छत्तीसगढ़ माध्यमिक शिक्षा मण्डल, रायपुर

xf.kr

d{kk x oh

i'u cd

¼fo|kfpr bdkb½

NÙkhlx< ek/;fed f'k{kk e.My] jk;iqj

vke[k

jk"Vh; ikB;p;k dh :ij[kk 2005 e ftu fpUrkvk dk mYy[k fd;k x;k g mld rkjrE; e in'k d gkbLdy ,o gk;j ld.Mjh e v/;;u dju oky fo|kfFk;k d lc/k e fopkj dju ,o mudh leL;kvk dk lek/kku dju gr NRrhlx< ek/;fed f'k{kk e.My i;Ru'khy g] rkfd 'k{kf.kd y{;k dh ikfIr gk ld ,o f'k{kk dh x.koRrk e l/kkj gk ldA

ijh{kkvk d le; fo|kfFk;k d eu e fpUrk ,o Hk; mRiUu gkrk g fd ijh{kk dlh gkxh\ ijh{kk e fdl idkj i'u iN tk;x\ dku lk i'u ijh{kk d fy, egRoi.k gk ldr g\ bl gr foxr o"kk e e.My i;kljr jgk gA fo"k;okj ekMy i'u i= dk vc NRrhlx< ek/;fed f'k{kk e.My d ekU;rk ikIr fo|ky;k e Hktu d lkFk&lkFk mUg e.My d oclkbV e ykM fd;k tk;xkA ijh{kk d Hk; ,o ruko l eDr j[ku d fy, e.My }kjk gkb Ldy ,o gk;j ld.Mjh d fo|kfFk;k d fy, fo"k;okj d{kk 9oh l 12oh rd i'u cd r;kj fd;k x;k gA i'u cd e ijEijkxr i'uk d vfrfjDr uohu i'uk dk leko'k fd;k x;k gA i'u cd bdkbokj ,o e.My dh ijh{kk ;ktuk d vulkj r;kj fd;k x;k g ftll vPN vd ikIr dju d lkFk&lkFk ijh{kkfFk;k e fo"k; d ifr :fp mRiUu gkxhA

i'u cd d vHkko e f'k{kdk] ikf'udk vkj fo|kfFk;k dk ikB; iLrd d vUr e fn; x, ijEijkxr i'uk ij fuHkj jguk iMrk gA bll fo"k; dk eY;kdu 0;fDrijd (Subjective) gk tkrk g rFkk fofHkUu 'k{kf.kd mÌ';k d vk/kkj ij eY;kdu ugh gkrk gA blh vko';drk dk /;ku e j[kr g, e.My u gkbLdy ½9oh] 10oh½ rFkk gk;j ld.Mjh ¼11oh] 12oh½ d lHkh fo"k; d i'u cd dk fuek.k fd;k gA bl i'u cd l f'k{kdk ,o fo|kfFk;k e fur uohu i'uk d fuek.k dh vfHk:fp mRiUu gkxhA

i'u cd e fo"k; dh miyC/k 'kf{kd lkexh dk 'kkfey fd;k x;k gA ble uohu ekfyd i'uk dk] fo"k; oLr] f'k{k.k d mÌ';] dfBukb Lrj vkj vdu dh x.koRrk d vulkj llxfBr djd j[kk x;k gA i'u cd e e.My dh ijh{kk ;ktuk d vulkj vfry?kmÙkjh;] y?kmÙkjh; ,o nh?kmÙkjh; i'uk dk leko'k fd;k x;k gA ifr;kxh ijh{kk d fy, vH;kl gr oLrfu"B i'uk dk Hkh leko'k i'u cd e fd;k x;k gA ftll ifr;kxh ijh{kkvk d vH;kl e lgk;rk feyxhA ifrfnu] ifr llrkg] ifrekg vkj ifro"k uohu i'uk d ckj e fo|kfFk;k] f'k{kdk] ikf'udk] ijh{kdk vkj lkekU; tu l fo"k;okj e.My uohu i'uk dk vkef=r fd;k tkoxkA vkid }kjk if"kr fo"k;okj uohu i'uk dk tkMdj ifro"k i'u cd dk l'kk/ku e.My }kjk fd;k tkoxk] ftll i'u cd vf/kd ifji.k vkj vk/kfudre gkr jgA

e> vk'kk g fd e.My }kjk tkjh i'ucd fo|kfFk;k] f'k{kdk] ikf'udk ,o ijh{kdk d fy, mi;kxh fl) gkxkA

'kHkdkeukvk lfgr---

¼t- fet½
vkb-,-,l-
lfpo
N-x- ek/;fed f'k{kk e.My] jk;ij

fo"k;%& xf.kr

d{kk nloh

vfr y?kqÙkjh; i'u

bdkbZ & 01

ifje; 0;tad] vuqikr&lekuqikr] ox lehdj.k] lekUrj J.kh

i'u 1& ifje; 0;tad $\frac{x^2-5x+6}{2x^2-8}$ dk U;ure ink e 0;Dr dhft, A

i'u 2& ;fn $\frac{2x-3y}{x-zy}=\frac{6}{7}$ gk] rk $x:y$ dk eku Kkr dhft;A

i'u 3& k d fdl eku d fy; ox lehdj.k $2kx^2-8x+k=0$ d ey cjkcj g \

i'u 4& ox lehdj.k $2x^2+5\sqrt{3}x+6=0$ d eyk dk ;kxQy o x.kuQy Kkr dhft;A

i'u 5& fuEufyf[kr ifje; 0;tdk dk vUrj Kkr dhft; &

$$\frac{x+2}{x-2},\ \frac{x-2}{x+2}$$

i'u 6& J.kh 9] 5] 1] &3---------- dk 8ok in Kkr dhft; A

i'u 7& $8ab$ vkj $4a^2b$ dk rrh;kuqikrh Kkr dhft; A

i'u 8& ;fn $a:b::c:d$ gk rk fl) dhft; fd $\frac{ma-nb}{b}=\frac{mc-nd}{d}$

i'u 9& ox lehdj.k cukb; ftud ey 6 vkj &1 g \

i'u 10& 1 vkj 50 d chp lHkh ikÑfrd l[;kvk dk ;kxQy Kkr dhft; tk 5 d x.kt g \

i'u 11& ;fn ox lehdj.k $ax^2-5x+6=0$ d eyk dk ;kxQy 10 gk] rk a dk eku Kkr dhft ;A

i'u 12& J.kh 3] 8] 13] 18 ---------- dk dku lk in 489 g \

i'u 13& fdlh lekUrj J.kh d no in dk eku 2n $ 5 g rk J.kh d 15o in dk eku Kkr dhft ;A

i'u 14& $\sqrt{2}+1$ vkj $\sqrt{2}-1$ dk lekUrj ek/; Kkr dhft ;A

i'u 15& $x:3a::y:5b$ d fy; ;kxkUrjkuikr fu;e fyf[k;A

i'u 16& ;fn a, b, c, d forrkuikr e gk rk a, b rFkk c dk d d :i e fdl idkj 0;Dr djx \

i'u 17& $\frac{x}{x-3}$ vkj bld 0;RØe dk ;kx Kkr dhft, A

i'u 18& $\frac{36x^2-36x}{12x^2-12}$ dk ljyre ink e 0;Dr dhft ;A

i'u 19& $\frac{x^2-1}{x+2}$ e D;k tkMk tk; fd ;kxQy $\frac{1}{x+2}$ ikIr gk tk;A

i'u 20& lehdj.k $(x-7)(x+8)=0$ dk gy dhft ;A

i'u 21& ;fn ox lehdj.k d eyk dk ;kx &5 rFkk eyk dk x.kuQy &4 gk rk ox lehdj.k fyf[k;A

i'u 22& ;fn $\alpha^2+\beta^2=\frac{3}{2}$ rFkk lehdj.k $x^2+2ax+a^2=0$ d ey α o β gk rk a dk eku Kkr dhft ;A

i'u 23& ^^nk Øekxr le l[;kvk d oxk dk ;kx 164 g** bl dFku dk lr"V dju okyk ox lehdj.k cukb;A

i'u 24& lehdj.k $4z^4 - 11z^2 + 6 = 0$ dk ox lehdj.k e ifjofrr dhft ; A

i'u 25& fdlh J.kh dk n ok in 2n+ 5 g] mi;Dr rd ndj crkb; fd 2n+ 5 }kjk lekUrj J.kh dk 0;Dr fd;k tk ldrk g A

i'u 26& vuØe 8, 4] 0---------- &24 e ink dh l[;k fdruh gkxh \

i'u 27& J.kh 9$12$15$---------- d 16 ink rd dk ;kxQy Kkr dhft ; A

i'u 28& ;fn $P = \frac{x^2 + y^2}{x^2 + 2xy + y^2}$ rFkk $Q = \frac{xy + y^2}{x^2 - xy}$ rk P.Q dk eku Kkr dhft ; A

i'u 29& lehdj.k $x^2 = 18x$ dk gy dhft ; A

bdkb & 02

¼okf.kT; xf.kr½ cfdx ,o vk;dj

i'u 30& cd e /ku jkf'k tek dju d fy; fdru idkj d [kkr [kky tk ldr g \ fdUgh pkj [kkrk d uke crkb; A

i'u 31& ,d ,l iR;{k dj dk uke crkb; ftl ik;% lHkh depkjh dUn ljdkj dk vnk djr g \

i'u 32& fdlh cd d cPkr cd [kkr l C;kt dh nj Kkr dju dk l= fyf[k;A

bdkb & 03
fun'kkd T;kfefr

i'u 33& x v{k e eyfcUn l 5 bdkb njh ij fLFkr fcUn dk Hkt o dkfV dk eku D;k gkxk \

i'u 34& fcUn ¼&4] 5½ vkj ey fcUn d chp dh njh Kkr dhft ; A

i'u 35& fcUn $(1,\sqrt{3})$ dk /koh; fun'kkd e cnfy ; A

i'u 36& f=Hkt d {k=Qy dk l= $\frac{1}{2}[x_1(y_2-y_3)+.....+.....]$ dk i.k dhft , A

i'u 37& fcUnvk ¼3] &2½ vkj ¼&3] &4½ dk feyku okyh j[kk d e/; fcUn d fun'kkd Kkr dhft ; A

bdkb & 04
f=dk.kfefr

i'u 38& 90^0 dk jfM;u e ifjofrr dhft ; A

i'u 39& dk.k ekiu dh fdruh i)fr;k ipfyr g] mud uke fyf[k; A

i'u 40& $\cot\theta.\cot(90-\theta)$ dk eku Kkr dhft , A

i'u 41& fdlh ledk.k f=Hkt e ,d U;udk.k 60^0 dk gk rk nlj U;udk.k dk eku Kkr dhft , A

i'u 42& fl) dhft ; $\frac{\sin 20^\circ}{\cos 70^\circ}=1$

i'u 43& $\sin 75^\circ+\cos 62^\circ$ dk 0° vkj 45° d chp d dk.kk d f=dk.kferh; vuikr e 0;Dr dhft ; A

i'u 44& fl) dhft ; $\sin^2 30^\circ+\cos^2 30^\circ=1$

i'u 45& ,d or d ml thok dh yckb Kkr dhft; tk or d dUn ij 60^0 dk dk.k cukrk gk A

i'u 46& f=dk.kferh; lkj.kh dk i;kx fd; fcuk $\cos^2 27^0 - \sin^2 63^0$ dk eku Kkr dhft; A

i'u 47& lehdj.k $2\sin\theta = \sqrt{2}$ dk gy dhft; A

bdkb & 05
{k=fefr

i'u 48& fiTe d ik'o Qyd dk ifjHkkf"kr dhft; A

i'u 49& ,d yEc fiTe dk flj 4 leh- Hkt k dk leckg f=Hkt g ;fn fiTe dh Åpkb 6 leh g rk yEc fiTe d ik'o i"B dk {k=Qy Kkr dhft; A

i'u 50& ,d yc f=Hkt h; fiTe dk vk/kkj ledk.k f=Hkt g] ml fiTe dk i"Bh; {k=Qy rFkk vk;ru Kkr dju dk l= fyf[k; A

i'u 51& 'kd d vk/kkj dh ifjf/k rFkk 'kd d vk/kkj dk {k=Qy dk l= fyf[k; A

i'u 52& ml cM l cM 'kd dh Åpkb Kkr dhft; tk ml ?ku e l dkVk tk ldrk g ft ld dkj dh yEckb 7 leh- g A

i'u 53& v/kxky dk li.k i"B vkj oØi"B e vuikr Kkr dhft;] ;fn v/kxky dk 0;kl 2r g A

i'u 54& 7 leh- 0;kl oky v/kxky dk oØi"B Kkr dhft; A

i'u 55& ,d xky dk oØ i"B 196π ox leh- g rk xky dk 0;kl Kkr dhft; A

i'u 56& ,d 'kd dh fr;d Åpkb 5 leh- g ;fn 'kd d vk/kkj dh f=T;k 3 leh- gk rk Å/ok/kj Åpkb Kkr dhft,A

i'u 57& ,d 'kd d fNUud dh f=T;k; 8 leh- o 5 leh- g A ;fn Åpkb 4 leh g rk fNUud dk vk;ru Kkr dhft ; A

i'u 58& ,d gh Åpkb vkj ,d gh f=T;k oky cyu ,o 'kd d vk;ruk dk vuikr Kkr dhft ; A

i'u 59& fiTe dk i"Bh; {k=Qy Kkr dhft ; ;fn fiTe dk ik'o i"B 672 ox leh- rFkk vk/kkj dk {k=Qy 168 ox leh- g \

i'u 60& xkyh; dk'k d vk;ru o oØi"B dk l= fyf[k; A

&&00&&

fo"k;%& xf.kr

d{kk nloh

y?kmÙkjh; i'u

bdkbZ & 01

ifje; 0;td] vuikr&lekuikr] ox lehdj.k] lekUrj J.kh

i'u 1& ljy dhft;s $\left[\frac{2x^2+3}{x-1}+\frac{x+3}{x+1}\right]\div\frac{x}{x^2-1}$

i'u 2& l[;kvk 11] 20] 26 vkj 50 e iR;d e l D;k ?kVk;k tk; fd lekuikrh gk A

i'u 3& ifje; 0;tdk $\frac{2\sqrt{3}x^2+1}{2x}$ vkj $\frac{-3\sqrt{3}x^2+1}{3x}$ dk ;kxQy Kkr dhft;s A

i'u 4& ;fn $x:y=2:3$ gk] rk $\frac{x+2y}{x-3y}$ dk eku Kkr dhft;s A

i'u 5& ox lehdj.k cukb; ftud ey $3\sqrt{2}, \sqrt{2}$ gk A

i'u 6& ;fn ox lehdj.k $ax^2+bx+c=0$ d ey α o β gk rk $\alpha^{-1}+\beta^{-1}$ dk eku Kkr dhft;s A

i'u 7& ,d ;k=h xkMh dh lkekU; pky e 5 fdeh- ifr ?k.V of) dj nu ij og 300 fdeh- dh njh r; dju e 2 ?k.V de le; yrh g] ml ;k=h xkMh dh lkekU; pky Kkr dhft;s A

i'u 8& ;fn $m+1, 3m, 4m+2$ fdlh lkekUrj J.kh d ikjHk d rhu Øekxr in g] rk bl l-J- dk 6ok in Kkr dhft;s A

i'u 9& fdlh l-J- dk 12ok in mld 5o in l 14 vf/kd g A nkuk ink dk ;kx 36 g] J.kh Kkr dhft ; A

i'u 10& 3 vkj &9 d chp rhu lekUrj ek/; ij fuof'kr dhft ; A

i'u 11& l-J- dk $m$ok in $\frac{1}{n}$ vkj $n$ok in $\frac{1}{m}$ g] rk (mn) ink dk ;kx Kkr dhft ;A

bdkb & 02

¼okf.kT; xf.kr½ cfdx ,o vk;dj

i'u 12& vk;"k u Mkd?kj e 50 :- ifrekg dh nj l 5 o"k d fy; vkorh [kkrk [kkykA ;fn C;kt dh nj 5% okf"kd gk rk vk;"k dk 5 o"k ckn dy fdruh jkf'k ikIr gkxh \

i'u 13& ,'o; nc u bykgkckn cd e lkof/k tek d : i e 1]00]000 :- ,d o"k d fy; 8% okf"kd C;kt dh nj l tek djrk g] ;fn C;kt N^ ekgh l;kftr gkrk gk rk ifjiDork frfFk d i'pkr ,'o; dk fdruh jkf'k ikIr gkxh \

bdkb & 03

fun'kkd T;kfefr

i'u 14& lehdj.k $x^3+y^3=3axy$ dk /koh; fun'kkd i.kkyh e ifjofrr dhft ; A

i'u 15& ,d ljy j[kk dh yckb 10 bdkb g mldk ,d fljk fcUn ¼2] &3½ ij g ;fn nlj flj dk Hkt 10 g rk fl) dhft ; fd mudh dkfV 3 vFkok & 9 gkxhA

i'u 16& ;fn A, B, C, E, I rFkk A-B-C rFkk AC = 10 bdkb rk C fcUn d fun'kkd Kkr dhft ; tcfd A vkj B d fun'kkd Øe'k% ¼3] 4½ vkj ¼7] 7½ g A

i'u 17& ;fn fdlh or d 0;kl dk ,d fljk ¼5] 0½ vkj dUn ¼6] 7½ g rk nlj fljs dk fun'kkd Kkr dhft ; A

i'u 18& fl) dhft ; fd fcUn ¼3a, 0½] ¼0] 3b½ vkj ¼a, 3b½ lej[k g A

i'u 19& ;fn ,d f=Hkt d 'kh"kk d fun'kkd ¼3] &5½ vkj ¼&7] 4½ rFkk ¼10] &2½ g] rk f=Hkt d dUnd d fun'kkd Kkr dhft ; A

i'u 20& ml f=Hkt dk vr% dUn Kkr dhft ; ftld 'kh"kk d fun'kkd ¼0] 3½ ¼3] 3½ vkj ¼0] 7½ g A

bdkb & 04
f=dk.kfefr

i'u 21& fdlh f=Hkt d nk dk.k Øe'k% $\frac{\pi}{3}$ vkj $\frac{\pi}{4}$ jfM;u d g rhlj dk.k dh eki v'kk e Kkr dhft ; A

i'u 22& J)k 175 eh Vj f=T;k oky oÙkkdkj iFk ij nkMr le; 8 ld.M e viuh ikjfHkd fn'kk l 30º ?ke tkrh g] J)k dk oÙkh; iFk d N% pDdj yxku e fdruk le; yxxk \

i'u 23& lolfedk $\sin^4\theta - \cos^4\theta = \sin^2\theta - \cos^2\theta$ dk fl) dhft ; A

i'u 24& fl) dhft ; &

$$\sec(90-\theta) = \operatorname{cosec}\theta$$

¼ledk.k ΔABC e ftld $\angle A=\theta^\circ$] $\angle B=90^\circ$ g½

i'u 25& fl) dhft ; fdlh f=Hkt ABC e] $\sin\left(\frac{B+C}{2}\right) = \cos\frac{A}{2}$

i'u 26& fl) dhft; $\sin 65^\circ \cos 25^\circ + \cos 65^\circ \sin 25^\circ = 1$

i'u 27& fuEu lehdj.k lolfedk g ;k ugh

$$\tan^2\theta - \sin^2\theta = \tan^2\theta \sin^2\theta$$

i'u 28& ;fn $\cos\theta - \sin\theta = \sqrt{2}\sin\theta$ rk fl) dhft; fd $\cos\theta + \sin\theta = \sqrt{2}\cos\theta$

i'u 29& fl) dhft; $\frac{1}{1+\sin(90-\theta)} + \frac{1}{1-\sin(90-\theta)} = 2\sec^2(90-\theta)$

i'u 30& ;fn $\sqrt{3}\tan\theta = 3\sin\theta$ g rk $\sin^2\theta - \cos^2\theta$ dk eku Kkr dhft;A

bdkb & 05
{k=fefr

i'u 31& 11 leh yEc rFkk 6 leh pkM dkxt d VdM dk ekMdj nk leoÙkh; cyu cuk;k x;k g rk mud vk;ru dk vrj fudkfy;A

i'u 32& ,d cyu dk vk;ru 5544 ?ku leh- g rFkk Åpkb 16 leh- g A cyu dk oØi"B Kkr dhft;A

i'u 33& ,d 'kd dk v/k'kh"kdk.k θ] 'kd dh m/ok/kj Åpkb λ gk rk 'kd d vk;ru rFkk oØi"B dk l= λ vkj θ d ink e 0;Dr dhft;A

i'u 34& leku Åpkb d nk yc oÙkh; 'kd g] ,d 'kd d vk/kkj dh f=T;k nlj 'kd dh f=T;k dh vk/kh g rk mld vk;ruk e vuikr Kkr dhft;A

i'u 35& ,d f=Hkt dh Hktk; 3 leh] 4 leh ,o 5 leh eki dh g] 4 leh ych Hktk dk v{k ekudj pkjk vkj ?keku ij cu Bkl dk vk;ru Kkr dhft;A

i'u 36& /kkr d ,d Bkl 'kd dh Åpkb 10 leh- vkj vk/kkj dh f=T;k 20 leh gA bl 'kd l 4 leh- 0;kl d fdru Bkl xky cuk; tk ldr g \

i'u 37& 8 leh f=T;k oky ,d xky dk fi?kykdj 320 feeh- Åpkb oky yc oÙkkdkj 'kd d :i e <kyk x;k g] 'kd d vk/kkj dh f=T;k Kkr dhft ; A

i'u 38& ;fn ,d ihry d xky dk 0;kl 18 leh g] xky dk fi?kykdj ,d leku ekVkb d rkj e cnyk x;k g rkj dh yckb 108 ehVj g rk rkj dh f=T;k Kkr dhft ; A

i'u 39& ;fn h, c, v Øe'kh ,d 'kd dh Åpkb] oØi"B vkj vk;ru gk rk fl) dhft ; fd $3\pi vh^3 - c^2h^2 + 9v^2 = 0$

i'u 40& ;fn ,d xkyh; [kky dk okgjh 0;kl 10 leh- rFkk vrh 0;kl 9 leh- g rk [kky e yx /kkr dk vk;ru Kkr dhft ; A

&&00&&

fo"k;%& xf.kr

d{kk nloh

nh?k mÙkjh; i'u

bdkbZ & 01

ifje; 0;td] vuikr&lekuikr] ox lehdj.k] lekUrj J.kh

i'u 1& x.ku[k.M Kkr dhft;

$$x^2(y+z)+y^2(z+x)+z^2(x+y)+2xyz$$

i'u 2& ;fn $\frac{\sqrt{x+2}+\sqrt{x-3}}{\sqrt{x+2}-\sqrt{x-3}}=5$ gk rk x dk eku Kkr dhft;A

i'u 3& ;fn $a:b::c:d$ gk rk fl) dhft; fd $\frac{(a+c)^3}{(b+d)^3}=\frac{a(a-c)^2}{b(b-d)^2}$

i'u 4& lehdj.k $\frac{x}{x+1}+\frac{x+1}{x}=\frac{5}{2}$ dk ^Jh/kjkpk;** dh fof/k }kjk gy dhft;A

i'u 5& ;fn lehdj.k $x^2+px+q=0$ rFkk $x^2+qx+p=0$ dk ,d ey mHk;fu"B gk rk fl) dhft; $p=q$ vFkok $p+q+1=0$

i'u 6& rhu lekUrj Jf.k;k d n ink d ;kxQy Øe'k% S_1, S_2, S_3 g ;fn iR;d J.kh dk iFke in 1 rFkk lkoUrj Øe'k% 1]2]3 gk rk fl) dhft; fd $S_1+S_3=2S_2$

i'u 7& ;fn fdlh lekUrj J.kh d p o vkj q o ink dk ek/;] r o rFkk s o ink d ek/; d cjkcj gk] rk fl) dhft; fd $p+q=r+s$

bdkb & 02

¼okf.kT; xf.kr½ cfdx ,o vk;dj

i'u 8& Jh lrh'k ik.M dk o"k 2007&08 dk ¼edku fdjk;k HkÙkk NkMdj½ ey oru 11000 :- ifrekg rFkk egxkb HkÙkk 4000 :- ifrekg g A o lkekU; Hkfo"; fuf/k e ifrekg 3000 :-] leg thou chek e 200 :- ifreku rFkk thou chek fuxe e 2500 :- =ekfld cpr djr g A ;fn Jh ik.M i/kkue=h jkgr dk"k e 3100 :- ¼100% NV ;kX;½ nku djr g rFkk /kekFk VLV dk 3000 :- ¼50% NV ;kX;½ nku djr g] rk Jh ik.M dk foÙkh; o"k 2007&08 e fdruk vk;dj nuk gkxk A

vk;dj dh nj ¼o"k 2007&08 gr½

1- (a) 1]10]000 :- rd vk; ij vk;dj 'kU;

(b) 1]10]001 :- l 1]50]000 :- rd vk; ij vk;dj 10%

(c) 1]50]001 :- l 2]50]000 :- rd vk; ij vk;dj 20%

(d) 2]50]000 :- l vf/kd ij vk;dj 30%

2- f'k{kk midj & 3%

i'u 9& Jh lj'k dekj d LVV cd dh ,d 'kk[kk e cpr [kkr dh ikl cd e ifof"V;k fuEukulkj g %&

fnukd	fooj.k	vkgfjr jkf'k ¼:-e½	tek dh xb jkf'k ¼:-e½	'k"k jkf'k ¼:-e½
09-01-2005	udn	&	5000-00	5000-00
11-01-2005	pd l	&	3200-00	8200-00
05-03-2005	Lo; dk	6000-00	&	2200-00
10-03-2005	pd l	&	9800-00	12000-00
22-04-2005	Lo; dk	2750-00	&	9250-00
22-05-2005	udn	&	750-00	10000-00

;fn Jh lj'k u 30 tu 2005 dk [kkrk cn dj fn;k rk dy fdruk /ku iklr gkxk ;fn C;kt dh nj 4% okf"kd gk A

bdkb & 03
fun'kkd T;kfefr

i'u 10& ;fn fdlh f=Hkt d 'kh"kk d fun'kkd ¼&2] 4½] ¼3] &1½] ¼1] a½ gk vkj ml f=Hkt dk {k=Qy 10 ox bdkb gk rk a dk eku Kkr dhft ; A

i'u 11& Kkr dhft ; fd fcUn ¼11] 15½ fn ; g ; fcUn ¼15] 5½ rFkk ¼9] 20½ dk feyku okyh j[kk[k.M dk fdl vuikr e foHkkftr djrk g A

bdkb 04 & f=dk.kfefr

i'u 12& fl) dhft ; $\frac{5\sin 28^\circ}{\cos 62^\circ}+\frac{2\cos 51^\circ}{\sin 39^\circ}-\frac{7\sin 40^\circ}{\cos 50^\circ}=0$

i'u 13& lehdj.k $\frac{\sin\theta}{1-\cos\theta}+\frac{\sin\theta}{1+\cos\theta}=4$ dk gy dhft ; A

i'u 14& ;fn $x=a\cos ec\theta,$ vkj $y=b\cot\theta$ rk fl) dhft ; fd $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$

i'u 15& ;fn $\cot\theta+\cos\theta=m$ rFkk $\cot\theta$-$\cos\theta$=n gk rk fl) dhft ; fd $\mathrm{m}^2-n^2=4\sqrt{mn}$

bdkb 05 & {k=fefr

i'u 16& 7-7 ?ku leh- lku e l 0-35 feeh- 0;kl dk fdruh yckb dk rkj [khpk tk ldrk g \

i'u 17& ,d cyukdkj fxykl e ikuh Hkjk gvk g fxykl dh Åpkb 16 leh- gA crkvk mle fdru 'kkdoh; l;ky Hkj tk ldr g ftudh xgjkb 6 leh vkj fdukj dk 0;kl 40 feeh- g A

i'u 18& ,d cru mYV 'kd d vkdkj dk g bldh Åpkb 8 leh rFkk Åijh lrg dh 0;kl 10 leh- g A cru Åij l [kyk g] bl cru e ikuh Hkjk g] cru e dN /kkr dh xkyh Mkyu l cru dk ,d pkFkkb ikuh ckgj cg tkrk g A cru e Mky x; /kkr d xkfy;k dh l[;k Kkr djk \

i'u 19& ,d yEc fiTe dk vk/kkj ,d leckg f=Hkt g bldk ik'o i"B 360 ox leh- rFkk vk;ru $240\sqrt{3}$?ku leh- g A fiTe dh Åpkb vkj vk/kkj dh Hktk dh x.kuk dhft ; A

i'u 20& v/kxky d ifjxr ,d cyu g vkj vUrxr ,d 'kd g ;fn mud vk/kkj lofu"B g rk fl) dhft , fd

'kd dk vk;ru % v/kxky dk vk;ru % cyu dk vk;ru ¾ 1 % 2 %3

i'u 21& ,d rEc cyu d vkdkj dk g] bld Åij 'kd cuk g] cyu dk 0;kl 24 ehVj g] cyukdkj Hkkx dh Åpkb 11 eh- g vkj 'kd d 'kh"k dh Åpkb Hkfe dh lrg l 16 eh- g A rEc dk dy vk;ru Kkr dhft ;A

&&00&&

fo"k;%& xf.kr

d{kk nloh

bdkbZ & 6 T;kfefr

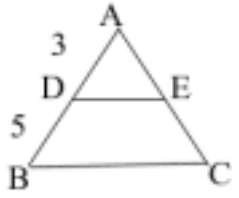
vfr y?k mÙkjh; i'u

v/;k; & 9 ¼le:i f=Hkt½

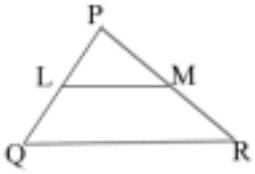
i'u 61& le:i f=Hkt dh ifjHkk"kk fyf[k, A

i'u 62& FkY l ie; ¼vk/kkjHkr vkuikfrdrk ie;½ dk dFku fyf[k, A

i'u 63& ;fn fdlh ΔABC e $DE \parallel BC$ rFkk $AD = 3$ leh-] $BD = 5$ leh-] $AC = 12$ leh- gk rk AE dk eku dk eku Kkr dhft, A



i'u 64& ;fn ΔPQR e $LM \parallel QR$;fn $PL = 6$ leh-] $QL = 9$ leh] vkj $PM = 8$ leh- gk rk PR dk eku Kkr dhft, A



i'u 65& ;fn nk le:i f=Hkt ABC vkj PQR e AB=5 leh] PQ=10 leh- rFkk QR=16 leh- gk rk BC dk eku Kkr dhft, A

i'u 66& ;fn nk le:i f=Hkt k d {k=Qyk e 9 % 16 dk vuikr gk rk mudh lxr Hkt kvk e vuikr Kkr dhft, A

i'u 67& ;fn nk le:i f=Hktk d lxr Hktkvk e 2 % 3 dk vuikr g rk mud {k=Qyk e vuikr Kkr dhft, A

i'u 68& ;fn nk le:i f=Hktk dk {k=Qy Øe'k% 25 ox leh- rFkk 36 ox leh- g] rk mud lxr Hktkvk e vuikr Kkr dhft, A

i'u 69& ;fn $\Delta ABC \sim \Delta PQR$ rFkk $BC = 3$ leh] $QR = 4$ leh-] ,o ΔABC dk {k=Qy 54 ox leh gk rk ΔPQR dk {k=Qy Kkr dhft, A

i'u 70& nk le:i f=Hktk dk {k=Qy Øe'k% 25 ox leh- o 49 ox leh- gA ;fn igy f=Hkt dh ,d Hktk 4 leh gk rk nlj f=Hkt dh lxr Hktk dk eku Kkr dhft, A

i'u 71& ik;Fkkxkjl ie; d dFku dk fyf[k, A

i'u 72& ,d f=Hkt dh Hktkvk d eki Øe'k% 3 leh-] 4 leh- vkj 5 leh- gA le>kb; fd ;g f=Hkt ,d ledk.k f=Hkt g A

i'u 73& 6 leh-] 8 leh- vkj 10 leh- Hktkvk oky f=Hkt d fy, tkp dhft, fd og f=Hkt ledk.k f=Hkt g vFkok ugh A

i'u 74& 4 ehVj Hktk oky ox d fod.k dh yckb Kkr dhft, A

i'u 75& 8 ehVj yc vkj 6 eh- pkMkb oky vk;r d fod.k dh yckb Kkr dhft, A

i'u 76& ;fn ΔABC vkj ΔPQR nk le:i f=Hkt g ftle AB=4 leh-] PQ=5 leh- rFkk ΔPQR dk {k=Qy 20 ox leh- g rk ΔABC dk {k=Qy Kkr dhft,A

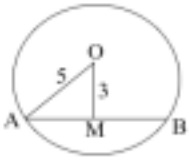
v/;k; & 10 oÙk (CIRCLE)

i'u 77& oÙk dh ifjHkk"kk fyf[k, A

i'u 78& nk oÙkk dh lokxlerk dk ifjHkkf"kr dhft, A

i'u 79& pki d v'keki dk ifjHkkf"kr dhft, A

i'u 80& fp=kuqlkj ,d oÙk dh f=T;k 5 lseh- g rk dUn l 3 lseh- dh njh ij fLFkr thok dh yckbZ Kkr dhft,A



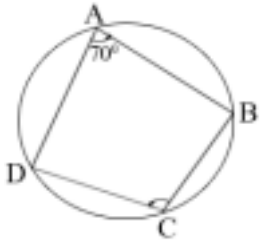
i'u 81& ,d fn, g, oÙk dk dUn Kkr djus dh fof/k fyf[k, A

i'u 82& oÙk dh Li'k j[kk dk ifjHkkf"kr dhft, A

i'u 83& oÙk dh Nnd j[kk dk ifjHkkf"kr dhft, A

i'u 84& ,d oÙk cukdj mldh Li'k j[kk [khfp, A

i'u 85& fn, x, fp= e $\angle A$ d lEe[k dk.k dk eku Kkr dhft,



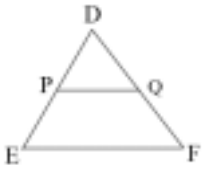
v/;k; & 11 T;kferh jpuk,a
(GEOMETRICAL CONSTRUCTION)

i'u 86& f=Hkt d ifjoÙk dh ifjHkk"kk fyf[k, A

i'u 87& f=Hkt d vr%oÙk dk ifjHkkf"kr dhft, A

v/;k; & 9 ¼le:i f=Hkt½

i'u 41& ΔDEF e DE vkj DF ij fcn P vkj Q bl idkj g fd $DP = 5$ leh- $QF = 24$ leh-] $DE = 13$ leh- rFkk $DF = 39$ lehA fl) dhft, $PQ \square EF$



i'u 42& fl) dhft, fd fdlh f=Hkt dh nk Hktkvk d e/; fcUnvk dk feyku okyh j[kk rhljh Hktk d lekrj gkxh A

i'u 43& ΔABC e D rFkk E Øe'k% Hktkvk AB vkj AC ij nk fcUn bl idkj g fd $DE \square BC$ rFkk $AD = x,\ AB = 2x - 1,\ AC = 2x + 1,$ $EC = x - 1$ gk rk x dk eku Kkr djk A

i'u 44& ΔPQR e M rFkk N Øe'k% Hktkvk PQ rFkk PR ij nk fcn bl idkj g fd $MN \square QR$ vkj $\frac{PM}{QM} = \frac{4}{5}$ rFkk PN=2 leh gk rk RN dk eku Kkr dhft,A

i'u 45& ;fn fdlh f=Hkt d ,d dk.k dk lef}Hkkt d lEe[k Hktk dk lef}Hkkftr djrk g rk fl) dhft, fd f=Hkt lef}ckg f=Hkt g A

i'u 46& ΔABC e $\angle A$ dk lef}Hkkt d AD g rFkk BD=4 leh- DC=3 leh- vkj AB=6 leh- gk rk AC dk eku Kkr dhft, A

i'u 47& FkY l ie; d dFku dk fyf[k, ,o fp= }kjk Li"V dhft, A

i'u 48& nk le:i f=Hktk d ifjeki Øe'k% 30 leh vkj 20 leh- g A ;fn igy f=Hkt dh Hktk dh yckb 15 leh- gk rk nlj f=Hkt dh lxr Hktk dh yckb Kkr dhft, A

i'u 49& ΔABC dh Hkt k BC e ,d fcn D bl idkj g fd $\angle ACD = \angle BAC$ fl) dhft, $\frac{CA}{CD} = \frac{CB}{CA}$;k $CA^2 = CB.CD$

i'u 50& ;fn nk le:i f=Hkt k d {k=Qy cjkcj gk rk fl) dhft, fd ; f=Hkt lokxle gkx A

i'u 51& nk lef}ckg f=Hkt k d 'kh"k dk.k leku g A ;fn mud {k=Qy 4 % 9 d vuikr e gk rk mud lxr 'kh"k yck d vuikr Kkr dhft, A

i'u 52& fl) dhft, fd ox dh ,d Hkt k ij cuk, x, leckg f=Hkt dk {k=Qy] ml ox d fod.k ij cuk, x, leckg f=Hkt d {k=Qy dk vk/kk gkrk g A

i'u 53& lyXu fp= e $ST \parallel QR$ rFkk $\frac{\{k = Qy(\Delta PST)}{\{k = Qy(\square QSTR)} = \frac{4}{5}$ gk rk $ST : QR$ Kkr dhft, A

i'u 54& 5 leh- Hkt k d lepr Hkt d ,d fod.k dh yckb 6 leh- g A nlj fod.k dh yckb Kkr dhft, A

i'u 55& 20 ehVj vkj 28 ehVj Åp nk Hkouk d Åijh fljk dh njh 17 ehVj g A Hkouk d chp d {kfrt njh Kkr dhft, A

i'u 56& fl) dhft, fd lepr Hkt dh Hkt kvk d oxk dk ;kx ml d fod.kk d oxk d ;kx d cjkcj gkrk g A

i'u 57& 13 leh- Hkt k oky lepr Hkt d ,d fod.k dh yckb Kkr dhft, A

i'u 58& ΔABC ,d lef}ckg ledk.k f=Hkt g ft ldk dk.k C ledk.k g fl) dhft, fd $AB^2 = 2AC^2$

i'u 59& ΔABC ,d lef}ckg f=Hkt g ft le $AB = BC$ rFkk $AC^2 = 2AB^2$ fl) dhft, fd f=Hkt ledk.k g A

i'u 60& ΔABC e $AB = AC$ vkj D Hkt k BC ij dkb fcn g fl) dhft, fd $AB^2 - AD^2 = BD.CD$

i'u 61& ,d vkneh io dh vkj 150 ehVj tkrk g vkj fQj mÙkj dh vkj 200 ehVj tkrk g A Kkr dhft, fd og ikjfHkd fcn l fdruh nj g \

i'u 62& ,d 25 ehVj yEch lh<h ,d Hkou d tehu l 20 ehVj Åph f[kMdh rd tkrh g A Hkou l lh<h d fupy flj dh njh Kkr dhft, A

i'u 63& ,d lh<h bl rjg j[kh xb g fd mldk fupyk fljk nhokj l 500 leh- njh ij g rFkk mldk Åijh fljk tehu l 12 ehVj Åph f[kMdh rd tkrk g A fl<h dh yckb Kkr dhft, A

i'u 64& 6 leh- Hktk oky leckg f=Hkt d 'kh"k yckb dh Åpkb rFkk f=Hkt dk {k=Qy Kkr dhft, A

i'u 65& fl) djk fd nk oÙkk dh f=T;k, cjkcj gk rk oÙk vkil e lokxle gkr gA

i'u 66& ;fn lokxle oÙkk d pki cjkcj gk rk mudh lxr thok, cjkcj gkrh g A fl) djk A

i'u 67& fl) djk fd lokxle oÙkk d pki cjkcj gku ij pki }kjk dUn ij cu dk.k cjkcj gkr g A

i'u 68& fl) djk lokxle oÙkk dh thok, cjkcj gku ij mudh lxr pki lokxle gkr g \

i'u 69& fl) djk fd fdlh oÙk d dUn l thok ij Mkyk x;k yc thok dk cjkcj Hkkxk e foHkDr djrk g A

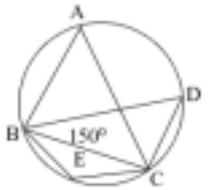
i'u 70& fl) djk fd v/koÙk ij cuk dk.k ledk.k gkrk g A

i'u 71& fl) djk fd v/koÙk ij cuk dk.k vkil e cjkcj gkr g A

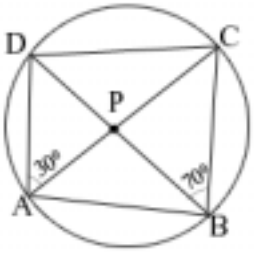
i'u 72& 5 leh f=T;k oky ,d oÙk e AB vkj AC nk thok, g tgk AB=AC=6 leh- thok BC dh yckb Kkr dhft, A

i'u 73& ,d oÙk dh f=T;k 5 leh- g rk dUn l 3 leh- dh njh ij fLFkr thok dh yEckb Kkr djk A

i'u 74& fn, x, vkÑfr e f=Hkt ABC leckg f=Hkt g A $\angle BCD$ vkj $\angle BEC$ Kkr dhft, A



i'u 75& ABCD ,d pØh; prHkt g A ftld fod.k ,d nlj dk fcn P ij ifrPNn djr g A ;fn $\angle PBC = 70^\circ$ vkj $\angle BAC = 30^\circ$ gk rk $\angle BCD$ Kkr dhft,



i'u 76& ^^fdlh ckg; fcn l oÙk ij [khph xb nk Li'k j[kkvk dh yckb;k cjkcj gkrh gA** fl) djk A

i'u 77& fl) dhft, fd oÙk d 0;kl d Nkj ij [khph xb j[kk lekUrj gkr g \

v/;k; & 11 T;kferh jpuk,
(GEOMETRICAL CONSTRUCTION)

i'u 78& ΔABC e AB=5 leh-] BC=6 leh-] AC=6.5 leh- A bl eki d vk/kkj ij f=Hkt d ifjoÙk dh jpuk dhft, A

i'u 79& ΔPQR d vrxr ¼vr%oÙk½ oÙk dh jpuk dhft,] ftle PQ=5.3 leh-] QR=6 leh- rFkk PR=6 leh- A

v/;k; & 9 ¼le:i f=Hkt½

i'u 22& FkYl ie; fyf[k, vkj fl) dhft, A

i'u 23& fl) djk fd dkb j[kk fdlh f=Hkt dh nk Hktkvk dk leku vuikr e foHkkftr djrh g] rk ;g j[kk rhljh Hktk d lekrj gkrh g A

i'u 24& ;fn ledk.k f=Hkt d ledk.k oky 'kh"k l d.k ij yc Mkyk tk, rk yEc d j[kk d nkuk vkj cuu oky f=Hkt ijLij vkj ey f=Hkt d le:i gkxA

i'u 25& ;fn ledk.k f=Hkt d ledk.k oky 'kh"k l d.k ij yc Mkyk tk, ftl yEc j[kk d nkuk vkj cuu oky f=Hkt ijLij vkj ey f=Hkt d le:i gk rk fl) dhft, fd yc dk ox] d.k d nk Hkkxk dh yckb;k d x.kuQy d cjkcj gkrk g A

i'u 26& fl) dhft, dh nk le:i f=Hktk d {k=Qyk dk vuikr fdUgh nk lxr Hktkvk d oxk d vuikr d cjkcj gkrk g \

i'u 27& ikbFkkxkjl ie; fyf[k, vkj fl) dhft, A

i'u 28& ;fn fdlh f=Hkt e ,d Hktk dk ox vU; nkuk Hktkvk d oxk d ;kx d cjkcj gk rk fl) dhft, igyh Hktk d lkeu dk dk.k ledk.k gkrk g A

i'u 29& fl) dhft, fd fdlh leckg f=Hkt dh fdlh Hktk d ox dk frxuk mldh Åpkb d ox d pkj xu d cjkcj gkrk g A

i'u 30& ΔABC ,d vf/kd dk.k f=Hkt g ftldk dk.k B vf/kd dk.k g A ;fn $AD \perp CB$ g A fl) dhft, fd

$$AC^2 = AB^2 + BC^2 + 2BC.BD$$

i'u 31& ΔABC ,d U;udk.k g ftldk $\angle B$ U;udk.k g A ;fn $AD \perp BC$] rk fl) dhft, fd $AC^2 = AB^2 + BC^2 - 2BC.BD$

i'u 32& ΔABC ,d ledk.k f=Hkt g ftldk dk.k C ledk.k g A ;fn BC=a, CA=b, AB=c rFkk C ls AB ij [khp x, yc dh yckbZ p gk rk fl) dhft, fd

(i) cp = ab

(ii) $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$

i'u 33& fl) dhft, fd rhu vlj[k fcnvk ls gkdj ,d vkj doy ,d gh oÙk [khpk tk ldrk g A

i'u 34& ,d oÙk Øe'kh 5 vkj 11 leh- dh nk thok, AB vkj CD lekUrj g A AB vkj CD d chp dh njh 3 leh- gk rk oÙk dh f=T;k Kkr dhft, A

i'u 35& fl) dhft, fd oÙk d fdlh pki }kjk dUn ij cuk dk.k mlh pki }kjk 'k"k ifjf/k ij cu dk.k dk nxuk gkrk g A

i'u 36& fl) dhft, fd pØh; prHkt d lEe[k dk.k lijd gkrk g A

i'u 37& ;fn leyEc prHkt dh vlekUrj Hktk, cjkcj gk rk fl) dhft, fd ;g pØh; prHkt g A

i'u 38& ;fn PAB oÙk dh Nnd j[kk gk rk oÙk dk A vkj B ij ifrPNn djrh g] vkj PT ,d Li'k j[kk[kM gk rk $PA \cdot PB = (PT)^2$ gkrk gA

i'u 39& ΔLMN dh jpuk dhft, tgk MN=6 leh-] $\angle L = 60^\circ$ vkj L ls Mkyk x;k 'kh"k yc ¾ 4 leh- gA

i'u 40& ΔABC dh jpuk dhft, tcfd BC=6.5 leh-] $\angle A = 70^\circ$ vkj A ls gkdj tku okyh ef/;dk 3-5 leh- gk A

i'u 41& ,d pØh; prHkt ABCD dh jpuk dhft, ftle $\angle ABC 75^\circ$] AC=6 leh-] AB=4 leh- rFkk CD=3.8 leh- g A

i'u 42& fn, g, f=Hkt ABC d le:i ,d f=Hkt cukb, ft ldh Hkt k, ΔABC dh lxr Hkt kvk d $\frac{3}{5}$ o Hkkx d cjkcj g A

i'u 43& fn, g, prHkt ABCD d le:i ,d prHkt cukb, ft ldh Hkt k, $\square ABCD$ dh lxr Hkt kvk d $\frac{2}{3}$ o Hkkx d cjkcj g A

&&00&&

fo"k;%& xf.kr

d{kk nloh

bdkbZ & 7

vfr y?k mÙkjh; i'u

i'u 88& n'keyo i)fr d ¼34½$_{10}$ dk f}vk/kkjh i)fr e cnfy, A

i'u 89& 45 e l 15 dk ijd vd fl)kUr l ?kVkb; A

i'u 90& 1001 dk f}vk/kkjh i.kkyh l n'keyo i.kkyh e ifjofrr dhft, A

i'u 91& vYxkfjFe dh ifjHkk"kk fyf[k, A

i'u 92& vYxkfjFe dk fu:i.k fdl idkj fd;k tkrk g \

i'u 93& fuo'k dk mnkgj.k lfgr le>kb; A

i'u 94& fuxe dk mnkgj.k lfgr Li"V dhft, A

bdkbZ & 8

i'u 95& ek/;e d mnn'; D;k g] le>kb; A

i'u 96& lekUrj ek/; dh ifjHkk"kk fyf[k, A

i'u 97& 10 d lHkkfor x.ku[k.M dk ek/; Kkr dhft, A

i'u 98& 5 vkj 15 d chp lHkh le l[;kvk dk ek/; Kkr dhft, A

y?k mÙkjh; i'u

i'u 80& 3] 5] x, 9 dk ek/; 6 gk rk x dk eku Kkr dhft, A

i'u 81& 5 cPpk dh vk; dk vkl r 15-2 g] ;fn mue l pkj cPpk dh vk; Øe'kh 13] 15] 16] 18 o"k gk rk 5o cPp dh vk; Kkr dhft, A

vfr y?k mÙkjh; i'u

i'u 99& ek/; d nk x.k fyf[k, A

i'u 100& iFke ikp fo"ke ikÑfrd l[;k dk ek/; Kkr dhft, A

i'u 101& ekf/;dk dh ifjHkk"kk fyf[k, A

i'u 102& ekf/;dk d nk nk"k fyf[k, A

i'u 103& 10 vkj 20 d chp dh fo"ke l[;kvk dh ekf/;dk Kkr dhft, A

i'u 104& 10 vkj 20 d chp dh le l[;kvk dh ekf/;dk Kkr dhft, A

i'u 105& fuEu vkdMk dk cgyd Kkr dhft, &

4] 5] 7] 5] 8] 7] 5] 9] 5] 7] 4] 5] 8] 7

i'u 106& ;fn d{kk 10oh d Nk=k dh vk; o"kk e fuEuku lkj&

14] 15] 16] 15] 14] 15] 13] 14] 15] 15 g rk mi;Dr ekuk dk cgyd fudkfy,A

i'u 107& ;fn ek/; 4] ekf/;dk 5 gk rk cgyd Kkr dhft, A

i'u 108& rk'k dh ,d xMMh l ,d iÙkk [khpk tkrk g] rk iÙk d bDdk gku dh ikf;drk Kkr dhft, A

i'u 109& ,d Fky e 5 vke rFkk 3 dy j[k x; g A ,d vke enPN;k fudkyu dh ikf;drk Kkr dhft, A

i'u 110& ,d ikl k mNkyu ij 0 ¼'kU;½ vd vku dh ikf;drk Kkr dhft, A

i'u 111& Lor= ?kVuk dk ifjHkkf"kr dhft,A

bdkb & 8

y?k mÙkjh; i'u

i'u 82& ;fn 8] 10] x, 15 dk lekUrj ek/; 12 g rk x dk eku Kkr dhft,A

i'u 83& fdlh ijh{kk e 50 Nk=k d ikRrkd fuEukulkj g &

ikIrkd	35	40	45	24	20
Nk=k dh l[;k	12	8	6	14	10

i'u 84& ;fn 10oh d{kk d 5 fo|kfFk;k dh vk; ¼o"kk e½ 16] 18] 20] 15] 17 g A rk y?k fof/k l lekUrj ek/; Kkr dhft, A

i'u 85& fuEufyf[kr lkj.kh e ,d xko e dke dju oky etnjk dh nfud vk; nh x;h g A ek/; Kkr dhft, A

ifrfnu dh vk; ¼:i;k e½	30&40	40&50	50&60	60&70	70&80
etnjk dh l[;k	35	25	20	12	8

i'u 86& fuEu cVu l y?kfof/k l lekUrj ek/; dhft, &

x	5	15	25	35	45
f	12	14	10	8	16

i'u 87& 20 ekuk dk lekUrj ek/; 70 g] ;fn bu 20 ekuk e l iR;d eku e 3 dh of) dj nh tk; rk u;k lekUrj ek/; Kkr dhft, A

i'u 88& 25 ekuk dk lekUrj ek/; 100 g] tkp dju ij ;g ik;k x;k fd vfHkdyu dju d nkjku 70 d LFkku ij xyrh l 45 fy[k fn;k x;k] lgh ek/; Kkr dhft, A

i'u 90& ,d 0;fDr yxkrkj rhu ekg rd igy ekg 12:- ifr fdyk] nlj ekg 15 :- ifr fdyk vkj rhlj ekg 20 :- ifrfdyk dh nj l pkoy [kjhnrk g rk pkoy dk ifrfdyk vkIr eY; Kkr dhft, A

i'u 91& fuEu ckjEckjrk cVu dh ekf/;dk Kkr dhft, &

x	5	8	11	14	17	20
f	6	9	5	8	9	13

i'u 92& ;fn fuEu 4] 8] 9] 6] 8] 6] 5] 6] 15] 8] x vkdMk dk cgyd 8 g rk x dk eku Kkr dhft, &

i'u 93& foKku fo"k; e jkd'k u 30] ed'k u 60 vkj fnu'k u 75 vd ikIr fd, A bl oÙkkdkj y[kkfp= }kjk inf'kr dhft, A

i'u 94& ;fn fdlh yhi o"k dk ;nPN;k pu fy;k tko] rk ml o"k e 53 c/kokj gku dh ikf;drk Kkr dhft, A

i'u 95& ,d Fky e 5 lQn rFkk 5 yky xn g] rk ,d dkyh xn [khpu dh ikf;drk Kkr dhft, A

i'u 96& ,d ikl dk mNkyu ij Åijh Hkkx e le vd vku dh ikf;drk Kkr dhft,A

i'u 97& f}vk/kkjh i)fr dh l[;k 1011 vkj 1010 dk ;kxQy Kkr dhft, A

nh?k mÙkjh; i'u

i'u 44& fuEu lkj.kh l y?kjhfr l lekUrj ek/; Kkr dhft, &

oxkUrj	5&15	15&25	25&35	35&45	45&55
ckjEckjrk	25	15	10	20	30

i'u 45& fuEu lkj.kh l ekf/;dk Kkr dhft, &

oxkUrj	0&10	10&20	20&30	30&40	40&50	50&60	60&70
ckjEckjrk	3	6	12	10	4	7	8

i'u 46& fuEu lkj.kh l cgyd Kkr dhft, &

oxkUrj	5&15	15&25	25&35	35&45	45&55
ckjEckjrk	8	10	18	12	5

i'u 47& fuEukfdr lkj.kh dk lekUrj ek/; 18 gk rk vKkr ckjEckjrk f dk eku Kkr dhft,&

x	5	10	15	20	25	30
f	4	3	8	f	6	12

&&&00&&&

fo"k;%& xf.kr

ifjf'k"V

Kku vk/kkfjr i'u

i'u 1& ifje; 0;tdd dk ifjHkkf"kr dhft, A

i'u 2& fuEufyf[kr dFku lekuikr l lcf/kr fdl fu;e dk 0;Dr djrk g

$$\frac{4a+5b}{4a-5b}=\frac{6c+7d}{6c-7d}$$

i'u 3& a:b;c:d;e:f rFkk g:h dk feJ vuikr fyf[k, A

i'u 4& 'k) ox lehdj.k dk ,d mnkgj.k nhft, A

i'u 5& vk;rkdkj dkxt dk yckb d vufn'k ekMu ij cuh vkÑfr dk uke fy[kdj ifjHkk"kk fyf[k, A

i'u 6& lekUrj J.kh dh ifjHkk"kk fyf[k, A

i'u 7& fdlh ljy j[kk dk a:b e vr% foHkkftr dju oky fcn d fun'kkd dk l= fyf[k, A

i'u 8& ,d ,l iR;{k dj dk uke fyf[k, ftl lHkh djnkrk dUn ljdkj dk vnk djr g \

i'u 9& dk.kk dh eki l lcf/kr v'k] xM vkj jfM;u e lc/k LFkkfir dju okyk l= fyf[k, A

i'u 10& fdlh yEc f=Hkt h; fiTe e dkjk rFkk Qydk dh l[;k fyf[k, A

i'u 11& 'kd dk ifjHkkf"kr dhft, A

i'u 12& xkyh; dk'k d oØ i"B dk Kkr dju dk ,d l= fyf[k, A

i'u 13& le:i f=Hkt dh nk 'kr fyf[k, A

i'u 14& lekUrj ek/;] ekf/;dk vkj cgyd e lc/k LFkkfir dju okyk l= fyf[k, A

i'u 15& ikf;drk dk ifjHkkf"kr dhft, A

i'u 16& lekUrj ek/;] ekf/;dk vkj cgyd d nk&nk x.k vkj nk"k fyf[k,A

vock/k ij vk/kkfjr i'u

i'u 1& p vkj q dk ek/;kuikr Kkr dhft, A

i'u 2& ;fn $\frac{a}{x+y}=\frac{b}{y+z}=\frac{c}{z+x}$ gk rk

fl) dhft, $(x-y)a+(y-z)b+(z-x)c=0$

i'u 3& ;fn $x=\frac{4ab}{a+b}$ gk rk fl) dhft, fd $\frac{x+2a}{x-2a}+\frac{x+2b}{x-2b}=2$

i'u 4& ;fn $px^2+qx+r=0$ d ey leku gk rk p,q rFkk r e lc/k fyf[k, A

i'u 5& ijd u Hkkjrh; LVV cd e 4 tykb 2007 dk 1000 :- l cpr [kkrk [kkykA 11 tykb dk 300 :- fudkyk rFkk 13 tykb dk 600 :- tek fd;k vkj 20 tykb dk 400 :- fudky fy;k A ;fn 3 vDVcj dk [kkrk cn djrk g rk ml fdruh jkf'k ij C;kt feyxk A C;kt dh nj 4 ifr'kr okf"kd gA

vuqi;kx vkj dk'ky ij vk/kkfjr i'u

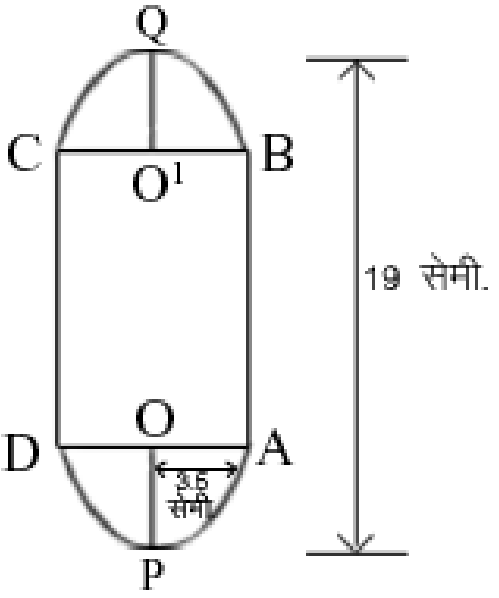
i'u 1& fdlh lekUrj J<h d p o in dk p xuk mld q o in d q o xu d cjkcj g rk J<h dk (p + q) ok in Kkr dhft, A

i'u 2& ;fn fdlh yhi o"k dk ;nPN;k pu fy;k tko rk bl o"k e 53 lkeokj gku dh ikf;drk Kkr dhft, A

i'u 3& $\frac{\sin^2\theta}{\tan^2\theta-\sin^2\theta}=3$ dk gy dhft, A

i'u 4& ΔPQR d le:i f=Hkt cukb, ftldh lxr Hktk, fn, g, f=Hkt d iR;d Hktk d $\frac{3}{5}$ o Hkkx d cjkcj gk tgk PQ=5 leh-] QR=6.5 leh] rFkk $\angle PQR=60^\circ$ gk A

i'u 5& fp=kulkj cyu dh f=T;k 3-5 leh gA ;fn Bkl dh dy Åpkb 19 leh- g rk Bkl dk dy vk;ru rFkk li.k Kkr dhft, A



&&00&&

fo"k; & xf.kr

bdkbZ & 1

vfr y?k mRrjh; i'u %&

1- ifje; 0; td dh ifjHkk"kk fyf[k, A

2- le rFkk fo"ke ifje; 0; td e D;k vrj g \

3- le ifje; 0; td fdl dgr g \

4- fo"ke ifje; 0; td fdl dgr g \

5- fefJr ifje; 0; td fdl dgr g \

6- D;k $\frac{x^2-1}{2\sqrt{x}+4}$,d ifje; 0; td g \

7- ,d ,sk ifje; 0; td fyf[k, ftldk v'k f}inh; cgin ,o gj f=inh; cgin gkA

8 $3x+\frac{1}{4x}$ dk ifje; 0; td d :i e 0;Dr dhft,A

9- $\frac{x^2-5x}{x+3}$ dk ;kT; ifryke Kkr dhft,A

10- $\frac{x-1}{x+2}$,o $\frac{x+4}{x+2}$ dk ;kxQy Kkr dhft,A

11- vuikr fdl dgr g \

12- vuikr dh dkbZ nk fo'k"krk, fyf[k,A

13- l;kftr vuikr fdl dgr g \

14- oxkuikr fdl dgr g\

15- ?kukuikr fdl dgr g \

16- oxeykuikr fdl dgr g \

17- 5%3 d io in o mRrj in dk eku Kkr dhft,A

18- 5%6 rFkk 8%9 e dku lk vuikr cMk g \

19- 4%6 rFkk 3%5 d l;kftr vuikr dk eku Kkr dhft,A

20- 8%27 dk ?kukeykuikr Kkr dhft,A

21- 3%7 dk ifrykekuikr Kkr dhft,A

22- lekuikr fdl dgr g \

23- forrkuikrh fdl dgr g \

24- 8] 14] 24 prFkkuikrh Kkr dhft,A

25- 4] o 9 dk e/;kuikrh Kkr dhft,A

26- $x^2-y^2,\quad x+y$ dk rrh;kuikrh Kkr dhft,A

27- x dk eku Kkr dhft, ;fn $6:10::x:25$ gkA

28- ox lehdj.k fdl dgr g \

29- ox lehdj.k fdru idkj l gy fd;k tkrk gA

30- ox lehdj.k d ey l D;k vk'k; g \

31- ox lehdj.k Kkr dju dh Jh /kjkpk; fof/k dk l= fyf[k,A

32- ox lehdj.k $ax^2+bx+c=0$ d fofoDrdj dk l= fyf[k,A

33- $2x^2+x-1=0$ d eyk d y{k.k Kkr dhft,A

34- $2x^2+5x+5=0$ dk fofofDrdj Kkr dhft,A

35- $3x^2-7x-5=0$ d eyk dk ;kxQy o x.kuQy Kkr dhft,A

36- ox lehdj.k cukb; ftud ey $2+\sqrt{3},\ 2-\sqrt{3}$ gkA

37- J.kh fdl dgr g \

38- lekUrj J.kh fdl dgr g \

39- lekUrj J.kh dk 0;kid in Kkr dju dk l= fyf[k,A

40- J.kh 5] 10] 15 ---------- dk 10 ok in Kkr dhft,A

41- lekUrj ek/; fdl dgr g \

42- 25 o &11 dk lekUrj ek/; Kkr dhft,A

43- lekUrj J.kh d ;kxQy Kkr dju dk l= fyf[k,A

44- 3] 6] 9] 12] ---------- d 20 ink rd dk ;kxQy Kkr dhft,A

y?kmRrjh; i'u

1- $\frac{x^2-x-6}{x^2-x-2}$ dk U;ure ink e 0;Dr dhft,A

2- ;fn $p=\frac{x+3}{x+4}$ gk] rk] p^2 dk eku Kkr dhft,A

3- ;fn $A=\frac{x+1}{x-1}$ gk] rk $A-\frac{1}{A}$ dk eku Kkr dhft,A

4- ;fn $a:b=4:5$ vkj $b:c=7:8$ gk rk $a:c$ dk eku Kkr dhft,A

5- ,d Vu 2 ?kV e 160 fd- eh- dh njh r; djrh g rFkk ,d dkj 3 ?kV e 170 fd- eh- dh njh r; djrh g rk mud pkyk dk vuikr Kkr dhft,A

6- ;fn $x, (x-2)$ rFkk $(x-3)$ rrh;kuikrh gk] rk x dk eku Kkr dhft,A

7- ;fn p o r dk e/;kuikrh q g rk fl) dhft, fd

$$p^2-q^2+r^2=q^4\left(\frac{1}{p^2}-\frac{1}{q^2}+\frac{1}{r^2}\right)$$

8- ;fn a,b,c vkj d lekuikr e gk rk fl) dhft, fd $\frac{ma+nb}{mc+nd}=\frac{ma-nb}{mc-nd}$

9- ;fn (a^2+b^2) $b(a+c)$ vkj (b^2+c^2) forrkuikr e gk rk fl) dhft, fd a vkj c dk e/;kuikrh b gkxkA

10- ;fn $\frac{3a+4b}{3c+4d}=\frac{3a-4b}{3c-4d}$ gk] rk fl) dhft, fd $\frac{a}{b}=\frac{c}{d}$

11- ;fn $\frac{a}{b}=\frac{c}{d}=\frac{e}{f}$ gk] rk fl) dhft, fd bue l iR;d vuikr $\frac{a+c+e}{b+d+f}$ d cjkcj gkxkA

12- lehdj.k gy dhft, $\left[x-(p+q)\right]^2=0$

13- lehdj.k gy dhft, $\sqrt{3}x^2+11x+6\sqrt{3}=0$

14- lehdj.k gy dhft, $\frac{1}{x-2}+\frac{2}{x-1}=\frac{6}{x}$

15- k d fdl eku d fy, ox lehdj.k $2kx^2-40x+25=0$ fd ey okLrfod ,o cjkcj gkxA eyk dk Kkr dhft,A

16- ;fn ox lehdj.k $ax^2+bx+c=0$ dk ,d ey bl frxuk gk] rk fl) dhft, fd $3b^2=16ac$

17- ;fn /koy d ikp o"k io dh vk; vkj 9 o"k dh vk; dk x.kuQy 15 gk] rk /koy dh oreku vk; Kkr dhft,A

18- ;fn vk;rkdkj [kr dh yEckb pkMkb dk rhu xuk gA;fn [kr dk {k=Qy 147 ox eh- g] rk [kr dh yEckb Kkr dhft,A

19- gy dhft, $\sqrt{3x+10}+\sqrt{6-x}=6$

20- ;fn ox lehdj.k $x^2-px+q=0$ d eyk dk vrj 1 g rk fl) dhft, $p^2=1+4q$

21- ;fn α,β ox leh- $2x^2+5x-6=0$ d ey g rk] $\alpha^4\beta+\beta^4\alpha$ dk eku Kkr dhft,A

22- ;fn fdlh lekUrj J.kh e ink dh l[;k 60] iFke in 8 rFkk vfre in 185 g rk J.kh dk 10 ok in Kkr dhft,A

23- 100 l de lHkh le ikdr l[;kvk dk ;kxQy Kkr dhft,A

24- J.kh 4] 8] 12] 16 ..... dk dku lk in 200 gkxkA

nh?k mRrjh; i'u

1- ;fn $p=\frac{x+3}{x-3}$ vkj $Q=\frac{x-3}{x+3}$ gk] rk p^2+Q^2-pQ dk eku Kkr dhft,A

2- x.ku[kM dhft, $a(b-c)^2+b(c-a)^2+c(a-b)^2+9abc$

3- $(a-b)^3+(b-c)^3+(c-a)^3$ dk x.ku[kM dhft,A

4- gy dhft, $\frac{a+\sqrt{a^2-2ax}}{a-\sqrt{a^2-2ax}}=b$

5- ;fn $\frac{x}{(b+c-a)}=\frac{y}{(c+a-b)}=\frac{z}{(a+b+c)}$ gk rk fl) dhft, $(b-c)x+(c-a)y+(a-b)z=0$

6- ;fn ox lehdj.k $ax^2+bx+c=0$ d nk ey α,β gk rk $a\left(\frac{\alpha^2}{\beta}+\frac{\beta^2}{\alpha}\right)+b\left(\frac{\alpha}{\beta}+\frac{\beta}{\alpha}\right)$ dk eku Kkr dhft,A

7- ;fn fdlh lekUrj J.kh d $n,2n,3n$ ink d ;kx Øe'k% s_1,s_2,s_3 gk] rk fl) dhft, $s_2=\frac{s_3+3s_1}{3}$

bdkb 2-

okf.kT; xf.kr

vfr y?k mRrjh; i'u

1- cd d dkb nk dk; fyf[k,A

2- cpr [kkrk vkjpky [kkrk e D;k vrj g \

3- uk fQYl ,dkm.V D;k g \

4- cd l fdru idkj l jkf'k vkgfjr fd;k tkrk g uke fyf[k,A

5- cpr [kkr e C;kt fdl le;kUrjky ,o jkf'k ij yxkrk tkrk g \

6- vk;dj fdl dgr g \

y?k mRrjh; i'u

1- ';ke u cd vkQ bfM;k e 6 tu 2008 dk 2000 :- l cpr [kkrk ikl cd [kkykA 8 tykb dk 500 :- fudkyk rFkk 10 tykb dk 800 :- tkrk tek fd;k gkj 20 tykb dk 1000 :- fudky fy;kA tykb 2008 e ml jkf'k dk Kkr dj ftle C;kt feyxkA

2- fodkl u xkeh.k cd e 200 :- ifr ekg dk 24 ekg d fy, vkorh tek [kkrk [kkykA ;fn C;kt dh nj 8 ifr'kr okf"kd gk rk ml nk o"k i'pkr fdruh jkf'k feyxh \

3- iR;{k ,o viR;{k dj dk mnkgj.k lfgr le>kb,A

4- dUn ,o jkT; ljdkj }kjk yxk, tku oky nk&nk dVk dk uke fyf[k,A

5- fdUgh pkj ;ktukvk dk uke fyf[k,] ftll vk;dj e NV feyrh g \

nh?k mRrjh; i'u %&

1- Jh erh nhlrh u LVVcd vkQ bnkj dh ,d 'kk[kk e 1 tykb 2005 dk 1000 :- dh jkf'k l cpr [kkrk [kkyhA 10 tykb 2005 dk 1000 :- tek 12 vxLr dk 800 :- fudkyk] 7 flrcj dk 600:- tek] 3 vDVcj dk 800

:- fudkyk 15 vDVcj dk 600 :- tek 20 uoEcj dk 400 : fudkyk ,o 9 fnlcj dk 400 :- tek fd;kA bu ifof:V;k d vk/kkj ij ikl cd dk ,d i"B r;kj dj tykb l fnlcj 2005 rd dh C;kt dh x.kuk dhft,] ;fn C;kt dh nj 5 ifr'kr okf"kd gkA

2- je'k u bykgkckn cd dh fdlh 'kk[kk l 1 o"k d fy, 25000 :- dk lkof/k tek fd;kA ;fn C;kt dh x.kuk ifr frekgh dh tkrh g] rk ifjiDork frfFk ij fdruh /ku jkf'k feyxhA

3- vk;dj dk ifjdyu dh fofHkUu pj.kk dk foLrkj l fyf[k,A

4- Jherh jf'e oek dh ekfld vk; 25000 :- gA ;fn th- ih- ,Q [kkre 1500 :- ekfld] thou chek ihfe;e d :i e 12000 :- okf"kd vnk djrh gA og 5000 :- jk"Vh; cpr i= [kjhnrh gA mud }kjk Hkxrku dh xb vk;dj jkf'k dh x.kuk dhft,A

vk;dj dh x.kuk %&

1- 145000 rd 'kU;

2- 145001 l 1]50]000 rd 10 ifr'kr

3- 1]50]001 l 2]50]000 rd 20 ifr'kr

4- 2]50000 l Åij 30 ifr'kr

bdkb & 3

fun'kkd T;kfefr

vfr y?k mRrjh; i'u

1- fun'kkd T;kfefr fdl dgr g \

2- le dkf.kd dkfrd fun'kkd D;k g \

3- Hkt ,o dkfV D;k g \

4- ey fcUn fdl dgr g \

5- eyfcUn d fun'kkd fyf[k,A

6- prFkk'k fdl dgr g \

7- fcUn $(-3,-8)$ fdl prFkk'k e fLFkr g \

8- fcUnvk ¼1] 2½ o ¼&4] 7½ dk ,d xkQ iij ij vkyf[kr dhft ,A

9- $(4,65^{\circ})$ vkj $(-3,70^{\circ})$ dh fLFkfr;k dk vky[ku dhft ,A

10- dkrh; rFkk /koh; fun'kkd e D;k lc/k g \

11- ;fn /koh; fun'kkd $\left(3,\frac{\pi}{6}\right)$ g rk bl dkrh; fun'kkd e ifjofrr djkA

12- fcUn $(-4,2)$ vkj $(2,10)$ d chp dh njh Kkr dhft ,A

13- f=Hkt dk dUnd fdl dgr g \

14- f=Hkt dk vUr% dUn fdl dgr g \

y?kmRrjh; i'u

1- ;fn PQRS ox e fcUn P eyfcUn] PQ, x-v{k rFkk PS, y-v{k rFkk iR;d Hkt dh yEckb 8 ek=d gk rk 'kh"kk d fun'kkd Kkr djkA

2- ml fcUn d fun'kkd Kkr dhft , tk fcUnvk ¼3]2½ rFkk ¼&6] 8½ d feyku okyh j[kk dk 2¾3 e vUr% foHkkftr djrk gA

3- fdlh oRr d C;kl dk ,d fljk ¼2] 3½ vkj dUn ¼5] 6½ g nlj flj d

fun'kkd Kkr djkA

4- K d fdl eku d fy, fcUn ¼1] 2½] $(K,-3)$ vkj $(-4,7)$ lej[k gkxA

5- ,d ljy j[kk dh yEckb 40 bdkb g vkj mldk ,d fljk ¼4]&3½ ij gA ;fn nlj flj dh dkfV &1 g rk mldk Hkt dk eku Kkr dhft ,A

nh?k mRrjh; i'u

1- fdlh f=Hkt dh Hktkvk d e/; fcUnvk d fun'kkd ¼5]&2½] ¼&3] 6½ rFkk ¼4]1½gA f=Hkt d 'kh"kk d fun'kkd Kkr dhft ,A

2- ml f=Hkt dk {k=Qy Kkr dhft , ftld 'kh"kk d fun'kkd fuEufyf[kr g $\left(at_1^2, 2at_1\right), \left(at_2^2, 2at_2\right), \left(at_3^2, 2at_3\right)$

3- ;fn Hktkvk d e/; fcUn ¼&2] 3½]¼4]&3½]rFkk ¼4] 5½ gk rk f=Hkt dk dUnd Kkr dhft ,A

4- ml f=Hkt dk vUr% dUn Kkr dhft , ftld 'kh"kk d fun'kkd ¼&2] 3½] ¼&5]&1½] rFkk ¼1] 7½] gA

bdkb & 4

f=dk.kfefr

vfr y?k mRrjh; i'u

1- xM fdl dgr gA \

2- π jfM;u dk eku crkb,A

3- dk.k d ekiu dh rhuk in/kfr;k e ijLij lc/k fyf[k,A

4- 50 xM dk jfM;u e ifjofrr dhft,A

5- 20^0 dk xM e cnfy,A

6- lolfedk fdl dgr g \

7- $\frac{3\pi}{4}$ dk v'k e ifjofrr dhft,A

8- lolfedk $\sin^2\theta+\cos^2\theta$ dk eku D;k g \

9- $\frac{\tan 51^0}{\cot 39^0}$ dk eku Kkr dhft,A

y?kmRrjh; i'u

1- oRr d pki dh yEckb Kkr dhft, ftldh f=T;k 12 l-eh- g rFkk og dUn ij 60^0 dk dk.k vUrfjr djrh gA

2- ,d f=Hkt d dk.k lekrj J.kh e gA ;fn lcl NkV dk.k dk eku 45^0 g rk lcl cM dk.k dk eku jfM;u e Kkr dhft,A

3- fl) dhft, dh $(1-\cos^2\theta).\cos ec^2\theta=1$

4- fln/k dhft, dh $\cos^2\theta\left(1+\tan^2\theta\right)=1$

5- ;fn $\frac{\cos\alpha}{\cos\beta}=m$ vkj $\frac{\cos\alpha}{\sin\beta}=n$ gk rk fln/k dhft, fd $\left(m^2+n^2\right)\cos^2\beta=n^2$

6- $\sec^2\theta = 1+\tan^2\theta$ lolfedk g ;k ugh \

7- $\tan(90-\theta).\cos(90-\theta).\cos ec(90-\theta)$ dk eku crkb;A

8- $\frac{\cos^2 20^0+\cos^2 70^0}{\sin^2 59^0+\sin^2 31^0}$ dk eku Kkr crkb;A

9- fl) dhft, fd $\frac{\sin(90-\theta).\cos(90-\theta)}{\cot\theta}=1-\cos^2\theta$

10- fl) dhft, fd $\sin^2(90-\theta)\left[1+\cot^2(90-\theta)\right]=1$

nh?k mRrjh; i'u

1- fdlh f=Hkt d dk.k lekUrj J.kh e g mld lcl cM dk.k e jfM;uk dh l[;k NkV dk.k e v'kk dh l[;k dk vuikr $\pi:60$ g rk mld dk.kk dk eku v'kk e Kkr dhft,A

2- ;fn $\sin\theta+\cos\theta=p$ vkj $\sec\theta+\cos ec\theta=q$ gk rk fl) djk fd $q\left(p^2-1\right)=2p$

3- ;fn $x=a\sin^3\theta, y=b\cos^3\theta$ gk rk fl) dhft, fd $\left(\frac{x}{a}\right)^{2/3}+\left(\frac{y}{b}\right)^{2/3}=1$

4- fl) dhft, fd $\frac{\cos^2 20^0+\cos^2 70^0}{\sin^2 20^0+\sin^2 70^0}+\sin^2 64^0+\cos^2 64^0.\sin 26^0=2$

5- eku Kkr dhft, $\sin\theta.\cos\theta-\frac{\sin\theta\cos(90-\theta).\cos\theta}{\sec(90-\theta)}-\frac{\cos\theta.\sin(90-\theta).\sin\theta}{\cos ec(90-\theta)}$

bdkb & 5

{k=fefr

vfr y?k mRrjh; i'u

1- fiTe fdl dgr g \

2- yc f=Hkth; fiTe fdl dgr g \

3- yc oxkdkj fiTe e dkjk dh l[;k cukb; \

4- yc f=Hkth; fiTe e dkjk ,o Qydk dh l[;k fyf[k, \

5- yc f=Hkth; fiTe e ik'o dkjk ,o ik'o Qydk dh l[;k fyf[k, \

6- ;fn ,d yc f=Hkth; fiTe dk ik'o i"B 144 ox l- eh- vkj vk/kkj dk {k=Qy 32 ox l- eh- g rk fiTe dk i"Bh; {k=Qy Kkr dhft, \

7- ;fn ,d yc f=Hkth; fiTe dh vk/kkj ij ifjeki 40 l- eh- vkj Åpkb 8 l- eh- g rk bldk ik'o i"B Kkr dhft,A

8- ;fn ,d yc f=Hkth; fiTe d vk/kkj dk {k=Qy 48 ox l- eh- vkj fiTe dh Åpkb 6 l- eh- gk rk fiTe dk vk;ru Kkr dhft,A

9- ;fn ,d yc fiTe dk vk/kkj leckg f=Hkt gA ftldh ,d Hktk dh eki 8 leh- gk rk fiTe d vk/kkj dk {k=Qy Kkr dhft,A

10- cyu dh ifjHkk"kk ,d mnkgj.k lfgr fyf[k,A

11- cyu dh dkb nk fo'k"krk, fyf[k,A

12- ;fn ,d yc oRrh; cyu d vk/kkj dh f=T;k 5 l- eh- rFkk mldh Åpkb 4 l- eh- gk rk cyu dk odi"B Kkr dhft,A

13- cyu dk vk;ru Kkr dhft, tcfd mldh Åpkb 6 l- eh- rFkk vk/kkj dh f=T;k 3 leh gA

14- ;fn cyu d vk/kkj dk {k=Qy 616 ox leh- gk rk mldh f=T;k Kkr dhft,A

15- 'kd dk ifjHkkf"kr dj Hkkxk dk n'kkb;A

16- ;fn 'kd d vk/kkj dh f=T;k 3 leh- vkj Åpkb 4 leh- gk rk mldh fr;d

Åpkb Kkr dhft,A

17- 12 leh 0;kl vkj 14 leh Åpkb oky 'kd dk vk;ru Kkr dhft,A

18- xky dh ifjHkk"kk nhft,A

19- ;fn v/kxky dh f=T;k 3 leh- g rk mldk vk;ru Kkr dhft,A

y?kmRrjh; i'u

1- ;fn ,d yc f=Hkth; fiTe dk ik'o i"B 150 ox l- eh- vkj Åpkb 5 leh g rk fiTe d vk/kkj dk ifjeki Kkr dhft,A

2- ;fn ,d yc le f=Hktkdkj fiTe dh Åpkb 10 leh- g rFkk vk;ru $160\sqrt{3}$?ku leh g rk fiTe d vk/kkj dh Hktk Kkr dhft,A

3- ;fn ,d cyu dk 0;kl 14 l- eh- vkj Åpkb 20 leh- g rk cyu dk vk;ru Kkr dhft,A

4- ,d vk;rkdkj dkxt d VdM dh yckb 44 leh- vkj pkMkb 20 leh- g bldk yckb d ifjr% ekMdj ,d cyu cuk;k x;k g cyu dk vk;ru Kkr dhft,A

5- ;fn ,d cyu dk vk;ru 40π ?ku leh vkj mld vk/kkj dk {k=Qy 4π ox leh- g rk cyu dk oØi"B Kkr dhft,A

6- 7 leh- 0;kl cky vk/kkj rFkk 10 leh- Åpkb oky 'kd dk vk;ru Kkr dhft,A

7- ;fn 9 eh- Åp ,d Bkl 'kd d vk/kkj dh ifjf/k 44 eh- g rk 'kd dk vk;ru Kkr dhft,A

8- ;fn xky dk vk;ru $\frac{4}{3}\pi$?ku leh- g rk mldk 0;kl D;k gkxkA

9- ;fn fdlh xky dh f=T;k nxuk dj fn;k tk, rk mud vk;ruk dk vuikr Kkr dhft,A

10- ml cM l cM xky dk vk;ru Kkr dhft, tk ml /ku e l dkVk tk, ftldh dkj 12 leh dh gA

11- ml cM l cM 'kd dk vk;ru Kkr dhft, tk ml ?ku e l dkVk x;k ftldh dkj dh yckb 6 leh gA

nh?k mRrjh; i'u

1- ,d yc f=Hkkth; fiTe dk vk/kkj ,d ledk.k f=Hkt gA ftldh ledk.k cuku okyh Hktk, 4 leh- rFkk 3 leh- gA ;fn fiTe dh Åpkb 10 leh- gk rk fiTe dk ik'o i"B] i"Bh; {k=Qy rFkk vk;ru Kkr dhft,A

2- ,d cyukdkj ik= ftldk 0;kl 14 leh- g] e dN ikuh Hkjk gA ble 8 leh- 0;kl dk ,d xkyk Mck;k tkrk gA ;fn xkyk ikuh e ijh rjg Mc tkrk g rk ikuh cru e fdruk Åij p<xkA

3- ml [kk[ky cyu dh ekVkb Kkr dhft, ftldh ckg; f=T;k 8 leh- vkj Åpkb 10 leh- g ,o li.k i"B dk {k=Qy 338π ox leh- gA

4- ;fn 'kd d vk/kkj dh f=T;k r Åpkb h fr;d Åpkb l v/k'kh"k α gk rk fl) dhft, fd

¼i½ 'kd dk oØi"B $c = \pi h^2 \tan\alpha.\sec\alpha$

¼ii½ 'kd dk vk;ru $v = \frac{1}{3}\pi h^3 \tan^2\alpha$

5- nk 'kdvk d vk;ruk e vuikr 3%7 rFkk mud Åpkb;k dk vuikr 7%3 gk rk mld vk/kkj d f=T;kvk dk vuikr Kkr dhft,A

6- ,d 'kd ftldh Åpkb 10 l-eh rFkk vk/kkj dk f=T;k 20 leh- g] dk xykdj 4 leh- 0;kl dk fdru xky cuk, tk ldr gA

7- 4 leh- 0;kl d ,d v/kxkykdkj iijoV e 2 leh- 0;kl d nk cycy gA iijoV cuku e i;Dr inkFk dk vk;ru Kkr dhft,A

bdkb & 6

T;kfefr

vfr y?k mRrjh; i'u

1- le:i cgHkt dh ifjHkk"kk fyf[k,A

2- fdlh cgHkt d le:i gku dh 'kr fyf[k,A

3- Hktk dk.k Hktk le:irk ie; dh dFku fyf[k,A

4- ck/kk;u ie; dk dFku fyf[k,A

5- nk le:i f=Hkt d le:i gku dh 'kr fyf[k,A

y?kmRrjh; i'u

1- ΔABC e D rFkk E Øe'kh Hktkvk AB rFkk AC ij nk fcUnq bl idkj gA fd $DE \| BC$ rFkk ;fn $\frac{AD}{BD}=\frac{6}{5}$ rFkk $AE=3$ leh- gk rk CE dk eku Kkr dhft,A

2- fl) dhft, fd fdlh lef}ckgq f=Hkt d ,d dk.k dk lef}Hkkt d lEe[k Hktk dk lef}Hkkftr djrk gA

3- ΔABC e $\angle A$ dk lef}Hkkt d AD g rFkk $BD=4$ leh] $DC=6$ leh- $AB=8$ leh rFkk $AC=12$ leh- gk rk fl) dhft, fd ΔABC ,d lef}ckgq f=Hkt gA

4- nk le:i f=Hkt ΔABC o ΔPQR e $AB=6$ leh- $BC=16$ leh- $AC=4$ leh- $PQ=8$ leh- $QR=12$ leh- rFkk $PR=3$ leh gk rk nkuk le:i f=Hktk d ifjekik dk vuikr Kkr dhft,A

5- nk le:i f=Hktk e igyk f=Hkt dh ,d Hktk dh ek=k 12 leh- rFkk nlj f=Hkt dh lxr Hktk 10 leh- gA igyk f=Hkt dh ifjeki 48 leh- gk] rk nlj f=Hkt dh ifjeki Kkr dhft,A

6- ,d m)k/kj [kMh 12 leh- yEch NMh dh Nk;k 16 leh- yEch gA mlh le; ,d 48 eh- Åpkb okyh ehukj dh Nk;k dh yEckb Kkr dhft ,A

7- ;fn nk le:i f=Hkt k dk {k=Qy Øe'kh 300 ox leh- rFkk 450 ox leh- gA ;fn lxr Hkt kvk e l ,d Hkt k dk eku 15 leh- gk] rk nlj Hkt k dh eku Kkr dhft ,A

8- ,d vk;r dh yEckb 6 leh- rFkk pkMkb 4 leh- gA bld ,d fod.k dh yEckb Kkr dhft ,A

9- ;fn ΔABC ,d ledk.k f=Hkt g rFkk ;fn bldk fod.k 360 leh- gA ;fn ble ledk.k cuku okyh Hkt kvk e 1 % 3 gk] rk ledk.k cuku okyh Hkt kvk dk eku Kkr dhft ,A

10- ;fn ,d ox dh ,d fod.k dh yEckb 36 leh- gk] rk mldh Hkt k dk eku Kkr dhft ,A

nh?k mŸkjh; i'u

1- ;fn fdlh f=Hkt ΔABC e $DE \square BC$ gk rk fl) dhft, fd $\frac{AD}{DB} = \frac{AE}{EC}$

2- ,d ledk.k ΔABC tgk $\angle B$ ledk.k g rFkk $BD \perp AC$ gk rk fl) dhft, fd ΔABC e cuku oky dk.k vkil e ,d nlj d cjkcj gA

3- nk le:i f=Hkt ΔABC vkj ΔPQR e dFku vkj dkj.k dk Li"V djr g, fl) dhft, fd &

$$\frac{\{k = Qy \Delta ABC}{\{k = Qy \Delta PQR} = \frac{AB^2}{PQ^2} = \frac{BC^2}{QR^2} = \frac{AC^2}{PR^2}$$

4- ;fn ,d ledk.k f=Hkt ABC g ftle $\angle B$,d ledk.k gk rk fl) dhft, fd $AC^2 = AB^2 + BC^2$

5- fdlh f=Hkt ABC e] ,d Hkt k dk ox vU; nk Hkt kvk d oxk d ;kx d cjkcj gk rk dFku o dkj.k dk Li"V djr g, fl) dhft, fd ΔABC ,d ledk.k f=Hkt gkxkA

v/;k; & 10

oÝk

vfr y?k mRrjh; i'u

1- oÝk dh ifjf/k fdl dgr g \

2- ldUnh; oRr l D;k vk'k; g \

3- oRr dh pki o ifjf/k l vki D;k le>r g \

4- oÝk vkj pkik dh lokxlerk l D;k vk'k; g \

5- oÝk d y?k o nh?k pki dk ifjHkkf"kr dhft,A

6- oÝk d dUnh; dk.k l D;k le>r gA

7- oÝk dh y?k pki o nh?k pki dh v'keki dh D;k ifØ;k gA fyf[k, \

y?k mÝkjh; i'u %&

1- ,d oÝk dh f=T;k Kkr dhft, ;fn oÝk d dUn l thok dh yEckb 4 leh- rFkk thok dh yEckb 6 leh- g

2- ,d oRr dh nk thok, cjkcj o lekUrj gA nkuk thokvk dh chp dh njh 6 leh- gA ;fn oÝk dh f=T;k 5 leh- gk rk nkuk thokvk dh yEckb Kkr dhft,A

3- ;fn fdlh oÝk dh thok, leku gk rk fl) dhft, fd oÝk d dUn l thokvk ij Mkyh xb yEc leku gkxhA

4- ;fn fdlh oÝk d pki }kjk dUn ij cuk dk.k 80^{o} gk rk mlh pki }kjk oRr d ifjf/k ij cuk dk.k dk eku Kkr dhft,A

5- fl) dhft, fd oRr d ,d gh pki }kjk ifjf/k ij cuk dk.k cjkcj gkrk gA

nh?k mŸkjh; i'u

1- ,d oRr dh Øe'kh 6 o 12 leh- dh nk thok, AB vkj CD lekUrj gA ;fn AB vkj CD d chp dh njh 4 leh- gk rk oRr dh f=T;k Kkr dhft ,A

v/;k; 11

T;kfefr ; jpuk,

y?k mÙkjh; i'u

1- ,d ifjxr oRr dh jpuk dhft, ;fn ΔABC e $AB = 6cm.\ BC = 7cm.,\ AC = 5.5cm.$ gkA

2- vUrkoRr dh jpuk dhft, ;fn ΔPQR e $PQ = 4.5cm.\ QR = 3.5cm.,\ PR = 6cm.$ gkA

3- ,d f=Hkt PQR cukb, tgk $PQ = 6cm.$] $\angle R = 60^0$ vkj R l gkdj tku okyh ef/;dk $4cm.$ gkA

4- ,d f=Hkt ABC cukb, tgk $BC = 6cm.$] $\angle A = 65^0$ vkj A l BC ij Mkyh x, yEc dk ikn fcUn D, B l $5cm.$ leh- njh ij gkA

nh?k mÙkjh; i'u

1- ΔPQR d le:i f=Hkt cukb, ftldh lxr Hktk, fn; g, f=Hkt d iR;d Hktk d $\frac{4}{5}$ o Hkkx d cjkcj gk tgk $PQ = 5cm.\ QR = 6cm.$] $\angle PQR = 60^0$ gkA

2- ΔDEF e $DE = 6cm., \angle D = 60^0$ vkj $\angle E = 30^0$ cukb, vkj bld $\frac{5}{7}$ o Hkkx d cjkcj lxr Hktkvk okyh le:i f=Hkt cukb,A

3- ,d prHkt $ABCD$ cukb, tgk $AB = 4cm., AD = 3cm. DB = 4cm. \angle B = 105^0$ vkj $BC = 5cm.$A ,d vU; prHkt $A'B'C'D'$ dh jpuk dhft, tk prHkt $A\ B\ C\ D$ d le:i gk ftld fod.k $B'D' = 5cm.$ gkA

4- prHkt $PQRS$ e $PQ = 5cm., \angle P = 65^0 QR = 5cm.$ cukb, vkj bl prHkt d lxr Hktkvk d cjkcj $\frac{3}{5}$ o le:i prHkt cukb,A

bdkb 7

dEl;Vj

y?k mÝkjh; i'u

1- f}&vk/kkjh vdu ;k *BITS* fdl dgr g \

2- fdUgh nk l[;k i)fr d uke fyf[k, \

3- f}&vk/kkjh l[;k i)fr fdl dgr g \

4- 25 dk f}&vk/kkjh i.kkyh e ifjofrr dhft,A

5 fuEu f}&vk/kkjh l[;kvk dk tkfM, %&

101101 $ 10010

6- 16 dk f}vk/kkjh i.kkyh e ifjofrr dhft, \

7- fuEu dk 9 d ijd i)fr l ?kVkb,A

1125 & 610

8- vYxkfjFe e i;Dr fdUgh pkj lc/k lpd irhdk dk fyf[k,A

9- vYxkfjFe d fdUgh 4 y{k.kk d uke fyf[k, \

y?k mÝkjh; i'u

1- n'keyo l[;k dk f}vk/kkjh l[;k e ifjoru dh fof/k dk le>kb,A

2- n'keyo fHkUu dk f}vk/kkjh fHkUu e cnyu dh fof/k dk le>kb, \

3- vYxkfjFe d fdUgh rhu egRoi.k y{k.kk dk le>kb, \

4- 20-125 dk f}vk/kkjh i.kkyh e cnfy, \

5- dEl;Vj d lnHk e fuo'k & ide.k & fuxe pØ dk le>kb,A

nh?k mÝkjh; i'u

1- dEl;Vj }kjk fdlh Hkh leL;k dk gy dju gr dku&dku lh ifd;k viuk;h tkrh g \

2- 200 :- dk 3 o"k d fy, 5 ifr'kr okf"kd C;kt dh nj l lk/kkj.k C;kt Kkr dju d vYxkfjFe dh jpuk dhft,A

3- vYxkfjFe d ikp egRoi.k fo'k"krkvk dk lknkgj.k Li"V dhft, \

4- fdlh vYxkfjFe e ifjferrk ,o fuf'prrk gkuk D;k vko';d gA mnkgj.k lfgr le>kb, \

v/;k; & 13

lk[;dh

y?k mÙkjh; i'u

1- lekrj ek/; d nk nk"k fyf[k, \

2- lekrj ek/; d nk mi;qfxrk fyf[k, \

3- 20 d x.ku[kMk dk ek/; Kkr dhft, \

4- 6] 7] 8] 9] 10 dk lekrj ek/; Kkr dhft,A

5- ;fn l[;kvk 3] 6] 4] x]5 dk lekrj ek/; 4 gk rk x dk eku Kkr dhft,A

y?k mÙkjh; i'u

1- uhp nh xb lkj.kh e ,d xko d 40 ifjokjk d cPpk dh l[;k nh xbA ifr ifjokj cPpk dh vklr l[;k Kkr dhft,A

cPpk dh l[;k	0	1	2	3	4	5	;kx
ifjokj dh l[;k	8	12	6	7	3	4	

2- fuEu lkj.kh dk lekrj ek/; Kkr dhft, %&

x	50	55	58	60	65	70	71
f	2	4	10	12	5	4	3

3- fuEu lkj.kh dk lekrj ek/; Kkr dhft, &

oxkUrj	0&6	6&12	12&18	18&24	24&30
vkofRr	6	8	10	9	7

4- 25 ekuk dk lekrj ek/; 50 ;k 1 tkp dju ij ik;k fd ek/; vfHkdyu dju d nkjku eku 45 d LFkku ij xyrh l 20 fy[k fn;k x;k gA lgh ek/ ; Kkr dhft ,A

5- 10 ekuk dk lekej ek/; 25 gA ;fn bu 10 ekuk e iR;d eku e 5 dh of) dj nh tk,] rk u, ekuk dk lekrj ek/; Kkr dhft ,A

nh?k mŸkjh; i'u

1- y?k fof/k dk mi;kx djr g, lekrj ek/; Kkr dhft ,A

ox vUrjky	0&50	50&100	100&150	150&200	200&250	250&300
ckjcjrk	4	10	12	10	8	6

2- fuEufyf[kr ckjckjrk lkj.kh dk lekrj ek/; 62-8 gA vKkr ckjckjrk x dk eku Kkr dhft ,A

ox vUrjky	0&20	20&40	40&60	60&80	80&100
ckjcjrk	5	8	x	12	7

& ef/;dk &

vfry?k mŸkjh; i'u %&

1- ef/;dk dh ifjHkk"kk fyf[k, \

2- ef/;dk d nk x.k fyf[k, \

3- ef/;dk dh mi;kfxrk fyf[k, dkb nk \

4- 4] 8] 3] 9] 5] 2] 0] 1 dh ef/;dk Kkr dhft, \

5- 1] 2] 3] 4] 6] 5] 4 dh ef/;dk Kkr dhft, \

6- ,d c<r de e j[kh J.kh dk ikpok in 14 rFkk NVok in 17 gk ,o ink dh l[;k 9 gk rk ef/;dk Kkr dhft, \

y?k mŸkjh; i'u

1- fuEufyf[kr lkj.kh l ef/;dk Kkr dhft, %&

x	5	6	7	8	9	10	11	12	13
f	12	14	16	25	9	8	7	5	4

2- fuEufyf[kr lkj.kh l ef/;dk Kkr dhft, %&

ox	0&10	10&20	20&30	30&40	40&50
vkofRr	20	36	44	33	18

nh?k mŸkjh; i'u

1- fuEufyf[kr lkj.kh l ef/;dk Kkr dhft, \

ikIrkd	0	10	20	30	40	50
fo|kfFk;k dh l[;k	50	42	34	24	11	7

2- fuEufyf[kr lkj.kh l ef/;dk Kkr dhft,A

oxkUrj	130&140	140&150	150&160	160&170	170&180	180&190	190&200
vkofRr	5	9	17	28	24	10	7

& cgqyd &

vfry?kq mŸkjh; iz'u %&

1- cgqyd dh ifjHkk"kk nhft, \

2- cgqyd ds nks xq.k fyf[k, \

3- cgqyd ds nks nks"k fyf[k, \

4- 4] 3] 2] 2] 3] 4] 4] 0] 3] 3] dk cgqyd Kkr dhft, \

5- 8] 5] 4] 3] 4]]3 dk cgqyd 4 gS rks x dk eku Kkr dhft, \

6- lekarj ek/;] ekf/;dk ,oa cgqyd esa laca/k fyf[k,A

y?kqmŸkjh iz'u %&

1- fdlh Js.kh dk lekarj ek/; 10 rFkk ef/;dk 15 gks] rks cgqyd Kkr dhft,A

2- fuEufyf[kr vkadM+ksa dk cgqyd leqghdj.k fof/k ls Kkr dhft, \

in	7	8	9	10	11	12	13	14	15
vko`fRr	10	12	16	18	10	8	17	5	4

nh?kZ mŸkjh; iz'u &

1- fuEufyfkr vkadM+ksa dk cgqyd Kkr dhft, \

oxZ	0&10	10&20	20&30	30&40	40&50	50&60	60&7
vko`fRr	2	18	45	35	20	6	3

2- fuEufyf[kr vkadM+ksa dk cgqyd Kkr dhft,A

oxkZUrj	0&5	5&10	10&15	15&20	20&25	25&30	30&3
vko`fRr	8	9	10	8	4	10	3

& oÝkkj[k vFkok ikb vkj[k ,o çkf;drk &

vfry?kmÝkjh; i'u &

1- ikb vkj[k fdl dgr g \

2- ikf;drk dh ifjHkk"kk nhft, \

3- ,d flDd d mNkyu ij 'kh"k ugh vku dh ikf;drk D;k gkxhA

4- ,d ikl dk mNkyu ij 5 l cMh vd ikIr dju dh ikf;drk D;k gkxhA

5- leikf;d ?kVuk, fdl dgr g \

y?k mÝkjh; i'u

1- ,d Fky e 6 dkyh rFkk 5 lQn xn j[kh xb gA ,d lQn xn ;nPN;k fudkyu dh ikf;drk Kkr dhft,A

2- rk'k dh ,d xMMh e ,d rk'k dk iRrk [khpk tk,] rk iku dk iRrk vku dh D;k ikf;drk gkxhA

nh?k mÝkjh; i'u

1- ,d Fky e 8 dkyh] 7 yky] rFkk 6 ihyh xn gA ;fn ,d xn ;nPN;k fudkyh tk, rk D;k ikf;drk g fd fudkyh xb xn

1- ihyh gkxh 2- yky gkxh 3- ihyh ;k yky gkxh

4- ihyh ;k dkyh gkxh 5- dkyh ;k yky gkxhA

2- xf.kr fo"k; e je'k u 27 vd uj'k u 48 ,o eg'k u 75 vd ikIr fd;A oRrkdkj y[kk fp= }kjk inf'kr dhft,A

3- ,d ifjokj dk ekfld 0;; fuEukulkj g Hkktu ij 900 : diM ij 800 :- edku ij 400 :- rFkk ilk/ku lkekxh ij 300 :- gA vkdMk dk ,d gh oRrkj[k }kjk inf'kr dhft, \

bdkb & 1

v/;k; & 1

chtxf.kr

oLrfu"B i'u

1- lR;@vlR; fyf[k, %&

¼1½ iR;d cgin ,d ifje; 0;tdgkrk g tcfd iR;d ifje; 0;td dk cgin gkuk vko';d ugh gA

¼2½ 0;td $\frac{x+2}{x^2-16}$,d fo"ke 0;td gA

¼3½ 0;td $\frac{x^2+4x}{x+2}$,d fo"ke 0;td gA

¼4½ ifje; 0;tdk dk x.kuQy] ;kxQy] vrj] ifryke Hkh ,d ifje; 0;td gkrk gA

¼5½ vuikr d ink dk de ugh cnyrk gA

¼6½ fdlh vuikr d nkuk ink dk ,d l[;k l x.kk ;k Hkkx nu l eku e vrj vk tkrk gA

¼7½ 4 vkj 9 dk e/;kuikrh 25 gkxkA

¼8½ $5x+12=0$,d ox lehdj.k gA

¼9½ pj jkf'k d o eku tk ox lehdj.k dk lr"V djr g ox lehdj.k d ey dgykr gA

¼10½ ox lehdj.k d nk l vf/kd ey gkr gA

¼11½ ox lehdj.k $ax^2+bx+c=0$ e ;fn b^2-4ac dk eku 'kU; l cMk gk rk ox lehdj.k d nkuk ey okLrfod o vleku gkr gA

¼12½ lekUrj J.kh dk 0;kid in dk l= $T_n=a+(n+1)d$ gA

¼13½ nk jkf'k;k dk lekUrj ek/; mu nkuk jkf'k;k d ;kxQy dk vk/kk gkrk gA

¼14½ l= $S_n = \frac{n}{2}\{a+l\}$ lekUrj J.kh d ;kxQy Kkr dju dk l= gA

¼15½ 9 vkj 5 dk lekUrj ek/; 4 gkxkA

mŸkj &¼1½ lR; ¼2½ vlR; ¼3½ lR; ¼4½ lR; ¼5½ lR;
¼6½ vlR; ¼7½ vlR; ¼8½ vlR; ¼9½ lR; ¼10½ vlR;
¼11½ lR; ¼12½ vlR; ¼13½ lR; ¼14½ lR; ¼15½ vlR;

2- [kkyh LFkku Hkfj, %&

1- nk cgink dk x.kuQy ,d ----------gkrk gA

2- ,lk 0;td ftle i.kkd rFkk ifje; 0;td nkuk gkr g ---------- --------ifje; 0;td dgykrk gA

3- $\frac{x+4}{x-1}$ dk ;kT; ifryke ----------gkxkA

4- $\frac{3}{5}$ dk ?kukuikr ----------gkxkA

5- dk ?kueYkkuikr ----------gkxkA

6- 4 vkj 9 dk e/;kuikrh ----------gkxkA

7- ;fn $a:b:c:d$ gk rk bldk ;kxkUrjkuikr ----------gkxkA

8- $(x-2)(x+7)=0$ gk rk x dk eku ----------gkxkA

9- 2] 4] 6] 8----------dk $n$ok in ----------gkxkA

10- 8 vkj 12 dk e/; in ----------gkxkA

mÙkj %& ¼1½ cgin ¼2½ fefJr ¼3½ $\frac{x-1}{x+4}$ ¼4½ $\frac{27}{125}$

¼5½ $\frac{3}{5}$ ¼6½ 6 ¼7½ $\frac{a+b}{a-b}=\frac{c+d}{c-d}$ ¼8½ $\frac{3}{5}$

¼9½ $x=2,(-7)$ ¼10½ 10

cgfodYih; i'u

1- $\frac{4}{9}$ dk oxeykuikr gkxk &

¼a½ $\frac{4}{9}$ ¼b½ $\frac{16}{81}$ ¼c½ $\frac{2}{3}$ ¼d½ $\frac{64}{729}$

2- ;fn $\frac{a}{b}=\frac{4}{3}$ gk rk $\frac{a}{b}$ dk ?kukuikr gkxkA

¼a½ $\frac{64}{27}$ $\frac{16}{9}$ ¼b½ ¼c½ $\frac{4^{1/2}}{3^{1/2}}$ ¼d½ $\frac{3\sqrt{4}}{3\sqrt{3}}$

3- ox lehdj.k $x^2-x-6=0$ d eyk dk y{k.k gkxk &

¼a½ okLrfod ugh gkxk ¼b½ eYk okLrfod vkj cjkcj gkxk

¼c½ nkuk eYk okLrfod ,o vleku gkxk

¼d½ bue l dkb ugh

4- J.kh 4 $ 8 $ 12 $ 16 $ ---------- dk 15 ok in fuEu gkxk &

¼a½ 64 ¼b½ 60 ¼c½ 50 ¼d½ 74

5- 8 vkj 16 dk lekUrj ek/; gkxk &

¼a½ 24 ¼b½ 20 ¼c½ 12 ¼d½ 16

mÙkj %& ¼1½ ¼c½ $\frac{2}{3}$ ¼2½ ¼a½ $\frac{64}{27}$ ¼3½ ¼c½ nkuk eYk okLrfod ,o vleku gkxk ¼4½ ¼b½ 60 ¼5½ ¼c½ 12

v/;k; & 2

cfdx vkj vk;dj

oLrfu"B i'u

1- lR;@vlR; fyf[k, %&

¼1½ cpr cd [kkrk l C;kt ugh feyrk gA m- & vlR;

¼2½ fdlh eghu d C;kt ml eghu d nlo fnu vkj vfre fnu d chp dh U;ure 'k"k jkf'k ij yxk;k tkrk gA m- & lR;

¼3½ ftl ekg e [kkrk cn fd;k tkrk g ml ekg dk C;kt fn;k tkrk gA m- & vlR;

¼4½ eukjtu dj dUn ljdkj }kjk yxk; tku okyk dj gA m- & vlRl

¼5½ fofRr; o"k 1 viy l ikjHk gkdj vxy o"k 31 ekp dk lekIr gkrk gA

2- fjDr LFkkuk dh ifr dhft, %&

¼1½ iR;d eghu d ----------rkjh[k rd gh dh xbZ tek jkf'k ij C;kt dh x.kuk dh tkrh gA

m- & 10 rkjh[k

¼2½ ey/ku ¾ $\frac{100\times.....}{.....\times le;}$

m- & $\frac{100\times C;kt}{nj\times le;}$

¼3½ lkof/k tek [kkrk e ----------C;kt xkgd dk feyrk gA

m- & pØof) C;kt

3- cgfodYi i'u %&

¼1½ lkof/k tek [kkrk [kkr e C;kt dh x.kuk fuEu l= d }kjk fd;k tkrk gA

¼a½ $A = P\left(1+\frac{r}{100}\right)$ ¼b½ $\frac{A}{P} = \left(1+\frac{r}{100}\right)^n$

¼c½ $P = A\left(1+\frac{n}{100}\right)^r$ ¼d½ $P = A\left(1+\frac{r}{100}\right)^n$

mÙkj & ¼b½ $\frac{A}{P} = \left(1+\frac{r}{100}\right)^n$

¼2½ vk;dj dh x.kuk e fdruh dy vk; ij vf/kHkkj yxrk gA

¼a½ 100000 :- l de ¼b½ 10]0000 :- rd

¼c½ 10]0000 l vf/kd ¼d½ bue l dkb ugh

m- ¼c½ 10]0000 :- l vf/kd

bdkb & 03

^^fun'kkd T;kfefr**

1- lgh fodYi pudj fyf[k, %&

1- ;fn Hkt _.kkRed ,o dkfV /kukRed gk] rk fcUn fdl prFkk'k fLFkr gkxk & ¼v½ iFke ¼c½ f}rh; ¼l½ rrh; ¼n½ prFk

mÿkj %& ¼c½ f}rh;

2- Y_{-} v{k e fLFkr fcUn dk Hkt gkxk %&

¼v½ 0 ¼c½ 1 ¼l½ &1 ¼n½ 2 mÿkj %& ¼v½ 0

2- fjDr LFkku dh ifr dhft, %&

1- rhu fcUn lej[k g rk {k=Qy ----------gkxkA mÿkj %& 'kU;

2- f=Hkt dh ekf/;dk, ftl fcUn ij feyrh g ml fcUn dk f=Hkt dk ----------dgr gA mÿkj %& dUnd

3- ,d okD; e mÿkj nhft, %&

1- rhu fcUn ,d gh j[kk ij fLFkr g rc ml D;k dgr g \

m- & lej[k

2- dkrh; rFkk /koh; fun'kkd e lc/k fyf[k,A

m- & $r = \sqrt{x^2 + y^2}$ $\theta = \tan^{-1}\left(\frac{y}{x}\right)$

4- mfpr lc/k tkfM, %&

¼v½ iFke prFkk'k ¼v½ ¼ &] & ½

¼c½ f}rh; prFkk'k ¼c½ ¼ $] & ½

¼l½ rrh; prFkk'k ¼l½ ¼ &] $ ½

¼n½ prFk prFkk'k ¼n½ ¼ $] $ ½

m- & ¼v½ iFke prFkk'k ¼n½ ¼c½ f}rh; prFkk'k ¼l½

¼l½ rrh; prFkk'k ¼v½ ¼n½ prFk prFkk'k ¼c½

bdkb & 4

¼f=dk.kfefr½

oLrfu"B i'u

1- lgh fodYi pfu,

1- 1 ledk.k cjkcj gkxk &

¼v½ 80 xM ¼c½ 90 xM ¼l½ 50 xM ¼n½ 100 xM mÿkj %& ¼n½ 100 xM

2- 270^0 v'k dk jfM;u e eku gkxk

¼v½ $\frac{\pi}{2}$ ¼c½ $\frac{3\pi}{2}$ ¼l½ $\frac{2\pi}{3}$ ¼n½ $\frac{3\pi}{4}$ mÿkj %& ¼c½ $\frac{3\pi}{2}$

2- ,d okD; e mRrj fyf[k, %&

1- ;fn $\sin\theta = \frac{3}{5}$ gk rk $\cos\theta$ dk eku D;k gkxk \

mÿkj & $\cos\theta = \frac{4}{5}$

2- $\tan(90-\theta)$ dk eku D;k gkxk \ mÿkj %& $\cot\theta$

3- fjDr LFkku dh ifr dhft,

1- $\sin\theta, \cos ec\theta =$ ..... mÿkj %& 1

2- pki dh yEckb ¾ dk.k dh eki × ----------

mÿkj & f=T;k

4- mfpr lc/k tkfM,

(A)	(B)	mÿkj
(i) $1+\tan^2\theta$	¼v½ $\sqrt{3}$	(i) $Sec^2\theta$
(ii) $\cos ec(90-\theta)$	¼c½ $Sec^2\theta$	(ii) $Sec\theta$
(iii) $\tan 60^0$	¼l½ $Sec\theta$	(iii) $\sqrt{3}$

bdkb & 5

{k=fefr

¼1½ lgh fodYi pudj fyf[k, %&

1- yEc f=Hkqt h; fiTe e Qydk dh l[;k gkrh g %&

¼v½ 4 ¼c½ 5 ¼l½ 6 ¼n½ 7 mÙkj %& ¼c½ 5

2- ,d xksy dk 0;kl 24 leh- g rc f=T;k gkxh %&

¼v½ 24 leh- ¼c½ 20 leh- ¼l½ 48 leh- ¼n½ 12 leh- mÙkj %& ¼n½ 12 leh-

¼2½ fjDr LFkku dh ifr dhft, %&

1- yEc f=Hkqt h; fiTe dk vk;ru ¾ vk/kkj dk {k=Qy × ----------

m- %& Åpkb

2- ¼fr;d Åpkb ½2 ¾¼Åpkb ½2 $ ----------

m- %& ¼f=T;k ½2

¼3½ ,d okD; e mRrj nhft, %&

1- cyu d odi"B dk l= D;k g \ m- %& $2\pi rh$

2- v/kxksy d vk;ru dk l= g \ m- %& $\frac{2}{3}\pi r^3$

¼4½ mfpr lc/k tkfM, %&

¼v½ xksy dk i"B ¼v½ $\pi r^2 h$

¼c½ 'kd dk vk;ru ¼c½ $\frac{4}{3}\pi r^3$

¼l½ cyu dk vk;ru ¼l½ $2\pi r(r+h)$

¼n½ xkyk dk vk;ru ¼n½ $4\pi r^2$

¼b½ cyu dk lEi.k i"B ¼b½ $\frac{1}{3}\pi r^2 h$

mŸkj %&

¼v½ xkyk dk i"B ¼n½

¼c½ 'kadq dk vk;ru ¼b½

¼l½ cyu dk vk;ru ¼v½

¼n½ xkyk dk vk;ru ¼c½

¼b½ cyu dk lEi.k i"B ¼l½

bdkb & 6

v/;k; & 9

T;kfefr

[kkyh LFkku Hkfj, %&

1- vk/kkjHkr vkuikfrdk ie; dk vkj ----------uke l tkuk tkrk gA

2- nk cgHkt le:i dg tkr g] ;fn mud flxr dk.k cjkcj o mudh lxr Hktkvk dh yEckb;k ----------gkrh gA

3- ;fn nk f=Hkt vkil e lekudkf.kd gk rk f=Hkt ----------gkxA

4- ----------f=Hkt e d.k dk ox vU; nk Hktkvk d oxk d ;kxQy d cjkcj gkrk gA

5- ;fn nk le:i f=Hkt k dh {k=Qyk dk vuikr $\frac{9}{25}$ gk rk mudh lxr Hktkvk dk vuikr ----------gkxk A

mŸkj %& 1 FkY l ie; 2-vkuikfrd 3- le:i

4- ledk.k 5- $\frac{3}{5}$

lR;@vlR; fyf[k, %&

1- nk cgHkt le:i gku d fy, mud lxr dk.k dk cjkcj gkuh pkfg,A

2- ;fn nk f=Hkt k dh lxr Hkt k, lekuikfrd gk rk nkuk f=Hkt lekudkf.kd ugh gkxA

3- ;fn fdlh f=Hkt d nk dk.k] nlj f=Hkt d lxr dk.kk d cjkcj gk rk nkuk f=Hkt le:i gkr gA

4- nk le:i f=Hktk d {k=Qyk dk vuikr] fdUgh nk lxr Hktkvk d oxk d vuikr d cjkcj ugh gkrk gA

5- fdlh f=Hkt e] ,d Hktk dk ox vU; nk Hktkvk d oxk d ;kx d cjkcj gk rk ledk.k f=Hkt gkrk gA

mÙkj %& 1- lR; 2- vlR; 3- lR;

4- vlR; 5- lR;

cgfodYi i'u

1- 4 eh- vkj 3 eh- Hktk oky vk;r d fod.k dh yEckb D;k gkxh

(*a*) 12 eh- (*b*) 7 eh- (*c*) 5 eh- (*d*) 4 eh-

2- ;fn nk le:i f=Hktk d lxr Hktkvk dk vuikr 2 % 3 dk vuikr gk rk mud lxr {k=Qyk dk vuikr gkxk %&

(*a*) $\frac{2}{3}$ (*b*) $\frac{4}{9}$ (*c*) $\frac{9}{4}$ (*d*) $\frac{8}{27}$

3- $\frac{AD}{BC}=\frac{6}{9}$ rFkk $AE=3$ leh- gk rk CE dk eku gkxkA

(*a*) 9 *cm.* (*b*) 3.5 *cm.* (*c*) 4.5 *cm.* (*d*) 27 *cm.*

mÙkj %&

(1) (*c*) 5 eh-

(2) (*b*) $\frac{4}{9}$

(3) (*c*) 4-5 leh-

bdkb & 6

v/;k; & 10

oÝk

lR;@vlR; fyf[k, %&

1- oÝk dh ifjf/k d ,d lrr Hkkx dk thok dgk tkrk gA

2- fdlh oRr dh ifjf/k d NkV Hkkx dk y?k pki o cM Hkkx dk nh?k pki dgr gA

3- ;fn nk oRr dh f=T;k, cjkcj gk rk oRr lokxle gkxA

4- rhu vlj[k fcUnvk l gkdj ,d vkj doy ,d oRr [khpk tk ldrk gA

5- oRr d fdlh pki }kjk dUn ij cuk dk.k mlh pki }kjk 'k"k ifjf/k ij cu dk.k d cjkcj gkrk gA

6- v)oRr ij cuk dk.k ledk.k gkrk gA

mÝkj %& 1- vlR; 2-lR; 3-lR; 4- lR; 5- vlR;

6- lR;

fjDr LFkku dh ifr dhft, %

1- ,d gh dUn oky oRrk dk ,d ----------oRr dgk tkrk gA

2- oRr d dUn l gkdj tku okyh lcl cM thok dk ----------dgr gA

3- fdlh oRr dh thok oRr dk ----------Hkkxk e foHkDr djrk gA

4- oRr dk v'k eki ----------ledk.k d cjkcj gkrk gA

5- oRr dh leku thok, dUn l ----------gkrh gA

6- oRr d fdlh pki d }kjk dUn ij cuk dk.k mlh pki }kjk ifjf/k d fdlh fcUn ij cu dk.k dk ----------gkrk gA

mŸkj %& 1- ldUnh; 2- 0;kl 3- nk 4- pkj

5- lenjLFk ;k cjkcj 6- vk/kk

cgfodYi i'u %&

1- ;fn fdlh oRr dh pki PQ gk rk ml inf'kr fd;k tkrk gA

(a) PQ (b) $\overline{PQ}$ (c) $\overset{\frown}{PQ}$ (d) $\overset{\frown}{PQ}$

2- ;fn oRr dh fdlh pki d }kjk dUn ij vUrfjr dk.k 30^0 gk rk ifjf/k d fdlh fcUn ij vUrfjr dk.k dk eku gkxk %&

(a) 15^0 (b) 30^0 (c) 60^0 (d) 45^0

3- ;fn oRr d dUn l thok ij Mkyh xb yEc dh yEckb 3 leh- rFkk thok dh yEckb 8 leh- gk rk oRr dh f=T;k gkxhA

(a) 5 leh- (b) 4 leh- (c) 3 leh- (d) 6 leh-

4- rhu vlj[k fcUnvk l gkdj fdruh oRr [khp tk ldr g &

(a) 1 (b) 2 (c) 3 (d) 'kU;

5- oRr ij [khph xb Nnd j[kk oRr dk fdru fcUnvk ij ifrPNn djrh gA

(a) 1 (b) 2 (c) 3 (d) 4

mŸkj %&

1- (c) $\overset{\frown}{PQ}$ 2- (a) 15^0

3- (a) 5 leh- 4- (a) 1

5- (b) 2

bdkb & 7

dEl;Vj

¼1½ lgh fodYi pfu, %&

1- f}&vk/kkjh vd g

¼v½ ¼0]0½ ¼c½ ¼0]1½ ¼l½ ¼1]1½ ¼n½ ¼1]2½ mÿkj %& ¼c½ ¼0]1½

2- 8 dk f}vk/kkjh i.kkyh e fu:i.k gkxk &

¼v½ 100 ¼c½ 1100 ¼l½ 1000 ¼n½ 1101 mÿkj %& ¼l½ 1000

¼2½ fjDr LFkkuk dh ifr dhft, &

1- nk'kfed i.kkyh dk vk/kkj ----------gA m - 10

2- $(0.625)_{10} = (\ldots\ldots\ldots\ldots)_2$ m- 0-101

¼3½ ,d okD; e mÿkj fy[kk %&

1- fdlh leL;k dk gy dju d fy, fuf'pr l[;k e fun'kk d vude dk D;k dgr g \ m- vYxkfjFe

2- dEl;Vj e x.ku lfd;k fdl idkj dh tkrh g \

m- ckj ckj tkMdj

¼4½ mfpr lc/k tkfM, %&

(A)	(B)
1- 234 dk ^9 dk ijd** g	¼v½ 34
2- 1011 $ 1010	¼c½ 765
3- $(100010)_2$	¼l½ 10101

oLrfu"B & lkf[;dh

1- iFke nl ikdr l[;kvk dk lekrj ek/; gkrk g %&

¼v½ 4-5 ¼c½ 3-5 ¼l½ 5-5 ¼n½ 5 mÿkj %& ¼l½ 5-5

2- iFke ikp le ikdr l[;kvk dk lekrj ek/; gkrk g &

¼v½ 6 ¼c½ 5 ¼l½ 4 ¼n½ 3 mÿkj %& ¼v½ 6

3- iFke ikp fo"ke ikdr l[;kvk dk lekrj ek/; gkrk g &

¼v½ 3 ¼c½ 4 ¼l½ 5 ¼n½ 6 mÿkj %& ¼l½ 5

4- ;fn 3] 4] 5] x] 8 dk lekrj ek/; 4 g rk x dk eku gkxk &

¼v½ 1 ¼c½ 0 ¼l½ 3 ¼n½ 4 mÿkj %& ¼c½ 0

5- 4] 6] 5 dh ekf/;dk gkxh &

¼v½ 4 ¼c½ 5 ¼l½ 6 ¼n½ bue l dkb ugh

mÿkj %& ¼c½ 5

6- 3] 4] 5] 5] 4] 6] 3] 4] 2] 4] 6] 4 vkdMk e cgyd D;k gkxk &

¼v½ 3 ¼c½ 4 ¼l½ 5 ¼n½ 6 mÿkj %& ¼c½ 4

7- lekrj ek/;] ekf/;dk rFkk cgyd e lc/k g &

¼v½ cgyd ¾ 3 ef/;dk & 2 lekrj ek/;

¼c½ cgyd ¾ ef/;dk & lk- ek/;

¼l½ cgyd ¾ 3 ef/;dk & 2 lekrj ek/;

¼n½ cgyd ¾ 3 ef/;dk $ lk- ek/;

mÿkj %& ¼v½ cgyd ¾ 3 ef/;dk & 2 lekrj ek/;

8- ,d flDdk dk iN (*tail*) vku dh ikf;drk gkxh &

¼v½ 1- ¼c½ 2 ¼l½ $\frac{1}{2}$ ¼n½ $\frac{1}{3}$ mÿkj %& ¼l½ $\frac{1}{2}$

9- rk'k dh xMMh l ,d iRrk [khpu ij iku dk iRrk gku dh ikf;drk gkxh

¼v½ $\frac{1}{2}$ ¼c½ $\frac{1}{3}$ ¼l½ $\frac{1}{4}$ ¼n½ $\frac{1}{5}$ mÿkj %& ¼l½ $\frac{1}{4}$

10- vkdMk 3] 4]]2] 3] 4] x dk cgYkd 4 g rk x dk eku gkxk &

¼v½ 2 ¼c½ 3 ¼l½ 4 ¼n½ bue l dkb ugh

mÿkj %& ¼l½ 4

[kkyh LFkku Hkfj, &

1- ,d flDdk dk mNkyu ij 'kh"k vku dh ikf;drk ----------gkrk gA

mÿkj & $\frac{1}{2}$

2- cgyd ¾ 3 ef/;dk & 2 ----------A

mÿkj & lekrj ek/;

3- iFke nl ikdr l[;k dk lekrj ek/; ----------gkxkA

mÿkj & 5-5