

""B{Vhng AÜ¶mZngRMr A{^Zd
nÜXV...AÜ¶mZ à^mnr¶m
VtoZnñ' H\$ Aä¶ng''

{Q; H\$ ' hman; > {dÜmrR; ¶m {dÜmrMñnVr (B{Vhng) nXdrA¶m
nyugR; gnKa Hbomg¶nZ à~ÿ

g¶nYH\$
~mgogr' m' YH\$

' mXeR\$
S;ñ I ÜXmH¶nDH\$

B{Vhng {d^m
{Q; H\$ ' hman; > {dÜmrR; nto

Oÿ 2011

à{VkmĪ

'r ~nogo gr'm 'Ym\$ā Ago à{VkmĪ gnKa H\$aVo H\$, {0i H\$ 'hnamī>
{dŪmrRāVZ B{Vhmg AŪqmmZngnRāMr A{^Zd nŪXV... AŪqmmZ à^ndnŪm
VibZnĒ' H\$ Aäqmg'' qm {dfqmdarb gēnYZ SāI ŪXm HŪ^ndH\$a qm qm
'mŪeZml nbr nŪqHōboAnho

nrEM.Sx. (B{Vhmg) nXdr àmā H\$aĒqmh\$aVm hm gēnYZ à-ŷ {0i H\$
'hnamī> {dŪmrRāg g{dZq gnKa H\$aĒqmm qm Anho hm gēnYZ à-ŷ 'r
ñdāqĒZnZonŪqHōboAnho CnbāY 'm{hVr gĒq Agy Vr AŪqndV Anhod
qm qm Ēqmm{RāH\$Ur gX^qXbboAnhV Ago' r à{VkmqP\$ Z' ŷ H\$aVo

gēnYH\$

ñWi ... nŪo

{XZnĪ\$ -29/6/2011

~nagogr'm'Ym\$ā

à' nUnI

à' m(UV H\$aÉ¶mV ¶¶o H\$, ~ngo gr' m ' Ym\$a ¶¶r {0: H\$ ' hrami>
{dÚmrR&VZ "B{Vhng AU¶mZngri&Mr A{^Zd nUXV... AU¶mZ à^nd¶¶m
VbZñ' H\$ Aä¶ng' ¶m {df¶ndarb gënYZ ' nÂ¶m ' mJëZml nbr nJ©H\$bo
Anho

nrEM?S&. (B{Vhng) nXdr àmä H\$aÉ¶mH\$aVm hm gënYZ à~Y {0: H\$
' hrami> {dÚmrR&g gnXa H\$aÉ¶mV ¶¶ Anho àñVW gënYZ gënYH\$Z
ñdà¶ÉZmZonJ©H\$bo Anho CnbäY ' ¶hVr gÉ¶ AgZ Vr AU¶ndV Anho d
¶¶¶ É¶m {R&¶Ur g&^¶XbboAnhV.

' mJëR\$

ñWi ..= nWlo
{XZr¶\$29/6/2011

S&¶ I UXmH¶¶nDH\$
{0: H\$ ' hrami>{dÚmrR> nWlo

F\$U{ZX}e

ànVW gēnYZ Ahdnb nJ^oHsarV AgVmZm àĒĴj d AàĒĴj AZbH\$M^o
'mĴeZ bm^bo gdāW' gēnYZnMo 'mĴeP\$ Sāi I ŪXm HĴ^nOH\$ā ĴnZr
gēnYZny/ugnR\$ dō mlō r AZ' nbo d AMH\$ 'mĴeZ HĴbo ĒĴm-Ōb gēnYH\$M
ĒĴnMr AĒĴ\$ F\$Ur Anho

VgM gēnYZ H\$nr mgnR\$ g\$UH\$ H\$ĵ d dnaOo 'mi dnS\$ {dŪnbĴmVrb
{dŪmWu CnbāY H\$ÉZ ghH\$MĴ^oHĴbo Ĵm-Ōb gēnYH\$M ĒĴnMr eVe... F\$Ur Anho
Znr Xolard 'nbnō {dŪm d {H\$M à{VōāZ, nWp gM{bV 'nŪĴ{ H\$ d
Cf' nŪĴ{ H\$ {dŪnbĴ, dnaOo 'mi dnS\$ ĴmVrb ànMnĴ^oI r. TāH\$Uo Or.nr. ĴnZr
gēnYZ H\$nr mgnR\$ gēnYH\$g {dŪnbĴmVrb {dŪmWu CnbāY H\$ÉZ {Xbo d
ĒĴnZr dō mlō r ghH\$MĴ^oHĴbo gēnYH\$M ĒĴnMo' Z..nplP\$ Am^na 'mZVo

Sāi gOrd gnZndUo Sāi anOI r 'Ĵā Sāi anOĴ anOmH\$ā d Sāi {MĪ bd m
anOmH\$ā, àm {^goga, I r. iĴH\$Oe qeXo ĴnZr gēnYZ H\$nr mg dō mlō r ĴnZr
{Xem XĒĴnMoH\$nr HĴbo āhUz ĒĴnMoeVe... Am^na.

Sāi ~na~nbo ga, àm j ragmā, àm JnS} àm naXer, I r. na~V ga,
I r. H\$nehoga ĴnZr gēnYZ H\$nr mgnR\$ HĴbo 'mĴeZ d gX^gMhĒĴ CnbāY
H\$ÉZ {XēĴm-Ōb gēnYH\$M ĒĴnMo' Z..nplP\$ Am^na 'mZVo

hogēnYZ nJ^ohnĒĴngnR\$ dō mlō r ànĒgnhZ XŪmaod 'XV H\$āUmao' mP^o
AnB^o~m~m 'mPm' bJm VOgHĴ^ona, HĴ.ànD^ob, gnĴ gmYZm gnZna VgM ^nD\$ d
कुटूंबातील इतर सर्व सदस्यांचे संशोधिका ऋण व्यक्त करत०

ଠିକ୍‌ସଂକଳନ ଗ୍ରନ୍ଥକ୍ରମ ଅନୁସାରେ ପଢ଼ାଯିବ, ହସ୍ତଗତ ଲିପି ଗ୍ରନ୍ଥକ୍ରମ
ଦ୍ଵାରା, ଯଦି ଗ୍ରନ୍ଥକ୍ରମ ଗ୍ରନ୍ଥକ୍ରମ ଅନୁସାରେ ପଢ଼ାଯିବ ତେବେ ଗ୍ରନ୍ଥକ୍ରମ
ଗ୍ରନ୍ଥକ୍ରମ ଅନୁସାରେ ପଢ଼ାଯିବ ଓ ଗ୍ରନ୍ଥକ୍ରମ ଅନୁସାରେ ପଢ଼ାଯିବ।

ଠିକ୍‌ସଂକଳନ ଗ୍ରନ୍ଥକ୍ରମ ଅନୁସାରେ ପଢ଼ାଯିବ ଓ ଗ୍ରନ୍ଥକ୍ରମ ଅନୁସାରେ
ପଢ଼ାଯିବ।

याखेरीज ज्या ज्ञात व अज्ञात व्यक्तींनी संशोधन कामास हातभार लावला
एकंदर असा.

ଗ୍ରନ୍ଥକ୍ରମ

ନିର୍ଦ୍ଦେଶ :- ନିର୍ଦ୍ଦେଶ
{XZ} :- 29/6/2011

~magogr'm'YH\$

AZH\$ {UH\$m

àH\$U H\$	Vnerb	nø>H\$ n\$
àH\$U-1	àñVmlZm	1 -24
àH\$U-2	g\$YV grñÈ¶ d g\$YZmMmAnTmlm	25-57
àH\$U-3	g\$YZmMr H\$¶ñÜXVr	58-79
àH\$U-4	g\$bv 'ñhVrModJuH\$U, {díbfU d AWZdMZ	80-100
àH\$U-5	gmaré, {ZiH\$© d {e'\$ner	101-114
	gX^gMr	115-120

ՀՏԻՀՏԻՐ ՂԻՔ

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ՀՏԻՀՏԻՐ 3	àմղմնՀՏ d {Z Ղİ V J0>Vrb {dUmi ՂԻՐZm Cİna MnMUrV { ' i mbboJW	86-87
ՀՏԻՀՏԻՐ 4	àմղմնՀՏ d {Z Ղİ V \$ J0>Vrb {dUmi ՂԻՐZm npl© Cİna MnMUrV { ' i nbë Ղմ JUnİ/m Anbd	88
ՀՏԻՀՏԻՐ 5	àմղմնՀՏ d {Z Ղİ V J0>Vrb {dUmi ՂԻՐMo gՏ Ղmemór Ղ {dİbfU	89
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àH\$U n{hbo

àñVmdZm

àH\$U n{hbo

àñVndZm

A.H\$	Vn{eb
1.0	àñVndZm
1.1	gēnVZnMr JaO
1.2	embŋ ñVanda B{VhngnMoñWmZ
1.3	'mZdr OrdZnVrb B{VhngnMoñWmZ
1.4	g\$UH\$ JaO d ' hEd
1.5	g\$UH\$ ghmpaŋV AZKēZ
	1.5.1 g\$UH\$ ghmpaŋV AZKēZnMr d{eî0ç0
	1.5.2 g\$UH\$ ghmpaŋV AZKēZng ghmpaŋ^v g{dYm
	1.5.3 g\$UH\$ ghmpaŋV AZKēZnMoàH\$na
	1.5.4 g\$UH\$ ghmpaŋV AZKēZnMo' \$nŋXo
	1.5.5 g\$UH\$ ghmpaŋV AZKēZnAŋm ' ŋŋRm
1.6	gēnVZnMo' hEd
1.7	gēnVZnMoerfP\$
1.8	gēnVZnMo{dYmZ
1.9	H\$ŋŋŋE H\$ iŋŋŋŋŋ
1.10	gēnVZnMr C{0î0ç0
1.11	JhrVHø
1.12	gēnVZnMr n[aH\$ēnZm
1.13	gēnVZnMr iŋŋar
1.14	gēnVZnMr ' ŋŋRm
1.15	gēnVZnMr n[a' ŋŋRm
1.16	g' nann
	gX^©

àH\$U 1 bo

1.0 àñVndZm..-

B{Vhng àhUOo ^yH\$ni An(U dV©mZH\$ni qmV Mnby AgUmam A\$hrZ g\$tnX Anho.

"g\$ñj© mZdr OrdZnmM ^yH\$ni , dV©mZH\$ni m' UqloOgnAqm Vgm C^m H\$aÉqmMr eakt B{VhngmV Anho ^yH\$ni hnm dV©mZH\$ni nMo 'j AgVno An(U ho 'j OVZ H\$éZ àÉqib\$ qUoneqm {nTfom ÉqmMr Anio I H\$éZ XÉqmMo H\$mq© B{Vhng H\$aVno'²

B{VhngnUmao àÉqib\$ iqfaktbm (bhmZmmgyZ 'nBxm 'mUgnfV) JVH\$brZ, ^yH\$brZ KQZndfqrMr 'mfhVr, ndOng\$Yr {d(dY àH\$naMr 'mfhVr, Ambr An(WP\$, anOH\$q, E{Vhm(gH\$, gm(hpÉqH\$ d gnH\$VH\$ na\$anMr 'mfhVr { ' i dVm qUo B{VhngnAqm 'nUq' mVZ 15 dfmVAVAm 'bnZm Jno:énmZo B{VhngnMm H\$hr ^m {eH\$dyZ 'bnAqm ^ndZnÉ' H\$ {dH\$ngng dnd Xv/m qUo B{VhngnUmaoViqmMr {ZdS>H\$aUoÉqmMm H\$' bndUo {dibfU H\$aUo 'jéqib\$Z H\$aUod eodQ {ZiH\$FqH\$nt>UoAem{d(dY 'mZ{gH\$ eaktMm {dH\$ng hnm/no

AnOÀqm qmV {dUm'qmZm {eH\$dÉqmg m ndV... {eH\$Éqmg g' W©-Z(dUo hM AnOÀqm AUqmZnMoC{Ôi>Agbonm(hOo à{gUX 'mZgemók h~@JmOm qm'qm 'Vo "' mfhVrMo dJuH\$aU An(U nZ@JuH\$aU H\$go H\$ando 'mfhVrMr gÉqgÉqVm H\$er nnaI ndr, 'y nP\$Syz A' y nP\$S@ An(U A' y nP\$Syz 'y nP\$S@ H\$go Ond@ B{Vhng d ÉqmAqm EI mUm Zi qm {XeZo H\$go nhnd@ àhUOM ndV..bnM H\$go {eH\$dnd@ ho Zi qm V\$ knZnda AmYnfaV {ej UmZo iqfaktbm {eH\${dbo nm(hOo dnmndqng Z qUnam VnoA{ej V AgoAnOdaMog' rH\$aU hnm/o qmnrfb H\$ni mV AUqqZ H\$goH\$andohoZ {eH\$obr iqfakt A{ej V RaUma Anho'³

Aä¶mgH\$ nV B{Vhmg {df¶m b m AZ¶¶m YnaU ' hEd Anho gZ 1986 Ä¶m ej {UH\$ YnaUmV g' n{di> H\$be¶m 10 Jm^m^¶ KQ-H\$¶m {dMna H\$aVm E¶mVrb AZb\$ Jm^mKQ-H\$ B{Vhmg {df¶mer g\$-¶YV Anhv. ho B{Vhmg AÜ¶mZmVZ {dÜmi¶m¶ Ü¶¶oq--{dVm ¶¶mV. E¶m¶ i oVa emb¶¶ Aä¶mgH\$ nV B{Vhmg hm {df¶¶ EH\$ ' hEdnMoA¶ -Zbm Anho

• **AZ¶eZ**

{dÜmWu H¶Dr^¶ RbDZ E¶m¶¶m JaOm Ami I ¶ O¶hm C{Öi¶¶Y{ö¶ AÜ¶¶Zm¶ ej {UH\$ gm{hE¶mMo ' ¶¶¶' mZmMo{Z¶mOZ nÜXVera H\$boOmVoE¶m¶ AZ¶eZ ähUVmV.⁶

AÜ¶¶Zm¶¶ Oa AZ¶eZ gm{hE¶mMr CnbäYVm H\$ÉZ {Xbr Va AÜ¶¶Z ho A{YH\$ n[aUm H\$naH\$, {MañWm¶¶r An¶U AnZ¶r hñ¶m¶ ' XV hñ/o AZ¶eZ gm{hE¶m i o Ame¶¶ A{YH\$ ñni> hñ/no An¶U {dÜmi¶mMr EH\$¶¶/m dmi¶¶mZonnR>A{YH\$ H\$ni bj mV anhvno AÜ¶¶Z honnhE¶mZ 83%; Eb\$E¶mZ 11%; dmgmZ 3.5%; ñnenZ 1.5%; MdrZ 1% hñ/ AgVo⁷ ¶mdeZ Ago {gÜX hñ/o H\$ Ní¶ AZ¶eZ gm{hE¶¶ ho {dÜmi¶mMo bj H¶DrH\$aU H\$aE¶m¶¶ {MañWm¶¶r AÜ¶¶Zm¶¶r An¶U AÜ¶¶Zm¶ CÎmOZ XE¶m¶¶r A{YH\$ n[aUm H\$naH\$ RaVo

""People learn more deeply from words and pictures than from words alone" (Richard Mayer)⁸ ¶m -h¶ nÜ¶¶' VEdmdeZhr Agobj nV ¶¶VoH\$, {dÜmWu hmeäX An¶U {Mì¶deZ OmñV gI nbnUoAÜ¶¶Z H\$aVm

AnOMo{dÜmWu hoX¶XeZ, pihs¶Am¶ g¶UH\$, BQaZQ>¶m Ní¶ gmYZn¶¶m à^ndml nbr AgVmV. ^¶H\$ni nV dmae¶m OmUñ¶m nna¶m[aH\$ nÜXVrMm Cn¶¶¶ H\$ÉZ {dÜmi¶mMr Ní¶ gmYZmVrb AndS>AmU X¶ H\$é eH\$V Znrh. emi ¶ kmZmMr Ani I H\$ÉZ XE¶m¶¶ ' m¶An¶U g' nOmV kmZ { ' i {dE¶m¶¶ ' m¶¶m¶ Ü¶¶o

I n ' \$aH\$ nSbmAnho XZ\$XZ OrdZnV V\$ kmZnVrb XpXeZ d g\$UH\$mM dma
dmTë\$mqZo {dUmWu OnnVrV OnnV kmZ ho È\$nmUmaM { ' i {dVno An(U ahUz
g\$UH\$mA\$mqmgnhmqmZoAÜ\$mqZ H\$aUoJaOModnQ>Vo

- **g\$UH\$mgnhmqmV AZKeZ (Computer Assisted Instruction-CAI)**

CAI is the systematic presentation of instruction by computer. It is characterized by testing, diagnostic learning, prescription & through record keeping - Burke [1982].⁹

"g\$UH\$mA\$mqm AZKeZ ànVWrH\$aU H\$aÈ\$mqm H\$mqmV\$ nbm g\$UH\$m
gnhmqmV AZKeZ ahUVnV."¹⁰

- **H\$ mqdV AÜ\$mqZnM\$aVmg\$UH\$m**

' n(hVr V\$ kmZnA\$mqm à^ndm v o{ej UnMoénm/a "B© EÁmqmZeZ' ' Ü\$mo
hmDSZ Oümqm AÜ\$mqmZ nuXVr, ^{d\$mqm H\$nb-mø RaUma Anhv. AÜ\$mqmZmgmR\$,
àaUm Xlq AÜ\$mqmZnMr AndS> {Z' nØ H\$aUq AÜ\$mqmZ gwe AgVmZm H\$be\$mqm
H\$mqm nMr Èd[aV VnmgUr H\$ÉZ {ZU\$ Xlq BÈ\$mqmR Jim\$ g\$UH\$m v oghO e³mq
hmVnV. B©EÁmqmZeZHSa OnÈ\$mqmR\$ g\$UH\$mA\$mqm gnhmqmZo AÜ\$mqmZ H\$aUo
' hÈdmModnQ>Vo

AämqmH\$' mZmgma nR\$H\$' Vmqm H\$bm OnVno d È\$mqm da AnYn[aV
nR\$mqmVH\$ ~Z{dbo OnVo B{VhmgmVrb KQZnZm Mma nby असतात. व्यक्ती,
g' nO, nWi An(U H\$mi, È\$mqm {dMma, AämqmH\$' d nmqmqmZo nR\$H\$' mV
H\$bbmAgVno

CfV' d XOXma Aem MmqmÈ\$mqm OrdZnMr àmar H\$ÉZ KÈ\$mqmR\$ ' mZdmZo
{ej UnMm {dMma H\$bbm Anho {eH\$dUmÈ\$mqm gekt ~Z{dÈ\$mqm H\$mqm {ej U
à{H\$mqmZ Pnbo nm(hOo {ej U à{H\$mqm Oa ' O~V nmqmqm da AnYnabbor d

à^nderbr Agb Va È¶¶¶¶¶¶¶¶¶¶ A{^éMr, d¶¶¶, '¶¶¶¶¶¶¶¶¶¶
g¶¶¶¶¶ -Xb KSZ ¶¶¶¶¶.

{ej U à{H\$¶¶¶¶ {ej H\$¶¶¶¶ {dÚmí¶¶¶¶er {ZÈ¶¶ g\$¶¶¶¶ ¶¶¶¶ AgVno dJm¶¶rb
àÈ¶¶¶¶ {dÚnWu hm gma l m ZgVno àÈ¶¶¶¶¶¶¶¶ H¶¶¶V, j 'Vm, ~¶¶¶XHS nmVi r,
A{^éMr d¶¶¶ r AgVo gdn¶¶¶¶¶ EH\$M AÚ¶¶¶¶Z nÚXVr dnnÉZ MmbV Znr. ¶¶¶
~XbÈ¶¶¶ H\$¶¶¶ mZgma AÚ¶¶¶¶Z nÚXVrV ~Xb H\$ÉZ ZdrZ V¶¶¶¶¶¶¶¶¶ H\$¶¶¶¶¶¶
hdm

{dÚmí¶¶¶¶MoAdYmZ, A{^éMr H\$¶¶¶¶' ahndr Aer {ej H\$¶¶¶¶ Ang m AgVo
{ej H\$¶¶¶¶Z XZ\$XZ AÚ¶¶¶¶Z H\$¶¶¶¶ AgVnZm Oa '¶¶¶¶Vr d V¶¶¶¶¶¶¶¶¶¶ On¶¶>{Xbr
Va AÚ¶¶¶¶ZnMr n[aUm H\$¶¶¶¶¶¶¶¶¶¶. È¶¶¶¶¶¶¶¶¶¶ {dÚmí¶¶¶¶Zm AndS¶¶¶¶¶¶¶¶¶¶
{ej H\$¶¶¶¶ {eH\$¶¶¶¶Zm Am¶¶¶¶ZHS nÚXVrZo '¶¶¶¶Vr d V¶¶¶¶¶¶¶¶¶¶ On¶¶VrV On¶¶V
d¶¶¶ H\$ÉZ {eH\$¶¶¶¶ Va AÚ¶¶¶¶Z à^ndr Va hm¶¶¶¶¶ {ed¶¶¶¶ {dÚmí¶¶¶¶Zm ¶¶¶
{df¶¶¶¶ A{^éMr {Z' m¶¶¶ hm¶¶¶ d È¶¶¶¶¶¶¶¶¶¶ g¶¶¶¶XZ H\$¶¶¶¶¶¶¶¶¶¶ ^a nS¶¶.

{dÚmí¶¶¶¶¶¶¶¶¶¶ g¶¶¶¶XZ H\$¶¶¶¶¶¶¶¶¶¶ d¶¶¶> H\$¶¶¶¶¶¶¶¶¶¶ Agb Va {ej H\$¶¶¶¶Mo
AÚ¶¶¶¶Z ho C{Ôi¶¶¶¶{Ô¶¶ hdo C{Ôi¶¶¶¶¶¶¶¶¶¶> d {ZpíMV Ag¶¶¶¶¶¶¶¶¶¶ hdr. Vg¶¶¶
{dÚmí¶¶¶¶Zm ÑHS-I m¶¶¶¶ ('¶¶¶¶Vr V¶¶¶¶¶¶¶¶¶¶) ¶¶¶ g¶¶¶¶Zn¶¶¶¶ On¶¶VrV On¶¶V d¶¶¶
H\$¶¶¶¶¶¶¶¶¶¶¶¶¶¶¶ {dÚmí¶¶¶¶¶¶¶¶¶¶ ' Zn¶¶¶¶ I ¶¶¶{dU¶¶¶¶ à[¶¶¶ H\$¶¶¶¶¶¶ gDZerbVm
d¶¶¶{dU¶¶¶¶ È¶¶¶¶¶¶¶¶¶¶ j ' V¶¶¶
¶¶¶¶¶¶¶¶¶¶ ghH\$¶¶¶¶¶¶¶¶¶¶ ^ndZm hdr {ej H\$¶¶¶¶¶ ^¶¶¶ H\$¶¶¶ hr ' ¶¶¶¶¶¶¶¶¶¶ hdr {ej H\$ hm
{dÚmí¶¶¶¶Zm àJVrH\$S¶¶ ZU¶¶¶¶ Ag¶¶¶¶¶ {dÚmí¶¶¶¶¶¶¶¶¶¶ i¶¶¶¶¶¶¶¶¶¶' ÈdnMr OnUrd
{ej H\$ng hdr. È¶¶¶¶¶¶¶¶¶¶ ej {UH\$ g¶¶¶¶Zn¶¶¶¶¶¶¶¶¶¶ g' n¶¶¶¶ Cn¶¶¶¶¶ H\$¶¶¶¶¶¶¶¶¶¶ hdm

AnOÀ¶¶¶¶¶¶¶¶¶¶ J{V' nZ OJnV ¶¶¶¶¶ h¶¶¶¶¶¶¶¶¶¶¶¶ i¶¶¶¶¶¶¶¶¶¶¶¶ H¶¶¶
AZ¶¶¶¶¶¶¶¶¶¶ {ej U¶¶¶ Adb\$¶¶¶ anhrJo¶¶¶¶¶¶¶ Znr. ¶¶¶¶¶¶¶¶¶¶¶¶ An¶¶¶¶¶¶¶¶¶¶ {ej U ho
hdm. hogd{ej U AZ¶¶¶¶¶¶¶¶¶¶ Ú¶¶¶

AZiŕd hohb/W...Úndobm/VmV d hV/mndP\$ AZiŕd {ej H\$M XD\$ eH\$VmV. àhUz
AÜŕmZmgR\$ {Za{ZamÜŕm ³bBÉŕmŕ d ej {UH\$ gmYZnŕ JaO AgVo VaM
AÜŕmZ à^ndr hnb/o VoAZiŕd {ZŕmOV dō mV {dÜmŕŕmZm{ ' i VmV. Éŕmŕ ũ o
{dÜmWu {Za{ZamÜŕm {dfŕmV àndrÉŕ d H\$peŕŕ àná H\$éZ KD\$ eH\$Vno
{edmŕ ÉŕmMogŕmXZ H\$peŕŕhr dmtV/o

nmRçnmVH\$ŕ ũ o{ej H\$ŕbm Annéŕm AÜŕŕmZnMo {ZŕmOZ H\$aUo gmŕŕMo
hnb/o Va {dÜmŕŕmZm ñdŕŕ\$ AÜŕŕZ H\$aÉŕmŕ nmRçnmVH\$ŕ ' ŕna ' nR\$ ' XV
hnb/o dJmŕŕo{ej H\$ŕr {eH\$dbéŕm nmRçnmVno Vo nmRçnmVH\$aŕm ghmeŕmZ
nŕhm AÜŕŕZ H\$é eH\$VmV. nmRçnmVH\$aŕm AmYnao{ej H\$ŕbm {ej U à{H\$ŕm
gŕi rVnUo nna nmSÉŕmŕ ' XV hnb/o AWmŕ AÜŕŕZ-AÜŕmZ à{H\$ŕm
nmRçnmVH\$ŕ ũ oŕi rVnUonna nmSvŕmŕ/o

naŕwOŕŕm nnaŕ[aH\$ AÜŕmZ nÜXVr' ũ oAÜŕŕZ-AÜŕmZ à{H\$ŕm
à^ndr hnb/ ZnhrV. AnOÀŕm ' rŕhVr Vŕ kmZnÀŕm gŕUH\$aŕm ŕŕmV An(U
Om{VH\$H\$aUmŕ ũ o OJ ho Odi Anbo Anho Éŕmŕ ũ o OJ j UmYnŕ Nŕiŕj omV
AnéŕmŕnaI o dnŕV/o àhUz ŕm H\$ŕi mV B{Vhŕg hm {dfŕŕ nnaŕ[aH\$ nÜXVrZo
{eH\$deŕmŕ {dÜmŕŕmZmÉŕmŕ kmZnÀŕm H\$ŕ m éŕdeŕmŕ ASMUr ŕŕD\$ eH\$VmV.
VgM ànW{ ' H\$ ñVanda gŕe hnbŕŕm ŕm {dfŕŕmŕ iŕmár nŕŕb Bŕŕmŕ Őŕŕo
ñVanŕ Őŕŕo dmtV OnVo Éŕmŕ ũ o ànW{ ' H\$ AdñWŕm ŕm {dfŕŕmŕ AndS> {Z' nŕ
Préŕmŕ Vno {dfŕŕ nŕŕb H\$ŕi mV Mŕŕbm hnb/no AnOÀŕm ñnYnŕarj nŕŕŕŕŕŕŕm
ŕŕmŕ hm {dfŕŕ AÉŕŕŕ ' hÉdnMm ' nZbm OmVno Hŕŕ na AdñWŕ Oa ŕm {dfŕŕmŕ
ZndS>{Z' nŕ Prŕr Va ÉŕmMm nŕŕb Bŕŕŕmŕ Őŕŕon[aUmŕ hnb/no àhUzH\$ H\$ŕŕŕ
gŭ n[apñWŕV J{UV ŕm {dfŕŕm-ano-aM gmŕ r(OH\$ emó ŕm {dfŕŕmMm ' nŕŕŕ{ ' H\$
ñVandarb (Bŕŕŕm 10 dr ' Yrb) {ZHŕb {Xdg{Xdg I nŕr OnV Anho ŕm
{dfŕŕmV AZiŕmUmMoà' nŕ dmtV MŕbboAnho¹¹

B{Vhng {dfnMo AUqnmZ gUHSnUmo H{e}ng hm {dfn {dUm'qna}m H{ na AdnWV Mn{e}m àH\$ao éO{dbm OnB. gUHSnUmo {dUm'qna}m Yrb AgUe}m {Okng}nrbm dnd XVm qB. E}n{e}m kmZnA}m H\$ m dnt{dE}ng 'XV hnb. AnOA}m qWnV gUHS\$ gnj a AgUo 'hEdnMo 'mZbo OnVo gUHSnUmoNH\$- I m' q gnYznUmo{dUm'qna}m U}oVno{dfn Mn{e}m àH\$aoq~{dVm qD\$ eH\$Vno qmH\$aVm nR{enmVH\$}nrb AgUe}m CfñVar} d ZdrZ gH\$enZm {dUm'qna}m U}oà^ndr àH\$aoéO{de}ng E}nA}m AUqna}Znda d gHmKZnda n[aUm Mn{e}m àH\$aoKSz qVnoH\$m qnmM {dMna hnbJoAndr}qH\$ dnoVo

1.1 gHnYznMr JaO ..-

AnO emi Vrb àE}nH\$ dJnH\$ H\$' rV H\$' r 40 qH\$dm E}ngj nhr OnnV {dUmWu gU}m AgVo Aend{ r {ej H\$}oAUqnmZ {H\$Vrhr à^ndr Rabo Varhr {dUm'qna}mH\$}adq{ktH\$ Xib} hnb/o {dUmWu H\$}DV AUqnmZ hnb/ Znhr, d{ n{d{ r {dUm'qna}mMo dq{ktH\$ 'j' mnZ H\$aVm qW Znhr, E}ngZm àE}m^aUhr XVm qW Znhr. Aer n[apnWVr {dUm'qna}m U}o {Xgz qW hr n[apnWVr Oa ~Xbn}Mr Agb Va H\$}nR KOH\$ {dUm'qna}m AUqna}ZngnR: Xbo d {ej H\$}r E}ngnR: gUHS\$ ghma}V H\$}nR: {dH\$}gV H\$aE}mi arO nq} Znhr.

Oa H\$' r d{ V, ndV.A}m JVrZngna gl nb Aä}ng H\$andqnmM Agb, {dUm'qna}m ndq} j' mnZ H\$an}Mo Agb Va CAI H\$}nR: nA}m ghma}mZoAUqna}Z H\$aUoAÉ}ndr}qH\$ RaVo Aem àH\$naA}m AUqna}ZnZo {dUmWu H\$}DV AUqna}Zhr hnb/o

1.2 enb} nVanda B{VhngnMonWrZ ...-

- १) व्यक्तिगत सर्वांगीण विकास होण्यासाठी
- २) व्यक्तिचे सामाजिक कौशल्य तयार करण्यासाठी
- ३) व्यक्तिच्या शारिरीक व मानसिक आरोगी gH}Y}ngnR:

- 4) i'IdgnMf | 'wXezmgRf
- 5) 'agVrAfm dO Mm gXp'fm H\$EfmgnRf
- 6) व्यक्तिचे जीवनविषयक तत्वज्ञान तयार होण्यासाठी
- 7) ñdV.Àfm g' ñ'fm gn's'dEfmgnRf
- 8) ñdgôj UmgRf
- 9) ami'f {dH\$ng K\$yZ f'f'fmgnRf

"{ej U ahUOo ^nfVH\$ d gmf nf(OH\$ n[apñWVrer g' ag hmf'fmMr H\$omf Aer {ej UnMr i'fm»fm A' {aH\$Z {ej UVk OmZ S;B©'fmgZr Hôbr Anho gmf nf(OH\$ n[apñWVrer g' ag hmf'fm 'fmndo ahUz 'bng'm g' nOmMo knZ {' i nbo nm(hOo An(U g' nOmMo knZ È'fmZm B{VhngmV {' i yeH\$Vo ahUz B{VhngmMm g' mde 'bng'fm Aä'fmgH\$' mV Hôbr nm(hOo "{ej U ahUOo' mZdr gôH\$VrMm d gô'fmMm Radm O'fm {nT\$H\$yZ Zi'fm {nT\$bm {' i Uò Aer {ej UnMr Xgar i'fm»fm Jn\$> \$ Wnf gZ 'fm B\$O VÈddE'fmZo Hôbr Anho B{VhngmMm Aä'fmg H\$arV AgVm 'bng'm nūH\$'i dnmZ H\$ando bmvVo {VVH\$ dnmZ BVa {df'fm'fm Aä'fmgmV Oéa ZgVo 'fm dnmZm w o È'fm/lo 'ZnôDZ hnd\$Z {edmf È'fmZm ~h' wUnmMm bmf hmf/no n'f'f' An'fm'fmV AZb\$ dO r È'fm ~h' wUnmMm Cn'fm È'fmZm H\$avm 'fmVno BV³'fm dnmZm w o bnf\$'fm AnMaUn'fm 'ZZm w o' bng'fm 'ZnV H\$hr Ü'f'f'dnX CÈnB hnd\$ eH\$Vno "Wna n'ef'fmMr M[aio ahUOo B{Vhngm'fm AnH\$nenVrb Zj io An(U È'fm'fm VOmZo {dUm'fmZm ñ' \$Vu {' i yz ñdV.Àfm An'fm'fmMoH\$hr CXmfm Ü'f'f' Radndogodno>Vo

1.3 'mZdr OrdZmVrb B{VhngmMmWmZ ...

B{Vhngm'fm Aä'fmgmZo 'bng' Ü'f'f' ñdXem-ôb AmmboUnMr ^mdZm CÈnB hmf/o Á'fmWna Ór-n'ef'fmgZr Ann'fmXemV 'nR> nR\$ H\$mf {Jar Hôbr È'fm'fm-ôb

नमो भगवते वासुदेवाय
नमो भगवते वासुदेवाय
नमो भगवते वासुदेवाय

B{VhngnAqim AaqimgmZo ' tonq Uqlo Zm[aH\$EdmMr OnUrd {Z' nE hno d
g' nOmVrb Annbr H\$Vqlo EeqmZm H\$ i VmV. EeqmM N{i-H\$nz {dH\$grV hno
g' nO~ny dng Ob ghmZwYr dnoVod EeqimgmR: Eeqm H\$aEeqmMr CXna ~UXr Eeqm
' ZnM CEnP hno "AnnUhr g' nOmgmR: H\$hrVar H\$bonm(hOo Aer H\$VkvMr
^ndZm Eeqm ' ZnM {Z' nE hndSZ AnnU H\$hr g' nOgdm H\$andr' Ago ' tonZm
dnOy bmlVo B{VhngnAqim AaqimgmZo ' tonZm O~m-XnarMr OnUrd hno ' tonZm
{d(dY XenVrb bmlMr ' m(hVr { ' i Vo ' mZdr àJVrg\$YrMm hm ~ny ' tonZm
EeqmXZ\$XZ OrdZmV ' \$na Cnqmr nS\$vo

{dkmZ विषयाचे महत्व लक्षात घेऊन अभ्यासक्रमात विज्ञान विषय सकृतीचा
H\$bonmAnho {dkmZ AUqmmZmV {ej H\$nbmAZH\$ ASMUr OnUdVnV.

CXmaUnV@-

- 1) {^P ~mUXH\$ nmV i rMo{dUmVv EH\$M dJm AgVmZm àEeqmH\$Aqim ~mUXH\$
j ' VnMm{dMna H\$aUoAdKS>OmVo
- 2) 70 Vo 80 {dUmVv g\$eqm {Zq\$V H\$aUo Z' wZm Xml {dUo àeqm
Xml {dUoBEeqmXr H\$R\$U ~ZVo
- 3) Ra{dbbmAaqimgH\$' dE Aqim AnYr nUqH\$andm bmlVnoEeqm i oAUqmmZmV
dE Mo ~\$Z nmi ndo bmlVo d BÀN\$ AgZhr EI nUm {dfeqm g\$^nE A{YH\$
' m(hVr dJm g\$Vm qm Znhr.

AUqmqZ H\$aV AgVmZm {dUmVnOm OnUdUraqim ASMUr nUrb à' nJo
g\$VmVrb ..-

- 1) {dUmVnZm {dfeqmAnH\$bZ Z PnEeqm i o{dfeqmMm nmqim H\$fm anH\$Vno

2) न[ा^न[फH\$ eāXnMoAW©Z g' Oēqmr i o{dfqnmMoAnH\$obZ hnw/ Znhr VgM Vm{dfq AndSv Znhr.

3) {dfqnmMoAÜqnmZ hnw/ AgVnZmAZb\$ Jnib AZw dVm qm Znhr. न[ाUm r विद्यार्थ्यांच्या संकल्पना स्पष्ट न झाल्यामुळे तो विषय फक्त पाठांतराचा बनतो.

• **AÜqmqZ-AÜqnmZnqmgÜpñVrdéZ H\$hr Jnib Armēqmq{ZXeZng qmVnV ÈqmnTxba' nJo..**

- 1) शिक्षकास विद्यार्थ्यांकडे वैयक्तिक लक्ष पुरविणे अवघड जाते.
- 2) {dÜmi'qnmZm ñdV.Àqmq JVrZo {eH\$dÈqnmMr g\$yr {' i V Znhr. àÈqmb\$ {dÜmi'qmq dJnqmq ~am aM OndobmVo
- 3) dJ©AÜqmqZm XaâqmqZ {dÜmWu {ZpñH\$mq anHÈqnmMr e³qmqAgVo
- 4) {dÜmi'qnmZm AÜqmqndV ' n[hVr nādVm qm Znhr H\$naU dJnqmqZ H\$aÈqmqg dñ AnamnsVno
- 5) {dÜmi'qnmZm ñdV{AÜqmqZmg H\$' r dñ {' i Vno

1.4 g\$UH\$JaO d 'hEd ..-

संगणक आधुनिक काळाची गरज बनलेला आहे. आज क्वचितच असे क्षेत्र gmnSob H\$ Owo g\$UH\$mMm drama Hbom OnV Znhr. Xz\$XZ OrdZm/rb Èqmqmq ~h[nqmqmVVo i o g\$UH\$ à{ej U hm EH\$ AndiqmH\$ ^m ~Zbm Anho ' n[hVrMr gnRdU H\$aÈqmqmMr àM\$> j ' Vm g\$UH\$mV Anho {d{dY àH\$naMr d ñdénmMr ' n[hVr XO)na nÜXVrZo g\$UVnH\$ gnR{dbr OnVo g\$UH\$ EH\$m ' n[hVrMo Ag\$mq nÜXVrZodJuH\$aU H\$é eH\$Vno g\$UH\$ VnH\$P\$ d J{UVr à{H\$mqm àM\$> dolmZoh\$é eH\$Vno

H\$nr nMm dol, AMH\$Vm d ÈqmqmZ hnwmar dñ Mr ~MV qm i o g\$UH\$mZo Xp\$ZnmngZ Vo H\$naI n[qqmqV - H\$mqmqmqmqV gdl j ð nV àde Hbom Anho

{ej U j ð nVhr àde Hðbm Anho {ej U j ð nVhr g\$UH\$ ' hEdnMr ^f' H\$m
~OmdyeH\$Vno {eH\$EdE\$VmVbm VnM VnMnUm g\$UH\$m i oH\$' r H\$aVm Vmno

A' v' g\$enZm A{YH\$ Mn\$E\$Vm àH\$aoñni>H\$aVm Vmno. AU\$mdV knZ
XVm VmnoahUz {ej Uj ð nV g\$UH\$ H\$ni nMr JaO ~Zbm Anho

1.5 g\$UH\$ ghpa\$V AZKeZ ..-

n[aUm H\$naH\$ [aVrZo AU\$mmZ KS\$z AnUE\$mgR\$ AU\$mmZnM {d{dYVm
AnJUo' hEdnMoAgVo E\$mgR\$ EH\$ CEH\$>gmYZ ahUOog\$UH\$ hnd].

g\$UH\$ AU\$mmZnM àE\$z qH\$dm AàE\$z nUo dmaVm Vmno Oðhm Vno
àE\$z nUo AZKeZ H\$aVmZm dmaVm Vohm E\$mg g\$UH\$ ghpa\$V AZKeZ
ahUVno AZKeZ ahUOo Anj V AU\$mmZ KS\$z AnJUo AU\$mmZ hnd].
g\$UH\$ àE\$z AZKeZ àñVrH\$aUm U\$jo ' XV H\$aVno Vm E\$ma\$Vm H\$mV\$ nbm
g\$UH\$ ghpa\$V AZKeZ ahUVm.

1.5.1 g\$UH\$ ghpa\$V AZKeZmr d{eio\$..-

- 1) AZKeZ V\$ hog\$UH\$ d AU\$mmZH\$Vm\$Vm\$rb AnVa{H\$da Adb\$z
AgVod ' nZdr AU\$mmZ hoE\$moC{O'i>Anho
- 2) Vm àH\$na\$Vm AZKeZ V\$ nV g\$UH\$ àE\$z {dUm\$Vm\$ ' n{hVr Xvno
- 3) विद्यार्थ्याला स्वतः व्यक्तीगत रित्या स्वतःच्या वेगाने अध्ययन करता यावे
Aer g\$UH\$mV gm\$ AgVo
- 4) knZ nmVi rdarb C{Oio\$ gm\$ H\$aE\$mgR\$ VmM Cn\$ hndno
{dUm\$Vm\$ à{VgnX Vm-S\$no- { i V AgE\$ i o\$ Nt\$H\$aU hndno
- 5) à^ndr {ej H\$m\$ O\$mB\$ Agb E\$ {R\$Ur ho V\$ knZ dmnÉZ
{dUm\$Vm\$ U\$jo AU\$mmZ KS\$z AnJUo Vmno
- 6) V\$ knZnM Cn\$ H\$ÉZ {dUmWu {ej H\$m\$ AZmpñWVrVhr AU\$mmZ
H\$é eH\$Vm.

- 7) AÜqInZ Cnnîr ' nŞÉqng ÈqInMm CnqIno hnb/no
- 8) nrRçnmVH\$Mr aMZm H\$' qm g\$-YrMogI no kmZ {' i Vo
- 9) AÜqInZngnr\$ qInq n[apñWVr, gmVÈqInjUgand qInMr qInDZmH\$aVm qIno
- 10) nrRçdnVMo gq\$V d qInq H\$no H\$éZ àÈqIn\$ KQ\$ ñdVq nUo gmKa H\$aVm qIno
- 11) nrRçm qIn bKw KQ\$Mr Vm(H\$Nioçm ' nŞUr H\$éZ AÜqInZ glo^ H\$aVm qIno

1.5.2 g\$UH\$ ghpæqV AZKeZng ghpæq^y gqdy..-

g\$UH\$ ghpæqV AZKeZm EI mUm {dfqInMm Aäqng H\$aÈqngnr\$ g\$UH\$er {ZJSfV Agm AmYiZH\$ gqdyMm dma H\$om Om/no qm gqdy nTxbà' mUoAnhv.

1) 'pèQ\$' {SqIm

'èOr àhUOoAZh\$ d {' SqIm àhUOo ' nÜq' àhUy 'pèQ\$' SqIm àhUOo AZh\$ ' nÜq' mV H\$nr H\$é eH\$Umaog\$UH\$q gmYZ hmq.

2) nrñla nrBQ>

nrñla nrBQ> ho E'.Eg.Anf' \$g nH\$O ' Yrb ' hÈdnMo gnA0daAa Anho qInV Mb{Mìq Üdzr, ' OH\$a qInMm g'Ydq gmYZ gnKxH\$aUmMr à(H\$Im i|dpñWVnUo AnH\$F\$ [aVrZo H\$br OmVo qInMm AZKeZ H\$mq' mV ' nrçm à' nUnda dma H\$om Om/nohonH\$O {dÜmiqInZm AnH\$F\$ KQ\$ eH\$Vo

3) BQaZQ>

EH\$ b\$er Onoboo AZh\$ g\$UH\$ ' rñhVr d gXenMr XomU-KomU OJm qIn nrçda H\$br H\$é eH\$VnV. Aem g\$UH\$ j ð mVrb AnYaami\$ vyaktiAqIn OmüqInbm BQaZQ>àhUVnV.

BQaZQda dddüüqim àH\$naÀqim gnBQg² CnbäY AgVnV. ÁqimÚmao
AmnUmg hiqim Èqim (dfqimMr AÚndV ' nfhVr empäXH\$ qH\$dm (MÌ énr AgyeH\$Vo
BQaZQ> hm kmZnMm H\$ëndy) ~Zbm Anho qimMm dma eäXH\$nfna' nUbr H\$aVm
qim/no

1.5.3 g\$UH\$ ghmpqV AZKeZnMoàH\$na

g\$UH\$ ghmpqV AZKeZ qim V\$ nMo {d{dY {ej U VknZr {d{dY àH\$nao
gnJVboAnhV AnOnqV ' n'qim nndbboàH\$na n'x:b à' nUoAnhV.

1) g\$imX ...-

qim àH\$nanV g\$UH\$naV {d{ei> ' nfhVr ^éZ Ralbr OnVo {dÚmWu
g\$UH\$ng àíZ {dMnaVno ÈqimMoCîna àhUz ' nfhVr g\$UH\$ndéZ {' i {dVno ÈqimMo
Cîna qim ÜqioEH\$na AVnZog\$imX AgV Znhr. H\$naU g\$UH\$ {dÚmíqimOm à(VaíZ
{dMnaV Znhr. g\$UH\$ hm EH\$ g\$^©JqV AgVno nU qimMm dma H\$aUo VbZV
gnnoAgVo

2) COi Ur d gand ...-

{ej U nmafmfaH\$ nUXVrZonnRçH\$' nVrb Z{dZ g\$imZnMr Ani I H\$éZ
XVno d g\$UH\$ qim g\$imZnMr COi Ur {dÚmíqimH\$Syz H\$éZ KVno qim w o
{ej H\$naqim {dÚmíqimH\$Syz gand H\$éZ KÈqimMm dâ dnMVno VgM {dÚmWu
ñdV.ÀqimJVrZoAäqimg H\$é eH\$Vno

3) n\$N>...-

g\$UH\$nbm ñdV..bm AndíqH\$ AgUmar ' nfhVr àíZnÚmao {dMnaVno d
g\$UH\$ Èqimg Vr ' nfhVr qH\$dm ' nfhVrMo ónb/ gn\$Vno {dÚmWu AÜqiqZ H\$aVnZm
JqVnbqimVZ Oer g\$^©nmVH\$ dmaVnoVgM g\$UH\$Mm g\$^©gmYZ àhUz dma
H\$aVm qim/no g\$UH\$nbm {dMnabeqim àíZnMoCîna g\$UH\$ XVno AZH\$ àH\$naMr
' nfhVr {' i {dÈqimgnRç g\$UH\$Mm Cnqimol hnb/no

4) Ɔɛɔm̄m̄ŋlɔ ...-

hoJVwVrMoVŋ Anho {dŪmWu n̄dV..bm Ono ^m̄J {eH\$ŋMm Anho ĒŋmMr
' n̄hVr gŋUH\$ŋbm XMno gŋUH\$ ĒŋmMo n̄yɔRmZ Vnm̄gVno Von_ \$ Agb VaM
AZK̄eZ gn̄ka H\$avno AŷŋWm Von_ \$ H\$éZ K̄vno AZK̄eZ Ɔɛɛŋm̄Ɔɛɛŋm̄Zogn̄ka
H\$avno àĒŋm̄ Ɔɛɛŋm̄da àíZ {dMm̄éZ Vno KOH\$ AnĒ' gn̄M Pnbm H\$ Znr̄r Vo
Vnm̄gVnoŋm̄ àH\$ŋm̄V {dŪmĭŋm̄n̄dV.Àŋm̄JVrZoAŪŋŋZ H\$avm̄ŋlɔ

5) g' ŋŋm̄{Zar̄H\$U ...-

{dŪmĭŋm̄ g' ŋŋm̄ gn̄ɛ>dĒŋm̄gn̄R\$ gŋUH\$ ŋŋ m̄gnal m Cnŋŋnr̄ RāVno
gŋŋm̄em̄órŋ' n̄hVrMr AnH\$ŋn̄ɛ> gŋUH\$ H\$avno Ēŋm̄ ū o ŋm̄ ' n̄hVrdéZ
{ZĪH\$ŋŋm̄H\$ŋŋm̄Uogn̄m̄On̄Vod dō Mr ~MV h̄m̄ŋo

ànVW ḡen̄VZm̄V EH\$ AŪŋŋZ KOH\$ {eH\$(dĒŋm̄gn̄R\$ darb àH\$ŋm̄Vrb
H\$ŋnr̄ àH\$ŋm̄Vm̄EH\$ŋ ūVnUodma H̄b̄m̄ Anho

1.5.4 gŋUH\$ ḡm̄ŋŋV AZK̄eZ m̄ŋŋXo..-

1) Vm̄-Sŷno { ' i Un̄ŋŋm̄ àĒŋm̄^aUm̄ ū o {dŪmWu gVV {H\$ŋm̄erb d n̄ŋŋb
AŪŋŋZm̄gn̄R\$ CĒḡm̄\$ AgVno

2) AnH\$ŋŋŋ d g' n̄ŋŋŋ {Mĭo AnH\$Ēŋm̄ ŋm̄Mr gŋUH\$ŋV gn̄ŋ AgĒŋm̄Zo
{dŪmĭŋm̄Zm̄A' ŋŋH\$ēn̄Zm̄' ŋŋH\$éZ {eH\$dVm̄ŋlɔ

3) gŋUH\$ŋŋŋm̄ ' XVrZo Aŋŋŋŋ{UVrŋ AnH\$ŋn̄ɛ> ObX H\$avm̄ŋlɔ Ēŋm̄ ū o
CXn̄haUogn̄ɛ>dĒŋm̄Mm̄dō dn̄MVno

4) gŋUH\$ àM\$>' n̄hVrMo{dĭb̄fU AMH\$ d H\$' r dō m̄V H\$éZ {ZXŋf {ZĪH\$ŋŋ
H\$ŋŋŋno

5) gŋUH\$ŋbm̄ On̄ɛ>bēŋm̄ ' ŋH\$ŋŋŋm̄ ' XVrZo{dŪmWu Zn̄g?KD\$ eH\$Vno

6) ŋŋm̄Vŋ m̄ ū o{dŪmĭŋm̄ g' ŋŋX AZŋd { ' i yeH\$ŋm̄V.

- 7) ho Vḡ {dÚmí'ŋm AnH\$FĀ KD\$ eH\$Vo Ēŋmbm {eH\$ĒŋmMr Jnḡ bndy eH\$Vo
- 8) gḡUH\$ {dÚmí'ŋmMr AndSḡ nḡRmZ, Vŋnar ŋmMr MnMUr H\$ÉZ ĒŋmMà' nUo {eH\$dVno
- 9) {dÚmWu ñdV.Àŋm dōmZō gḡŋrZoŋmVḡ nMm dma H\$ÉZ {eH\$ eH\$Vno
- 10) या तंत्रामुळे विद्यार्थ्यांकडे वैयक्तिक लक्ष खोजे³ŋ hnb/o
- 11) ŋm Vḡ m' ŋ o {ej U Annēŋnda bnXboJbo AgēŋmMr ^ndZm {dÚmí'ŋmĀŋm 'ZnM {Z' nḡ hnb/ Znhr.

1.5.5 gḡUH\$ ghmpŋV AZKeZnŋŋm' ŋmRm...-

gḡUH\$ ghmpŋV AZKeZnŋŋm' ŋmRm nŋḡḡ b à' nUo...-

- 1) ànḡḡ bm Anōj V Agbēŋm à{VgmXmgj m dōi nM à{VgmX {dÚmí'ŋmZō {Xēŋmg CĪma gḡUH\$ XD\$ eH\$V Znhr.
- 2) gḡUH\$nda EH\$M {dÚmWu Agēŋmg gḡŋḡḡnHḡO gḡmŋV Vno H\$Qni ḡ OnēŋmMr e³ŋVmAgVo
- 3) ^ndnē' H\$ {dH\$mgmgnRḡ hoVḡ Cnŋmŋr RaV Znhr.
- 4) विद्यार्थी जर फक्त याच तंत्राचा उपयोग करून शिकू लागला तर तो EH\$bH\$ḡḡḡḡḡḡḡḡḡ.
- 5) gḡUH\$ 'hmJSḡ ḡḡ Anho Ēŋm' ŋ o ĒŋmMm Cnŋmŋr H\$Uo H\$ḡḡ {d{ei> dJnŋrb 'bnZnM H\$Uoe³ŋ Anho

gḡUH\$ ghmpŋV AZKeZnM H\$ḡḡ 'ŋmRm Agēŋm Varhr {d{ei> nŋXVrZō ĒŋmĀŋmnda 'nM H\$Uo e³ŋ Anho d ĒŋmMo 'ŋmXo bj nM Km m embŋ AŋŋŋZ AŋŋmZnMr gŋŋŋVr nnbQĒŋmMr hoVḡ {ZpŋMVM Cnŋmŋr Rē eH\$Vo

{dÚmí'ŋm AnYĀŋm ŋmŋm/ dndaV AgVnZm Ēŋmbm ñdV..bnhr AŋŋŋZ H\$andobmJUna Anho Aem dō r ŋm' n{hVr Vḡ kmZnĀŋm ŋmŋm/ Ēŋmbm gḡUH\$Mr

'XV KÙo A{Zdmŀ RaVo emi Vrb {dÙmŀŀmgnR: Oa gŀUH\$ gnŀmpeŀV AZKeZ (CAI) Hŀmŀŀŀ' {dH\$gV HŀmŀŀMm Agb Va àW' {dÙmŀŀmZm Aem gŀUH\$ gnŀmpeŀV Hŀmŀŀŀ' mVZ AÙŀŀŀZmMm AZŀd KÙo AndŀŀŀH\$ dnŀVo Oa ÈŀmZm Aem gŀUH\$ gnŀmpeŀV AZKeZ Hŀmŀŀŀ' nMr ' mŀhVr Pnŀr, AndS>{Z' mŀ Pnŀr Va AmmAmM Vo B{Vhng AWdm gŀŀYV nmr: {dfŀŀm-ŀb ag KD\$ bmVrb.

ŀmŀednŀ Aäŀmgh\$' mVrb Hŀnhr {dfŀŀ qH\$dm {dfŀŀmVrb Hŀnhr KOH\$H\$aVm Agm gŀUH\$ gnŀmpeŀV AZKeZ (CAI) Hŀmŀŀŀ' {dH\$gV H\$ÈZ {dÙmŀŀmZm AÙŀŀŀZmH\$aVm {Xbm Va Aäŀmgh\$' mVrb Áŀm ~m-tgnR: OmŀV ' mŀŀeZmMr {dÙmŀŀmZm JaO Anho Èŀm ' mŀŀeZmgnR: {ej HŀŀZnhr nœgm dŀ { i b Ago dnŀVo

gŀUH\$ gnŀmpeŀV AZKeZ (CAI) Hŀmŀŀŀ' mgnR: B{Vhng hm {dfŀŀ निवडला कारण दैनंदिन जीवनात व्यक्तीला इतिहासाची माहिती उपयुक्त ठरते. पण {dÙmŀŀmZr B{VhngmMr ŀŀmâr ' ŀmŀXV Z RdVm B{VhngmMm gI nb Aäŀmgh\$H\$aUo hr Hŀmŀ nMr JaO Anho B{Vhng {dfŀŀmMo kmZ {dÙmŀŀmZm ñdV..gnR: d समाजासाठी अधिक उपयुक्त ठरण्यासाठी त्यांच्या हातात इतिहासा संदर्भात संगणक gnŀmpeŀV AZKeZ (CAI) Hŀmŀŀŀ' AgUoAÈŀmŀŀŀH\$ dnŀVo

ŀm gdmŀ ŀ M gXaMogŀmZ hmVr ; ŀmŀdoAgogŀmYH\$bm dnŀbo

• **KOH\$Mr {ZdS>..-**

ŀm B{VhngmVrb KOZm d KOH\$Mm nmr: KÙmMm gŀŀY nŀŀb àÈŀŀŀŀ Bŀŀŀŀŀ ŀŀŀ OmVno d ÈŀmMr ŀŀmâr dmŀŀ OmVo ' nŀŀŀŀ' H\$ ñVanV àmŀŀVhŀŀŀH\$ Hŀmŀ mVrb, B{OâMr gŀŀH\$Vr, ànMrZ ^naVrŀŀ gŀŀH\$Vr, JkH\$ gŀŀH\$Vr Aem àH\$naAŀm KOH\$Mm ŀm ' nŀŀŀŀ' H\$ ñVanVM {dÙmŀŀmZm H\$ŀU dnŀŀmŀm gŀŀŀŀŀm nŀamŀŀ MŀŀÈŀm àH\$nao hmŀo JaOMo Anho ŀm gŀŀŀŀŀm ÈŀmZm

'nũŋ{ 'H\$ nVanVM Mnšĕŋm àH\$ao AdjV Pnĕŋng Ēŋmhm {dfŋ 'nũŋ{ 'H\$ AdnWV AndSxMm hnD\$Z H\$R:U gŋšĕnzŋ-ano-aM AÜŋŋZ-AÜŋŋZ {H\$ŋm à^ndr hnĕŋngnR: d Ēŋm {dfŋH\$š di ĒŋngnR: {ej H\$ŋZr {dŪmĭŋŋZm Amĕŋŋm AÜŋŋZnVM AnY{ZH\$ Vŋ knZnMm d gŋUH\$Mm dma H\$aUoJaOMoAnho

gĕŋŋYHšZo-r.ESžbm à{ej U KV AgVnZm B{Vhng {dfŋŋMo nŋR> KV/bo Vohm gĕŋŋYHšom AZh\$ ASMUr OnUdĕŋŋm gĕŋŋYHšZo B{Vhng {dfŋŋMo AÜŋŋZ nŋŋŋ[aH\$ nŪXVrZoHšbo Ēŋm ĩ oVr AÜŋŋZnŋngnR: AndĭŋH\$ AgUŋĕŋŋm H\$ŋĕŋŋMoàJOxH\$aU H\$é eH\$V Zgo

B{Vhng {dfŋŋMo AÜŋŋZ nŋŋŋ[aH\$ nŪXVrZoHšbo Vohm gĕŋŋYHšom Ago {XgyZ Anbo H\$, {dŪmWu AÜŋŋZnH\$š bj XW ZnhrV. Jnŋŋi H\$aVnM. ĒŋŋMo AdYnZ {Oxšdž RšĒŋng AÜŋŋZ nŪXVr à^ndr RaV ZnhrV. Ēŋŋdš r gĕŋŋYHšĀŋŋm 'ZnM Agm àĭZ {Z' nŋ Pnŋbm H\$, nŋŋŋ[aH\$ AÜŋŋZ nŪXVr ĭŋŋV{aŋŋ AmYna nŪXVr, ŃH\$ĭ mĭŋ gŋŋZe-gŋUH\$ ŋŋŋm AÜŋŋZnM Cnŋŋŋ H\$éZ AÜŋŋZnMr n[aUm H\$naH\$Vm dntšdVm ŋBš H\$ŋ? Ēŋŋŋao {dŪmĭŋŋĀŋŋm gŋŋXZnM dnt>hnD\$ eHšbo H\$ŋ? ŋŋŋm emŋŋŋ nŪXVrZoAäŋng H\$ŋŋŋMr JaO dnšbr.

"{ej U àhUOo^ŋŋVH\$ d gŋŋŋŋ{OH\$ n[aŋŋWVrer g' ag hnĕŋŋŋMr H\$ŋm"¹² Aer OnZ SžBžo ĭŋŋŋŋŋm Hšbr. "B{Vhng {dfŋŋMo AÜŋŋZ A{YH\$ Cnŋŋŋ d g' šb ĭhŋdo àhUž {Za{Zanŋŋŋm gŋŋZnŋŋm Cnŋŋŋ Hšbm OnVno Ēŋŋŋom AÜŋŋZ gŋŋŋĒŋŋ àhUVnM".¹³

AÜŋŋZ H\$arV AgVnZm {dŪmĭŋŋZr {H\$ŋŋmĕrb ahŋdo ho AnOĀŋŋm {ej U nŪXVrMo d{eĭš Anho Cŋ' W©H\$ŋZm AdKS> gŋšĕnzŋm {dŪmĭŋŋĀŋŋm 'ZnM éO{dĒŋŋngnR: 'ŋ© gŋŋŋĒŋŋŋm AmYna ŋŋŋŋm bŋŋVno Ēŋŋŋ ĩ o H\$ŋŋĭ r 'Zo ^ŋŋŋŋ ĭŋŋrb àgŋŋŋer g' ag hnD\$ bŋŋVnM.

'n(hVr d V§ knZ ¶m gnrZm w o(dÚmí¶mMr d emi Mr àJVr KSdZ
 AnUVm ¶mVo {dÚmí¶m b m {ej H\$Zr {Xbè¶m 'n(hVrMo knZ d AnH\$bZ hnb/o
 'n(hVr d V§ knZmM dma {ej H\$ZoAÜ¶mZmV Hbom Va AÜ¶mZm/hr Zm(dY¶
 ¶B. AÜ¶mZm/rb AdYmZ {OH\$Z anhrb. {edn¶ {dÚmí¶m¶¶m gñmXZndahr
 n[aUmí Mñbomhnb. ¶m w oAÜ¶¶Z AÜ¶mZ à{H\$¶m gnb^ hnb/o

AÜ¶¶ZmV g§UH\$ ho AÜ¶¶ZmMo EH\$ à^ndr 'nÜ¶' àhUj g§UH\$mM
 Cn¶m hndSZ {dÚmí¶mZm Annè¶m gñsèZm g' Oj KE¶m g 'XV hnb/o Va
 {ej H\$Zm {dÚmWu- {ej H\$ AYa{H\$¶m dnt {dÈ¶mMr gYr {Z' nB Hb or OnVo
 ej {UH\$ V§ knZmM dma H\$ÉZ {XboOnUmao{ej U hog' OÈ¶m gñm XrK¶m
 n[aUmí H\$naH\$ ¶m w o aOH\$ Ago Anho gñsèZm g' Ondj Xb o AÜ¶¶Z-
 AZm dñMoNTxH\$aU H\$aUoAmU AÜ¶¶Z à{H\$¶m gnb^ hnb/o ¶m g d~m-tMm {dMma
 H\$ÉZ g§UH\$ gñm¶V AZKeZ H\$¶m¶m nMm dma H\$ÉZ B{Vhng {df¶m¶¶m
 AÜ¶¶Z d AÜ¶mZmMr n[aUmí H\$naH\$Vm dntVo qH\$dm H\$go ho nñÈ¶m gñmR\$ àñVW
 gñmZ hnb/r KvboAnho

1.6 gñmZmMo' hEd ...-

B{Vhng hm Á¶m g' nOmV {dÚmWu anhvno È¶m g' nOn¶m gñm r(OH\$
 dñVndaUma àH\$ne OñH\$È¶mMoH\$¶m H\$aVo B{Vhngn¶m {ej Un{edn¶ AnnUnbm
 dV~mZH\$mi g' OyeH\$V Znhr qH\$dm ^{d¶mMm A\$no KD\$ eH\$V Znhr An(U
 àhUjM Aä¶m gñm nV B{Vhng ¶m {df¶m b m ' hEdnMoñWmZ XÈ¶mV AmboAnho

àñVW gñmZm w o{ej U j ð mVrb I nrb KOH\$Zm ' XV hnbUma Anho

- 1) {ej H\$
- 2) {dÚmWu
- 3) nrbH\$
- 4) g' nO

1) 'nÜ¶{ H\$ ñVandarb B{Vhng {df¶mMoB¶m9 dr gñm AÜ¶mZ
 H\$aUmao{ej H\$...-

- B.9 dr 'Yrb "B{Vhng' qm {dfqnmMo AUqnmZ H\$Umeqm {ej H\$gnR\$ CAI H\$mqf\$' nMr 'XV hnb'o
- B.9 dr 'Yrb AäqmgH\$' nMr {d{dY {dfqnmMo AUqnmZ H\$Umeqm {ej H\$ZmAemàH\$naAqm CAI H\$mqf\$' {dH\$gZnMr d CnqnmOZnMr àaUm {' i b An(U ' nÜqf{ ' H\$ emi Aqm {ZH\$bnMm XOnfdmTÉqmg ' XV hnb'o.

2) Bqim9 drMoB{Vhng {dfqnmMoAUqnmZ H\$Umeqm {dUm'qmZm ...-

- B.9 dr 'Yrb "B{Vhng' qm {dfqnmMo AUqnmZ H\$Umeqm {dUm'qmZm Annem JvrZgna, di Zgna d JaOZgna AUqnmZ H\$ÉqmgR\$ CAI H\$mqf\$' CnbäY Prbm
- CAI H\$mqf\$' nAqm ghmamZo AUqnmZ H\$em' i o {dUm'qmZm AUqnmZ ghmXZnM dnt>hndSZ EHQU ÉqnmAqm {ZH\$bnMm XOnfdmT'o.

3) nrbH\$...-

इतिहास विषयासाठी पालकांना संगणक पध्दतीची उपयुक्तता लक्षात घेऊन Annem XZ\$XZ OrdZnM d 'bnZm Kar g\$UH\$Aqm ghmamZo AUqnmZ H\$Éqmg 'XV hnb'o.

4) g'nD ...-

- समाजातील ज्या व्यक्तीला इतिहास शिक्षणासंबंधी माहिती हवी असेल Éqnm g\$emYH\$Zo{dH\$gV H\$em' CAI H\$mqf\$' CnbäY Prbm

1.7 g\$emYZnMoerf\$

""B{Vhng AUqnmZngnR\$Mr A{^Zd nÜXV...AUqnmZ à^ndnMm VbZnÉ' H\$ Aäqmg''.

4) àñññUH\$ JQxom g\$UH\$ ghmpæ¶V H\$ñ¶¶\$ nÜmao AÜ¶¶mZ H\$aUo d {Z¶¶¶¶ V JQxgnR\$ nnañm[aH\$ nÜXVrZoAÜ¶¶mZ H\$aUo

5) g\$UH\$ ghmpæ¶V AZKæZ H\$ñ¶¶\$ nÄ¶¶m ghmpæ¶mZo H\$öæ¶¶m AÜ¶¶mZnMm d nnañm[aH\$ nÜXVrZo H\$öæ¶¶m AÜ¶¶mZnMm {dÜmí¶¶nÄ¶¶m gñmKZnda hñm¶¶m n[aUm H\$aH\$VMm VbZnE' H\$ Aä¶¶mng H\$aUo

1.11 JñrVH\$

àñVW gñmYZnV gñmYH\$ZonTxb JñrVH\$ ' r\$br Anho..-

- 1) B{Vhng {df¶¶ {ej H\$ à{ej V AgVmV.
- 2) B{Vhng {df¶¶nÄ¶¶m AÜ¶¶mZnngnR\$ {ZpíMV AÜ¶¶mZ nÜXVrMm dnna H\$om Om/no
- 3) àE¶¶\$ emi W g\$UH\$ gmYZ CnbäY Anho
- 4) B{Vhng {df¶¶mMoAÜ¶¶mZ H\$aVmZmÑH\$- I m¶¶m gmyZodmaE¶¶mV ¶¶mV.
- 5) {dÜmWu d {ej H\$Zm g\$UH\$ hmVmi E¶¶mMoknZ Anho

1.12 gñmYZ n[aH\$enZm

1) gñmYZ n[aH\$enZm..- g\$UH\$ ghmpæ¶V AZKæZ ¶¶m ' n[hVr d V\$ kmZnMm B{Vhng AÜ¶¶mZnV dnna H\$ö¶¶m w o{dÜmí¶¶nÄ¶¶m gñmKZnV Bi>~Xb hñm/no

2) eý¶¶ n[aH\$enZm..- B¶¶¶m ZddrÄ¶¶m B{Vhng ¶¶m {df¶¶mVrb àmJ{Vhng(gH\$ H\$mi , B{Oá gñH\$Vr, àmMrZ ^naVr¶¶ gñH\$Vr, JkH\$ gñH\$Vr ¶¶m KQH\$Mo àñññUH\$ JQxVrb {dÜmí¶¶mZm CAI H\$ñ¶¶\$ nÄ¶¶m gnmpæ¶mZoAÜ¶¶mZ H\$ö¶¶mZ\$ a d {Z¶¶¶¶ V JQxg nnañm[aH\$ nÜXVrZo AÜ¶¶mZ H\$ö¶¶mZ\$ a {dÜmí¶¶nÄ¶¶m KQH\$ MnMUrVrb ' Ü¶¶' mZm Ü¶¶ognW© \$aH\$ nS\$V Znhr.

1.13 gñmYZnMr i¶¶már ...

1) àñVW gñmYZ ho ' hmani>anÄ¶¶mVrb B¶¶¶m 9 dr Mm dJ©Agbæ¶¶m ' anR\$ ' nÜ¶¶' mVrb gd©emi n¶¶ g\$YV Anho

2) àñVW gēnVZ Bqīṅn 9 dr Àqīm B{Vhng' qīm {dfqīmer g\$ŷV Anho

1.14 gēnVZmR ' qīṅm...-

1) àñVW gēnVZ Bqīṅn 9 dr Àqīm ' anR\$ ' nūqī' nÀqīm "B{Vhng' qīm {dfqīmVrb nR\$KOH\$ṅmVM ' qīṅXV Anho

2) àñVW gēnVZ Bqīṅn 9 dr Àqīm "B{Vhng' qīm {dfqīmVrb "àṃj{Vhm{gH\$ H\$ni , B{Oá gṅH\$Vr, àṃMrZ ^naVr qī gṅH\$Vr d JkH\$ gṅH\$Vr' qīm nR\$KOH\$ṅmVM ' qīṅXV hnb/o

3) àñVW gēnVZच्या अभिनव पध्दती ही फक्त संगणकापुरतीच मर्यादित होती.

4) àñVW gēnVZ ho Zm Xolam ' nbnì ' nūqī{ ' H\$ d Cf ' nūqī{ ' H\$ {dÚnbqī dmaOo ' mi dnS\$ qīm emi Vrb {ZdS\$H\$ {dÚmī' qīṅmVM ' qīṅXV Anho

1.15 gēnVZmR n[a' qīṅm

1. àñVW gēnVZ ho Zm Xolam ' nbnì à{VöZMq ' nūqī{ ' H\$ d Cf ' nūqī{ ' H\$ {dÚnbqī dmaOo ' mi dnS\$ qīm emi Vrb Bqīṅn 9 dr Vrb ' anR\$ ' nūqī' mVrb B{Vhng {dfqīmVrb AÜqīqZ H\$aV Agbēqīm {dÚmī' qīṅmVo' qīṅXV Anho

2. àñVW gēnVZ ho Bqīṅn ZddrÀqīm AäqīmgH\$' nVrb B{Vhng' qīm {dfqīmH\$aVm ' qīṅXV Anho

1.16 g' mmm ...-

àñVW gēnVZmR\$ nyl© gēnVZmM Aäqīmg gēnVYH\$Zo H\$om Anho nT\$ b àH\$aU Xnz' Üqīog\$ŷV gṅ{hÉqī d gēnVZmM AmT\$dm XÉqīmV Anbm Anho

g⁸^©

1. H\$na, B.EM. ""B{Vhmg àhUOo H\$mf'' H\$pfOZVOb àH\$neZ, nUo (AZdnX {d.Jnobb)
2. OJVm h.Zm, (E{àb 2006), {ej UmVrb Zdàdnh d ZdàdVZp {ZÈ¶ZYVZ àH\$neZ.
3. nnoxb brbm (1983) AnOMoAÜ¶mZ, nUo l r {dUm àH\$neZ. n¶H\$. 15 d 16
4. gào Zrbr' m d nnoxb àrVr (2007 OZ). {ej UmVrb {dMnaàdnh (Mn¶Vr And¶nr) H\$nehmna ...' \$H\$ àH\$neZ. n¶H\$.205
5. OJVm h.Zm, (g80a 2006), àJV ej {UH\$ V¶ {dkmZ An¶U ' n¶hVr, V¶ {dkmZ, {ZÈ¶ZYVZ àH\$neZ, nUo
6. gào Zrbr' m d nnoxb àrVr (2007 OZ). {ej UmVrb {dMnaàdnh (Mn¶Vr And¶nr) H\$nehmna ...' \$H\$ àH\$neZ. n¶H\$.206
7. Izzet, Kara (2007). The effect of retention of computer assisted Instruction in science education. Retrieved May 27, 2009. <http://www.thefreelibrary.com/The+effect+on+Retention+of+Computer+Assisted+in+science.a+0193791687>.
8. Mayer, Richard. Gognitive Theory of Multimedia Learning. Retrieved May 30, 2009. <http://www.learning-theories.com/cognitive-theory-of-multimedia-learning>.
9. Aggarwal, J.C. (2006). Educational Technology and Management. Agra : Vinod Pustak Mandir. P.No.131.
10. OJVm h.Zm (2007) àJV ej {UH\$ V¶ {dkmZ An¶U ' n¶hVr V¶ kmZ ({ÜVr¶ And¶nr) nUo {ZÈ¶ZYVZ àH\$neZ n¶H\$. 303.
11. JnOaq {MOUJrg, nnoxb, {ej UmMo A{Yð¶Z, (àW' And¶nr 1999), {ZÈ¶ZYVZ àH\$neZ.

12. q^VnSø(d.am ('o2005), ej {UH\$ gēnZ nÜXVr (V/r¶| AndVnr) ZVZ àH\$reZ, nWø-30 n¥H\$.16.

13. XZml o AaqdX; (2000) B{VhmgmMo AÜ¶|nnZ, ZVZ àH\$reZ, nWø-30 n¥H\$.3,12.

àH\$U Xpao

g\$§YV gnñÈ¶ d

g\$enYZmMmAnt xdm

àH\$U Xbgao

g\$§YV grhÉ¶ d g\$§ZnMmAmTædm

A.H\$	Vn{eb
2.1	ànVndZm
2.2	g\$§YV grhÉ¶ d g\$§ZnMmAmTædm Aä¶mgnMo' \$¶¶Xo
2.3	g\$§YV grhÉ¶ d g\$§Z AmTæi ë¶¶mMoón¶
2.4	g\$§YV grhÉ¶mMm AmTædm
2.4.1	g\$§YV grhÉ¶m/rb VmpIdH\$ ^ndmMm AmTædm
2.4.2	V¶¶ma H\$' pYdV AU¶¶¶Z H\$' nmR>d CAI H\$¶¶¶¶' nMr d{eî0æo
2.5	g\$§YV g\$§ZnMm AmTædm
2.5.1	CAI er g\$§YV g\$§Z
2.5.1.1	àÉ¶¶j AhdrbmVZ àná Prbbor g\$§YV g\$§Z§
2.5.1.2	{Z¶¶VH\$¶bH\$¶ YZ àH\$¶(eV Prbbog\$§YV g\$§Z
2.5.1.3	Am¶aami¶¶ n[afX' Ü¶¶oàH\$¶(eV Prbbog\$§YV g\$§Z
2.5.1.4	BQaZ0da àH\$¶(eV Prbbog\$§YV g\$§Z
2.5.2	^naVm-nharb g\$§YV g\$§Z (BQaZ0da àH\$¶(eV Prbb))
2.6	g\$§YV grhÉ¶ d g\$§ZnMm àñV¶ g\$§Zm grR¶ Prbbom Cn¶¶¶
2.7	g\$§YV d àñV¶ g\$§ZnMr V¶bZm
2.8	g' nann
	g&^©

àH\$U 2 ao

g\$YV grhÉ¶ d gënZnMmAntædm

2.1 àñVndZm.-

EI nXr g' ñ¶m gnS{dÉ¶mgnR\$ g\$YV KOH\$¶m {dMna H\$andm bndVno
~é¶mMemg' ñ¶mMr CH\$b nduA¶m{ZiH\$¶m bnbbr AgVo gënZ g' ñ¶m
{ZpíMV Pré¶mnda {ZdSbë¶m g' ñ¶er {ZJ{SV gënZnMm Aä¶mg H\$andm
bndVno gënZ A{^H\$ën H\$aÉ¶mndu ñdV.À¶m {df¶mer {ZJS\$V Agbbo
grhÉ¶ { ' i dZ É¶mMm Aä¶mg H\$ë¶mg {ZdSbë¶m {df¶mdarb gënZ
A{YH\$ AW¶mU¶mVo \$

gënZnV gënYH\$ë¶m gënZ g' ñ¶m{df¶r j ð {ZpíMV H\$éZ g\$YV
gënZnMm AntU grhÉ¶mMm Antædm bndVno É¶m w o nT\$ b gënZnMr {Xem
{ZpíMV hndVod ¶mndu g\$YV {df¶mV Prbë¶m gënZn{df¶r ' n{hVr { ' i Vo
gënZ H\$¶m©nÜXVera d g' \$b hnd¶mg gX^©grhÉ¶ d gënZnMm Cn¶m
hndVno EI nXr g' ñ¶m gnS{dÉ¶mndu g' ñ¶er g\$YV KOH\$¶m {dMna H\$andm
bndVno gënZ AnamI S¶mV¶ma H\$aÉ¶mndu ñdV.À¶m {df¶mer {ZJS\$V Agbbo
grhÉ¶ { ' i dZ É¶mMm Aä¶mg H\$ë¶mg {ZdSbë¶m gënZ {ZpíMVM A{YH\$
Mn§bohndVno ndu Prbë¶m gënZnMm Antædm KUJohEH\$ ' hÉdmMoH\$¶m©Anho

2.2 g\$YV grhÉ¶ d gënZn¶m Aä¶mg nMo' \$¶Xo.-

- 1) ndu H\$¶m PrboAnthohog' Oé¶mZoÉ¶m{df¶mMr nZand¶m Q¶i Vm ¶mVo
- 2) gënZnMm{Xem{ ' i Vo
- 3) hm Aä¶mg gënZnMr C{Ôî0:εo{ZpíMV H\$aÉ¶mg ' XV H\$aVno
- 4) gënZnMr b ' ¶mRm g' OVndV.
- 5) gënZnMr ' n\$Ur H\$aÉ¶mg hm Aä¶mg ' XV H\$aVno

6) hmVr KVbë¶m gë¶YZ Aä¶mgnVZ { ' i nbbö{ZîH\$F©d g\$¶YV gë¶YZnVrb {ZîH\$F©¶mMr VbZmH\$aVm¶mVo

7) hmAä¶mng gë¶YZnMr n[aH\$ënZm ' n\$É¶mng ' XV H\$aVmV.

2.3 g\$¶YV grhÉ¶ d gë¶YZ Antä ë¶mMoón¶ ...-

àW' gë¶YHöZo B{Vhmg {df¶mV H\$öUH\$öUVr gë¶YZo Pbr ¶mMr nnhUr Höbr. ¶mAntä¶m nîrb ó¶mVZ ' ¶hVr CnbäY Pbr.

1) g¶ {Z' Öm/nB©WmOæ{ej Uemó ' hm(dÜmb¶mVrb gë¶YZo

2) I r' Vr ZnWr~nB©Xm nKa RæH\$agr {dÜmnrR> nUo

3) E' .Eg.gr.B.Ama.Ox. ¶mVrb gë¶YZo

4) ' hmanî>EÁ¶mÖeZb OZö.

5) 5th Survey in Educational Research

2.4 g\$¶YV grhÉ¶mMantädm...-

gë¶YHöom gë¶YZnMr ¶m¶ {Xem Xmi {dÉ¶mgnRæ Á¶m à' mUo g\$¶YV gë¶YZnMm Antädm KUo JaOMo AgVo É¶mà' mUM gë¶YHöZo dV©mZnî, ' ¶gHö, {Z¶VH\$¶bHö, g&^©nñVHö ¶m¶o dñMZ H\$ÉZ Annë¶m {df¶mVrb g\$¶YV grhÉ¶m¶m ' ¶hVrMog¶HöZ H\$aUoJaOMoAnho

gë¶YZnMr n[aH\$ënZm, gë¶YZ ähUOoH\$¶¶? Ambm gë¶YZnMm {df¶m {ZpîMV H\$aVnZm H\$öUVr g' ñ¶m {ZîMrV H\$aVnZm H\$öUVr g' ñ¶m {ZdSædr ¶mgnRæ VgM J¶hVHö, n[aH\$ënZm, C{ÖîOæo {ZîH\$F© ' n\$É¶mgnRæ, {e' \$naer, gMZm, Cn¶¶ ¶mOZm gM{dÉ¶mgnRæ, gr¶¶¶H\$ ' ¶hVrgnRæ AWZd¶Z H\$aÉ¶mgnRæ A{^H\$ënnMr {ZdS>H\$aÉ¶mgnRæ.

gë¶YZngnRæ Andí¶H\$ Agbë¶m Á¶m g\$¶YV VmÉdH\$ ^mMm VgM V¶ma H\$' n¶dV AÜ¶¶Z H\$' nñR>d CAI H\$¶¶¶' mMm Aä¶mng gë¶YHöZo Höom É¶mMmWnö>¶mV Antädm I nör XÉ¶mV AnbömAnho

2.4.1 g\$YV grhEqrVrb VnEdH\$ ^ndrMmAnr...-

ndqrAÜqrqZ -

ndqrAÜqrqZ ahUOo {dÜmqrqrZo ndV... H\$andqrMmo AÜqrqZ.¹ H\$rb©
 anDgqrM 'Vo {ej UnMr à{H\$qrM Hodi dJnqrM MnbV ZgVo Va H00- An(U
 g' nO qrqrM m \$V Oo AZnd { i VmV EqrMqr g3/4Vm dJnqrM AÜqrqZmer
 Oir br An(U Vr g3/4Vm {dÜmqrqrAqrM ' Zrbm n0:br VaM {dÜmWu entbqr AÜqrqZ
 ghOnUoAnE' gmV H\$e eH\$Vno qrM VEdnAqrM AnYmnda 1969 'Üqrjo EqrMzo
 " \$S> QybZ©hmJ\$V à{gÜX H0bm²

• anDgqrM ndqrAÜqrqZ à{H\$qrM VEdo ...-

- 1) àEqrH\$ व्यक्तीमध्ये स्वयंशिक्षणाची नैसर्गिक शक्ती असते.
- 2) {dÜmqrqrAqrM ndV.ÀqrM OrdZnÜXVrer An(U OrdZnVrb Üqrqrqrer AÜqrqZ
 {dfqrMmOohmqrqrqr g\$Y Oir VnoVohmM EqrMmoñdqr\$ej U Ono mZonw@OmVoAn(U
 EqrMbmEqrM NiriZnCnbāY H\$eZ {Xb0qrM AÜqrqZ g(dYm hi qrMmem dnQVnV.
- 3) "स्वयंअध्ययनाचा' अर्थ स्वतःच्या व्यक्तिमत्त्वाची पुनर्रचना करणे. याकरिता
 विद्यार्थ्याला आपल्या व्यक्तिमत्त्वाची रूपरेषा स्पष्टपणे दिसणे आवश्यक असते.
- 4) अध्ययन प्रक्रियेच्या अंतर्गत एखादी बाब स्वतःच्या व्यक्तिमत्त्वाला आव्हान
 XUmar Anr: br VargÜXm {dÜmWu {VÀqrMer hi hi yVSOn0>H\$e eH\$Vno na\$w
 BVa H\$nr VSOn0:MoAmhmZ {XboVa EqrMmVnoh' I mg à{VH\$na H\$aVno
- 5) स्वतःच्या व्यक्तिमत्त्वाला जेव्हा एखादे आव्हान मिळते तेव्हा विद्यार्थ्याची
 आंतरिक बौद्धिक व भावनिक शक्ती त्या आव्हानाची चिकित्सा H\$aVo An(U AÜqrq
 -ZnMr dnQVnV H\$qrM' anHVo
- 6) nW\$si go' hEdnMoAÜqrqZ hoH\$VerbVwZ hm/ AgVo
- 7) {dÜmWu Oohm ndV.ÀqrM O~m-Xnarda AÜqrqZ à{H\$qrjo Üqrjo gh^mJr hm/nO
 Vohm AÜqrqZ à{H\$qrM gqr énnUoMnboVo

8) नंदी आउपपत्र अहमि {दुमि एनएम ^नदम d ~पुख' इम एनएम गस' नव/ हन/ AgएमZoVr {दंV/ AnU {0HSD\$ हन/ AgVo

9) विद्यार्थ्यांच्या स्वयंअध्ययनशक्तीचे इतरांनी केलेले मूल्यमापन जेव्हा त्याने नंद... Hबेएम 'पे' मZmg m H\$' r ' hEdmMo ' mZbo OmVo Vohm {दुमWu A{YH\$ नंदV nUo A{YH\$ अहमि नं RDS eH\$Vn H\$naU नंदV.Mo 'पे' मZ H\$anZm एमम {M{H\$gH\$dम AnU नंदmb-Z एमgd {हमम g' mde "नंदी 'पे' ' मZm' {Z{^SउoH\$andm bmJVn

10) AnY{ZH\$ OJm उंन "Aउपपत्र अहमि ahUOn[adVZnएम AZn dम/ r EH\$ Z gनुAnar gml i r AgM ' mZndo bmब. एम अहमि उंन हनुnao नंदी आउपपत्र Hदि EI नम {dfएम VM gr{ V anH V Znr. एम/ r Oir Ur नंदm dmer AnU n[adVZ अहमि-ObMm OmJéH\$ dमrer OmUrder हन/ AgVo

• **गमYH\$A{^gयनZ (Operant Conditioning)**⁴

~r.E' \$,पंH\$ZaZoàनएमda AZH\$ àएम HबेएमH\$ EH\$ àएम एमZoXmZ H\$-Wan\$la Hबेम H\$hr I mg 'a' \$na HबेमgnJnJ hm I o XnZ H\$-Wao I o VnV. gnJnJmM bhNZgm d hbH\$m M\$y Vo MnMrZo EH\$' H\$H\$S\$ T\$H\$VnV. आम H\$-Wan\$एम ~nOpm M\$y O\$ bndéZ I nbr nS\$b एमएम {deUX ~nOएम H\$-Wang 'ne-Xbm (XnU) { ' i Vn {deUX ~nOg M\$y nS\$dm d Amएम ~nOg M\$y nS\$y Zंन एम I O\$Q\$V H\$-Wao hm J\$w/yrMm I o ~anM d o I o V anH VnV. hr H\$R\$U j 'Vm gnएम H\$aएमgnR\$ dVZ~Xbnएम ~एम bhNZ bhNZ नमएम YZ H\$' nH\$' nZo एम d o m 'ne-Xbm Xw H\$-Wan\$म Yंन do bmVo Aem b\$bmH\$ gandnVZ gnJnम एम I o nVrb MT\$Am\$MoA\$V' C{0i>gnएम हन/ o

एम àएमndéZ पंH\$ZaZoEH\$ V\$ enVZ H\$nt\$bo आम àनएम {eH\$dmएमो असेल त्या प्राण्यांकडून त्याला शक्य असलेल्या वर्तनापैकी आपल्याला जे उपयुक्त

Agb Ago dVZ KSb Aer n[apñWVr {Z' nE H\$amfMr An(U Anój V dVZ
 KSvMv È¶mMoà~bZ H\$amfMoÈ¶mE¶mZo"gmYH\$ A{^g\$yMz' AgoZnd {Xbo
 pñH\$ZaÀ¶m 'Vo' mZdr dVZhr AenM àH\$mao {Z¶¶ Uml nbr AnUVm ¶mVo
 {dÚmí¶mE¶m AÜ¶¶¶Z H\$aVmZm VnÈH\$mi àbno^Z {XboJboVa È¶mE¶m AÜ¶¶¶Z H\$aUo
 gnb^ hnbVo ¶m CÔemZo pñH\$ZaZo A{^H\$' V/H\$' n¶ydv AÜ¶¶¶ZnMr {Z{ '¶r d
 {dH\$ng H\$om pñH\$ZaÀ¶m 'Vo H\$' n¶ydv AÜ¶¶¶Zn¶m gnhrm¶mZo H\$uÈ¶mhr
 {dÚmí¶m Ü¶¶o AÜ¶¶¶Z hohnbmaM. n¶¶ ' J È¶mV S¶¶ Zm È H\$D\$Sa, S¶¶{Jb~Q[©]
 BÈ¶mXr 'mZgemóknZr AnUI r ^a KmVbr.

• **pñH\$ZaÀ¶mCnnÎmMoej {UH\$ ' hÈd⁵ ...-**

- 1) {dÚmí¶mH\$Syz KSUme¶m dVZmH\$ Anój V dVZntom {ej H\$uZo ¶m¶¶
 à{VgnK {Xè¶m¶m {dÚmí¶mÈ¶m dVZntom di U bndUogmnoOnVo
- 2) {dÚmí¶mH\$Syz OoAnój V dVZ AnhoVoKSè¶m-amo-a bJM È¶mE¶m ~{j g
 XÚoAndí¶mH\$ AgVo ho~{j g dðdðù¶m àH\$maMoAgyeH\$Vo
- 3) gandrbm AZY¶m¶maU ' hÈd Agè¶mZo {ej H\$uZo {dÚmí¶mE¶m Anój V
 ~m-tMmgand H\$éZ Kvbmn¶hOo
- 4) dVZmgnR: àaUMr Andí¶mH\$Vm Anho {dÚmí¶mZm AÜ¶¶¶ZmgnR: {d{dY
 àaH\$¶m dma H\$éZ àaUmXÚoAndí¶mH\$ Anho
- 5) Anój V dVZ {d{ei> ÑT: H\$maH\$ dnméz A{^g\$YV H\$aUo àhUOM
 AÜ¶¶¶Z Agè¶m w o {dÚmí¶m Ü¶¶o H\$uVo dVZ Anój V Anho ho nrhZ nr¶mR
 C{Ôi: dVZn¶m ñdénmV {bhndrV.
- 6) pñH\$ZaZo CnnÎm¶m AnYnao V¶ma H\$è¶m A{^H\$' V AÜ¶¶¶Z nÜXVrMm
 Cn¶m H\$éZ {dÚmí¶mZm Annè¶m gn¶rZgna d JvrZgna AÜ¶¶¶Z H\$aVm ¶mVo

• **H\$ n¶ydv AÜ¶¶¶ZnMr AnYna^y VÈd⁶ ...-**

- 1) **bKIm KOH\$** nrR: dñVmo{díbfU bhnz bhnz ^mJmV H\$boOnVo

2) **Ēd[aV nS\vi m àiZnAqm CĪmanMm ĒdarV nS\vi m Kv/m qV AgēqmZo**
CĪmanMoŃT:H\$U hmb/o

3) **g(H\$Ń à(VgnK àĒqH\$ {dŪmWu AŪqVZ H\$VmZm H\$ŃAV/H\$Vrerb**
anhVno

4) **ñdJVrZoàJVr gdS:Zyga d HĉdVrZyga {dŪmĪqm AŪqVZ H\$ĒqmMr**
gnŃ AgVo

5) **{dŪmWu MrMUr {dŪmWu Mm\$om Va ĒqmMr ZnK KD\$Z H\$ŃP\$' nV gVmaUm**
H\$Vm qV/o

• **H\$ nŃdV AŪqVZ H\$ŃP\$' aMZVrb à' ũ nrŃĒqm ...**

1) **nrŃĒqm nrR:KOH\$Mr C{Ōi: nrR:KOH\$ng\$Yr nrRnZ {dŪmĪqm**
àma\$^H\$ d A\$V' dVZ VnngĒqmgnR:Aqm qmOZMo ñdén BĒqmXrMm {dMna qm
ñVanda Hĉom Om/no

2) **H\$ŃP\$' bĪ Z ...**

A) **KOH\$Ń(dĪbŃU nrR:KOH\$MnN:ĉmN:ĉm KOH\$V énnVa H\$Uo**

~) **MnH\$Q> {b(hUo- nrRnZ MnH\$Q>AŪqVZ MnH\$Q> AndŃnr MnH\$Q> {ZH\$F MnH\$Q>**
BĒqmXr MnH\$Q>Aqm àH\$nanMm CnŃm H\$éZ qmŃ nŪXVrZoMnH\$Q> {b(hUo
H\$) **H\$ŃP\$' nMo gŃKZ** MnŃĒqm H\$ŃP\$' nMo {ZH\$F bj nV KD\$Z VŃma Hĉobm
H\$ŃP\$' VnngZ KĪo

• **nrR>A{^H\$' V H\$ĒqmMoàH\$Ń⁸ ...**

1) **ad rŃ A{^H\$' - qm àH\$naAqm A{^H\$' nMm CXŃm/m ~r.E'\$.pñH\$Za Anho**
Ńm Ūqo AŪqVZ MnH\$Q>ZŃ/a Or àiZ MnH\$Q> AgVo ĒqmVrb àiZnAqm CĪmanMm
nS\vi m {dŪmĪqm KĒqmMr gnŃ AgVo

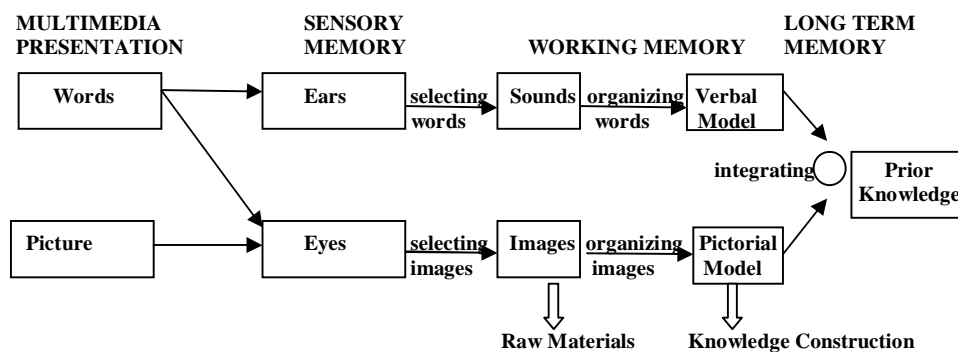
2) **enŃrŃ A{^H\$' - qm àH\$naAqm A{^H\$' nMm OZH\$ ZnŃ Z H\$ŃD\$Sa Anho**
Ńm Ūqo AŪqVZ MnH\$Q>ZŃ/a Or àiZ MnH\$Q> AgVo Ēqm Ūqo {dŪmĪqm ZoMm\$Aqm

CînanMm nîmî {ZdSbM Va Êqim nîmîmîr Ûqio MyH\$ H\$er Anho ho gnîJVbo OmVo H\$hr dô r ~ano-a nîmîmîrH\$Sâ OnÊqimgrR\$ A{YH\$ ' m(hVr {Xbbr AgVo {dÛmWu ~ano-a nîmîmîr {ZdSÊqimMm àqÊZ H\$aVno {dÛmîqimZo ~ano-a nîmîmîr {ZdSbM VaM Êqimbm nîrÀqim nîmîrH\$Sâ Om/m qVvo

• **AÛqimZmH\$aVmJZogîJVbêqimZD\$ gm nîqî AZKêZ ~m-r⁹ ...**

- 1) AZKêZmMndrH\$a H\$aÊqimH\$aVm AÛqimZH\$Êqimobj dÛUo
- 2) AÛqimZmMr C(Ôrî)AÛqimZH\$Êqimî gnîUo
- 3) nîRmZ AnR\$dÊqimî gnîUo
- 4) MWH\$ àhUOM AmêqimMognKxH\$aU H\$aUo
- 5) AÛqimZmH\$aVm ' mXêZ nê(dUo
- 6) AÛqimZH\$Êqimî à(VgnX XÊqimî gnîUo
- 7) AÛqimZH\$Êqimî à(VgnXmî àÊqim^aU nê(dUo
- 8) AÛqimZH\$Êqimî à(VgnXmî ' ÊqimîH\$Z H\$aUo Am(U AÛqimZmî CînoZ XÊqimH\$aVm àÊqim^aU XbUo
- 9) j ' Vnîqim gmî nîqimH\$aUmH\$aVm {d(dY gamîmîr CnbâYVmH\$êZ XbUo

• **~hîmîqî' AÛqimZmMr ~m-rî' H\$Cnnîm¹⁰ ...**



AmîWr H\$ rî\$ 2.1 ~hîmîqî' AÛqimZmMr ~m-rî' H\$Cnnîm

• **CnnîmÀqimnîqîqim...**

- 1) gnîKa Hbêqim AmêqimVZ qH\$dmH\$WVZ gî-YV eâXmîr {ZdS>H\$aUo

- 2) gnXa Hbē¶m {Mī nVZ g\$YV {Mī nMr {ZdS>H\$aUo
- 3) {ZdSbē¶m eāXn¶logu\$V epāXH\$ nZāñVWrH\$aUm/ gKQ>H\$aU H\$aUo
- 4) {ZdSbē¶m {Mī n¶logu\$V Nī¶ nZāñVWrH\$aUm/ gKQ>H\$aU H\$aUo
- 5) Nī¶ d epāXH\$ nZāñVWrH\$aU An¶U n¶RmZnMoEH\$ī rH\$aU H\$aUo

2.4.2 V¶m H\$ n¶dV AÜ¶¶Z H\$ nr>d CAI H\$¶¶\$ nMr d{eî0çod

'¶¶m...-emb¶ nVandarb {d{dY {df¶mgnR> V¶m AgbboH\$ n¶dV AÜ¶¶Z H\$ nr>d ~nOnanV emb¶ nVandarb {d{dY {df¶mgnR> CnbāY AgbboVgM MS-CIT (Maharashtra State-Certificate in Information Technology) Aä¶mgH\$ mgnR> {dH\$gV Hbom CAI H\$¶¶\$ ¶¶m Aä¶mg H\$Z g\$YV CAI H\$¶¶\$ nMr d{eî0çod '¶¶m bj nV Kmē¶m

• H\$ n¶dV AÜ¶¶Z H\$ nr>...-

Jm' .-n-b¶ gMmbH\$, {ej Uemó g\$Wm, nUe-30 ¶¶Zr ànV{ 'H\$ nVangnR> H\$nr H\$ nr>àH\$eV HboboAnhV. ¶¶m H\$ nr>H\$ B¶¶m 4 Wr Vo 7 वी मधील विज्ञान विषयातील जे घटक (उदा.वैयक्तिक आरोग्य, जीवनसत्वे, I éO, n0H\$, n¶bAn¶ ~nbg\$nmZ Bē¶nXr) Anan¶ {ej U ¶¶m {df¶mer g\$YV AnhV Aem H\$ nr>¶¶m Aä¶mg Hbom ¶¶m H\$ nr>nMr d{eî0çod '¶¶m I nbr Xē¶mV Antobr AnhV.

• d{eî0çod.-

- 1) H\$ nr>¶¶m '¶ nē¶da Jm rU ^mJmVrb VrZ {dUmWu dS¶¶m PrS¶¶m nmandā ~gZ Aä¶mg H\$arV Agbbo{Mī Anh¶ VgM H\$ nr>Mm nVa (B¶¶m 4 Wr Vo 7 dr) d KQH\$Mm Znd {Xbbo Anh¶ àhUOM '¶ nē¶da C,, d Hbē¶m KQH\$Mm g\$YV nVandarb {dUm¶¶mZr n¶¶AÜ¶¶Z H\$aUo Agm ¶¶m AW©ñni> hnb/no
- 2) àē¶H\$ KQH\$mgnR> n¶dV¶ H\$ nr>{Xbom Anh¶

3) H\$' nnR: A qm gredmVrbm (dUmí qmZm H\$' nnR: A qm gnhm: qmZo ñd qm: AÜ qmZ H\$E qmgs Yr A qm gMzm (Xbë qm AnhV.

4) H\$' nnR: Moñdén d dmaE qmgs Yr {ej H\$Zm gMzm (Xbë qm AnhV.

5) H\$' nnR: > gnd: {dE qmgnR: {dUmí qmMo Anó j V àna\$^H\$ dVZ (Xbbo Anhod E qmnda AmYm[aV dnV(Zò> d bKímar àiZ Agbbr àna\$^H\$ dVZ H\$gnó: (Xbbr Anhó {ej H\$Zr qm àna\$^H\$ H\$gnó: A qm AmYnao {dUmí qmH\$S: b Anó j V àna\$^H\$ dVZ Vnmgn qmMo Anhó

6) H\$' nnR: > gnd: {dE qmZVa {dUmí qmH\$S: b Anó j V A\$V' dVZ (Xbbo Anhod E qmnda AmYm[aV dnV(Zò> d bKímar àiZ Agbbr A\$V' àna\$^H\$ dVZ H\$gnó: (Xbbr Anhó {ej H\$Zr qm A\$V' H\$gnó: A qm AmYnao {dUmí qmH\$S: b Anó j V A\$V' dVZ ~Xb Vnmgn qmMo Anhó

7) KOH\$Vrb bhmZ bhmZ CnKOH\$V Ü qm {d^mUr H\$EZ E qmndarb àiZ Amí rZo H\$' nnR: Ü qm (Xbbo AnhV.

8) H\$' nnR: V nYU àiZ d {Ün qm qm àiZ qm àH\$nanMo dnV(Zò> àiZ AnhV. H\$hr {R: H\$Ur AnH\$E qm (Xbë qm AnhV d E qmnda AmYm[aV nYU àiZ qH\$dm {Ün qm qm àiZ {dMnaboo AnhV. àiZ nMr CímaonS: vmi z nnhE qmMr gmqm Hóbbor Anhó

9) H\$' nnR: Vrb gd^ àiZ H\$ü qm a\$ mV d Címaobrb a\$ mV (Xbbr AnhV.

10) H\$' nnR: Vrb Aj amí o: s: bod Z àmV { H\$ ñVanH\$arVm qm: Ago Anhó

• ' qm m...-

1) qm H\$' nnR: Ü qm AmE qm m ^m H\$Bbr (Xbbo m Zhr.

2) H\$' nnR: Ü qm {Ün qm qm àiZ nmg m nYU àiZ ndaM OnñV ^a (Xbbo m Anhó VgM BVa àiZ àH\$nanM {dMna Hóbbor m Zhr.

3) H\$' nnRnV AnH\$Ejla AnYn[aV àiZàH\$nanMm dma A{Vej H\$' r H\$obm Anho

4) H\$' nnRnV/rb àiZnMo Cîma àiZmeOnarb nV\$'m ÜjM {Xbbo AgëjMzo विद्यार्थी विचार न करता ते उत्तर पाहून लिहिण्याची शक्यता आहे.

5) H\$' nnRnV Zó ³jM H\$uEjM BqjIngnR\$ d dfnRjM nnRçH\$' mgnR\$ {Xbbo Anhv VodfçXbboZnhr.

6) H\$' nnRnMoàH\$meZ dfçXbboZnhr.

• CAI H\$njP\$' ..-

ZdZrV 0xñ nH\$uAa d ~r.nr.~r. ~hþ nÜj' jMçr embqj nVandarb {d{dY {dfjIngnR\$ VgM ' hrami>knZ ' hmr \$:i ' jMçXVZóMS-CIT (Maharashtra State-Certificate in Information Technology) AäjMgH\$' mgnR\$ CAI H\$njP\$' {dH\$(gV H\$obboAnhv.

A) ZdZrV 0xñ nH\$uAaZo' hrami>anAqj ' \$:i nÄjM AäjMgH\$' nda AnYn[aV B\$Or ' nÜj' nÄjM I nrb {dfjIngnR\$ VjMa H\$obm CAI H\$njP\$' nMm AäjMg H\$obm

- 1) {dknZ ^mJ EH\$ - BqjInm Zddr
- 2) {dknZ ^mJ XnZ - BqjInm Zddr
- 3) ^ylnb d AWemó-BqjInm Zddr
- 4) OmJ{VH\$ ^ylnb - BqjInm AnRçr
- 5) ^maVrj B{Vhmg - BqjInm AnRçr

jM CAI H\$njP\$' nMr d{ei0çod ' jMçM I nrb à' mJoAnhv.

• d{ei0ço..-

1) H\$njP\$' nMr {d^mUr àñVndZm, Amej, Mb{MÎo àiZ ~H\$, H\$ç\$, jMç rH\$aU àiZ, gÎ MnMUr, à{VgnXnMm Ahdnb jMa' mJoH\$obor Anho EI mJm ^mJnda p³bH\$ H\$obAgVmEjM ^mJm/rb gdçKOçH\$MoAÜjM H\$aVm jMbo

2) AmejmbmAZgëZ CXnhaUo AnH\$EjM d Anbd {XbboAnhv.

3) H\$çr AnH\$EjM d Anbd nZmA{Z' eYg H\$obboAnho

- 7) AndíqH\$ ÉqM {R-H\$Uj qín} ÉqM gM Zm {XbèqM Anhv.
- 8) VmpEdH\$ ^mJmÁqM AUqM qM Zm Y/a dñV{Zð>d bKîmar àíZ {XbboAnhv.
- 9) dñV{Zð>àíZñMr Cîmao{b{hÊqM Mr gñ} Hòbbr Anho
- 10) àíZñMr CîmaoS\mi ž nñhÊqM Mr gñ} Hòbbr Anho

• 'qínRm...-

- 1) gJUHSÁqM nSÚmr Yrb WnSēM ^mJmV H\$MPP\$ {XgVmp ÉqM m̃ o
Aj anMm AnH\$ma d AnH\$ÉqM l yn bhmZ dnQ\mV.
- 2) {d{ei>Bqîm m nnRēH\$} {dMmanV Z Kvñ, Bqîm gnV/dr Vo~mandrnqVÁqM
{dÚmī qñgnRē H\$MPP\$} Hòbom AgēqM Zogdñ Bqîm Yrb gdñ {dÚmī qñ Zm gdñ
gl nb 'n{hVr g' Ob AgoZñr.
- 3) H\$MPP\$ m̃ Ūqñ H\$Rē hr ūdZr {Xbom Zñr.

H\$ 'hnamī> kmZ 'hm̃ S̃i 'qínXV qñZr MS-CIT (Maharashtra State-
Certificate in Information Technology) OnZñmar 2007 qM AāqñgH\$ m̃gnRē
{dH\$gV HòbēqM CAI H\$MPP\$ nMm Aāqñg Hòb qM H\$MPP\$ nMr d{eîOēo d
'qínRm l m̃rb à' nUoAnhv.

• d{eîOēo...-

- 1) KQHSñMr gñ ^ 'nSUr Hòbbr Anho
- 2) H\$MPP\$ m̃ Ūqñ CĒH\$>{ZdXZ HòboAnho
- 3) gandngñRē dñV{Zð>àíZ {XbboAnhv d Cîmao{b{hÊqM Mr gñ} Hòbbr
Anho
- 4) àíZñMr CîmaoS\mi ž nñhÊqM Mr gñ} Hòbbr Anho

Arhiv. ho Qari Êqimgnr: g{ ' VrZo Áqim à' t {e' \$raer Hëqim Arhiv. Êqim
 ahUOo- ' nÛq{ ' H\$ ñVanda {d{dY àH\$naMo AäqimgH\$' grë H\$andv. ' nÛq{ ' H\$
 ñVanZy/a nqinqir AäqimgH\$' grë H\$andv ahUOo {dUmVU i qindgrqH\$ qH\$dm
 AnjUnUH\$ {ej UnH\$Sadi Vrb.

**(5) ej {UH\$ YmaUnV I nrbv VëdrZygra {ej UnMm{dH\$ng H\$Êqimla
 ^a Arho**

- 1) ' nÛq{ ' H\$ ñVanda {I ^mfmgj} nMm Adb\$
- 2) H\$mqmZv^d/g' nOgdm qmMm {ej UnMoA{d^mÁq} A\$} ahUy ñdrH\$na
- 3) embq ñVanda {dkmZ{ej U d gënvZnda ^a
- 4) ' jëq' mZ d narj mUXVrMr gYmaUm
- 5) ' nÛq{ ' H\$ ñVanda Vn\$} H\$ d i qindgrqH\$ {ej UnMr gmq
- 6) H\$S\$ i i qmMm {dH\$ng
- 7) 10+2+3 qm ej {UH\$ AnH\$V~\$} nMm ñdrH\$na

2) ^maVr{ej U Anqim AWdm H\$D\$ar {ej U Anqim (1964-

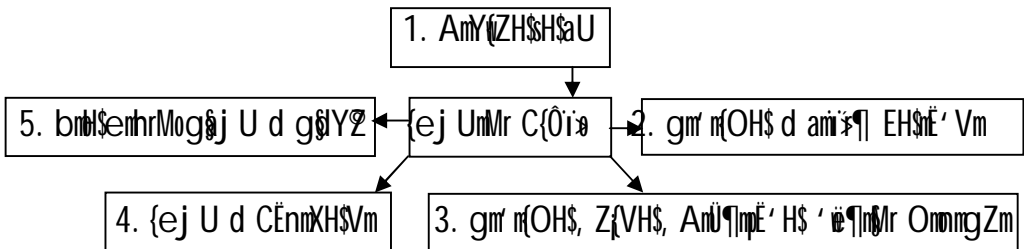
1966)¹² -A) ^maV gaH\$naZoS\$ S\$.Eg. H\$D\$ar qmMm AUqj Vd nrb 14 Obj
 1964 anDr EH\$m {ej U Anqim nMr Zó UH\$ Hëbr. VoÊqimdo r {dUmnr>AZKmZ
 Anqim nMo (University Grant Commission) AUqj hnb/o {ej UVÁk Oonr.
 ZnB\$ ho ^maVr{ej U Anqim nMo g{Md hnb/o {ej UnMm gdrUrU {dMna
 H\$Êqimgnr: ^maVr{ej U Anqim nMr Zó UH\$ H\$ÊqimV Anbr. Anqim nMo AUqj
 S\$ H\$D\$ar AgëqimZo qm {ej U Anqim ng "H\$D\$ar {ej U Anqim" Agbr
 ahUVmV. ^maVnMoanOH\$}, gmr n{OH\$ d AnW\$ n[advZ KSdZ AnUÊqimH\$aVm
 {ej Ungna I o Xlgao ' nÛq' Znhr. am\$} {ej UnMm AnH\$V~\$, {ej UnMr
 ' m\$e\$ Vëdo An(U gd©ñVanda ej {UH\$ {dH\$ng nMo YnaU qm{dfqir engZng
 {e' \$rag H\$andr Aer engZnZo Anqim nH\$S\$Z Anj m i q³V H\$ÊqimV Anbr hnb/r.

-) 2 Amfom 1964 andr (X, r' Yrb (dkmZ ^dZmV qm H\$B\$ar {ej U Amfom Mo CXKioZ H\$VnZm ^Vnd^ami'xVr Sxi gdR, r amYnH\$UZ ahUmbohmV H\$, ""' nPr Aer hm(XP\$ BAN\$ Anho H\$, ho Amfom {ej UnAqm anV{ ' H\$, ' nUq{ ' H\$, {dUmnrR\$ q Am(U Vn\$ H\$ nVandarb {ej UnMm Aaqmng H\$EZ Aem gMZm H\$amqnmV H\$, Aqmr w o Amneqm {ej U iqdnWAqm gd^nVanMr ajVr hndqmg ' XV hndB. ' ^naVrq {ej U Amfom mo ^naVrq g\$H\$Vr Am(U ' e' qm dA AmYnfaV dkqZH\$ N(i' H\$ZmVZ {ej UnZo Amneqm ^naVnMr CPVr hnd\$ eHob Agm N(i' H\$Z S\$u' qmg' na Ralbm ^naVrq {ej U Amfom mo Amnbn {e' \$naetMm Ahdnb "{ej U Am(U amix' q {dH\$mg' qm ZnchnZo H\$D emgZmg 29 OZ 1966 ' U' qognKa H\$obm ^naVrq {ej U Amfom mo ' w' qV... {ej UnMm {dMna nix' b XnZ ASnZr H\$e' qm Mo (XgZ qm o-

1. amix' q C(XKi' q Am(U ' q' qm {ej UnMm g\$Y anWm nV H\$aUo
2. g\$Y amix' q g' nZ H\$mg qm XVr Am(U q' qm UMm dma H\$aE' qm dA ^a XJo

^naVrq {ej U Amfom mo ' w' qm g\$ Am(U ej {UH\$ JwdTnm {dH\$mg Am(U {ej UnMm g\$ qm e' H\$ {dnVna ho hndq. Amfom mo Amneqm Ahdnb nV {ej U {dH\$mg nMr nmM VEdo {deX H\$ob Anhv. hr nmM VEdo ahUOo amix' q C(XKi' q hndV.

2) H\$B\$ar {ej U Amfom mo Zogn Vbbr {ej UnMr C(XKi' q.-



1) AmY(ZH\$H\$aU ... (Modernisation)

^naV Xe {dH\$gZerb Xe ahUyZ Anni I bm OnVno BVa XenMr Or gdq d nV Zd XrnH\$ ajVr H\$obor {XgVoE' qm ' nZmZo ^naV ' nJo Ag'e' qm Mo aE' qj mg

1) ƒmgnR: BVa Xem-ano-a nŕa ƒmgnMo Agēƒmg ^naVmZo AmY(ŒH\$ Vnŕi H\$
 kmZnMm Cnƒm H\$aUoJaOMoAnho Vnŕi H\$ H\$peƒ Am(U emŕƒ Œŕi:ŒmZm ō o
 CĒnmKZj 'Vm VgM OrdZ' mZnMm nVa dmtŒdUo AndŕiƒH\$ Anho ^naVmMr
 OrdZnXYVr, gŕH\$Vr Am(U AmWŕŕ n[apnWVr ƒmgnm 'nŕi' mVZ
 AmY(ŒH\$H\$aUmMr H\$ŕŕ' Vm nŕJĒmg Zbr nhrOo àĒŕŕŒ ZdrZ Vŕ d ƒŕ
 ƒmgnm dmanZo 'mZdr I 'nMr -MV H\$aUo d Anŕj V Őƒŕ JnRŒo ƒmgM
 AmY(ŒH\$H\$aU ahUVmV. CXnhaU ahUŒ AmU eVr iƒdgmƒmMo ndén nhŕ
 eH\$Vno eVr iƒdgmƒ naŕamJV ndunmgŒ H\$aĒƒmV ƒmno Ēƒm ō o ^naVmrb
 eVr iƒdgmƒmMr pnWVr hbml rMr Prbbor Anho naŕamJV eVr iƒdgmƒmZo
 Ambr h[aVH\$ŕ 'ŒJVrZo gŕe Anho bmbŕŕ 'mZ{gH\$Vm -XbŒ AmY(ŒH\$
 Vŕ mMm d ƒŕ mMm dma H\$aUoJaOMoAnho hogdŕej Um ō o KŒŒ ƒŒD\$ eH\$Œ.
 kmZbrbmg, YŒŒŒŒŒ, àƒmŕerb iƒ³Vs {ej UmVZM {Z' nŕ hmD\$ eH\$Vo
 ĒƒmgnR: ƒmgn AŐƒmZnŐXVrMr JaO ^mgVo {ej Um ō o {dŐmŕ ƒmgnm 'ZmV
 {dMnae³Vs, {ZUŕe³Vs, dŕmŒH\$ Œŕi:ŒmZ {Z' nŕ hmD\$ eH\$Vno ahUŒ
 {ej UmMr H\$mg YaUoJaOMoAnho .

**3) 'hmanŕMmH\$ŕ H\$ŕŕŕ' gmaŕ, ànŒ{' H\$ {ej UmMogmŕŕH\$aU
 AnŒU gnj aVmH\$ŕŕŕ, erbŕ {ej U {d^m, JŒŕŕŕ, 'ŒB¹³**

ànŒ{' H\$ emi nŒma(SAno H\$ -H\$gŒBbAgŕna{dUo

AŐƒŕZ-AŐƒmZ à(H\$ŕm à^ndr Am(U 'ZnaŒH\$ hmŕŕm Őŕo ej {UH\$
 Vŕ kmZ I nM n[aUm H\$naH\$ RaVo ĒƒmŒŕi:Œo Jm rU ^mJnVrb XadaĒƒm
 emi nŕŕV ej {UH\$ Vŕ kmZ nŕnMmdndo Aer amŕŕŕ ej {UH\$ YnaUmV {e' Œag
 H\$br Anho

emgZmZo AnVmŕŕV 33,366 {Őhm n[afX ànŒ{' H\$ emi nŒm a(SAno-
 H\$ -H\$gŒBbAgŕna{dboAnhV. nŒmŒH\$ ndamĒŕ gŕWnŕŕm Cabēŕŕm, ahUOo

19,371 ànW{ H\$ emi nZnhr HÐnnañH\$V ¶nDZd nbr a(S>Ano-H\$ -H\$g0>fbAg©
 nna{dÉ¶mV ¶ndV. ¶m gmYZnñ w o{ej H\$Zm AnH\$medmUr darb ej {UH\$ H\$¶¶¶
 {dÚmí¶nZm Eb\$VdVm ¶Vrb, ñdV... Eb\$VdVm ¶Vrb AnU ej {UH\$ H\$¶¶¶ nla
 AnYnabé¶m Üd{Z{ 'SVtMm dnna ' lon¶nR¶ AnU ñdV..gnR¶ H\$aVm ¶BÐ. ¶mñ w o
 AÜ¶¶Z-AÜ¶¶mZ à{H\$¶¶m AnZ\$Xm¶r AnU n[aUmñ nH\$naH\$ hñ¶¶ng ' XV hñBÐ.

**4) an¶¶ Aä¶¶ngH\$ Aranl Sm2010, OrdZ {ej U {Sg}-a 2010
 - OnZdnar 2011 ' g¶m{de¶¶¶, ' hññi>an¶¶ ej {UH\$ g¶¶¶Z d
 à{ej U n[afX, n¶¶30 ({dÚmñ[afX)¹⁴ ...**

A) {ej UnV ' n¶hVr V¶ knZnMmdma ...

enb¶¶ {ej UnV ' n¶hVr V¶ knZnMm Aä¶¶ng EH\$ ñdV¶¶ {df¶¶ àhUz hñ¶¶
 Andí¶¶H\$ Anho É¶¶mMà' n¶¶ àÉ¶¶¶ {df¶¶¶¶m AÜ¶¶¶ZnV ' n¶hVr-V¶ knZnMm
 Cn¶¶¶ H\$aÉ¶¶mMo ' m¶¶eZ d gand {dÚmí¶nZm { i b ¶¶m¶r VaV¶ H\$aUbr
 Andí¶¶H\$ Anho ¶m í¶¶[a³Vhr {ej UnMo gnd¶¶ H\$aH\$aU d J¶¶d¶¶m{dH\$ng
 ¶¶¶¶¶ ' n¶hVr V¶ knZ AZH\$ A\$¶¶Zr Cn¶¶¶V Rab. CXnhaUmV©

- 1) {dÚmí¶n¶¶nR¶ grS¶, S¶hrS¶ d B¶aZDedÉZ nñR¶gn{hÉ¶¶ VgM n¶H\$ gm{hÉ¶¶
 CnbäY H\$ÉZ X¶¶
- 2) {dÚmí¶n¶¶nR¶ ñd¶¶AÜ¶¶¶Z gm{hÉ¶¶, ej {UH\$ I ó BÉ¶¶mXrhr darb ' n¶¶¶' n¶¶Z
 CnbäY H\$ÉZ X¶¶
- 3) विद्यार्थ्यांना कधीही गरज वाटेल तेव्हा वैयक्तिक (अभ्यासातील) शंका दूर
 H\$aÉ¶¶¶¶nR¶, EI n¶¶ AdKS>Jñi> H\$Vr g' Oz KÉ¶¶¶¶nR¶ VÁkn¶¶sadr AnZbnBZ
 àíZñma gdmCnbäY H\$ÉZ X¶¶
- 4) {ej H\$¶¶nR¶ AnZbnBZ ' m¶¶eZ X¶¶¶¶m gmB¶¶g²g¶é H\$aUo
- 5) {dÚmWu, nñbH\$, {ej H\$ ¶¶¶m H\$¶¶É¶¶mñr àH\$naA¶¶m gëé¶¶m¶r AWdm ej {UH\$
 ' X¶¶m¶r Andí¶¶H\$VmdnDè¶¶ng VoAnZbnBZ CnbäY H\$ÉZ X¶¶

6) amA^anVrb {dUmi^mZm EH\$' b\$er gUUh\$UaogH\$ gmY^mMr gYr XUao H\$H\$' , nnYmBE^mXr Am^m(OV H\$aUo

7) nmbH\$, {ej H\$ m^mngR\$ {df^m(Zhm^ d nVa(Zhm^ Z^d(H\$J CnbäY H\$EZ XUoBE^mX.

8) äE^b\$ {dUmi^mIT skills ^mVrb ^mngR\$ i^dñWm H\$andr.

-) knZj ð mVrb ' hEdn^m KS^r n\$ emi m d {dUmi^m^mV VmV\$ZonmEd^mngR\$ H\$m^' ñdénr i^dñWm..-

ent^l Aä^mgH\$' d nR{df^mVrb Am^m hm gd^m^m ' m^hVrda AmYm^aV AgVmo Aä^mgH\$' d nR^mVH\$mV ~Xb hm^mngR\$ b^mUmam H\$m^mdYr, AE^mV(ZH\$ gH\$enZm^o àJV d J^mVrMo ñdén Aer H\$maUo bj mV K^m AU^mdV ' m^hVrMm g^mde nR^mVH\$mV hm^m Znhr. na\$w {dkmZ - V\$ knZm^m j ð mV ' hEdn^m KS^r n\$ hm^m AgVmZm E^mVrb àaH\$, Zndr^m^o, AmhmZn^ H\$ ^m ent^l {dUmi^m^mV nmMdUbr ' ma ' hEdn^mo Anho hr AU^mdV ' m^hVr { ' i dE^mngR\$ b^mUm^m g^mdYm VgM hr ' m^hVr {dUmi^m^mV gm^m eäXm^ nU {-ZM^H\$Uo nmMdE^mngR\$ i^dñWm äE^b\$ emi V Agb Ago Znhr. ho H\$aE^mngR\$ {ej H\$Zm And^mH\$ AgUao ' m^eZ d ' m^hVr d^ V nmEdE^mngR\$ EH\$ H\$m^' ñdénr i^dñWm {Z^m^ H\$aUo JaOMo Anho ^m i^dñWUmam E^m E^m j ð mVrb VÁkn^m ' XvrZo gm^m eäXm^ Am^U {M^' ^, a^H\$ ñdénmV OJn^m {d{dY ^m^mV KS^m^m ' hEdn^m KS^r n\$, g^mVZo em^, àE^Z BE^mXr ~m-r àmV{ ' H\$ VgM ' m^m^' H\$ {dUmi^m^mV VmV\$Zon nmMdE^mV ^mVrb. E^mngR\$ {dUmi^mngR\$ ' m^hVrny^o(Z^mVH\$m^bH\$, a(S^Ano d O^ihr. H\$m^H\$, de-gnB^g, AnZbnB^ gdm, ' m^m^ ' m^Z Aem {d{dY ' m^m^' n^m Cn^m H\$aVm ^m^m. ^mngR\$ B^m^m ' XvrZoE^m^oUmào àmV{ ' H\$ d ' m^m^' H\$ nVanda ñdV\$ MZb H\$m^m^dV H\$and^.

{dfq(Zhrq) YmUn' H\$ {e' \$ner ...

gmf n(OH\$ emóo-

- 1) Cf 'nùq{ ' H\$ ñVanda gmf n(OH\$ emónAqm AäqmgmV Cnqm(OV Ñi' H\$ nZ AnUrdm AäqmgH\$' nMr gmS>i qndgm(qH\$ H\$peeqmer Knbndr.
- 2) qm {dfq(Aqm AäqmgH\$' nVZ Hd i ^anp ' m(hVr XE qnEdOr B{VhmgmH\$Sə nnhE qnMr Ñi' An(U ^mJnObH\$ {dMna An(U VEdo qnm/m Cnqm H\$E qnMoH\$peeq {dH\$(gV hnd qnAqm Ñi' ZoAU qnZ AZw dnMr qmDZm H\$andr.
- 3) B{Vhmg {dfqmV ànW{ ' H\$ ñVanda ^VH\$ni Vo dV©mZH\$ni Aer AäqmgH\$' nMr aMZm Agndr. qnAqm OnSxbm {Oehm, anAq, Xe d OJ Aer AäqmgH\$' nMr aMZm Agndr. 'nùq{ ' H\$ d Cf 'nùq{ ' H\$ ñVanda Zdo àdrh, dV©mZnMr gI nb OnUrd ihndr. AäqmgH\$' Cnqm(OV Agndm
- 4) AäqmgH\$' nMr aMZm d nrRxnVH\$mo bd Z àH\$ennpH\$ Agndo ànW{ ' H\$ Vo Cf 'nùq{ ' H\$ ñVamqv {dUm' qnm ñd qnAÜ qnZmg àdqm H\$Unam AäqmgH\$' Agndm
- 5) **am' q ej {UH\$ YmU 1986, ej {UH\$ AnhnZnH\$Z H\$V H\$ qnR\$ nH\$¹⁵.**

• Vnq H\$ d iqdnWmZ{dfqH\$ {ej U ...

- 1) JUH\$ qn' ohr ' hEdnMr d gdqnmr gmYZo Pnrb AnhV. JUH\$ qn {dfqH\$ {H\$' nZ knZ d E qnm/m Cnqm H\$gm H\$andm, qm {dfqrMo à{ej U hm qm iqndgm(qH\$ {ej UnMm EH\$ ^m Agb. AJXr enbq ñVammgyZ JUH\$ qnMo knZ XUmaoCnH\$' ' \$na ' nrRxn à' nUnda Anqm(OV H\$boOnVrb.
- 2) ^naVr q n[apnWVrAqm gX^m' iqdnWmZ{dfqH\$ {ej UnÜXVrMo n[aerbZ H\$EZ EVX{dfqH\$ ej {UH\$ H\$ qnR\$ nMr Am Ur d {Z{ ' Vr H\$E qnmV

{eH\$É¶mÀ¶m nÜXVrbm àñgnhZ XÙo d È¶mMr -nOy CMbZ YaÉ¶mgnR: à{gÜXr 'nÜ¶' n¶m Cn¶m hnd\$ eH\$Vno Annè¶m JVrZo {eH\$Vm- {eH\$dVm ¶¶Ùo ñd¶¶- AÜ¶¶Z, {eH\$dÈ¶mÀ¶m ÛrnÜXVr (dual modes of study) BÈ¶mXr gnè¶m JnèZm V¶ kmZnÀ¶m {defV... BQaZQ> d 'n¶hVr V¶ kmZnÀ¶m à{H\$¶o ù o '¶¶¶Xm hnBB. H\$Yr Zìho Vno BQaZQÀ¶m dman¶ ù o ¶m 'n¶hVrMm àgna d dnX{ddnX, {^P 'XÙn¶a g¶mX ¶¶bm BV³¶m ì¶mH\$ n¶Vi rda EH\$ ñWmZ { ' i Uo e³¶ ¶mbo I mg JOa AgUñè¶m 'bnè¶m ej {UH\$ Andí¶¶H\$Vm n¶vugnR: H\$ënH\$ Vn¶¶ H\$ CnH\$ 'n¶mao ¶¶¶¶ g¶hÈ¶¶ {Z' n¶ H\$aVm ¶¶BB. {ej UnMr ì¶mH\$ C{Öi: d à{H\$¶¶er V¶ kmZnMr gn¶¶S>ZrQ> KmVbr Jbr n¶hOo È¶mMm ñdV¶ {dMna H\$aUo M¶¶\$Mo Rab, ho AYn¶¶¶ V H\$aUo AÈ¶mndí¶¶H\$ Anho ¶m n¶d¶y rda V¶ kmZnMm dma àhUOo {ej H\$ d 'bnèZm H\$di È¶mMo {JehnB¶¶ qH\$dm MnbH\$ ~ZdUo ¶¶mngZ dnMbo n¶hOo d È¶mMr g' rj m H\$an¶¶bm hdr. g¶mX An¶U Xn¶Vr hrM J¶d¶mnd¶¶ {ej UnMr Jè{H\$, r Anho An¶U VÈdmer H\$¶È¶mhr Aä¶¶ngH\$ 'n¶rb hnVj m H\$aVnZm VS:On¶>H\$an¶¶bm ZH\$no

• **nñVH\$...-**

1) 'ù oame¶ d C' n¶¶(d.Vw (1986), "ej {UH\$ g¶¶nZrMr 'bÈdb 'hrani> J¶¶Z' ùr '¶¶, Zrn¶¹⁷.

g¶¶YH\$om g¶¶YZ H\$aVnZm g¶¶^¶¶¶mMr 'hÈdny^o XV ¶mbr. g¶¶YZ H\$aVnZm Anam¶ S¶ H\$gm V¶¶na H\$andm, g' n¶m {dYmZnMr aMZm, n[ah\$ënZm H\$em àH\$mao 'n\$ndr, J¶hVH\$¶¶r 'n\$¶r, Ahdmb bd Z H\$emàH\$mao H\$ando Aem àH\$maÀ¶m AZb\$ 'XÙnMr n[any^o n¶hVr g' OÈ¶mng ' XV ¶mbr. g¶¶YZ nÜXVr H\$¶¶Vr dman¶r, Z' ¶m {ZdS>nÜXVr Aer {d{dY 'n¶hVr { ' i n¶r.

2) ~m0>^mJm (1975) ""ej {UH\$ gēnYZ'' ZVZ àH\$eZ, nū¹⁸.

àñVW nñVH\$MZY g\$YV gēnYHōm àH\$aUmMr 'n\$Ur H\$er H\$andr, g' ñŕm {Zd>H\$emàH\$aoH\$andr, C{Ōi>Mr 'n\$Ur, gēnYZng AndŕŕH\$ 'mŕhVr H\$emàH\$aoO' m H\$andr. 'mŕhVrMoAW{ZdMZ H\$emàH\$aoH\$andoB.{dfŕŕ 'mŕhVr àñVW gX^ēnñVH\$MZY {' i nŕor Anho

3) Dr. M.B. Buch, rol.II, fifth survey of Educational Research in India¹⁹.

àñVW I \$mV gēnYHōm nŕōgnŕhēŕmM gēnYZnMm Amŕadm KVNŕm ŕm I \$mMr gēnYHōg 'XV Prbr. {ej UmVrb {d{dY ñVanda Prbr gēnYZo EH\$ŕVnUoAäŕmgŕŕmgnR\$ ŕm I \$mMo{deŕ ghmŕŕ Prbo

4) ŕVŕŕ(d.am (2006) ""ej {UH\$ gēnYZ nŕXVr'' (Xbr Amŕm) I r{dŪmàH\$eZ, nū²⁰.

àñVW nñVH\$Mm 'mŕŕeZ ho EI mŪm {XnñV\$mgnaI o bm^bo gēnYZ H\$aV AgVnŕm àŕŕb\$ 'Ōm AäŕmgVnŕm g\$YV nñVH\$Mm 'ŕa 'nŕonMm hmV^na bmbm

5) Mihru (H\$em ('\$-ŕm 2004) "'mŕhVr d g\$ŕU VŕkŕZ AnŕU ej {UH\$ 'ŕŕ'mZ' àkmàH\$eZ, ZŕeH\$²¹.

"'mŕhVr g\$ŕU VŕkŕZ' ŕm nñVH\$Mm àH\$ēn AmŕnŕaV AŪŕŕZ ŕm ŕmŌZo AŕJŕ {ej H\$ {dŪmŕŕmZm ñdŕŕAŪŕŕZmgŕR\$ àdŕm H\$aŕŕmgŕR\$ g\$UH\$ŕŕm ghmŕŕmZoH\$Vr ŕmŌZm H\$er Amŕ br OmVo ŕm-Ōb {ddMZ Hōbo Anho ŕm Ūŕlo {ej H\$ AŪŕmZ KOH\$ŕ gX^mŕ AŪŕmZ gnŕhēŕ nŕda nŕBŪ> 'ŪŕloH\$go gnKa H\$é eH\$VnV ŕm-Ōb 'mŕhVr {Xbr Anho ŕm Ūŕlo {ej H\$, V°, àŕZ 'Ōŕm MnMŕŕm Ago àH\$ēn g\$UH\$ŕŕla gnKa H\$aVnV. {dŪmWu ñdŕŕŕŕ'mZmgŕR\$ ŕm àH\$ēnMm Cnŕm H\$é eH\$VnV. VgM "Video Conferencing' ŕm VŕkŕZnMm

g\$YV g\$YZ		CAI H\$R\$	
nWi	OrV	nrEM.Sx.nVa	BVa
^mVnVrb	àÉŒj Ahdrnb	04	-
	{ZŒVH\$ŒbH\$	02	-
	AnŒaami ŒŒ n[aFX	-	01
	EHŒ	09	03
^mVn-rnarb	{ZŒVH\$ŒbH\$	-	-
	BŒaZŒ>	-	07
	EHŒ	-	07
EHŒ	19		

• ^mVnVrb g\$YV g\$YZ ...

2.5.1 CAI H\$R\$ ner g\$YV g\$YZ ...

2.5.1.1 àÉŒj AhdrnbŒZ àm Prbb g\$YV g\$YZ ...

1) Ahmed Noman Abdulkarem Alghami (2008). The effect of using computer and practical display as educational media in teaching physics on the achievement, retention and development of scientific thinking of the secondary school students in Yemen²⁴."

2) "Akmal, (2008). Improving English speaking skills of psychology students through the use of computer assisted language learning (CALL)²⁵."

3) "Inamdar, Radhika, (2007). A study of effectiveness of Computer Assisted Instruction Programme for teaching Geography to Std. VII students from Marathi Medium Secondary Schools in Pune City²⁶."

2.5.1.2 {ZŒVH\$ŒbH\$ YZ àH\$ŒV Prbb g\$YV g\$YZ ...

1) Malliga.T.(2003). Relative effectiveness among Different strategies of computer Mediated multimedia presentation in teaching & Learning of chemistry at higher secondary stage²⁷."

2) Meera, S. (2000). Relative effectiveness among different modes of computer Based Instruction in Relation to students' Personality traits²⁸."

2.5.1.3 ~~Arvānī'ī n[afX' ŪlāH\$eV Prbbog\$YV gēnZ...-~~

1) Mohanasundaram, K. and Jebaraj, P. (June 2007). Effectiveness of e-content in Teaching of physics at Tertiary Level²⁹.

2.5.1.4 ~~BaZōda àH\$eV Prbbog\$YV gēnZ ...-~~

1) Traynor, Patrick L. (2008, June 1). Effects of computer-assisted-instruction on different learners³⁰.

2) Rastogi, Satish & Pawar, Ashok. (2007, May). Computer Assisted learning (CAL) Strategy for Numerical Methods Course an Experiment³¹.

3) Patil Anil Tanaji. (2006). Development of Multimedia Instructional System on Computer Education for B.Ed. Pupil Teacher³².

4) Ruttanathummatee, Suwana. (2004). Effectiveness of Computer Assisted Instrument for Primary School Students: An Experiment Study³³.

5) Intrawong, Opas. (2002). Evolving self - instructional training package on personnel management³⁴.

2.5.2 ~~^mVm-rnarb g\$YV gēnZ (BaZōda àH\$eV Prbb)...-~~

1) Izzet, Kara. (2007). The effect of retention of computer assisted Instruction in science education³⁵.

2) Alain, Senteni. (2004). Mathematics & computer aided learning³⁶.

3) Morgil, Inci, Yavuz, Soner, Oskay, Ozge Ozalcin & Arda, Secit (2004 December, 6). Traditional & Computer assisted Learning in teaching acids & Bases Under Regional Educational Laboratory Program, Haceltepe University, Faculty of Education, Beytepe-Ankara Turkey³⁷.

4) Ghaleb, Almekhlafi Abdurrahman. (2004). The effect of computer Assisted Language Learning (CALL) on United Arab Emirates (UAE) English as a foreign language (EFL) school students' achievement & attitude³⁸.

5) Chang, Chun-Yen and Tsai chin-Chung-(2004). The interplay between different forms of CAI & students performance of learning environment in the secondary science class³⁹.

6) Karper, Chistine, Robinson, Edward & Monfeserrat, Casado-Kehoe. (2004). Computer assisted instruction & academic achievement in counselor education⁴⁰.

7) Hannafin, Robert, D. & Orshay, Wellesley R. (2001). An evaluation case study of one high school's use of CBI to improve pass rates on high-stakes tests⁴¹.

2.6 ગુણવત્તા ગ્રંથિત અને ગૈરગૃહીત અભ્યાસ ગૈરગૃહીત પ્રશ્નના સંબંધ...-

આશિષકરણ ગુણવત્તા ગ્રંથિતના સંબંધમાં CAI નો ઉપયોગ {dH\$gV H\$દેવના પ્રશ્નના અભ્યાસ ગૈરગૃહીતના સંબંધમાં H\$દેવના ઉપયોગના વગર CAI નો ઉપયોગ {dH\$gV H\$દેવના અશિષકરણ ગુણવત્તા ગૈરગૃહીતના પ્રશ્નના

2.7 ગુણવત્તા અને ગૈરગૃહીતના વ્યવસ્થા...-

CAI ગુણવત્તા ગૈરગૃહીતના ઉપયોગ {dH\$gV H\$દેવના ઉપયોગ, ગુણવત્તા, આશિષકરણ j 'Vm, વિષયાંતીલ બોધાત્મક ક્ષેત્રાતીલ ઉદ્દિષ્ટે, વ્યક્તિમત્વ, સંગણક વાપરण्याचा कालावधी ના મર્યાદા ગુણવત્તા {dH\$gV H\$દેવના ઉપયોગના વગર emi વગર {dH\$gV H\$દેવના {H\$દેવના d ગુણવત્તા ગુણવત્તા નીચી ગુણવત્તા CAI માં હાલમાં નાનામાં નાનામાં ગુણવત્તા નો ઉપયોગના ગૈરગૃહીતના આશિષકરણનો ગુણવત્તા ગુણવત્તા ' નીચી H\$, Cf-' નીચી H\$ d {ej Uemó nXdr ના નાનામાં વગર J{UV, ^nVH\$emó, agnanaemó, Ordemó, ^emó, ગુણવત્તા {ej U, ^ymó, ^nm-H\$om, WnB© ^nm, B\$Or ^nm, ગુણવત્તા {ej U d iñdñWmZ ના ગુણવત્તા ગુણવત્તા ગુણવત્તા ગુણવત્તા CAI ગુણવત્તા ગુણવત્તા CAI ના ગૈરગૃહીતના ઉપયોગના વ્યવસ્થા

nnañm[aH\$ AUqmmZ nuXVrer H\$aEfmV Antobr Anho VgM nr0xb A(Zb (2006) qmfm gemyZm Uqjohr VbZm CAI ~ana H\$mfm(1 H\$m d CAI nrRmnr> MMm@Aer H\$aEfmV Antobr AnhoVa 'VranOIr (2003) qmfm gemyZm Uqjohr VbZmpihSraAnoH\$mfmP\$, 'DV gm(hEfm d XnhtMoEH\$)rH\$aU Aer Hbbr Anho

• añVW gemyZmModdi nU ...-

añVW gemyZmMoBVa gemyZmj mAgbboddi nU nr0xb à' mUo...-

- 1) nqgegemyZmMm Antadm KVbm AgVm AgoAntxi boH\$, g\$UH\$ ghmafV AZkeZ H\$mfmP\$ nra AZH\$ gemyZoPnor Anhv. naYwgXa gemyZ g\$UH\$ ghmafV AUqmmZ H\$mfmP\$ nra AnYm[aV Anho
- 2) añVW gemyZmV XnZ g'mZ JO> H\$aEfmgnR\$ nqRmZnda AnYm[aV MnMUrMm dma Hbbr Anho
- 3) añVW gemyZmV Z'zm {ZdS> H\$aEfmgnR\$ Ag\$miVola AnYm[aV ghVm\$ Z'zm{ZdS>fm nuXVrMm dma Hbbr Anho

2.8 g'ram ...-

g\$YV gemyZmMm Antadm KVem i o gemyHbbr gemyZ g'nm {ZpMV H\$aEfmgnR\$ EfmMm Cnfm Pnbm hm Aäfmng H\$aVmZm {d(dY JV, gX^© JV qmMo AdbnbSZ Hbbr Anho qm Antxi qmZVa gemyHbZo qm(df qm fm g\$YV nqdu Pnbbr gemyZo Aäfmngbr Anhv d EfmMm Jmfdnam {Xbm Anho nr0xb àH\$aUm UqjogemyZmMr àEfmj H\$mfmGhr {Xbr Anho

-...g^@:-

- 1) ગાંધી ઝરૂંબર' મંદ નંબર, ઈવર. (2007, 07). {ej UnVrb {dMnaàdnh (MnVr AndVr). H\$ehma ... ' \$H àH\$eZ. n#H\$.205.
- 2) {H\$im, n#H\$.206
- 3) {H\$im, n#H\$.206 d 207
- 4) AnH\$, gw Z. (1995). ej {UH\$ V\$ {dkmZ ({UVrV AndVr), n#Jo... I r {dUmàH\$eZ. n#H\$.71 d 72.
- 5) OJVm, h.Zm (1997, OnZdnar). AU\$VZ CnnIm d AU\$VmZ, n#Jo... ZVZ àH\$eZ. n#H\$.74 d 75.
- 6) OJVm, h.Zm (2007). àJV ej {UH\$ V\$ {dkmZ AnU ' n#hVr V\$ kmZ ({UVrV AndVr), n#Jo...{ZEV ZVZ àH\$eZ. n#H\$.150 d 151.
- 7) {H\$im, n#H\$. 153 d 156
- 8) {H\$im, n#H\$. 158
- 9) Using Power Point presentations in Teaching Retrieved May 2, 2009 http://cap.warwick.ac.uk/powerpoint/Teaching_with_Powerpoint_4.ppt.
- 10) Development into programme instruction. Retrieved May 27, 2009 <http://www.starfsfolk.khi.is/solrunb/proginsssf.htm.warwick.ac.uk/ETS/Publication/Guides/Classroom/Powerpoint? docs/Power Point 2 Teaching.pdf>.
- 11) Naik J.P., Syed Nurullah, 6th Edition (1974), A student's History of Education In India, (1800 - 1973), Madras : Macmillan India Limited. Page No.203-210; 207-212; 282; 340-341.
- 12) ^naVmVrb ej {UH\$ AnVr d g' rEVm, S#H\$.Vw Km ' n#Jo {dUmàH\$eZ, ZmVn, (n#H\$.137 Vo139)
- 13) 'hnamim H\$Vr H\$Vr' gn#e, àmV' H\$ {ej UnMo gndVrH\$aU AnU gnj aVmH\$Vr, embV {ej U {d^m, J\$VmbV, ' B.

- 14) anÁ¶ Aä¶mgH\$' Anaml S¶ 2010, OrdZ {ej U {Sg}-a 2010 - OmZdmar 2011 'g¶m {defn¶\$, 'h¶mi> anÁ¶ ej {UH\$ g¶mZ d à{ej U n[afX, n¶-30 ({dÚm n[afX).
- 15) amí¶ ej {UH\$ Y¶U 1986, ej {UH\$ Amí¶mZnHSSZ H¶V H¶¶¶¶ nHSS¶ nmZ Z§137 Vo140 d 244.
- 16) amí¶ Aä¶mgH\$' Anaml S¶ 2005, amí¶ ej {UH\$ g¶mZ d à{ej U n[afX, n¶ {Sg}-a 2009, nmZ Z§139-140.
- 17) '¶ oame¶ d C' nR¶(d.V¶ (1986), "ej {UH\$ g¶mZnMr '¶Édó 'h¶mi> J¶VZ' uVr '§i , Z¶¶¶.
- 18) ~mO>^mJ¶ (1975) ""ej {UH\$ g¶mZ"" Z¶Z àH¶eZ, n¶
- 19) Dr. M.B. Buch, rol.II, fifth survey of Educational Research in India.
- 20) q^VnS¶(d.am (2006) ""ej {UH\$ g¶mZ nÜXVr"" (X¶gar And¶¶r) I r{dÚm àH¶eZ, n¶
- 21) MihmU {H¶em ('¶-dmar 2004) "" n{hVr d g¶FU V¶ kmZ An(U ej {UH\$ '¶¶' mZ' àkm àH¶eZ, Z¶(eH\$.
- 22) ~ado{ 'Zmj r (1999) g¶UH\$...{ej U, n¶ Z¶Z àH¶eZ à.H\$. 40-50.
- 23) 'SS¶, 'nK¶ Omer (2001) H¶¶¶¶¶ d B¶aZ¶, n¶ ... ¶¶¶¶¶ {H¶E¶g n¶H\$.25-30.
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- 29)** Mohanasundaram, K. and Jebaraj, P. (June 2007). Effectiveness of e-content in Teaching of physics at Tertiary Level. Paper Presentation in International Conference at ST Thomas College of Teacher Education, Pala.
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àH\$U {Vgao

g&enYZnMr H\$η@üXVr

àH\$U {Vgao

gēnVZnMr H\$ññÜXVr

A.H\$	Vn{eb
3.0	ànVndZm
3.1	gēnVZnMm àH\$na
3.1.1	gēnVZnMr d{eī0ξo
3.1.2	gēnVZnAñm nmñeñm
3.2	gēnVZnMr nÜXVr
3.3	gēnVZnMm A{^H\$ën
3.4	g\$UH\$ ghmpañV AZKëZ H\$ññP\$' nMr àEñj A\$ b~OndUr
3.5	gēnVZnVrb Mbo
3.5.1	ñdml ñr Mb
3.5.2	Aml ñr Mb
3.5.3	A{0aññ>Mb
3.5.4	-mø Mb
3.6	YñmXe©
3.6.1	OZg\$ñm
3.6.2	Z' ŵm{ZdS>
3.7	gēnVZnMr gmYZo
3.7.1	gñmXZ MnMEñm
3.7.2	g\$ñmemórñ gmYZo
3.8	प्रत्यक्ष कार्यवाहीचा तक्ता
3.9	g' nann
	g\$^©

3. gēnVZ ho{ZpīMV I ' d nSvni m nnhVm 1188 Aem VII'inda AmYnabbo AgVo
4. gēnVZ ho{~ZMH\$ {Z[aj U d dVZnda AmYnabboAgVo
5. gēnVZnMoZdrZ kmZ {ZînP hnV/o

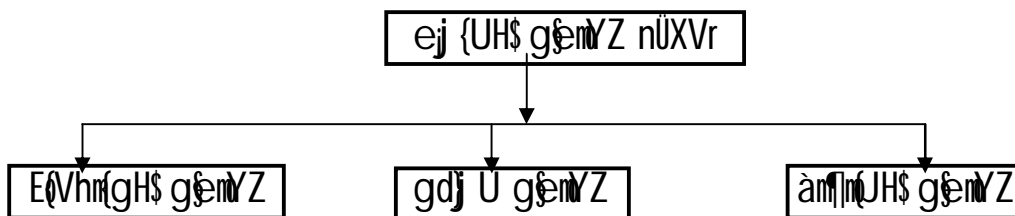
3.1.2 gēnVZnMnMfēIm..-

1. g' n' MoA^{ZYnaU
2. JfhVH\$Mr ' n\$Ur
3. gm(hE'InMonvZr(dEbnH\$Z
4. MbKOH\$MoA^{ZYnaU d Znr nH\$Z
5. H\$MIn' ' i'Im»ImH\$aUo
6. gēnVZ A{^H\$en VIma H\$aUo
7. àíZndbr d ' bml V AZvMr VIma H\$aUo
8. gm»ImH\$ {díbfU H\$aUo
9. gēnVZ Ahdrnb bd Z

3.2 gēnVZ nUXVr³ ..-

ânVW gēnVZngR\$ { ' I nUXVrMmCnIm H\$aE'ImV Anbom Anho Im
 ' Ü'ogdj U nUXVr d àmImUH\$ gēnVZ nUXVr Im gēnVZ nUXVrMm CnIm
 H\$aE'ImV Anbom

ej {UH\$ gēnVZngR\$ nī>sb VrZ nUXVrMmdma àm' »ImZoH\$om OnVno



• **gēnY nÜXVr ...**

(1) EñhrñgH\$ nÜXVr ...

प्रामुख्याने भुतकालीन घटना, व्यक्ति चारित्रे, परंपरा यांचे स्वरूप समजून घेण्यासाठी उपयुक्त असते.

(2) gdj U nÜXVr ...

dV©mZ pñWVrMm Aä¶mg H\$E¶mgR× gdj U nÜXVr dmaVmV.

(3) àñññH\$ nÜXVr ...

^dî¶H\$ñbrZ Ñi×Zo {Z¶', {ZiH\$F© àñWmñV H\$E¶mgR× àñññH\$ nÜXVr Cn¶¶V Anhoक्त

àñVW gēnYZmgR× àñññH\$ nÜXVr dmnabr AgZ E¶mg\$-Yr {dnVW {ddMZ nñ×H\$E¶mV AnboAnho

• **gdj U d àñññH\$ nÜXVr ...**

➤ **gdj U nÜXVr ...** dV©mZ pñWVrMm Aä¶mg H\$E¶mgR× ¶m nÜXVrMm dma H\$E¶mV ¶mno

➤ **àñññH\$ nÜXVr ...**

àñññH\$ ñdén (The Nature of Experimentation)

Zg{J¶\$ KS×Jñ¶m KQZñ¶m Aä¶mgndéZ emór¶ gÉ¶ enVÉ¶mMm à¶ÉZ nñgm Zñhr. ¶mV KS×Jñ¶m KQZm nanYrZ AgVnV. É¶m { ' i ñ¶V dnO> nhndr bnVVo ¶m CbO> {d{ei> n[apñWVr {Z' nñ H\$Vm Anbr d É¶mV KQZm H\$em KS×mV ho nñhVm Anbo Va Vo gēnYZH\$E¶m¶m Ñi×Zo gn¶¶rMo AgVo ¶mVZM à¶mñ¶m H\$ñZMm CJ' Pñbm d¶m{ZH\$ Ann¶m à¶mñemi V {d{ei> n[apñWVr {Z' nñ H\$Vm d É¶m n[apñWVrV Anój V {Zarj Uo{ ' i VmV qH\$dm Zñhr ho nñhZ emór¶ gÉ¶ OJng' na RdVno à¶mñH\$Vñ¶KQZñ¶m ~m-VrV ñdV... g{H\$¶ ^m

A) àm(VhmgH\$ H\$ni , B(Oá g\$H\$Vr, àmRZ ^mVr¶ g\$H\$Vr d JmH\$ g\$H\$Vr ... ¶m KQ\$Yrb CfnVar¶ g\$H\$ZmM emV KÊ¶mgnR\$ gdj U nÜXVr - àíZndbr, B(Vhmg {df¶ {ej H\$ Am(U {dÚm¶¶mgnR\$ àíZndbtMm dna H\$bm ¶mgnR\$ g\$emYH\$Zo ' m\$eP\$ d Vk ¶m¶¶mer MMm¶H\$br d ZYa àíZndbr {ZpíMV H\$br ¶m àíZndbr ' YZ { ' i nbe¶m ' m(hVrMo EH\$Ì rH\$aU H\$éZ Ê¶mVZ CfnVar¶ g\$H\$ZmMr A\$V' ¶mXr V¶ma H\$br.

~) g\$UH\$ ghm¶¶V AZKeZ H\$m¶¶\$ {Z{ ' ¶r ...

CfnVar¶ g\$H\$Zm {ZpíMV H\$emZYa g\$emYH\$Zo ' m\$eP\$ d Vkn¶er MMm¶H\$br VgM g\$UH\$ Vk {df¶ {ej H\$, nmR\$nmVH\$ ' \$i mVrb {df¶ Vk ¶m¶¶mer MMm¶H\$br. CfnVar¶ g\$H\$Zm¶er g\$YV ' m(hVr { ' i {dÊ¶mgnR\$ ~hCÓer¶ ' nÜ¶' nMm dna H\$bm VgM H\$hr g\$H\$Zm g' OÊ¶mgnR\$ nnda nBD> àñVr H\$aÊ¶mMm dna H\$bm darb gd^aH\$ao{ ' i nbe¶m ' m(hVrMo EH\$Ì rH\$aU H\$éZ ' m\$eP\$ d Vkn¶\$Z g\$UH\$ ghm¶¶V AZKeZ H\$m¶¶\$ nMm Anaml S\$m {ZpíMV H\$bm Ê¶mZYa g\$UH\$ ghm¶¶V AZKeZ H\$m¶¶\$ V¶ma H\$bm

¶m g\$UH\$ ghm¶¶V AZKeZ H\$m¶¶\$ nMr {Z{ ' ¶r H\$aVmZm ~ZaMr AZKeZ CÊñmr, J\$Mr I Ur ~ÜX AU¶¶Z CÊñmr, pñH\$ZaMr H\$' p'vdV AU¶¶Z CÊñmr, OrZ {n¶mOo g\$nrÊ' H\$ {dH\$gnMr CÊñmr ¶m ' nZgemór¶ CÊñmMm Cn¶m H\$bm

H\$ nWXeu Aä¶¶g ...

¶m H\$arVm g\$emYH\$Zo Zm Xoland ' nbnö {dUm d H\$S\$m à(VöZ, nÜo gM(bV ¶m¶¶r ' nÜ¶{ ' H\$ d Cf ' nÜ¶{ ' H\$ {dUm¶¶, dnaOo¶m emi Vrb B¶¶m 9 dr¶¶m dJm¶¶ {ZdS> H\$br. ¶mgnR\$ Ê¶m emi Vrb 100 {dUmWu {ZdS>bo hmV'o Ê¶m¶r Ag\$ m¶¶m nÜXVrZoghVH\$ Z' wZm {ZdS>nÜXVrZo{ZdS>H\$éZ Ê¶m¶ogw' ¶mNAN\$H\$ nÜXVrZo XnZ g' nZ JQ>H\$éZ {Z¶¶V d àm¶¶UH\$ JQ¶V {d^mJUr

{ZdS>Hbbr. gēnyHōZōZm Xoland ' nbnm ' nūq{ ' H\$ d Cf ' nūq{ ' H\$ {dÚntbŋ
 dmaOo' mi dnS\$ emi Vrb 100 {dÚmī'ŋmMr g\$ mŋVm nUXVrVrb gw' ŋmŋpANH\$
 nUXVrZo {ZdS> Hbbr. ĒŋmgnR\$ VbZrŋ JO> Vŋma H\$aĒŋmH\$arVm gm nŋŋV...
 I nrb nUXVrMm Cnŋm H\$aVm.

1) àŋŋŋUH\$ gēnyZ nUXVr {ZdSĒŋmŋm nR\$' mJrb JaO XnZ JOmMr VbZm
 V\$nm/\$ H\$aVm ŋMod {ZiH\$ŋānVm(dV H\$aVm ŋm/m.

2) g' nŋm hr ^{dīŋ H\$mi mRb AnhoĒŋmgnR\$ àŋŋŋUH\$ gēnyZ nUXVr {ZdS>
 H\$aĒŋmV Anbr.

3) AZb\$ àH\$maMm {dMna àŋŋŋUH\$ gēnyZ nUXVr' ūŋoH\$aĒŋmV ŋm/no AūŋmZ
 nUXVr hoŋdV\$ Mb Agēŋm ŋ o gēnyHōZōmMr {ZdS>Hbbr Anho

4) JOnda {Zŋŋ U RdVm ŋMod XnZ JOmMr {Zŋŋ UnZ\$ya VbZm H\$aĒŋmgnR\$
 gmŋŋrH\$a Agēŋm ŋ oàŋŋŋUH\$ nUXVrMm Adb\$ H\$aĒŋmV ŋUma Anho

५) फक्त एकाच चलाचा परिणामांचा अभ्यास करता येतो.

• **pīX30>A{^H\$ēnmMrbā' nūJO>nrbbo..-**

eni m	JO>	{dÚmī'ŋm g\$ŋm	AūŋmZ nUXVr
1	{ZŋŋIV	50	nmaŋm[aH\$
	àŋŋŋUH\$	50	g\$UH\$ ghmpaŋV AZKeZ H\$Vr H\$ŋŋŋ\$'

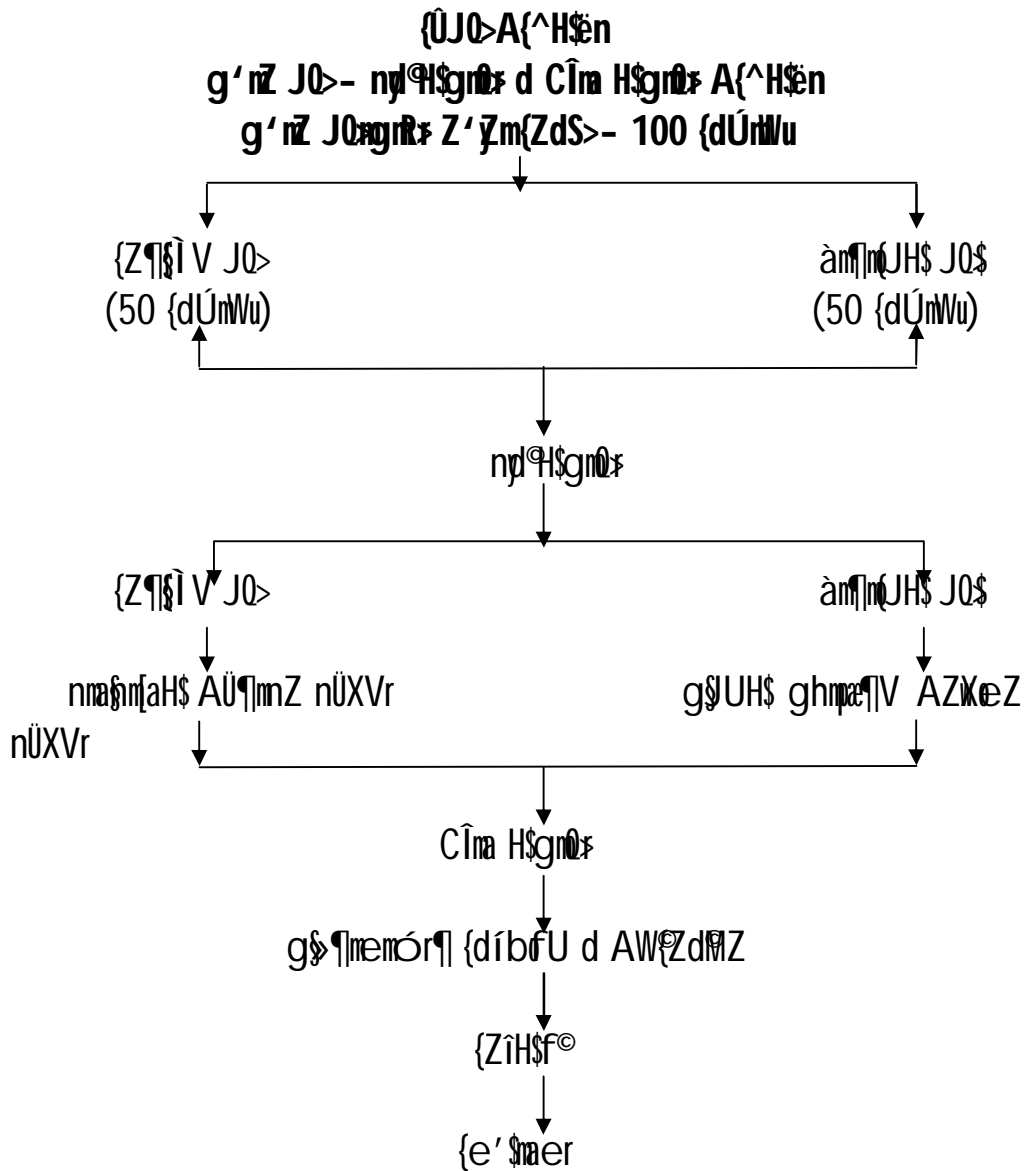
AnŋVr 3.3 pīX30>A{^H\$ēnmMr aMZm

-) gēnYZ H\$ri H\$OrModō mĪH\$..-

A.Z§	Vnerb	H\$brndYr
1	g\$^©nĪVH\$riModnMZ, g\$ŸYV Vk व्यक्तींशी चर्चा, संबंधित संशोधन, H\$' nŸdV nR>d CAI H\$riH\$' nMm Aä¶mg	2.4.2006 Vo5.4.2007
2	CAI H\$riH\$' nMog\$hvmbd Z	6.4.2007 Vo2.9.2007
3	g\$ŸYV g\$hmKZ MnME¶m ñd¶AÜ¶¶Zmg\$Ÿr {dUmĪ¶mgR>A¶m gMZm	4.9.2007 Vo2.3.2008
4	CAI H\$riH\$' nMr {Z{' Ÿr	3.3.2008 Vo15.9.2008
5	' mŸeH\$d Vkn¶¶m ' mŸeZmZmgma CAI H\$riH\$' d g\$hmKZ MnME¶mŸ Ü¶oAndĪ¶H\$ Vno~Xb	16.9.2008 Vo3.3.2009
6	nWXeu Aä¶mg	4.3.2009 Vo15.9.2009
7	CAI H\$riH\$' m Ü¶oAndĪ¶H\$ Vno~Xb	16.9.2009 Vo3.3.2010
8	nd¶mUrMr A§ b~OndUr	10.3.2010 Vo15.9.2010
9	nd¶mUrVrb CĪman{Ī H\$riH\$ VnmgUr d g' mZ JO>{Z{' Ÿr	16.9.2010 Vo 15.12.2010
10	à¶¶nĪH\$ JO>MoCAI H\$riH\$' nA¶m ghm¶mZoAÜ¶¶mZ d {Z¶¶Ī V JO>Mo nma¶¶aH\$ nÜXVrZoAÜ¶¶mZ, CĪmaMnUrMr A§ b~OndUr	16.12.2010 Vo2.3.2011

AmŸr 3.4 gēnYZ H\$ri H\$OrModō mĪH\$

darb XnŸhr JO>g AÜ¶¶mZ H\$brndYr g' mZ hnb/m AÜ¶¶mZmZŸ/a XnŸhr
JO>g CĪma H\$gnŸ XDSZ {' i mbe¶m ' mŸVrMoEH\$ĪH\$aU H\$éZ VrMo{dĪbŸFU d
AWŸZdMŸ H\$aĪ¶mgR> 't' test ¶m g\$¶¶memŸr¶ gmYZn¶m dma gēnŸYH\$ZoH\$bm



Answer H\$ r\$ 3.5 pX30>A{^H\$enMmAn^m

gdn^ n{hbr 'mZgemór^f à^m^emi m brnqPJ ^l^o ~0> ^mZr 1879
 gnbr ñWmZ H\$br d VVoE^mZr AU^f^Znda à^m^ H\$bo E^mAmYr gdj UnE' H\$
 g^n^ZndaM A{YH\$ ^a hnl^m 'H\$H\$to ^mZr à^m^emi {edm^f EH\$boJ0>
 समानगट, आवर्तन गट इत्यादी अभिकल्पांत स्वाश्रयी चलांची संख्या फक्त एक
 AgVo ñdm^ f^r Mbn^Mr g\$^m XnZ qH\$dm A{YH\$ Agë^mng d E^mZm ñdmYrZ
 RdUoe³^f Zgë^mng hoA{^H\$en Cn^m^mV AnUVm ^l^oCfñVar^f OnVo E^m^ w o
 An(U gn^>^H\$A^m àJV knZnA^m CnbāYr' w o K0ZnE' H\$ A{^H\$enMr ^a
 nSbr.

A) H\$A{^H\$ën ...

H\$A{^H\$ënV 'wV...I nrb àH\$MoA{^H\$ën AY^V

AgVnV ...

1. EH\$ J0>A{^H\$ën
2. g' mZ J0>A{^H\$ën
3. AndVZ J0>A{^H\$ën
4. ~hp0>A{^H\$ën

• g' mZ J0>A{^H\$ën ...

AÝV gd[©]-m-VrV g' mZVm aml ž {ZdSbeVim XnZ qH\$dm A{YH\$ J0>da XnZ CnmVim Adb\$ H\$ÉZ ÈVim gmgj n[aUm nMr VbZm H\$aÈVim H\$arVm g' mZ J0>A{^H\$ën A{YH\$ Vm Anho Vm A{^H\$ënV g' mZ nml VMoXnZ J0>{ZdSbo OmVm. ÈVim H\$arVm nV[©]MnMUr {Xbr OmVo EH\$m J0>da àVim JH\$ CnmVim Adb\$ H\$om OmVno d XpèVim J0>da àVim JH\$ CnmVim Adb\$ H\$om OmV Znhr. XnZhr ~m-VrV BVa gd[©]n[apñWVr VrM Raibr OmVo ÈVimZVa XnZhr J0>Zm EH\$ MnMUr {Xbr OmVo { i mbeVim 'Sbn/rb 'SaH\$Vim gmVPSVdeZ àVim JH\$ CnmVim n[aUm H\$maH\$Vm Ra(dbr OmVo Vm A{^H\$ënMr H\$ënZm I nrb And ZndÉZ A{YH\$ ñni>hnB.

3.5 gënYZnVrb Mb ...

1) ñdnl Vr Mb ... (Independent variable)

BÝIm 9 dr AVim AäVingH\$ mVrb B{Vhng {dfVimgR\$ gën(YH\$S)Z {dH\$gV H\$aÈVimV Ambom CAI H\$VPS' hogënYZnVrb ñdnl Vr Mb Anho

2) Anl qir Mb ... (Dependent variable)

"B{Vhmg' {dfqim/rb gñmKZ MnMUrV {dÚmi'qimZr àná Hóbe'qim JUWVZ àVrV Pribbo{dÚmi'qimMoAne'qimZ àhUOoAnl qir Mb Anho

3) A{Oa'qim Mbo...- (Attribute variable)

{dÚmi'qimMo qbJ ' bo d ' br ... qim MbnZyga CAI H\$mq' nMm gñmKZ MnMÉ'qim/rb {dÚmi'qimA'qim AU'qimZ gñmKZndarb n[aUm' Aä'qimgbbm Anho

4) ~nø Mbo...- (Extraneous variable)

A) gñmYHóMr AU'qimZ epr ... {Zq'í V JOxg nmañm[aH\$ nUXVrZo

AU'qimZ H\$VnZm gñmYHó'qim AU'qimZ eprMm {dÚmi'qimA'qim AU'qimZ gñmKZnda hñUam n[aUm' H\$' r H\$E'qimgnr' gñmYHóZo CAI H\$mq' {dH\$(gV H\$E'qimgnr' Hóbe'qim Ane'qim nW, \$aUmMm Cn'qim H\$éZ gñmYHóZo ñdV... (Mma) KOH\$mo AU'qimZ Hóbo

~) gñmKZ MnMÉ'qim Cîman{î H\$ó'qim 'mZn/rb

iq{³V{Zð\m.-

gñmKZ MnMÉ'qim Cîman{î H\$ó'qim 'mZn/rb iq{³V{Zð\m H\$' r H\$E'qimgnr' gñmYHóZonp{Z'qimOV CîmagMr d JUWVZ qimOZZyga ñdV... gd© Cîman{î HóMo' mZ Hóbo

3.6 ÝqimKe©...-

3.6.1 OZgñ'qim...-

1) àñVW gñmVZnV ' hnami>an'qim/rb Bq'îm 9 dr MoB{Vhmg {dfqimMoAU'qimZ H\$Umaogd{dÚmWu hr OZgñ'qim Anho

2) àñVW gñmVZnV ' hnami>an'qim/rb ' anR' ' nU'qim' nA'qim gd©emi m Á'qim' Ü'qim Bq'îm 9 dr Mm dJ©Anho

3.6.2 Z' w m {ZdS>.- gēnYH\$m gēnYZ H\$mġmġnR\$ nġo ehamVrb 'anR\$ 'nġġ' m/rb Bġġm 9 dr Mm dJ©Agbēġm CfñVarġ gġġenZnM emY KēġmġnR\$ gdġ U nġXVr VgM n[aUm H\$aH\$Vm AäġmġġmġnR\$ àġġmġH\$ nġXVrMm Cnġmġ Hġbm

1) CfñVarġ gġġenZnM emY KēġmġnR\$ gdġ U H\$aġġmġnR\$ Z' w m {ZdS> ġmġpANġ\$ nġXVrZo Hġbr. nġo ehamVrb 25 emi nġ Yrb 50 {ej H\$ d 200 {dŪmWu ġmġr {ZdS>Hġbr.

2) àġġmġH\$ nġXVrgnR\$ ghVW\$ Z' w m {ZdS> nġXVrZo nġo ehamVrb EH\$m emi Vrb 50 {dŪmWu {Zġġġ V JQġgnR\$ d 50 {dŪmWu àġġmġH\$ JQġgnR\$ {ZdS>bo

VH\$ġ	JQ>	{dŪmWu gġġm	AŪġmZ nġXVr
A	{Zġġġ V JQ>	50	nġaġm[aH\$
~	àġġmġH\$ JQ>	50	gġġUH\$ ghġpēġV AZKēZ H\$mġġġ'

āñVW gēnYZmġnR\$ nġo ġmVrb Zm Xoland 'nġnġ 'nġġ{' H\$ d Cf 'nġġ{' H\$ {dŪmġm/rb Bġġm Zddr 'Yrb 100 {dŪmġmġr {ZdS>Hġbr Anho hr {ZdS>āngġH\$ Z' w m {ZdS>ġm nġXVrMm gēnYH\$Zodmna Hġbm Anho

3.7 'nġVr gēnYZmġr gnYZo.-

gd©aH\$aġm gēnYZm Ūġo AmYnagmġr Jk gġġbV H\$aUoAmdġġH\$ AgVo g' nġġMo {ZanH\$aU H\$aġġmġH\$aVm nāmdm āhUġ AmYnagmġr JkMo gġġhU gēnYZmV gdmġ 'hġdnMo AgVo AmYnagmġr Jk {OVH\$ AMġH\$ d g' Wġġ Agb {VVHġM gēnYZmMo {ZiH\$ġ{dġdgZrġ hġġġmġm gġd OmġV AgVno

Bi> AmYnagm Jk gH\$bv H\$aE¶mgnR: Zó ³¶m 'mZ gmYZnMr {ZdS> H\$aUo And¶¶H\$ AgVo g¶¶YHóom H\$ndE¶m àH\$naMr AmYnagm Jk gH\$bv H\$and¶¶mMr Anho ¶¶nda g¶¶YZ AmYnagm Jk gmYZnMr {ZdS> Adb\$Z AgVno àñVW g¶¶YZnV AmYnagm wk gH\$boZngnR: g¶¶KZ MnMUr (n¶¶MnMUr d CÎna MnMUr) ¶¶¶m dma H\$aE¶mV Anbm Anho g¶¶KZ MnMUr g¶¶YHóZo ñdV... संविधान तक्त्यानुसार केली आहे. यापैकी २५ गुणांची चाचणी पूर्वज्ञानावर आधारित V¶¶na Hóbr Anho d CÎna MnMUrV 25 J¶¶¶r g¶¶YHóZo {eH\$(dbE¶m nR:KOH\$nda AmYn¶aV Anho

3.7.1 g¶¶KZ MnME¶m..-

A) n¶¶MnMUr ..-

g¶¶YZngnR: B¶¶¶m 9 dr 'Ü¶¶o B{Vhng {df¶¶nda AmYnarV àíZndbr {dÜm¶¶¶mZm XE¶mV ¶¶¶na Anho 25 J¶¶¶r MnMUr Ago øm MnMUrMo ñdén anhUna Anho

B¶¶¶m 9 dr 'Yrb B{Vhng {df¶¶mVrb Am¶¶¶¶la AmYn¶aV g¶¶dYmZ तक्ता.

n¶¶MnMUr d J¶¶XnZngH CÎmagMrMr {Z{ '¶r g¶¶YHóH\$Syz H\$aE¶mV Anbr. hr MnMUr V¶¶na H\$aVnZm Aä¶¶ngH\$' nV KOH\$Zngma XE¶mV Anbom J¶¶¶m ^nanE bj nV KVbm 'wrb dm{f¶¶\$ narj à¶¶m àíZn{¶Hó¶¶m ñdénMm AmYna KVbm g¶¶YHóZo V¶¶na Hóbr 25 J¶¶¶r n¶¶MnMUr Zddr 'Yrb B{Vhng AÜ¶¶mZ H\$aUnaAZw dr {ej H\$ d g\$-¶YV VknH\$Syz VnngZ 'wXeZ KE¶mV Anbod AemàH\$naong¶¶MnMUrMr Am¶¶¶ ga' nUVmRa{dE¶mV Anbr.

MnMUr V¶¶na H\$aVnZm I nrb n¶¶¶¶¶¶mdma HóbrAnho..-

- 1) उद्दिष्टनुरूप संविधान तक्ता तयार केला.
- 2) संविधान तक्त्याप्रमाणे चाचणी तयार केली.
- 3) J¶¶XnZ gMr

ग्राहक मूल्य 3.6 नयाँ चीन मूल्य

- ... संविधान तक्रा :-

चीन

चीन	म	मूल्य
क	10	40
अ	10	20
क	05	40

क

चीन	म	मूल्य
अ' व म	05	20
अ' व म, अ' व म, अ' व म अ' व म	10	20
अ' व म, अ' व म, अ' व म अ' व म	10	60

अ' व म

चीन	म	मूल्य
{XK}	10	40
bK	10	20
dñV	05	40

CnKQHS	knZ			AnbZ			CnqndZ		
	{X.	b	d	{X.	b	d	{X.	b	d
à' m Mma gñH\$VrMo' híd	2(1)		3(2)						
àmV{VhngH\$H\$ni , B(Oá gñH\$Vr, àmMrZ ^maVr¶ gñH\$Vr d JkH\$ gñH\$Vr ¶mMr ' mthVr			2(3)				5(1)		
àmV{VhngH\$H\$ni , B(Oá gñH\$Vr, àmMrZ ^maVr¶ gñH\$Vr d JkH\$ gñH\$Vr ¶mMr A{YH\$ ' mthVr	3(1)				5(5)				5(5)
	5(2)		5(5)		5(5)		5(5)		5(5)
EHJU	10(7)			5(5)			10(6)		

वरील तक्त्यात **d**=dnV(Zò>àíZ, **b**=bKmar àíZ, **{X**={XKmar àíZ
H\$gmVrb Añ\$ JU Xe{dVm/ An{U H\$gm-nharb Añ\$ g\$¶mXe{dVmV.
àmV{VhngH\$H\$ni ,àmMrZ ^maVr¶ gñH\$Vr, JkH\$ gñH\$Vr, B(Oá gñH\$Vr

H\$ Cîna MnMUr ...

gñmYHóZo B¶m 9 dr À¶m à¶m{UH\$ d {Z¶¶V Aem Xnhr JQada
à¶m{UH\$ ' m m d {Z¶¶rV ' m m {Xe¶mZYa Oo B{Vhng {df¶mMo AU¶mZ Hóbo
Anho È¶m ^m mda 25 JU¶m MnMUr à¶m{UH\$ d {Z¶¶V JQagnR\$ EHSM MnMUr
XÈ¶mV ¶mna Anho B¶m 9 dr ' Yrb B{Vhng {df¶mVrb KQññla An¶m{aV
g\$¶mZ तक्ता, Cîna MnMUr d JU XnZngH Cînag¶mMr {Z' ¶r gñmYHóSSZ
H\$aÈ¶mV Anbr. hr MnMUr JU, àíZ H\$ ññ\$, àíZ àH\$na d CnKQHS ¶m-m-V n¶
MnMUr g' mVa H\$aÈ¶mV Anbr. V¶na Hóbr 25 JU¶m Cîna MnMUr d
JU XnZngH Cînag¶mMr 9 dr ' Yrb B{Vhng {df¶mMo AU¶mZ H\$aUnè¶m AZ¶dr
{ej HññSSZ d g\$¶YV VknñSSZ VnngZ ' mXeZ KÈ¶mV Anbo È¶m Ü¶o
Andí¶H\$ Vo~Xb H\$aÈ¶mV Anbod Aem àH\$nao Cîna MnMUrMr Ame¶ ga' mUVm
Ra{dÈ¶mV Anbr. AZ¶dr {ej H\$ d g\$¶YV VknñSSZ Cîna MnMUr~m-V AnboÈ¶m
g¶mZm n¶¶mUr gnR\$ XÈ¶mV AnboÈ¶m g¶mZm Cn¶m H\$ÉZ Cîna MnMUrV
~Xb H\$aÈ¶mV gñJVbo ¶m g¶mZm Cn¶m H\$ÉZ Cîna MnMUrV ~Xb H\$aÈ¶mV
Anbm

3.7.2 'nhr {dibfUmr g\$ qnenorj Vj o.-

A) 'Uq' nZ ...-

amqUH\$ d {Zqj V JQxrb {dUm'qnr nqfMUrV d CmaMnMUrV VgM amqUH\$ JQxrb 'bo d 'br qnr Cma MnMUrV amá Hbeqm Jwmo 'Uq' nZ H\$Tz EqmM Cnqnl "t' 'e q H\$T E q nH\$ aVm H\$om

~) Arbd ...-

amqUH\$ d {Zqj rV JQxrb {dUm'qnr amá Hbeqm nqfMUrV d CmaMnMUrV Jwmo AmYanda Arbd nnao VbZm Xe d E q mgnR\$ d {ZiH\$F© H\$T E q mgnR\$ nV\$ nbd nMm Cnqnl H\$aE q mV Arbm

H\$ "t' narj H\$m...-

1. amqUH\$ d {Zqj V JQxrb {dUm'qnr Xnhr KOH\$ MnMUrV amá Hbeqm Jwmo 'Uq' nZnVrb ' \$aH\$
2. amqUH\$ d {Zqj V JQxrb {dUm'qnr CmaMnMUrV amá Hbeqm Jwmo 'Uq' nZnVrb ' \$aH\$
3. amqUH\$ JQxrb {dUm'qnr nqfMUrV d CmaMnMUrV amá Hbeqm Jwmo 'Uq' nZnVrb ' \$aH\$
4. {Zqj V JQxrb {dUm'qnr nqfMUrV d CmaMnMUrV amá Hbeqm Jwmo 'Uq' nZnVrb ' \$aH\$
5. amqUH\$ JQxrb 'bo d 'br qm {dUm'qnr CmaMnMUrV amá Hbeqm Jwmo 'Uq' nZnVrb ' \$aH\$.

darb 'Uq' nZnVrb ' \$aH\$Mr gnW\$Vm VnngE q mgnR\$ "t' n[a j H\$Mm Cnqnl H\$aE q mV Arbm amqUH\$ d {Zqj V JQxrb VbZm H\$E Z "t' 'e q H\$T E q mV qB d "t' amá 'e q 0.05 d 0.01 qm nVanda gnW\$Vm Ra{dbr OmVo

3.9 g'ramm ..-

àñVW àH\$UmV gēnYHōZogēnYZ nUXVr, gēnYZnMr àĒġj H\$ŋŋŋhr
H\$aV AgVnZm dmnabbr gmYZo d Vġ ġnMr 'n(hVr d àĒġj AÜġmZnMr
dō mġHō ġnMr 'n(hVr {Xbbr Anho àmā 'n(hVrMo dJuH\$aU H\$ŋŋH\$aU,
AWZdMZ, nġsb àH\$aUmV HōboAnho

g⁸^©

1. npÊSV, ~Ýgr {-hmar (2005, Am⁰ma). {ej UmVrb g⁸enVZ (g⁸enVZ ' H\$ Am(U JwU⁸ H\$) nWJo...{ZÊ¶ ZVZ àH\$meZ. n#H\$. 20.
2. OJVm, h. Zm (2007), àJV ej {UH\$ V¶ {dkmZ Am(U ' r(hVr V¶ kmZ ({UVr¶ And¶r), nWJo...{ZÊ¶ ZVZ àH\$meZ. n#H\$.150 d 151.
3. Using Power Point presentations in Teaching Retrieved May 2, 2009
http://cap.warwick.ac.uk/powerpoint/Teaching_with_Powerpoint_4.ppt.
4. Development into programmed instruction. Retrieved May 27, 2009
<http://www.starfsfolk.khi.is/solrunb/proginsssf.htm.warwick.ac.uk/ETS/Publication/Guides/Classroom/Powerpointdocs/Power Point 2 Teaching.pdf>.
5. ' w q ame. d C' nQ {d.Vw (1997) ej {UH\$ g⁸enVZnMr ' wVEdq ZmJnq.
6. q^VnS {d.am (1999) ej {UH\$ g⁸enVZ nUXVr, ZVZ àH\$meZ nWJo n#144
7. nmagmZg, h⁰ bVmd XennS brZm...ej {UH\$ g⁸enVZ n#H\$.7.

àH\$aU MrWo

gH\$bV ' m{hVrMo

dJuH\$aU, {dÍb{fU d

AW{ZdMZ

àH\$U MmWo

gH\$bV 'm(hVrModJuH\$U, {díbfU d AWZdMZ

A.H\$		Vn{eb
		' m(hVrMogH\$bZ, dJuH\$U Am(U AWZdMZ
4.1		ànVndZm
4.2		' m(hVrMogH\$bZ
	4.2.1	{díbfUmMmAW\$
	4.2.2	' m(hVr {díbfUmMoàH\$ma
4.3		ànVW g\$emZngnR\$ gH\$bV 'm(hVrMog\$¶memór¶ {díbfU d AWZdMZ
4.4		g\$emZnMo{ZiH\$F©
4.5		g' nann
		gX^©

àH\$U MmVo

gH\$bV 'm'hVrModJuH\$U, {díbfU d AWZdMZ

4.1 àñVmdZm..-

àñVW gñmVZmV gñmYHóZo {ZíH\$fróV nñmMÉ¶mgnR: {d{dY àH\$naMr 'm'hVr ¶m àH\$UmV g' m{di>Hóbr Anho ¶m gH\$bV Hóbe¶m 'm'hVrMo gXa àH\$UmV nW.H\$U, {díbfU d AWZdMZ HóboAnho

gñmVZ à{H\$¶m {d{^P àH\$naA¶m 'm'hVrMo 'm'çm à' mUmda gH\$óZ H\$andóbmVVo {d{dY óm/mVZ gH\$bV Hóbr 'm'hVr gñdm/rbm {dI mbe¶m ñdénmV AgVo ¶m 'm'hVrMo EH\$ÌH\$U d gñm rH\$U H\$éZ gñmYHóbm Vr ¶m¶m [aVrZo gnKa H\$andr bmVVo ho H\$AV AgVñZm gñmYHóbm 'm'hVrMo dJuH\$U d VññH\$U H\$Uo Andí¶mH\$ AgVo dJuH\$UmZVa ¶m 'm'hVrMo gñ ~ÜX gnKarH\$U H\$Uo A{YH\$ gñ^ hñVo ¶m m o gñmYH\$ñm Ú¶m Andí¶mH\$ Agbe¶m 'm'hVrMo{díbfU d AWZdMZ ¶m à{H\$¶m gñ^ hñD\$ eH\$VmV. ¶m H\$naUmVd 'm'hVrModJuH\$U H\$UoAndí¶mH\$ RaVo

4.2 'm'hVrMogH\$bZ ..-

gñmVZnA¶m gX^mñ H\$ñUVr 'm'hVr {' i dñ¶mMr Vr Hóhm {' i dñ¶mMr d H\$er {' i dñ¶mMr ¶mMo {Z¶mOZ gñmVZnA¶m gñdm/vrgM hñVo {' i mbe¶m 'm'hVrA¶m AW©{ZdMZmgnR: H\$ñUVo gñ¶memó dman¶mMo ho gñXm AmYrM Ra{dUoAndí¶mH\$ AgVo ¶m m o gñmVZ à{H\$¶m EH\$ {Xem {' i Vo AZndí¶mH\$ 'm'hVr Jñ m Hóbr OmV Znhr. O' {dbe¶m 'm'hVrMo{ZdMZ AmVm H\$goH\$an¶mMo hohr àíZ Ìng XV Znhr. gñmVZ H\$ñ¶m^, \$' nñmnda C^oanhVo g' ñ¶mMo Cîna enYUo ho gñmVZ à{H\$¶mMo à' ¶m C{óíOç gñ¶¶ hñVo WñS>¶mV, n[aH\$ñZñmVr VnmgUr H\$AVm¶mVo

4.2.1 {dibfUmmAW©.-

gH\$bv 'mfhVrMo V³E'qmV énnVa H\$éZ E'qm AmYnao {ZiH\$frAV
nnbMÉ'qmpdu 'hÉdnMm Q\$nm ahUOo gn>>H\$H\$ à{H\$'m H\$aUo Aem à{H\$'m
'mfhVrMo{dibfU ahUVnV.

'mfhVr gH\$bv H\$aE'qmpduM {dibfUmm Anaml Sx V'qna H\$andm bmvVno
p³bi>àn'qJH\$ ^mfMr {dibfUmr Ü'qognü'qm d gn'qim ^mfó Ü'qonZ... 'n\$Ur H\$br
OmVo AgoH\$é'qm i M 'mfhVrMoAW©ZdMIZ gto^ hmv

gémYZ àiZnZm Cîna {' i E'qna'qm hVZo {' i dbé'qm 'mfhVrMo dJuH\$aU
gylrH\$aU Am(U gnané H\$aUoahUOo{dibfU hmq}.

4.2.2 'mfhVr {dibfUmmàH\$a ...-

1) g\$'qne' H\$ {dibfU

2) JUné' H\$ {dibfU

ànVW gémYZmV gémYH\$Zog\$'qne' H\$ {dibfUmm AmYna Kv/bm Anho

4.3 àñVW gémYZngnr\$ gH\$bv 'mfhVrMog\$'qnenÓ'q {dibfU d AW©ZdMIZ ...-

ànVW gémYZngnr\$ gémYH\$Zog\$'qne' U d àn'qJH\$ nUXVr Aer {' I
nUXVr am-{dbr Anho àñVW gémYZmV A{^Zd nUXVrV g\$UH\$ ghma'qV
AZXeZ nUXVr dmnabr Anho E'qmV g\$UH\$A'qm ghma'qVZod nna\$nr[aH\$ nUXVrZo
AÜ'qmnZ H\$éZ E'qnmr VioZm H\$obr Anho 'qngnr\$ nq'qnmUrMm dma H\$éZ,
E'qnmrb JUnéZ g'mZ JO>V'qna H\$bo àn'qJH\$ JOxom g\$UH\$Mm Cn'qnm
H\$éZ B'q'nm ZddrA'qm "B{Vhmg' qm {df'qnmrb àmj{Vhr{gH\$ H\$ni , B{OáMr
gH\$Vr, ànMrZ ^naVr'q gH\$Vr d JkH\$ gH\$Vr'. hm ^m {eH\$de'qmV Antom
{Z'q'V JOxom hnm KOH\$ nna\$nr[aH\$ nUXVrZo {eH\$dbm Xn'hr JOxom Cîna
MnMUr {Xbr Am(U àE'qH\$ JOA'qm àmá\$nr Ü'qo VioZm H\$br. E'qndéZ,

g\$UH\$U\$nao H\$öe\$fm AU\$fmZnMr n[aUm H\$naH\$Vm Vnmgbr. H\$di g\$fmE' H\$ VbZ\$fm AmYnao {ZiH\$fm} {gÜXVm hmD\$ eH\$V Znhr. H\$naU, EH\$M OZg\$fmZ {ZdS\$bo XnZ JO> ho Zn' rM EH\$gmaI o AgVrbM Ago Znhr. fmgnR\$ YfmXe©I \$ H\$ntE\$fm Anbr. Xnhr JO\$M AmT\$ bbm ' \$aH\$ hm YfmXe© I \$ ng m OmV Ag\$fm, gn\$fmH\$fm à' nU gnV\$ RaVo gnV\$Vm H\$gn\$ nntE\$fmgnR\$ XnZ JO\$Vrb ' Üfm' nZnM ' \$aH\$ "t" n[a{j H\$fm gnha\$fmZonr(hbm fm àmf\$ à' nU I \$ fmMoJbna H\$nt\$do bMVo

eYfm n[aH\$enZMm pndH\$na qH\$dm E\$fm hm gnV\$Vm nVanda Adb\$Z AgVno gm nYfm... {ej Uj d mV 0.05 d 0.01 ho XnZ gnV\$Vm nVa {ZdS\$bo OmV. eYfm n[aH\$enZMm 0.01 nVanda E\$fm H\$aUo ahUOo àmf\$ d {Zfm V JO\$Vrb ' Üfm' nZnM ' \$aH\$ 100 d m H\$öe\$fm àfm nV EH\$ d m àfm MmMm fmD\$ eH\$Vno àmf\$ d {Zfm V JO\$Vrb {dUm fmMm nY©d Cma MmMUrVrb àVgnX bj mV KD\$Z B{Vhmg {dfmVrb àmfVhmgH\$ H\$ni , B{OáMr g\$H\$Vr, àmRZ ^maVr fm g\$H\$Vr d JkH\$ g\$H\$Vr fm KOH\$dfmMo AäfmgnZ Vnmgbo

àmf\$ d {Zfm V JO\$Vrb {dUm fmMm nY©d Cma MmMUrVrb àVgnX bj mV KD\$Z B{VhmgVrb àmfVhmgH\$ H\$ni , B{OáMr g\$H\$Vr àmRZ ^maVr fm g\$H\$Vr d JkH\$ g\$H\$Vr fm CnKOH\$dfmMoAäfmgnZ Vnmgbo

4.2.1 H\$H\$-1

B{Vhmg {dfmVrb AdKS>dnU\$fm g\$enZMm emV K\$fmgnR\$ gdj U Z' m{ZdS>fm fmNpAN\$ nÜXVrZo{ZdS>H\$br.

nUo ehanVrb 25 emi n\$ Yrb 50 {ej H\$ d 200 {dUmWu fmMm {ZdS> H\$br.

H\$H\$-2

nd@MrMUr

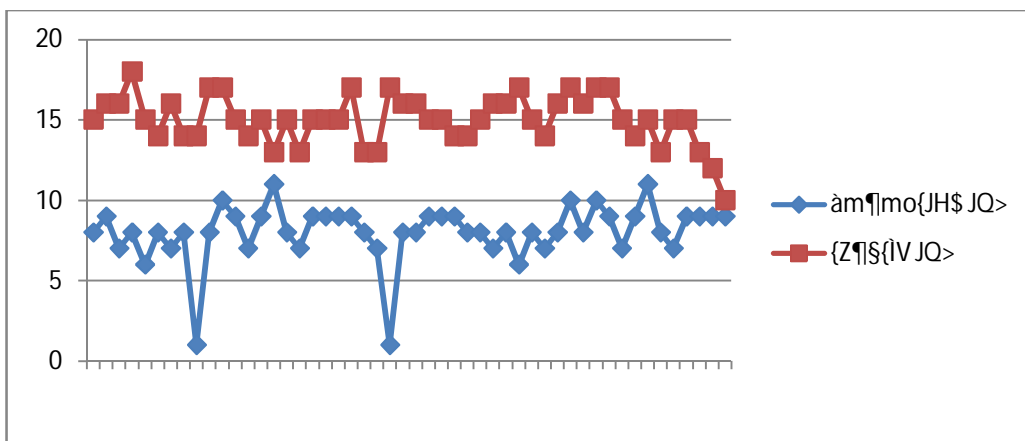
àññòUH\$d {Zñ§ì V J0>rb {dÚñìññZmnyd@MrMUrV { ' i rbbòJW

EHU JW-25

A.H\$	àññòUH\$ J0>	{Zñ§ì V J0>
1	10	08
2	08	09
3	10	07
4	09	08
5	07	06
6	09	08
7	11	07
8	08	08
9	09	10
10	06	08
11	09	10
12	09	09
13	04	07
14	09	09
15	08	11
16	07	08
17	10	07
18	08	09
19	08	09
20	09	09
21	07	09
22	09	08
23	08	07
24	07	10
25	08	08
26	09	08
27	07	09

28	08	09
29	06	09
30	08	08
31	10	08
32	10	07
33	09	08
34	07	06
35	09	08
36	11	07
37	08	08
38	09	10
39	06	08
40	09	10
41	09	09
42	04	07
43	09	09
44	08	11
45	07	08
46	10	7
47	08	09
48	08	09
49	09	09
50	08	09

• àm¶JH\$d {Z¶§} V JQ>Wrb {dÚn¶¶Zmnd¶¶MUrV { ' i rbbJW



H\$H\$-3

CÎm MrMUr

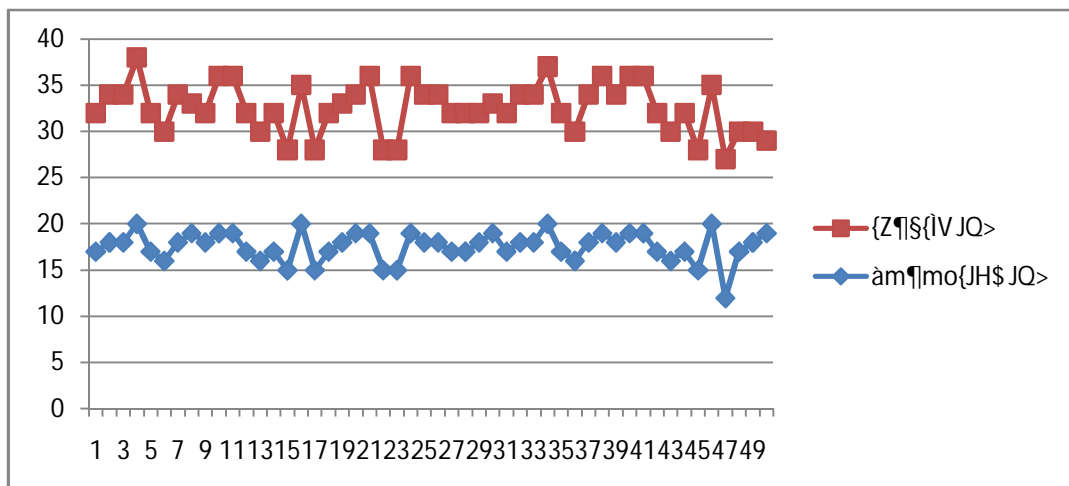
àññU\$ d {Zŷŷi V J0>rb {dÚniŷrZmCÎm MrMUrV { ' i nb0JW

EHU JW-25

A.H\$	àññU\$ J0>	{Zŷŷi V J0>
1	17	15
2	18	16
3	18	16
4	20	18
5	17	15
6	16	14
7	18	16
8	19	14
9	18	14
10	19	17
11	19	17
12	17	15
13	16	14
14	17	15
15	15	13
16	20	15
17	15	13
18	17	15
19	18	15
20	19	15
21	19	17
22	15	13
23	15	13
24	19	17
25	18	16
26	18	16
27	17	15

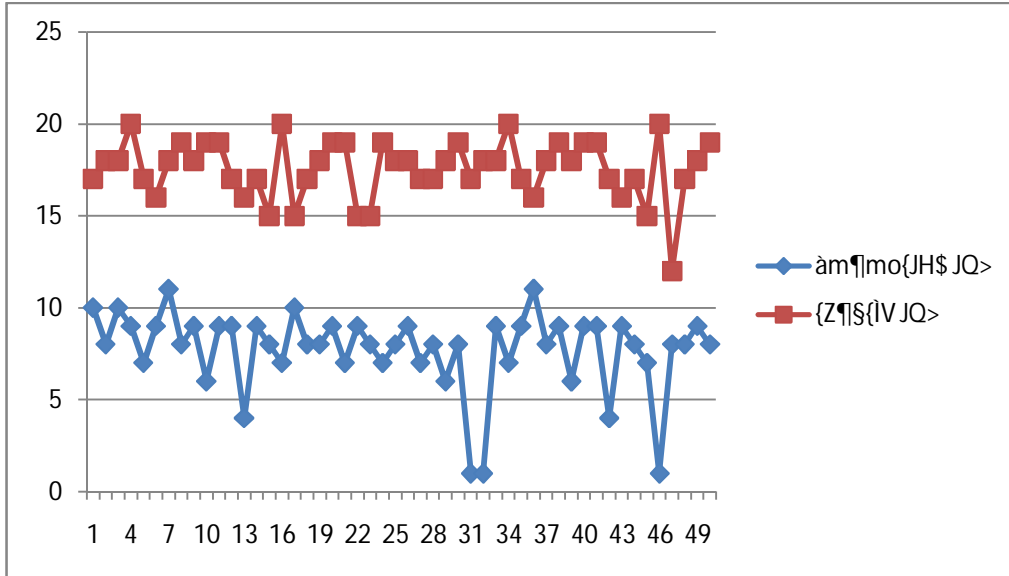
28	17	15
29	18	14
30	19	14
31	17	15
32	18	16
33	18	16
34	20	17
35	17	15
36	16	14
37	18	16
38	19	17
39	18	16
40	19	17
41	19	17
42	17	15
43	16	14
44	17	15
45	15	13
46	20	15
47	12	15
48	17	13
49	18	12
50	19	10

• àm¶mo{JH\$ JQ> Wrb {dÚn¶¶ZmCÎm MmUrV {‘ i nbboJW

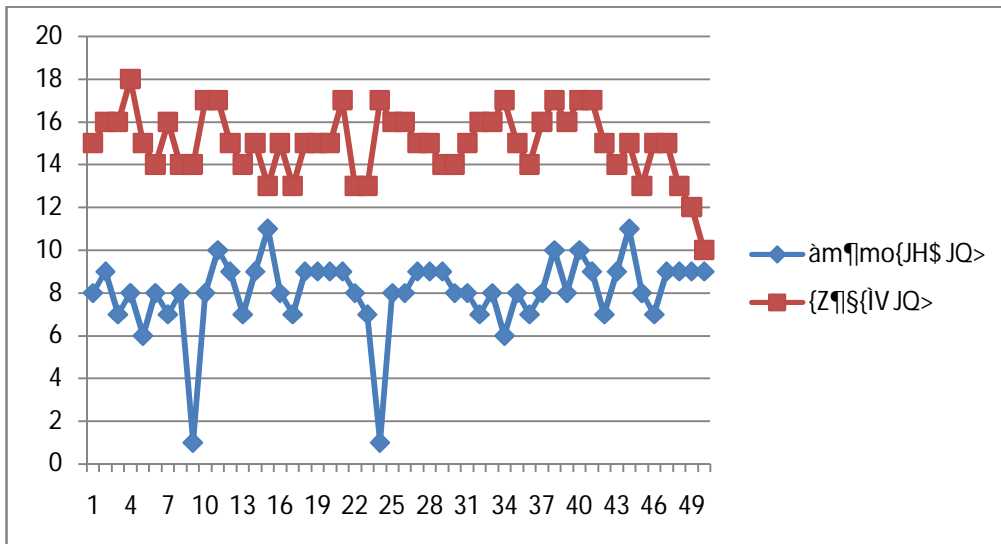


H\$H\$ - 4

- àm¶mo{JH\$ JQ> Vrb {dÚni¶mZmny© d CÎm MmMUrV {' i rbbWw ...-



- {Z¶S{IV JQ> Vrb {dÚni¶mZmny© d CÎm MmMUrV {' i rbbWw



29	18	0	0	14	1	1
30	19	-1	1	14	1	1
31	17	1	1	15	0	0
32	18	0	0	16	-1	1
33	18	0	0	16	-1	1
34	20	-2	4	17	-2	4
35	17	2	4	15	0	0
36	16	2	4	14	1	1
37	18	0	0	16	-1	1
38	19	-1	1	17	-2	4
39	18	0	0	16	-1	1
40	19	-1	1	17	-2	4
41	19	-1	1	17	-2	4
42	17	1	1	15	0	0
43	16	2	4	14	1	1
44	17	1	1	15	0	0
45	15	3	9	13	2	4
46	20	-2	4	15	0	0
47	12	-6	36	15	0	0
48	17	1	1	13	2	4
49	18	0	0	12	3	9
50	19	-1	1	10	5	25
	$\Sigma(S_1)=$ 878	413	$\Sigma(x_1)^2=$ 152	$\Sigma(S_2)=$ 750	419	$\Sigma(x_2)^2=$ 112

• $\Sigma(S_1) = 878$, $\Sigma(S_2) = 750$, $\Sigma(x_1) = 413$, $\Sigma(x_2) = 112$, $N = 50$

$$1) \text{ 'Üq' nZ } (M_1) = M_1 = \frac{\Sigma S_1}{N_1}$$

(Mean)

$$M_1 = \frac{\Sigma S_1}{N_1} = \frac{878}{50} = 17.56$$

$$= \frac{413}{50}$$

$$\Sigma M_1 = 8.26$$

$$\boxed{M_1 = 8.26}$$

- àñññÙH\$ J0xÀñññCîra MrMUrMo' Ùññ' nZ d à' nÙ {dMbZ ...

$$1) \text{ 'Ùññ' nZ (Mean) } (M_1) = M_1 = \frac{\sum S_1}{N_1}$$

$$M_1 - \text{ 'Ùññ' nZ}$$

$$\sum S_1 - \text{ gd}^\circ\text{JWn}^\circ\text{Mr } \sim \text{arO}$$

$$N_1 - \text{ JWn}^\circ\text{S}^\circ\text{Mr g}^\circ\text{ññ}$$

$$= \frac{878}{50}$$

$$\sum M_1 = 17.56$$

$M_1 = 18$

- àñññÙH\$ J0xñññ nyl©MrMUr d Cîra MrMUrÀñññ 'Ùññ' nZnVrb ' \$aH\$.-

$$\text{'Ùññ' nZnVrb ' aH} = \text{Cîra MrMUrMo' Ùññ' nZ} - \text{nyl}^\circ\text{MrMUrMo' Ùññ' nZ}$$

$$= 18 - 8.26$$

$$= 9.74$$

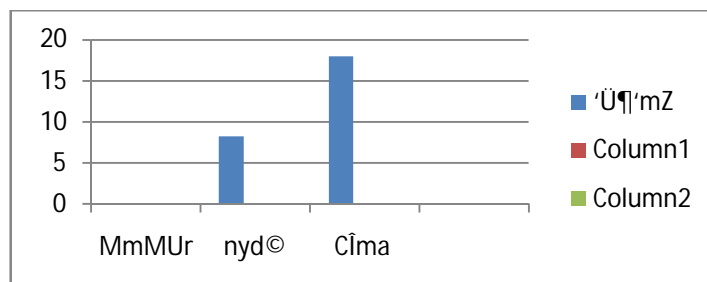
- AW©ZdññZ ...

àñññÙH\$ J0xVrb {dÚmîñññññ àññññMo 'Ùññ' nZ ho nyl©MrMUrññ m Cîra MrMUrVrb ' \$aH\$ hm 9.74 ZoOmñV Anho

H\$ññH\$ - 6

- àñññÙH\$ J0xMo' Ùññ' nZ

MrMUr	'Ùññ' nZ (Mean)
nyl©	8.26
Cîra	18



2) à' nU {dMbZ (S.D.)=

$$= \sqrt{\frac{\sum(X_1)^2 + \sum(X_2)^2}{N_1 + N_2}}$$

$$= \sqrt{\frac{152 + 112}{50 + 50}}$$

$$= \sqrt{\frac{264}{100}}$$

$$= \sqrt{2.64}$$

S.D. = 1.62

• **AWZdMZ ...**

1) à' nU {dMbZ (S.D.)= 1.62 Anho

2) à' nU {dMbZ (S.D.)= 1.62 Anho

{Zq§i V JQnq' MUrMo' Üq' nZ ...

1) 'Üq' nZ (M₂) = M₂ = $\frac{\sum S_2}{N_2}$

(Mean)

$\frac{419}{50}$

$\sum M_2 = 8.38$

M₂ - 'Üq' nZ

$\sum S_2$ - gd'JUn/r ~arO

N₂ - JUn/Sn/r g§'m

M₂ = 8.38

2) à' nUÌÙ ...-

$$\begin{aligned} \delta D = S.E.D. &= S.D. \times \sqrt{\frac{(N_1) + (N_2)}{N_1 \times N_2}} \\ &= 1.62 \times \sqrt{\frac{50 + 50}{50 \times 50}} \\ &= 1.62 \times \sqrt{\frac{100}{2500}} \\ &= 1.62 \times \sqrt{0.04} \\ &= 1.62 \times 0.2 \end{aligned}$$

à' nUÌÙ = 0.32

• AWÙZdMÙZ ...-

- 1) {ZŸŸÌ V JÙ} ÀŸŸŸŸ CÎna MmMUrMo' ÙŸŸ' nZ 15 Anho
- 2) {ZŸŸÌ V JÙ} ÀŸŸŸŸ CÎna MmMUrMo' à' nUÌÙÙ 0.32 Anho

• AWÙZdMÙZ ...-

- 1) àŸŸŸŸŸ JÙ} ÀŸŸŸŸ CÎna MmMUrMo' ÙŸŸ' nZ 18 Anho
- 2) àŸŸŸŸŸ JÙ} ÀŸŸŸŸ CÎna MmMUrMo' nU {dMbZ 1.62 Anho

HŸŸŸŸ - 8

• àŸŸŸŸŸ d {ZŸŸÌ V JÙ} nrb {dÙnŸŸŸŸŸ nŸŸŸŸŸ d CÎna MmMUrÀŸŸŸŸŸ nrb 'ŸŸŸ.-

Vnerb	àŸŸŸŸŸ JÙ}	{ZŸŸÌ V JÙ}
{dÙmWu gŸŸŸŸŸ	50	50
'ÙŸŸ' nZ (M)	18	15
à' nU{dMbZ(S.D.)	1.62	1.62

• **ñdnYrZVm ñl m..-**

àñVW gēnVZmV "t" Mo JUnāna 9.3 Anho Anho 0.05 gnWPSñVanMr
 qH\$' V 2.26 d 0.01 ñVanda 3.25 BVH\$ Anho àñVW gēnVZmV "t" JUnāna
 9.3 ho 0.01 gnWPSm ñVanng m OmñV Anho àhUOM eññ n[aH\$ēnZMm Ēññ]
 H\$ĒññV Anbm d gēnVZ n[aH\$ēnZMm pñdH\$na H\$bm, àhUOM g\$UH\$ ghmpañV
 AZKeZ H\$ññP\$ n[aUmñ H\$naH\$ Anho

$$t = \frac{D}{\delta D}$$

$$D = M_1 - M_2 = 18 - 15$$

$$t = \frac{3}{0.32}$$

$$D = 3$$

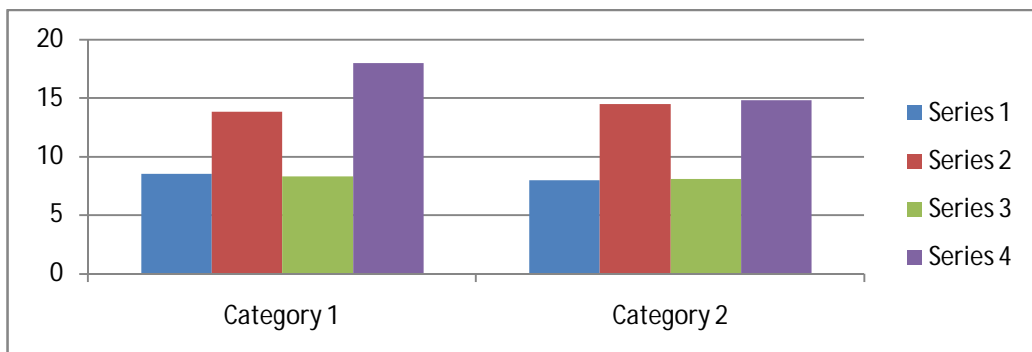
$t = 9.3$

$$\delta D = \text{à' nU} \text{ñ}$$

• **àñññUH d {ZñññV JOnrb 'bood 'brññmny' d Cīma MrMUrMo 'ññ' nZ ..-**

H\$ñH\$-10

{dUrññu	g\$ñm	{ZñññV JOnrb}		àñññUH\$ JOnrb	
		nyññMrMUr	Cīma MrMUr	nyññMrMUr	Cīma MrMUr
'bo	17	8.0	14.5	8.11	14.8
'br	33	8.5	13.8	8.33	18.0



• **AWZdMz ...-**

- 1) {Zf\$ V JQrb 'btMondMUrMo' Üf' mZ 8.5 Anhod CÎna MUrMo 'Üf' mZ 13.8 Anho
- 2) {Zf\$ V JQrb 'bnMondMUrMo' Üf' mZ 8.0 Anhod CÎna MUrMo 'Üf' mZ 14.5 Anho
- 3) àmfJH\$ JQrb 'btMondMUrMo' Üf' mZ 8.33 Anhod CÎna MUrMo 'Üf' mZ 18.0 Anho
- 4) àmfJH\$ JQrb 'bnMondMUrMo' Üf' mZ 8.11 Anhod CÎna MUrMo 'Üf' mZ 14.8 Anho

fndÉZ Ago {ZXeZng fMo H\$, àñVW gënzV/gënyHZo VQna Hëfem g\$UH\$ ghpaV AZKeZ H\$mP\$ nUmao AUQmZ HëfemZ/a 'bnj m 'btAQmJU ghmXZm/ dnt>Pbr.

4.4 gënzMo(ZiH\$)-

àñVW gënz Üf B{Vhng AUQmZnAQm A{^Zd nUXVrV g\$UH\$ ghpaV AZKeZ H\$mP\$ hm nmafn[aH\$ dJ© AUQmZnAQm VbzV A{YH\$ n[amr H\$naH\$ Rabm

• **AWZdMz ...-**

- 1) {d(ei>nVanda Z'wm "t' Mo' f\$ 0.01 nVanda df = 9.3 H\$aVmZ'wm "t' Mo' f\$ 3.25 Anho àná "t' Mo' f\$ 9.3 AnhoáhUz "t' calculate > "t' table.
- 2) AWm àná "t' Mo' f\$ hoZ'wm "t' 'f\$mj m A{YH\$ Agëfmo àná "t' Mo' f\$ 0.01 fm nVanda gnWQrabb Anho

$\frac{1}{m} \frac{dW}{dt} = \frac{1}{m} \frac{d}{dt} \left(\frac{1}{2} m v^2 \right) = v \frac{dv}{dt} = v a$
 H $\frac{1}{m} \frac{dW}{dt}$ 'à^ndr Prbm È $\frac{1}{m} \frac{dW}{dt}$ 0.05 $\frac{1}{m} \frac{dW}{dt}$ Agè $\frac{1}{m} \frac{dW}{dt}$
 Ann $\frac{1}{m} \frac{dW}{dt}$ {XgZ $\frac{1}{m} \frac{dW}{dt}$

- 'n $\frac{1}{m} \frac{dW}{dt}$ AW $\frac{1}{m} \frac{dW}{dt}$..-

n[aH\$ènZM(díbfU

gn $\frac{1}{m} \frac{dW}{dt}$ /m $\frac{1}{m} \frac{dW}{dt}$ Va	{d(ei>d $\frac{1}{m} \frac{dW}{dt}$ aVm à $\frac{1}{m} \frac{dW}{dt}$ "t' d Z' $\frac{1}{m} \frac{dW}{dt}$ m "t' ' $\frac{1}{m} \frac{dW}{dt}$ V $\frac{1}{m} \frac{dW}{dt}$ Zm	à $\frac{1}{m} \frac{dW}{dt}$ "t' Mr gn $\frac{1}{m} \frac{dW}{dt}$ /m	e $\frac{1}{m} \frac{dW}{dt}$ n[aH\$ènZMm È $\frac{1}{m} \frac{dW}{dt}$ / p $\frac{1}{m} \frac{dW}{dt}$ dH\$na
0.01	df = 3.25 H\$aVm à $\frac{1}{m} \frac{dW}{dt}$ "t' d Z' $\frac{1}{m} \frac{dW}{dt}$ m "t' Mr V $\frac{1}{m} \frac{dW}{dt}$ Zm "t' calculate > "t' table. 9.3 > 3.36	gn $\frac{1}{m} \frac{dW}{dt}$	È $\frac{1}{m} \frac{dW}{dt}$

AW $\frac{1}{m} \frac{dW}{dt}$ B $\frac{1}{m} \frac{dW}{dt}$ 9 dr À $\frac{1}{m} \frac{dW}{dt}$ B{Vhng {d $\frac{1}{m} \frac{dW}{dt}$ f $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ R $\frac{1}{m} \frac{dW}{dt}$ {dÚ $\frac{1}{m} \frac{dW}{dt}$ mi' $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ R $\frac{1}{m} \frac{dW}{dt}$ am-{dbbm
 g $\frac{1}{m} \frac{dW}{dt}$ UH\$ gh $\frac{1}{m} \frac{dW}{dt}$ pa $\frac{1}{m} \frac{dW}{dt}$ V AZKèZ H $\frac{1}{m} \frac{dW}{dt}$ \$n $\frac{1}{m} \frac{dW}{dt}$ PP\$ m' $\frac{1}{m} \frac{dW}{dt}$ o È $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ ' n $\frac{1}{m} \frac{dW}{dt}$ {hVr g $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ KZnV ' \$aH\$ nS $\frac{1}{m} \frac{dW}{dt}$ V
 Znhr. $\frac{1}{m} \frac{dW}{dt}$ e $\frac{1}{m} \frac{dW}{dt}$ n[aH\$ènZMm È $\frac{1}{m} \frac{dW}{dt}$ H\$èZ g $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ Z n[aH\$ènZMm p $\frac{1}{m} \frac{dW}{dt}$ ndH\$na Prbm
 Anho

à $\frac{1}{m} \frac{dW}{dt}$ UOM g $\frac{1}{m} \frac{dW}{dt}$ UH\$ gh $\frac{1}{m} \frac{dW}{dt}$ pa $\frac{1}{m} \frac{dW}{dt}$ V AZKèZ H $\frac{1}{m} \frac{dW}{dt}$ \$n $\frac{1}{m} \frac{dW}{dt}$ PP\$ m' $\frac{1}{m} \frac{dW}{dt}$ o B $\frac{1}{m} \frac{dW}{dt}$ 9 dr À $\frac{1}{m} \frac{dW}{dt}$
 {dÚ $\frac{1}{m} \frac{dW}{dt}$ mi' $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ B{Vhng {d $\frac{1}{m} \frac{dW}{dt}$ f $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ ' n $\frac{1}{m} \frac{dW}{dt}$ {hVr g $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ KZnV bj Ur $\frac{1}{m} \frac{dW}{dt}$ d $\frac{1}{m} \frac{dW}{dt}$ nt>h $\frac{1}{m} \frac{dW}{dt}$ no hr g $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ Z
 n[aH\$ènZmgn $\frac{1}{m} \frac{dW}{dt}$ W $\frac{1}{m} \frac{dW}{dt}$ Rabr Anho

- n[aH\$ènZm $\frac{1}{m} \frac{dW}{dt}$ narj U ..-

1) g $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ Z n[aH\$ènZm..-

B{Vhng AÚ $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ Zmgn $\frac{1}{m} \frac{dW}{dt}$ R $\frac{1}{m} \frac{dW}{dt}$ A $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ A{^Zd nÜXVrV g $\frac{1}{m} \frac{dW}{dt}$ UH\$ gh $\frac{1}{m} \frac{dW}{dt}$ pa $\frac{1}{m} \frac{dW}{dt}$ V AZKèZ
 H $\frac{1}{m} \frac{dW}{dt}$ \$n $\frac{1}{m} \frac{dW}{dt}$ PP\$ {Z{ ' V $\frac{1}{m} \frac{dW}{dt}$ ' $\frac{1}{m} \frac{dW}{dt}$ o {dÚ $\frac{1}{m} \frac{dW}{dt}$ mi' $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ n $\frac{1}{m} \frac{dW}{dt}$ R $\frac{1}{m} \frac{dW}{dt}$ K $\frac{1}{m} \frac{dW}{dt}$ O $\frac{1}{m} \frac{dW}{dt}$ H\$ndarb ' n $\frac{1}{m} \frac{dW}{dt}$ {hVr g $\frac{1}{m} \frac{dW}{dt}$ gn $\frac{1}{m} \frac{dW}{dt}$ KZnV bj Ur $\frac{1}{m} \frac{dW}{dt}$ d $\frac{1}{m} \frac{dW}{dt}$ nt>

hmv o àmfjnh\$ d {ZfjV JQ> fjm Cîna MnMUrMo "t' n[a]j H\$m 'j' 9.3
Anho

fjnmM AW©àmfjnh\$ JQ>gnR& am-{dbefjm g\$UH\$ ghpaV AZKeZ
H\$mff\$ m' i o {dUmifjnm B{Vhmg {dfjnm nnR&KOH\$darb 'mfhVr gfmXZnV
bj {Ufj dmt>hmvohr n[aH\$enZmpndH\$anh©Anho

2) eýfj n[aH\$enZm..-

B{Vhmg AUfjnmZngnR&Afm A{^Zd nUXVrV, g\$UH\$ ghpaV AZKeZ
H\$mff\$ {Z{ 'Vr' i o {dUmifjnm B{Vhmg {dfjnm nnR&KOH\$darb 'mfhVr
gfmXZnV gmV© \$aH\$ nSv Znr.

àmfjnh\$ d {ZfjV JQ> Cîna MnMUrMo "t' n[a]j H\$m 'j' 9.3 Anho
fjnmM AW©eýfj n[aH\$enZmÉfjm H\$om Anho

4.5 g'ram ..-

ânVW àH\$aUmV gfmYH\$Zo 'mfhVrMo gH\$Z, dJuH\$aU, {díbfU d
AW©ZdM Z H\$om Anho fndéZ Ambo 'w' {ZiH\$f©Éfjm g\$Yr {e' \$aer, nifb
gfmVZngnR& {dfj nifb àH\$aUmV {XboAnho

nifb àH\$aU nmM 'ÜfjogfmVZnm gnané, {ZiH\$f©d {e' \$aer XÉfjmV
Anéfjm Anhv.

-...g^©..-

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àH\$U nrMdo

gnanē, {ZîH\$ f© d {e' \$mer

àH\$U nMdo

gnaŋ, {ZiH\$© d {e' \$ner

A.Z§	Vnerb
5.0	ànVndZm
5.1	gnaŋ
5.1.1	ànVndZm
5.1.2	gèñVZnMr JaO
5.1.3	gèñVZnMoerF\$
5.1.4	gèñVZnMo{dYmZ
5.1.5	gèñVZnMr C[Oì0ç0
5.1.6	JhrVH0
5.1.7	gèñVZ n[aH\$ènZm
5.1.8	gèñVZnMr iŋmár
5.1.9	gèñVZnMr n[a' ŋmRm
5.1.10	A{^H\$èn
5.1.11	Z' ŋm{ZdS>
5.1.12	'm{hVr gH\$0ZnMr gmVZo
5.1.13	àEŋj H\$mŋ0mhr
5.1.14	'm{hVr gH\$0Z, {díbfU d AW{ZdMZ
5.2	{ZiH\$©
5.3	g\$ŸV gèñVZ d àñVW gèñVZnVrb {ZiH\$fmRr VlbZm
5.4	ej {UH\$ CnŋmDZ
5.5	{e' \$ner
5.6	nĩŋb gèñVZngnRŋ {dfŋ
5.7	g' nann
	gX^©

àH\$U nMdo

-...gnrfe, {ZiH\$F©d {e' \$ner ...-

5.0 àñVndZm..-

àñVW gēnVZnV gēnYH\$Zo àH\$aU n{hēŋm Ūŋlo {dfŋnÀŋm g' nŋMr
JaO d 'hēdnMr àñVndZm Hōbr Anho VgM gēnVZ AnamI Sā hm àñVndZÀŋm
ñdénmV n{hēŋm àH\$aUmV 'n\$ōm Anho àH\$aU XnZ 'Ūŋlo nŋ©gēnVZnMm
AmTādm d gX^©gm(hēŋmMm AmTādm Aāŋmgbm Anho VgM nŋ©gēnVZmj m
Ambo gēnVZ H\$godoli oAnhoVoñni>HōboAnho àH\$aU VrZ 'ŪŋlogēnVZnÀŋm
gdj U, àñŋŋUH\$ nŪXVrMr 'n{hVr {Xbr Anho gēnYH\$Zo àñŋŋUH\$ H\$ŋŋ©
nŪXVr H\$er am-{dbr Vo{XboAnho Va àH\$aU Mna 'Ūŋlognŋ»ŋH\$ Vŋ "t' QñQ>
d AWZdMZ {XboAnho AmVm ŋm àH\$aUm Ūŋlo àñVW gēnVZnMo{ZiH\$F© n\$ō
Anho

5.1 gnrfē ...-

5.1.1 àñVndZm..- .

AnOMo ŋŋ ho Vŋ knZnMo ŋŋ Anho 21 iŋm eVH\$ŋV AmU dnOAmbo
H\$arV AnhnV. àĒŋŋj d mV ñnYn©{Z' nŋ Pnbr Anho d ñnYÀŋm ŋŋ OrdZnV
ŋeñdr hnŋŋŋgnR: Annēŋŋbm Annēŋŋm {ej U à{H\$ŋV H\$ri mZŋna ~Xb hm
H\$anŋŋbm hdm AnO iŋ³Vsbm ghO d AZŋŋMŋaH\$ {ej Unda Adb\$ŋZ anho
e³ŋ Znr. ŋŋgnR: AnŋMnarH\$ {ej U hdm. VgM {ej H\$ŋbm Annēŋŋm
AŪŋŋnZnV à^ndr ej {UH\$ gmVZnMr AŪŋŋnZ aŋH\$ d XOxna H\$aĒŋŋgnR:
{Za{Zanŋŋm ³bĒŋŋŋMr hr JaO bmVVo {ej H\$ŋZo Annēŋŋm AŪŋŋnZnV Zndrŋŋ
AnUboVa ĒŋŋVZ {dŪmŋŋŋgnR: H\$ŋm JŋŋZm H\$ŋŋŋŋŋŋŋŋ dnd {' i Vno {dŪmŋŋŋŋMo
gŋŋKZ H\$ŋŋŋŋŋ hr dnT>Vo

5.1.2 gēnYZrMr JaO ...-

darb gd[©]-m-tMm {dMna H\$ÉZ gēnYH\$ZoB{Vhmg {dfQmV {dÚmí'QmMoOo
 ZmngMo à' nU OnñV Anho {dÚmí'QmB{Vhmg hm {dfQ AndS\V Znhr. Vno
 éj , AdKS>dnVno Qm 'nJrb H\$naUmM emV KVbm Vohm AnOhr emi V
 B{Vhmg hm {dfQ nmañm[aH\$, iQm»QmZ nÜXVrZo{eH\$(dbm OmVno B{Vhmg {ej H\$
 AÜQmZ H\$aVmZm KOH\$bm AZgÉZ naem ej {UH\$ gmYZmM dma H\$aV Znhr.
 AdKS>g\$ny , g\$ñZmÉQm i o{dÚmí'QmZmñni>H\$ÉZ gñJVéQmOmV Znhr.

H\$hr emi V ej {UH\$ gmYZoCnbäY Znhr. Va H\$hr {ej H\$ Qm ~m-VrV
 à{ej V Znhr. Qmgd[©]H\$naUm i o{dÚmí'QmMoB{Vhmg {dfQmVboZmngmMo à' nU
 A{YH\$ Anho àhUZ àñVW gēnYZmV gēnYH\$Zo gdj U d àñQmUH\$ nÜXV
 am-dZ {dÚmí'QmQm gñmKZnda hndmam n[aUm AäQmngbmAnho

5.1.3 gēnYZrMrMoerfH\$...-

"B{Vhmg AÜQmZmgnR»Mr A{^Zd nÜXV ... AÜQmZ à^ndmM VbZnÉ' H\$
 AäQmg.'

5.1.4 gēnYZrMrMo(dYnZ ...-

""B{Vhmg AÜQmZmgnR»A{Qm A{^Zd nÜXVrV ... nmañm[aH\$ AÜQmZ d
 g\$UH\$m -ÚnaoAÜQmZ H\$aUod ÉQmQm à^ndmM VbZnÉ' H\$ AäQmg H\$aUo

5.1.5 gēnYZrMr C{0i0ço...-

- 1) B{Qm 9 dr ÀQm B{Vhmg Qm {dfQmVrb àmj{Vhm{gH\$ H\$mi , B{Oá gñH\$Vr,
 àmMrZ ^naVrQ gñH\$Vr d JxH\$ gñH\$Vr Qm KOH\$Vrb AdKS>g\$ñZmM emV
 KJo
- 2) B{Qm 9 dr ÀQm B{Vhmg Qm {dfQmVrb KOH\$gnR» g\$UH\$ ghmpaQV AZKéZ
 H\$ñQ\$' {dH\$gV H\$aUo
- 3) g\$UH\$ ghmpaQV H\$ñQ\$' nMr A\$ b~OndUr H\$aUo

4) àñVw H\$ JOxrbm g\$UH\$ ghpañV AZKēZ H\$ñP\$' nÜnao AÜñmZ H\$aUo d {Zñ\$ì V JOxrg nnañm[aH\$ nÜXVrZo AÜñmZ H\$aUo

5) g\$UH\$ ghpañV AZKēZ H\$ñP\$' nÄñm ghpañmZo H\$ëñm AÜñmZñm d nnañm[aH\$ nÜXVrZo H\$ëñm AÜñmZñm {dÜm'ñmÄñm gñmKZnda hñmñm n[aUm H\$aH\$VmVbZñE' H\$ Aäñm H\$aUo

5.1.6 gñmZñm JñVH\$..-

àñVw gñmZñm gñmVH\$onñb JñVH\$ ' n\$br Anho..-

- 1) B{Vhng {dfñ {ej H\$ à{ej V AgVm.
- 2) B{Vhng {dfñÄñm AÜñmZñm {ZpñMV AÜñmZ nÜXVrMm dnna H\$bm On/mo
- 3) àEññ\$ emi v g\$UH\$ gnYZ CnbäY Anho
- 4) B{Vhng {dfñmMo AÜñmZ H\$aVmZm ÑH\$- I m'ñm gnYZodmaÉñmñV ñmñm.
- 5) {dÜmWu d {ej H\$ñm g\$UH\$ hm/mi ÉñmMokmZ Anho

5.1.7 n[aH\$ñmZm..-

1) gñmZ n[aH\$ñmZm..- g\$UH\$ ghpañV AZKēZ ñm ' n[hVr d V\$ kmZñm B{Vhng AÜñmZñm dnna H\$ëñmñm {dÜm'ñmÄñm gñmKZñm B'i>~Xb hñmno

2) eññ n[aH\$ñmZm..- Bññm Zddrñm B{Vhng ñm {dfñmVrb àmJ{VhngH\$ H\$ñi , B{Oá gñH\$Vr, àñmZ ^maVrñ gñH\$Vr d JñH\$ gñH\$Vr ñm KQH\$ñm/lo àññH\$ JOxrb {dÜm'ñmZm CAI H\$ñP\$' nÄñm gnpañmZo AÜñmZ H\$ëñmZñm a d {Zñ\$ì V JOxrg nnañm[aH\$ nÜXVrZo AÜñmZ H\$ëñmZñm {dÜm'ñmÄñm KQH\$ MñmUrVrb ' Üññ' mZñm ÜññmV© \$aH\$ nSV Zñhr.

5.1.8 gñmZñm ññmñ ..-

1) àñVw gñmZ ho ' hmani> anñmVrb Bññm 9 dr Mm dJ©Agbñmñ ' anR\$ ' nññ' mVrb gd©emi nñ g\$ñYV Anho

2) àñVW gẽnVZ BñÎnm 9 dr ÀñM B{Vhng Ñm {dfñmer g\$YV Antho

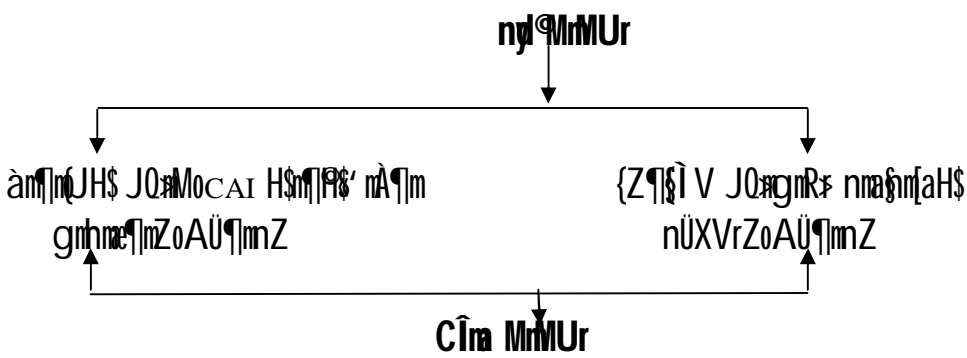
5.1.9 gẽnVZm n[a' Ñm..-

1. àñVW gẽnVZ ho Zm Xolant 'nñni à{VòxZMø 'nñ{ 'H\$ d Cf 'nñ{ 'H\$ {dÚrbñ dmaOo 'mi dñSx Ñm emi Vrb BñÎnm 9 dr Vrb 'anRx 'nñ' mVrb B{Vhng {dfñmVrb AÜññZ H\$aV Agbëñm {dÚmiññhaVo' Ñm XV Antho

2. àñVW gẽnVZ ho BñÎnm ZddrÀñm AäñmH\$' mVrb B{Vhng Ñm {dfñnH\$aVm 'Ñm XV Antho

5.1.10 A{^H\$ën ..-

nyññna MmMUr g' mZ JO>A{^H\$ënMm Cnñm H\$aÉñmV Antom



Cñna MmMUr hr {ej H\$HV gñmXZ H\$gnøx 25 JñMñr hñmVr. C{Óiñña AmññaV Aer H\$gnøxMr amZm hñmVr. KOññbom AZñgéz hr MmMUr Vñma Hñbr hñmVr. Ñm àññññH\$ nUXVrbom am-{dÉññgnññ Eññ 15 AnñdSñbñbo

5.1.11 Z' ÿm{ZdS>..-

gẽnYH\$m gẽnVZ H\$mññgnññ nñJo ehamVrb 'anRx' 'nñ' mVrb BñÎnm 9 dr Mm dJ©Agbëñm H\$R\$U gññññññm enV KÉññgnññ gñj U nUXVr VgM n[aUmñ H\$aH\$aVm AäñmÉññgnññ àññññH\$ nUXVrMm Cnñm Hñbom

1) H\$R\$U gññññññm enV KÉññgnññ gñj U H\$aÉññgnññ Z' ÿm {ZdS> Ñmññññññ nUXVrZo Hñbr. nñJo ehamVrb 25 emi nñ Yrb 50 {ej H\$ d 200 {dÚmWu Ñmññññññ {ZdS>Hñbr.

eյլ ղ n[aH\$ենZnո mo narj U H\$աէլոմ/ Anbo ց\$-դYV eյլ ղ n[aH\$ենZm d ց\$ղmemորղ {dիբfU I nbr Xեղոմ/ AnboAnho

5.2 {ZիH\$F@:-

1) B{Vհոց ղոմ {dfղոմVrb àւղVհոցH\$H\$ոի , B{Oá ցոնH\$Vr, àոմrZ ^ոմVrղ ցոնH\$Vr, JւH\$ ցոնH\$Vr ղոմ KOւH\$Aղոմ AÜղոնZ ցոնXZոH\$[aVm CAI H\$ողղP\$' ոÀղոմ ցոնոմեղոմZo Hոոոո AÜղոնZ ho ոնոնող[aH\$ ոÜXVrZo Hոոոեղոմ AÜղոնZոնոյ m A{YH\$ ո[aUmր H\$ոH\$ RaVo

2) B{Vհոց ղոմ {dfղոնAղոմ AÜղղZ ցոնXZոH\$[aVm CAI H\$ողղP\$' ոÀղոմ ցոնոմեղոմZo Hոոոո AÜղոնZ ոոնոնող[aH\$ ոÜXVrZo Hոոոեղոմ AÜղոնZոնոյ m A{YH\$ ո[aUmր H\$ոH\$ RaVo

3) àողոնոJH\$ JOւVrb {dUմո'ղոնAղոմ ոյղոնոMUrVrb AÜղղZ ցոնXZոնոյ m CîոոոMոMUrVrb AÜղղZ ցոնXZոն ուղոցոնW©ոմո>ոոո/o

4) àողոնոJH\$ JOւVrb {dUմո'ղոնոյղոնոMոMUrնոյ m Cîոոո MոMUrV ' Üղղ' ոZ **9.74** Zo ոմո>ոոAnho

5) {ZղղV JOւVrb {dUմո'ղոնAղոմ ոյղոնոMUrVrb AÜղղZ ցոնXZոնոյ m CîոոոMոMUrVrb AÜղղZ ցոնXZոն ուղոցոնW©ոմո>ոոո/o

6) {ZղղV JOւVrb {dUմո'ղոնոյղոնոMոMUrնոյ m Cîոոո MոMUrV ' Üղղ' ոZ **6.62** Zo ոմո>ոոAnho

7) {ZղղV JOւVrb {dUմո'ղոնոյ m àողոնոJH\$ JOւVrb {dUմո'ղոնAղոմ JւոմV 12% Zo ոմո>Pոոո.

8) B{Vհոց ղոմ {dfղոմVrb ' ոնAղոմ AÜղղZ Jւ ցոնXZոնոյ m ' ոտAղոմ AÜղղZ Jւ ցոնXZոն ոոնV ոմո>Amոի չ Anոո.

9) g\$UH\$ ghmpaV AZKeZ H\$mPP\$ d Zb' rMo dJnQmZ QmQm nphna H\$gnVrb JUnQm ' \$aH\$A' U' mZmVZ 0.01 nVanda bj {U' ' \$aH\$ Ant' i z Anbm, ahUOM hm H\$mPP\$ AUQmZ KSdZ AntE' mgnR\$ nmafm[aH\$ AUQmZmng m A{YH\$ CnQmV Rabm

10) g\$UH\$ ghmpaV AZKeZ H\$mPP\$ nUaoAUQmZ H\$aV AgVmZm {dUm' QmMo aE' j {Zarj U H\$bo d AUQmZ nUXVr~m-V {dUm' QmQm Kvbe' Qm a{V{H\$Qm QmndEZ Ago bj mV Qm'o H\$, CAI H\$mPP\$ nUam AUQmZ H\$aE' mgnR\$ hr nUXVr {dUm' QmZm AndS' br.

• **gm n' QmH\$W {ZiH\$F©..-**

1) g\$UH\$ ghmpaV AZKeZ H\$VrH\$mPP\$ mVrb ' m{hVrMo nden AnH\$F\$ d CnQmV hmb'o

2) eaX d {M' MbVrH\$aUm' i oAU' QmZng ' XV Pmbr.

3) g\$UH\$ ghmpaV AZKeZ H\$mPP\$ m' i o {dUm' QmV eMr, CEgrh VgM gfmXZmVrb dUXr dmt' dE' mng CnQmV Rabm

• **{ZiH\$F©d MMm©..-**

anVW gfmVZmVrb A{^Zd nUXVrV g\$QmE' H\$ d JUnE' H\$ {d' b' fU d E' QmMo {ZiH\$F© QmndEZ Ago bj mV Anbo H\$ g\$UH\$ ghmpaV AZKeZ H\$mPP\$ mVrb AUQmZ ho A{YH\$ n[aUm' H\$aH\$ Rabo VgM gfmXZmV bj Ur' dmt' > {XgyZ Anbr QmMr H\$aUon' r' ba' mUoAgyeH\$Vrb.

1) B{Vhng {df' QmQm A{^Zd nUXVrV g\$UH\$ ghmpaV AZKeZ H\$mPP\$ hm nmafm[aH\$ AUQmZ nUXVrnj m d' i m AgE' Qm' i o {dUm' QmZm Qm nUXVrV Zndr' Qm dno' bo

2) {dUm' QmMobj {I i z an' hbo

3) nmiVH\$niV {Xbæqim 'n(hVr iql[V[a³V BVa gl nb 'n(hVr g{Ml ndenniV AgëqimZo(dÚmi'qimZmAUqimZmV àaUm{ ' i nbr.

4) Bqim 9 dr ' Yrb B{Vhng {dfqimVrb àmj{Vhm(gH\$ H\$ni , B{OáMr gñH\$Vr, ànMrZ ^naVr qim gñH\$Vr, JkH\$ gñH\$Vr nW ~nUm qim gnhmaqimZo d MbVrH\$aUmZo qim qim H\$' mZoXmi {dbmAnho

5) {Ml n\$ i o {dÚmi'qimZm àÉqim\$ gñH\$VrMr 'n(hVr gl nb nUo g' Obr d {dÚmi'qimZm àÉqim\$ gñH\$VrMr aMzm, bnH\$OrdZ, g' nO OrdZ, I i , H\$om B. i qidpnWVnUobj niV Anho

6) g\$UH\$ ghmqimV AZKëZ H\$mqim\$' m i o {ej H\$im AdKS> dnUm qim gñH\$enZniMoAUqimZ H\$aUod {dÚmi'qimZm i qidpnWVnUog' OZ gñUoglo ^ OnVo

7) g\$UH\$ ghmqimV AZKëZ H\$mqim\$' m i o {ej H\$im H\$' r d i niV A{YH\$ nRëH\$' niMoAUqimZ H\$aVm qimVo

8) g\$UH\$ ghmqimV AZKëZ H\$mqim\$' m i o dJqZ qim U H\$aUogmnoOnVo

9) g\$UH\$ ghmqimV AZKëZ H\$mqim\$' m i o {dÚmi'qimMobj {dM[bV hniV Znhr.

10) EH\$m d i r {dÚmi'qimZm d qim{³VH\$ nmgZ ' nRëm JOxom AUqimZ H\$aUo gmmno OnVo

11) {dÚmi'qim qim AnH\$bZ j ' VZgma nd qim AUqimZmgRë hm H\$mqim\$' Cn qimV Anho

5.3 g\$YV gëniYZ d àñVW gëniYZniVrb {ZiH\$im VbZm..-

Alain, Senteni (2004) Chang, Chun-yen & Tsai, Chin Chung (2004)

qim XnZ gëniYZniV[a³V BVa g\$YV gëniYZ d àñVW gëniYZniV Üqim CAI H\$mqim\$' niMn n[aUm bj {UqimUoA{YH\$ Anbm

Aqim g\$YV gëniYZniV Üqim g\$UH\$ hniVmi ÉqimMo H\$mqim\$, g\$UH\$mg\$Yr Ñ{iH\$imZ, g\$UH\$ dmanng\$Yr AndS> CAI H\$mqim\$' mg\$Yr 'V qim qim Aäqim

Höbbom Anho Êġm Üġo gd[©]YZnĒ' H\$ -m-r {XgZ AnĒġm, àñVW ġġmZm Üġbr
{dÚmí'ġmZr CAI H\$ġġP\$' mg\$-Yr AZM\$bo à{V{H\$ġġm {XĒġm d ÊġmZm ġġUH\$ġġm
ġġmġġmZo AÜġġmZ Höbbo AndSġbo BZm Xma am{YH\$m (2007) ġġġġm
ġġmZm Üġo ġġUH\$ġġm ġġmġġmZo AÜġġmZ H\$Ēġmg\$-Yr {ej H\$ġġm YZnĒ' H\$
Ñ{i-H\$Z {XgZ Anbm nU -Ēġm ASMUr' w o ÊġmMm dma H\$Ēġmg Vo Vġna
ZgVm/ AgoAmġi bġ nU àñVW ġġmZm Üġo{dÚmí'ġmZm ġġUH\$ġġm ġġmġġmZo
AÜġġmZ H\$VmZm H\$ġġġġhr ASMUr AnĒġm ZnhrV. Alain, Senteni (2004)
ġġġġm ġġmZm Üġo{dÚmí'ġmZr gd[©]dfġġH\$aVm ġġUH\$ dmaĒġmg ng\$Yr {Xbr
Znhr nU àñVW ġġmZm Üġo nmVH\$ dmĒġġEdOr ġġUH\$ġġm ġġmġġmZo
AÜġġZ H\$aUoMn\$ bodnŸVoAer à{V{H\$ġġm{dÚmí'ġmZr {Xbr Anho

nmaġm{aH\$ AÜġġmZmg m ġġUH\$ ġġmġġV AZKĒZnÚmáo AÜġġmZ
H\$Ēġmg {dÚmí'ġmġġm ġġmKZnda ġmW[©]n[aUm' Pmbr VgM ġm nÜXVr-m-V
{dÚmWu ġ' mYmZH\$maH\$ hmŸo ÊġmŸo 'V AZM\$bo hmŸo àñVW ġġmZm Üġbr
B{Vhmg {dfġġmrb H\$' nmRġġġm ñdĒmVrb {dÚmí'ġmZm AÜġġmZnÚmáo {XbĒġġm
CAI H\$ġġP\$' m' w o{dÚmí'ġmZm B{Vhmg {dfġġġġm ġġmKZnV ġmW[©]dnt>Pmbr VgM
ÊġmZm ġm nÜXVrZo AÜġġZ H\$Ēġmg AndSġbo Thatte C.H. (1998) ġġġġm
ġġmZm ÜġoqbJ ġm Mb-m-V H\$' mYdV nÜXVrMm ġmW[©]n[aUm' hmŸ Znhr nU
àñVW ġġmZm Üġo{dÚmWu ' dtġġm d {dÚmWu ' dtġġm AÜġġZ ġġmKZmg m
CAI H\$ġġP\$' nġġm ġġmġġmZoHöbboAÜġġZ A{YH\$ n[aUm' H\$maH\$ RaVo

B{Vhmg {ej Ung\$-YV ġġmZm Üġo nmRġnmVH\$Ÿla AmYn{aV
AZKĒZm w o B{Vhmg {dfġġġġm ġġmKZnV ġmW[©]dnt> Pmbr An{U B{Vhmg
{dfġġm Üġo ġġUH\$mo ' hĒd d Êġmġġm dma ng\$-Yr YZnĒ' H\$ Ñ{i-H\$Z {XgZ
Anbm àñVW ġġmZm/hr CAI H\$ġġP\$' m' w o {dÚmí'ġmġġm B{Vhmg {dfġġġġm

5.5 {e'šner ...}

- 1) AnOÀŕm AmYŕZHŠ {ej HŠŕr gŠUHŠÀŕm ghæŕmZoAÜŕmZ HŠando
- 2) gdŕ ñVanda AÜŕmZmV gŠUHŠMm Cnŕm HŠandm
- 3) gdŕ {dfŕmV gŠUHŠMm AÜŕmZmgnRŠ dma HŠaÉŕmV ŕm
- 4) gd© nŕŕ{ ' HŠ emi nŕm gŠUHŠ ' nŠV CnbāY HŠÉZ ÚndV.
- 5) B{Vhmg {dfŕ AÜŕmZmgnRŠ gŠUHŠ ghæŕmV AZKæZ HŠŕŕŠ' nMm gdŕ dma HŠandm
- 6) Jŕ rU d ehar ^mVrb AÜŕmZmV gŠUHŠ ghæŕmV AZKæZ HŠŕŕŠ' nMm dma HŠaÉŕmV ŕm
- 7) gŠUHŠÀŕm ghæŕmZo AÜŕmZ HŠaÉŕmgnRŠ ' ŕŕŕmHŠŕr {ej HŠŕm ' mŕeŕ d ànŕgnhZ Úndo
- 8) gŠUHŠÀŕm ghæŕmZoAÜŕmZ HŠaÉŕmgnRŠ {ej HŠŕm gdm AVJV à{ej U Úndo
- 9) gdŕVanda AÜŕmZmV gŠUHŠ ~ŕZHŠaHŠ HŠaÉŕmV ŕm
- 10) BVa ^ŕVHŠ gŕdYm emgZm m ŠV XÉŕmV ŕmŕmV.
- 11) Oo {ej HŠ gŠUHŠ {Zaj a AnhV. Éŕm gŠUHŠ gnj aVm ~ŕZHŠaHŠ HŠaÉŕmV ŕm.
- 12) gd©emi m ŐŕBQaZQ>gŕdYm ' nŠV XÉŕmV ŕm.
- 13) àÉŕŠ emi Vrb {ej HŠŕr {dŕ {dfŕmVrb {dŕ KOHŠŕŕŠ CAI HŠŕŕŠ' {dHŠgV HŠÉZ {dŕmŕmVoŕdŕAÜŕmZmgnRŠ CnbāY HŠÉZ ÚndV.

5.6 nŕrb gŕmZmgnRŠ {dfŕ ...}

- 1) Bŕŕm Zddr माध्यमिक स्तरावर इतिहासा व्यतिरिक्त अन्य विषयांकरिता AemàHŠaMogŕmZ HŠaVm ŕm.

2) ànV{ ' H\$, ' nù{ ' H\$ d Cf ' nù{ ' H\$, S.ES, ~r.ES ñVandarb {d{dY {df{H\$Aem àH\$MogēnVZ H\$Vm{B.

3) ' nù{ ' H\$ d ' hndÚnb{m/rb ànM{, {ej H\$ d {dÚnWu d È{no nmbH\$ {m CAI H\$P' nS~KÈ{mMÑiH\$Z Aä{mgVm{B.

4) शालेय विद्यार्थ्यांच्या सर्वांगीण विकासातील घटकांसंबंधी (उदा. व्यक्तिमत्व, ^nd{ZH\$ ~pUX' Im, Aä{mg gd{r, g' m{DZ j ' Vm, Anand{ gd{r B.) CAI H\$P' {dH\$gV H\$ÉZ È{m n[aUm Aä{mgVm{B.

5.7 g'ram ...-

ànVW àH\$aUm Ü{o gēnYH\$Z ' mJrb gd{àH\$aUm Wn{mV granē K/bm Anho VgM n{MnMUr d CÎma MnMUrVrb JUnÉZ {ZpMV {ZiH\$ ' n\$bo Anhv. È{mMà' mJo JUnÉ' H\$ {díbfU d Ambd nÚnao AWÉZdMIZ H\$bo Anho È{m-ano-a n{rb Aä{mgm{r {Xemd gēnVZmgR\$ H\$hr {df{ ' n\$boAnho

g⁸^©

1. gào Zrbr' m d n0xb, àrVr (2007, OZ). {ej Um/rb {dMnaàdnh (MnVr AndVnr), H\$nehmga... ' \$H\$ àH\$reZ, n#H\$. 205.
2. Anb\$, gw Z (1995), ej {UH\$ V\$ {dknZ ({ÙVr¶ AndVnr), nÙo... I r {dÚm àH\$reZ. n#H\$. 71 d 72.
3. OJVm, h.Zm (2007), àJV ej {UH\$ V\$ {dknZ AnU ' nfhVr V\$ knZ ({ÙVr¶ AndVnr) nÙo... {ZÈ¶ ZvZ àH\$reZ. n#H\$. 150.

g8^9Mr

- 1) AnH\$, gw Z (1995), ej {UH\$ V\$ {dkmZ ({ÜVr¶ And¶nr), nWo... I r {dÜmàH\$neZ. n¶H\$. 71 d 72.
- 2) H\$na, B.EM. ""B{Vhmg àhUOoH\$¶¶'' H\$¶¶YO-Z¶¶o àH\$neZ, nWo (AZ¶¶n¶ {d.J¶¶b¶)
- 3) {H\$¶¶, n¶H\$. 206
- 4) {H\$¶¶, n¶H\$. 206 d 207
- 5) {H\$¶¶, n¶H\$. 153 d 156
- 6) {H\$¶¶, n¶H\$. 158
- 7) H\$¶¶H\$Uu, n.dr. d à^¶¶on.n., dUZ¶¶' H\$ g¶¶¶¶¶H\$ Z¶¶¶¶ {dÜmàH\$neZ n¶H\$. 51, 146, 292.
- 8) JmOaq {MO¶¶rg, n¶¶¶b, {ej UmMo A{Y¶¶¶Z, (àW' And¶¶nr 1999), {Z¶¶¶Zy/Z àH\$neZ.
- 9) MihmU {H\$¶¶ ('¶¶-¶¶mar 2004) "' ¶¶hVr d g¶¶¶U V\$ kmZ An(U ej {UH\$ ' ¶¶¶' mnZ' àkmàH\$neZ, Z¶¶eH\$.
- 10) OJV¶¶, h.Zm (2007), àJV ej {UH\$ V\$ {dkmZ An(U ' ¶¶hVr V\$ kmZ ({ÜVr¶¶ And¶¶nr) nWo...{Z¶¶¶ Zy/Z àH\$neZ. n¶H\$. 150.
- 11) OJV¶¶ h.Zm, (E{àb 2006), {ej UmVrb Zdàdnh d ZdàdV¶¶¶ {Z¶¶¶Zy/Z àH\$neZ.
- 12) OJV¶¶ h.Zm, (g¶¶¶-a 2006), àJV ej {UH\$ V\$ {dkmZ An(U ' ¶¶hVr, V\$ {dkmZ, {Z¶¶¶Zy/Z àH\$neZ, nWo n¶H\$. 310
- 13) OJV¶¶ h.Zm (2007) àJV ej {UH\$ V\$ {dkmZ An(U ' ¶¶hVr V\$ kmZ ({ÜVr¶¶ And¶¶nr) nWo {Z¶¶¶ Zy/Z àH\$neZ n¶H\$. 303.

- 14) OJVM, h.Zm (1997, OnZednar). AÜ¶¶Z CnnÎnr d AÜ¶¶mZ, nJo... ZVZ àH\$neZ. n#H\$.74 d 75.
- 15) OJVM, h.Zm (2007). àJV ej {UH\$ V§ {dkmZ An(U ' r(hVr V§ kmZ ({ÜVr¶ And¶nr), nJo...{ZÈ¶ ZVZ àH\$neZ. n#H\$.150 d 151.
- 16) OJVM, h. Zm (2007), àJV ej {UH\$ V§ {dkmZ An(U ' r(hVr V§ kmZ ({ÜVr¶ And¶nr), nJo...{ZÈ¶ ZVZ àH\$neZ. n#H\$.150 d 151.
- 17) OJVM, h.Zm (2007), àJV ej {UH\$ V§ {dkmZ An(U ' r(hVr V§ kmZ ({ÜVr¶ And¶nr) nJo...{ZÈ¶ ZVZ àH\$neZ. n#H\$. 150.
- 18) XZml o AaqdX; (2000) B{VhngnMo AÜ¶¶mZ, ZVZ àH\$neZ, nJo-30 n#H\$.3,12.
- 19) nmQ;b brbm(1983)AnOMoAÜ¶¶mZ,nJoI r {dÚm àH\$neZ.n#H\$.15d16
- 20) nPESV, ~Ygr {-hmar (2005, AnPQ;a). {ej UmVrb g¶nYZ (g¶¶nÈ' H\$ An(U JJnÈ' H\$) nJo...{ZÈ¶ ZVZ àH\$neZ. n#H\$. 20.
- 21) nmagnZg, h bVmd Xenns brZm...ej {UH\$ g¶nYZ n#H\$.7.
- 22) 'SSH, 'nkQ Omer (2001) H\$B¶¶Qa d BQaZQ, nJo ... ¶¶QbrQ {HÈeYg n#H\$.25-30.
- 23) ~mQ>^mJm (1975) ""ej {UH\$ g¶nYZ"" ZVZ àH\$neZ, nJo
- 24) ~ado{' Zmj r (1999) g¶UH\$.{ej U,nJoZVZ àH\$neZ à.H\$. 40-50.
- 25) q^VnS(d.am (' o2005), ej {UH\$ g¶nYZ nÜXVr (V¶r¶ And¶nr) ZVZ àH\$neZ, nJo-30 n#H\$.16.
- 26) ^naVmVrb ej {UH\$ An¶¶m d g' rÈ¶¶ SH\$.¶¶Knm' nS {dÚm àH\$neZ, Zm¶,(n>H\$.137 Vo139)
- 27) q^VnS(d.am (2006) ""ej {UH\$ g¶nYZ nÜXVr"" (Xgar And¶nr) I r{dÚm àH\$neZ, nJo

- 28) q^VnSø {d.am (1999) ej {UH\$ gēnVZ nÜXVr, ZVZ àH\$meZ nUo n¥144
- 29) q^VnSø {d.am (1999) ej {UH\$ gēnVZ nÜXVr ((Vgar Andŷnr) nUo ZVZ àH\$meZ, n¥H\$.37-39,96.
- 30) 'w oameš d C' nRø {d.Vw (1986), "ej {UH\$ gēnVZnMr 'wÈdò 'hrami> JVV{Z' uVr 'Ši , ZmJnø.
- 31) 'w o ame. d C' nRø {d.Vw (1997) ej {UH\$ gēnVZnMr 'wÈdò 'hrami>{dÚmnrR>JVV d {Z{ 'Vr 'Ši , ZmJnø.
- 32) 'w o ame. An(U C' nRø {d.Vw (1998) ej {UH\$ gēnVZnMr 'wÈdò Anšm-nX, {dÚnàH\$meZ n¥H\$. 130-134, 142.
- 33) gào Zrbr' m d nRøb, àrVr (2007, OZ). {ej UmVrb {dMmàadrh (MnVr Andŷnr), H\$ehmø... 'ŠHò àH\$meZ, n¥H\$. 205, 206.

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- **‘nqH\$**

1) ‘hrami’Mm H\$Vr H\$mP\$’ gnan, àmW{‘ H\$ {ej UmMo gndPrH\$aU An(U
gnj aVmH\$mP\$, embq {ej U {d^mJ, JQVmbq, ‘B.©

2) anÁq AäqmgH\$’ Anaml Sm 2010, OrdZ {ej U {Sg}-a 2010 -
OnZolmar 2011 ‘gXm{deFnH\$, ‘hrami>anÁq ej {UH\$ g\$enYZ d à{ej U
n[afX, nUe-30 ({dUm n[afX).

3) amixq ej {UH\$ YmU 1986, ej {UH\$ AmihmZnH\$Z H\$V H\$mP\$’ nH\$e
n¥H\$.137 Vo140 d 244.

4) amixq AäqmgH\$’ Anaml Sm 2005, amixq ej {UH\$ g\$enYZ d à{ej U
n[afX, nUe {Sg}-a 2009, n¥H\$.139-140.

- **g\$W nWi o.-**

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B -	n¶¶mMUrMr CÎmagMr
B©-	n¶¶da n¶¶BÜ>ñbrBSg²
C -	CÎna MmMUrMr àíZndbr
D\$-	CÎna MmMUrMr CÎmagMr
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| 2. emi MoZnd | ..- | |
| 3. i¶ndgr¶¶H\$ nmi Vm | ..- | |
| 4. AU¶mZ AZ¶d | ..- | |

gYZm..-

- १) सर्व माहिती गोपनीय ठेवली जाईल व फक्त संशोधनकार्यासाठीच वापरली जाईल
- 2) OWoCÎmanMohnd¶/Znr AgoXmZ n¶¶¶ Anhv. ¶¶¶ VWo/Aer I ¶ H\$andr.
- 3) Andí¶H\$ VWog(dñVa CÎmoo{bhndrV.

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(EH\$ng m A{YH\$ gmYZndm dna H\$arV Agè¶ng VolTcm {R\$¶Ur √ I ¶ H\$andr.)

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| ~) à{VH\$Vr | <input type="text"/> |
| H\$) ñbnBSg ² | <input type="text"/> |
| S) X¶XeZ | <input type="text"/> |
| B) O.H.P. | <input type="text"/> |
| B) {MÎo | <input type="text"/> |
| '\$) AY¶ ----- | <input type="text"/> |

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A) nna\$maH\$ nUXVr

~) AmY@ZH\$ V\$ kmZnUaoAU\$nmZ

H\$aU -----

3) AmUng g\$UH\$M\$amV{ ' H\$ kmZ AnhoH\$m ?

A) hnd ~) Znhr

4) AmU g\$UH\$MokmZ H\$UJE\$nm H\$ngUam amá H\$boAnho?

5) I nrbnrbnH\$ H\$UH\$UJE\$nm ~hC0er\$ ' nU\$' nMm AU\$nmZnV dma H\$bm

Anho? EH\$ng m A{YH\$ ' nU\$' nMm dma H\$bm Ag\$ng VolT\$cm (RH\$Ur

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S> pihS\$Am³brng²

B) L.C.D.

'\$) AY\$ -----

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{dUmñ\$nm AnH\$boZng H\$R\$U dnQ\$nmV? E\$nmMr Zndo{bhm

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B{Oá g\$ñH\$Vr	
amMrZ ^naVr\$ g\$ñH\$Vr	
JkH\$ g\$ñH\$Vr	

- 11) gſſenZmgnRſ {dÚmWu AnVa{HſſmKVmHſm ?
 A) hndſ ~) Znhr
- 12) {dÚmſſm gh^mſ KVmHſm ?
 A) hndſ ~) Znhr
- 13) Agēſſmg Hſſmſſmſſm àHſſmKVm? Èſſmſſmſſm Úm

- 14) {dÚmſſm gh^mſ A{YHſ dnt{x{dÈſſmgRſ ÈſſmZm gſſenZmſ {ZJſſV
 gſſ^©Jmſ mHſſaÈſſmg gſſſVmHſm ?
 A) hndſ ~) Znhr
- 15) Agēſſmg HſſmſſmſſmVognhÈſſmſſmſſm gſſenZmgnRſ Jmſ mHſſoAnhſ

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- 16) {dÚmſſmZm gſſenZm g' O{dÈſſmgRſ {dÚmſſmHſſmZ HſſmſſmſſmVo CnHſſ'
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- 2) {Z~ſſnſſmſſm {Hſſ, oſſnſſmſſm dſſdſſnſſmſſm {MſſHſſomſſnſſmſſm anſſmſſm r ſſnſſmſſm
- 3) amſſ>nſſe fſſmſſm OrdZndarb, ſſndmſſmſſmſſm bTſſmſſmſſm {d{dY àgſſmda

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4) Xe³Vsda JrVnMogm Km(H\$ JmJZ H\$aUo

5) E(Vhm(gH\$ nWi nZm ^0x XUo

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A) hndj ~) Znr

20) AnnéJm emi V B(Vhm(g {ej H\$ ' \$i nMo' m(gH\$ CnbãY hndV H\$m?

A) hndj ~) Znr

21) B(Vhm(g {ej H\$ ' \$i nUao{d{dY CnH\$' K/bbAntmV H\$m?

A) hndj ~) Znr

22) Agēfmg Ēfm Cm CfñVarf gšēnZm {dŪmīfmg g' O(dēfmg Rš Hšom AnhoHšm?

A) hmf ~) Znhr

23) Agēfmg I nrb à' nŪōndén gšm

gšēnZm	Ēfmg^m KvbbocnHš

24) hñVnpñVHšm ahŪOoHšmf hoAmUmg ' n(hV AnhoHšm?

A) hmf ~) Znhr

25) B{Vhng {dfm Mo XzšZ AUfm Z HšVnZm AmU hñVnpñVHšm dnnaVmV Hšm?

A) hmf ~) Znhr

26) amšf ej {UHš Amaml SšmV {ej HšmVr HšmŪVr HšVf {Xbbr Anho? Vo {bhm?

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27) {dÚmí'í'ínZm gñŠenZñer {ZJSrV AmV(ZH\$ VŠ knZnda AmVnfaV CnH\$'
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A) hññ ~) Znhr

28) Agëñmg H\$ñUH\$ñUVoCnH\$' {dÚmí'í'ínZr H\$ñV ÈññMr ÑñXr Úm

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- 2) {ej H\$ dJm AÜqmmZ H\$aVnZm I nrbnH\$ H\$UJH\$UËqmm AÜqmmZ
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- A) H\$VmH\$WZ nÜXVr (Jm éen)
- ~) àiZnmaonÜXVr
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- 3) {ej H\$ dJm B{VhmgmMoAÜqmmZ H\$aVnZm I nrbn H\$ H\$UJH\$UËqmm
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- A) {Ml o
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- S) XæXeZ
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- 4) B{Vhmg {dfqVrb EI nÜm KOH\$MoAÜqmmZ H\$aVnZm {ej H\$ AmY{ZH\$
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6) {ej H\$ dJm AÜmZ H\$VnZm Vw Mm nrt>bnH\$ H\$UEm àH\$naMm
 gh^m H\$ÉZ KVmV? Eñmrt>√ I y H\$am

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38	~naboànVZm Jn¶ni	09	17
39	gngø{ZVm ' Ym\$ø	06	16
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41	Tæbo{a¶¶¶m { ' qbX	4	16
42	H\$¶ i oñdm/r {dO¶	9	17
43	b¶¶æA¶m/r {dídZmV	8	15
44	àgnX [a¶¶¶¶ nar amf {Zdng	7	20
45	e¶ma {OVe ' pANÐ	10	15
46	gædgogæe Jan¶nm	8	17
47	H\$¶ i og¶m/m ~mny	8	18
48	XanSøg{Zb Amf y	9	19
49	'S\$Hð æen¶/ à' n¶K	6	18
50	J¶¶i o{ ' am ~\$¶	8	19

n[a{ei>- H\$

BqIrm - 9 dr

VmSS\$ - ~

{Zq\$ i V JOnVrb {dUnifqMr Zrfo

A.H\$	Zrfo	nglMrMUrMo JW	CIm MrMUrMo JW
1	JmflH\$dnS>A' nb AÉU	08	15
2	JmflH\$dnS>gVZVm {dOqI	09	16
3	e' m' Znha gae	07	16
4	qeXoJnar H\$brng	08	18
5	^mf aogmla amf H\$U	06	15
6	CJboOrdZ gmla	08	14
7	'hmOZ {dbng Y' m'	07	16
8	nmf/mi anOI r {edmOr	08	14
9	Tnbo{a'qf\$im { 'btX	10	14
10	H\$S i onV' adr	08	17
11	H\$S i onVm {dOqI	10	17
12	JmflH\$dnS>gae 'Znha	09	15
13	eoma A'qim/r 'pAN\$	07	14
14	gmfl\$er g\$rvm 'pAN\$	09	15
15	gmfl\$er gae 'pAN\$	11	13
16	H\$S i ogOm/m ~my	08	15
17	eoma VOg anOmamf	07	13
18	XanSagnVnbr AI w	09	15
19	XanSæA{ZVm anOmamf	09	15
20	Tæmi AnH\$ne {Xbrn	09	15
21	'SH\$ A{ZVmH\$ed	09	17
22	H\$nb\$aoq\$mf ^mD\$	08	13
23	H\$nb\$aoA{Zb ^mD\$	07	13
24	anRnS>{a'qf\$im 'mfUH\$	10	17
25	anRnS>gud mVm\$amf	08	16
26	'SSH\$ æUmbr æ' nK	08	16
27	H\$mi o{a'qf\$im æ' nK	09	15
28	JmYi o{ 'am ~\$w	09	15
29	OmYd gOqI I rYa	09	14
30	dSZaogOqI I rYa	08	14

31	A{hao{eVb gXkr	08	15
32	'nVao{ebmXeaW	07	16
33	AmJmeol V/r {XnH\$	08	16
34	AI oam{YH\$m nmmO>	06	17
35	na~V A{OVmi¶¶SDe	08	15
36	'nVaoXeaW anOmanr	07	14
37	qeXoi¶¶SDe XImm	08	16
38	qeXogr' m n\$>{bH\$	10	17
39	ndna I {VH\$m XeaW	08	16
40	Jngndr énnbr anOp	10	17
41	H\$m\$ i oAMZm{^H\$m	09	16
42	Snd i oAMZmanr m	07	17
43	H\$mH\$mOaA' nbo à' nk	09	15
44	ed en¶¶rZ ' nba' X	11	20
45	{Vdnar AZm' mAZm	08	15
46	qeXoApídZr gXkr	7	17
47	An/n\$à{V^m amr M\$	09	18
48	~XmZo{à¶¶SDe à' nk	09	19
49	^n\$ao{ZVm A^¶¶	09	18
50	~naO> \$ gOn/m I rH\$U	09	19

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àíZmlbr

nyl@MrMUr

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JW - 25

dó - 30 { ' {ZQø

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emi MoZn¶ ...-

{dÚmí ¶mMoZn¶ ...-

hOar H\$' n¶\$...-

B¶¶Îm ...-

gMZm ... **gd@aíZ gn¶{dUoAmí¶H\$ Arno**

à.1 bm.- I rbrb [aH\$¶¶mOndm^am (5 JW)

- 1) An(X' nZd gw nao --- dfm¶du n¶ drda dndaV hn¶/m
A) drg bml ~) n¶Mdrg bml H\$) Vrg bml
- 2) ànMrZ B{Oá' Ú¶oOVZ H\$ÉZ Ralbe¶¶m' ¶ earan¶Zm --- AgoahUVm¶.
A) ' ' r ~) pñ' \$³g H\$) ' \$ano
- 3) hS¶nmd ' n¶ZOn¶Ks¶hr {R-H\$UoAn¶/m --- Anh¶.
A) n¶(H\$¶VnZn¶ ~) A' \$J{UñVnZn¶ H\$) ~n¶on¶Ker¶
- 4) JkH\$ bnd¶\$¶¶m {Z¶m¶rV --- hm' hÉdn¶/m KQ¶H\$ hn¶/m
A) Mm¶ S¶ dñVy ~) bnd¶\$a H\$) An¶(bìh Vb
- 5) "B{b¶¶S> An(U "An¶gr' ¶m' hnH\$¶¶m¶r aMZm --- ¶mZoH¶lor.
A) hnd a ~) qnS¶æ H\$) gn¶ \$n¶borg

à.2 ... EH\$ndr?¶rV CÎmoUm

(5 Ju)

- 1) gOrdnd¶m CÈH\$VrMm emóeUX {gUXn¶/ H\$nr d H\$Yr ' n\$bm?
- 2) à¶{Vhm{gH\$ H\$ni àhUOoàhUOoH\$¶¶ ?
- 3) B{Opbe¶¶Z bndH\$ H\$nrH\$nrUoAb¶¶na dmaV Ago?
- 4) î¶¶¶¶¶{bhm - hS\$nm g¶H\$Vr ?
- 5) B{Vhmgnd¶m OZH\$ àhU¶ H\$nrUvmB{VhmgH\$na hnd\$Z Jbm?

à.3 ... H\$naUo{bhm(H\$nrUvbr 2)

(6 Ju)

- 1) à¶{Vhm{gH\$ H\$ni mg "Aí' ¶¶' AgoàhUvmV.
- 2) B{Oábm "ZnB¶ ZXrMr XUJr' AgoàhUV.
- 3) hS\$nm g¶H\$Vrg "ZmJa g¶H\$Vr' àhU¶ Ani I boOnVo

à. 4... 'H\$ñni>H\$am (H\$nrUvbr 2)

(4 Ju)

- 1) g¶H\$Vr An(U gä¶¶m
- 2) OZoAí' ¶¶ An(U ZdoAí' ¶¶.
- 3) AWÍg d ñnmO¶¶

à.5 ... I nrbr àíZr¶r àÈ¶¶\$ 40 Vo50 eäXr¶ CÎmo{bhm(H\$nrUvbr 2) 5

- 1) à¶{Vhm{gH\$ H\$ni nrbr H\$brMr ' ¶{hVr {bhm
- 2) hS\$nm g¶H\$VrMm em¶ H\$gm bndJbm ?
- 3) ^¶¶¶H\$ n[ap¶WVrMoJ¶H\$ g¶H\$Vrda H\$nrUvon[aUm¶ Pnbo?

n[a{ei>- B

CîmagMr

nglMrMUr

{df¶ - B{Vhng

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{XZn¶\$... / /2011

emi MoZn¶ ...-

{dÚmi¶¶¶MoZn¶ ...-

hOar H\$' n¶\$...-

B¶¶¶ ...-

gMZm ... gd¶aíZ gn¶{dUoAmí¶¶H\$ Arho

à.1 bm.- I rbrb [aH¶¶¶mOndm^am (5 JW)

- 1) An(X' nZd gw naodrg bnl dfn¶¶du n¶¶drda drdaV hn¶/m
- 2) àMrZ B{Oá' Ú¶¶oOVZ H\$éZ Ralbe¶¶m ' ¶ earanZm ' 'r AgoâhUVm¶.
- 3) hS¶¶nd ' n¶ZOn¶S¶¶hr {R¶¶UoAm/m n¶¶H\$¶VnZ¶¶ Anh¶.
- 4) J¶H\$ bnd¶¶¶¶¶{Z¶¶¶rV An¶b¶h Vb hm ' hËdnMm KQ¶H\$ hn¶/m
- 5) "B{b¶¶S> An{U "An¶Sgr' ¶¶m ' hnH\$¶¶¶¶¶r aMZm hnd a ¶¶nZoH¶¶or.

à.2 ... EH\$ndr¶¶¶¶¶ CîmoÚm (5 JW)

1) gOrd¶¶¶¶¶CÈH\$¶¶¶¶¶m enóe¶¶X {gÜX¶¶¶ H\$¶¶r d H\$¶¶r ' n¶¶bm?

Cîm- {~{Oe emók Mnb¶¶ S¶¶dZ¶¶ ¶¶nZo B.g. 1859 gnbr gOrd¶¶¶¶¶¶¶
CÈH\$¶¶¶¶¶m enóe¶¶X {gÜX¶¶¶ ' n¶¶bm

2) ànd{Vhrfgh\$H\$ni àhUOdH\$fi ?

Cîra- 'mZdrÀfîm B{VhrgmVrb Áfîm H\$tbl \$mV 'mZdrbm bd ZH\$om AdJV ZihVr, ÈfîmH\$tbl \$mV "ànd{Vhrfgh\$H\$ni ' AgoâhUVmV.

3) B{OpefZ bnd\$H\$H\$UVoAbf\$na dmaV Ago?

Cîra- H\$hma, H\$UofUo aÉZO{SV -mSçm, A\$RçmB. Abf\$na dmarV.

4) ifîm{bhm- hS\$nmgh\$Vr ?

Cîra- hS\$nm fîm{bhm àmMrZ gh\$VrMoAdef gmnSçfîmZo{Vbm "hS\$nm gh\$Vr' AgoâhUVmV.

5) B{VhrgmÁfîmOZH\$ àhUÿ H\$UVmB{VhrgH\$na hmD\$Z Jbm?

Cîra- {hantç² hm "B{VhrgmMm OZH\$" àhUÿ 'mZbm Jbm B{VhrgH\$na hmD\$Z Jbm

à.3 ... H\$naUo{bhm(H\$UVbr 2) (6 Jw)

1) ànd{Vhrfgh\$H\$ni ng "Aí' fîm' AgoâhUVmV.

Cîra- (1) ànd{Vhrfgh\$H\$tbl \$mV 'mZdrbm bd ZH\$om AdJV ZgèfîmZo ÈfîmÁfîm OrdZ-ìfîdhnanMr 'mfhVr Hódi ÈfîmZoVfîna Hóbeèfîm hÈfîmanÁfîm AdefnçÉZ àná hnd/o (2) ÈfîmZoVfîna Hóbor bndH\$smMr d hndsmMr AdOnaoAn(U hÈfînao H\$ni mÁfîm AnKnV Zi>Pntr. (3) {ZgJm⁷ ghO CnbâY hndnam XJS> An(X' mZdrÀfîm XZçXZ dmanVrb 'hÈdnMm KOH\$ AgèfîmZo ànd{Vhrfgh\$H\$ni ng "Aí' fîm' Agbr àhUVmV.

2) B{Oábm"ZrB\$ ZXrMr XbJr' AgoâhUV.

Cîra- (1) eVr hm àmMrZ B{OáÁfîm AnWf\$ OrdZnMm nmfîm hnd/m (2) eVr ifîdgmfîmH\$Vm ZnB\$ ZXrÁfîm I nçfîmVrb Jm nMr gmrH\$ O'rZ CnbâY Pntr. (3) fîmVrb eVr 'wçÉdo ZnB\$ ZXrÁfîm nmÈfîmda Adbçÿz hnd/r. (4) ZnB\$ ZXr' i o ObdrhVh\$ d Xi Udi U gndfîrMo Pntr (5)

APYnYqnmMo ' w-bH\$ CEnnKZ d ObdrhVn\$Mr CnbāYVm qn\$ vi o ànMrZ B{OáMm i qmna {dH\$(gV Prbm (6) {dH\$(gV Prbēqm i qmnanr vi o ànMrZ B{OáMr gdmrU àJVr Prbr; àhUz ànMrZ JkH\$ B{VhmgH\$na {han\$og B{Oábm "ZnB ZXRMr XUJr' AgoáhUVmV.

3) h\$nmg\$H\$Vrg "ZmJa g\$H\$Vr' àhUz Anì I boOnVo

Cîra- h\$nm AnqU ' nZOnK\$no qmVo Prbēqm CÈI ZZnV XnZ ànMrZ ZJanm emY bmlbm qmZJanMr aMZmd(ei0enU qmVr. h\$nmg\$H\$VrVrb hr ZJao' nZdr OrdZnMr à' v H\$DohmVr. "ZJao hr qm g\$H\$VrMoH\$DnWmZ AgēqmZø hr g\$H\$Vr "ZmJa g\$H\$Vr' àhUz Anì I br OnVo

à. 4.- ' \$H\$ñni>H\$am (H\$UVbr 2) (4 Jw)

1) g\$H\$Vr AnqU gäqVm

Cîra-

A.H\$	g\$H\$Vr	A.H\$	gäqVm
1	g\$H\$Vr hr ' nZdnAqm ' nZ{gH\$ JaOnAqm n[anyver g\$YV AgVo	1	gäqVm hr ' nZdnAqm enar[aH\$ JaOner g\$YV AgVo
2	g\$H\$Vr hr Ambr ~n{YH\$ d Z{VH\$ àJVr g\$MV H\$aVo	2	gäqVm Ambr ^n{VH\$ àJVr g\$MV H\$aVo
3	g\$H\$Vr hr gäqVng m ' qmXV g\$enZm Anho	3	gäqVm hr g\$H\$Vrng m i qmH\$ Agz Vr gdg' ndeH\$ g\$enZm Anho
4	g\$H\$VrMm g' nde gäqVn hnb/no	4	g\$H\$Vr hm gäqVMm EH\$ KOH\$ Anho
5	gm(hE, H\$om, Y', Zr{V{Zq' qmM g\$H\$VrV g' nde hnb/no	5	^n{VH\$ gml XUñeqm gd KOH\$Mm gäqVn g' nde hnb/no

2) **OzōAí' ʔw̄ AnʔU ZdoAí' ʔw̄.**

Cīma- OzōAí' ʔw̄ àhUOM "nanUmí' ʔw̄" d ZdoAí' ʔw̄ àhUOM "Zdmí' ʔw̄" hndʔ. ʔnʔʔnVrb 'sàH\$ I mbrbà' mUoAnho...-

A.H\$	OzōAí' ʔw̄ ("nanUmí' ʔw̄')	A.H\$	ZdoAí' ʔw̄ ("Zdmí' ʔw̄')
1	ʔm H\$ni mVrb XJSʔ hÉʔmao d AdOmao H\$' r àVrMr d Anə-Sʔno-S> hndʔ/r.	1	ʔm H\$ni mVrb XJSʔ hÉʔmao d AdOmaogw-H\$ hndʔ/r.
2	ʔm H\$ni mVrb 'mZdnbm APrngnRʔ gVV ^0H\$Vr H\$andr bmJV Ago	2	eVrAʔm enVnr w̄ o Ap{Z{' ʔr H\$əUnam ʔm H\$ni mVrb àJV 'mZd eVr H\$ÉʔmgnRʔ CnʔʔV RəUneʔm {R-H\$Ur pñWa Prbm
3	hÉʔmao~ZdUq dVʔ ànÉʔmVr {eH\$na H\$əUo AnʔU 'š i o d H\$X' w̄ o Jni m H\$əUo BÉʔmXr H\$nr o ʔm H\$ni mVrb 'mZd H\$əV Ago	3	eVr hm ʔm H\$ni mVrb 'mZdnMm à' w̄ iʔdgnʔ hndʔ/m Éʔm~anə-a nemnbZ, bnH\$arMr d H\$nrSəMr dóo ~ZdUq gwmaH\$nr, H\$maH\$nr, Ka~nʔUr, YnVw̄H\$nr AnʔU iʔmna ho AYʔ iʔdgnʔhr VnoH\$é bmJbm
4	ʔm ʔw̄mVrb 'mZd {ZdneʔmgnRʔ Pnsəʔla, JmV qH\$dm I S-H\$ʔʔm AnSəntbm anhV Ago	4	ʔm ʔw̄nAʔm ànəʔr 'mZd bnH\$S>d JdVmmgZ Vʔna H\$əbÉʔm PnmSənr/ anhV Ago H\$nrbnV/anZə Vno 'mVrAʔm {dQm d XJSʔʔm n ³³ ʔm KanV anhjbmJbm
5	ʔm ʔw̄mVrb 'mZdnMo OrdZ H\$'əX AnʔU Agəj V hndʔ/o	5	ʔm ʔw̄mVrb 'mZdnMo OrdZ àJV, gʔP AnʔU gəj V hndʔ/o
6	ʔm H\$nb I \$əV JmM I H\$əMm {dH\$ng Prbm hndʔ/m	6	ʔm H\$nb I \$əV {M I H\$əbÉʔm {V[a ³ V {d{dY H\$bnʔʔm {dH\$ngntbm MnbZm {' i nbr. ʔm H\$nb I \$əVrb gw-H\$ d gʔKa CnH\$əUo AnʔU 'mVrMr ^n\$ʔ ʔnʔV ÉʔmMoàÉʔm/a ʔw̄o
7	ʔm H\$nb I \$əVrb 'mZd g' jnZə qH\$dm JQəZə nmʔr ^0H\$Vr H\$əV Ago	7	ʔm H\$nb I \$əV MnH\$Mm enV bndÉʔmZə dnH\$VH\$ d Xi Udi U dntəbo n[aUm r 'mZdr OrdZ

			J{V' mZ Pnto
8	ghH\$mf, gmf hH\$ OrdZ An(U H06 -g\$Wm ho Qm H\$tbl \$m/rb gmf m(OH\$ OrdZnMonpyhnb/.	8	Qm H\$tbl \$m/rb pñWa OrdZm w o 'mZdnAQm gmKQñi\$bm MmbZm { ' i nrb. H\$bm, VIdkmZ, I UXm An(U ^mfMm {dH\$ng ho Qm H\$ni m/rb gmf m(OH\$ OrdZnMonpy hnb/.

3) AWig d ñnn0x

Cīa- ànMrZ Jkg' Yrb AWig An(U ñnn0xQm ZJaamAQm/rb ' \$aH\$ I nrb
à' nJohm/m...-

A.H\$	AWig	A.H\$	ñnn0x
1	AWig ho H\$bm, VIdkmZ d anOH\$Q {ddMnangR\$ à{gUX hnb/o	1	ñnn0x ho bîH\$ar {ej U, {eñV{àQVm, ñdnrb\$Z d H\$iaX OrdZ OJEQnMo {ej U QngR\$ à{gUX hnb/o
2	AWig' UQlo bnb\$enhràYmZ anAQiQdnWm hnb/r.	2	ñnn0xUQlo bîH\$ar hpi\$ enhr anAQiQdnWm hnb/r.
3	enVr{àQ d g\$H\$V anAQ àhUz AWigMr Ani I hnb/r.	3	bîH\$ar d {dnVnadmXr anAQ àhUz ñnn0xMr Ani I hnb/r.
4	"AnàH\$iz' hm anAQnMm à' w engH\$ hnb/m Vno bnb\$ZQV Ago	4	ñnn0xQm àengZnMr gyl oEH\$M A{YH\$na ' \$i nH\$shnb/r.
5	'hEdnMo YnaUnE' H\$ {ZUQ bnb\$AQm gdQmYnaU g^w K/b0Om/.	5	gd© {ZUQ àengZm/rb A{YH\$na ' \$i K/b Ago

à.5 .. I nrb àiZr àEQH\$ 40 Vo50 eàXr Cīa(bhm (H\$Uvhr 2) 5

1) ànd{VhrigH\$H\$ni nrb H\$0Mr ' rñVr {bhm

Cīa- (1) nanUmí' An(U ' ÜQmí' Qm nV ' mZdmZo {MîH\$om AnE' gmV H\$br hnb/r. (2) ' mZdnMo dnñViQ AgUnAQm XJS\$ Jhm\$ ÜQlo ànUr, nj r d ' mZdr OrdZm/rb {d{dY KOZnMo ad n0Z H\$aUmar a\$rv {Mîo ' ÜQlo àXen/rb ^r' ~0H\$M QmVo AnT\$ br Anhb/. (3) AnX' JS> QmVrb XJS\$

JhV J\$εnÀŦm {eH\$narÀŦm àg\$ŦmMr {MŦo AnhV. (4) ñnZ' Yrb
 AèVmf' am Jhñ\$ ŦŦoAnt' bbr {d(dY ànÈŦmMr {MŦoàhUOoàmj{VhmŦgH\$
 {MŦH\$bmogè{gÜX Z' ŦoAnhV. (5) ŦmH\$Ŧi m/rb gwH\$, gKa CnH\$aUo
 d' m/rMr ^n\$Ŧ ŦmVZhr àmj{VhmŦgH\$ H\$Ŧi m/rb H\$bmMoàÈŦŦ/a ŦŦo

2) h\$ŦnmgŦH\$Ŧmment' H\$gmbndbm?

CŦa- (1) B.g. 1920 ÀŦm gw nang bñhna Vo 'bVnZ hm bñh' mŦVŦma
 H\$aVmZmH\$Ŧhr ànMrZ {dO\$ gmnSèŦm (2) ÈŦm Ŧ o H\$Ŧyb OmŦ/
 PnèŦmZoga OmZ 'meŦ ŦmŦŦm ZVÈdml nbr nannVEd I nÈŦmV' \$ nŦm- d
 qgY ànŦmV CÈI ZZnbm gwèdmV Pnbr. (3) S\$Ŧ XŦmanŦ ghmZr ŦmZm
 nŦm- ànŦmV h\$Ŧnm ŦŦo AnŦU am nrbXng ~Zou ŦmZm qgY ànŦm/rb
 'nrbZOnKS\$ ŦŦo ànMrZ 'Ŧm gmnSèŦmZo ÈŦmZŦ/a PnèŦm CÈI ZZmV
 h\$ŦnmgŦH\$Ŧmment' bndbm

3) ^nŦmŦbH\$ n[apñWVrMo JkH\$ gŦH\$Ŧrda H\$ŦVn[aUm Pnbo?

CŦa- Jkg' Yrb ^nŦmŦbH\$ n[apñWVrMo JkH\$ gŦH\$Ŧrda Pnbo n[aUm
 nŦŦbà' nŦo... (1) VŦH\$ S\$Ŧami àXe d eŦH\$Ŧo bhmZ-' nŦŦ ~ŦŦ Ŧm
 ^nŦmŦbH\$ n[apñWVr' Ŧ o ànMrZ Jkg' ŦŦo bhmZ bhmZ ZJaanaŦo CXŦmŦg
 Anbr. (2) gmJanÀŦm gmŦŦŦm Ŧ o JkH\$ bñh\$ CŦm' XŦmŦXu ~Zbo AnŦU
 ZnH\$Ŧm ŦŦm ŦŦmŦŦmŦŦm {dH\$(gV Pnbm (3) S\$Ŧami ^mŦmV
 'ŦŦnrbZ d bñh\$ŦarMoH\$ŦmS>VŦma H\$aUoho' hÈdmMoŦŦmŦŦm ~Zbo (4)
 ^y ŦŦm gmŦŦH\$ hdm nZm Ŧ o Jkg' ŦŦo 'Ŧi 'Ŧi ndi d bñh\$ŦŦmŦr CŦm'
 nŦŦng hmV Ago (5) 'Ŧi nŦmŦŦŦ VoCŦm' XOnŦo' Ŧ ~ZdV. 'Ŧi o d
 AnŦbìh VbnMr JkH\$ bñh\$ {ZŦmŦ H\$aV AgV. (6) ŦŦmnanŦŦ ànà
 PnèŦm g' ŦŦr' Ŧ o JkH\$ gŦH\$ŦrZo gmŦŦÈŦ, H\$Ŧm, emó BÈŦmŦV
 AgmŦmaU àJVr H\$Ŧr hmŦr.

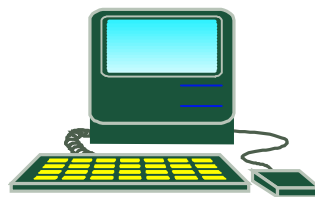
n[a{ei>- B©

g\$UH\$ ghpaV AZKeZ H\$P\$ nmdmang\$YrAqm

gMZmnTxb à' nUo



- 1) g\$UH\$ ghpaV AZKeZ H\$P\$ hm {dÚmi' qmZr/{ej H\$Zr dmaVnZm qmZr H\$ nZodmndm
- 2) g\$UH\$ ghpaV AZKeZ H\$P\$ hm BqTnm 9 dr gnR\$ Agëqnr vi o AÜqmnZ/ AÜqmqZ H\$aÉqngnR\$M dmandm
- 3) g\$UH\$ ghpaV AZKeZ H\$P\$ hm i'qdpñWV hmVmi ndm
- 4) g\$UH\$ ghpaV AZKeZ H\$P\$ mV, àÉqñsmZo àÉqñs àH\$aUmZ\$Ya {Xbbr MnMUr ñdV... àm n(UH\$Uo gn\$ndr d ÉqnmMo ñdqñs q' mZ H\$andl
- 5) g\$UH\$ ghpaV AZKeZ H\$P\$ nMm dma HëqnmZ\$Ya JaOZqna ÉqnmV ~Xb H\$andm



g9UH\$ ghpaIV AZMeZ H\$P\$ Mr gr.Sx. à~YngnV
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hOar H\$' n¶\$...-

B¶Îm ...-

gMZm ... gd@aíZ gn¶{dUoAmí¶H\$ Arno

à.1 bm.- I rbrb [aH\$¶¶mOndm^am (5 JW)

- 1) An(X' nZd gw nao --- dfm¶du n¶ drda dndaV hn¶m
 A) drg bml ~) n¶Mdrg bml H\$) Vrg bml
- 2) ànMrZ B{Oá' Ú¶oOVZ H\$ÉZ Ralbe¶¶m ' ¶ earanZm --- AgoahUVmV.
 A) ' ' r ~) pñH\$³g H\$) H\$ano
- 3) hS¶nmd ' n¶ZOn¶Ks¶hr {R-H\$UoAn¶m --- AnhV.
 A) n¶(H\$¶VnZnV ~) A' \$J{UñVnZnV H\$) ~n¶on¶enV
- 4) JkH\$ bnd¶¶¶¶m {Z¶m¶rV --- hm ' hÉdn¶m KOH\$ hn¶m
 A) Mm S¶ dñVy ~) bnd¶\$a H\$) An¶(bìh Vb
- 5) "B{b¶¶S> An(U "AnSgr' ¶m ' hnH\$¶¶¶m aMZm --- ¶mZoH¶or.
 A) hnd a ~) qnS¶æ H\$) gn¶ \$n¶ borg

à.2 ... EH\$ndr?¶m CÎmoUm (5 Ju)

- 1) gOrdnd¶m CÈH\$VrMm emóeUX {gUXn¶/ H\$ndr d H\$Yr ' n\$bm?
- 2) ànd{Vhm(gH\$ H\$ni àhUOoàhUOoH\$¶¶ ?
- 3) B{Opbe¶¶Z bndH\$ H\$ndH\$ndUVoAb¶¶na dmaV Ago?
- 4) i¶¶¶¶¶m{bhm - hS\$nm g¶¶H\$Vr ?
- 5) B{Vhmgnd¶m OZH\$ àhUz H\$ndVmB{VhmgH\$na hnd\$Z Jbm?

à.3 ... H\$naUo{bhm(H\$ndVbr 2) (6 Ju)

- 1) ànd{Vhm(gH\$ H\$ni mg "Aí' ¶¶' AgoàhUVmV.
- 2) B{Oábm"ZnB¶ ZXrMr XUJr' AgoàhUV.
- 3) hS\$nm g¶¶H\$Vrg "ZmJa g¶¶H\$Vr' àhUz Ani I boOnVo

à. 4... 'H\$ñni>H\$am (H\$ndVbr 2) (4 Ju)

- 1) g¶¶H\$Vr An(U gä¶¶Vm
- 2) OZoAí' ¶¶ An(U ZdoAí' ¶¶.
- 3) AWÍg d ñnmO¶¶

à.5 ... I ndr àíZr¶r àE¶¶H\$ 40 Vo50 eàXr¶ CÎmo{bhm (H\$ndVbr 2) 5

- 1) ànd{Vhm(gH\$ H\$ni ndr H\$ndMr ' n{hVr {bhm
- 2) hS\$nm g¶¶H\$VrMm em¶ H\$gm bndJbm ?
- 3) ^nd¶¶H\$ n{apnWVrMoJ¶H\$ g¶¶H\$Vrda H\$ndVn[aUm¶ Pnbo?

n[a{ei>- D\$

CîragMr

Cîra MrMUr

{df¶ - B{Vhng

JW - 25

dî - 30 { {ZQæ

{XZn¶\$... / /2011

emi MoZn¶ ...-

{dÚmî ¶¶nMoZn¶ ...-

hOar H\$' n¶¶\$...-

B¶¶Îm ...-

gMZm ...- gd[©]aíZ gn[©]dUoAmí¶¶H\$ Arho

à.1 bm... I rbrb [aH\$¶¶mOndm^am (5 JW)

- 1) Am(X' nZd gw naodrg **bnl** dfn¶¶du n¶¶drda dndaV hn¶¶m
- 2) ànMrZ B{Oá' Ú¶¶oOVZ H\$éZ Ra[©]bè¶¶m ' V earanZm ' ' r AgoâhUVn¶.
- 3) hS\$nm d ' n¶¶ZOnK\$[©]ohr {R¶¶H\$UoAm/m n¶¶H\$VnZn¶ Anh¶.
- 4) JkH\$ bn¶¶H\$¶¶¶¶m {Z¶¶¶rV **Anbîh Vb** hm ' hËdnMm KO¶¶\$ hn¶¶m
- 5) "B{b¶¶S> An{U "An[©]gr' ¶¶m ' hnH\$¶¶¶¶m aMZm **hna** ¶¶mZoH¶¶or.

à.2 ... EH\$ndr¶¶¶¶ CîraÚm (5 JW)

- 1) gOrdnd¶¶¶¶mCÈH\$¶¶¶¶m[©]eÜX {gÜXn¶¶ H\$¶¶r d H\$¶¶r ' n¶¶b¶m?

Cîra- {~(Oe emók Mnb¶ S¶¶dZ ¶¶mZo B.g. 1859 gnbr gOrdnd¶¶¶¶m
 CÈH\$¶¶¶¶m[©]eÜX {gÜXn¶¶ ' n¶¶b¶m

2) ànd{VhrfGH\$H\$ni àhUOoàhUOoH\$fi ?

Cîra- 'mZdrÀfîm B{VhngmVrb Áfîm H\$rbI \$mV 'mZdrbm bd ZH\$om AdJV ZihVr. Èfîm H\$rbI \$mV "ànd{VhrfGH\$H\$ni 'AgoàhUVmV.

3) B{OpefZ bnd\$H\$H\$H\$VVoAbf\$na dmaV Ago?

Cîra- H\$hma, H\$UofUo aÉZO{SV -mSçm, A\$RçmB. Abf\$na dmarV.

4) ifîm{bhm- hS\$nmgh\$Vr ?

Cîra- hS\$nmfîmVoîm ànMrZ gh\$VrMoAdef gmnSçfîmZo{Vbm "hS\$nmgh\$Vr' AgoàhUVmV.

5) B{VhngmÀfîmOZH\$àhUyZ H\$H\$VVB{VhngH\$na hrD\$Z Jbm?

Cîra- {hantog² hm "B{VhngmMm OZH\$" àhUyZ 'mZbm Jbom B{VhngH\$na hrD\$Z Jbm

à.3 ... H\$naUo{bhm(H\$H\$Vbr 2) (6 Ju)

1) ànd{VhrfGH\$H\$ni ng "Aí' fîm' AgoàhUVmV.

Cîra- (1) ànd{VhrfGH\$H\$rbI \$mV 'mZdrbm bd ZH\$om AdJV ZgèfîmZo ÈfîmÀfîm OrdZ-îfîdhnanMr 'mfhVr Hôdi ÈfîmZoVfîna Hôbèfîm hÈfîmanÀfîm AdefnçÉZ àná hndvo (2) ÈfîmZoVfîna Hôbor bndH\$S\$Mr d hnd\$Mr AdOnaoAn(U hÈfînao H\$ni nÀfîm AnKnV Zi>Prbr. (3) {ZgJm⁷ ghO CnbâY hndnamXJS> An(X' mZdrÀfîm XZ\$XZ dmanVrb 'hÈdnMm KOH\$ AgèfîmZo ànd{VhrfGH\$H\$ni ng "Aí' fîm' Agbr àhUVmV.

2) B{Oábmb"ZrB\$ ZXrMr XbJr' AgoàhUV.

Cîra- (1) eVr hm ànMrZ B{OáÀfîm AnWf\$ OrdZnMm nrfîm hnd/m (2) eVr ifîdgmfîmH\$Vm ZnB\$ ZXrÀfîm I nrfîmVrb Jri nMr gmrH\$ O'rZ CnbâY Prbr. (3) fîmVrb eVr 'wèfîÉdoZnB\$ ZXrÀfîm nrfîmda Adb\$yZ hnd/r. (4) ZnB\$ ZXr' i o ObdrhVh\$ d Xi Udi U gndfîrMo Prbo (5)

			J{V' nZ Pnto
8	ghH\$mf, gmf yH\$ OrdZ An(U H0\$ -g\$Wm ho Qm H\$tbl \$m/rb gmf m(OH\$ OrdZnMonpyhnb/.	8	Qm H\$tbl \$m/rb pñWa OrdZm w o 'mZdmAqm gmkQñi\$bm MmbZm { ' i nrb. H\$bm, VÍdknZ, I ÚXm An(U ^mfMm {dH\$ng ho Qm H\$ni m/rb gmf m(OH\$ OrdZnMonpy hnb/.

3) AW'g d ñnn0x

Cīa- ànMrZ Jkg' Yrb AW'g An(U ñnn0xQm ZJaamAqm/rb ' \$aH\$ I nrb à' nJohm/m...-

A.H\$	AW'g	A.H\$	ñnn0x
1	AW'g ho H\$bm, VÍdknZ d anOH\$Q {ddMnan\$gnR\$ à{gUX hnb/o	1	ñnn0x ho bîH\$ar {ej U, {eñV{àQVm, ñdrdb\$Z d H\$îàX OrdZ OJÉQmMo {ej U QngnR\$ à{gUX hnb/o
2	AW'g' UQo bnb\$enhráYnZ anAQiQdnWm hnb/r.	2	ñnn0xUQo bîH\$ar hñ\$' enhr anAQiQdnWm hnb/r.
3	enVr{àQ d gngH\$V anAQ àhUz AW'gMr Ani I hnb/r.	3	bîH\$ar d {dnVmadnKr anAQ àhUz ñnn0xMr Ani I hnb/r.
4	"AnáH\$îZ' hm anAQmMm à' w emgH\$ hnb/m Vno bnb\$ZQV Ago	4	ñnn0xQm àengZmMr gyl oEH\$m A{YH\$na ' \$î nH\$S\$hnrb/.
5	'hEdnMo YnaUnE' H\$ {ZUQ bnb\$AQm gdQmYnaU g^V Kñ/boOmV.	5	gd© {ZUQ àengZm/rb A{YH\$na ' \$î Kñ Ago

à.5 ... I nrb àíZñr àÉQH\$ 40 Vo50 eáXr/ Cīa{bhm (H\$Uvhr 2) 5

1) àn(VhrngH\$H\$ni nrb H\$Mr ' rñVr {bhm

Cīa- (1) nanUmí' An(U ' ÚQmí' QmV ' mZdmZo {MÌH\$bm AnE' gmV H0br hnb/r. (2) ' mZdmMo dnñViQ AgUnAQm XJS\$ Jmñ\$ ÚQo ànUr, nj r d ' mZdr OrdZm/rb {d{dY KOZnMo ad n0Z H\$aUmar a\$Vr {MÌo ' ÚQo àXem/rb ^r' ~0H\$m QmVo Amí\$ br Anhb/. (3) AnX' JS> QmVrb XJS\$ JmV JS\$AQm {eH\$narAQm àg\$nmMr {MÌo Anhb/. (4) ñnZ' Yrb

AëVnř' am Jhnř Üřlo Anři bbr {d{dY ànĒřnřMr {MĪ oàhUOo àmj{VhnřgH\$
{MĪ H\$obMogà{gUX Z' ŵoAnhř. (5) řmH\$mi nřrb gw-H\$, gřKa CnH\$aUo
d ' nřMrMr ^nřř řnřřZhr àmj{VhnřgH\$ H\$mi nřrb H\$obMoàĒřřř/a řřVo

2) hSřnmgřH\$řrMmenř H\$gmbnřbm?

CĪra- (1) B.g. 1920 Āřm gw nang brhna Vo ' ĩVnř hm brnř' mĉVřna
H\$aVnřmH\$řhr ànřrZ {dO.ř gmSĒřřm (2) Ēřmř ĩ o H\$řrb Omřř
PnĒřmZoga Onř ' meĪ řnřřřm ZVĒdmĪ nřr nřnřĒ I nĒřřmř' \$ nřOm- d
qgY ànřřm CĒI ZZnřm gĒdmř Pnřr. (3) Sřř Xřmarr ghmZr řnřřm
nřOm- ànřřm hSřnm řřVo AnřU amĪ nřXng ~ZOu řnřřm qgY ànřřmrb
' nřZOnřS.ř řřVo ànřrZ ' Īm gmSĒřřmZo ĒřmZřř/a PnřbĒřm CĒI ZZnř
hSřnmgřH\$řrMmenř bmbm

3) ^nřnřbH\$ n[apnřVřMo JkH\$ gřH\$řrda H\$řřVnř[aUm Pnřbo?

CĪra- Jřg' Yrb ^nřnřbH\$ n[apnřVřMo JkH\$ gřH\$řrda Pnřbo n[aUm
nřřřbà' nřo... (1) VĪH\$ Sřřami àXe d ebřřř.ř bhřZ -' nřřř ~O.ř řm
^nřnřbH\$ n[apnřVřr' ĩ o ànřrZ Jřg' Üřlo bhřZ bhřZ ZJaarrĀřlo CXřmř
Anřr. (2) gmJarrĀřm gř{PÜřmř ĩ o JkH\$ bnbř CĪmř XřmřXu ~ZboAnřU
Znřřm- nřřUrMm ĩřdgmřřd rb {dH\$řgV Pnřm (3) Sřřami ^nřmř
' řřnřbZ d bnbřřarMoH\$řmS>Vřna H\$aUo' hĒdmĪ ĩřdgmřř ~Zbo (4)
^y Ūř gmř {D\$ hdmř nřmř ĩ o Jřg' Üřlo ' ři ' ři nđi d bnbřřř> řnřřr CĪmř
nřřng hnbř Ago (5) ' ři nřngřř Vo CĪmř XOnřřo ' Ū ~ZdV. ' ři o d
AnřbĪh Vbnřr JkH\$ bnbřř {Zřmř H\$aV AgV. (6) ĩřmnanřřř ànř
PnřbĒřm g' ŪXr' ĩ o JkH\$ gřH\$řrZo gř{hĒřř, H\$om, emó BĒřmřřV
AgmřnaU àJVr H\$řr hnbřr.

à{V,
'm{d^w à'w ,
B{Vhmg {d^w,
{Q: H\$ ' hmami>{dÚmnrR>
ñdmaJQ> nWJo

{df¶ ...B{Vhmg AÜ¶mZnA¶m A{^Zd nÜXVrV ...g\$UH\$
ghmpe¶V AZKæZ H\$m¶¶\$' am-{dè¶m-m-V.

' hm¶¶,

darb {df¶mZmna {Q: H\$ ' hmami> {dÚndmMñnVr (nrEM.Sæ.) (B{Vhmg)
¶m {dÚmnrR¶/rb nXdrMo H\$m¶ n¶J©H\$aÈ¶mgnRæ Hæ. ~nægo gr' m ' Ym\$a {hbm
g\$Wó m \$V Amr Mr Zmr Xolard ' nbnö ' nÜ¶{ ' H\$ d Cf' nÜ¶{ ' H\$ emi m, dmaOo
nWJo ' Yrb B¶¶Îm 9 dr Mm dJ©gmYnaUV... 18 AnRæSæ¶m H\$m¶bndYrgnRæ nadmZJr
XÈ¶m¶ ¶¶ Anho Amr A¶m emi ¶ ¶D\$Z È¶mZr È¶m¶Mo H\$m¶ g' mYmZH\$mH\$ n¶J©
Hæbo

H\$ì ndo

Ammbm{dídmgY