Total No. of Questions : 9] [Total No. of Printed Pages : 4

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BE–105

B. E. (First Semester) EXAMINATION, April, 2009

(Common to all Branches)

ENGINEERING GRAPHICS

(BE—105)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt any *one* question from Unit I to Unit IV. Q. No. 9 is compulsory. Attempt all questions in drawing sheet only. Assume suitable missing/misprint data, if necessary.

Unit—I

1. (a) Draw a plain scale to measure a maximum length of 10 km and to read in kilometre and hectometre. Mark on this scale a length of 3·6 km. Take R. F. = 1 : 80,000. 10

   (b) The major axis of an ellipse is 150 mm long and minor axis 100 mm long. Find the foci and draw the ellipse by arc of circle method. 10

Or

2. (a) A 3·2 cm long line represents a distance of 4 m. Extend the line to measure up to 25 m and show on it units of m and 5 m. Show a length of 16 m on this line. 10

P. T. O.

(b) A circle of 50 mm dia. rolls on the outer side of t circumference of another circle of 175 mm dia. Tra the locus of a point on the circumference of the rollir circle for one complete revolution. Name the cur traced.

Unit – II

3. Draw projections and find out the true length of a line A with end B on H.P. and 40 mm in front of V. P. AB inclined at 30° to H.P. and 45° to V. P. and its plan measure 50 mm. 2

Or

4. Two apples on a tree are respectively 1·8 m and 3 m abov the ground and 1·2 m and 2·1 m from a 0·3 m thick wa but on the opposite side of it. The distance between th apples along the wall is 2·7 m. Determine the true distanc between the apples. 2

Unit – III

5. (a) A regular hexagonal thin plate of 45 mm side has a circular hole of 45 mm dia in its centre. It is restin on one of its side on H. P. Draw its projections whe the plate surface is vertical and inclined at 30° to the V. P. 1

(b) Draw the projections of a cylinder 75 mm dia and 10 mm long, lying on the ground with its axis inclined a 30° to the V. P. and parallel to the ground. 1

Or

6. (a) A rectangular lamina ABCD of side 60 mm × 30 mm has its side in H.P. and inclined at 60° to V. P. and the plane of the lamina is inclined at 60° to the H. P. Draw its projection. 10

(b) A right circular cone, diameter of base 40 mm and height 52 mm is held on its base on ground such that its axis is inclined at 45° to V. P. and is parallel to the H. P. Draw its projections when its axis is turned away from the V. P. 10

Unit – IV

7. (a) A square pyramid, base 40 mm side and axis 65 mm long has its base on the H. P. and all the edges of the base equally inclined to the V. P. It is cut by a section plane perpendicular to the V. P. and inclined at 45° to H. P. and bisecting the axis. Draw the sectional top view and true shape of the section. 10

(b) Draw the development of the surface of the part P of the cube whose front view is shown below. 10

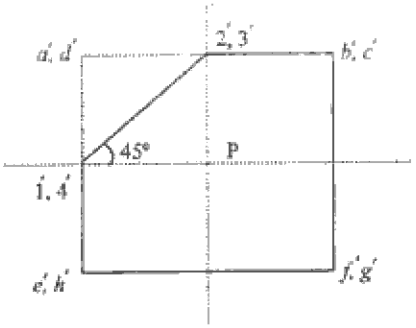


Fig. 1

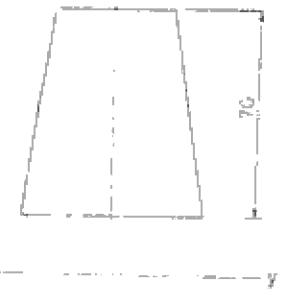
Or

8. (a) A cube of 35 mm long edge is resting on H. P. on one of its faces with a vertical face inclined at 30° to the V. P. It is cut by a section plane parallel to the V. P. and 9 mm away from the axis. Draw its sectional front view and top view. 10

(b) A vertical cylinder of 80 mm diameter is completely penetrated by another cylinder of 60 mm dia, their axes bisecting each other at right angles. Draw their projections showing curves of penetration, assuming the axis of the penetrating cylinder to be parallel to the V. P. 10

Unit – V

9. (a) Draw the isometric view of the frustrum of the co as shown in the following figure.



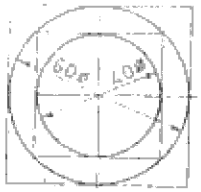


Fig. 2

Or

Draw the isometric projection of a sphere (R = 25 mm) resting centrally on top of a square prism (Base = 60 mm, height = 20 mm) as shown below.

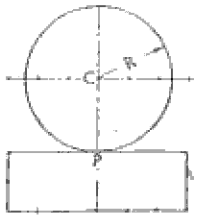


Fig. 3

(b) Give *two* limitations of manual drawing and *three* advantages of computed aided drawing and drafting. 5

(c) Name and explain any *five* edit commands used in AutoCAD. 5