

B.Tech. (Model Curriculum) Sem-I
ESC102 - Engineering Graphics & Design

P. Pages : 2

Time : Four Hours



GUG/W/22/13168

Max. Marks : 80

- Notes :
1. All questions carry equal marks.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data wherever necessary.
 4. Illustrate your answers wherever necessary with the help of neat sketches.
 5. Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.
 6. Retain the construction lines.

1. a) Construct a triangle ABC of sides AB = 80 mm, BC = 60 mm and CA = 50 mm. Draw the parabola passing through all vertices of a triangle. **8**
- b) A line AB 70 mm long is so placed that its side view measures 70 mm. Its end A is 10 mm above HP and 15 mm in front of VP. Draw the projection of line when it is inclined at 40° to HP. **8**

OR

2. a) A point P moves in such that sum of its distances from two fixed points A and B which are 90 mm apart remains constant. When P is at equal distances from A and B, its distance from each one is 57 mm. Draw the path traced by the point P. **8**
- b) The projector distance between ends of line AB is 60 mm. The end A is 20 mm above HP and 18 mm in front of VP. The front view and top view is inclined at 50° and 35° respectively to reference line. Draw the projections and find true length, inclination with HP and VP of line. **8**
3. a) A regular hexagon at 40 mm side is resting on one of its sides on the HP having that side parallel to and 25 mm in front of VP. It is tilted about that side so that its highest side rests in the VP. Draw the projections. **8**
- b) A thin 30°-60° set square has its longest side 80 mm long is in HP and inclined at 40° to the VP. Its surface makes an angle of 45° with the HP. Draw its projections. **8**

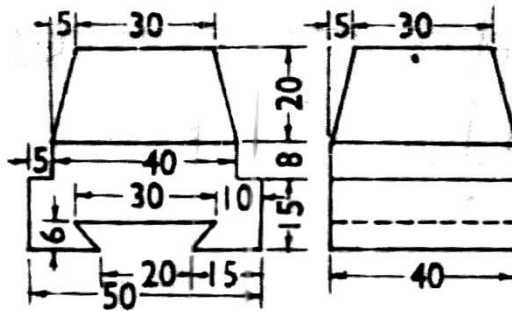
OR

4. Draw the three views of cube of solid diagonal 65 mm long such that true length of solid diagonal is seen in both F.V. and T.V. **16**
5. A tetrahedron of 60 mm long edges rests on one of its faces on HP and an edge is perpendicular to VP. A sectional plane perpendicular VP cuts the tetrahedron such that true shape of section is an isosceles triangle of base 50 mm and altitude 36 mm. Draw the FV, TV and true shape of section. Also find inclination of section plane with HP and draw the development of retained part of tetrahedron. **16**

OR

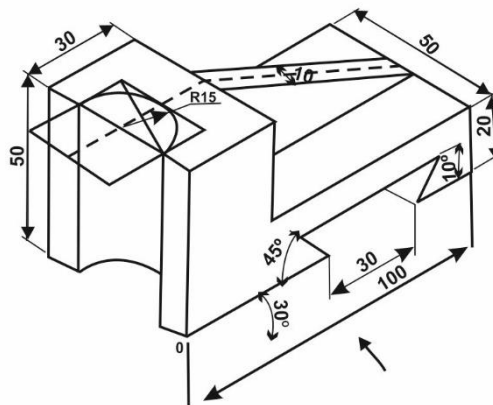
6. A right circular cone of base 50 mm and axis 65 mm is resting on its base on HP. It is cut by AVP inclined at 45° and 10 mm away from axis. Draw the sectional front view and true shape of section. Draw the development of remaining portion of cone. 16

7. Draw the Isometric view of the following whose front and left hand side views are given. 16



OR

8. Draw F.V. T.V. and LHSV of the object whose Isometric view is given in the following fig. 16



9. a) What is AUTOCAD? What are the uses of AUTOCAD? 5
- b) Explain the purpose and applications of computer graphics in technology? 5
- c) Explain the various steps to draw a Pentagonal prism of 40 mm side and 90 mm axis standing on its base on ground, using computer aided drawing. 6

OR

10. a) What is the use of variants in AutoCAD? 5
- b) What is layer in AUTOCAD? How empty layers are removed in CAD drawing? 5
- c) Explain the following commands in AutoCAD in brief. 6
- CLOSEALL
 - DIMRADIUS
 - BACKGROUND
