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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2017

Program: B.Tech. (ADE, APE UP, CIVIL, FSE, mech., Mechatronics, GSE, GIE, Mining)

Semester – I

Subject (Course): Engineering Graphics

Max. Marks : 100

Course Code : MECH1001

Duration : 3 Hrs

No. of page/s: 2

SECTION A (4x5=20)

Q1. Define solid. Explain types of solid

Q2. Explain the frustum of the solid. Give suitable example.

Q3. A line is 50mm long, whose front view is a point and 20mm above XY line. Draw its projection and show the position with respect to reference planes. One end of the line is 30mm below XY line.

Q4. Draw the line to represent the following;

- Centre or centroid axis.
- Cutting or section plane
- hidden edge
- hatching

Section B (4x10= 40)

Q5. A pentagonal prism is resting on the HP by one of the sides. The axis is inclined 45° with the HP. Draw the projections. Take length of side 25mm and axis 55mm.

Q6. Point A is 20mm above the HP and 30 mm in front of VP. Point B is 25 mm below HP and 40 mm behind of VP. The distance between the projectors is 60 mm. draw the projections and join their front views and top views.

Q7. Draw the projections of a regular hexagon of 25 mm side, perpendicular to the V.P. and its surface making an angle of 45° with the H.P.

Q8. The top view of 75mm long line AB measures 65 mm, while the length of its front view is 50mm. Its one end A is in the HP. and 12mm in front of the VP. Draw the projections of AB and find its inclination with the HP and VP.

OR

The projectors through the traces of a line are 80 mm apart and those through the ends of the line PQ are 55 mm apart. The End P of the line is 15 mm above the HP. The views of the line from top and from the front make 40° and 30° respectively with the XY line. Draw the projections of the line.

SECTION C (2x20=40)

Q9. 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., inclined at 45° to the H.P. and bisecting the axis. Draw its sectional top view and true shape of the section.

Q10. A plate having shape of an isosceles triangle has base 50 mm long and altitude 70 mm. It is so placed that in the front view it is seen as an equilateral triangle of 50 mm sides and one side inclined at 45° to XY. Draw its top view.

OR

- a. A pentagonal pyramid, base 25 mm side and axis 50 mm long has one of its triangular faces in the VP. Draw the projections.
- b. A line AB, 80 mm long, is inclined at 40° to the HP and 38° to the VP. Its end B is in the HP and 40 mm in front of the VP. Draw its projections and determine its traces