

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Bachelor of Technology (Mechanical Engineering) SEMESTER - 2 Winter 2025 (Supply.)

Course :Bachelor of Technology (Mechanical Engineering) Branch : Engineering and Technology

Semester : SEMESTER - 2

Subject Code & Name: 24AFIEGES204 - ENGINEERING GRAPHICS

Time : 4 Hours]

[Total Marks : 60

Instructions to the Students:

1. Each question carries 12 marks.
2. Question No. 1 will be compulsory and include objective-type questions.
3. Candidates are required to attempt any four questions from Question No. 2 to Question No.6
4. Use of non-programmable scientific calculators is allowed.
5. Assume suitable data wherever necessary and mention it clearly.

Q1. Objective type questions. (Compulsory Question)

12

1	Which of the following best describes the main purpose of dimensioning in engineering drawings? A. To provide complete size and location information for manufacturing B. To improve the aesthetic appearance of the drawing C. To indicate the type of material used D. To show only overall dimensions
2	A diagonal scale is preferred over a plain scale when: A. Only large dimensions are to be measured B. Angles need to be measured C. Curved lengths are to be measured D. High precision involving three units is required
3	A point is located in the second quadrant when it is: A. Above HP and in front of VP B. Above HP and behind VP C. Below HP and in front of VP D. Below HP and behind VP
4	When a line is inclined to HP and parallel to VP, its front view shows: A. Apparent length B. True length C. A point D. Shortened length equal to top view
5	A line perpendicular to VP will have its front view as: A. True length B. A point C. An inclined line D. A vertical line
6	When the axis of a solid is inclined to both HP and VP, the projection is generally drawn by: A. One-step method B. Change of position method C. Direct measurement method D. Freehand method

7	A sectional view of a solid is drawn mainly to:	
	A. Reveal internal details not visible in normal views	B. Show external shape clearly
	C. Reduce drawing size	D. Show the true length of edges
8	Development of surfaces is mainly used in:	
	A. Structural design	B. Manufacturing sheet metal components
	C. Architectural drawings	D. Electrical layouts
9	The lateral surface development of a right circular cone is a:	
	A. Rectangle	B. Square
	C. Trapezium	D. Sector of a circle
10	In orthographic projection, the projectors are drawn:	
	A. At 30° to the reference plane	B. Parallel to the object edges
	C. Perpendicular to the reference plane	D. At 45° to the horizontal
11	The angle between any two isometric axes is:	
	A. 30°	B. 45°
	C. 60°	D. 120°
12	An isometric scale is used to:	
	A. Enlarge the drawing	B. Convert orthographic views to perspective views
	C. Reduce true lengths to isometric lengths	D. Measure angles accurately

Q2. Solve the following.

- Draw the following lines used in general engineering drawing: i. Dashed thin (narrow) ii. Chain thin long-dashed 6 dotted (narrow) iii. Continuous thick.
- Enlist and explain the methods of placing the dimensions with the help of neat sketch.

6

Q3. Solve the following.

- The front views of two points P and Q coincide at 30 mm above XY. Their top views are 30 mm below and 10 mm above XY respectively. Draw the three views of each point and determine the distance between them.
- A line AB, 50 mm long, is in the HP and parallel to the VP. Draw the three views of the line if it is 25 mm in front of the VP.

Q4. Solve Any One of the following.

- A rectangle ABCD of size 30 mm X 20 mm is perpendicular to the VP and inclined to the HP at 30°. A longer side of the rectangle is parallel to the VP. Draw the projections.
- A cone of base 60 mm diameter and height 80 mm is resting on a point on the circumference of base on the HP 12 mm with its apex 55 mm above the HP. Draw its projections if its axis is inclined at 45° to the VP.

Q5. Solve Any One of the following.

- A cube of 50 mm side length rests on an edge on the HP. The edge is parallel to the VP and the two faces sharing the edge are equally inclined to the HP. An AIP, inclined at 47° to the HP and passing through one of the top corners of the cube, cuts the cube. Draw FV, sectional TV and sectional SV. Also, draw the true shape of the section.

- B) A pentagonal pyramid of base side 30 mm and length of axis 60 mm is kept on the ground on its base. A thread 12 is wound around the pyramid in such a way that it starts from a corner of the base and comes back to the same corner after completing one revolution by the shortest route. Draw the development of the pyramid and show the thread in FV and TV.

Q6. Solve Any One of the following.

- A) A pictorial view of a machine bracket is shown in the Figure 1. Draw using the first angle projection method front 12 view, top view and right end side view.

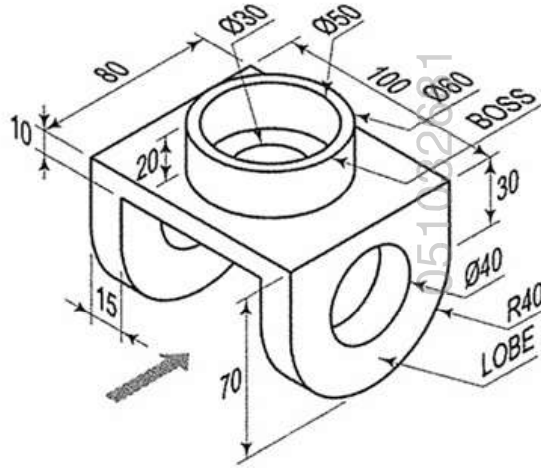


Figure 1

- B) Draw the isometric projection of the object as shown in Figure 2:



Figure 2

*** End ***