

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

First Semester B.Tech Degree Regular and Supplementary Examination December 2020 (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-I**

- 1 The front view of the line MN is 55 mm long. The point M is 15 mm above HP and 20 mm in front of VP. The point N is 35 mm above HP. Draw the projections of the line if its true length is 70 mm. Measure the true inclinations of the line with respect to the reference planes (20)
- 2 A line AB is in the first quadrant. Its ends A and B are 20 mm and 60 mm in front of to VP respectively. The distance between the end projectors is 75 mm. The line is inclined at  $30^\circ$  to the HP and its HT is 10 mm above XY line. Draw the projections of AB and determine its true length and mark VT. (20)

**Module-II**

- 3 A pentagonal prism 30 mm base edge and 60 mm height is on HP on one of its base edges so that the axis is inclined at  $45^\circ$  with HP and the base edge on which it rests is inclined at  $30^\circ$  with VP. Draw the projections of the solid. (20)
- 4 A square pyramid base 40 mm side and axis 60 mm long is freely suspended from one of the comers of its base. Draw its projections when the axis makes an angle of  $50^\circ$  with the VP. (20)

**Module-III**

- 5 A pentagonal pyramid side of base 25 mm, height 70 mm has its base on the ground and a side of the base parallel to VP. The pyramid is cut by a section plane passing through a point on the axis which is 25 mm below the apex and making an angle of  $60^\circ$  with the axis. Draw the projections and obtain the front view, sectional top view and true shape of the section. (20)

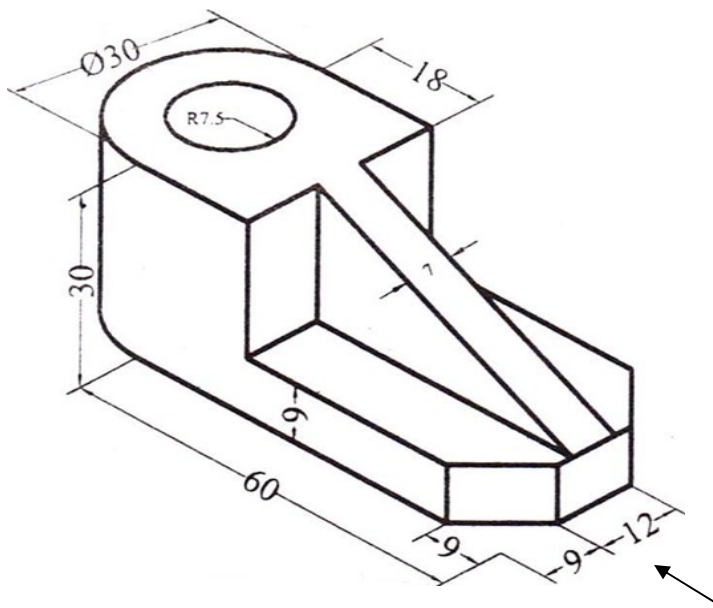
- 6 Draw the development of the lower portion of a cylinder of diameter 50 mm and axis height 70 mm when it is sectioned by a plane inclined at  $40^\circ$  to HP, perpendicular to VP and bisecting the axis. (20)

#### Module-IV

- 7 Draw the isometric projection of a hexagonal prism, 25 mm side of base and 60 mm height, which is resting on a rectangular face on HP. (20)
- 8 A hemisphere of diameter 70 mm is placed centrally over a cylinder of diameter 50 mm and height 80 mm, with its flat surface facing upward. Draw the isometric view of the combination. (20)

#### Module-V

- 9 A rectangular box of 50 mm x 30 mm x 25 mm size rests on the ground on one of its 50x30 mm rectangular face on the ground plane. The box is located behind the PP with a vertical edge touching it and a face containing the largest edge making an angle of  $30^\circ$  to the PP. The station point is located 45 mm in front of PP and 55 mm above the ground plane. The central plane passes through the centre of the box. Draw the perspective view of the box. (20)
- 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 dimension may be suitably assumed. (20)



(20x5=100 marks)

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