

BME-157

B. Tech
Year: 1st, Semester: 2nd
Minor Test/Examination 2024-25
Engineering Graphics with AutoCAD

Time: 2 Hr.

Max Marks: 20

Note: Answer all Question

Q 1.	Attempt any two parts of the following.	Marks	CO	BL	PO	PI Code
(a)	Interpret orthographic projection and explain its principles.	4	6	2	1	1.3.1
(b)	Differentiate between Cycloid, Epicycloid, and Hypocycloid. Draw their respective sketches.	4	3	5	1	1.3.1
(c)	What are "regular solids"? Illustrate its classification.	4	5	1	1	1.3.1
Q 2.	Attempt any two parts of the following.					
(a)	Discuss the methods of first-angle projection and third-angle projection. Write down their key similarities, differences, and symbols.	3	6	4	1	1.3.1
(b)	Define and explain different types of scales used in engineering drawings	3	2	4	1	1.3.1
(c)	An 80 mm long line PQ has end P 20 mm above H.P. and 40 mm in front of the V.P. The line is inclined at 30° to the H.P. and is parallel to the V.P. Draw the projections of the line.	3	3	5	1	1.3.1
Q 3.	Attempt any two parts of the following.					
(a)	Discuss the types of prisms and pyramids. Draw their sketches using suitable nomenclatures.	3	5	2	1	1.3.1
(b)	Draw the projection of the top view and front view of a hexagonal prism of 25 mm base edges and 50 mm vertical height, standing on its base on the H.P. with two of its vertical rectangular faces parallel to the V.P.	3	3	5	1	1.3.1
(c)	Draw the Projection of the top view and front view of a pentagonal prism of 30 mm end edges and 60 mm long edges which are perpendicular to the V.P. and its rectangular face on the top is parallel to the H.P.	3	3	5	1	1.3.1

B.Tech.
Year: 1st, Sem: 2nd
Major examination: 2024-25
Engineering Graphics with AutoCAD

Time: 3 Hours

Max. Marks: 50

Note: Attempt all questions. Each question carries equal marks.

		Marks	CO	BL	PO	PI Code
Q 1.	Attempt any five parts of the following.	2×5				
(a)	Define the term "orthographic projection" and discuss its applications.	2	1	1	11	1.4.1
(b)	Discuss the position of top view, front view, and side views in the first angle projection method and also in the third angle projection method. Draw their respective symbols	2	1	2	11	1.4.1
(c)	Draw the projection of the following points: (i) A, 40 mm above the HP and 20 mm in front of VP (ii) B, 40 mm below the HP and 25 mm in front of VP.	2	3	4	2	1.4.1
(d)	A line <i>AB</i> of length 50 mm is parallel to both the reference plane and one of its ends, <i>A</i> lies 20 mm behind of V.P. and 10 mm below H.P. Draw the projections of the line.	2	4	1	4	1.4.1
(e)	Draw the true shape of the base of a pentagonal and triangular prism whose one face is parallel to V.P.	2	1	2	4	1.4.1
(f)	Discuss the term trace to the context of a line and a plane.	2	2	2	11	1.4.1
(g)	Write the classification of regular solids with their respective diagrams.	2	3	4	11	1.4.1
Q 2.	Attempt any two parts of the following.	5×2				
(a)	Discuss the types of sections and applications of section of Solid.	5	1	1	11	1.4.1
(b)	A square pyramid of base side 40 mm and axis 60 mm is resting on its base on the H.P. with all the sides of the base equally inclined to the V.P. Draw its sectional views and true shape of the section, if it is cut by a section plane perpendicular to the V.P., bisecting the axis and is parallel to the H.P.	5	2	4	7	1.4.1
(c)	A square prism of base side 40 mm and axis 60 mm rests on its base of the H.P. such that one of its rectangular faces is inclined at 30° to the V.P. It is cut by a section plane parallel to V.P., bisecting a face of the prism which is inclined at 30° to the V.P. Draw its sectional front view and top view.	5	6	2	7	1.4.1

Q 3.	Attempt any two parts of the following.	5×2				
(a).	Explain the principles of the parallel line and radial line methods of surface development. For which type of solids is each method applicable?	5	2	1	11	1.4.1
(b).	A pentagonal prism of base side 30 mm and axis 70 mm is resting on its base of the H.P. with a rectangular face parallel to the V.P. Draw the development of the lateral surface of the truncated prism.	5	1	3	1	1.4.1
(c).	Draw the development of the lateral surface of a square pyramid of base side 40 mm and axis 60 mm, resting on its base on the H.P. such that a side of the base is parallel to the V.P.	5	3	2	4	1.4.1
Q 4.	Attempt any two parts of the following.	5×2				
(a).	Explain the concept and terminology of isometric projection in Engineering Graphics. How does isometric projection differ from orthographic projection?	5	4	2	1	1.4.1
(b).	Draw the isometric view of a circle of diameter 60 mm on all the three principal planes.	5	3	4	1	1.4.1
(c).	Draw the isometric view of a cylinder of base diameter 50 mm and axis 60 mm. The axis of the cylinder is perpendicular to the H.P.	5	4	3	1	1.4.1
Q 5.	Attempt any two parts of the following.	5×2				
(a).	What is isometric scale? Draw it and write down the various steps involved.	5	4	1	12	1.4.1
(b).	Draw the isometric view of a hexagon of side 30 mm whose surface is parallel to the H.P. and a side parallel to the V.P.	5	6	3	12	1.4.1
(c).	What is Computer-Aided Design (CAD)? Explain its advantages over manual drafting. Explain at least three applications of computer graphics in engineering.	5	6	2	11	1.4.1