

**PRACTICE TEST**

**End Semester Examination, December, 2025**

**Program: B.Tech (Mining/CSE)**

**Semester: I**

**Subject: Engineering Graphics and Design**

**Subject Code: 8ESC102/ 3ESC102**

**Course Outcome:**

On the completion of the Course, the students will be able to:

<b>Course Outcomes</b>	<b>Description</b>
<b>CO1</b>	To know and understand the conventions and the method of engineering drawing.
<b>CO2</b>	To know the Orthographic & Isometrics projections.
<b>CO3</b>	To know the various projections of regular Planes, solids, Sections and Views of Right Angular Solids.
<b>CO4</b>	To improve visualization skills so that student can apply these skills in developing new products.
<b>CO 5</b>	To know about graphical communication and various graphical drawing tools.
<b>CO 6</b>	To know the creation of engineering models and their presentation in standard 2D & 3D forms.

**Unit I**

**Section A (5 Marks)**

1. Define Engineering drawing. What are principles of engineering drawing? **CO 1 Remember**
2. Construct a scale of 1:4 to show centimetres and long enough to measure upto 5 decimetres. **CO 1 Understand**
3. Construct a scale of 1:50 to show metres and decimetres and long enough to measure upto 5 metres and mark 2 m. **CO 1 Understand**

**Section B (10 Marks)**

4. Draw and discuss the various types of Lines used in Engineering Drawing. **CO 1 Remember**
5. Discuss the function of scale and also discuss different types of scale. **CO 1 Understand**

**Unit II**

### **Section A (5 Marks)**

6. What do you mean by projection? Write the different type of projection. **CO 2 Remember**
7. Describe orthographic projection & planes of projection. **CO 2 Understand**
8. Draw the projection of various points. **CO 2 Apply**
  - (i) Point A 30mm above HP and 40mm behind VP.
  - (ii) Point B 35mm below HP and 45 mm in front of VP.
9. Differentiate between first angle and third angle projection. Draw the symbol used for them. **CO 2 Remember**
10. Draw the projection of a line AB which is 50mm long is inclined  $30^\circ$  to HP and parallel to VP such that point A is 20mm above HP and 25mm in front of VP. **CO 2 Apply**
11. A line AB of 50 mm length is 60 mm away from VP and 80 mm above HP and parallel to both planes. Draw its projection. **CO 2 Apply**

### **Section B (10 Marks)**

12. Line PQ is 80mm long and it is  $30^\circ$  and  $45^\circ$  inclined to HP and VP respectively. End P is 12 mm above HP and 10mm in front of VP. Draw its projections. **CO 2 Apply**

## **Unit III**

### **Section A (5 Marks)**

13. Draw the types of solid used in engineering drawing. **CO 3 Understand**
14. Define Auxiliary view. Write the steps to draw projection of a solid. **CO 3 Remember**

### **Section B (10 Marks)**

15. A square prism of edge of base 50 mm and height 100 mm is resting on one of its edge in HP. The axis of pyramid is inline  $45^\circ$  to HP and  $30^\circ$  to VP. Draw its projection. **CO3 Apply**
16. Draw the projection of a line CD measuring 40 mm inclined at an angle of  $60^\circ$  to HP and the end C is 30mm in front of VP is in HP. **CO 3 Apply**

### **Section C (20 Marks)**

17. A hexagonal pyramid side of base 30 mm and height 60 mm has an edge of its base on the ground. Its axis is inclined at  $45^\circ$  to the ground and parallel to the V.P. Draw the projection of prism and write the steps. **CO 3 Evaluate**
18. A pentagonal prism of side of base 30 mm and height 55 mm is resting on one of its rectangular faces on the H.P, the axis makes an angle of  $45^\circ$  with VP. Draw its projection and write steps of projection. **CO 3 Evaluate**

## **Unit IV**

### **Section A (5 Marks)**

19. Define Section planes, Sections and True shape of a section. **CO 3 Remember**
20. Explain different methods of development of surfaces. **CO 3 Understand**

### Section B (10 Marks)

21. A hexagonal pyramid of side of base 30 mm and axis 60 mm long rest with its base on HP, the axis is parallel to V.P. It is cut by a horizontal section plane at a distance of 20 mm above the base. Draw the front view, sectional top view. Write the steps of construction. **CO 3 Apply**
22. A cone of radius 40 mm and axis 60 mm long is resting on its base on HP. It is cut by a section plane perpendicular to VP and parallel to HP at a distance of 20mm from top of cone. Draw its sectional top view, true shape of both parts. Write the steps of construction. **CO 3 Evaluate**
23. A pentagonal prism side of base 30mm and axis 50mm long stands on HP on its base with one of the sides of base perpendicular to VP. It is cut by a section plane perpendicular to VP and parallel to HP at a distance of 30mm from top. Draw its sectional top view, true shape of lower part and development of surface of lower part. Write the steps of construction. **CO 3 Evaluate**

### Unit V

#### Section A (5 Marks)

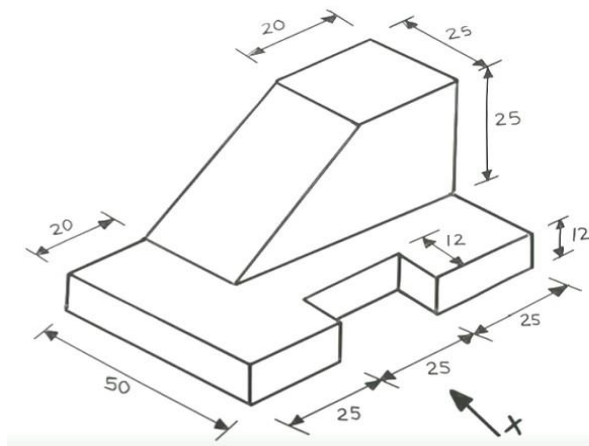
24. Define isometric projection. **CO 4 Remember**
25. Draw isometric top and front view of a pentagon of side 30 mm **CO 4 Understand**
26. Draw isometric top and front view of a hexagon of side 40 mm **CO 4 Understand**

#### Section B (10 Marks)

27. Draw isometric view of a circle of diameter 40 mm in x-y plane and write steps of construction. **CO4 Understand**
28. Draw isometric view of pentagonal pyramid resting on base and on apex whose edge of base is 30 mm and height is 70 mm. Also write steps of construction. **CO 4 Apply**

#### Section C (20 Marks)

29. A hexagonal prism side of hexagon 35 mm and height 40mm is resting on its hexagonal base on HP. One of the sides of hexagonal base is perpendicular to VP. A right circular cone of base diameter 50mm and axis 65mm is kept centrally on the top of hexagonal face on its apex. The axis of both solids are vertical and coinciding. Draw isometric projection for the given arrangement of solid. **CO4 Apply**
30. Draw the following orthographic views from the isometric view of given object using first angle projection. All dimensions are in mm. **CO 4 Apply**
  - a) Front view when viewing from X direction
  - b) Top view
  - c) Side view



### Unit VI Section A (5 Marks)

31. Define CAD. Write its advantages. **CO 5 Remember**  
 32. What is CAD software? Write the major functions to be performed by using CAD software. **CO 5 Understand**  
 33. What is AutoCAD? Explain some of the features of CAD systems. **CO5 Understand**

**Section B (10 Marks)**

34. Explain all the commands of Draw toolbar used in AutoCAD. **CO 5 Remember**  
 35. Explain all the commands of Modify toolbar used in AutoCAD. **CO 5 Remember**

**Unit VII**

**Section A (5 Marks)**

36. Write steps of Customisation & CAD Drawing consisting of setup of the drawing page and the printer. **CO 5 Understand**  
 37. Write the steps to set units and drawing limits in AutoCAD. **CO 5 Understand**

**Unit VIII**

**Section A (5 Marks)**

38. What is Annotation in AutoCAD? What are the different types of Annotations? **CO 6 Remember**  
 39. Write Dimensioning guidelines used in AutoCAD. **CO 6 Understand**

**Unit IX**

**Section A (5 Marks)**

40. Explain 3-D Wire-frame modelling. Define VPOINT command and UCS command. **CO6 Understand**  
 41. What is Building information modelling (BIM)? Write its advantages. **CO6 Remember**

**Summary Sheet**

**CO Wise**

<b>CO</b>	<b>Q. No</b>	<b>Mark s</b>
CO1	1,2,3,4,5	35
CO2	6,7,8,9,10,11,12	40
CO3	13,14,15,16,17,18,19,20,21,22,23,	120
CO4	24,25,26,27,28,29,30	75
CO5	31,32,33,34,35,36,37	45
CO6	38,39,40,41	20
<b>Total</b>		<b>335</b>

Unit Wise

<b>Unit</b>	<b>Q. No</b>	<b>Marks</b>
Unit 1	1,2,3,4,5	35
Unit 2	6,7,8,9,10,11,12	40
Unit 3	13,14,15,16,17,18	70
Unit 4	19,20,21,22,23	50
Unit 5	24,25,26,27,28,29,30	75
Unit 6	31,32,33,34,35	35
Unit 7	36,37	10
Unit 8	38,39	10
Unit 9	40,41	10
<b>Total</b>		<b>335</b>

Blooms Taxonomy Level (BTL) Wise

<b>BTL</b>	<b>Q. No</b>	<b>Marks</b>
LOT	1,2,3,4,5,7,8,9,10,11,12,14,15,16,20,21,25,26,27,28,32,33,34,35,36,37,38,39,40,41,42	200
HOT	6,13,17,18,19,22,23,24,29,30,31	135
<b>Total</b>		<b>335</b>

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**Disclaimer:** - This is a Practice set. The Question in End term examination will differ from the Practice set. This Practice set is meant for practice only.