Reg. No.															

Question Paper Code	12768

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

First Semester

Mechanical Engineering

(Common to All Branches)

20ESGE101 – ENGINEERING GRAPHICS

Regulations - 2020

Duration: 3 Hours Max. Marks: 100

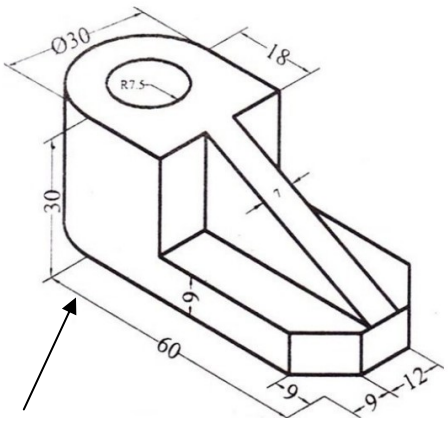
PART - B (5 × 20 = 100 Marks)

Answer ALL Questions

11. a) Draw the conic section when the distance of the fixed point from the fixed line is 50mm and the eccentricity is 2/3. Also, draw tangent and normal at any point on the curve. *20 K2 CO1*

OR

b) Draw free hand sketches of the front, top and side views of the block given below. *20 K2 CO1*



12. a) The distance between the end projectors passing through the end points of the line AB is 60 mm. The end A is 15 mm above the HP and 10 mm in front of the VP. The end B is 35 mm in front of the VP. The line AB appears 70 mm long in the front view. Complete the projections. Determine the true length of the line and its inclinations with respect to HP and VP. *20 K2 CO2*

OR

b) A hexagonal lamina of side 30 mm is resting on one of its sides on the VP and inclined at angle of 40° to the HP. Its surface is inclined at 35° to the VP. Draw the projections of the lamina. *20 K2 CO2*

13. a) Draw the projections of a hexagonal prism of base side 25 mm and axis length of 60 mm long lies with one of its rectangular faces on the HP, such that the axis is inclined at an angle of 45° to the VP. *20* K2 CO3

OR

b) A cone of base diameter 50 mm and axis length of 65 mm is resting on HP on a point on the circumference of the base with its axis inclined at an angle of 40° to the HP and parallel to the VP. Draw the corresponding projections. *20* K2 CO3

14. a) A hexagonal prism of base side 30 mm and axis length 60 mm is resting on the HP on of its bases with two of the vertical faces perpendicular to the VP. It is cut by a plane inclined at 50° to the HP and perpendicular to the VP. The cutting plane passes through a point which is at a distance of 12 mm from the top. Draw its front view, sectional plan, and true shape of the section. *20* *K2* *CO4*

OR

b) Draw the development of the lower portion of a cylinder of diameter 50 mm and axis 70 mm when sectioned by a plane inclined at an angle of 40° to the HP and perpendicular to the VP. The cutting plane bisects the axis. *20* *K2* *CO4*

15. a) A hexagonal prism of base edge 20 mm and height 60 mm is resting on the HP on its base with two of its rectangular faces parallel to the VP. It is cut by a plane inclined at an angle of 30° to the HP cutting the axis of the prism at height of 45 mm from its base. Draw the isometric projection of the truncated prism. *20* *K3* *CO5*

OR

b) A square pyramid of base side 30 mm and height 60 mm rests with its base on ground such that the nearest edge of the base is parallel to picture plane and 30 mm behind it. The station point is 70 mm in front of the picture plane, 60 mm to the right of the axis of the pyramid and 75 mm above the ground. Draw the perspective view of the pyramid. *20* *K3* *CO5*