Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 53554

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017
First Semester
Mechanical Engineering
GE6152 – ENGINEERING GRAPHICS
(Regulations 2013)
(Common to Mechanical Engineering (Sandwich), Aeronautical Engineering, Agriculture Engineering, Automobile Engineering, Biomedical Engineering, Civil Engineering, Computer Science and Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Electronics and Instrumentation Engineering, Environmental Engineering, Geoinformatics Engineering, Industrial Engineering, Industrial Engineering and Management, Instrumentation and Control Engineering, Manufacturing Engineering, Marine Engineering, Materials Science and Engineering, Mechanical and Automation Engineering, Mechatronics Engineering, Medical Electronics Engineering, Metallurgical Engineering, Petrochemical Engineering, Production Engineering, Robotics and Automation Engineering, Biotechnology, Chemical Engineering, Chemical and Electrochemical Engineering, Fashion Technology, Food Technology, Handloom and Textile Technology, Industrial Bio Technology, Information Technology, Leather Technology, Petrochemical Technology, Petroleum Engineering, Pharmaceutical Technology, Plastic Technology, Polymer Technology, Rubber and Plastics Technology, Textile Chemistry, Textile Technology, Textile Technology (Fashion Technology), Textile Technology (Textile Chemistry))

Time : Three Hours   Maximum : 100 Marks

Note : Blank answer Booklet consisting of A3 drawing sheets is to be supplied to the students.

Drawings should be neat and legible.
Standards should be followed for dimensioning and printing.
Missing dimensions may be suitably assumed.
Answer ALL questions

(5×20=100 Marks)

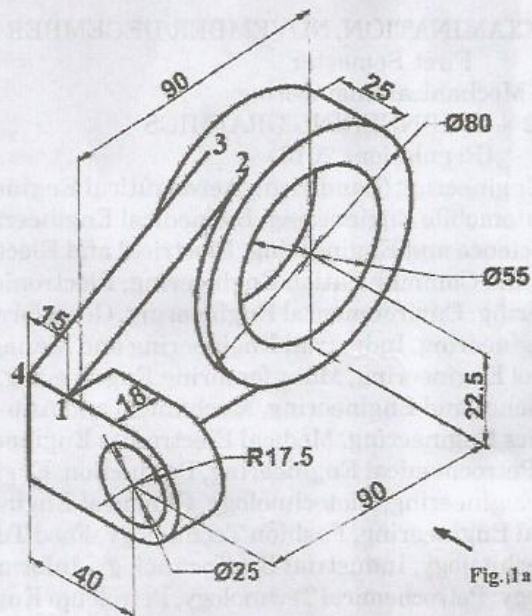1. a) For the object shown in Fig. 1a, draw free hand sketching of

   i) front view

ii) top view and

iii) left hand side view. (20)

Fig.1a

Note: All dimensions are in 'mm'

(OR)

b) Construct a hyperbola, with the distance between the focus and the directrix as 50 mm and eccentricity as 3/2. Also, draw normal and tangent to the curve at a point 30 mm from the directrix. (20)

2. a) A line AB of length 65 mm is inclined at 30° to HP, the end A being 30 mm above HP and 25 mm in front of VP. The line joining the front view of the end A and h' is 35 mm. Draw the projections of the line and locate the traces and also find the inclination of the line with VP. (20)

(OR)

b) A thin rectangular card board lamina has one of its corners on the HP and the surface makes 60° with the HP. Draw its projections, when the top view of the diagonal passing through the corner on HP, makes 45° with the reference line. The size of the lamina is 50 × 25 mm. (20)

3. a) A hexagonal pyramid of 30 mm base edges and axis 70 mm long is tilted about one of its base edges such that the triangular face through that edge is vertical. Draw its projections. (20)

(OR)

b) A right circular cylinder of base 45 mm diameter and axis 60 mm long rests on HP, such that its axis is inclined at 30° to HP. Draw its projections. (20)

4. a) A hexagonal prism of 30 mm sides and axis 80 mm long is resting on HP on its base with two of its lateral faces parallel to VP. The prism is cut by an inclined section plane that passes through the midpoint of the axis and makes 60° with the HP. Draw the sectional top view and the true shape of the section if the section plane is perpendicular to VP. (20)

(OR)

b) A right circular cone of base 60 mm diameter and axis 70 mm long is resting on the ground on its base on the HP. Calculate the shortest length of a string required to be wound over the lateral surface of the solid, starting from one extreme point of the base and ending at the same point. Obtain the path of the string in the front view and top view. (20)

5. a) A hexagonal prism of 20 mm base edges and axis 45 mm long has a through square hole of 16 mm sides. The axis of the hole coincides with axis of the prism. Two lateral faces of the hole are parallel to that of the prism. Draw the isometric view of the solid when it it standing upright. (20)

(OR)

b) A frustum of a hexagonal pyramid has a base of 30 mm sides, top of 20 mm sides and height 50 mm long. The station point is 65 mm in front of PP and 120 mm from the axis and to its left. The horizon level is at 90 mm height. One of the base edges of the pyramid touches the picture plane. Draw the perspective view of the solid. (20)

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