

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular Summer Examination – 2026

Course: B.Tech.

Branch: Common To All Branches

Semester: II

Subject Code & Name: 24AF1EGES204; Engineering Graphics

Max Marks: 60

Date: 31/07/2026

Duration: 4 Hr.

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. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question.
5. Use of non-programmable scientific calculators is allowed.
6. Assume suitable data wherever necessary and mention it clearly.

	(Level /CO)	Marks
Q. 1 Objective type questions. (Compulsory Question)		12
1 Which of the following projection methods places the object between the observer and the plane of projection? A) Oblique projection B) Third angle projection C) First angle projection D) Isometric projection	(CO5)	1
2 If a plane is parallel to the plane of projection, it appears A) True size B) as a line or edge C) Foreshortened D) None of these	(CO4)	1
3 What is the purpose of a center line in a drawing? A) To show visible outlines B) To represent symmetry and centers of circles C) To indicate section lines D) To show cutting planes	(CO1)	1
4 In orthographic projection, the front view is typically shown in which plane? A) Horizontal plane B) Vertical plane C) Profile plane D) Planes of projection	(CO5)	1
5 The true length of a line is seen in which of the following conditions? A) When the line is parallel to the plane B) When the line is perpendicular to the plane C) When the line is inclined to both HP and VP D) When viewed from the side	(CO3)	1
6 If a line is located in the first quadrant and is inclined to HP, where will its front view be located? A) Above the XY line B) Below the XY line C) On the XY line D) At the origin	(CO 3)	1
7 When a point is located on the XY plane in projection, its projection on the plane will be: A) A point at the same location B) A point at the origin C) A line along the X-axis D) A line along the Y-axis	(CO 4)	1

8	Which of the following is NOT a principal plane in orthographic projection? A) Horizontal plane (HP) B) Vertical plane (VP) C) Side plane (SP) D) Profile plane (PP)	(CO 4)	1
9	When a prism is lying on HP with its axis inclined to HP, its front view will be: A) A rectangle B) A parallelogram C) A line D) An ellipse	(CO 4)	1
10	If a plane is inclined to both HP and VP, its projections appear as: A) A true shape in both views B) A point in both views C) Inclined lines in both views D) A horizontal and vertical line	(CO 5)	1
11	When a solid is cut by a plane, the shape of the section depends on: A) The position of the plane B) The material of the solid C) The color of the solid D) The surface texture of the solid	(CO 5)	1
12	The angles between the projection of the x-axis, y-axis, and z-axis in an isometric view are: A) 90° B) 120° C) 45° D) 60°	(CO 5)	1
Q. 2 Solve the following.			12
A)	Differentiate Aligned and Uni-directional system of placing the dimensions on a drawing with the help of neat diagrams.	(CO 1)	6
B)	Draw the following lines by stating their description and general applications: i. Continuous thick or Continuous wide ii. Dashed thin (narrow) iii. Chain thin Long-dashed dotted (narrow)	(CO 2)	6
Q.3 Solve the following.			12
A)	Draw the FV, TV and RHSV of the following points: (i) Point P lies in the HP and 22 mm behind the VP. (ii) Point Q lies in the VP and 32 mm below the HP. (iii) Point R lies 32 mm below the HP and 22 mm behind the VP.	(CO 3)	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.	(CO 2)	6
Q. 4 Solve Any Two of the following.			12
A)	Draw the projections of a regular hexagon of 25 mm side, having one of its sides in the H.P. and inclined at 60° to the V.P., and its surface making an angle of 45° with the H.P.	(CO 4)	6
B)	A cone of base 60 mm diameter and height 80 mm is resting on a point on the circumference of base on the HP with its apex 55 mm above the HP. Draw its projections if its axis is inclined at 45° to the VP.	(CO 4)	6

- C) A hexagonal prism, having a base with a 30 mm side and an 80 mm long axis, rests on one of its base edges in the H.P such that the axis is inclined at 30° to the HP & resting edge makes an angle of 45° with VP, draw its projections. (CO 4) 6

Q.5 Solve Any Two of the following.

12

- A) A triangular prism, with a base side of 50 mm and an axis length of 70 mm, is resting on a rectangular face on the HP, the axis being parallel to the VP. An AIP inclined at 45° to the HP cuts the prism. The cutting plane intersects the axis at a distance of 30 mm from one end of the prism. Draw FV, sectional TV and sectional SV of the prism. (CO 5) 6
- B) A cylinder of 40 mm diameter, 60 mm height and having its axis vertical, is cut by a section plane, perpendicular to the V.P., inclined at 45° to the H.P. and intersecting the axis 32 mm above the base. Draw its front view, sectional top view, sectional side view and true shape of the section (CO 5) 6
- C) Draw the development of the lateral surface of the part P of the triangular pyramid as shown in Fig. 1. The line $o'1'$ in the front view is the true length of the slant edge because it is parallel to xy in the top view. The true length of the side of the base is seen in the top view. (CO 6) 6

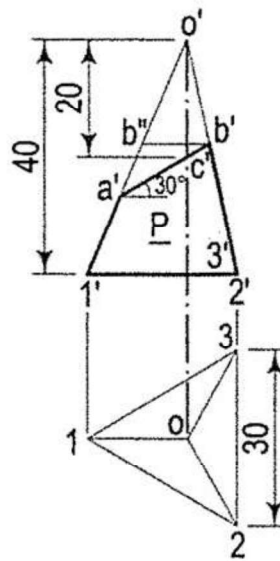


Fig. 1

Q. 6 Solve Any One of the following.

12

- A) Draw the half-sectional FV, and half-sectional RHSV and Top View of the object as shown in Fig. 2 by using first angle method. (CO 5) 12

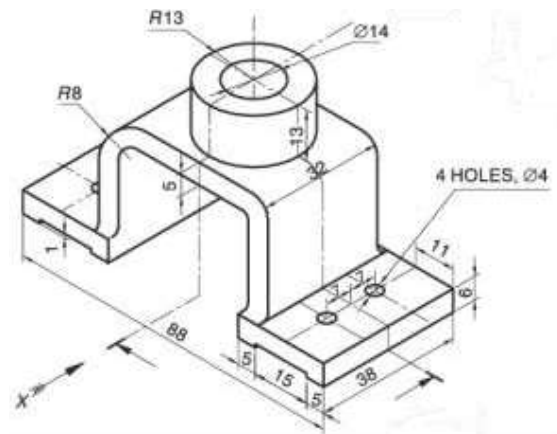


Fig. 2

- B) Figure 3 below shows the FV and LHSV of an object. Draw its isometric view. (CO 5) 12

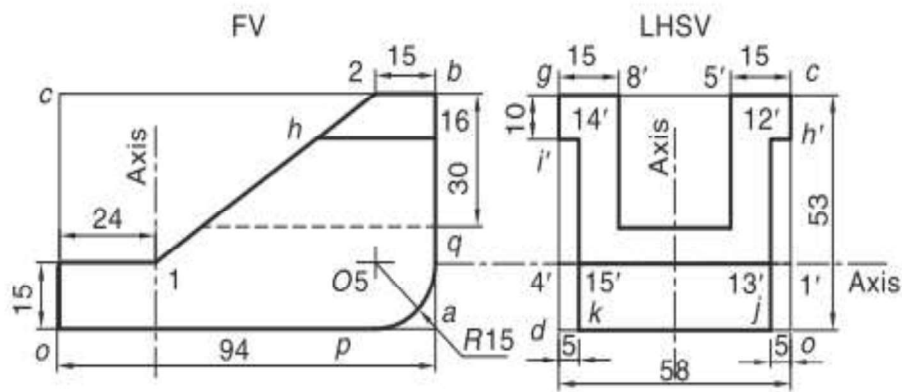


Fig. 3

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