16028(J)   J-16

B. Tech 2nd Semester Examination

Engineering Graphics and Drawing (NS)

BE-103

Time : 3 Hours   Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : (i) A drawing Sheet is needed to attempt this question paper.
        (ii) Attempt five questions in all, select one question from each sections A, B, C and D. Section E is compulsory.

SECTION - A

1. Draw a Vernier scale of RF = 5 to read 1/5 cm and 1/25 cm and to measure upto 5 cm. Mark on the scale distance of 2.12 cm   (20)

2. A straight line AB 60mm long has its end A in both H.P and V.P. The straight line is inclined at 30° to V.P, and 45° to H.P Draw its Projections.   (20)

SECTION - B

3. Draw the projections of a cylinder 75 mm diameter and 100 mm long, lying on the ground with its axis inclined at 30° to the V.P. and parallel to the ground.   (20)

4. A right regular pentagonal pyramid side of base 30 mm and height 65 mm lies on one of its triangular faces on H.P., such that its axis is parallel to V.P. A section plane perpendicular to V.P. and parallel to H.P. cuts its axis at point 7 mm away from its base. Draw its front view and sectional top view.   (20)

[P.T.O.]

SECTION - C

5. A right hexagonal pyramid is of 50 mm high and 20 mm side base. A hole of 10 mm diameter is drilled through the pyramid at right angles to its axis and at a height of 15 mm from the base. Develop the lateral surface of the pyramid.   (20)

6. A cylinder, 50 mm diameter of base and 100 mm height is centrally penetrated by a cone, 50 mm diameter of base and 75 mm height. The axis of cylinder which is vertical, cuts the axis of the cone which is horizontal at 30 mm from the base of the cone. Draw the front view and the side view showing the curves of penetration.   (20)

SECTION - D

7. Draw the isometric view of the given Fig. 1.

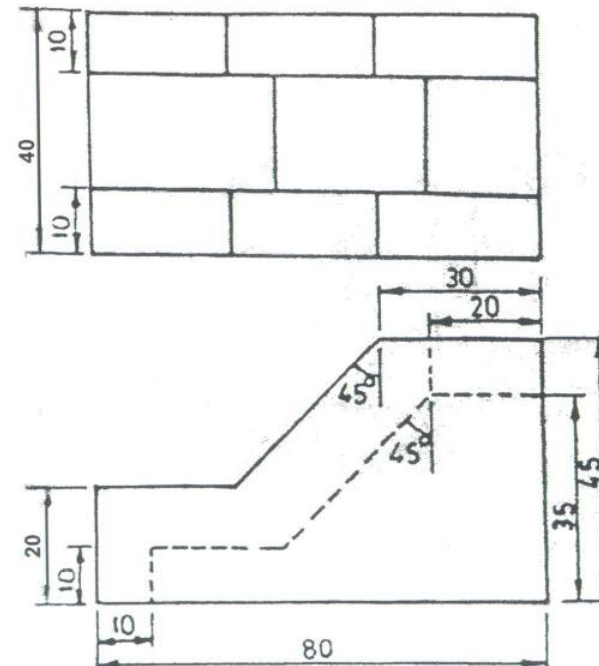Fig. 1   (20)

8. Determine the magnitude of forces in the simple truss given in the Fig. 2 using Graphical method.   (20)
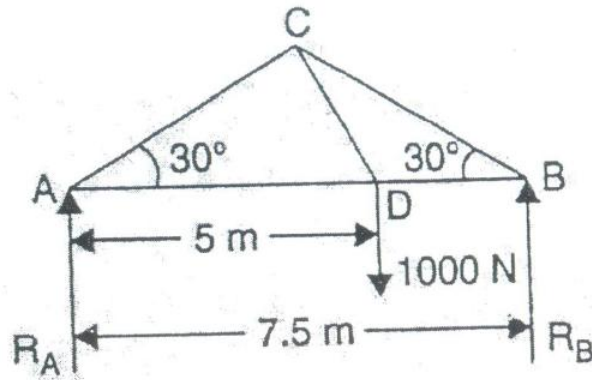

Fig. 2

SECTION - E

9. Reply the following (Fill in the blanks/tick the right one/define/draw)

(a) Write the name of the different types of scale.

(b) What is the difference between prism and pyramid?

(c) If a solid rests on an edge of its base on V.P., it must be kept perpendicular/parallel to H.P.

(d) The ratio of the length of the drawing of the object to the actual length of the object is called...................

(e) When a sphere is cut by a sectional plane, the true shape of the section is.......................

(f) The intersection between a solid body and a straight line is a point/line.

[P.T.O.]

(g) The isometric view is in the ratio of.................of the true length.

(h) In the first angle projection we assume the object to be situated in front of the..................and above the.............

(i) In isometric projection, the receding lines are drawn with the horizontal at 45° /30° /60°.

(j) When a line is parallel to both the H.P. and V.P., it has H.T./V.T./No Trace.   (10×2=20)