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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S1 (S,FE) S2 (S,FE) Examination December 2025 (2019 Scheme)

Course Code: EST110

Course Name: ENGINEERING GRAPHICS

(2019 -Scheme)

Max. Marks: 100 Duration:3 Hours

Instructions: Retain Construction lines. Show necessary dimensions.

Answer any ONE question from each module. Each question carries 20 marks.

MODULE 1

1 A line PQ 90mm long is inclined 30° to HP and 45° to VP. One end of the line is 10mm above HP and 15mm in front of VP, while the other end is in third quadrant. Draw the projections of line and find the apparent angles with HP and VP.

2 The distance between end projectors of the line AB, when measured parallel to XY line is 60mm. Point A is 10mm above HP and 20mm in front of VP, the other end point B is 50mm above HP and 65mm in front of VP. Draw the projections and find its true length and true inclinations with HP and VP. Also locate its traces.

MODULE 2

3 A square pyramid of base edge 30mm and axis 60mm resting on one of its slant edges on HP, such that top view of the axis is seen inclined 45° with XY line. Draw the projections of square pyramid.

4 A cone of base diameter 40mm and axis 60mm long touches the HP on a point of its base circle. The axis of the cone is inclined 30° to HP and the top view of the axis appears to be inclined 45 ° with reference line. Draw its projections.

MODULE 3

5 A hexagonal pyramid of base edge 30mm and height 60mm rests on its base on HP, such that two of its base edges are perpendicular to VP. A section plane perpendicular to VP and inclined at 40 ° to HP cuts the pyramid at mid height. Draw the front view, sectional top view and true shape of the section.

6 Draw the development of the a right regular hexagonal prism of base edge 25 mm and height 65mm resting on its base on HP. An ant moves over its lateral surface of the prism from a point on its base to its diametrical opposite point of its top face by the shortest route. Sketch the path of the ant in the elevation and plan. Assume that the ant return back to its starting point.

MODULE 4

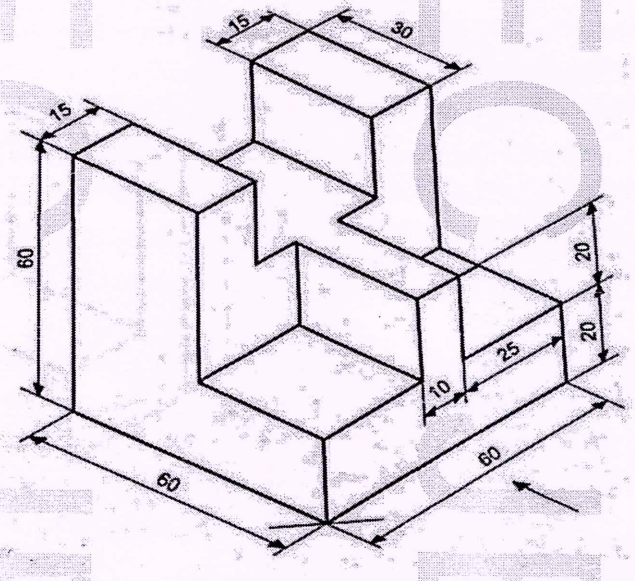
7 A sphere with a diameter of 30mm rests on the frustum of a hexagonal pyramid with a base of 30mm, top face of 18mm side, and a height of 50mm, such that their axes coincide. Draw the isometric projection of the combined solids.

8 A rectangular slab of 70mm X 50mm X 20mm thickness rests on its 70mm X 50mm rectangular face on HP. A cube of 40mm edge is placed centrally over the slab and on top of it, rests a square pyramid of base edge 25mm and height 40mm, such that one base edge of cube and one base edge of pyramid are parallel to VP. Draw the Isometric view of the combination of solids.

MODULE 5

9 A square pyramid of base edge 40mm and height 60mm rests with its base on ground such that one of its base edges is parallel and 20mm behind the picture plane. The station point is 30mm in front of picture plane, 80mm above ground plane and 50mm to the right of the axis of the pyramid. Draw the perspective view of the pyramid.

10 Draw the top view, front view and any one side view of the figure shown below. The front view direction is marked with a long arrow. Any missing dimensions may be suitably assumed.



(5 x 20 = 100 Marks)

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