

2007 (A)

Time : 4 Hrs.

D1G
B.Engg.Drwg.

Full Marks : 80

Pass Marks : 26

All questions from Group-A are compulsory.

xij -A ds l Hkh i l u vfuok; l gA

Write answer of Group-A with pen and at one place.

xij -A l sl Hkh i l ukads mUkj , d gh txg i s l sfy [ka

Answer **any four** from Gr.-B, and **any three** from Gr-C.

xij -B l sfdlgha plj rFkk xij -C l sfdlgha rhu i l ukads mUkj nA

Missing data if any may suitably be assumed.

; fn dkbZ vktMk Nvk gvk çhr gks rks ml s ; qDr l ær eku yA

Use HB pencil for Drawings.

Mkbx grq, p&ch i s l l y dk i z ksx djA

The figures in right hand margin indicate full marks.

i k' o z ds v d i wkked ds l pd gA

GROUP-A

1.(A) Choose the appropriate word/words given in the bracket : **1x10=10**

Directions: Answer the following questions in brief. Each question carries 10 marks.

(i) Lower case letters may be written within guidelines. (four / three)

Directions: Answer the following questions in brief. Each question carries 10 marks.

(ii) An ellipse has directrix / directrices. (one / two)

Directions: Answer the following questions in brief. Each question carries 10 marks.

(iii) When a cone is cut by a plane inclined at an angle with vertical greater than semi-vertical angle of the cone, the section is

(a parabola / an ellipse)

Directions: Answer the following questions in brief. Each question carries 10 marks.

(iv) Distance of a point on a curve from its directrix is equal to the distance from its focus. The curve must be (a parabola, hyperbola)

Directions: Answer the following questions in brief. Each question carries 10 marks.

(v) A straight line contained in both HP and VP. Top and front view of the line will be

(same / different)

Directions: Answer the following questions in brief. Each question carries 10 marks.

(a parabola / an ellipse)

(vi) Distance of a point from HP appears in

(plan / elevation)

, p-i h- l sfdl h fclnq dh njh ei i dV

gkrih gA ¼yku @ , fyos'ku½

(vii) To obtain plan and elevation on a paper, the HP

is always rotated so that second and fourth

quadrant are always

(opened / closed)

fdl h dlxt ij lyku , oa, fyos'ku dksn'kkZs dsfy, , p-

i h- dksbl i dklj ?kpk; k tkrk gSfd f}rh; , oa prfki kn

ges'kkA ¼ky tk; @cln gks tk; ½

(viii) When a straight line is rotated by keeping its

angle with HP constant, the height of the top

end of the line from ground line

(changes / remains constant).

fdl h l jy j[kk ds{k&rt ry l s>plko dksfLFkj j [krsqg

?kpkus ij ml ds 'kh'kz fclnq dh Åpkbz vk/kkj & j[kk l s

..... A ¼cny tkrh gS@ fLFkj jgrh g%

(ix) True length obtained by trapezoid method when

produced intersects the front view or front view

produced at (HT / VT)

l eyEc prkkz fof/k l s i klr j[kk dh okLrfod yEckbz

vkj j[kk ds ^, fyos'ku* dks c<kus ij feyk dVku 'fclnq

..... gks'k gA ¼ p(EVhE@HkhEVhE)½

(x) Auxiliary front view is drawn on an

(auxiliary inclined plane / auxiliary vertical

plane).

¼kdthyjh Ý/ 0; # ij i klr gks'k gA

¼kdthyjh vour ry @ vkDthyjh mnxzry½

(B) Write True for correct statement and False for wrong

statement : **1x10=10**

fuEufyf[kr okD; ka dsfy, l R; ; k vl R; tks mi; Pr gk fy[ka %

(i) Side view of an object is projected on a plane perpendicular to both HP and VP.

fdl h oLrqdk 'l kbM 0; w, d, s sry ij i klr gkrk gS tks

{kfrt, oamnxz nku ka rya ka ds yEcor-gkrk gA

(ii) Distance of a line in side view from the point of intersection of HP, VP and Profile plane is the shortest distance of the line from xy-line.

{kfrt] mnxz, oa i kQkby* rya ds dVku fclnq l s

fdl h jskk ds 'l kbM 0; w dh njh xy-jskk l s U; ure

gkrh gA

(iii) In an isometric projection, horizontal edges of an object are horizontal.

vkbl kefVd Mkbax eafdl h oLrqdk {kfrt fdukjk {kfrt gkrk gA

(iv) Development of lateral surfaces of a pyramid consists of a number of triangles in contact.

fdl h fi jkfeM ds ik' oLrykadk MoyieW vud l Eifdr f=Hkqt gkr's gA

(v) An oblique plane is inclined to HP only.

, d vkfCyd rd {kfrt, oamnxz nku ka rya l s > qk gkrk gA

(vi) When both plan and elevation are equal and parallel to the xy-line, the line must be horizontal.

fdl h j s [kk dk lyku , oa , fyos'ku nka j s [kk dh okLrfod
yEckbz ds cjkj vks xy-j s [kk ds l ekukurj gks rks j s [kk
vo'; gh {kfrt gkschA

- (vii) End view of a line is a point.

fdl h j s [kk dk ^, M 0; # (End view) , d fclnqgkrk gA

- (viii) A cone has one generator only.

fdl h 'kdlqdk dpy , d gh 'i ztud* gkrk gA

- (ix) Isometric view of a solid is drawn with true scale.

fdl h Bkl dk vkbl kesV'd i kst'D'ku okLrfod i ekus i j
[khp k tkrk gA

- (x) Development of lateral surfaces of a solid is used
in a found shop.

fdl h olrq/Bkl 1/2 ds i k' olrykadk MoyieW dk vuq z, kx
<ykbz?kj eagkrk gA

GROUP-B

Draw *any four* questions :-

6x4=24

fdllgha pkj i z uka dks cuk, j %&

2. Two points P and Q are in HP. The point P is 25 mm in front of VP, while the point Q is behind VP. The distance between end projectors is 80 mm and the line joining their top views make an angle of 45° with xy-line. Find the distance of the point Q from the VP. **6**

nksfclnqP vks Q , d {kfrt ry eagA fclnqP mnxzry l s25 mm
vks s gStcfd fclnqQ mnxzry ds i hNsgA nka fclnq/kadh i zki d
j s [kk, j 80 mm dh njh i j gA muds'VKW 0; # dksfeykusokyh j s [kk
xy-j s [kk l s 45° dk dks k cukrh gA fclnqQ dh mnxzry l snjh
Kkr djA

3. A point P is 20 mm in front of VP and 30 mm above HP.
Draw its auxiliary top view on a plane perpendicular to the
VP and inclined at 25° to the HP. **6**

P.T.O.

, d fclnqP mnxzry ds 20 mm vks, oa {kfrt ry l 30 mm
 Åij gA bl fclnqdk \vkDthyjh VKW 0; ð, d ry ij cuk, j tksfd
 mnxzry ds yEcor-gks rFkk {kfrt ry l 25° ij >plk gkA

4. Construct a plain-scale of R.F. 1 : 4000 to show a single metre and long enough to measure upto 500 metre. Show on it a length of 353 metre. **6**

, d lyu Ldsy cuk, j ftl dk vkjE, OE 1:4000 gks tks, d ehVj
 dh njh dkseki l ds vksj vf/kdre 500 ehVj dh njh i <+l dA bl
 i ekus ij 353 ehVj dks n'kkz, A

5. Draw the projection of a hexagonal pyramid, base 25 mm side and axis 55 mm long, having its base in the HP and one of the edges of its base perpendicular to the VP. **6**

, d l e"kvHkqt/k/kj fi jkfeM ds vk/kkj ds fdukj sdh yEckbZ 25 mm
 rFkk v{k dh yEckbZ 55 mm gA bl dk vk/kkj {kfrt ry ea gsvksj
 vk/kkj dk, d fdukj mnxzry ds yEcor-gA bl flFkr ea
 fi jkfeM dk i kstD'kuI cuk, A

6. A cone, diameter of base 45 mm and axis 50 mm long is resting on its base on HP. It is cut by a section plane, perpendicular to the axis of the cone, bisecting the axis. Draw sectional plan of the cone. **6**

, d 'kclqftl ds vk/kkj dk 0; kl 45 mm rFkk v{k dh yEckbZ 50
 mm gA vi us vk/kkj ij {kfrt ry ij flFkr gA bl s, d, s sry
 l s dkVx; k gA tks 'kclq ds v{k ij yEcor-gs rFkk tks v{k dks
 l ef}Hkfrtr djrk gA 'kclqdk l D'kuy lyku cuk, A

7. Construct a parabola of base 60 mm and rise 50 mm. **6**
- , d ijoy; cuk, j ftl dk vk/kkj 60 mm rFkk ÅpkbZ 50 mm gA

GROUP-C

Answer *any three* questions :-

12x3=36

fdlgharhu i tuka ds mUkj na %&

8. A line AB 80 mm long and lies in a plane perpendicular to VP and inclined at an angle of 45° with HP. The front view

P.T.O.

of the line is 60 mm long. The end A is in the VP and 25 mm in above the HP. Draw projections of the line and find

- inclinations with the reference planes
- its traces.

12

, d 80 mm yEch l j y j s k k , d , d s r y i j i w k z i l s f l F k r g s t k s m n x z r y i j y e c o r - r f k k { k f r t r y l s 45° i j > p h g a j s k k d s ^ Y / 0 ; i d h y E c k b z 60 mm g a j s k k d k , d N k j A m n x z r y e a g S r f k k { k f r t r y l s 25 mm A i j g a j s k k d s i z k i k a d k s c u k , j r f k k K k r d j a &

- fun k r y k a l s c u s d k s k
- j s k k d s V l d (Traces)

9. A cube of 40 mm long edges is resting in HP on one of its faces with a vertical face inclined at 30° to the VP. It is cut by a section plane perpendicular to the HP and inclined at 60° to the VP the section plane cuts the face which is inclined at 60° with the VP, in two equal halves. Draw the sectional front view and true shape of the section. 12

, d ? k u d s f d u k j s d h y E c k b z 40 mm g s v k s ; g { k f r t r y e a v i u s , d Q y d i j b l r j g i M t g s f d m l d k , d m n x z Q y d m n x z r y l s 30° d k d k s k c u k r k g a , d d k v u s o k y k r y t k s f d { k f r t r y d s y e c o r - g s v k s t k s m n x z r y l s 60° i j > p k g s ? k u d k s b l i d k j d k v r k g s f d ? k u d k o g Q y d t k s m n x z l s 60° i j > p k g s l e f } H k k f t r g k r k g a ? k u d k l d ' k u y , f y o s k u , o a ^ d k v * d k o k l r f o d v k d k j c u k , A

10. Draw development of lateral surfaces of a pentagonal pyramid, base 20 mm side and axis 50 mm long, resting on its base in the HP keeping one of the edges of its base parallel to the VP. A section plane perpendicular to the VP and inclined at 30° with the HP, cuts its axis 20 mm above the base. Assume lower portion of the pyramid removed. 12

, d l e i p h k q t f i j k f e M d h i k ' o z l r g k a d k M o y o e l / c u k , j f t l d s v k / k j d k , d f d u k j k 20 mm r f k k v { k 50 mm y e c k g s r f k k ; g

P.T.O.

vi us vk/kkj ij {kfrt ry ea [kMk gsrkfd bl ds vkekj dk , d fdujuk mnxzry ds l ekulrj gA , d dkVuokyk ry tismnxry ds yEcor-gsrFkk {kfrt ry l s30° ij >pk g\$ bl fi jkfeM dks vk/kkj l s 20 mm Åij dkVrk gA fupys fgLI s dks gV/k; k gV/k l e>A

11. Draw plan, elevation and isometric projection of a sphere of radius 20 mm resting centrally on the top surface of a rectangular prism of length, width and height 50 mm, 45 mm and 15 mm respectively. **12**

, d xkyk ft l dh f=T; k 20 mm g\$, d vk; rkdj fi Åie dh Åij h l rg ds Bhd chip ea fLFkr gA fi Åie dh yEckb] pkmkbz , oa Åpkbz Øe'k%50 mm, 45mm , oa 15mm gA bl h fLFkr ea l yku] , fyo\$ku , d vkb l kefv'd i kst'd' kul -cuk, A

12. A hexagonal pyramid, base 25 mm side and axis 50 mm long is resting on one of the edges of its base in the HP and parallel to the VP. Draw its projections and side view also. **12**

, d "kVHkqt: k/kkj fi jkfeM ds vk/kkj dk , d fdujuk 25 mm v{k\$ v{k 50 mm gA ; g vk/kkj ds , d fdujk s ij {kfrt ry ea fLFkr gsrFkk ; g fdujuk mnxzry ds l ekulrj Hkh gA bl fLFkr ea i {k\$ ka dks cuk, j rFkk l kFk gh ^1 kbM 0; Å Hkh cuk, A

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