[3761]-20

F. E. Examination - 2010

ENGINEERING GRAPHIC - II

(2003 Course)

Time : 4 Hours]   [Max. Marks : 100

Instructions :

(1) *Answer **any one** question from each unit.*

(2) *Answer to the **two sections** should be drawn on **separate drawing sheets**, use back side of sheet also.*

(3) *Figures to the right indicate full marks.*

(4) *Use of log table, electronic pocket calculator is allowed.*

(5) *Assume suitable data, dimensions if necessary.*

(6) ***Retain all construction lines;** marks are reserved for dimensioning and good presentation.*

SECTION - I

UNIT - I

Q.1) A line MN has its end point M 20mm in front of the V.P. and end point N 60mm in front of the V.P. Line is inclined to H.P. at 30°. Distance between the projectors of M and N is 75mm. Vertical trace of the line is 10mm above the H.P. Draw projections of the line and find its inclination with V.P. and its true length. Locate H.T. **[16]**

OR

Q.2) Two bulbs P and Q in a decoration of room are 0.5 meter and 1 meter above the ground respectively. 'R' and 'S' are two walls of room at right angles. Bulb P is 0.3 meter from wall 'R' and 0.6 meter from the wall 'S'. Bulbs Q is 1.5 meter from wall 'R' and 2 meter from the wall S. Draw the projections of bulb and determine the true distance between the bulbs P and Q. **[16]**

UNIT - II

Q.3) A trapezium ABCD having larger parallel side AB=60mm, smaller parallel side CD=30mm and height 50mm is kept in H.P. on its side AB in such a way that its top view appears as another trapezium of same parallel sides but of height 30mm. Draw the projections of the trapezium when the side in H.P. makes an angle of 50° with V.P. [17]

OR

Q.4) A regular pentagon of 30mm sides is resting on one of its sides on V.P. such that it is parallel to and 15mm above the H.P. If the highest corner of the pentagon rests on the H.P., draw its projections and find the angle made by the plane with the V.P. [17]

UNIT - III

Q.5) A hexagonal pyramid, side of base 30mm and axis length 60mm is kept on the H.P. on one of its base edges in such a way that the triangular face containing that base edge is vertical. Draw the projections of the pyramid when the triangular face which is vertical is parallel to V.P. and away from it. [17]

OR

Q.6) A square prism, side of base 30mm and axis length 60mm is kept on the V.P. on a corner of its base such that one of the solid diagonals of the prism is parallel to V.P. and inclined at 30° to the H.P. Draw the projections of the prism. [17]

SECTION - II

UNIT - IV

Q.7) A cone of base diameter 50mm and axis length 70mm is kept on the ground on one of its generators so that the axis is parallel to the V.P. It is cut by a section plane perpendicular to the H.P., inclined at 30° to the V.P. and intersecting the axis at a point 25mm from apex. Draw the T.V., sectional F.V. and the true shape of the section. [16]

OR

Q.8) A equilateral triangular prism, side of base 40mm and axis length 75mm is lying on the H.P. on one of its longer edges with its axis parallel to V.P. It is cut by an AVP in two equal halves in such a way that true shape of the section is an isosceles triangle of base 70mm. Draw T.V., sectional F.V. and true shape of the section. [16]

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UNIT - V

Q.9) A cylinder of diameter 40mm and axis length 70mm is kept on the H.P. on its base. A square hole of side 20mm, the axis of which is parallel to both H.P. and V.P. is drilled through the cylinder. Axis of the square hole is at center height and is 10mm in front of the axis of the cylinder and all rectangular faces of the square hole are equally inclined to H.P. Draw the DLS of the cylinder. [17]

OR

Q.10) A frustum of a hexagonal pyramid, side of base 40mm, side of the top edge 20mm and height 45mm is resting on its base in H.P., with one of its edges of base perpendicular to V.P. A piece of wire is stretched round the slant surface from the corner of base nearest to the observer to the point on the top-face opposite to the corner point on the base. Show the wire in the elevation and plan. [17]

UNIT - VI

Q.11) A vertical square prism of 40mm edge of the base and 80mm axis is resting on its base on the H.P. in such a way that one of the edges of the base makes an angle of 30° with the V.P. The prism is penetrated by a cylinder with the axis parallel to H.P. and V.P. The diameter of the cylinder is 50mm and axis is 10mm in front of the axis of the prism and is 40mm away from the H.P. Draw three views of arrangement showing the curves of intersection. [17]

OR

Q.12) A cone of base diameter 50mm and height 60mm is resting on the H.P. on its base. A square prism of side of base 25mm and axis length 65mm penetrates the cone horizontally. Axis of the prism is parallel to V.P., 25mm above H.P. and 6mm in front of the axis of the cone. All the rectangular faces of the prism are equally inclined to V.P. Draw the projections of solids showing curves of intersection. [17]