VASAVI COLLEGE OF ENGINEERING (*Autonomous*), HYDERABAD
B.E. (CBCS) II-Semester Old Examinations, May/June-2018

Engineering Graphics-II
(Civil, EEE & Mech. Engg.)

Time: 3 hours   Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part A (10 x 2 = 20 Marks)

1. Discuss the need for sectioning of solids in engineering practices.

2. Define an Auxiliary inclined plane and an auxiliary vertical plane.

3. List out the methods for the development of i) Prisms and Cylinders ii) Pyramids and Cones.

4. What is the radial length and included angle for the development of cone of size 60 mm base diameter and 60 mm axis length?

5. What are Key points? Discuss their importance in intersection of surfaces.

6. Describe the conditions in which the curve of intersection between a cone and a cylinder is represented by a straight line.

7. Draw an isometric view of a semicircular plane with 70mm diameter, when it is kept on a horizontal plane.

8. Define isometric axes and isometric planes.

9. List all the orthographic views that are possible to draw from an isometric view.

10. Draw the representation of First angle and Third Angle Projections.

Part B (5 × 10 = 50 Marks)

11. a) Distinguish between truncated solid and frustum of a solid.   [3]

    b) A pentagonal prism of base side 30 mm and axis length 60 mm is resting on HP on one   [7]
       of its rectangular faces, with its axis perpendicular to VP. It is cut by a plane inclined
       at 50° to VP and perpendicular to HP and passing through a point 25 mm from rear
       base of the prism. Draw its top view, sectional front view and true shape of section.

12. a) Develop all surfaces of a cube of 40 mm side   [4]

    b) A hexagonal pyramid with side of base 30 mm and height 75 mm stands with its base   [6]
       on H.P and an edge of the base parallel to V.P. It is cut by a plane perpendicular to
       V.P, inclined at 45° to H.P and passing through the mid-point of the axis. Develop the
       lateral surface of the truncated pyramid.

13. a) Explain the methods of determining the curves of intersection.   [3]

    b) A vertical cylinder of diameter 120 mm is fully penetrated by a cylinder of diameter   [7]
       90 mm, their axes intersecting each other. The axis of the penetrating cylinder is
       inclined at 30° to the HP and is parallel to the VP. Draw the top and front views of the
       cylinders and the curves of intersection.

14. a) What is the relation between true length and isometric length?   [3]

    b) A right circular cone of base diameter 60mm and height 75mm is cut by a plane making   [7]
       an angle of 30° with the horizontal. The plane passes through the mid-point of the
       axis. Draw the isometric view of the truncated solid.

15. The pictorial view of an object is shown in the Fig 1. Draw the following orthographic view in the x direction shown by using First Angle Method of projection.

    i) Front view [4]
    ii) Top view [3]
    iii) Left hand side view. [3]

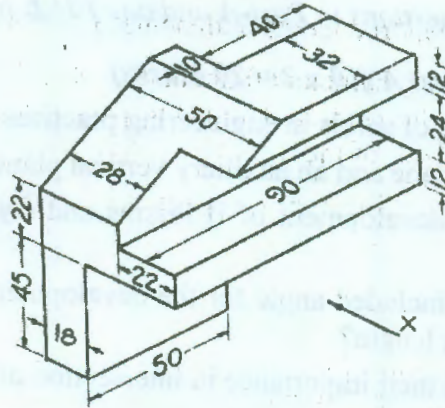

Fig:1
All dimensions are in mm.

16. a) Draw the development of lateral surface of a square pyramid standing on its base on HP with a base side inclined at 30^0 to VP. Side of the base 40 mm and axis 60 mm. [5]

    b) A hexagonal prism of base side 30 mm and axis length 60 mm is resting on HP on one of its bases with two of the vertical faces perpendicular to VP. It is cut by a plane inclined at 60° to HP and perpendicular to VP and passing through a point at a distance 12 mm from the top base. Draw its front view and sectional top view. [5]

17. Answer any *two* of the following.

    a) A T-pipe connection consists of a vertical cylinder of diameter 80mm and a horizontal cylinder of the same size. The axes of the cylinders meet at right angles. Draw the curves of intersection? [5]

    b) Draw the isometric views of a pentagonal plane of 30 mm side when the surface is (i) parallel to V.P and (ii) Parallel to H.P. [5]

    c) The pictorial view of an object is shown in the Fig 2. Draw the following orthographic views in the x direction shown by using first angle method of projection? [5]
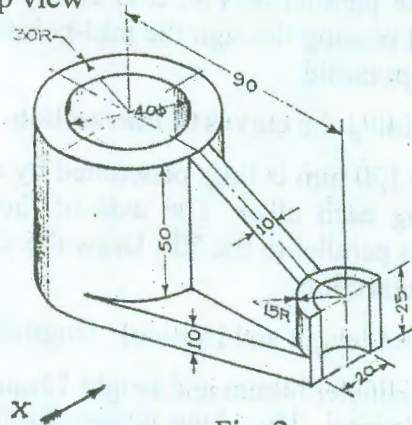   i) Front view   ii) Top view

All dimensions are in mm.
Fig. 2.

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