B.E. / B.Tech. (All Branches) (Model Curriculum) Semester-I & II
ESC102 - Engineering Graphics & Design

P. Pages : 3

Time : Four Hours   ‖‖‖‖‖ *6461*   Max. Marks : 80

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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.   Attempt Q. 1 or 2, Q. 3 or 4, Q. 5 or 6, Q. 7 or 8, Q. 9 or 10.
         6.   Retain the construction lines.

1.   a)   Two fixed points A and B are 100 mm apart. Trace the complete path of a point P moving (in the same plane as that of A and B) in such a way that, the sum of its distances from A and B is always the same and equal to 120 mm. Name the curve.   **8**

     b)   The point C of line CD is 10 mm above HP and is 25 mm infront of VP, while the end D is 70 mm infront of VP and 60 mm above HP. Draw the projections of line if the line is inclined at 45º HP. Determine the true length and inclination of line with VP.   **8**

OR

2.   a)   A circle 40 mm diameter rolls on a straight line without slipping. Plot and name the locus of a point lying on the circumference of circle for one complete revolution. Initially the point was at left most position on the circumference of circle.   **8**

     b)   The front view of a 70 mm long line PQ measures 55 mm. P is 20 mm in front of VP and 10 mm above HP. Q is 65 mm above HP and is infront of VP. Draw the projections of CD and find its inclinations with the HP and VP.   **8**

3.   a)   The front view of a plane figure is a line inclined at 45º to xy and its TV is a regular hexagon of sides 30 mm with one side of it is parallel to xy. Draw FV and TV. Also find its true shape.   **8**

     b)   Draw a rectangle of 50mm×30mm longer side making an angle of 35ºwith reference line xy in top view. Corresponding to this draw any quadrilateral in the front view. These two views represent the front view and top view of a quadrilateral thin plate. Determine true shape of the plate.   **8**
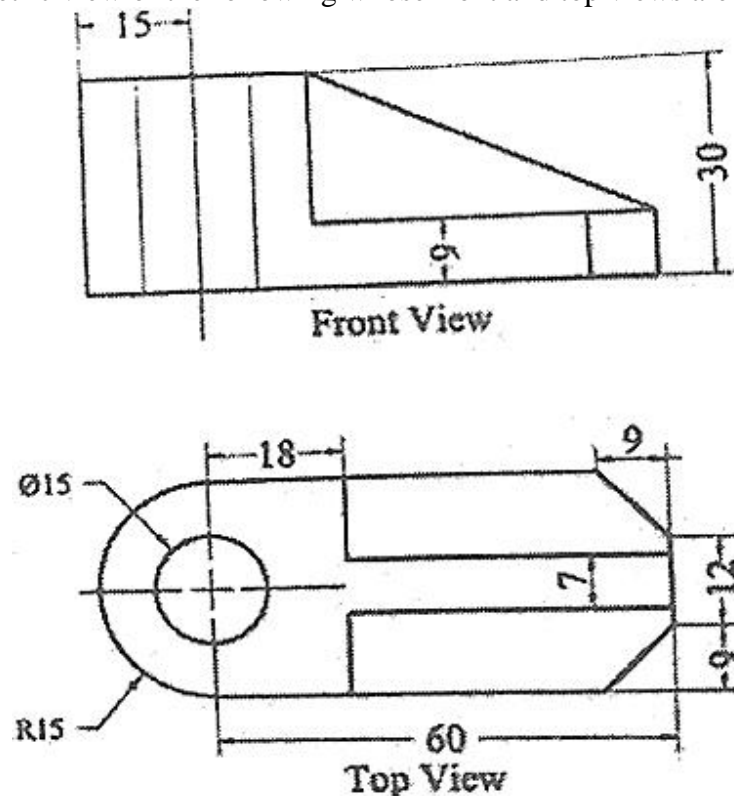
OR

4.   A pentagonal pyramid, base 40 mm side and height 75 mm rests on one edge of its base on the ground so that the highest point in the base is 25 mm above the ground. Draw its projections when the axis is parallel to the VP. Draw another front view on a reference line inclined at 30º to the edge on which is resting and so that the base is visible.   **16**

5.   A tetrahedron of 60 mm long edges rests with 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 any one part of tetrahedron.   **16**
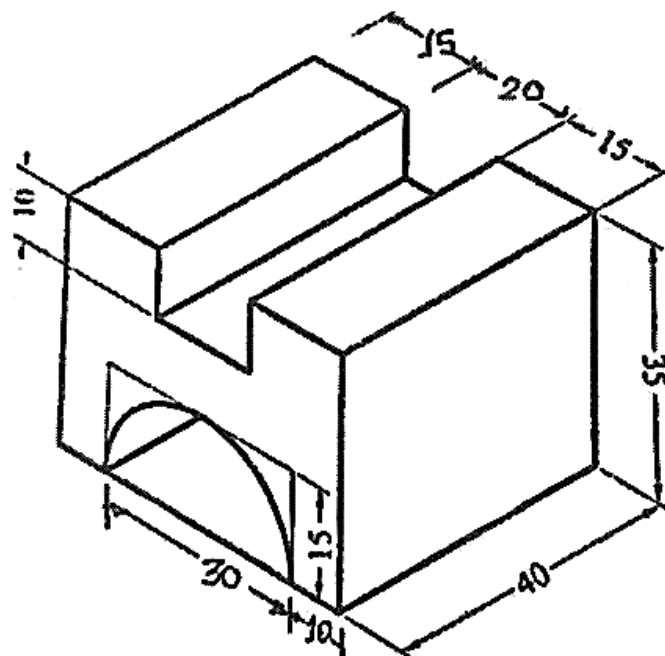
OR

6. A cone base 75 mm diameter and axis 100 mm long has its base on the ground. A section **16** plane parallel to one of the end generators and perpendicular to the VP cuts the cone intersecting the axis at a point 75 m from the base. Draw the sectional top view, true shape of section and develop the retained portion of cut cone.

7. Draw the Isometric view of the following whose front and top views are given. **16**

Front View

Top View

OR

8. Draw F.V, T.V and RHSV of the object whose Isometric Views is given in the following **16** fig.

9. a) What is graphical communication in technology? **5**

b) Explain the purpose and applications of computer graphics in technology? **5**

c) Explain the various steps to draw a triangular prism of 40 mm side and 100 mm axis standing on its base o ground, using computer aided drawing. **6**

OR

10. a) What are the difference methods to draw circle in AutoCAD? Explain any one in detail. **5**

b) How empty layers are removed on CAD drawings? **5**

c) Explain the following commands in AutoCAD in brief. **6**

i) COPY

ii) ROTATE

iii) MOVE

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