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D – 5367

Reg. No. :

Name :

**Combined First and Second Semester B.Tech. Degree Examination,
March 2018
(2008 Scheme)
08.104 : ENGINEERING GRAPHICS (CMNPHERARUFBS)**

Time : 3 Hours

Max. Marks : 100

Instructions : i) Answer **any two** questions from **each** Module.
ii) **First angle projection** to be followed.

Module – I

(16×2=32 Marks)

1. A suspension bridge has a span of 10 m and a dip of 2 m at the centre. Draw the shape of the bridge assuming it as parabolic.
2. A bicycle of wheel diameter 650 mm passes over a segment of an arched culvert of radius 2.5 m. Draw the locus of a point P on the circumference of one of the wheels for one complete revolution.
3. The mid-point of a 120 mm long line PQ is 50 mm above HP and 40 mm in front of VP. The end P is 15 mm above HP and 10 mm in front of VP. Draw the projections of the line PQ and locate its traces.

Module – II

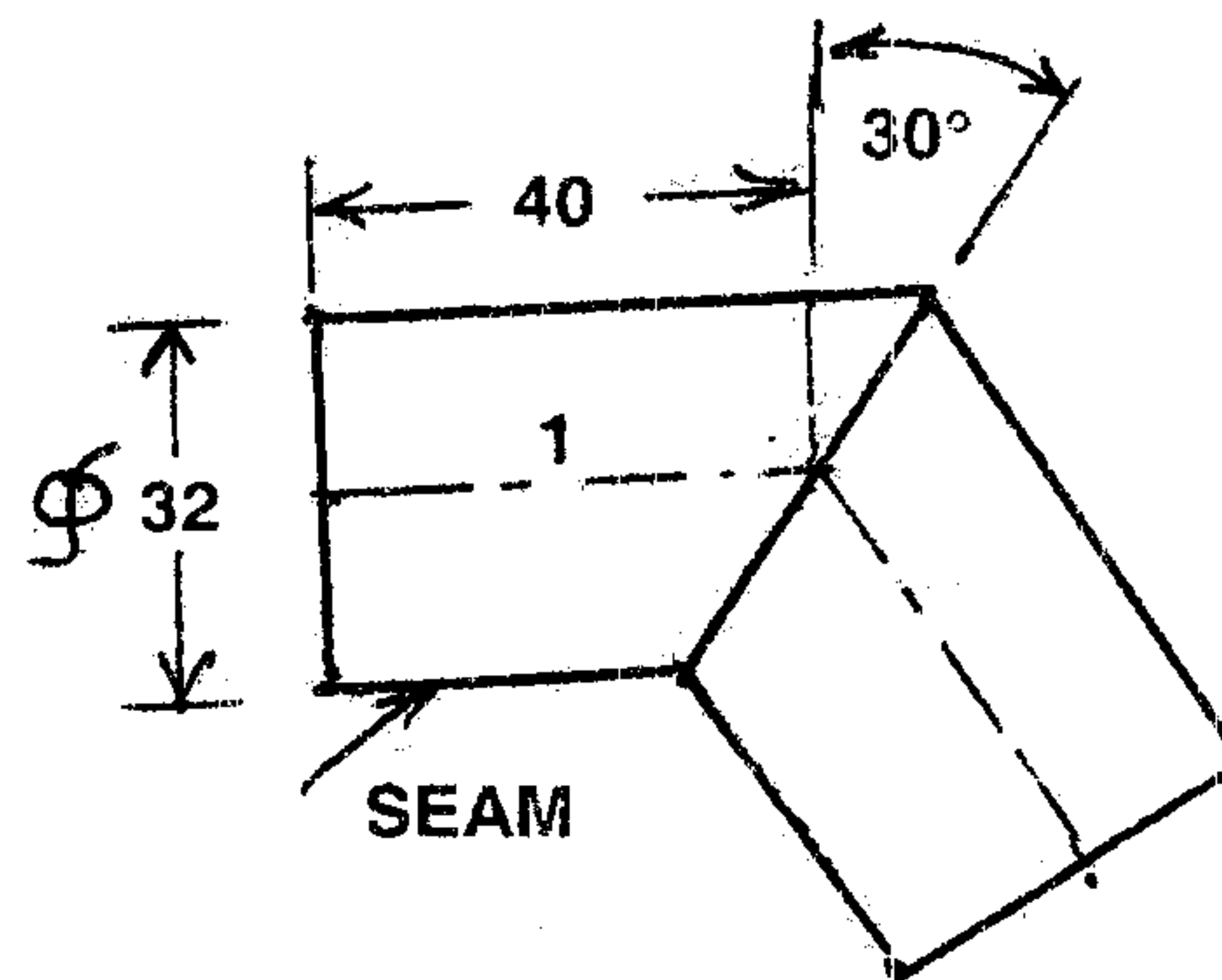
(17×2=34 Marks)

4. A square pyramid with side of base 40 mm and height 80 mm is suspended freely from a point on a slant edge at a distance of 20 mm from its apex. The top view of the axis of the pyramid is inclined at 30° to the xy-line. Draw the projections of the pyramid.
5. A tetrahedron of 50 mm edge is lying on HP on one of its faces with an edge perpendicular to VP. It is cut by a section plane perpendicular to VP so that the true shape of the section is an isosceles triangle of base 40 mm long and altitude 32 mm by removing the upper portion of the solid. Draw the sectional top view and the true shape of the section.

P.T.O.



6. A sheet-metal pipe elbow is shown in Fig. 1. Develop the inside pattern for piece 1.



PIPE ELBOW

Fig. 1

Module – III

(17×2=34 Marks)

7. A sphere of diameter 30 mm rests centrally on the top plane surface (ϕ 30 mm) of the frustum of a cone of height 60 mm and base diameter 60 mm. Draw the isometric view of the solids.
8. A right cylinder of ϕ 69 mm base and 90 mm long resting on its base on HP, is penetrated by a square prism of 36 mm base edge and 90 mm long, such that the axes of the solids bisect each other at right angles. The faces of the prism are equally inclined to the VP. Draw the projections of the solids showing curves of intersection.
9. Draw the perspective view of a right regular pentagonal prism, edge of base 25 mm and 60 mm long, lying on the ground on one of its rectangular faces such that its axis is inclined at 30° to the picture plane and one of its vertical edges touches the picture plane. The station point is 80 mm in front of the picture plane and lies in a central plane bisecting the axis. The horizon is at the top rectangular face of the prism.