Q†U†q eb†j c†Z tn††i
3-4 †K†R exR `iKvi
Ges mwi†Z eb†j c†Z
tn††i 1.5-2.5 †K†R
exR `iKvi|

¶PI 5.12 c~~q~~kv†Ki RvZ



K. RigZ mivvi exR ebZ: mvariYZ 1 wg. c⁻ Ges c⁺qRbgZ ^`N⁻ wekó teW ^Zwi
KiZ nte Ges teWi D⁺PZv 10-15 tm. wg. n⁺Z nte hvZ tmLv⁺b cv⁺b bv R⁺g| c⁺Z
teWi wfZi 30 tm.wg. c⁻ Ges 20 tm.wg. MfxiZv wekó bvjv⁻_vK⁺j fv⁺jv djb w⁻te (wPí
5.13)| c⁺Z teW 75 tm.wg. `fi `fi 2 wU mvi K⁺i c⁺Z mviZ 45 tm.wg. ci ci 2-4
tm.wg. Mfxi 2-3 wU K⁺i exR ebZ nte|



mvi i bvg	Rgi Deriv kv ³			mvi † qvi mgq
	Kg	gvSwi	teik	
BDiqv 1g Dcwi c†qvM	120	100	80	Pviv MRv†bvi 7-15 w`b ci
2q Dcwi c†qvM	120	100	80	Pviv MRv†bvi 30-40 w`b ci
3q Dcwi c†qvM	120	100	80	1g dmj KvUvi ci ciB
4 Dcwi c†qvM	120	100	80	2q dmj KvUvi ci ciB
wU Gmuc teQvj tWvR	150	120	100	†kl Pv†li Av†M
Gmuc teQvj tWvR	120	100	80	†kl Pv†li Av†M
Dcwi c†qvM	100	80	50	c_g dmj KvUvi ci ciB
†Mvei mvi teQvj tWvR	10000	5000	5000	†kl Pv†li Av†M

evs j v t k D š y w e k e v j q

c_gevi dmj KvUvi ci BDiiqv I cUvk mvi MvQi tMvovi Pvi`K 15-16 tm.ig. `ti
 iQvUtg gvi mti½ fvtjv Kti iqvktq ibtZ nte| ctqvRbteva nvjKv tP t`qv thtZ cvti|
 iQZxq evi dmj KvUvi ci BDiiqv H GKB fvt RigtZ i`tZ nte| `Dci ctqvMi gvSi
 mgq I BDiiqv mvtii ciiqvY MvQi evo-evoZi Dci ibfi Kti Kgvbv ev evovbv thtZ
 cvti| teQvj mvi I tMeimvi tkl Pili AvM RigtZ iQvUtg Pvl I gb i`tq fvtjv Kti
 gvi mti½ iqvktq i`tZ nte|

Abvb" ciPhv

cKvKi mzevo-evoZi
Rb" cyiv RxbKvji
KLbB cwiBi Afve nqv
DvPZ bq|

K. tP e'e⁻vt teW I bvjv cxiZtZ cKvKi RigtZ tP t`qv mveavRbK| PÎ 5.16
 Abvqx bvjv ^Zi KiZ nte| RigtZ me RvqMvq mgvbfvte tP t`qv i Rb" Gme bvjv LxB
 `iKvix| AvZi<sup>3</sup> eioi ev tmtPi cwiB mntRB G bvjvi gvLyj tei Kti t`qv mae| teW bv
 Kiv RigtZi G bvjvi gva'tg Lx mntRB tP t`qv thtZ cvti| cKvKi mzevo-evoZi
 Rb" cyiv RxbKvji KLbB cwiBi Afve nIqv DvPZ bq Ges G Ae⁻vq gvi i'tmi meiba
 evAbxq gvÎv 65%|

L. AvMqv`gb, MvQi tMvovq gvi t`qv I Wv KvUv: ctqvRb I mgqgZ AvMqv Zzj
 tdtZ nte Ges MvQi tMvovq nvéfvte gvi i`tZ nte| mvtii Dci ctqvM, AvMqv`gb,
 Ges MvQi tMvovq gvi t`qv i KvR GKB mgq Kiv thtZ cvti| Mv hLb 20-30 tm.ig. jdv
 nq ZLb MvQi Wv tKtU i'tj MvQi kvLv-ckvLv teik nte| cKvK gvPvZI Zzj t`qv
 thtZ cvti| gvPv 1.5 iqvvi DvznjB Pjete| teik djv cvlqv i Rb" dmj KvUvi ci
 Abvgv`Z gvÎvq BDiiqv Ges Ggic mvi Dci ctqvM Kti GKvU nvjKv tP i`tZ nte|

M. tcvKvgKo I tivMejvB: cKvK gvi³K tKvbv tcvKvgKo ev tivMejvB Gi AvμgY
 nq bv| cvZv cPv (leaf rot) ntj QÎvK bvkK WvBt_b Gg 45 ctqvM Kiv thtZ cvti|

RxbKvj

cKvKi RxbKvj mvaviYZ 60-150 i`b nqv_vtK|

dmj mSMn I djB

hLb Wv 25-30 tm.ig. jdv nte ZLb 10-12 iU cvZmn cKvKi kvLv-ckvLv tKtU ibtZ
 nte| dj aivi AvM chš Gfvte dmj KvUv thtZ cvti| mvaviYZ tmtPv³ tkl fvm
 chš dmj mSMn Kiv P'tj| gvPvq A_ev RigtZ Avev`, Dfq tÎB Gfvte dmj KvUzt
 nte| ciZ tn'ti 50-75 Ub djB cvlqv hvte|

**mvigg**

- ~~ck~~K L~~i~~d t~~g~~sm~~gi~~ Ab~~”~~Zg k~~v~~K|
- ~~ck~~v~~†~~K cP~~z~~ c~~i~~g~~v~~†Y ||fU~~v~~gb I L~~b~~R c`v~~\_~~ ||e`~~”~~gvb|
- Dò I Av` Rj~~e~~vq~~cy~~~~†~~ Gi Rb` Dc~~†~~h~~v~~Mx|
- ~~ck~~v~~†~~Ki Rb` te~~†~~j t`vA~~v~~k g~~v~~U DĖg|
- exR A~~_~~ev K~~v~~Us Gi Ø~~v~~i v ~~ck~~v~~†~~Ki esk ||e~~¯~~vi Ki v hvq|
- dvj~~_~~b t~~_~~†K ^R`ô g~~v~~m exR e~~v~~i mgq|
- fv~~†~~jv dj~~†~~bi Rb` BD~~v~~iqv mvi gv~~†~~S gv~~†~~S Dc~~v~~ic~~†~~qvM Ki~~†~~Z nq|
- MvQ 20-30 t~~m~~.||g. j~~†~~v n~~†~~j Zvi gv~~_~~v tK~~†~~U ||`†Z n~~†~~e, G~~†~~Z MvQ tS~~v~~c~~v~~†jv n~~†~~e|
- c~~v~~Zv-cP~~v~~ t~~i~~vM `g~~†~~bi Rb` W~~B~~†~~_~~b Gg-45 t~~¯~~ú Ki~~†~~Z n~~†~~e|
- c~~v~~Z t~~n~~±~~†~~i 50-75 Ub dj~~b~~ c~~v~~lqv hvq|



cvtVĖi gj'vqb 5.5

1. mZ' n+j ōmō Ges ig_ 'v n+j ōmō jLb|

K. cjk/K iie tgsmygi Ab'Zg k|K|

L. cjk/K cPz ciigvY fUvbg I LbR c`v_ _vK|

M. cjk/Ki giv³K tKv³bv tcvKvgKo ev tivM evjvB-Gi Avμgb nq bv|

2. ĩb'vb cY Ki:b|

K. cjk/Ki esk iev⁻vi Øviv Kiv nq|

L. mvi c×Z MvQi `tZ nIqv DPr|

M. tn±i ciZ cjk/Ki djb |

3. mVK DĖiUi ctk UK Pý (√) `b|

K. exR ecYi mgq KLb ?

- | | |
|--------------|---------------|
| 1. gN-dvêp | 2. dvêp-R'ô |
| 3. R'ô-AvIvp | 4. AMnvqY-čšI |

L. vQvU+q evj tn±i KZUKzR jvM#e ?

- | | |
|-------------|-------------|
| 1. 4-5 tKvR | 2. 3-4 tKvR |
| 3. 5-6 tKvR | 4. 1-2 tKvR |

M. MvQ ec+bi c#e exR KZvY fRvq ivLz n#e ?

- | | |
|---------------|---------------|
| 1. 10-20 N>Uv | 2. 12-24 N>Uv |
| 3. 15-20 N>Uv | 4. 24-36 N>Uv |

4. GK K_vq ev evK' DĖi `b|

K. cjk/Ki Rb' tKvb iKg RjevDĖg ?

L. cjk/Ki Rb' Kx iKg gvu DĖg ?

M. tev kLv-ckLv nIqv i Rb' MvQi D'PZv KZ n+j Zvi gv_v tKvU v`tZ n#e|

cV 5.6 d j R V Z x q m e W R P v I



GB $c_V V^\dagger k^\dagger / A_V c_W b$

- *†Xam Pɿli iːZ I eˈenvi mɔʔÜ ejʔZ cviːɐb|*
- *†Xɔʔmi Drcvˈb tɬɡʂmɿ, Rɿg ʷbevPb I ˈZi Ges exR ecɐ mɔʔÜ ejʔZ cviːɐb|*
- *†Xɔʔmi Rjevq I ɡwUi ˈeɪkóː mˉúʔK Ges RvʔZi eYbv KiʔZ cviːɐb|*
- *†Xɔʔmi AʂeZxKvjxb cʷiPhv mˉúʔK ʷjLʔZ I ejʔZ cviːɐb|*
- *†Xɔʔmi ʔivMevjvB ˈqb, dmj msMn I djb mˉúʔK ʷjLʔZ I ejʔZ cviːɐb|*



†Xam

Bs†i||R b||g: Ladys Finger/Okra

^eÁwbK bq: *Hibiscus esculentus*

tXam (Hibiscus esculentus) gvjʃfwm ciievʃii me|R| GwU evsjvʃ`ʃki AbʔZg cavb
Lwid me|R| GʃZ cPʒ ciigvY wfuWgb we l wm Ges chvʒ ciigvʃY wfuWgb ÔGÔ,
K'vjmqvg, AvʔqvWb, dmdivm, tʃʃn, Avwgl BZ'wv` AvʔQ| GwU wmx Kʃi Lv lqv kixʃii
cʃ¶ weʃki DcKvix| Avqʃe` kvʃ tXaʃmi GKwaK JIwa, ʃYi DʃjL AvʔQ|

RjevqyRwg I gwU

evs j v t † k i Aven l l q q
e Q † i i t h † K v † b v m g q G u U
R b † v † b v h v q Z † e m v a v i Y Z
L w i d t g s m t g B G i P v l
n g l k z K v † j M v Q I d j
† Q v U v † K Ges d j b K g
n g l

A#cTtKZ.Dò Rjeqy†Xa†mi Rb" Dc†hvMx| iwi†Kvjxb D"P Zvcgv†vq Mv†Qi e†x `€Z
nq| kQ I Av` Dfq Ae`vq †Xam RŠ†bv hvq| evsjv`†ki Avenv†lqv eQ†ii th †Kv†bv
mgq GwU RŠ†bv hvq Z†e mvav†YZ Lwi†dgš†gB Gi Pv†l nq| kvZKv†j MvQ I dj †QvU
_v†K Ges djb Kg nq| †v-Av†k I G†Wj †v-Av†k gvwU, elvi cwb D†V bv I cwb
wb†Wk†bi e'e`v Av†Q Ggb R†g †Xam P††li Rb" Dc†hvMx| cPž `Re mvi c†qvM Ki†Z
cvi†j te†j ai†bi gvwU†ZI Gi Pv†l Kiv th†Z cv†i| gvwUi A†Z 6-6.8 †Xam P††li Rb"
Dc†hvMx|

RvZ

evsjvʰt̚k eZgʷb t̚Kvʰbv Abt̚gʷm̚ Z RvZ t̚bB | KIK chvʰq AʰbK RvʰZiB PvI nʰq AvmʰQI
 t̚h LʰvUv I Avʰzj RvZ, t̚jv eZgʷb PvI Kiv nʰt̚Q Zv cvq me, t̚jvB weʰt̚k t̚t̚K Avg̃vbx
 Kiv nʰq _vʰK | weʰfb cKvi RvʰZi gʰã t̚cUvMxb I c̚k̚v kvIwB weʰkl fvʰe DʰjL Kiv
 t̚hʰZ cvʰi | GQvov t̚nvqBU t̚fjʰfU, Kveʰj t̚Wqv̥d, t̚Wqv̥d c̚jw̥dK, Sg Awj, kv̥bx, c̚k̚v
 qjg̥j BZʷm̚ i PvI nʰt̚Q |

esk we⁻vi

†Xa†mi esk we⁻vi ex†Ri gva†g Kiv nq|

exR ebwi mqq

evs jv¹ t¹ k mva¹ iYZ t¹ deg¹ i t¹ K t¹ g gvm chš t¹ Xam jv¹ m¹ t¹ bv nq | Lwid-1 dm¹ ji Rb¹
15 qvN -15 ^Rô chš Ges Lwid-2/iwe dm¹ ji Rb¹ 15 fv¹ -15 KwZK |

†Xam P_v†Ii Rb^u c_uZ
†n_u†i 4-5 †K_uR ex†Ri
c†q_vRb ng|

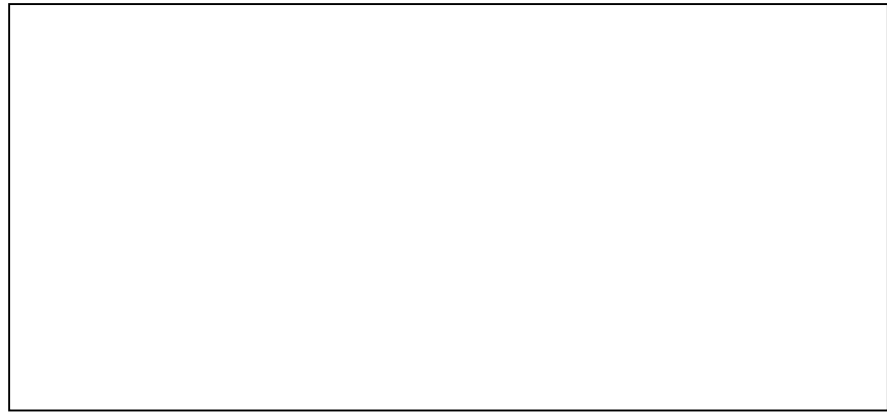
ex†Ri cwigvY

†Xam Pvl i Rb" cZ tn±i 4-5 †KlR ex†Ri c†qvRb nq|

Rig ^Zi I exR ecb (PI 5.14)

fv†jvfvte Rig KIY K†i †b†i QK Ab†qv Rig ^Zi K†i Z†Z exR e†Z n†e|

te†Wi AvKvi	c	Mx@Kvjxb	100 †m.ig.
		kxZKvjxb	110 †m.ig.
	%`N"		Rigi ^`N"i Dci †bfi Ki†e
bvjvi AvKvi	c		35 †m.ig.
	MfxiZv		25 †m.ig.
`iZ	Mx@Kvjxb		60×40 †m.ig.
	kxZKvjxb		45×30 †m.ig.
exR e†vi MfxiZv			2-3 †m.ig.
cZ M†Z ex†Ri msL"v			2-3 U
cZ M†Z P†ivi msL"v			1U (c†Zjv Kivi ci)



PI 5.14 †Xam ecb c×Z

10-12 †`b ci hLb M†Qi
D"†Zv 12-15 †m. ig. n†e
ZLb cZU M†Z GKU
mej I my P†iv †i†L
evKx, †jv Z†j †d†j †`†Z
n†e|

10-12 †`b ci hLb M†Qi D"†Zv 12-15 †m. ig. n†e ZLb cZU M†Z GKU mej I my P†iv †i†L evKx, †jv Z†j †d†j †`†Z n†e|

†Xam i Rb" m†ii c†igY I c†qM c×Z (†KlR/n.)

M†Qi ex× I dj aviY h_vh_ ivLvi Rb" cZ tn±i 10 Ub †Mve i mvi, 150 †KlR BD†iqv, 150 †KlR Ggic Ges 100 †KlR U Gm †c c†qvM Ki†Z n†e| U Gm †c I †Mve i mvi †kl P†li Av†M Rig†Z fv†jvfvte †Q†U†q g†U†i m†½ Pvl I gB †`†q †g†k†q †`†Z n†e| P†iv MRv†bvi 15 †`b ci (hLb P†iv c†q 12-15 †m. ig. j†v n†e) BD†iqv I Ggic mvi P†ivi †Mvov n†Z 5-6 †m. ig. ††i †Q†U†q g†U†i m†½ fv†jvfvte †g†k†q †`†Z n†e|

Ab"vb" c†iPhv

K. †mP e"e"v (PI 5.15): †Kjx A_ev te†Wi `†c†ki bvjvi m†v†h" †Xam i Rig†Z †mP †`qv m†eavRbK| dm†ji c†iv R†ebK†ji †K†bv mg†qB hv†Z c†vbi Afve bv nq †m††K j †" ivL†Z n†e Ges G mgq g†U†i i†mi me†b† gv†v 65% n†Iqv D†PZ|

evs jvʈ`k Dšyʷ wekwe`vjq

**mvigg**

- †Xam GKU cyóKi meiR|
- G‡Z ‖fUwgb I L‖bR c`v\_ h‡\_ó c‖igv‡Y ‖e`gvb|
- Dò Rjevqy†Xam Pvl Ii Rb` Dc‡hvMx|
- myb@w‖kZ †`v-Av‡ †\_‡K Gt‡j †`v-Av‡ g‖U Dc‡hvMx|
- e‖sjv‡`‡k †deg‖i †_‡K †g g‖m chŠ †Xam jvMv‡bvi Dch‡ mgq|
- Z‡e m‖iv eQ‡iB †Xa‡mi Pvl Kiv hvq|
- †n‡i c‖Z 4-5 †K‖R e‖R c‡qvRb|
- †Xa‡mi †gvR‖BK f‖Bivm †_‡K i‡‖vi Rb` f‖Bivmgy‡ Rv‡Zi Pvl Ki‡Z n‡e|
- e‖R ec‡bi 40-50 ‖`‡bi g‡a` †Xam Mv‡Q d‡y I dj Av‡m|
- c‖Z †n‡i 8-10 Ub dj msMn Kiv hvq|



cVtVĖi gĵ'vqb 5.6

1. mZ' nĵ ōmō Ges ig_ 'v nĵ ōngō ||jLb|

K. kxZKvĵ ħXa†mi djb Kg nq|

L. DĖiv ħXa†mi GKU DrKó.RvZ|

M. eivĵv`k ħXa†mi P†Ii Dc†hVmx mgq nĵv †degvī-tg gvm|

2. ĩb'vb cĵY Kib|

K. †Xam P†I gviUi Dchĵ ||c.GBP. nĵv |

L. Mx@Kvĵ ħ†Z nĵZ †Xam ||b ci msMn Kiv D†Pr|

M. †Xa†mi djb Ub/†n±i |

3. mVK DĖiUi c†k UK Pý (√) ||b|

K. †Xam P†Ii Rb' †Kib iKg RjevqyDĖg ?

1. Dò

2. gviSvi Dò

3. VŪv

4. gviSvi VŪv

L. †Xam P†Ii †n±i c†Z KZUKzR ĵv†M ?

1. 2-3 †K†R

2. 3-4 †K†R

3. 4-5 †K†R

4. 5-6 †K†R

M. c†Z †n±i ħXa†mi ex†Ri djb KZ ?

1. 50-100 †K†R

2. 100-150 †K†R

3. 100-200 †K†R

4. 150-200 †K†R

4. GK K_vq ev ev†K' DĖi ||b|

K. †Xa†mi cavb I gviiv³K †ivM Kx ?

L. †Xa†m ||U.Gm.||c mvi KLb c†qvM Kiv D†Pr ?

M. †Xam P†Ii mvi Ges M†Qi `†Z KZ nIqv D†Pr ?



mswTβ / iPbvgJK ck

1. ʔgʷó Kɡov Pɪʔli , iːZ l eːnvi mɑʔÜ ʔjLɓ|
2. ʔgʷó Kɡov Pɪʔl Rjeʋqʏl gʷU i ˈeʷkóː eYbɪ Kiːb|
3. ʔgʷó Kɡov Pɪʔli tɡʂmɿ DʔjL Kiːb|
4. ʔgʷó Kɡovi Rɪg ˈZwi l eʔR ecb c˥Z eYbɪ Kiːb|
5. ʔgʷó Kɡovi mvi cʔqʷM c˥Z ʔjce˥ Kiːb|
6. ʔgʷó Kɡov Pɪlveʔˋ cʔqʷRbɪq AʂeZ˥ cʷiPhv eYbɪ Kiːb|
7. ʔgʷó Kɡov mʂMn l dʒb mɑʔÜ ʔjLɓ|
8. ʔgʷó Kɡovi tɕvKv l tɪvM ˋgb c˥Z DʔjL Kiːb|
9. Kʷkʔivj Pɪʔli , iːZ l eːnvi mɑʔÜ ʔjLɓ|
10. Kʷkʔivʔji gʷU l Rjeʋqʏ Pwɪnˋv eYbɪ Kiːb|
11. Kʷkʔivʔji esk ʷeˋvi mɑʔÜ eYbɪ Kiːb|
12. Kʷkʔivʔji mvi cʔqʷM c˥Z eYbɪ Kiːb|
13. Kʷkʔivʔji Pɪlveʔˋ cʔqʷRbɪq AʂeZ˥ cʷiPhv , ʔjvi eYbɪ ʷˋb|
14. Kʷkʔivʔj Avʂ dmj mɑʔÜ eYbɪ Kiːb|
15. ZɪgʔRi , iːZ l eːnvi mɑʔÜ ʔjLɓ|
16. ZɪgʔRi Rbˋ Kx aiʔbi Rjeʋqʏl gʷU cʔqʷRb eYbɪ Kiːb|
17. ZɪgʔRi ʷeʔkl ʷeʔkl AʂeZ˥ cʷiPhv eYbɪ Kiːb|
18. ZɪgʔRi tɕvKɪgʷKo l tɪvMeʋjvB mɑʔÜ eYbɪ Kiːb|
19. ZɪgʔRi RɪgʔZ mvi cʔqʷMi ʷbqgvej˥ eYbɪ Kiːb|
20. ZɪgʔRi dmj mʂMn l dʒb mɑʔÜ ʔjLɓ|
21. gʷkʷKPʔ cʔqʷRbɪqZv eYbɪ Kiːb|
22. gʷkʷKPʔ ecb mɿg l c˥Z eYbɪ Kiːb|
23. gʷkʷKPʔ mʋʔii cʷiɿgʷ l cʔqʷM c˥Z mɑʔÜ ʔjLɓ|
24. gʷkʷKPʔ Pɪlveʔˋ cʔqʷRbɪq AʂeZ˥ cʷiPhv mɑʔÜ ʔjLɓ|
25. gʷkʷKPʔ dmj mʂMn l dʒb mɑʔÜ ʔjLɓ|
26. tʃXɑʔmi , iːZ l eːnvi mɑʔÜ ʔjLɓ|
27. tʃXɑm Pɪlveʔˋ Rjeʋqʏ Pwɪnˋv eYbɪ Kiːb|
28. tʃXɑʔmi eʔR ecb c˥Z DʔjL Kiːb|
29. tʃXɑʔmi dmj mʂMn l dʒb mɑʔÜ ʔjLɓ|
30. tʃXɑʔmi caʋb tɪvʔMi eYbɪ ʔjLɓ|



cV 5.1

- | | | |
|---|--|--|
| 1. K (...) | 1. L (...) | 1. M (...) |
| 2. K (2.5-3.0 gUvi) | 2. L (300-500 Mg) | 2. M (30%) |
| 3. K (1) | 3. L (2) | 3. M (2) |
| 4. K (K ₁ O ₂ Rig P ₁ Li m ₁ q te ₁ W Ges K ₁ O ₂ g ₁ v ₁ q) | 4. L (K ₁ P dj t ₁ L ₁ q t ₁ bq) | 4. M (K ₁ Îg civM ₁ q ₁ b ₁ i) |

1. K (lg.)	1. L (m.)	1. M (lg.)
2. K (idZ/bx)	2. L (diêp-êkvL)	2. M (5-10)
3. K (2)	3. L (1)	3. M (2)
4. K (Kûlg ciMqab mab Kiv)	4. L (QûqicQ`Kivx qmjv dmj thgb Ar`v)	4. M (qibcûy qkz`cûy I gazyû)

1. K (g.)	1. L (g.)	1. M (m.)
2. K (Dò I ï®)	2. L (tẽtj t`v-Avẽt`v-Avẽ)	2. M (mKvẽj)
3. K (3)	3. L (2)	3. M (3)
4. K (40-70 Ub)	4. L (tUvKv w`tj W`veW`ve kã nq)	4. M (cUv I mvMi)

1. <i>K</i> (<i>m.</i>)	1. <i>L</i> (<i>m.</i>)	1. <i>M</i> (<i>m.</i>)
2. <i>K</i> (<i>meʔPʔq teʷk</i>)	2. <i>L</i> (<i>25-40 fm.</i>)	2. <i>M</i> (<i>teʔj t`vɛAvk t_ʔK t`vɛAvk</i>)
3. <i>K</i> (<i>1</i>)	3. <i>L</i> (<i>2</i>)	3. <i>M</i> (<i>2</i>)
4. <i>K</i> (<i>qvP qvm</i>)	4. <i>L</i> (<i>cvZv S jmvʔbv</i>)	4. <i>M</i> (<i>m`úY MvO qʔi hvevi ci</i>)

1. $K(\parallel g.)$	1. $L(m.)$	1. $M(m.)$
2. $K(exR \text{ ev } K_{VII}Us)$	2. $L(75 \times 45 \uparrow m.\parallel g)$	2. $M(50-75 Ub)$
3. $K(2)$	3. $L(2)$	3. $M(2)$
4. $K(D\grave{o} \text{ } I \text{ } A_V\grave{ })$	4. $L(\text{te}\uparrow j \text{ } \uparrow\grave{ } V-A_V\text{ } k)$	4. $M(20-30 \uparrow m.\parallel g)$

1. $K(m.)$	1. $L(\ g.)$	1. $M(m.)$
2. $K(6-6.8)$	2. $L(73)$	2. $M(8-10)$
3. $K(1)$	3. $L(3)$	3. $M(2)$
4. $K(\dagger g \vee R \vee BK \vee Bim)$	4. $L(\dagger k \vee P \vee I \vee i \vee mgg)$	4. $M(60 \times 45 \dagger m. \ g)$

k_xZK_vj_xb me_wR P_vI

iwe tɔʂmɔg ev kxZKʷj evsjvʰʰk th mKj meɪR Drcv`b Kiv nq Gigʰa caɪb
meɪR,ʃjv nʰʰQ dʒKɪc, Avjygjv, UʔgʰUv, tɕqɪR BZ`wɪ | GQɪovɪ gɪPɪq Zzj t`qɪ hvq
G aiʰbi KZK,ʃjv , iʒZcʰ meɪR thgb- jvD, wkg BZ`wɪ meɪR,ʃjvɪ evsjvʰʰk
kxZKvjxb meɪR wɪnʰtɕe Pɪlvev` Kiv nʰq \_vʰKɪ ZvB GB meɪR,ʃjvi Pɪlvev` Ges
e`envi m`úʰK mg`K aviYv _vKv cʰqɪRb| kxZKvjxb meɪR,ʃjvi gʰa Avjyl tɕqɪR
mviveQiB e`envi Kiv nq eʃj Gʰi msiɲY Kiv GKvš cʰqɪRb| ZvB Avjyl tɕqɪRi
msiɲY cɪwɪqɪ m`úʰKɪ Avgvʰi Ávb _vKv cʰqɪRb|

cvV 6.1 KwcRvZxq meWR - dZKwc



GB c_vV †k‡I A_vc_wb

- $d\tilde{z}K_{\parallel c}K_X a i\tilde{b}i\ m e i R\ t m\ m^{-}\tilde{u}\tilde{z}K\ a v i Y v\ \cdot\ \tilde{z}Z\ c v i\tilde{z}e b|$
- $d\tilde{z}K_{\parallel c}i\ c y\acute{o}, Y\ I\ A_{\%}b i Z K\ , i z\ e^{\vee}L^{\vee}\ K i\tilde{z}Z\ c v i\tilde{z}e b|$
- $d\tilde{z}K_{\parallel c}i\ P v l v e r\ m^{-}\tilde{u}\tilde{z}K\ R v b\tilde{z}Z\ c v i\tilde{z}e b|$



dʒKɪc (Brassica oleracea var. botrytis) eɪsʃvʰʰk GKɪU AZʰš Rbɪcɥ mɪɪv
cɪɪvɪfʃ kɪZKɪxb mɛɪR| cɪɪxɪ Abʰvʰ ʰʰkɪ GɪU cɪɪv mɛɪR, ʰʰvɪ gʰaʰ AbʰZg|
fgaʰmɪx AAʰj Gi Drɪcɪʰj eʰj aɪɪv Kɪv nq| tɥvNj Aɪvʰj fɪZeʰl dʒKɪcɪ
Pɪvɪvʰ c_g ʰʰiɪ nq eʰj Rɪvɪv hɪvq| eɪsʃvʰʰkɪ cɪv mɛɪ dʒKɪcɪ Pɪv nq| Zʰe UʰʰvBj
ʰʰRjv Aɪvɪv RvʰZi dʒKɪc Pɪʰli Rbʰ ɪɛɪʰvZ|

Rjevqyl gwU

WŪv Avenv I qv d m j e ‡ j
 evs j v ‡ † k k ZK v ‡ j B † a
 d ‡ K v c i P v l m a e |
 Z v c g v † v q m s ‡ e † b k v j e ‡ j
 R v Z † w b e v P b A v Z
 j i ‡ Z c Y |

mvaivYZ VŪv I Av` RjeyqdyZKic P†Ii Rb" me†P†q Dc†hwMx| RvZ†f†` Giv ZvcgvŶvi
 weifbZvq LqB ms†e`bkxj| ZvB dZKici mdj PvIve†`i Rb" mg†qvc†hwMx RvZ ‖beivPb
 LqB , iZc†Y| mvaivYf†e dZKic 15⁰-25⁰ †m. ZvcgvŶvq me†P†q fv†jv R†ŠŠ|
 te†j †v-AvK I Gwuj †v-AvK gwU†Z dZKic fv†jv R†ŠŠ| Z†e Rwg†Z cwiB †mP I cwiB
 wBwK†bi fv†jv e'e`v_vK†Z n†e|

Drcv`b Kvj I RvZ

RvZ†f†` ZvcgŶvi
wefbZvq Drcv`bKvj†K
AvMvg, ga`g I bveX GB
WZbfv†M wef³ Kiv n†q†Q|

AvMwg Rv†Zi dḫKwC Pv†Ii Rb" AvM'óí gvSigwS, gvSvwi Rv†Zi Rb" tm†Poi gv†mi
gvSigwS I bvx Rv†Zi Rb" Av†±veí gv†mi gvSigwS mg†qi g#a" exRZjvq exR ecb
Ki†Z n†e| dm†ji RxebKvj 80-110 w`b| eZgv†b evsjv†`†k th mg⁻ Rv†Zi dḫKwC
Drcw`Z nq tm,†jv n†jv-

AvMng : KwZKv, cvUvB, cKv`xcvjx, AvMng tMevj, UvK`vj-55 w`b l UvK`vj-45
w`b|

$g_{\nu}^{Svix} : AM_{\nu} q b_x, t_{cS}^{I\nu} j_x, t_{Mev}^{I\nu} G \cdot, t_{Mev}^{I\nu} I q B, t_{Mev}^{I\nu} -16 \text{ Ges } t_{\nu} \mu \nu D b |$

bvex : tnvqBU gvd†Èb, BDwBk †Mvej, gvNk tebvimx, iv¶mx †jU, wKs Ae KvKxi
BZw |

- dʒKci `p ev k³ cŷúgÄix meR ¶n¶mte LvIqv nq|
- †n±i cZ dʒKci djb n¶jv 20-25 Ub|



cvtWĒi gj'vqb 6.1

1. mZ' n+j Ōmō Ges ḡ_v n+j Ōḡō ḡjLb|

K. dḡKḡc Pvl i Rb' Dc+hvMx ZvcgvÎv n+jv 15-25 tmjḡmqvm|

L. dḡKḡci DrcĒj n+jv BD+iḡcqv AAj|

2. ĩb'vb cĥ Kiib|

K. exR ec+b+i ci dḡKḡc msMn Ki+Z ḡb mgq jv+M|

L. I RjevqZ dḡKḡc fv+jv Rš'i|

3. mVK DĒi i cĥk ḡUK ḡPý (√) ḡb|

K. evsjv'ḡki tKvb tRjv AvMvg dḡKḡc Pvl i Rb' ḡeL'vZ ?

1. gqgbḡmsn

2. MvRxcý

3. Rvgvjcy

4. UvsMvBj

L. b/ex Rv+Zi dḡKḡc Pvl i Rb' KLb exRZjvq exR ecb Ki+Z nq?

1. AvM+ ÷ i gvSvḡḡS

2. tm+P+i i gvSvḡḡS

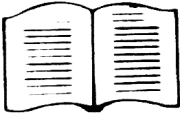
3. A±ve+i i gvSvḡḡS

4. b+f+i i gvSvḡḡS

4. GK K_vq ev evK' DĒi ḡb|

K. tKvb ai+bi gvU+Z dḡKḡc fv+jv Rš'vq ?

L. dḡKḡc Pvl i Rb' cḡZ tn+i Rvg+Z KZUKæR `iKvi nq ?



cV 6.2 K`RvZxq meiR - Avjy

GB cV tkfI AvciB

- Avjym`úK aviYv `Z cvi#eb|
- AvjyPvlv` e`vL`v Ki#Z cvi#eb|
- Avjye`envi D#jL Ki#Z cvi#eb|

fjgKv I ciPiZ

AvjyA`Z Rb`icq meiR| Gi `eÁ`bK bvg Solanum tuberosum evsjv`#k Rigi ciigvY I Drcv`#bi `K t`K avb I M#gi ciB Avjy`vb| evsjv`#ki cvq me GjvKv#ZB Avjy Pvl n#q `v#K| Z#e epEi XvKv, K#jv, e, ov, `bvRcý, iscý I ivRkv#Z Avjyfv#jv R#š`_v#K|

Avjy Drcv`E`j `Y Av#gviKv, #e#kIz tci#, evj#fqv, Kj#qv Ges Ab`vb` #bKUeZx AÁj| 1580 mv#ji `K t`ú#b, BD#ivc mn c`_exi #efb `v#b Avjy Pvl Q#o#q c#o| Avgv`i t`#k mB`k kZv#xi c_g `K cZMvRiv Avjy#b#q G#m#Qj e#j aviYv Kiv nq|

RjevqY gwU

i@ I `vfv#eK Wûv AvenvIqv AvjyPv#Ii Rb` Dc#hvmx| Z#e 10⁰ tm. Gi #b#P Ges 20⁰ tm. Gi Dc#i i Zvcgv#vq djb Kg nq|

Avjy15-20⁰ tm. Zvcgv#vq fv#jv djb t`q| AvjyPv#Ii Rb` te#j t`v-Auk I t`uAvk gwU Dchý|

Drcv`b Kvj

mvaviYZ b#f#i gv#m Avjy K` tivcY Kiv nq| Z#e ep#ev`j te#k bv n#j tm#b#i-A##vei gv#m I AvjytivcY Kiv hvq| b#f#i i ci tivcY Ki#Z h#Zv t`#i n#e, djb ZZ Kg n#e| `#v c#v#Z#Z AvjyPvl Kiv n#q `v#K| h\_v- (1) Av#Qv`vb c#v#Z I (2) tfjx c#v#Z|

**Aw#Qv`b c#v#Z :** GB c#v#Z#Z Rvg `Zvii mgq me mvi c#qvM Ki#Z nq| Gici exR (K`) jv#M#q KP#xcv#v, Lo BZ`v `#q gwU tX#K t`qv nq Ges tmP t`qv nq bv|

tfjx c#v#Z : MvQ jvM#bvi ci jvBb eivei AvBj t`qv nq| K#`i AvKvi, Ae`v I tivcY `#Zi Dci Avjy djb #bfi K#i| eo AvKv#i i exR Ges Nb tivc#Y tgvU djb te#k nq| Z#e Av#_K #etePbvq Ddkx Rv#Z 60 tm. #g. `#Z mvi K#i 25 tm. #g. e`ear#b 25-35 Mvg IR#bi exRK` jvM#j 1.6-2.3 Ub/t#i exR c#qvRb| AvjyPv#Ii tgvU e`qi 25-40% n#jv exRK#`i LiP|

cKZ.ex#Ri gva`g `Yv#e dmj Drcv`b Kiv hvq| c\_gZ exRZjvq AvjyPv#Ii `Zvii K#i gv#V tivcY Kiv Ges #ZxqZ exR e#b c_g eQ#i tQvU tQvU K` Drcv`b K#i #ngvMv#i msi Y K#i cieZx eQ#i tivcY Ki#Z nq|

RvZ

evsjv`k K#L.M#eIYv Bb#vUDU tek #KQyDbZ RvZ D#v#eb K#i#Q| Gi g#a` K#vWbvj, K#i#x #m#`y, gv#v, tgv#ib, I#i#Mv I n#iv D#jL#hvm| t`kx Rv#Zi g#a` jvjciKix, Pijkv, kvj#evZx, t`v#vRvix BZ`v i#q#Q| eZgv#b evsjv`k K#L.M#eIYv Bb#vUDU mdj fv#e Avjy cKZ.exR Drcv`b Ki#Z t#i#Q| d#j Drcv`b LiP I K#g hv#e|

mvi

AvjyPv#Ii Rb` c#Z t#i i
Rvg#Z tMei#Remvi 10
Ub, BD#iqv 325 tK#R, #U
Gm #c 230 tK#R, Gg #c
275 tK#R c#qvM Kiv
D#PZ|

Avjy Pvl i Rb" ciz tn±i RigZ tMei/Remvi 10 Ub, BDiqv 325 tKlR, uGm uc 230 tKlR, Gg uc 275 tKlR cqvM Kiv DlpZ|

GQvov mjdvi I v AfveRlbZ RigZ 35-40 tKlR Rcmvg I 5-10 tKlR Rsk mjdU cqvM Kiv iKvi| AvMB ejv ntqQ, AvQv`b cxZz me mvi Rig Zii mgg GKmsM cqvM KiZ nte| tfjx cxZz tMei I uGm uc, Rcmvg I Rsk mjdU cyvUvB Rig Zii mgg gkq`Z nte| Gg uc AakUv Rig Zii mgg, evKx Aak tfjx Ges BDiqvi GK ZZxqsk Rig Zii mgg, GK ZZxqsk Pvi MRvbi 15-20 b ci, evKx GK ZZxqsk Zvi 20-25 b ci MvQi tMvovq tfjx eivei cqvM KiZ nte, hvZ tivCYKZ.K` ev MvQi Mvq tKvbi AvNvZ bv jvM|

AšeZxvjb c iPhv

iKbv tgmvg AvjyPvl Kiv nq etj 2-3 evi tmP t`qv cqvRb| GQvov RigZ bZb AvQv`vb ev tfjxZ gvu Zzj`Z nq|

tcvKv-gvKo I tivMejvB`gb

Avjy meP gvi³K tivM
tjUevBU ev bweaŸmv hv
Phytophthora infestans
bvgK QŸvK Øviv nq|

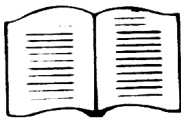
Avjy meP gvi³K tivM tjUevBU ev bweaŸmv hv *Phytophthora infestans* bvgK QŸvK Øviv nq| WŸv, Av I tgnjv AvenlqvZ GB tivMi cvŸve nq| GiKg Avenlqv t`Lv v`jB, Wb`b Gg-45 Ksev iWmgj t`u KiZ nte| GQvov Avjy KvUB tcvKv Øviv MvQi tMvov ev KvŸ KvUz t`Lv tMjB ciz`b t fvi ejv tMvovi gvu Ljo tcvKv a i tgi tdjZ nte|

dmj msMn I djb

Avjy AvaybK RvZmg 90-100 v`b c i c°Zv jvf K i | Zte t`kx RvZ KQy t`i nq| c i YZ AvjyQ tn±j cto I cvZi vbi v`K njy ntZ vK| evjv`k tn±iciz Mo djb Ddmx RvZ cvq 14 Ub I t`kx RvZ cvq 8 Ub| Zte eÁwbK cxZz Pvlvev` Ki±j Ddmx I t`kx RvZ h_vµg 40 I 15 Ub djb cvlqv mae|

e`envi

evjv`k Avjy e`envi cavbZ meiR vntmte| tgvU Avnvi hvm" meiRi kZKiv 53 fVMB Avjy`Lj K i AvQ| G`k ewIK gv_wcQyAvjyLvevi c i gY 9 tKlR| mvaviY Ae_vq Ddmx RvZi Avjy3-4 gvm Ges t`kx Avjy5-6 gvm msiY Kiv hvq| evKx mgqUv vngvM i iLz nq| c i µqvRvZ Ae\_vq AvjyPcm, µ`vKv, t dÂ dvB, g`vKW BZ`v vntmte MnY Kiv hvq|



migg

- iR I v fweK WŸv Avenlqv AvjyPvl i Rb" DchŸ|
- 15-20 tm. ZicgvŸv Avjyfvjv Rbq|
- mvaviYZ b f i gvM AvjyK` tivCY Kiv nq|
- A"Qv`vb I tfjx GB`gxZz AvjyPvl Kiv nq|
- Avjy meP t q gvi³K tivM ntjv tjU evBU|
- mvaviYZ 90-100 v`b Avjy c i c°Zv jvf K i |
- evjv`k tn±i ciz Avjy Mo djb ntjv Ddmx RvZi tŸŸŸ cvq 14 Ub Avi t`kx RvZi tŸŸŸ cvq 8 Ub|
- evjv`k tgvU Avnvi hvm" meiRi kZKiv 53 fVMB nt"Q Avjy



cv#VĖi gj`vqb 6.1

1. mZ` n#j ōmō Ges ig\_`v n#j ōgō #jLb|

K. iR I Mig Avenv Iqv AvjyPv#li Rb` Dc#hvMx|

L. A"Qv`vb I #fjx GB `jcxZ#Z AvjyPv I Kiv n#q_#K|

2. iR`vb c#Y Ki#b|

K. AvjyPv#li Rb` #n±i c#Z Ub #Mei/Remvi c#qvM Kiv D#PZ|

L. Avjy met#P#q gvi v³K #ivM |

3. mVK DĖ#ii c#k #UK #Pý (√) #`b|

K. Avjy AvaybK RvZmg n KZ#`#b c#ic°Zv jvf K#i ?

1. 90-100 #`#b

2. 90-95 #`#b

3. 95-100 #`#b

4. 100-110 #`#b

L. AvjyPv#li #gvU e#qi kZKiv KZfvM exRK#` i Rb` c#qvRb nq?

1. 20-40%

2. 25-40%

3. 20-30%

4. 25-30%

4. GK K_vq ei ei#K` DĖi #`b|

K. m#aviYZ #Kvb gv#m Avjy K>` #ivcY Kiv nq ?

L. KZ ZvcgvÎvq Avjyfv#jv djb #`q ?

cV 6.3 *gf_VR_VZ_Xq me_WR gf_V*



GB c_vV †k‡/ A_vc_wb

- $g_{j\vee}^i K_X a i \# b i \text{ me} | R \vee | R \vee \# Z \text{ cvi} \# e b |$
- $g_{j\vee}^i c j \# Y | A _ \# b i Z K _ , i \# Z m \text{---} \acute{u} \# K A e | n Z n \# e b |$
- $g_{j\vee}^i P v | v e \text{---} m \text{---} \acute{u} \# K A e M Z n \# e b |$
- $g_{j\vee}^i e \text{---} e n v i m \text{---} \acute{u} \# K R \vee \# Z \text{ cvi} \# e b |$



gʲv (Raphanus sativus) evsʲvʲʰʰʰi GKU Rbɪcq Ges AbʲZg cavb meɪR | gʲv MvʲQi
gɪvUi bɪʲPi ʊxZ gʲʲKB meɪR ɪnʲmʲte eʲenvi Kiv nq | gʲv i KɪP cɪZvI kvK ɪnʲmʲte Lg
cʲoKi | gʲv i DrcɪEʲvb mʲæeZ ʲɪY-cɪʲdʲg BDʲivʲc | cɪL ex i AwaKvsk ʲʰʰKB Kgʲeɪk
gʲv i PvIvevʲ nʲq vʲK |

gǝjv ɬZ w fUwɨgb wɨm l Kʷvjmwɨqɨg hɬ_ó cɨɨgɨvY AvɬQ | Zɬe Gi meɬ cɨvZ wɨwfb LɨwɬR jeY
l w fUwɨgb ǾGǾ Ges Ǿmɨm mǾx | qǝjv mɨvjvʷ, ZiKvix, AvPvi l ɬɨɨvɨvʷ wɨnɬɨe eʷeüz nq |

Rjevqyl gvwU

mɪavɪYfvɛ gɟɪ VvŬv Avɛnv lqvi dɱj | Zɛ Gɪkqvɔ RvZ, ɟjv Zɟɔv gɟKfvɛ BDɟiɪwɔqvɔ
 RvZ, ɟjvi Zɟɔvq tɛɪk Zvcgvŭv mn̄ KiɟZ cɪi | gɟv ˈvɟ, MŬ Ges AvKvɟi mɛɟPɟq
 fvɟjv nq 10⁰ ɟm. ɟ_K 16⁰ ɟm. Zvcgvŭvq | D^ɟP Zvcgvŭvq gɟv LɟˈˈvcɟɪvMx n lqvi AvɟMB
 k³ | Sɟsvɟjv nɟq hvq | GKviɟYB kvZcavɔ ɟˈɟki RvZ, ɟjvi ɟɟq Avɟɟˈi ɟˈɟk
 Drcv̄ Z RvɟZi gɟv GKUzɛk Sɟsvɟjv nq |

gɣ^v cɪq me ai#bi g^wU#ZB Rš^v#bv hvq| Zte t^v-Av^k I te#j t^v-Av^k g^wUB gɣ^v Pɪ#i
Rb" me#P#q Dc#hvM| AɪaK ʔre m^vimg^x g^wU g^vi⁻v^fveK^{-v} I e^x#Z m^vn^h K#i|

Drcv`b Kvj I RvZ

gǝʝi AvMvg Pɹɤli Rb ʈmɤɔi gvm, gɹSviX Pɹɤli Rbˀ Aɤ±vei gvm Ges bɹex Pɹɤli Rbˀ
bɤfɔi-ɹWɤmɔi gvm chš exR ecb Ki v hvq | evs jvɤˀk AvMvg Pɹɤli Rbˀ ɹgɤbv Avɹj, j v j
ʈevɔvB Ges ZvmvKxmb; gɹSviX RvZ iɤc ZvmvKxmb, ewi gǝʝ-2 (ɹcskX) I ɹgɤbv Avɹj Ges
bɹex RvZ ɹnɤmɤe ewi gǝʝ-2 (ɹcskX) I ɹgqvkɤM RvɤZi bɹg DɤjL Ki v hvq | ZvmvKxmb I
ewi gǝʝ-2 evs jvɤˀk KɹL.MɤeIYv BbɹóUDU KZK DTMveZ nɤqɤQ |

$$R \parallel g^{\wedge} Z \parallel i \mid exR \text{ ecb}$$

gʃv Drcv`ʃbi Rb` Mfxi Kʃi Dchvix 4-5 uU Pvl w`ʃq Rwg DĖgiʃc ^Zwi Kiv`iKvi|
KviY Rwg ^Zii Dci gʃvi Drcv`b AʃbKvʃʃk wbfikxj| hı I mvaviYfvte gʃvexR wQvUʃq
ecb Kiv nq, Zey mwiʃZ exR ecb Kivb fvʃjv| GʃZ exʃRi cwigY Kg jvʃM Ges cieZx
ciPhv Kiv mnR nq| GRb` Rwg ^Zii Kivi ci GK wgvvi ck` I 10-15 ʃm. wg. DĖzwo
ev teW ^Zii KiʃZ nq| cvkvcvk` yU wgoi mvʃ_ 30 ʃm. wg. Plov tWb ivLʃZ nq| GʃZ
cvvb tMp I wʃwkvʃbi mveav nq| wgoi Dci 30 ʃm. wg. iʃZ wZb mwiʃZ exR ecb KiʃZ
nʃe| mwiʃZ 30 ʃm. wg. iʃZ 2/3 uU exR cvq 1 ʃm. wg. Mfxʃi ecb Kʃi Szʃzi gwU
w`ʃq ʃXʃK w`ʃZ nq| gwU fvʃjv ÔʃRw0 _vKv Ae_vq exR ecb Kiv DvPZ| RvZʃfʃ` tnʃi
ciZ 2-3 ʃKwR exʃRi cʃqvRb nq|

$$\frac{D^{\prime\prime}P\ Z_Vcgv\hat{I}vq\ g\ j\ v\ i\ P\ v\ I}{Ki\ddagger j\ k^3\ I\ S_VS\ddagger j\ v\ nq}$$

f v ‡ j v d j ‡ b i R b ¨ t m ‡ P a i
t ‡ K W ‡ m a i c h Š t h
t K v ‡ b v m g q B G i P v I K i v
h v q, Z ‡ e t g Š m g - I q v i x R v Z
W b e v P b K ‡ i W b ‡ Z n ‡ e l

Mfxi K+i DĖgi†c Rŋg
PvI K+i c†qŋRbgZ mvi I
†Mvei c†qM K+i mwi†Z
ŋbŋ`ó`††Z exR ecb
Ki†j cŋZŋU g†ji eŋx
mgfv†e nq Ges djb eŋx
cŋqI

mv̄i i c̄i gY R̄gi DeiZ̄vi Dci ɯbf̄i K̄i Kḡt̄e k̄ n̄t̄e | ḡj̄ P̄t̄li R̄b̄ t̄n̄i c̄i Z̄ mv̄i i
c̄i gY I c̄t̄q̄M c̄x̄Z̄ mv̄i Y 6.3.1-G t̄̄ q̄v̄ n̄t̄ j̄ |

m_i	$\dagger g \nabla c \nabla i g \nabla Y$	$\dagger k \nabla P \nabla i \nabla m g q \nabla t \nabla q$	$c i e Z \nabla c \nabla i P h \nabla \nabla m \nabla t e \nabla t \nabla q$	
			$1 g \nabla K \nabla$	$2 q \nabla K \nabla$
			$e \nabla R \nabla e c \nabla b i \nabla 20 \nabla \nabla b \nabla c i$	$c \nabla g \nabla K \nabla i \nabla 14 \nabla \nabla b \nabla c i$
$\hat{R} e m \nabla i$	$10 \nabla U b$	$m e$	-	-
$\nabla U \nabla G m \nabla i c$	$225 \nabla \dagger K \nabla R$	$m e$	-	-
$B D \nabla i q \nabla$	$375 \nabla \dagger K \nabla R$	$175 \nabla \dagger K \nabla R$	$100 \nabla \dagger K \nabla R$	$100 \nabla \dagger K \nabla R$
$G g \nabla i c$	$225 \nabla \dagger K \nabla R$	$125 \nabla \dagger K \nabla R$	$50 \nabla \dagger K \nabla R$	$50 \nabla \dagger K \nabla R$

tɕvKv-gvKo I tɕivMeɣjvB ʔgb t gɣv dmɕj Lɤ GKUv tɕivMeɣjvB ev tɕvKv-gvKɕoi Dc ʔe
 ʔLv hvq bv | AɕbK mgq cɕZvi ʔj ʔv tɕvKv ev Rve tɕvKv ʔLv hvq | gʔjv vi qb ev mɕgɕ qb
 (57 Bim) bvɔK ʔh tKvb GKU KɕUvɕK JIa cɕZ ʔjUv i cviɕɕZ 2 ʔm. ʔm. ʔgɕkɕ ʔʔ Kiɕj
 Gme tɕvKv mɕRB ʔgb Kiv hvq |

mʌviYfvʔe gʃvPvʔli Rbʔ th aiʔYi Pvʔlev` KiʔZ nq, exR Drcv`ʔbi Rbʔl cvq GKB
 Pvʔlev` AbmʌiY Kiv nʔq \_vʔK| Zʔe exR Drcv`ʔbi ʔ ʔʔʔi ʔKQycv_K` iʔqʔQ| th RvʔZi
 gʃvi teʔki fvM Ask gwʔUi Dcʔi _vʔK, ʔm RvʔZi exR dmʔji ʔejvq MvʔQ dʒ ʔ`Lv ʔ`qvi
 ci bvʔv ʔ`ʔK gwʔU ʔbʔq m`úY gʃv gwʔU ʔ`ʔq ʔXʔK ʔ`ʔZ nq| exR dmʔji RʔgʔZ gwʔUʔZ
 me`v fvʔv im _vKʔZ nʔe| MvʔQ dʒ Avmvi ci ʔnʔi-cʔZ AʔZʔi³ BDʔiqv 100 ʔKʔR I
 ʔgDʔiU Ae cʔvk (Gg ʔc) 100 ʔKʔR ʔQʔUʔq fvʔvjfvʔe ʔgʔkʔq ʔ`ʔZ nʔe| Rve ʔcvKv ʔ`Lv
 ʔ`qvgʔv ʔgʔvjw\_ʔbʔ ʔQʔUʔq Zv `gb KiʔZ nʔe| exʔRi iʔwʔZ ev cvZv I dʒ `ʔU
 Ajʔvibʔʔiqv `vMRʔbZ ʔivʔMi cv`ʔve nʔj 2 Mʔg ʔivʔivʔ cʔZ ʔjʔvi cʔwʔZ ʔgʔkʔq ʔ`ú
 KiʔZ nʔe| exR ecʔbi ci ʔ`ʔK 5 qvʔmi qʔaʔB exR msMʔni Dchʔ nq| cicivMqgbB



gĵvi mĵaviY ag| tĵmRb" exR dĵmĵji PZĴ ĴK 1000 ĴgUĵĴii gĴa" Ab" tKĴb gĵviRĴZ _ĴKĴ
DĴPZ bq| RĴZĴUĴK ĴeĴx ĴvLĴi Rb" GUĴ AcĴinĴh|

mĴigg

- gĵvi cĴ_eXe"vcx eĴj e"eĴZ GKĴU meiR|
- gĵvkK cĴó, ĴYi Ĵ`K t_ĴKI hĴ_ó, ĴĴZ enb KĴi|
- gĵvi WŴv AvenvIqvi DcĴhVMx dĵj|
- gĵvi Drcv`bKvj Lg mĴĴĴB, gvĴ 40 t\_ĴK 60 Ĵ`b chŠ |
- tĵnĴicĴZ 60-90 Ub chŠ dĵb cvIqvi hĴq|



cVtWĖi gĵ`vqb 6.3

1. mZ` nĵ ōmō Ges ḡ\_`v nĵ ōḡō ḡLb|

K. gĵvZ hĵ_ó cḡigvY ḡfUḡgb ōḡmō I K`vjḡmqv g iĵqQ|

L. ^Re mvi mgx gḡU gĵvi ḡfvieK ḡ_` I eḡxZ evavi mḡó Kĵi|

2. ĩb`vb cĶY Kiab|

K. gĵvi AvMḡg PĵIi Rb` gḡm exR ecb Kiv hvq|

L. mḡaviYfvĵe gĵv AvenvIqv i dmj|

3. mVK DĖĵii cĶk ḡUK ḡPý (√) ḡ`b|

K. gĵv PĵIi Rb` Dchy ZvcgḡÎv ḡKvbiU ?

1. 10-14° ḡmjḡmqvm 2. 10-15° ḡmjḡmqvm

3. 10-16° ḡmjḡmqvm 4. 10-17° ḡmjḡmqvm

L. ḡn±i cḡZ RvZĵfĵ` gĵvi djb KZUkznq_ḡK ?

1. 60-80 Ub 2. 50-90 Ub

3. 40-60 Ub 4. 60-90 Ub

4. GK K_vq ev eĶK` DĖi ḡ`b|

K. exR ecĵbi ci KZ gḡmi gĵa` gĵv exR msMḡni Dchy nq ?

L. gĵvi Drcv`bKvj KZ ḡ`b ?

U†g†Uv †ivcbKv†i M†Z
U.Gm.†c mvi Ges
cieZx†Z †Kv†Z BD†iqv
Ges Gg.†c Dc†i c†qvM
Ki†Z n†e†

mvi	$\dagger g v U$ $c \parallel i g v Y$	$\dagger k l P r \dagger l i$ $m g q \dagger ^\text{`} q$	$c i e Z x c \parallel i P h v \parallel n m v \dagger e \dagger ^\text{`} q$		
			$P r i v$ $j v M v \dagger b v i$ $m g q M \dagger Z$	$1 g \parallel K \parallel ^{-}$ $(m v \parallel i \dagger Z)$	$2 q \parallel K \parallel ^{-}$ $(m v \parallel i \dagger Z)$
				$P r i v j v M v \dagger b v i 3$ $m \beta s y n c \dagger i$	$P r i v j v M v \dagger b v i$ $5 m \beta s y n c \dagger i$
$\hat{r} e m v i$	$10 U b$	$A \dagger a K$	$A \dagger a K$	-	-
$B D \parallel i q v$	$550 \dagger K \parallel R$	-	$200 \dagger K \parallel R$	$175 \dagger K \parallel R$	$175 \dagger K \parallel R$
$\parallel U G m \parallel c$	$450 \dagger K \parallel R$	-	$m e$	-	-
$G g \parallel c$	$250 \dagger K \parallel R$	-	$m e$	-	-

U†g†Uv i DĖg d j ‡bi Rb̄̄
Mv†Q †VKbv †`qv, AsM I
cvkK QvUvB, AvMvQv
c¶i®w iKiY I c‡qvRbgZ
†mP w` ‡Z nq|

Utg†Uvi fv†jv dj†bi Rb" euki k³ K^uÂ A₋ev[^]aÂvi K_vV_W ‖`†q Bst†iR ÔAÔ AvK_uZi gZ
cukvcuk ‖`ym†ii g†a<sup>-</sup>em††q Mv†Qi †VKbv i e<sup>-</sup>v Kiv hvq| Mv†Qi cukK<sub>W</sub> QvUvB K†i ‖`†Z
nq| GQvov Mv†Qi †Mvovi g_vU AvjMv K†i ‖`†Z nq|

U†g†Uv M†Q AvμgYKvix
KxU cZs†Mi g†a
Rve†cvKv Ab†Zg| U†g†Uv
MvQ cavbZ: X†j cov, Av†
a†ym, cvZv†`vMcov I
f†vB†vm †ivM Øv†v AvμvS
ng|

UḡḡUv Mḡḡi ḡḡZKi ḡcḡKvi ḡḡa" Rve ḡcḡKv Ab"Zg| Giv Mḡḡi KḡP WMv, cḡZv I KḡU
ḡḡK im ḡḡI Lḡq| Bḡḡḡḡ ḡjd ḡvBbi ḡcḡKvi AvḡḡY ḡḡLḡ ḡḡq| Giv cḡZvi meḡ Ask
ḡḡḡḡ ḡḡḡḡ| ḡḡḡḡḡḡḡ 57 Bḡm (1.12 ḡḡUvi) cḡZ 1000 ḡḡUvi cḡḡḡḡḡ ḡḡḡḡḡ GK ḡḡḡḡ
Rḡḡḡ ḡḡḡ Kḡḡ mnḡR Gme ḡcḡKv ḡḡb Kiv ḡḡq| Xḡḡ cov UḡḡḡUv Mḡḡi Rbḡ ḡḡivZK
ḡḡZKi GKḡU ḡḡivM | G ḡḡivM eḡḡḡḡḡḡ I QḡḡK Øḡiv nḡ| G ḡḡivM cḡZḡivax RvZ ḡḡMḡḡḡḡ

DĖg| GQvov GKB RwgZ cŁZ eQi U†g†Uv PvI Kiv DŁPZ bq| exRZjvq mŁaviYZ W'wŁŹs
Ad tiv†Mi AvuŁY nq| G tiv†Mi c'Łve Ł'Lv w†j tivfivj 2 MŁq/ŁUvi wŁŁŁŁŁ cŁbŁZ

7-10 `b Aši Priv MvQ cqvM KiZ nq| UtgUvi evoš MvQ cvZvq `vM cov
 tivMi AvugY cwiwqZ nq| tevfv÷b GK Mvg GK wjUvi cvwbZ wgwktq f-ú Ki+j G
 tivM `gb Kiv hvq| fvBivm tivMvuvš MvQ, +jvK Zzj cvq ev gwUzZ cZ bó K+i
 tdjZ nq| Avi cUz+ivax eē^{-v} wntmte cvZv tKukovbv fvBivm tivMi evnK mv^{-v} gwQ
 `g+bi Rb<sup>-v</sup> Wb+gugb (1 w. wj./jUvi) cvwbZ wgwktq cvZvi wB+Pi w`K f-ú KiZ nte|
 cqvRb tevta 15 `b Aši wQZq f-ú KiZ nte|

Pviv †ivc†Yi 60-80 w` †bi
g†a" U†g†Uv msMn i†yn†q
120 w` b chš P†j | Mo
djb 60-65 Ub†/n. |

RvZ t f t̃ P r i v t i v c t̃ Y I 60-80 w̃ t̃ b i g t̃ a c v K v U t̃ g t̃ U v m s M n i i a n q | c w Z M v q t̃ t̃ k 7-8
e v i d j m s M n K i v h v q | d t̃ j i w b t̃ P i w̃ t̃ K G K U z j v j P f v e t̃ L v w̃ t̃ j, d j t̃ Z v j v i D c t̃ h v M x
n q | A v g t̃ i t̃ t̃ k U t̃ g t̃ U v i M o d j b t̃ n t̃ i c w Z c v q 8 U b | Z t̃ e e v s j v t̃ k K u L. M t̃ e I Y v
B b̃ o i U D U K Z K D̃ m̃ w e Z R v Z g v b K I i Z t̃ b i d j b c v q 80 U b / t̃ n. |

Gʔɿŋi we:kɿ Pɾivɛv` c xɿZ Aejaɓ KiʔZ nq| gwUi cKɿZ I ˉvb Ges tɪvcYKvjʔfʔ
30-40 f.m. ||g. DɾɛGes 120 f.m. ||g. Plɔv wɿo (teW) Kʔi MvQ jvMvʔZ nq| cɿZU teʔW
tbSkvi QBʔqi AvKɿZ Kʔi ˌQ ciw_b ˌʔq QvDɿb ˌʔZ nte| MvQ cPʔ dzš dʒ
ˌvKvKvjxb mgʔq UgʊvUvʔUv bɿgK Kɿl̥g niʔqb 50 , Y (2%) ZijxKiY Kʔi iagɿ dʒi



cvWĖi gĵvqb 6.4

1. mZ" nĵ ōmō Ges ĩg_`v nĵ ōġō ĩjLb|

K. t`v-Avĥ I tēĵ t`v-Avĥ gġU UġġUv PĵIi Rb" Dc#hMx|

L. UġġUvi cġZġU MvQ t_ġK gŵĤ GKei dj msMn Ki v hvq|

2. ĩb"vb cĥY Kiib|

K. UġġUv cġievi fZ GKġU meR|

L. ĩvĤKġxb ZvcgŵĤ tġjmqvġmi Dcġi nĵ dj aviY e`vnZ nq|

3. mVK DĖġii cġk ĩUK ĩPý (√) ĩ`b|

K. cġZ exRZġvq KZUġġUġġUvi exR `iKvi nq ?

- | | |
|-----------|-----------|
| 1. 10 Mvg | 2. 12 Mvg |
| 3. 15 Mvg | 4. 20 Mvg |

L. RvZġfġ` Pġiv tġvcġYi KZġ`b cġi cġKv UġġUv msMn ĩiġ nq ?

- | | |
|--------------|--------------|
| 1. 60-90 ĩ`b | 2. 25-80 ĩ`b |
| 3. 60-80 ĩ`b | 4. 50-70 ĩ`b |

4. GK K_vq ei eiK" DĖġ ĩ`b|

K. KZġ`b eqġmi UġġUvi Pġiv exRZġv t_ġK Zġj gġ RġġZ tġvcY KiġZ nq ?

L. UġġUvi MġQi Ab`Zg ĩġZKi tġvKvi bvq Kx ?

cvV 6.5 kéRvZxq meiR - tcvR**GB cvV tKtI AvciB**

- tcvR m-úK aviYv w`Z cvi`eb|
- tcvRi Pvlvew` cYvjx eYbv KiZ cvi`eb|
- tcvRi msi Y m-úK D+jL KiZ cvi`eb|



tcvR tKej gmjvB bq, meiR wntmteI Gi e`envi euj cPijZ| Drcw`Z ciigvYi w`K
 t`K evsjv`tki gmjv dmjmg tni gta` tcvRi v mtev`P| GLv`b ciZ ermi cvq 35
 nRvi tnai RiqZ tcvRi Pvl nq Ges AvbgmbK 1.40 j Y Uv tcvR Drcb nq|
 dli`cy, XvKv, gqgbmsn, iscy, Kzjv I cvebv tRjvq cPz tcvR Drcb nq|

cw`dg Gikqv tcvRi DrciE v| gwKb hy ivó, Rvcvb, wgmI I t`ub w`eki caib PviU
 tcvR Drcv`bKvix t`k| tcvRi eÁmbK big Allium cepa L. | tcvR wjwqwm
 (Liliaceae) ciievi fy | tcvR GK cKvi f;wb i`cšwiz KvU hv ké K` ev evj bvtg
 ciwPZ|

tcvR tKej gmjvB bq,
meiR wntmteI Gi e`envi
euj cPijZ| Drcv`bi
ciigvYi w`K t`K
evsjv`tki gmjv
dmjmgtni gta` tcvRi
v mtev`P|

RjevqY gwU

tcvRtK maviYfvte VvUv RjevqY DcthvMx dmj e+j eYbv Kiv nq| wKš RjevqYZ
 Pwv`vi e`vcv`i Gi RvZmg tni gta` cPz e`eavb j Y Kiv hvq| 15-25° tm. ZvcgvÎv Gi
 Rb` mev`c Y DcthvMx| ewxi cv wGK chvq ZvcgvÎv A+c Y KZ. wba Ges ké K` ev
 evji ciw`c Zv jvtfi mgq wKQyD`P ZvcgvÎv Ges AvenvIqv i`v K+j djb fvjv nq|
 tcvRi tKvb tKvb RvZ wgv`4 chš wba ZvcgvÎv mn` KiZ cvi`i| D`P ZvcgvÎvq Ršv`bv
 tcvR Sšw teik nq| AwaK Gwuj bv n+j thKv`bv gwU`Z tcvR Drcv`b Kiv hvq| Dei
 t`v-Auk I ciw t`v-Auk gwU`Z Gi djb mev`c Y fvjv nq|

D`P ZvcgvÎvq Ršv`bv
tcvR Sšw teik nq| Dei
t`v-Auk I ciw t`v-Auk
gwU`Z Gi djb mev`c Y
fvjv nq|

RvZ

GjvKv`f` wvfb vbxq RvZ thgb Zv`nicjx, dli`cyi fwZ, wSUKv, KjvmbMi
 D+jL`thvM`| m-úZ evsjv`k K vL.MteIYv BbówUDU ewi tcvR-1 bvtg GKU RvZ D`v`eb
 KtiZQ|

Eskie`vi I tivcY

tcvR wZbU c`wZ`Z Pvl Kiv hvq| thgb- 1. mivmwi exR ejb| Gt`t`Î 6-8 tKwR exR
 `iKvi nq| 2. ké K` tivcY Kti| AvKvi t`f` tnai`ciZ 1200-1500 tKwR ké K`
 `iKvi nq| 3. exRZjvq exR ejb Pviv D`Evjb Kti Zv tivcY Kti| exR n`Z Pviv wZi Kti
 tivcY Kti AwaK djb nq Ges KIKMY A`bwZKfvte teik jvfevb nb| G c`wZ`Z
 A`v`ei gv`m exR Zjvq exR ecb KiZ nq|

Pviv Drcv`b

ciZ tnai RiqZ Pviv Kti tivcY KiZ n+j 3-4 tKwR fvjv exR jvMte| c`Z`K exRZjvq
 (3x1eM wG. AvKv`ii) 25-30 Mvg nvti e`jZ nq| ciZ tnai Pvivi Rb` Dc`iv`<sup>3</sup> AvKv`ii
 120-130 wU exRZjvi c`qvRb nq|

ciZ tnai RiqZ Pviv Kti
tivcY KiZ n+j 3-4
tKwR fvjv exR jvMte|

Rig ^Zii, tivCY I mvi c#qM

mvaviYZ 4-6 U Mfxi Pvl I gB w`#q AvMQv te#Q, tXjv tfs#M, gwU SzSzi I mgvb K#i t#qR P#li Rb` Rig ^Zii Ki#Z n#e| mPivPi 40-50 w`b eq#mi Piv tivc#Yi Rb`

D#g| mvi t_#K mvi Ges MvQ t_#K M#Qi ` iZ 20 x 10 tm. wg. n#Z n#e| ga#g Dei Rig Rb` tn#i c#Z 10 Ub tMvi mvi, 260 tK#R BD#iqv, 200 tK#R U Gm w# Ges 160 tK#R cUvk mvi c#qM Ki#Z n#e| Rig ^Zii tkl P#li mgq mg#q tMvi mvi Ges U Gm

w# c#qM Ki#Z n#e| BD#iqv I Gg w# c mvi#K mgvb `y#M K#i `y#K` #Z h\_v#g Piv tivc#Yi 20 w`b Ges 50 w`b ci Rig#Z c#qM K#i fv#jvf#e gwUi m#\_ w#k#q w`#Z n#e| t#qR Rig#Z gwUi c#qRb#q im bv_vK#j 10-15 w`b A#i A#i c#bi tmP w`#Z n#e| g#b ivLv `iKvi th, tm#Pi Afve Avgv#`i t`#ki t#qR djb Kg nIqvi Ab`Zg KviY| t#qR t#Z gwUi tRv Avmvi m#_ m#_ PUv t#f#Z w`#Z nq| Ab`_vq k# K#`i e#x e`vnZ n#q djb K#g hvq|

tivM I tcvKvKo `gb

t#qR WDb w#jWD, cvi#cj eP, t#g dvBjvg I tMvov c#r tivM nq| tivfivj, Wq#_b Gg-45, w`\_Iwfu I teb#jU (20 Mvg) 10 w#jUvi c#b#Z w#k#q e`eni Ki#j fv#jv dj cvIqv hvq| tcvKvK#oi g#a` w`_cm Ges Rve#civKv D#jL#h#M`| KxUbvkK Jla thgb-g#jv\_wb w#Ksev Wb#g#b w`#q G#`i `gb Kiv hvq|

dmj m#Mn I djb

t#qR MvQ c#ic° n#j, cvZv #gv#q nj#n#q tn#j c#o| Rig cvq 70-80% Mv#Qi G Ae`\_v n#j t#qR tZvjvi Dc#h#Mx nq| c#Z tn#i cvq 12-16 Ub t`kx t#qR Ges 800-1000 tK#R exR Drcb nq|

**migg**

- t#qR gmjv I meiR w#m#e e#j cP#jZ| Drcv`#bi w`K t_#K gmjv dmj mg #ni g#a` Gi`vb m#ev`P|
- t#qR W#v Rjevq#Dc#h#Mx dmj| 15-20⁰ tm. Zvcgv#v Gi Rb` mev#c#v Dc#h#Mx|
- Dei t`v-Av# I c#j t`v-Av# gwU#Z Gi djb fv#jv nq|
- t#qR RvZ mg #ni g#a` ewi t#qR-1, Zv#nic#x, d#i`c#i fv#Z, w#SUKv c#f#Z D#jL#h#M`|
- mivmvi exR e#b, k#K` tivCY Ges exRZjvq Piv Drcv`b K#i Zv tivCY K#i Gi Pvl Kiv hvq|
- gwU SzSzi I mgvb K#i Rig ^Zii K#i t#qR jvM#bv D#g|
- gwU#Z tRuAvmvi m#_ m#_ PUv tfs#M w`#Z nq| Zv#Z k# K#`i e#x fv#jv nq|
- t#qR MvQ c#ic° n#j, cvZv #gv#q nj#n#q X#j c#o|
- tn#i c#Z t`kx t#qR djb 12-16 Ub Ges ex#Ri djb 800-1000 tK#R n#q _v#K|



cv#VĖi gj'vqb 6.5

1. mZ' n#j ōmó Ges ᵛg_ 'v n#j ōᵛgō ᵛjLb|

K. †cqR iagvî gmjv ᵛn#m#e e'eüZ nq|

L. †cq#Ri DrciĖ 'vb n#jv ce-Gikqv|

2. ĩb'vb c#Y Kiab|

K. †cqR GK ai#bi fᵛba' KvŪ|

L. I gᵛU#Z †cq#Ri djb mev#cᵛv fᵛ#jv nq|

3. mVK DĖ#i i c#k ᵛUK ᵛPý (√) ᵛ`b|

K. †Kvb Zvcgvîv †cq#Ri Rb' me#P#q Dc#hvMx ?

1. 15-20° tm.

2. 15-25° tm.

3. 10-15° tm.

4. 10-20° tm.

L. †n±i cᵛZ †`kx †cq#Ri djb KZUKZ?

1. cvq 12-16 Ub

2. cvq 12-14 Ub

3. cvq 12-15 Ub

4. cvq 10-12 Ub

4. GK K_vq ei e#K' DĖi ᵛ`b|

K. cᵛZ †n±i Rᵛg#Z KZUKZc#Ri e#R c#qvRb ?

L. e#jv#`k KvL.M#eIYv Bbᵛ ÷ ᵛUDU KZK.D™ᵛeZ †cq#Ri Rv#Zi bᵛg Kx ?

e'enwiK**cvV 6.6 †`kxq cšvq Avjyl †cqr msi ¶Y Abkxjb****GB cvV †k†I AvciB**

- Avjyl †cqr †Kb msi ¶Y Kiv nq Zv RvbZ cvi#eb|
- †`kxq c×LZZ Avjyl †cqr Kxfv#e msi ¶Y Kiv nq Zv eYbv Ki#Z cvi#eb|

**Avjynsi ¶Y**

AvjyAvqv#`i †`k GKU Ab`Zg caib meiR| mviv eQi a#iB Avgiv AvjyLvB| Avqv#`i †`ki AvenvIqvq iagv# kxZKv#j AvjyDrcv`b Kiv hvq| kxZKv#j Drcv`Z Avjynsi ¶Y K#i mviv eQ#i i Pwv`v tguv#v nq| Avjy`Z cPbkxj| m#znsi ¶Y e`e`vi Afv#e cLZ eQi

Drcv`Z Avjy`kZKiv 10-30 fVM chš bó n#q hvq| Ab`#`K, mSM#ni mgq Avjy`eμq gj` L#B Kg _v#K, d#j Drcv`KMY b`vh` gj` †`K eL#Z nb| AvjyKQyb msi ¶Y K#i eμ Ki#j A`bLZKfv#e A#bK teik jvfv#v nIqv hvq| G mKj Kv#Y AvjymVKfv#e msi ¶Y Kiv GKvSB Ri#ix|

m#znsi ¶Y e`e`vi Afv#e
cLZ eQi Drcv`Z Avjy
kZKiv 10-30 fVM chš
bó n#q hvq|

eisjv#`k cLZ eQi Drcv`Z tgu 16 j ¶ Ub Avjy`g#a` gv# 5 j ¶ Ub AvjyngvMv#i msi ¶Y i e`e`v Av#Q| evKx L#B fv#Mi `BfvM AvjB cvKkZK cwi#e#k †`kxq c×LZZ msi ¶Y Kiv nq| cvKkZK cwi#e#k D`P djbkxj e#`kx Rv#Zi Avjy1-3 gvm Ges †`kx Rv#Zi Avjy6-8 gvm msi ¶Y Kiv hvq| Avjynsi ¶Y ¶gZv evov#v Rb` wba#jLZ v#lq, #jv v#e#Pbvq ivL#Z n#e|

†QvU AvjygvSvix I eo
Avjy`Z#bvq `Z IRb
nvivq| †QvU AvKv#i i Avj
te#Q Avjv`v K#i †dj#Z
n#e|

1. mVK mg#q AvjymMn t cwi° AvjymMn Kiv `iKvi| Aí Ges AvZ cwi° Avjy msi ¶Y ¶gZv Z#bvq jKfv#e Kg|
2. #KD#is t AvjymM#ni ci ci #KD#is Gi e`e`v MnY Ki#Z nq| Qvqvhy` v#b Qv#q ivL#j Avjy`ZK k³ nq Ges †QvULvU ¶Z i#K#q hvq|
3. Rvj w`#q AveZKiY t Drcv`b GjvKvq †cvKvi AvμgY teik n#j AvjymM#ni ciciB ¶gMn Rvj w`#q †X#K ivL#Z n#e| G#Z †cvKv Avjy`big Z#Ki g#a` Wg c#vov m#hM cvq bv| Kv#Y GB Wg cieZ#Z Kxov n#q Avjy`¶Z K#i|

N#i i th`v#b mivm#i m#hi
Av#jv c#o bv, chvB evZvm
PjvP#ji m#hM i#q#Q Ges
cwib covi ev M#o#q
hvIqvi m#v#v tbB Ggb
v#B Avjynsi ¶Y i Rb`
Dch#|

4. evQvBKiy t ¶Zv#¶Z Avjy`msi ¶Y ¶gZv `Z nvm cvq| tivMvμvš Avjynsi ¶Y Ae`vq `Z tiv#Mi v#v Nuvq| †QvU AvjygvSvix I eo Avjy`Z#bvq `Z IRb nvivq| G mKj Kv#Y msi ¶Y i c#e ¶Z, tivMvμvš, meR, mv`v Ges †QvU AvKv#i i Avjy te#Q Avjv`v K#i †dj#Z n#e| Gici evKx Avjynsi ¶Y Ki#Z n#e|

Avqv#`i †`k mvaivYZ N#i i †Kv#Y, v#Qv#v v#b#P, tg#S#Z, e#ki gvPq, e#ki †i#K, mwjs G S#q#q cfLZ cšvq Avjynsi ¶Y Kiv nq| cwi#e#ki Dci msi ¶Y ¶gZv wbfikxj| N#i i th`v#b mivm#i m#hi Av#jv c#o bv, chvB evZvm PjvP#ji m#hM i#q#Q Ges cwib covi ev M#o#q hvIqvi m#v#v tbB Ggb v#B Avjynsi ¶Y i Rb` Dch#| msi ¶Y GjvKvq chvB evZvm PjvPj w#b#Z Kiv GKvš Avek`K| G#Z K#i Avjy`#K †Q#o †`qv cwib `Z i#K#q hvq| Ab`vq cwib Avjy`M#q Rg#Z i#e K#i Ges cPb i#e nq| wba#iZ v#b evQvB Kiv AvjyGK`#i Ges ci#gvY teik n#j 2-3`#i m#R#q ivL#Z n#e| Avjy`Z cPbkxj e#j

gvS gvSB msi^{¶¶}Yi Avjy^{¶¶}ovPvov K*i* t`LZ nte Ges cPv ev cPvi m<sup>¶¶</sup>vebv AvQ Ggb Avjy<sup>¶¶</sup> t`L teQ Avjv^{¶¶} K*i* t*¶* d*¶* jZ nte|

G c^{¶¶}xiZ^{¶¶} iagv^{¶¶} Lvev Avjym^{¶¶}si^{¶¶}Y Kiv hvq| exR AvjyAek^{¶¶}B ^{¶¶}ngvMv^{¶¶}i msi^{¶¶}Yi e^{¶¶}e^{¶¶} v KiZ nte|

tcqR msi^{¶¶}Y

Avjy^{¶¶}gZ tcqR^{¶¶}I iagv^{¶¶} kxZKv^{¶¶}j Pvlvev^{¶¶} K*i* Drcw^{¶¶}Z t*¶* cqR^{¶¶} m^{¶¶}iv eQi LvIqv nq| d*¶* j

tcqR^{¶¶} msi^{¶¶}YI L^{¶¶}B , i^{¶¶}zC Y| t`kxq c<sup>¶¶</sup>xiZ<sup>¶¶</sup> m<sup>¶¶</sup>aviY Zvcgv<sup>¶¶</sup>I Av<sup>¶¶</sup>Zvq t*¶* cqR<sup>¶¶</sup> msi<sup>¶¶</sup>YI L<sup>¶¶</sup>B , i<sup>¶¶</sup>zC Y| Zte t`kxq c^{¶¶}xiZ^{¶¶} m^{¶¶}aviY Zvcgv^{¶¶}I Av^{¶¶}Zvq t*¶* cqR^{¶¶} `xN<sup>¶¶</sup>b msi<sup>¶¶</sup>Y Kiv K<sup>¶¶</sup>Vb| G<sup>¶¶</sup>t<sup>¶¶</sup> i<sup>¶¶</sup> t`kxq t*¶* QvU t*¶* cqR^{¶¶} ^{¶¶}KQY^{¶¶} fv^{¶¶}jv d*¶* jvdj c`kb Ki<sup>¶¶</sup>jI <sup>¶¶</sup>et`kx eo t*¶* cqR^{¶¶} t`kxq c<sup>¶¶</sup>xiZ<sup>¶¶</sup> msi<sup>¶¶</sup>Yi Rb<sup>¶¶</sup> tgv<sup>¶¶</sup>UB Dch<sup>¶¶</sup> bq| eZgv<sup>¶¶</sup>b t`k Drcw^{¶¶}Z t*¶* cqR^{¶¶}Ri kZKiv 90 fvMB t`kxq c^{¶¶}xiZ^{¶¶} msi^{¶¶}Y Kiv n*¶*q^{¶¶} v^{¶¶}K|

evsjv^{¶¶} k K^{¶¶}L.M^{¶¶}teIYv Bb^{¶¶}o^{¶¶}UD^{¶¶}Ui t*¶* c^{¶¶}ónv^{¶¶}i^{¶¶}fó t*¶* UK^{¶¶}b^{¶¶}vj^{¶¶}R ^{¶¶}efvM t`kxq c^{¶¶}xiZ^{¶¶} t*¶* cqR^{¶¶} msi^{¶¶}Yi c^{¶¶}xiZ^{¶¶} ^{¶¶}b^{¶¶}xviY K*i*Q| G c^{¶¶}xiZ^{¶¶} m^{¶¶}g^{¶¶}z^{¶¶}ve c^{¶¶}qM K*i* t*¶* cqR^{¶¶}Ri msi^{¶¶}YKivxb AcPq A^{¶¶}bKiv^{¶¶}kB Kgv^{¶¶}bv m^{¶¶}ae| msi^{¶¶}Yi Dc^{¶¶}h^{¶¶}Mx RvZ ^{¶¶}baviY t^{¶¶} K^{¶¶} i^{¶¶}i K*i* msi^{¶¶}Yi avc^{¶¶} , ^{¶¶}jv ^{¶¶}b^{¶¶}o^{¶¶}i^{¶¶}c t

1. msi^{¶¶}Yi Rb^{¶¶} Kg Av^{¶¶}Z^{¶¶}w^{¶¶}ekó, t*¶* k S^{¶¶}sv^{¶¶}jv, D^{¶¶}4j ZK, t*¶* kmsL^{¶¶}K ZK ^{¶¶}w^{¶¶}ekó Ges t*¶* k cvK^{¶¶}uZK m^{¶¶}g^{¶¶}z^{¶¶}vi mgq^{¶¶}gv ^{¶¶}w^{¶¶}ekó Rv^{¶¶}Zi t*¶* cqR^{¶¶}RB Dch^{¶¶} |

2. P*¶*li Rb^{¶¶} t*¶* vM I ^{¶¶}μUg^{¶¶} exR e^{¶¶}envi KiZ nte|

3. t^{¶¶} t^{¶¶} Z AvZ gv^{¶¶}Ivq t*¶* mP t`qv hvte bv|

4. t^{¶¶} t^{¶¶} Z gv^{¶¶}IvZ^{¶¶} i^{¶¶} 3 BD^{¶¶}i^{¶¶}qv t`qv hvte bv|

5. Mv^{¶¶}Qi c^{¶¶}g^{¶¶}Zv G^{¶¶}m t*¶* M^{¶¶}j, t*¶* cqR^{¶¶}Ri Wv^{¶¶} A^{¶¶}vr Mjvi ^{¶¶} t^{¶¶} Ki ^{¶¶}ôU^{¶¶}m^{¶¶}ybig n*¶*q hvq| d*¶* j cvZv t*¶* n^{¶¶}j c^{¶¶}o| dm^{¶¶}j^{¶¶}i cvq 70-80% Mv^{¶¶}Qi cvZv Gfv^{¶¶}te ^{¶¶}b^{¶¶}R ^{¶¶}b^{¶¶}RB t^{¶¶} f^{¶¶}½ t*¶* M^{¶¶}j t*¶* cqR^{¶¶} m^{¶¶}SM^{¶¶}ni Dch^{¶¶} mgq n*¶*q^{¶¶}Q e^{¶¶}j a^{¶¶}i ^{¶¶}b^{¶¶}Z nte| t*¶* cqR^{¶¶} m^{¶¶}SM^{¶¶}ni mgq t*¶* Lqv^{¶¶} i^{¶¶}LVZ nte hvZ Mv^{¶¶}q ^{¶¶} t^{¶¶} Z^{¶¶}i m^{¶¶}j^{¶¶} bv nq|

6. t*¶* cqR^{¶¶}Ri Wv^{¶¶} 2 t*¶* m. ^{¶¶}g. t^{¶¶} i^{¶¶}LV cvZv , ^{¶¶}jv t^{¶¶} K^{¶¶}U t`qv nq| AZtci 5-7 ^{¶¶} b a^{¶¶}i 10-12 t*¶* m. ^{¶¶}g. c^{¶¶}y^{¶¶} K*i* evq^{¶¶}p^{¶¶}jvPj m^{¶¶}yeavh^{¶¶}y, kxZj I Qvqvgq ^{¶¶} v^{¶¶}b i^{¶¶} K^{¶¶}q ^{¶¶} b^{¶¶}Z nq|

7. msi^{¶¶}Yi c^{¶¶}te t*¶* cqR^{¶¶} KivU^{¶¶}Qav, cPv, t*¶* QvU-eo, t^{¶¶} Wv^{¶¶}jv BZ^{¶¶} w^{¶¶} Ab^{¶¶}h^{¶¶}qv^{¶¶} evQvB I t*¶* k^{¶¶}Yieb^{¶¶}vm Kiv nq|

8. t*¶* cqR^{¶¶} msi^{¶¶}Yi R^{¶¶}b^{¶¶} msi^{¶¶}Y^{¶¶} j I gvPvi cK^{¶¶}uZ L^{¶¶}B , i^{¶¶}zC Y| e^{¶¶}tki cvZjv Puv (teZx) m^{¶¶}zjx ^{¶¶} t^{¶¶} q t*¶* M^{¶¶} t*¶* M^{¶¶} ^{¶¶} Z^{¶¶}vi ^{¶¶}ôevb^{¶¶}ô-Gi Dci t*¶* cqR^{¶¶} msi^{¶¶}Y KivB DĖg| N^{¶¶}ii ^{¶¶} m^{¶¶}js-G e^{¶¶}tki gvPv ^{¶¶} Z^{¶¶}vi K*i* Zvi Dci evbv ^{¶¶} w^{¶¶}Q^{¶¶}q t*¶* cqR^{¶¶} i^{¶¶}LVZ nte| ^{¶¶} w^{¶¶}fb t*¶* kYxi t*¶* cqR^{¶¶} Avjv^{¶¶} Avjv^{¶¶} RvqMvq msi^{¶¶}Y Kiv D^{¶¶}iPZ| ^{¶¶} U^{¶¶}bi N^{¶¶}ii ^{¶¶} m^{¶¶}js-G t*¶* cqR^{¶¶} i^{¶¶}LVZ Zv 20-25 t*¶* m. ^{¶¶}g. c^{¶¶}y^{¶¶} K*i* i^{¶¶}LV hvte| L^{¶¶}oi ev U^{¶¶}m^{¶¶}ji N^{¶¶}ii ^{¶¶} m^{¶¶}js-G t*¶* cqR^{¶¶} 15-20 t*¶* m. ^{¶¶}g. Gi t*¶* k c^{¶¶}y^{¶¶} K*i* bv i^{¶¶}LVb fv^{¶¶}jv| t^{¶¶} g^{¶¶}Si ^{¶¶} d^{¶¶} Dc^{¶¶}i ^{¶¶} Z^{¶¶}vi gvPvq i^{¶¶}LVi t^{¶¶} q ^{¶¶} m^{¶¶}js-G t*¶* cqR^{¶¶} i^{¶¶}LVb DĖg| KviY c^{¶¶} t^{¶¶} gv^{¶¶} 3 ^{¶¶} v^{¶¶}bi Pvi^{¶¶} ^{¶¶} K m^{¶¶}aviYZ evq^{¶¶}p^{¶¶}jvPj Kg ^{¶¶} v^{¶¶}K| h^{¶¶} t^{¶¶} g^{¶¶}Si ^{¶¶} d^{¶¶} Dc^{¶¶}i ^{¶¶} b^{¶¶}gZ gvPvq t*¶* cqR^{¶¶} i^{¶¶}LVZB nq, Zte Zv 10-15 t*¶* m. ^{¶¶}g. Gi t*¶* k c^{¶¶}y^{¶¶} K*i* bv i^{¶¶}LVb fv^{¶¶}jv| t*¶* k c^{¶¶}igvY t*¶* cqR^{¶¶} msi^{¶¶}Yi Rb^{¶¶} ^{¶¶} m^{¶¶}js Gi ^{¶¶} b^{¶¶}P ^{¶¶} d^{¶¶} A^{¶¶}š A^{¶¶}š GK^{¶¶}waK gvPv ^{¶¶} Z^{¶¶}vi K*i* Zvi Dci t*¶* cqR^{¶¶} i^{¶¶}LVi e^{¶¶}e^{¶¶} v Kiv t*¶* h^{¶¶}Z c^{¶¶} t^{¶¶} i| G^{¶¶} t^{¶¶} i^{¶¶} Aek^{¶¶}B N^{¶¶}ii teovi ^{¶¶} b^{¶¶}ô ^{¶¶} v^{¶¶}bm^{¶¶}g^{¶¶}n evq^{¶¶}p^{¶¶}jvPj c^{¶¶} i^{¶¶}LVi e^{¶¶}e^{¶¶} v KiZ nte|

9. gvS gvS msi^{¶¶}Yi t*¶* cqR^{¶¶} b^{¶¶}ov ^{¶¶} t^{¶¶} Z nte I cPv t*¶* cqR^{¶¶} evQvB KiZ nte| ev^{¶¶} jv ^{¶¶} b^{¶¶} ^{¶¶} et^{¶¶} k^{¶¶} f^{¶¶}ve t*¶* cqR^{¶¶}Ri ^{¶¶} K^{¶¶} t*¶* Lqv^{¶¶} i^{¶¶}LVZ nte| KviY GB mgq evZ^{¶¶}mi Av^{¶¶} Zv t*¶* k

evsjv^{¶¶} k Dš^{¶¶}y ^{¶¶} ek^{¶¶}ie^{¶¶} ^{¶¶} vj^{¶¶}q

$nIq\uparrow q\uparrow tcq\uparrow R\ iK\uparrow q\ b\uparrow, h\uparrow v\ i\ d\uparrow j\uparrow tcq\uparrow R\ cP\uparrow Z\ i\ i\#K\uparrow i\mid G\ Ae\uparrow^{-}q\ c\uparrow q\uparrow R\uparrow b\uparrow tcq\uparrow R$
 $g\uparrow P\uparrow\uparrow\uparrow K\ b\uparrow\uparrow\uparrow g\uparrow q\uparrow Q\uparrow q\uparrow h\uparrow y\uparrow\uparrow\uparrow\uparrow b\uparrow c\uparrow Z\ j\uparrow\uparrow K\uparrow i\uparrow\uparrow e\uparrow Q\uparrow q\uparrow i\uparrow\uparrow K\uparrow q\uparrow\uparrow b\uparrow q\uparrow g\uparrow P\uparrow q\uparrow DV\uparrow\uparrow Z\ n\uparrow e\mid$

cvV 6.7 Pvl*Li* Avq-e"q *nmve msiY cXZ*



GB cvV *tk!l* Av**cib**

■ Pvl*Li* Avq-e"qi *nmve KiZ cvi#eb*

Pvl*ev#`* Avq-e"qi *nmve* *we#kl* , *iZcY* | Avq-e"qi *nmv#ei* gva"tgB R**ibv** m#e *tkib* dm*ji* Drcv`b jvfRbK | Avq-e"qi *nmve* *ia#l* KI*!Ki* Rb" bq; bXZ-*ibav*iK, M*te*IK

Ges m*az*miY Kg*x`* i Kv*QI* GiU mgvb , *iZcY* |

dmj Drcv`b*bi* jvf-*Y* , dm*ji* `vg, djb Ges Drcv`b-Li*Pi* Dci *bfik*xj | Drcv`b LiP g*z* *ai#bi* | *vqx* LiP Ges c*ieZbk*xj LiP | *vqx* LiP ej*z* R*igi* g*z* i Dci m*y*, fvo*v*, Ki BZ" *v* e*g*vq | c*ieZbk*xj Li*Pi* g*a* k*ig*K, Pvl*ev#`* i Mi*z*, exR, mvi, KxUb*vk*K, t*m*P cf*u*Zi g*y*/fvo*v* Ges *we*fb Li*Pi* Dci m*y* A*sfy* | *vqx* LiP i c*ieZbk*xj Li*Pi* thvMdj n*ji*v tgvU LiP |

dmj Pvl*Li* Avq-e"q *ibav*i*bi* Rb" dmj Drcv`b *i*i*z* Kiv t\_#K c*u*ZU c`*z* *Y*ci L*y*bwU *nmve* h_vh_fv*te* msiY KiZ n*te* | R*ig* Pvl t_#K *i*i*z* K*i* dmj msMn Ges c*q*vR*z*b dmj msMn*vi*Ei KvR e"e*u*Z mKj fvo*v* Kiv Ges c*ie*viK kg*K* kg-*em* n*te* b_l_f*z* Kiv nq | cP*ij*Z evRvi `i Ab*q*x GKK kg *em*i g*z* `i *q* , Y K*i* tgvU kg *em*i g*z* *ibav*iY Kiv nq |

R*ig* Pvl Ges c*q*vR*z*b gvo*v*B-KvR e"e*u*Z cvYxi msL`*z*K *em* c*u*Z tRvo*v* n*te* b\_l\_f*y* Kiv nq | fvo*v* Kiv t*nv*K A\_e*v* *ib*ri t*nv*K, cP*ij*Z evRvi `i Ab*q*x Zvi g*z* *ibav*iY Kiv nq |

dmj Drcv`b evRvi t\_#K tKb Ges c*ie*vi t\_#K e"e*u*Z mKj DcKiYi m*u*jZ g*z* tK DcKiY g*z* *nmv#e* aiv nq | DcKiY *u*z*qi* Rb" e"q Kiv U*kv* dmj Drcv`b-mg*qi* Rb" e"vsK i*vl*z*z* th c*ig*vY m*y* cv*lq*v thZ Zv*KB* DcKiY g*z* i Dci m*y* n*te* aiv nq |

evRvi *we* *u* ev c*ie*viK c*q*vR*z*b e"envi, thfv*te*B t*nv*K, tgvU g*z* km" (thgb: cvU) Ges Avb*z*K Ab"vb" Drcv`b*bi* (cvUK*u*v) msMn*i* mg*qi* g*z* Ab*q*x tgvU g*z* tK Avq *nmv#e* aiv nq | tgvU Avq t\_#K tgvU c*ieZbk*xj LiP ev` *z* Mm g*u*Rb cv*lq*v hvq | Avevi tgvU Avq t_#K tgvU LiP ev` *z* cKZ Avq cv*lq*v hvq |

evs*z* *z* k *we*fb meiRi Avq-e"qi *nmve* *ib*P t`Lv*z*bv n*ji*v t

mviY 6.7.1 t *we*fb meiRi c*u*Z t*nv*i Drcv`b LiP (U*kv*)

Li <i>Pi</i> LiZ	d <i>z</i> K <i>c</i>	e <i>u</i> K <i>c</i>	g <i>z</i> v	kg	te_b	cUj
k <i>ig</i> K	12825	11745	9900	28160	15308	41201
Mi <i>z</i>	1297	1273	1630	1938	1620	2363
exR/Pvi <i>v</i>	8040	10704	1059	292	4612	2199
tM <i>ei</i> mvi	2313	740	575	98	1108	2058
i <i>vmv</i> q <i>u</i> bK mvi	10840	11098	4798	3756	2819	4654
KxUb <i>vk</i> K	1526	3232	263	5005	314	5554
t <i>m</i> P	2332	1787	1577	2421	-	2190
evD <i>ib</i>	-	-	-	8958	-	4913

evsjv#`k Dšy wekwe`"vjg

Drm	msL^v/cigvY	GKK gj^{''} (UvKv)	†gvU LiP (UvKv)
KxU/†ivM bvkK			4680/-
†mP	22.35 NE _v	40/- c Z NE _v	894/-
Pj Z gja†bi mÿ			972/-
†gvU c ieZbkxj LiP	-	-	55748/-
†gvU Li†Pi	-	-	35826/-
¶f Ē†Z			
bM [`] Li†Pi			
¶f Ē†Z			
Drcv [`] b LiP (UvKv/†K R)			343/-
djb (†K R/†n.)	16270/-		-
†gvU Avq (UvKv/†n.)	-	6.90 UvKv (c Z †K R) ¶n†m†e	112263/-
Mm gv Rb (UvKv/†n.)	-	-	56515/-
†gvU Li†Pi	-	-	76437/-
¶f Ē†Z			
bM [`] Li†Pi			
¶f Ē†Z			
Avq-e ^{''} †qi AbgvZ			2.01

Drm t evrm iK cWZ`e`b 1993-94, K lLA_bWZ wefvM, we G Avi AvB, Rq+`ecy, MvRxcy|



Peš gj"vqb— BDwbU 6

msw 113 / iPbvgjk ck

01. dʒKɪci Pɪv Drcv`b I tɪvY tKʃkj eYbv Kiɓ|
02. AvjyDrcv`ɓi c×WZ, tɪv eYbv Kiɓ|
03. AvjyDrcv`ɓi RjevqYZ Pwɪn`v wjLɓ|
04. Avjy AʃeZxKvjxb cwiPhv eYbv Kiɓ |
05. gɟv PɪI mɪtɪi cwiɪvY DɪjL Kiɓ|
06. gɟvi Rb` RjevqY gwUi Pwɪn`v eYbv Kiɓ|
07. gɟvi exR Kxfvɛe Drcv`b KiɓeZv eYbv Kiɓ|
08. UɪgɪUv I Avjy RvɪZi bvɪ wjLɓ|
09. Mx@Kvɪj Kxfvɛe UɪgɪUv Pvlvev` KiɓeZv wjLɓ|
10. tɒvR Pvlvev` c×WZ eYbv Kiɓ |



DĖıgvjv– BDıbu 6

cV 6.1

- | | |
|------------------------------------|--------------------|
| 1. K (m) | 1. L (ıg) |
| 2. K (90-100) | 2. L (VŪv Av`) |
| 3. K (4) | 3. L (3) |
| 4. K (te‡j †`v-Avk I G‡Uj †`v-Avk) | 4. L (350-400 Mıg) |

cV 6.2

- | | |
|-------------------|----------------------------|
| 1. K (ıg) | 1. L (m) |
| 2. K (10 Ub) | 2. L (†jU e-vBU) |
| 3. K (1) | 3. L (2) |
| 4. K (b‡fıi gv‡m) | 4. L (15-20° †m. ZvcgvÎvq) |

cV 6.3

- | | |
|---------------|---------------------|
| 1. K (m) | 1. L (ıg) |
| 2. K (†m‡ııi) | 2. L (VŪv) |
| 3. K (3) | 3. L (4) |
| 4. K (5 gvm) | 4. L (40 †ıK 60 ‖b) |

cV 6.4

- | | |
|--------------------------------|-------------------|
| 1. K (m) | 1. L (ıg) |
| 2. K (Solanaceae (†mıjv‡bıım)) | 2. L (20° †m.) |
| 3. K (1) | 3. L (3) |
| 4. K (30-40 ‖b) | 4. L (Rıe †cvKıv) |

cV 6.5

- | | |
|------------------|--------------------------------|
| 1. K (ıg) | 1. L (ıg) |
| 2. K (ııcvŠıııZ) | 2. L (Deı †`v-Avk cıj †`v-Avk) |
| 3. K (2) | 3. L (1) |
| 4. K (3-4 †KııR) | 4. L (eıııı †cqııR-1) |

ev†i v g w m m e w R P v I

meiR P*v*†*l*i g*j* j *Y*q|`K n†*j*v Z*v*i m*g*q| K*v*iY me meiRB m*v*i*v* e*Q*i P*v*l K*v*i h*v*q b*v*|
†K*v*†b*v* meiR k*x*ZK*v*†*j* P*v*l K*v*i n*q* A*v*e*v*i †K*v*†b*v* meiR M*x*®K*v*†*j* P*v*l K*v*i n*q*| Z*t*e G*g*b ‖K*Q*Y
meiR A*v*†*Q* t*h*.,†*j*v m*v*i*v* e*Q*iB P*v*l K*v*i h*v*q| GB BD‖b†U †m*i*†c ‖K*Q*YmeiR t*h*g*b* t*e*.,b,
*j*v†k*v*K Ges e*e*i†U m⁻ú†K A*v*†*j*vP*b*v K*v*i n†*j*v|



cV 7.1 djRvZxg meW R - te .b

GB c_vV †k‡/ A_vc_wb

- *te₃ b m⁻ú#K aviYv w^h #Z cvi#eb|*
- *te₃ #bi Pvlver^h e^hvL^h Ki#Z cvi#eb|*
- *te₃ #bi e^henvi D^hjL Ki#Z cvi#eb|*



f_qK_v / c_wi_wP_wZ

te, b Solanaceae c|rev`i i m`m`| Gi `eÁw|bK b|vq Solanum melongena| evsjv`+k
tgvU Pvlvaxb R|gi c|ig|Y I Drcv`+bi w`K t`+K te, +bi v`vb mev`M| t`+ki mef Gi Pvl
nq| mviv eQi GuU evRv+i cvlqv hvq etj me tKYxi t+jvKi Kv+Q w`cq| A+`+Ki g+Z fviZ
Dcgnv`+k te, +bi DrcwE`j| ZvB te, +bi wewfb v`vbXq RvZ t`+ki wewfb AÂ+j Q|o+q
wQ|U+q Av+Q|

Rjevqyl gvwU

te, b Dò Rjevqy dmj | Zte AwaK DòZvq djb fv+jv nq bv | djavi+Yi Rb 15-20⁰
tm. Zvcgv f v c+qvRb nq | evsjv+† k miviv eQiB te, †bi Drcv b nq | iie tgšm y me Rv†Zi
te, b P†i Ii Rb AwaKZi Dc+hvMx | † v-Ava I te†j † v-Ava gwU te, †bi Rb me†P†q
fv+jv | cvb wb@v k†bi m e vmaúB Gwjj † v-Ava gwU†ZI te, b Pvlvev Kiv hvq |

te, b Dò Rjevqy dm j |
d j a v i ‡ Y i R b ¨ 15-20⁰ fm.
Zvcgv İv c ‡ qv Rb nq | ‡ v-
Avk l I te ‡ j ‡ v-Avk g w u
te, ‡ b i R b ¨ me ‡ P ‡ q
fv ‡ j v |

esk we⁻vi / †ivcY

ex#Ri gva#tgb te, b Mv#Qi eskwe#vi Kiv n#q_v#K| kxZKvjxb te, b Pv#li Rb# Ry#B#qi
tkl t_#K A#tve#ii givsgv#S chš Ges elvKvjxb te, #bi Rb# wW#m#ii tkl t_#K

Gic†j i gvSvW S chš Priv Drcv`†bi Rb" exRZjvq exR ecb Kiv hvq| mȳ Priv cvIqvi
Rb" c_†g exRZjvq Priv ^Zwi K†i Zv ∅Zxq exRZjvq ‾vbs†i Kiv DvPZ| exR ec†bi Rb"
c†Z exRZjvq (3_1 eM wq.) cvq 8 Mvq exR `iKiv nq|

RvZ

evsjv`tki wefb AÂj AmsL RvZi te,bi Pvl nq| Gi g#a D†jLthvM RvZ,†jv
n†Q t †fvjvbw, Bmjvgcy, LULUqv, †ksbw, DËiv (we G Avi AvB KZK D™weZ),
bqbKvRj Ges gv†Kkix|

mv i c†qvM

te,b gWU t_†K cPž cWigvY Lv`vc`vb tkvIY K†i e†j m†šVIRbK Drcv`†bi Rb" mvi
c†qVM AZ"vek"K| mviWY 7.1.1 Abm†i mvi c†qVM Ki†j fv†iv djb cvIqV mæ|

$m \nu_i$	$t g \nu U \text{ c} \parallel i g \nu Y$ ($t \pm i \text{ c} \parallel Z$)	$t k l P \nu \parallel i$ $m g q \text{ t}^+ q$	$c i e Z \times \text{ c} \parallel i P \nu \parallel m m \nu e \text{ t}^+ q$		
			$1 g \parallel K \parallel^-$	$2 q \parallel K \parallel^-$	$3 q \parallel K \parallel^-$
$t M \nu e i / K \pm \alpha \nu \acute{o}$	15 Ub	me	-	-	-
$B D \parallel i q \nu$	300 $t K \parallel R$	-	100 $t K \parallel R$	100 $t K \parallel R$	100 $t K \parallel R$
$\parallel U G m \parallel c$	220 $t K \parallel R$	me	-	-	-
$G g \parallel c$	260 $t K \parallel R$	me	-	-	-





Abjj**b (Activity)** t Avcbvi GjvKvq †Kvb †Kvb Rv†Zi te,b Pvl Kiv nq| Zv†`i djb
ıj†L GKUv ZııjKı c⁻Z Kiıb|

mıgg

- evsjv†`k te,b GKıU kxı⁻vbxq meıR|
- te,b Dò Rjevqıı dmj| Gi dj avı†Yi Rb^ı Mıto 15-20⁰ ım. Zvcgvıı c†qıRb nq|
- †`v-Avıı I te†j †`v-Avıı gvıU te,b Pvlıı Rb^ı me†P†q Dc†hıMı|
- ex†Ri gva^ı†g te,ıbi eskıe⁻ıı Kiv nq|
- evsjv†`k ııfb Rv†Zi te,ıbi Pvl nq|
- †nııcııZ djb 30-40 Ub|
- te,ıbi eıııea eıııvııı gıa^ı ZiKıııı, fııR I fZı Ab^ıZg|



1. $mZ'' n \nmid j \hat{O} m \hat{O} \text{ Ges } w g _ \ddot{v} n \nmid j \hat{O} w g \hat{O} w j L b y l$

K. $fviZ Dcgn\#k te, \#bi Drcw\ddot{E} - j |$

L. te, #bi dj avi #Yi Rb" 25-30° #m. ZvcgvÎv c#qvRb|

M. $D\ddot{E}i_v R_vZ_{\mathbb{W}}U m\ddot{\neq}ev^{\mathfrak{P}}65 \dagger K_{\mathbb{W}}R/\dagger n. djb \dagger^`q|$

2. $\bar{b}^{\top} v b c^{\top} Y K i a b$

K. $te, b \dots\dots\dots c \# iev \# ii \text{ me} \# R |$

L. *te, #bi* *l* *†cvKv cavb kî* |

M. *RvZ†f†` exR †evbv i ..... w` †bi g†a` †e, b msMn Ki v hvq|*

3. $mVK \text{ D}\ddot{E} \ddot{i} i \text{ c} v \ddot{k} \text{ UK } \text{Py} (\sqrt{\text{ }}) \text{ `b|}$

K. $te_{\downarrow} \# bi^{\wedge} e \acute{A} \nabla \nabla bK \ b \nabla g \ \dagger K \nabla b \nabla U?$

1. *Solanum tuberosum*
2. *Solanum melongena*
3. *Lycopersicon melongena*
4. *Solanum pisi*

L. $k_X Z_{K^*}^{\vee} \otimes b^* \otimes b^* K_L^* \otimes P^* \otimes K^* \otimes n^*$?

1. *bʰfəi t_ʰK wʰməʰi*
2. *Ry t_ʰK A wʰó i tkl chš*
3. *wʰməʰi i tkl t_ʰK Gicʰi i qʷSiq wʰS*
4. *Ry Bʰqi tkl t_ʰK A t_ʰweʰi i qʷSiq wʰS*

M. *exR tevbi ci t_K dZ AvmZ KZW`b mgq jvM?*

1. 60-90 $\mathbb{W}^b$
2. 50-80 $\mathbb{W}^b$
3. 70-80 $\mathbb{W}^b$
4. 70-90 $\mathbb{W}^b$

4. GK $K_{-vq} e^v e^{\dagger} K^{\dagger} D \ddot{E} i \text{ w } `b |$

K. †Kvb gvwU‡Z †e, †bi djb †ewk nq?

L. we.G.Avi.AvB KZK.DTMweZ te, #bi RvZwUi bvg Kx?

M. ZiKwi QvovI te, b Ab" Avi Kxfvte LvIqv hvq?

cV 7.2 kvKRiZiq meiR - jvjkvK**GB cV tkfI Avcb**

- jvjkvK m⁻ú#K aviYv w⁻z cvi#eb|
- jvjkvK Pvlvev⁻ m⁻ú#K eYbv Ki#Z cvi#eb|



jvjkvK evOvjx⁻i GKUv
AvZicq I c^oKi meiR|
evsjv⁻tk Bnv L^o mn#RB
R#š⁻v#K|

evsjv⁻tki Rjevq^z
eQ#ii th tKv#bv mgq
jvjkvK Rb#bv hvq|
jvjkvK PvlI Rb⁻t⁻v-
Avk gvuU mev#c^oqv
Dc#hvMx|

exR tQvU weavq evvj ev QvB
vgk#q exR e^ob Kvv ev
nvZ w⁻q ecbKZ.exR
tX#K w⁻z n#e|

jvjkv#Ki Rb⁻Pviv
cVZjvKiY L^oB DcKvix|

fvgKv I ciiPiZ

jvjkvK (Amaranthus gangeticus) Avgv⁻i t⁻#ki GKU AvZ Rb^ocq meiR| jvjkvK
 ÔA⁻vgvib⁻um (Amaranthaceae) c^oievi f^z | evsjv⁻tk jvjkvK L^o mn#R R#š⁻, ZvB
 A#b#KB Gi Drcv⁻b we^ol#q g#bv#hvM t⁻I qvi c^oqvRb^oqZv Ab^oye K#ib bv| wbi^oq AA#ji
 me^oIB Gi Pvl nq| we^ofb Mx^ocavb t⁻#k Gi Pvl n#q v#K| Bs#i^oR#Z G#K Red
 Amaranth ejv nq| jvjkv#Ki cVZv big, t^ojvgnb, jvj A⁻ev Mvp jvj n#q v#K| KvÛ I
 kvLvi AMfv#Mi cVZvmg^o Rosette-Gi AvKv#i mvRv#bv v#K| v⁻úBK-RvZxq d^z, t^oQ
 jvjkv#Ki d^z nq| exR t^oMvjvKi I Kv#jv| Gi KvÛ I cVZv memgq jvj; G#Z cP^z
 c^oigvY ÔG⁻v#šv^omqv^obbô iÄK v#K| GB iÄ#Ki⁻i#b jvjkvK jvj nq|

RjevqyI gvu

Av⁻ I i^o Dfq Ae⁻vq mdjfv#e jvjkv#Ki Pvl n#q v#K| evsjv⁻tki Rjevq^z eQ#ii
 th tKv#bv mgq jvjkvK Rb#bv hvq| Z#e iwe t^ogsm^ogi c⁻g fvm jvjkvK Drcv⁻bi cavb
 t^ogsm^o| jvjkvK PvlI Rb⁻t⁻v-Av^ok gvuU mev#c^oqv Dc#hvMx|

RvZ

evsjv⁻tk mvaviYZ AvjZvcwZ (hv evsjv⁻k Kvl.Dbqb K#cv#ikb KZK Ab^og^ow⁻Z) Ges
 eZgv#b evsjv⁻k Kvl.M#eIYv Bb^oóUDU KZK D^oweZ evvi jvjkvK-1 eüj e⁻eüz n#^oQ|

esk⁻vi I exR nvi

exRi gva⁻tg jvjkv#Ki esk⁻vi Kiv nq| cVZ tn#i 2.0 tKvR exR jvjM|

exR ecb

Rig Mfxi fv#e Pvl K#i SzSz⁻ Ki#Z nq| mvaviYZ exR GKe⁻i bv e^ob 3/4 mßvn cici
⁻d^ovq⁻d^ovq Rig#Z e^ob^oj me mgq kvK tZvjvi m^ohvM nq| exR Kv#jv I q^oz⁻ exR tQvU
 weavq evvj ev QvB vgk#q exR e^ob Kvv ev nvZ w⁻q ecbKZ.exR tX#K w⁻z n#e|

mvi c#qvM

mvaviYZ ga⁻g Dei Rig^oi Rb⁻tn#i-cVZ 10 Ub tMvei mvi, 200 tKvR BD^oiqv, 100 tKvR
 vU Gm w⁻c Ges 150 tKvR Gg w⁻c c#qvM Ki#Z n#e| mg^oq tMvei, vU Gm w⁻c Ges A#ak
 BD^oiqv I Gg w⁻c Rig⁻Z^oii mgq Ges evKx A#ak BD^oiqv I Gg w⁻c Dc^oic#qvM w⁻tn#e exR
 ec#bi 20 w⁻b ci c#qvM Ki#Z n#e|

ciPhv I djb

t^oqZ AvMvQvg^o i^olv, c^ovb t^omP-wb^okb e⁻e⁻v Ges Pviv MRv#bvi w^oKQ^ow⁻b ci Pviv cVZjv
 K#i w⁻z nq| g#a⁻ g#a⁻ Nb Pviv DV#j kvK LvIqv P#j| evvi jvjkv#Ki djb tn#icVZ
 12-14 Ub| exR ec#bi 30-35 w⁻#bi g#a⁻ jvjkvK AvniY Kiv hvq|

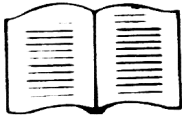
j_vjk_v†Ki *ïq_v†c_vK_vl*
K[˘]_vU_vi_wc_j†ii *A_vμgY*
†[˘]L_vh_vq_l

 $\dagger \mathbf{c}_V \mathbf{K}_V \mid \dagger \mathbf{i}_V \mathbf{M}$

jvjkvK tcvKiv AvμgY L₅B Kg| iqv tcvKv I K^vUvicijv⁺ii AvμgY t⁺Lv hvq|
g^vjw_{qb} 57 Bim e⁺en⁺vi Bnv `gb Kiv hvq| gv<sup>+</sup>S gv<sup>+</sup>S g<sup>+</sup>iiPv ev cvZvq `vM cov tivM
t⁺Lv hvq| c_WZ wjUvi c_Wb⁺Z 1.5 Mig Wb⁺_b Gg-45 w_gk⁺q t⁺ú Ki⁺j G tivM `gb Kiv
mæ|

e"envi

jvjkv†Ki cıZv fvr wntmte Ges big KvŬ e“Ä†bi DcKiY wntmte e“eüZ nq|

**mvigg**

- *jvjkvK evOvjx†` i GKUv w cq cyóKi meiR|*
- *jvjkv†Ki ciZv mij, †jvgnxb, jvj A_ev Mvp jvj n†q _v†K|*
- *jvjkv†Ki cPz ciw igvb ôG“†švmvqwbô iÄK _v†K| GB iÄ†Ki Rb“ jvjkvK jvj nq|*
- *evsjv†`†ki Rjevq†Z eQ†i i th tKvb mgq Bnv R†b†| Z†e iwe tğš††g tewk fv†jv nq|*
- *jvjkv†Ki ciZv cavbZ fwr wnmv†e Lv lqv nq|*
- *jvjkv†Ki ex†Ri gva“†g eskwē_v i Kiv nq|*
- *†n±iciwZ dj b 12-14 Ub|*



K. $j \vee j \quad k \vee \nmid Ki \quad Bs \nmid i \parallel R \quad b \vee g$ red shak.

L. *jvjkv#K cPž cwigv#Y ÔG#švmvqvbbô iÄK_v#K|*

2. $\bar{b} \rightarrow c \gamma$ Kib|

K. *j j k v t K i`y U D d m x R v Z I |*

L. jvkK ciev†ii meR

3. $m \parallel VK \ D\ddot{E} \nmid i \ i \ c \nmid k \ \parallel UK \ \parallel P\acute{y} \ (\sqrt{}) \ \parallel `b|$

K. $j_{\nu} j_{\nu} K M_{\nu} \dagger Q \dagger c_{\nu} K_{\nu} i A_{\nu} \mu g Y$

1. $L_B \text{ tek}$ 2. $L_B \text{ Kg}$
3. g_{Svix} 4. Kg

L. *j_vjk_v†Ki esk we⁻ vi †K†mi gva†g Ki_v nq?*

1. $\text{ex} \vdash R i \text{ gva}^{\sim} \dagger g$
2. $Pv i i \text{ gva}^{\sim} \dagger g$
3. $k v L v i \text{ gva}^{\sim} \dagger g$
4. $\text{ex} R \mid k v L v i \text{ gva}^{\sim} \dagger g$

M. $jvjkv\sharp K\ gv\sharp S\ gv\sharp S\ Kx\ \dagger i_{vM}\ \dagger`Lv\ hvq?$

1. $Pv\dot{i}v\ X\ddot{t}j\ co\dot{v}$
2. $c\dot{v}Z\dot{v}q\ `vM\ co\dot{v}$
3. $K\dot{v}\hat{U}i\ K\dot{v}\ddot{t}j\dot{v}\ `vM$
4. $d\dot{z}\ S\ddot{t}o\ co\dot{v}$

4. GK K_{vq} ev ev†K" D*Ëi* w `b|

K. $j_v j_{Kv} K \dagger K_{vb} \dagger g_{\check{m}t} g_i m_{ew} R$?

L. $j^v j k^v \# K i \ d \dot{z} \ \# K \# m \ n q?$

M. *j_vjk_v†Ki †c_vK_vi b_vg e_jp*



GB $c_V V^\dagger k^\dagger / A_V c_W b$

- $eieU\text{ }U\text{ }Drc\text{ }v\text{ }b\text{ }c\times\text{ }Z\text{ }m^{-}\acute{u}\ddot{t}K\text{ }R\text{ }l\text{ }b\text{ }z\text{ }cvi\text{ }t\text{ }eb\text{ }|$
- $Gi\text{ }c\text{ }y\text{ }j\text{ }Y\text{ }m^{-}\acute{u}\ddot{t}K\text{ }a\text{ }v\text{ }i\text{ }Y\text{ }v\text{ }w\text{ }v\text{ }z\text{ }cvi\text{ }t\text{ }eb\text{ }|$
- $Gi\text{ }e\text{ }^{\text{envi}}\text{ }e\text{ }^{\text{vL}}\text{ }v\text{ }Ki\text{ }z\text{ }cvi\text{ }t\text{ }eb\text{ }|$
- $eieU\text{ }U\text{ }P\text{ }t\text{ }l\text{ }i\text{ }m\text{ }a\text{ }v\text{ }e\text{ }b\text{ }v\text{ }m^{-}\acute{u}\ddot{t}K\text{ }e\text{ }i\text{ }t\text{ }z\text{ }cvi\text{ }t\text{ }eb\text{ }|$

eieU#K BstiiR#Z Yard long bean e#j hvi ^eÁmbK bvg Vigna sesquipedalis| GUv
 wj, g#bim (Leguminosae) c#iev#ii D#TM` | Lwid tgs#tg hLb me#Ri Drcv`b i#e
 tgs#tg i Z#bq Kg ZLb eieU me#R P#v#vi A#bKUvB c#Y K#i | i#w I c#y exR DfqB
 AwigI mgx | eieU#i t#Sv#jv I Lv#Uv RvZ, #jv ~vb#q fvIvq Ô#dj#b b#q c#i#PZ | dj ev
 k# mi# I j#v, RvZ#f#` 10-100 #m. #g. chš n#q \_v#K | eieU# g#Z: ~civM#vqZ D#TM` |
 Z#e t#vKv-gvK#oi Dc# ~Zi Kv#Y #KQ#ci-civM#vq b#Z c#i#i |

eieU DrcE ~vb m ú#K wfbgZ t`Lv hvq| Kv#iv g#Z wbi¶xq c#dg AwdKvq Gi
DrcE| KvIY tmlv#b mewak Di™ ZwEK `e#PÎ~ cvlqv tM#Q| Ab~w`#K `w¶Y I `w¶Y-ce
Gikqv#K Gi DrcE~j e#j g#b Kiv nq| KvIY GLv#b ¶Rvi eQ#i i l t#k mgq a#i
PvIve~ n#q Avm#Q| cLx#Z `w¶Y I `w¶Y-ce Gikqv, c#dg AwdKv, h#i vó I P#b cPz
eieU Drcb nq| evsjv#`#k cvq me~v#b eieU Pvl n#q _v#K| Z#e PÆmg, XvKv, h#kvi,
Lybv, iscÿ BZ~w~v#b fv#jv R#Š| t dj#bi Pvl gjZ PÆmg I t#bqvLv jx GjvKvq
mxgve×| 1993-94 mv#ji evsjv#`k c#imsL~vb e#iivi wnmve Ab¶qx t`#k eQ#i cvq 2900
tn±i Rng#Z 7200 tgUK Ub eieU Drcb nq|

eieiu GKU eIRex MvQ| t`LZ A#bKUv wkg MvQi gZv| Zte jZv#bv I tSvciKUZ.me
iKg RvZB t`Lv hvq| MvQi eY meR t`K te,bx| cvZv w-cîKx, d# mv`v Ges dj mi#
I `xN| d#ji is meR A\_ev te,bx, KL#bv KL#bv mv`v#U nq| eieiu Avigl, K`v#i viUb I
wFUvqb-wm mgx GKU dmj|

$$\frac{L_{\text{wid}} FZ \ddot{z} \text{ we} \ddot{t} k l Z 20 - 30^0 \text{ } \ddot{t} m. Z_{\text{vcg}} \hat{v} \text{ } Mv \ddot{t} Qi - \text{ve} \text{ } \text{ } fK \text{ } e_{\text{p}} \times i \text{ } Rb \text{ } Kvg \text{ } |}$$

PvIvev`i Rb" meR
nn+mte 4-5 tK/R/tn. Ges
meR mvi ev tMvLv`
nn+mte 10-12 tK/R/tn.
exRi cqvRbI

Rjevqy! qvwU

evsjvʰ tʰk tɛkɪfvM RvZB mʷivɛQi dʲvʰbv mæ| Ztɛ Lɪid FZʒ wɛtʰkɪZ 20-30⁰ tɪ.
Zɪcvɪv MʷʰQi ˈvɛwʰfK eɹxi Rbˈ Kvɣˈ | iɛ tɣsmɣg MʷʰQi eɹxi nvi Kg Ges fʷBivʰmi
Avɣgb tɛk nɪqvq dʲb Kg nq| iːRˈ ev Avˈ Dfɣ AeˌvʰZB eieU Rʰʂː ˌvʰK| eɹɔ
AZˈwɑK nʰj dʲarɪY ʈɪZMˈ nq| tˈv-Avʰg wUʰZ eieU fʷʰjv Rʂʰʰjɪ mɛiKg gUʰZB
Gi Pɪlvɛˈ Kiv tʰʂZ cvʰi | tɪPɪl tʰZgb ˈiKvi nq bv|

exR ecb / exRnvi

Brv mwi:Z Pvl Kiv tkq| `p ugUvi `y:Z mwi K:i 25-30 tm. ug. `i `i exR ecB
Ki:Z nq| G:Z tn:i c:Z 4-5 tK:R exR jvMte| meRmvi ev tMvLv`` nntme Pvl Ki:j
QvUtq eb:Z nte| tm:¶:î 10-12 tK:R/tn:i ex:Ri c:qvRb|

RvZ

evsjv`†k GL†bv †Kvb bZb RvZ D™weZ nqib| Pxbv †÷sexb, l††mqÈ lqvÔvi, Kv†Mvi
bvUKx, ckv diêp K†gKiu Rbvcq RvZ|

mvi cʔqVM

tn±icUZ 10 Ub tMei, 50 tKUR BDibU, 120 tKUR U Gm uc Ges 100 tKUR Gg uc mvi
t`qv thZ cvʔi | meUKzmvi Rlg ^Zii mgq wgtkq t`qv thZ cvʔi, KLtbv BDibU I
cUvki wKq`sk Dcwi cʔqVM Kiv nq |

AšeZxKvjxb cwiPhv

jZvʔbv RvʔZi meiRi Rb`
meʔPʔq eo cwiPhv nʔjv
gvPv ev evDbx t`qv |

jZvʔbv RvʔZi Rb` gvPv t`Iqv cʔqVRb | Zte tnjvʔbv/Lvov evDbx t`qv thZ cvʔi |
cʔqVRb tmP t`qv DvPZ | tʔʔZ cvib Rtg tMʔj wbtvkb Kiv `iKvi | weQvʔcvKv MvʔQi
cvZvi wkiUkz ev` meR Ask tLʔq tʔʔj | Rve tcvKv I wcm cvZv I WmV bó Kʔi t`q |
25 wj. wj. gʔjwqb 57 Bim ev 20 wj. wj. WwqWRbb 60 Bim 10 wjUvi cwbʔZ wgtkq t`ž
KiʔZ nʔe | dj wQ`Kvix tcvKv `gʔb wickW ev WwqWRbb t`ž KiʔZ nʔe | Gb_vKʔbvR Ges
MvʔQi tMvov I wkKo cPv t`Lv wʔj WwB\_b Gg-45 Gi 0.2% `eY 15 w`b cici t`ž
KiʔZ nʔe |

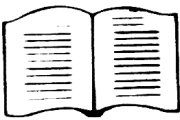
dmj msMn I djb

mvaviYZ dj aivi 4-5
w`bi gʔa` cʔAvKvi cvʔ
I tLvmvq Auk nqwb Ggb
dj msMn KiʔZ nq | GʔZ
djb 5-7 Ub/tn. nq |

exR ecʔbi 50-60 w`b ci eieUʔZ dʔ I dj aʔi | mvaviYZ dj aivi 4-5 w`bi gʔa`
c Y AvKvi cvʔ I tLvmvq Auk nqwb Ggb dj msMn KiʔZ nq | GʔZ djb 5-7 Ub/tn. nq |
exRi Rb` Pvl Kiʔj mvaviYZ MvʔQi 80-100 w`b eqm t_ʔK cvKv I iKbv dj msMn
KiʔZ nq | exRi djb 1.0-1.5 Ub/tn±i nq | dʔ Avmvi ci t_ʔK GB MvQ 60-75 w`b
chš dj w`ʔZ cvʔi |

e`envi

meiR wnʔmʔe KUP Acwic° kʔ Ges cwiYZ wKš Acwic° dj t_ʔK cvʔ KUP exR e`eüZ
nʔq _vʔK | kʔ cwic° nevi mvʔ_ mvʔ_B exR Awgʔli cigvY eioʔZ _vʔK | ZLb GB exR
Wvj dmj wnʔmʔe AZ`š cyóKi | MvQ KUP I big Ae`vq DrKó.cĩLv` I meR mvi
wnʔmʔe e`envi Kiv hvq |

**migg**

- mKj cKvi RlgʔZ Aí mvi I mvgvʔ cwiPhvʔZB eieU Pvl Kiv hvq |
- gvʔmi dmʔj hʔ_ó Awgl-mgʔ meiR cvIqv mʔe |
- KUP kʔB cavb Dcv`vb wnʔmʔe weʔePZ nʔj I Wvj dmj wnʔmʔe I Gi e`enviʔi e`vck
mʔevb iʔqʔQ |
- GK wgtv `iʔZ mvi Kʔi 25-30 tm. wj. `iʔZ AvaybK c×wʔZ Pvlvev` Kʔi 5-7
Ub/tn. eieU Drcv`b Kiv hvq |



cv#VĖi gĵ'vqb 7.3

1. mZ' nĵ Ōmō Ges ṽg_ 'v nĵ Ōgō ṽjLb|

K. eieU PvlI Kv" ZvcgvĤv 12-20° tm.

L. meiKg gvU#ZB eieUi Pvl Kiv hvq|

M. KvBr ex#R Avig#Ii cṽigvY te#k_v#K|

2. kĵ'vb cĥY Ki#b|

K. eieU PvlI Rb" cṽZ tn±i †K#R BDṽiqv mvi c#qvRb|

L. eieUi tn±i cṽZ djb cvq |

M. eieUi ^eÁṽbK bvg |

3. mVK DĖi i c#k ṽUK ṽPý (√) ṽ`b|

K. eieU †Kvb cṽiev#i i meiR?

1. †mvjv#bṽm

2. A'vgv#ib#_ṽm

3. gvj#fṽm

4. ṽj_ṽg#bṽm

L. eieUi exR mvi#Z KZUKb` i#Z †ivcY Kiv nq?

1. 15-20 tm. ṽg

2. 20-25 tm. ṽg.

3. 25-30 tm. ṽg.

4. 30-35 tm. ṽg

M. dĵ Avmvi ci †_#K eieU KZṽ`b chš dj ṽ`#Z cv#i?

1. 30-40 ṽ`b

2. 40-50 ṽ`b

3. 50-65 ṽ`b

4. 60-75 ṽ`b

4. GK K_vq ev ev#K' DĖi ṽ`b|

K. eieUi Lv#Uv I †Sv#jv RvZ_ †jv#K_vbxq fvlvq Kx e#j?

L. eieUi `ŷU Rb#cq Rv#Zi bvg ejb|

M. meiR ṽn#m#e Pvl Ki#j KZUKb#R` iKvi?



Povš gj'vqb— BDibU 7

msi 1 iPhvgjK ck

1. te₃b Pvl i Rb" Gi Rjeqyl gwlU Ges tivcY c×Z eYbv Kiab|
2. te₃b Pvl i Kxfvte mvi cqvM Kiteb cwigvYmn eYbv Kiab|
3. jvjKvK Pvl i Dci msi 1 GKUv iPhv jLb|
4. eieUi ASeZxKvjxb cwiPhv eYbv Kiab|
5. eieUi dmj mSMn, djb Ges e'envi m'úK eYbv Kiab|
6. te₃b Kx Kx tcvKvgvKo i tivMevjvB nq? tm₃tv `g#bi cqvRbxq e'e'v eYbv Kiab|



Dëigjv— BDibU 7

cV 7.1

1. K (m) L. (lg) M. (m)
2. K (Solanaceae) L. (dj i Kvû Q`Kvix) M. (90)
3. K (2) L. (2) M. (1)
4. K (t'vAvk i te+j t'vAvk) L. (Dëiv) M. (AvPvi ^Zi Ki)

cV 7.2

1. K (m) L. (m) M. (lg)
2. K (AvjZvcwZ, evi jvjKvK) L. (A'vgvivb#hwm) M. (12-14)
3. K (2) L. (1) M. (2)
4. K (iie tgšmg) L. (úvBK RvZxq dž, #Q) M. (iqv tcvKv i K'vUvi cji)

cV 7.3

1. K (lg) L. (m) M. (lg)
2. K (50) L. (1.0-1.5 Ub) M. (Vigna sesquipedalis)
3. K (4) L. (3) M. (4)
4. K (tdjb) L. (Pxbv ÷s exb, ckv dëp) M. (4-5 tKR/tñi)

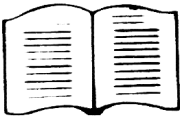
gmjv dmþji Pvlvev`

Lvþ`i tkvfv I Av`v` eþxi Rb` th mg` mþÜhy D1TM` Ges D1TM`RvZ` e` e`eüZ nþq
_vþK Zvþ`iþK gmjv dmj ejv nq| cKviþfþ` D1TM`þ`i gþ, KvÜ, cvZv, dþ Ges dj gmjv
nmvþe e`eüZ nq| tkvþbv tkvþbv tþîî UvUKv Ae`vq Avevi KLþbv iþKþq wefbfvþe
c1µqvRvZ Kþi gmjv dmj e`envi Kiv nq| AþbþKi gþZ gmjvRvZxq`þe`i webgþqi
gvaþgB mec_g AvSRvZK eþYþR`i mþbv nþqQj| ga`hþM BDþivcxqiv gmjvi mÜvþb
þ`kþ`kvþþi Q1oþq cþo| GB e`emvþq Av1acZ` iþvi Dþîþk` wefb þ`þk Dc1bþek`vcb
KiþZ cqvmx nq| eZgvþb gmjv wefb KvþR eþYþR`K wfiEþZ e`eüZ nþQ|

cv 8.1 gmjv dmþji A`b1ZK I þfIR ,iþZ

GB cv tkþI Av1b

- gmjvi A`b1ZK ,iþZ m`úþK RvbþZ cviþeb|
- gmjvi þfIR ,iþZ eYbv KiþZ cviþeb|



gmjvi A`b1ZK ,iþZ

1. Kgms`vb t gmjvi Pvl, c1µqvRvZKiY, ,`vgRvZKiY/msiþY Ges e`emv-eþYR`
þ`þki hþK I g1njvþ`i Kgms`vþbi mþhvm mþó Kþi| dþkyþZ þ`þki teKvi mgm`v
AþbKvþk jvNe nþZ cvþi|
2. gmjv Pvl jvfRbK t wþþi mviþY þ`þK cZxqgvb nq th, gmjv dmj Pvlvev` Kiþj Ab`
dmj thgb - tMvjAvjyþg1óAvjyþ`þK AþbK jvfevb n1qv hvq|

gmjv	Mo Avq/GK1 (UvKv)	Ab`vb` dmj	Mo Avq/GK1 (UvKv)
Av`v	30,000/-	tMvj Avj`	8,415/-
njÿ	12,000/-	wg1ó Avj`	1,915/-
þcqR	22,500/-		
imþ	41,000/-		
g1iP (iþbv)	10,800/-		

Drm t wmwv, Kvþwv (1990-91)

3. RvZxq Avþq gmjvi Ae`vb t evsjvþ`k c1imsL`vb eþþivi 1990-91 mþþji nmve gþZ
þ`Lv hvq th D<sup>3</sup> ermþi evsjvþ`þk Drcw`Z gmjv dmþji gþ` wQj 727 tKvU UvKv;
wKŠ Gi Rb` LvUvþbv DcKiþYi gþ` wQj gvî 87 tKvU UvKv| A_vr D³ ermi gmjv
þ`þK gþ` mshþ (jvf) nþqþQ 630 tKvU UvKv|
4. iþvbx cY` nmvþe gmjvi mþvebv t eZgvþb c1\_exi eü þ`þk gmjv dmj Drcv`b
eþYþR`K wfiEþZ iþi nþqþQ| G ,þjv iþvbx Kþi Zviv cþþ`eþ`wK gývI ARb KiþQ|
evsjvþ`þki AþbK gmjv iþvbxþhvm` cY`| mEþii`kK þ`þK wKQyKQygmjv iþvbx nþq
AvmþQ| Drcv`b ew1oþq iþvbxþhvm` gmjv þ`þK cþþ`eþ`wK gýv Avþqi GKUv Dþ4j
mþvebv AvþQ| c1_exi tKvb tKvb þ`þk gmjvi Pw1n`v AvþQ Ges Kx aiþbi ,YMZ gvb
n1qv D1PZ Zvi R1ic Kiv cþqvRb|

Drcv`b ew1oþq iþvbxþhvm`
gmjv þ`þK cþþ`eþ`wK
gýv Avþqi GKUv Dþ4j
mþvebv AvþQ|

«kí e'envi t cμqRvZ Lv`" `te"i msi ¶Y I , YMZ gvb Dbq#b, JIa, cmvabx I teKvix
«kí, e#i is Ki#Y, cvbxq I mYÜ cZ#Z gmjv RvZxq dm#ji e'envi n#"Q| GQvovI
tcvKvgvKo cIZ#iva I `g#b gmjv dm#ji e'envi nq|

gmjvi t fIR ,iZ

gmjvi t fIR ,iZ LpB D#jL#hvM| JIa nnt#e gmjv eûj e'eüZ n#q _v#K| cvPxb
fviZe#I gmjvi mrvn#h" B #nKgvK#eivRx BZ"v" P#Krmv nZ| eZgv#bI evsjv#`k A#bK
Am#LiB #beviK gmjv nnt#e e'eüZ n#"Q| thgb-

Av`v — Kwk `g#b Ges nRgk³ eaK I evq#kK nnt#e e'eüZ nq|

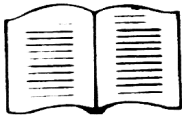
njy — K#v njy kix#i i #mS`heaK, ¶Z #bivggKvix Ges i#Peak|

tMjgiP — g#Li cvPKim #btmY e#x K#i| d#j Lvev#i i mv#_ thvM Ki#j nRg k³
evovq| nvo gPKv#bv, e`nRg n#j tMjgiP e'envi Kiv hvq|

im# — R#evb#kKmn evZ, i³ Pic, ü`#ivM BZ"v" i dj`vqK JIax nnt#e e'eüZ
n#"Q|

tgšix — nRgk³ evovq, g#Li `MÜ I e#g#ve `#K#i Ges kixi kvZj iv#L|

tcqR — VvÜv, Kwk Ges ü`#ivM Dck#g e'eüZ nq|



mvi gg

- evsjv#`k #e#fb gmjvi Pvl nq|
- cvPxb Kvj t_#K cIZ #`#bi Lv#`", cμqRvZ «kí-`te" Ges t fIR nnt#e gmjvi
e'envi n#"Q|
- t`#ki A_#bZK Dbq#b gmjvi h#_ó fvgKv Av#Q|
- gmjv-RvZxq dm#ji Dbq#bi #`#K #e#kl bRi t`qv c#qvRb|



cVtWĖi gĵ`vqb 8.1

1. mZ` nĵ ōmō Ges ig\_`v nĵ ōvgō ||jLb|

K. gmjv dmĵi A_`bZK , iZ_vKĵi I †fIR , iZ †bB|

L. †cVkvKo cIZĵi I `gĵb gmjv dmĵi e`envi nq|

2. ĩb`vb cĴY Kiib|

K. cVPxb fviZe†I gmjvi mvrn†h`B ||P||Krmv nĵZv|

L. Kvik `gĵb Ges nRgk||<sup>3</sup>eaK I evqĵkK ||n†m†e ..... e`eüZ nq|

3. mVK DĖĵii cĵk ||UK ||Pý (√) ||`b|

K. 1990-91 mvĵj evsjv†`k Drcv||Z gmjv dmĵi gĵ`KZ ||`b?

1. 728 †KvU UvKv

2. 725 †KvU UvKv

3. 727 †KvU UvKv

4. 726 †KvU UvKv

L. WŪv, Kvik Ges ü`†ivM Dck†g Kx e`eüZ nq?

1. †cqR

2. imĵ

3. †gšix

4. †Mvjg||iP

4. GK K_vq e† e†K` DĖi ||`b|

K. †Kvb RvZxq gmjv dmj gĵLi cVPKim ||b:miY e||x K†i?

L. †Kvb RvZxq gmjv kix†ii †mš`heaK ||n†m†e e`eüZ nq?

cV 8.2 gmjv dmjji e'envi I Drcv`b mgx¶v



GB cV tk¶I Avcb

- evsjv`tki ¶efb ai¶Yi gmjv KZUKZ R¶gZ Pvl n¶"Q Zv ejZ cvi¶eb|
- ¶efb ai¶Yi gmjv dmj evsjv`tk Kx c¶ig¶Y Drcv`Z n¶"Q Zv ejZ cvi¶eb|



Av`Kvj t\_¶K evsjv`tk ¶efb gmjv dmjji Pvlv` n¶q Avm¶Q| cavb cavb gmjv thgb-
tc¶R, im¶, Av`v, njy, g¶iP caibZ emY¶R`K ¶f¶E¶Z R¶gZ Avev` Kiv nq| Ab`vb`
gmjv thgb- Kvj¶Riv, tg¶i, a¶b mvaivYZ evoxi Avs¶Mbv msjM R¶gZ Pvlv` n¶q _v¶K|
AvenvIqv, g¶U Ges evRvRvZKi¶Yi m¶eavi Rb` tKvb tKvb gmjv dmj ¶ekl ¶ekl
GjvKvq e`vck Pvlv` n¶q _v¶K| K¶qK¶U caib gmjvi eZgvb R¶gi I Drcv`¶bi c¶ig¶Y
¶b¶a eYbv Kiv nj:

tc¶R t gmjv dmj ¶n¶m¶e e`eüZ Ges Drcv`¶bi ¶`K t\_¶K evsjv`tk tc¶R¶i ¶vb
m¶ew¶P| eZgvb evsjv`tk c¶Z ermi c¶q 35,000 tn±i R¶gZ Bnvi Pvl nq Ges c¶q
1.40 j¶¶ tg¶UK Ub tc¶R Drcb nq| tc¶R Pvl¶i Rb` D¶jLthv¶ A¶jmg¶ n¶"Q -
d¶i`c¶y, XvKv, gqgb¶msn, isc¶y, Kzjv I cvebv|

im¶t G¶U evsjv`tki GK¶U cavb gmjv dmj| ¶efb tiv¶Mi J¶a ¶n¶m¶e Gi e`vck K`i
i¶q¶Q| eZgvb evsjv`tk c¶q 14,000 tn±i R¶gZ tg¶U 40,000 tg¶UK Ub im¶ Drcv`b
nq| evsjv`tki d¶i`c¶y, ¶`bvRc¶y, XvKv, ivRkvx, h¶kvi, Kzjv c¶f¶Z tRjvZ im¶bi
e`vck Pvlv` n¶q _v¶K|

**Av`v t** Av`v GK¶U AvZ c¶qvRbxq gmjv dmj| evsjv`tk 6,880 tn±i R¶gZ tg¶U
41,000 tg¶UK Ub Av`v Drcv`b n¶q _v¶K| eZgvb evsjv`tk isc¶y, ivsMvg¶U, P¶EMvg,
ev`ieb, gqgb¶msn, UvsMvBj, ¶`bvRc¶y I Rvgvjc¶y tRjvZ-Gi e`vck Pvlv` n¶q _v¶K|

njy t evsjv`tk njy GK¶U eüj e`eüZ Ges Rb¶cq gmjv| eZgvb 16,190 tn±i R¶gZ
njy`i Drcv`b n¶"Q 42,000 tg¶UK Ub| evsjv`tki ¶`bvRc¶y, cvebv, h¶kvi, ivsMvg¶U,
LvMov¶Qio, isc¶y, ivRkvx, Kzqv I Lybv tRjvZ Bnvi e`vck Pvl n¶q _v¶K|

g¶iP t gmjv QvovI g¶iP GK¶U Rb¶cq meiR| evsjv`tk c¶q 70,000 tn±i R¶gZ
45,000 tg¶UK Ub g¶iP Drcv`Z n¶q \_v¶K| evsjv`tki e,ov, Kzjv, tbqvLv¶jx, evikvj,
cUq¶Lv¶jx, P¶EMvg, XvKv, d¶i`c¶y I Rvgvjc¶y tRjvZ Bnvi e`vck Pvlv` n¶q _v¶K|

tMvjg¶iP t tMvjg¶iP eügv e`eüZ AZ`š `vgx gmjv| evsjv`tk tMvjg¶i¶Pi mx¶gZ
Pvlv` n¶q \_v¶K| eZgvb ¶m¶jU tRjvq `Ršvc¶y, LvMov¶Qio I ivgMo A¶jji tMvjg¶i¶Pi
¶i c¶im¶i Pvlv` n¶"Q |

a¶b t a¶b G¶`tki Rb¶cq gmjv| eZgvb evsjv`tk c¶q 6,000 tn±i R¶gZ c¶q 3,600
tg¶UK Ub a¶b Drcb n¶q _v¶K| G¶`tk me¶B a¶bi Pvlv` n¶q _v¶K| Z¶e d¶i`c¶y,
Kzjv, XvKv, h¶kvi, cvebv Ges ¶m¶jU tRjvZ caibZ A¶aK nq|

tg¶i Ges Kvj¶Riv t evsjv`tki ¶KQyKQyGjvKvZ emY¶R`K ¶f¶E¶Z G gmjvi Pvlv` n¶q
_v¶K| Z¶e tg¶Ugv¶f¶te t`tki me¶B emZevoxi Avs¶Mbv msjM R¶gZ Pvlv` nq|

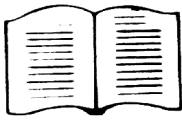
evsjv`tk K¶L. c¶imsL`vb eyiv 1996 tg¶Zv¶eK gmjv Pvl¶i R¶gi tg¶U c¶ig¶Y c¶q
1,40,000 tn±i Ges Drcv`¶bi c¶ig¶Y c¶q 3,25,000 tg¶UK Ub| MZ`k eQ¶ii (1984-
85 t_¶K 1993-94) gmjv Pvlv`¶i ch¶jvPbv Ki¶j t`Lv hvq th, GB mg¶q R¶gi Mo
ex¶i nvi 0.06% Ges Drcv`¶bi nvi 1.30% (mviYx-1)| g¶i¶Pi R¶gi c¶ig¶Y nvm t¶c¶q¶Q

cvq 0.41%, Zte Drcv`b teotoQ 2.70%| Ab`vb` gmjv thgb tgšii, qv#gšii, KvjRiV, ival BZ`vi i Rig I Drcv`b Dfqi nvi D+jL+hvM`fvte nvm tc+q+Q|

mviYx-1 t MZ `k eQ+i (1984-85 t\_K 1993-94) gmjv P+Ii Rig I Drcv`bi eix/nv+mi nvi|

μigK	Rigi cigvY	
	dm+ji bvg	eixi nvi (%)
1.	gviP	-0.41
2.	tcqR	0.31
3.	imj	0.24
4.	nj`	0.69
5.	Av`v	1.75
6.	aibqv (exR)	2.96
7.	Ab`vb`	-10.45
	tgU	0.06

Drcv`Z gmjvi cigvY	
dm+ji bvg	eixi nvi (%)
gviP	2.70
tcqR	0.61
imj	0.72
nj`	3.84
Av`v	0.43
aibqv (exR)	5.01
Ab`vb`	-9.73
tgU	1.30



migg

- evsjv`+ki cZeQi 35,000 tn+i Rig+Z cvq 1.40 j q tgUK Ub tcqR Drcb nq|
- evsjv`+k cZeQi 14,000 tn+i Rig+Z tgU 40,000 tgUK Ub imj Drcv`Z nq|
- evsjv`+k cZeQi 6,880 tn+i Rig+Z tgU 41,000 tgUK Ub Av`v Drcv`Z nq|
- evsjv`+k cZeQi 16,190 tn+i Rig+Z cvq 42,000 tgUK Ub nj` Drcv`Z nq|
- evsjv`+k cZeQi 70,000 tn+i Rig+Z 45,000 tgUK Ub gviP Drcv`Z nq|
- evsjv`+k cvq cZeQi 6,000 tn+i Rig+Z 3,600 tgUK Ub a+b Drcv`Z nq|



cv#VĖi gj`vqb 8.2

1. mZ` n#j ōmō Ges ig\_`v n#j ōvgō #jLb|

K. Rvgvjcy†Rjv†Z†Mvj g#i†Pi Pvl nq|

L. wefb†iv†Mi Jla n#mte im#bi e`vcK K`i i†q†Q|

2. ĩb`vb c#Y Ki#b|

K. eivjv†`k c#Z eQi cvq †n±i R#g†Z†cqv†Ri Pvl nq|

L. gmjv Qvovl g#iP GKUv meiR|

3. mVK DĖi i c#k #UK #Pý (√) #`b|

K. †Kvb `v#b †Mvjg#i†Pi Pvl nq?

1. d#i`cy

2. K#óqv

3. #m#jU

4. #`b#Rcy

L. Drcv`#bi #`K †_†K eivjv†`k †Kvb gmjv dm#ji `vb m#ev`P?

1. †cqvR

2. im#

3. Av`v

4. njy

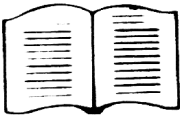
4. GK K_vq ev e#K` DĖi #`b|

K. #m#jU †Rjvi †Kvb `v#b †Mvjg#i†Pi Pvlvev` nq?

L. ev#oi Av#b# msjM R#g†Z #K gmjv dm#ji Pvl nq?

cvV 8.3 imby, `viPib I tMvjgiiPi Pvlvev`**GB cvV tkI AvciB**

- imby, PviPib I tMvjgiiP m`úK aviYv `tZ cvi`eb|
- imby, PviPib I tMvjgiiPi Pvlvev` e`vL`v KiZ cvi`eb|
- imby, PviPib I tMvjgiiPi e`envi m`úK ejtZ I jLZ cvi`eb|

**imbi Pvlvev`**

WjWjgmx cievifz imby (Allium sativum L.) evsjv`tki GKU D+jL+hvM` A_Kix dmj| Diallyl disulfide Ges Diallyl trisulfide bvgK`jv` e` imbi `eikó`mPK M+Üi Rb` `vqx| eZgvb evsjv`tki cvq 14 nRvi tn±i RigtZ tgvU 40 nRvi tgvUK Ub imby Drcv`b nq| imby evsjv`tki kxZ tgmjg Ršvq|

RjevqY gwU

AaK eYócVZ I Av`Zv imbi Rb` YZKi| imbi kéK` Drcv`b Zvcgîv I W`em` N`i Dci Wbfikj| th MvQ ev exRK` KL+bv 21⁰ tmt Gi bxP D+bWpZ nq bVB Zvrv K` Drcv`b KiZ cvi`bv| GRb` tKvb tKvb Wbi Yxq AA+j (thLv`b W`emi` N` memgq Kg _vK) imby Drcv`b mæ bq| imbi MvQ exi cv`WgK chvq tKej cvZv Drcv`b K+i| K+`i` uXZ iia nj cvZv Drcv`b eÜ nq| th MvQ K` Drcv`b iia nIqvi cæ tekx cvZv nq, Zvi djb fvj nq|

Eske`vi I tivcy

tKvqi mvinth` imbi eske`vi Kiv nq| maviYZ imby 10-15 W tKqv`vK| tKvb tKvb RvZ tKvqi mSL`v gvî 1 A_ev 2/3 W| Rig Lg fvj fve` Zii K+i 15 A±vei t\_K 15 btfaii gta` jvM+bv DEg| 15 tm.Wg. `tZ mvi K+i ciz mviZ 10 tm.Wg. `fi`fi imbi tKqv 5-7 tm.Wg. Mfxi bvjvq jvM+bv nq| tn±i ciz cvq 350 tKWR exR imbi c+qvRb|

mvi

maviYZ tn±i-ciz 10 Ub tMvei, 200 tKWR BDWiqv, 125 tKWR WU Gm Wc Ges 100 tKWR Gg Wc mvi e`envi KiZ nq| Rig`Zii tkl P+li mgq mgvq tMvei Ges WU Gm Wc c+qM KiZ nq| BDWiqv I Gg Wc mviK mgvb`YvM fVM K+i`YK`Z tKqv ec+bi 30 W`b Ges 60 W`b ci RigtZ c+qM KiZ nq|

ciPhv

Piv MRv+j mvi`vi t\_K tMvovq gwU Zzj t`qv, gwU AvjMv Kiv I AvMvQv gy` ivLv c+qvRb| gwU+Z im Ktg tM+j ciz 10-15 W`b Aši tmP W`tZ nq|

tivMejvB I tcvKqvKo`gb

imby tcvKqvK+oi AvµgY LgB Kg| cavBZ tMvovPv tivM, cvi+cj eP I`WU tivM nq| tivfivj ev Wvq+\_b Gg-45 A\_ev W` IufU 20 Mvg ciz 10 WjUvi cvib+Z Wgk+q c+qM K+i Gme tivM`gb Kiv mæ|

tKvqi mvinth` imbi
eske`vi Kiv nq| 15
A±vei t_K 15 btfaii
gta` jvM+bv DEg|

ⱱKDⱱis fvʔjv nʔj imʔ
˘xNⱱ˘b msi ʔY Kiv hvq|

dmj msMn I djb

imʔ MvʔQi cvZv nʔj ʔ˘K ev˘vgⱱ is aviY Kʔi ʔfʔ½ coʔj DʔĖvjb DcʔhMx nq| djb
 ʔnʔi cıZ 6-8 Ub chš nʔZ cvʔi|

imʔ msMʔni ci giv cvZv ʔQʔU fvʔj fvʔe 4/5 ˘b Qvqvhʔ ˘vʔb iKvʔj Gi Mjv msKʔZ nq
 Ges evnfvM iKʔq cvZjv I k³ AveiʔY cıiYZ nq| G cıieZbʔK ŌKDⱱisō ejv nq|
 ⱱKDⱱis fvʔjv nʔj imʔ ˘xNⱱ˘b msi ʔY Kiv hvq|

e˘envi

gmjv ˘nmvʔe ˘evfb Lv˘ c˘ZʔZ cavbZ e˘eüZ nq| imʔbi AvPvi tek Rbıcq| Avg,
 RjcıvB cfıZ ˘evfb cʔ˘i AvPvʔii DcKiY ˘nmʔe e˘eüZ nq| imʔ evZ, D˘P i³Pvc I
 ü˘ʔivʔMi I lḡ ˘nmʔe mvʔžZKKvʔj e˘eüZ nʔ˘Q | eZgvʔb I lḡ ʔKvʔvbx, ʔjv imʔbi eıo
 Drcv˘b KiʔQ|

˘viʔPibi Pvlvev˘

˘viʔPibi ˘eÁvıbK bıg Cinnamomum zeylanicum. GıU jʔimx (Lauraceae)
 cıievıfʔ GKıU A_Kix gmjv dmj| kxjsKv I ˘˘Y-fviZ ˘viʔPibi DrcıĖ˘vıb|
 eZgvʔb gv˘vMvKvi, evRj, kxjsKv, fviZ cfıZ ʔ˘k Gi e˘vck Pvlvev˘ nq| Bıv GKıU
 ˘Pinıir e, ʔ Ges evʔZ ˘ʔj 30-40 dʔ Dʔnq|

Rjevqy gwU

˘viʔPib Dò I Av˘ Rjevqy dmj| evsjvʔ˘k ˘ekl Kʔi cveZ˘ PĖMıg GjvKv ˘viʔPib
 Pıʔli ˘ekl DcʔhMx| thme ˘vʔbi Zvcgııv 25-30⁰ tmt Ges evrmıK eıócvZ 200-250
 ʔmt ıgt ʔmLvʔb ˘viʔPib fvʔj Rbʔ| Avsıkk Qvqıgq Ges mıbıwıKZ Dei ʔeʔj ʔ˘vAvk gwU
 ˘viʔPib Pıʔli Rb˘ Dchʔ|

eskie˘vi I ʔivcY

exR, kvLv-Kjg Ges ˘U-
Kjʔgi mıvıʔh˘ ˘viʔPibi
esk ˘evı Kiv nq|

exR, kvLv-Kjg Ges ˘U-Kjʔgi mıvıʔh˘ ˘viʔPibi esk ˘evı Kiv nq| exR ˘ž mRxevZ
 nıııʔq ʔdʔj eʔj cvKv dj cPıʔbıı cıciB exR Avjv˘v Kʔi Zv ecı Kiv nq| exR ʔ˘K
 Pııv Drcı˘b Kʔi ʔivcY Kiv nq| AvU˘k dʔ ˘ʔi ˘ʔi gv˘v Kʔi cıZıU gv˘vq Pııv ʔivcY
 Kiv hvq| ʔivcʔYi 2 ermi ci MvʔQi KvʔŪi 6-8 BıĖ Dcʔii Ask ʔKʔU gwU ˘ʔq ʔXʔK
 ʔ˘lqv nq| KıZZ KvʔŪi ʔMıov ʔ˘K AʔbK, ʔjv Wıjcıjv ʔei nq| ˘bevıPZ (5-6ıU)
 Wıj, ʔjv ʔiʔL evKx, ʔjv QııvB Kʔi ˘ʔZ nq|

mıi

evKjB ˘viʔPibi e˘envh
Ask| iKvʔbıı mgq evKj
ıfZʔii ˘ʔK ʔetK ʔPıvMıı
AvKvi aviY Kʔi| GʔK
Quill eʔj|

cıZ MvʔQi Rb˘ gv˘v ˘Zııı mgq 10 ʔKıR ʔMıei, 250 Mıg ˘Lj I 2 ʔKıR QıvB fvʔj fvʔe
 ıgkvʔZ nq| cıZ eQi mvi cʔqvM KiʔZ nq| MvʔQi eıxı mı˘ mvi cʔqvʔMi mıgĖm˘ ivLv
 cʔqvRb|

cıPhv

AvMıQıv cıııvi Kiv, gwU AvjMı ivLv, elvi cııb ıbıwıkb Ges Lıvq cııb ʔmP ʔ˘qv cʔqvRb|

dmj msMn I djb

Pııv ʔivcʔYi 3-4 eQi ci KvŪ ev Wıʔji evKj msMn Kiv nq| evKjB ˘viʔPibi e˘envh
 Ask| msMıxZ ZıRıv evKj ʔivʔ˘ iKvʔbıv nq| iKvʔbıı mgq evKj ıfZʔii ˘ʔK ʔetK

†PvsMvi AvKvi aviY K+i | G#K Quill e+j | GB Ae⁻vq Bnv evRviRvZ Kiv nq | GKB MvQ
†_#K A#bK eQi `viPib cvIqv hvq | †n±icwZ djb 75-100 †KwR |

e⁻envi

`viPib †\_#K Drcw<sup>-</sup>Z `y mYÜ `te⁻i big ðmbwGK GjWwvBWð Ges ðBDwRbjð | cimeb
cµqvi mvinth⁻ evKj I cvZv †_#K ðmbwBKð †Zj ^Zwi Kiv nq | GB †Zj Lv⁻ I cmvabx
`te<sup>-</sup>i mYÜKiY e<sup>-</sup>eüZ nq | `viPib †cvjvI, R⁻vmn wefb Lv⁻ e⁻ ^ZwiZ e⁻eüZ nq |

†Mvjgwi†Pi Pvlvev⁻

†Mvj gwIP (Black pepper) evsjv⁻`kmn mg<sup>-</sup> cµ<sup>-</sup>ex<sup>-</sup>Z AZ<sup>-</sup>š `vgx gmjv | Gi ^eÁwbK
big Piper nigrum | †MvjgwIP Piperaceae cwievi fY | G#K ðgmjvi ivRvð wnmvte MY⁻
Kiv nq | aviYv Kiv nq⁻ v#K fviZe†Ii `wY-cwðg GjvKvq Gi DrciE | B#v#bikqv,
gvj†qikqv, fviZ, kxjsKv, ewRj Ges _vBj⁻v#Ü Gi e⁻vcK Pvlvev⁻ nq | evsjv⁻†#k
†Mvjgwi†Pi mxwgZ Pvlvev⁻ nq |

†MvjgwIP jZv RvZxq eueIRxex MvQ | †L†Z A#bKUv cvb Mv†Qi gZ | dj †MvjvKvi I ¶ž
GK exRavix | KuPv Ae⁻vq meR⁻ v#K, cvKvi mgq c⁻tg jvj†P I c†i njy eY aviY K+i |
iK†bv djB †Mvj gwIP wnmvte cwiPZ |

RjevqY gwU

†MvjgwIP Dò I Av⁻ RjevqY Dc†hvMx dmj | tgšmYx evqyGjvKvq thLv#b 125-200 †m.wg.
eþcvZ nq, †mLv#b fvj R†š | Gi Rb⁻ DchY ZvcgvÎv 10⁰ †_#K 40⁰ tmt | †vAuk gwU
†MvjgwIP P†Ii Rb⁻ AZ⁻š Dc†hvMx |

eskie⁻vi I †ivcY

mvaviYZ jZv †_#K KwUs
ev kvLv Kjg Øviv
†Mvjgwi†Pi esk we⁻vi Kiv
nq |

mvaviYZ jZv †_#K KwUs ev kvLv Kjg Øviv †Mvjgwi†Pi esk we⁻vi Kiv nq | Avmj exR
†_#KI MvQ Drcv⁻b Kiv th†Z cv†i |

th Mv†Qi d†ji Qov 15-20 †m.wg. j#v Ges djb tekx Ggb gvZMvQ †_#K †MvjgwIP KwUs
msMn Kiv D†PZ | 2.75 †_#K 3 wguvi `i†Z mwi K+i, 60 †m. wg. Plov Ges 60 †m.wg.
Mfxi gv⁻vq KwUs jvM†Z nq | Avkq⁻vZv MvQ wnmvte gv⁻vi, mRbv, wkgY, Kwuj, AvgjKx,
wRKv BZ⁻w⁻ e⁻envi Kiv nq | Zte⁻vqx e⁻e⁻v wnmvte Ksµ†Ui Lyð e⁻envi Kiv th†Z cv†i |
MvQ jvMv†bvi 3-4 ermi ci dmj w⁻†Z i†i K+i | †MvjgwIP Avsikk Qvqvqg⁻v#b fvj djb
†`q |

RvZ

evsjv⁻†#k eZgv#b 1wU RvZ (RšvcY) we⁻gvb hv evsjv⁻†#k KIL.M†eIYv BbwiUDU KZK
DTMvieZ nq†Q |

mvi

†MvjgwIP †ivc†Yi mgq wbaWiZ M†Z 10-15 †KwR †Mvei, 30 Mvg wU Gm wC I 1 †KwR QvB
e⁻envi Ki†Z nq | djš Mv†Q cwZ ermi 5 †KwR †Mvei, 75 Mvg BDwiqv, 60 Mvg wU Gm wC
I 60 Mvg Gg wC mvi e⁻envi Ki†Z nte |

jZv thb vVKgZ teq DVZ
cv#i tmi`#K tLqvj ti#L
teta v`#Z nq| Mv#Qi WMv
c#qvRbgZ tQtU v`#Z nq|

ciPhv

jZv thb vVKgZ teq DVZ cv#i tmi`#K tLqvj ti#L teta v`#Z nq| Mv#Qi WMv c#qvRbgZ
 tQtU v`#Z nq| thb jZv MvQvUi kvLv-ckvLv μgvšq teo cvq 3 vguvi Dc#i tek Sukov
 nq| AvMvQv `gb I tMvovi gvU AvjMv ivLv c#qvRb|

djb

Piv tivc#Yi 3-4 eQi ci dj v`#Z Avia K#i| t\_vKv#Z `jGKUv dj jvj#P nevi m#½ m#½
 m`úY t\_vKv vQto 5-7 v`b tiv#` iKv#Z nq| MvQc#Z 5-10 tKvR UvUKv tMvjg#iP msMn
 Kiv hvq|

e`envi

tMvjg#iP c#Zv`#bi vefb Lv` ^Zv#Z e`eüZ nq| gvsm I Ab`vb` cPbkxj Lv`^`i
 AZ`vek`K vCRvi#fUf vnt#te tMvjg#i#Pi e`envi i#q#Q| GQvov I K`vbs, AvPvi, teKvix I
 cvbxq c`Z vK#i e`vCKf#te e`eüZ n#`Q| tMvjg#i#Pi ÔK`v#fQb# bvgK `e` Brvi StS Ges
 Ôv#c#iib# I Ôv#c#iWvBb# bvgK Acv `jv `e` m#Üi Rb` `vqx| ZvB cmvab mvgMxi
 DcKiY vnt#te tMvjg#iP e`eüZ nq| AvZ cvPxbKv#j tMvjg#iP nvo fvsMv/gPKv#bv,
 e`nRg, g`v#j#iqv, K#úB BZ`v`i mvdj`RbK JIax vnm#te e`eüZ nZ| eZgv#b
 tcvKgvKo c#Z#iva Ges g_ vKjvi vnm#te tMvjg#iP e`eüZ n#`Q |

**migg**

- im#y evsjv#`#ki GKUv D#jL#hvM` A_Kix gmjv RvZxq dmj |
- i` I WÜv Rjevqyim#y P#li Dc#hvMx |
- tn#i c#Z im#bi djb 6-8 Ub |
- gmjv Qvov I evZ, D`P i`Pvc I ü`#ivM vbevi#Y JIa vnt#te im#bi e`envi i#q#Q|
 ev#ocvZ I Av`Zvi Av`aK` im#bi Rb` v`ZKi |
- Dò I Av` Avenv Iqvq `vi#Pvib fv#jv Rb#vq |
- `vi#Pvib exR, kvLv Kjg Ges ,vU Kj#gi mvrn#h` eskie`vi K#i |
- tn#i c#Z `vi#Pvib djb 75-100 tKvR |
- `vi#Pvib Lv` I cmvabx mvgMxi m#ÜKv#K vnt#te I e`eüZ nq |
- Ôgmjvi ivRò tMvjg#iP Dò I Av` Rjevqy Dc#hvMx dmj |
- tMvjg#iP KvUs ev kvLv Kj#gi mvrn#h` eskie`vi K#i |
- mvaviYZ MvQ c#Z 5-10 tKvR UvUKv tMvjg#iP msMn Kiv m#e |
- gmjv Qvov I JIa, m#Ü, Lv`^`#e`i vCRvi#fUf vnt#te tMvjg#iP e`eüZ n#q _v#K |



cv†VĖi gj`vqb 8.3

1. mZ` n†j ōmō Ges ig\_`v n†j ōvġō ||jLb|

K. im† evsjv†`k Mig †gšm†g Rb||q|

L. kvLv Kj†gi m†v†h` †Mvjg||i†Pi esk †e`vi Kiv nq|

2. ĩb`vb c†Y Kiab|

K. †n±i c†Z im†bi djb Ub|

L. exR, kvLv Kjg Ges Kj†gi m†v†h` `vi||Pibi esk †e`vi Kiv nq|

3. mVK DĖ†ii c†k ||UK ||Pý (√) ||`b|

K. †n±i c†Z c†q KZ †K||R exR im†bi c†q||Rb?

1. 400 †K||R

2. 500 †K||R

3. 350 †K||R

4. 300 †K||R

L. †Kvb gmjv†K ōgmjvi ivRvō e†j MY` Kiv nq?

1. †Mvjg||iP

2. im†

3. `vi||Pib

4. Av`v

4. GK K_vq ev ev†K` DĖi ||`b|

K. ||KD||is ej†Z ||K e†Sb?

L. Quill Kv†K e†j?

cV 8.4 Av`v I njy`i Pvlvev`****GB cV tk`I AvciB

- Av`v I njy`i maúK aviYv`Z cvi`eb|
- Av`v I njy`i Pvlvev` maúK eYbv`Z cvi`eb|
- Av`vi I njy`i e`envi RvbZ cvi`eb|

**Av`vi Pvlvev`**

Av`v RbRevimx cievifz GKU AIZ ctqRbxq gmjv| Av`vi eÁwBK bvg Zingiber officinale| Gi DrcE`Y-ce Gikqv, wekl Kti fviZ Dcgnv`k, evv I Pxb| RvgvBKvZ fvgvbi Av`v Drcb nq ej RvgvBKvK Av`vi t`k ev Land of Ginger ej| ZvQvov fviZ, evsvv`k, Pxb, vBj`vU, ZvBlqv, Rvcvb, Aójvq I bvtRvqvZ Av`vi fvjv Pvl nq| evsvv`k 6880 tn±i RvgZ tgvU 41000 tg. Ub Av`v Drcv`b nq vK|

RjevqY gwU

Av`v PvlI Rb` Dò I Av` RjevqYDc`hvMx| evrmiK eócvZ 150-300 tm. wg. I ZvcgvÎv 28°-30° tmt Av`v PvlI Abk`j| Av`v te`j t`v-Av, t`v-Av I cij gwUz fvjv djb t`q| RvgZ vBvkvbi m`e`v vKZ nte| mvgv` Qvqhy`vbi Av`vi Pvl nZ cvi`i|

Av`v PvlI Rb` Dò I
Av` RjevqYDc`hvMx|

eskie`vi I tivcY

gvP-Gicj (dvêP`PÎ) gvpm 1-2 Kz wekó ivB`Rvg tivcY KiZ nq| fvj fvt Rvg`Zvi Kti 45-50 tm.wg. `tiZ mvi Kti mviZ 20 tm.wg. `hi`hi 5 tm.wg. Mfxi m`y ivB`Rvg tivcY KiZ nq| ivB`Rvg jvMvbi 7-10 `bi g`a` Pviv MRvq|

eR ni

tn±i ciZ cvq 800-1000 tKIR ivB`Rvgi ctqRb nq|

RvZ

evsvv`k Av`vi tKvb gy`vqZ RvZ tbB| KIKiv mvaviYZ vbxq RvZ Pvl Kti| Zte bxjdvgix tRjvi vbxq RvZUi mvg i`qQ|

mvi ctqM

fvtjv djb tctZ n`j vbtPi mviY Abvq mvi ctqM KiZ nte|

mvi	tgvU cwigvY	Rvg`Zvi mgq t`q	tkl PvlI cieZx cwiPhv`nmvte t`q		
			1g`K`	2q`K`	3q`K`
			ivB`Rvg entbi 50`b ci	c_g`K`i 90`b ci	ivB`Rvg tivcYi 120`b ci
Remvi	10 Ub	me	-	-	-
U Gm`c	180 tKIR	me	-	-	-
BDiqv	220 tKIR	-	110	55	55
Gg`c	200 tKIR	100	-	50	50

ciZ`K`i mvi ctqvMi cte ciZevi Rvgi AvMvQv cwi`vi Kti mvi gvSLv`b mvi ctqvM KiZ nte| mvi`gkZ SzSzv gwU``q`gvo ev`iR teta`Z nte|

Av`v RjvexZv mn` KiZ
cv#i bv| tmP c#qv#Mi 2/3
NÈv ci tm#Pi bvjv Ljy
AvZi³ cwb tei K#i
v`Z n#e|.

AšeZxKvjxb cwiPhv

gvP-Gicj gv#m Av`vi Pviv MRv#bvi ci e#ó n#j tm#Pi c#qvRb nq bv| gwiUi Ae<sup>-</sup>v tf#`
 15 v`b Aši Aši tmP c#qvRb| hLb gwiUi im kZKiv 50 fVM gvV ¶lgZvi (Field
 capacity) v#bP hvq ZLb tmP v`Z n#e| tm#Pi Afv#e Av`vi djb Kg#Z v#K| Av`v
 RjvexZv mn` KiZ cv#i bv| tmP c#qv#Mi 2/3 NÈv ci tm#Pi bvjv Ljy AvZi³ cwb tei
 K#i v`Z n#e| ZvQvov Rlg memgq AvMvQvg# I gwiU SzSzi ivL#Z n#e|

tiVMejvB I tcvKivKo`gb

tiVMejvB#qi g#a` Av`vi KvÛ ev ivB#Rvg cPv tivM, cvZvi`vM tivMB cavb| cPv tivM Øviv
 MvQ Avµvš n#j, Mv#Qi cvZvi AvMv nj#` n#q hvq| G tivM Av# Av# gwiUi v#Z#i
 Av`vq AvµgY K#i| d#j Av`v c#P hvq I MvQ gi#Z v#K| ZvB GwiU Av`vi GKwiU gviK
 tivM| v#Pzm`v#Z I AmgZj Rlg#Z Pvl Ki#j G tivM e`cKfv#e v#vi jvf K#iZ
 cv#i| G tivM Gov#Z n#j m# mej I v#tivM exR e`envi Ki#Z n#e Ges Dch# Rlg#Z
 Av`vi Pvl Ki#Z n#e| c#qvRb#e#i tivc#Yi c#e Av`v exR QivK bvkK I l# v`#q tkvab
 K#i v#Z n#e| 1 Mvg v#fUv#f · 1 v#jUvi cwb#Z v#gk#q e`envi Kiv hvq| cvZv`vM tiv#Mi
 AvµgY n#j Wvq#_b Gg-45 bvgK (20 Mvg/vjUvi cwb#Z) e`envi Ki#j G tivM`gb Kiv
 m#e| Av`v Mv#Q KvÛ tQ`K tcvKv, cvZv tgvov#b tcvKvi AvµgY n#j tgjv_qb ev
 WvB#gµb KxUbvkK (cvZ 50 Mvg 500 v#jUvi cwb#Z v#gk#q) e`envi Ki#j fvj dj cvlqv
 hvq|

Av`vi cPv tivM, cvZvi`vM
tivM Ges KvÛ tQ`K tcvKv
Av`vi cavb kî#|

dmj msMn I djb

jvMv#bvi 9-10 gvm ci v#m#i-Rvbgvix gv#m Av`v msMn Kiv nq| Mv#Qi cvq me Ask
 iKv#j, Av`v tZvjvi Dc#hvMx nq| Av`v tZvjvi mgq tLqvj ivL#Z n#e thb Av`v tK#U bv
 hvq| Dch# gwiU I AvenvIqvq mgqgZ cwiPhv Ki#j tn#i cvZ Av`vi djb 20-30 Ub
 n#Z cv#i|

e`envi

mvaviYZ Av`v#K gmjv vnt#e e`envi Kiv n#q v#K| g#Li i#P ex I e`nRg tiv#a Av`v
 i#K#q v#Pv#q LvIqv nq| Lv` v#k#i, cvbxq c`v#Z#Z, AvPvi vnt#e Av`v e`eüZ nq| Av`v
 t#K v#Rbvi K`vÛ, v#móvjvBRW v#Rbvi (Av`v tK#U v#Pvbi c#jc t`q), g`, cii l#
 BZ`v` ^Z#i nq| GQvov Av`vi ^Zj (Ginger oil) t#K I v#j I#i v#Rb v#btmiY Kiv nq| l#
 I m#vÛ ^Z#i#Z e`eüZ nq|

nj#i Pvlv`

nj# (Curcuma longa) v#RvRev#imx c#ievif# GKwiU Rbvcq gmjv| nj#i Drcv#
 B#`vPx I v`¶Y ckvš Øx#c| fviZ m#ú#K m#ev#P nj# Drcv`bKvix t`k| evsjv#`k
 16190 tn#i Rlg#Z nj#i Drcv`b m#ú#K 42000 tg. Ub|

Rjevqy gwiU

nj# Dò, AeDò I Av` Rjevqy Dc#hvMx dmj| Qvqv, AvavQvqv, e#ócvZ mgx I cvnvov
 AÂ#j nj# fv#jv R#š#| ewIK 100-200 tm.vg. e#ócvZ nj# P#li Rb` Dc#hvMx| me
 ai#bi t`vAvk I SzSzi gwiU#Z nj# Rš#v#Z cv#i|

mvaviYZ 1-2 K# v#kó
ivB#Rvg, nj# Pvl e`eüZ
nq|

eskie⁻vi I tivcY

mvaviYZ 1-2 K~~me~~ ~~we~~kó ivB†Rvg, njy Pvl e'eüZ nq| gvP-Gicj (dvêp-^PÎ) gvm ivB†Rvg tivc†Yi Dchy mgq| fv†jvfv†e Rvg ^Zi i ci, 30-45 tm.ig. `†Z mvi K†i, mvi†Z 10-30 tm.ig. `†i `†i 5-7 tm.ig. Mfx†i m̄ ivB†Rvg jvMv†Z nq| ivB†Rvg jvMv†bvi Pvi mBvn c†iB gviUi Dc†i cvZv †ei n†Z _v†K|

eR nvi

†n±i ciZ cvq 1500 †K†R ivB†Rv†gi c†q†Rb nq|

RvZ

eisjv†`k eZgv†b `†v gy³ vqZ RvZ (Wg jv I m>`y) i†q†Q| G `†U RvZ eisjv†`k K†L. M†eIYv Bb†óUDU KZK D™weZ n†q†Q| ZivQov KIKiv †KQy vbxq RvZ e'envi K†i, thgb t nviY †cjv, cvUvB BZ`v`|

mvi c†qvM I AšeZxKvjxb c†iPhv

gviU†Z im K†g †M†j mgqgZ †mP †`Iqv c†q†Rb| njy† i †††Î A†Z e†ó†i mgq hv†Z Mv†Qi †Mvovq c†vb bv R†g †mRb` `z bv jv †K†U c†vb †b†v†k†bi e'e⁻ v K†i†Z n†e|
fv†jv djb †c†Z n†j †b†Pi mviY Ab†vqx mvi c†qvM K†i†Z n†e|

mvi	†gvU c†igvY	Rvg ^Zi i mgq †`q	†kl Pvl†i cieZx c†iPhv †nmv†e †`q		
			1g †K† ⁻	2q †K† ⁻	3q †K† ⁻
			ivB†Rvg ec†bi 50-60 †b ci	c_g †K† ⁻ i 50-60 †b ci	†ØZxq †K† ⁻ i 50- 60 †b ci
†Remvi	10 Ub	me	-	-	-
†U Gm †c	180 †K†R	me	-	-	-
BD†iqv	220 †K†R	-	110	55	55
Gg †c	200 †K†R	100	-	50	50

mvi mvi i gvSLv†b c†qvM K†i †Kv`vj †`†q K†c†q AvMvQv c†i†v†i K†i gviU SzSzv K†i †`†Z nq| D<sup>3</sup> SzSzv gviU mvi i Dci 15-20 tm. ig. D†K†i teta †`†Z nq|

†ivMeivjB I †cvKvgKo `gb

njy† i †iv†Mi AvμgY A†c††vKZ.Kg| D†jL†hvM` †iv†Mi g†a` †jd eP, †jd †úU, ivB†Rvg iU (KvÔ cPv) BZ`v` †ivM †`Lv †h†Z cv†i| Gme †ivM `gb K†i†Z n†j Wq†_b Gg-45 (20 Mvg 10 †jUvi c†vb†Z) bvgK Q†vK b†kK I†g c†qvM K†i†j fv†j djb cv†qv hvq| GKB R†g†Z c†Z eQi njy I Av`v dmj Pvl Kiv D†PZ bq| †cvKvgK†oi g†a` njy† i KvÔ-†Q`K †cvKv, cvZv-†gvov†bv †cvKv, †\_cm BZ`v` i AvμgY n†Z cv†i| Gme †cvKv `g†bi Rb` g†vjv_†qb bvgK K†Uv†kK e'envi K†i†j m†j cv†qv hvq|

dmj msMn I djb

Avqv†` i †`†k mvaviYZ tivc†Yi 9-10 gv†m njy msMn Kiv nq| Mv†Qi KvÔ †vK†q †M†j njy msMn K†i†Z nq| msMn Kivi mgq †Lqv† ivL†Z n†e thb †K†U bv hvq|

njy† i Ab`Zg cavb †ivM
n†jv ivB†Rvg iU ev KvÔ
c†i†ivM|

evsjv`k njy`i Mo Drcv`b 7.5-10 Ub/tnti | evsjv`k KIL.M#eIYv BbóUDU KZK
gyvqZ Wgqv I m>`y RvZ `yvi djb 25-30 Ub/tnt | 100 tKR Kib njy t_K 20-
25 tKR iKbv njy cvlqv hvq |

e`envi

njy KviKDgb_vKvi Rb` njt` is ntq_vK | Avgv`i t`k njy mvaiz gmjv ntmte
e`eüZ nq | ZvQvov efb mvgRK Abv`b thgb e`qi if Abv`b, cRv-cveY njy
e`envi ntq\_vK | njy cmvabx I I l`k í, Lv` k í Ges mÜ c`Z e`eüZ nq |



migg

- Dò I Av` Avenv lqv Ges t`vAv I SzSzi gvUz Av`v fvj Ršš |
- Av`v Pv`Ii Rb` gvP-Gicj gv`m 1-2 Kzo eikó ivB`Rvg tivcY KiZ nq |
- mvaiz tivcYi 9-10 gvm ci Av`v msMn Kiv nq |
- tnti cvZ Av`vi djb 20-30 Ub ntZ cv`i |
- Dò, AeDò I Av` Rjevqnjy Pv`Ii Dc`hvMx |
- njy Pv`Ii Rb` 1-2 Kzo eikó ivB`Rvg gvP-Gicj gv`m tivcY KiZ nq |
- mvaiz ticYi 9-10 gvm ci njy msMn Kiv nq |
- evsjv`k njy`i Mo djb 7.5-10 Ub/tnti |
- 100 tKR Kib njy t_K 20-25 tKR iKbv njy cvlqv hvq |



cvtWĖi gj'vqb 8.4

1. mZ' n+j Ōmō Ges ig_`v n+j Ōvgō ||jLb|

K. ejsjv`k Av`vi A+bK RvZ Av+Q|

L. cvUbvB njy`i GK||U`vbxq RvZ|

2. ĩb'vb c+Y Ki|

K. Gi gva`tg Av`vi esk ||e`vi Kiv nq|

L. njy` ..... \_vKvi Rb` nj+` is nq|

3. mVK DĖi i c+k ||UK ||Py (√) ||`b|

K. jvMv+bvi KZ gvm ci Av`v msMn Kiv nq?

1. 9-10 gvm

2. 6-7 gvm

3. 11-12 gvm

4. 4-5 gvm

L. 100 †K||R KvD njy`†K mva+iYZ KZ †K||R iK+bv njy`cvlqv hqv?

1. 30-35 †K||R

2. 20-25 †K||R

3. 40-45 †K||R

4. 50-55 †K||R

4. GK K_vq ei ei+k' DĖi ||`b|

K. †n±i c||Z KZ †K||R Av`vi exR c+qvRb?

L. imybi`pU gy`vqZ Rv+Zi bvg ||jLb|



cV 8.5 †MvjgwiP I `viPibi ciμqvRiZKiY

GB cV †k†I Avcib

- †MvjgwiPi ciμqvRiZKiY mǎú†K ej†Z cvi†eb|
- `viPibi ciμqvRiZKiY e`vL`v Ki†Z cvi†eb|



†MvjgwiPi ciμqvRiZKiY

†MvjgwiP Kvjv Ges mv`v GB `B i†c evRviRvZ Kiv n†q _v†K|

Kv†jv †MvjgwiP (Black Pepper)

cwi° dj, "Q msMn Kivi ci 3-4 w`b tiv†` ivL†Z nq| iKbv dj, "Q mgr nVZØviv bvoPov Ki†j dj Qov t_†K Avjv`v n†q hvq| A†bK mgq dmj msMn Kivi ci 2 t\_†K 3 wqwbU cwib†Z d††j fvj ØDrcv`KØ cvlqv hvq| ciZ 100 †KvR UvUKv dj t_†K cvq 30-40 †KvR Kv†jv †MvjgwiP cvlqv hvq|

mv`v †MvjgwiP (White Pepper)

dj, "Q msMn Kivi ci dj Avjv`v K†i w†Rv e`vq Pjgwb cwib†Z ivL†j Dc†ii ZK c†P hvq, ZLb cv w`†q Nm†j w†Z†ii mv`v exR Avjv`v nq| iKv†bvi ci Bnv cvDWi w†m†e ev Av` w†m†e e`envi Kiv hvq| fv†jv White Pepper t†c†Z n†j GKUZ`wi†Z A_vr dj c†v jv† n†j dmj msMn Kiv fv†jv| ciZ 100 †KvR dj t_†K cvq 25-30 †KvR White Pepper Drcb nq|

`viPibi ciμqvRiZKiY

tivc†Yi 2 ermi ci Kv†Ui cvq 6-7 BvÂ Dc†ii Ask t†K†U w`†q gwU Øviv †X†K w`†j A†bK, wj bZb m†y tei nq| Bnvi g†a` m†aviYZ 4-6Uv ivLv fv†jv| Kv†Ui GB evKjB `viPibi e`envi Ask| msMpxZ Kv†U ZvRv \_vK†ZB Gi evKj Avjv`v K†i iKv†bvi nq| c_g dmj msMn Kiv nq 6-10 d†† j†v Ges 1/2-2 e`v†mi m†y j†v j†v†f†e t†K†U e`v†Mi w†Zi ti†L dvi†gb†Ukb K†i Bnv m†y t_†K Avjv`v Kiv nq| me†P†q fv†jv PviPib cvlqv hvq GKUv m†y gi gvSigvS Ask t\_†K| evKj iKv†bvi mgq w†Z†ii w`†K †PisMvi AvKvi nq, G†K Quill e†j| GB Ae`vq `viPib evRviRvZ Kiv nq|



migg

- †MvjgwiP Black Ges White Pepper GB `B i†c evRviRvZ Kiv n†q _v†K|
- ciZ 100 †KvR UvUKv dj t_†K cvq 30-40 †KvR Black Pepper cvlqv hvq|
- ciZ 100 †KvR dj t_†K cvq 25-30 †KvR White Pepper Drcb nq|
- `viPib Quill Ae`vq evRviRvZ Kiv nq|



cvtWĖi gj`vqb 8.5

1. mZ' n+j Ômô Ges ig_`v n+j Ôvgô jLb|

K. Kv+jv tMvjgwiP msMn Kivi ci 7`b tlv` ivL+z nq|

L. `viPib tK+U iK+q Zvi evKj Avjv`v Kiv nq|

2. ĩb`vb cY Ki:b|

K. tMvj gwiP ----- I ----- i+c evRvRvZ Kiv nq|

L. cZ 100 tK+R dj t_K cvq ----- tK+R ---- Drcb nq|

3. mVK DĖi i c+k UK Pý (√) `v I |

K. `viPibi evKv evKj+K Kx ejv nq?

1. Quil

2. White Pepper

3. Black Pepper

4. Dc+i i GKUI bv|

L. Kv+jv tMvjgwiP KZY cwb+z f+R+q ivL+z nq?

1. 1-5 gwbU

2. 2-5 gwbU

3. 2-3 gwbU

4. 3-4 gwbU

4. GK K_vq ev evK' DĖi w`b|

K. fv+jv `viPib cvlqv hvq mbi tKvb Ask t_K?

L. evR+i th `viPib cvlqv hvq Zvi bvg Kx?



Povš gŕvqb— BDwbU 8

mswTβ / iPbvgtK ck

1. *gmjvi A_#bWZK I †fIR , i#z eYbv Ki#b|*
2. *†cqWR, im**b**, Av`v I njy`i e`envi WjL**b**|*
3. *im**b**i RjevqyI gWU m`ú†K eYbv `b|*
4. *Av`v I njy`i †cvKvgKo m`ú†K WjL**b**|*
5. *Av`v I njy`i Rv†Zi bvg WjL**b**|*
6. *†Mvj gwi†Pi esk W e`vi I †ivcY cbvjx WjL**b**|*
7. *†MvjgwiP Kxfv†e cWmqvRvZ Kiv nq?*
8. *`viW**P**ibi cWmqvRvZ cWmqv eYbv Ki#b|*



DĖigvį— BDwbU 8

CV 8.1

1. $K(\|g)$ $L.(m)$ 2. $K(\uparrow n \| Kg \| K \| e \| v R x)$ $L.(A v \backslash v)$
 3. $K(3)$ $L.(1)$ 4. $K(\uparrow M v j g \| i P)$ $L.(n j \backslash y)$

cyV 8.2

- 1.** $K(\parallel g)$ $L(m)$ **2.** $K(35,000)$ $L(Rb\parallel cq)$
3. $K(3)$ $L(1)$ **4.** $K(\textit{RŠvcj})$ $L(Kvj\parallel R\textit{iv}, a\sharp b, \dagger q\check{\textit{v}}\parallel i)$

civ 8.3

1. K. (lg) L. (m) 2. K. (6-8) L. (, llU)
3. K (3) L. (2) 4. K. (msllkó cW `óe")

cV 8.4

- 1.** $K(\parallel g)$ $L.(m)$ **2.** $K.(ivB\ddagger Rvg)$ $L.(Kvi\parallel KDngb)$
3. $K.(1)$ $L.(2)$ **4.** $K.(800-100\ddagger K\parallel R)$ $L.(\parallel Wg\,j\,v\,I\,\parallel m\ddot{\smash{.}}\,y\grave{\smash{.}})$

CV 8.5

- 1.** K. (lg) L. (lg) **2.** K. ($Kv\sharp j\vee, mv\`v$) L. (25-30)
3. K. (1) L. (3) **4.** K. ($qvSiqv\parallel S$) L. (Quil)

Z_ "mĥ

Rvgvb, Gm.Gg.GBP. 1992| tmtPi gva`tg dmj Drcv`b g`vbqj| Kll.m`úmviY
Awa`Bi| Lvgvieox, XvKv|

fjvij, Avi.Gj, Gm.Gm. mvgmWwivg I Gg.Gj. Plav| 1993| meiR eMvb
wb`kKv| GfAviWim, ZvBic, 10099|

kidzb, G.Gd.Gg. I tgv: Av: mmiK| 1985| meiR eÁvb| nQbv AvKZvi eDlU,
AvevmK GjvKv, ev.K.e., gqgbmsn|

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