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Reg. No.:.....

Name:.....

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIRST/SECOND SEMESTER B.TECH DEGREE SPECIAL EXAMINATION, SEPT 2016

Course Code: BE110

Course Name: ENGINEERING GRAPHICS

Max. Marks: 50

Duration: 2 Hours

PART A

Answer ANY ONE question (11 Marks)

1. The front and top views of an 80 mm long line PQ measures 70 mm and 60 mm, respectively. The end P is on the HP and the end Q is in the VP. Draw the projections of line PQ and determine its inclinations with the HP and the VP. Also, locate the traces.
2. A room is 4.8 m x 4.2 m x 3.6 m high. Determine graphically, the distance between a top corner and the bottom corner diagonally opposite to it.

PART B

Answer ANY THREE Questions (13 marks each)

3. A square pyramid of base side 30 mm and axis length 60 mm is resting on HP on one of its triangular faces with its axis parallel to VP. Draw its projections.
4. A frustum of a cone of base diameter 50 mm, top diameter 30 mm and height 45 mm is resting upon its base on HP. Draw the isometric projection of the frustum.
5. A pentagonal prism, having a base with a 30 mm side and a 70 mm long axis, is resting on its base on H.P. such that one of the rectangular faces is parallel to the V.P. It is cut by an auxiliary inclined plane making an angle 45° with the H.P. and passes through the midpoint of the axis. Draw the sectional top view, true shape of the section and the development of the lateral surface of the truncated prism.
6. A horizontal cylinder of 50 mm diameter and 100mm long penetrates a vertical cylinder of 80mm diameter and 120mm long resting on HP. The axis of the horizontal cylinder is parallel to VP and 60 mm above the HP. Draw the projection showing the curve of the intersection.

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PART A

Answer ANY ONE question. (1 x 11 = 11 Marks)

1. The ends of a line AB are 50 mm and 20 mm above HP. The length of its elevation is 70 mm and its VT is 10 mm above HP. The line is inclined at 40° to VP. Find its true length and true inclination with HP. Also locate its traces.
2. The midpoint of a line AB measuring 80 mm is 50 mm above HP and 30 mm in front of VP. The line is inclined at 45° to HP and 30° to VP. Draw the projections and find the length of plan and elevation.

PART B

Answer any 3 Questions (3 x 13 = 39 Marks)

3. A square prism of base side 30 mm and length 50 mm has a base edge on VP, axis inclined at 35° to VP and the resting base edge is inclined at 45° to HP. Draw the projections of the solid.
4. A hemisphere of diameter 80 mm is resting on the ground with its flat surface facing upwards. A square pyramid having side of base 40 mm and axis 60 mm is resting on its base centrally on top of the hemisphere. Draw the isometric projection of the combination of solids.
5. A right circular cone of base diameter 60 mm is cut by a section plane so that the true shape of the section is a parabola of maximum double ordinate 50 mm and vertex of the parabola is 70 mm from this ordinate. Draw the front view, sectional top view and true shape of the section.
6. A cube of 25 mm side is placed vertically with its top face on an auxiliary ground plane, which is at a height of 45 mm above the horizon plane. The nearest vertical edge of the cube touches the picture plane and the adjacent square faces of this edge are equally inclined to the picture plane. Draw the perspective view of the cube, if the station point is 70 mm in front of the picture plane and lies in a central plane which is 30 mm to the right side of the centre of the cube.