

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Bachelor of Technology (Mechanical Engineering) SEMESTER - 2 Summer 2026 (Regular)

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.
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Q1. Objective type questions. (Compulsory Question)

12

- 1 A line of true length 100 mm is represented as 75 mm on a drawing. The representative fraction (R.F.) of the scale is: A) 1 : 0.75 B) 0.75 C) 1.33 D) 0.50
- 2 Which of the following scales is most suitable for accurately measuring distances in kilometres, metres and decimetres on a map? A) Plain Scale B) Diagonal Scale C) Vernier Scale D) Comparative Scale
- 3 A sectional view of a machine component is preferred over hidden lines because it: A) Reduces the number of dimensions. B) Clearly shows the internal construction of the object. C) Eliminates the need for front and top views. D) Makes the drawing smaller.
- 4 A line is parallel to HP and inclined to VP. Which statement is correct? A) Top view shows the true length, while front view is shorter than the true length. B) Front view shows the true length, while top view is shorter. C) Both front and top views show true length. D) Neither view shows true length.
- 5 If the front view and top view of a line are both shorter than its true length, the line is: A) Parallel to HP only B) Parallel to VP only C) Inclined to both HP and VP. D) Perpendicular to HP
- 6 The horizontal trace (HT) of a line is the point where the line: A) Meets the Vertical Plane. B) Meets the Horizontal Plane when extended if necessary. C) Intersects the XY line. D) Meets the profile plane.
- 7 An auxiliary plane is introduced in projection drawing mainly to: A) Reduce the number of views. B) Obtain the true shape and true size of an inclined surface. C) Draw sectional views. D) Prepare development of surfaces.
- 8 While projecting a solid whose axis is inclined to both HP and VP, the usual procedure is to: A) Draw the final position directly. B) Draw the simple position first and then obtain successive inclined positions. C) Draw only the top view. D) Use only the auxiliary plane method.
- 9 The true shape of the section obtained after cutting a solid can be obtained by: A) Orthographic projection. B) Auxiliary projection on a plane parallel to the cutting plane. C) Isometric projection. D) Perspective projection.

- 10 Development of surfaces is based on the assumption that the surface of the solid: A) Can be unfolded into a plane without stretching or tearing. B) Can be folded into any shape. C) Is always circular. D) Is represented only by orthographic views.
- 11 Which of the following statements correctly distinguishes an isometric drawing from an isometric projection? A) Both use true lengths along isometric axes. B) Isometric drawing uses true lengths, whereas isometric projection uses isometric lengths. C) Isometric projection uses true lengths, whereas isometric drawing uses reduced lengths. D) Both use reduced lengths along all directions.
- 12 In first-angle orthographic projection, the top view is placed: A) Above the front view. B) Below the front view. C) To the right of the front view. D) On the left of the front view

Q2. Solve the following.

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

Q3. Solve the following.

- A) A point P is in the first quadrant. Its shortest distance from the intersection point of H.P., V.P. and Auxiliary vertical plane, perpendicular to the H.P. and V.P. is 70 mm and it is equidistant from principal planes (H.P. and V.P.). Draw the projections of the point and determine its distance from the H.P. and V.P. 6
- B) A line AB, 50 mm long, is inclined to the HP at 30° and parallel to the VP. The end nearest to the HP is 40 mm above it and 25 mm in front of the VP. Draw the projections. 6

Q4. Solve Any One of the following.

- A) A rectangle ABCD of size 30 mm X 20 mm is inclined to the HP at 30° . Its shorter side AB is parallel to the HP and inclined at 45° to the VP. Draw the projections of the rectangle. 12
- B) A pentagonal pyramid of edge of base 30 mm and length of axis 65 mm is resting on a corner of the base on the HP. The triangular face opposite to the corner on the HP is inclined to the HP at 45° with its shorter edge inclined to the VP at 60° . Draw its projections. 12

Q5. Solve Any One of the following.

- A) A triangular pyramid with a base side of 50 mm and a slant height of 70 mm, rests on the base on the HP with a side of base perpendicular to the VP. It is cut by an AIP inclined at 30° to the HP and bisecting the axis and a profile section plane intersecting the AIP at the edge of the pyramid parallel to the VP. Draw FV, sectional TV and sectional SV. 12
- B) A cone of base diameter 40 mm and slant height 60 mm is kept on the ground on its base. An AIP inclined at 45° to the HP cuts the cone through the midpoint of the axis. Draw the development 12

Q6. Solve Any One of the following.

- A) Figure 1 shows the pictorial view of an object. Using first-angle method, draw its FV, 12 TV and RHSV:

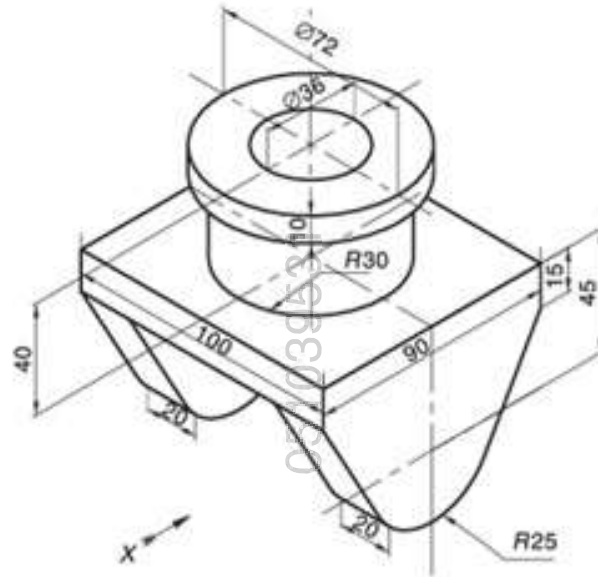


Figure 1

- B) Figure 2 shows the FV and LHSV of an object. Draw its isometric view:

12

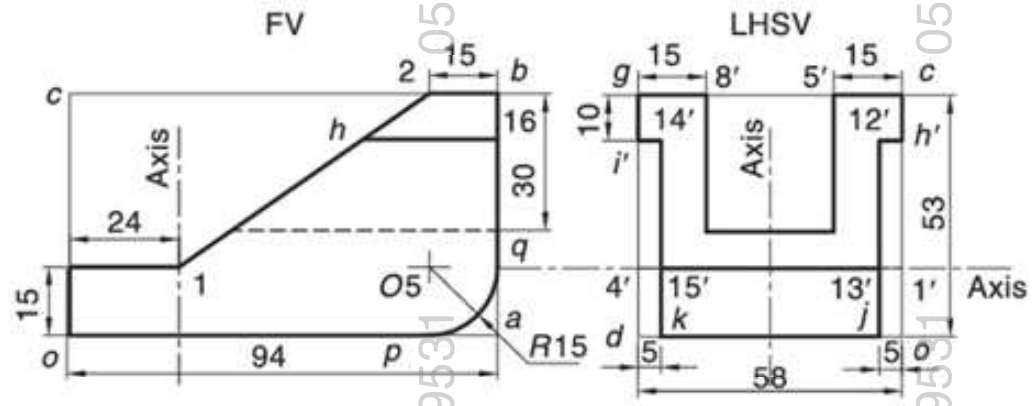


Figure 2

*** End ***