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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   (20)
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

2   A line AB is in the first quadrant. Its ends A and B are 20 mm and 60 mm in   (20)
front of to VP respectively. The distance between the end projectors is 75
mm. The line is inclined at 30° 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.

Module-II

3   A pentagonal prism 30 mm base edge and 60 mm height is on HP on one of   (20)
its base edges so that the axis is inclined at 45^0 with HP and the base edge on
which it rests is inclined at 30^0 with VP. Draw the projections of the solid.

4   A square pyramid base 40 mm side and axis 60 mm long is freely suspended   (20)
from one of the comers of its base. Draw its projections when the axis makes
an angle of 50^0 with the VP.

Module-III

5   A pentagonal pyramid side of base 25 mm, height 70 mm has its base on the   (20)
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 60^0 with the axis. Draw the projections and obtain the
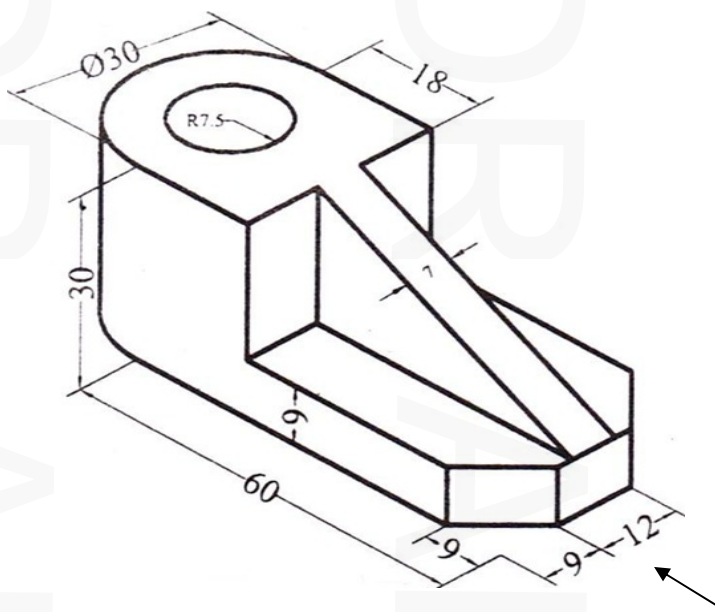front view, sectional top view and true shape of the section.

6   Draw the development of the lower portion of a cylinder of diameter 50 mm   (20)
      and axis height 70 mm when it is sectioned by a plane inclined at 40^0 to HP,
      perpendicular to VP and bisecting the axis.

Module-IV

7   Draw the isometric projection of a hexagonal prism, 25 mm side of base and   (20)
      60 mm height, which is resting on a rectangular face on HP.

8   A hemisphere of diameter 70 mm is placed centrally over a cylinder of   (20)
      diameter 50 mm and height 80 mm, with its flat surface facing upward. Draw
      the isometric view of the combination.

Module-V

9   A rectangular box of 50 mm x 30 mm x 25 mm size rests on the ground on   (20)
      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° 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.

10   Draw the top view, front view and any one side view of the figure shown   (20)
      below. The front view direction is marked with a long arrow. Any missing
      dimension may be suitably assumed.

(20x5=100 marks)

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