Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 81508

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2025.

First/Second Semester

Civil Engineering

GE 3251 — ENGINEERING GRAPHICS

(Common to : Aeronautical Engineering/Aerospace Engineering/Automobile Engineering/Biomedical Engineering/Civil Engineering (Environmental Engineering)/Computer Science and Design/Computer Science and Engineering/Computer Science and Engineering (Artificial Intelligence and Machine Learning)/Computer Science and Engineering (Cyber Security)/Computer Science and Engineering (Data Science)/Computer and Communication Engineering/Electrical and Computer Engineering/Electrical and Electronics Engineering/Electronics Engineering (VLSI Design and Technology)/Electronics and Communication Engineering/Electronics and Instrumentation Engineering/Electronics and Telecommunication Engineering/Environmental Engineering/Geoinformatics Engineering/Industrial Engineering/Industrial Engineering and Management/Instrumentation and Control Engineering/Manufacturing Engineering/Marine Engineering/Materials Science and Engineering/Mechanical Engineering/Mechanical Engineering (Sandwich)/Mechanical Engineering (Specialised in Automobile)/Mechanical Engineering (Specialised in Smart Manufacturing)/Mechanical and Automation Engineering/Mechatronics Engineering/Medical Electronics/Petrochemical Engineering/Production Engineering/Robotics and Automation/Safety and Fire Engineering/Agricultural Engineering/Artificial Intelligence and Data Science/Biotechnolog/Biotechnology and Biochemical Engineering/Chemical Engineering/Chemical and Electrochemical Engineering/Computer Science and Business Systems/Fashion Technology/Food Technology/Handloom and Textile Technology/Information Technology/Petrochemical Technology/Petroleum Engineering/Pharmaceutical Technology/Plastic Technology/Textile Chemistry/Textile Technology)

(Regulations 2021)

Time : Three hours | Maximum : 100 marks

(A3 sheet is permitted)

Answer ALL questions.

(5 × 20 = 100)

1. (a) A flower bed in a botanical garden is elliptical in shape. Major and minor axes are 120 mm and 80 mm respectively. Draw the profile of a flower bed.

Or

(b) Construct an epicycloid generated by a rolling circle of diameter 50 mm which rolls over a base circle of diameter 150 mm. Draw tangent and normal at any point on the curve.

2. (a) A line LM 70 mm long has its end L 10 mm above HP and 15 mm in front of VP. The top view and front view measures 60 mm and 40 mm respectively. Draw the projections of the line and determine its inclination with HP and VP. Also mark its traces.

Or

(b) A pentagon plate of side 30 mm rests on the ground on one of its corners with the sides containing the corner being equally inclined to the ground. The side opposite to the corner on which it rests is inclined at 30° to VP and is parallel to HP. The surface of the pentagon makes 50° with the ground. Draw its projections.

3. (a) A regular hexagon of side 40 mm is resting on one of its corners on HP and the surface inclined 45° to HP. Draw the projections when the diagonal through the corner resting on HP makes an angle of 60° with VP.

Or

(b) Make free hand sketch of front, top and left side view of the universal coupling shown in the figure 1.

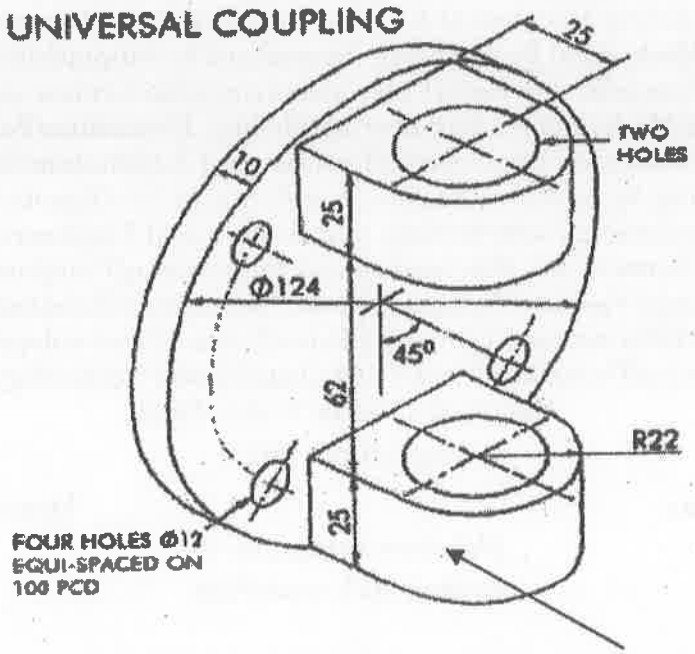

Figure 1.
All Dimensions are in "mm"

4. (a) A cylinder of base diameter 50 mm and axis length 60 mm is resting on HP on one of its generators with its axis perpendicular to VP. It is cut by a plane inclined 30° to VP and perpendicular to HP and is bisecting the axis of the cylinder. Draw its top view, sectional front view and true shape of section.

Or

(b) A lampshade which is formed from a cut cone of base 50 mm diameter and height 65 mm. The first cutting plane which is perpendicular to the axis and parallel to the base, cut the cone 15 mm away from the apex. The second cutting plane cuts the cone in a manner 25° inclined to its base and passing through one of the extremities of the base. Draw the lateral surface development of the lampshade.

5. (a) A cone with a base diameter of 40 mm and axis height 50 mm is placed centrally on top of a square slab of side of 60 mm and thickness of 20 mm. Draw the isometric view of the combination of solids.

Or

(b) A square prism, with a side of base 40 mm and height of 60 mm rests with its base on the ground such that one of its rectangular faces is parallel to and 10 mm behind the picture plane. The station point is 30 mm in front of PP, 88 mm above the ground plane and lies in a central plane 45 mm to the right of the centre of the prism. Draw the perspective projection of the square prism.