



Indian School Al Wadi Al Kabir

Assessment – 2 (2025-2026)

Class: XI
Date: 02/12/2025

Subject: Engineering Graphics (046)
Set - I

Max. marks: 70
Time: 3 Hours

General Instructions:

- (i) Attempt all the questions.
 - (ii) Use both sides of the drawing sheet, if necessary.
 - (iii) All dimensions are in millimeters.
 - (iv) Missing and mismatching dimensions, if any, may be suitably assumed.
 - (v) Follow the SP: 46 – 2003 revised codes. (with the first angle method of projection)
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20 × 1 = 20

SECTION – A

Q.1 to Q.20: Answer the following multiple-choice questions. Print the correct choice on your drawing sheet.

1. Which line type is used to represent visible outlines or edges in engineering drawings?
 - (a) Chain thin line
 - (b) Continuous thick line
 - (c) Continuous thin line
 - (d) Dashed line

2. Which of the following statements is true about orthographic projections?
 - (a) It gives a pictorial view.
 - (b) It uses perspective shortening.
 - (c) It shows multiple views of an object accurately.
 - (d) It cannot represent the true shape.

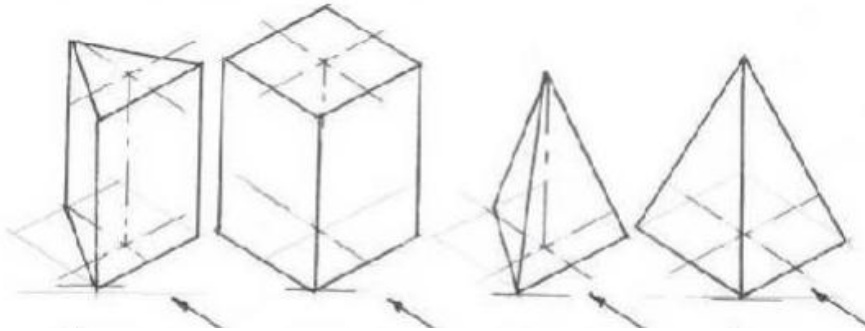
3. In Engineering Graphics, a circle is generally drawn using a:
 - (a) Compass
 - (b) Protractor
 - (c) Mini drafter
 - (d) French curve

4. If the front view and top view of a point are 40 mm above and 30 mm below the XY line respectively, then the point is located in:
 - (a) Second quadrant
 - (b) First quadrant
 - (c) Third quadrant
 - (d) Fourth quadrant

5. A cone is kept with its base on HP and axis vertical. Which of the following statements is correct?

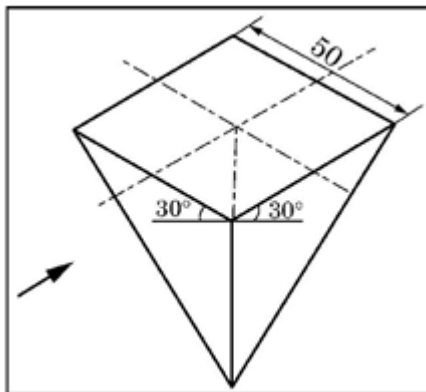
- (a) The plan will show a triangle, and the elevation shows a circle.
- (b) The plan will show a circle, and the elevation shows a triangle.
- (c) Both plan and elevation show triangles.
- (d) Both plan and elevation show circles.

6. Identify a vertical triangular prism with its axis perpendicular to HP and parallel to VP from the given figures.



(a) (b) (c) (d)

7. Choose the correct statements for the given square pyramid as seen from the given arrow:

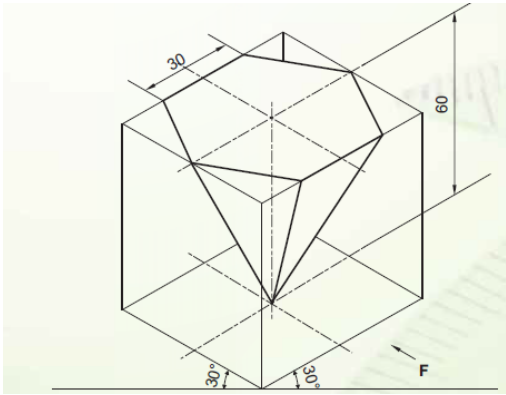


- (a) The solid is resting with its base when its axis is parallel to VP.
- (b) The solid is resting on its apex when its axis is perpendicular to VP.
- (c) The solid is resting on its apex when its axis is parallel to VP.
- (d) The solid is resting on its base when its axis is perpendicular to VP.

8. Which dimension is common in the front view and top view?

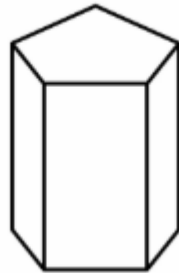
- (a) Length
- (b) Width
- (c) Height
- (d) All of these

9. Identify the solid and the position of the axis line from the given figure.



- (a) Upright hexagonal pyramid and axis perpendicular to HP.
- (b) Upright hexagonal prism and axis perpendicular to VP.
- (c) Inverted hexagonal pyramid and axis perpendicular to HP.
- (d) Inverted hexagonal prism and axis perpendicular to VP.

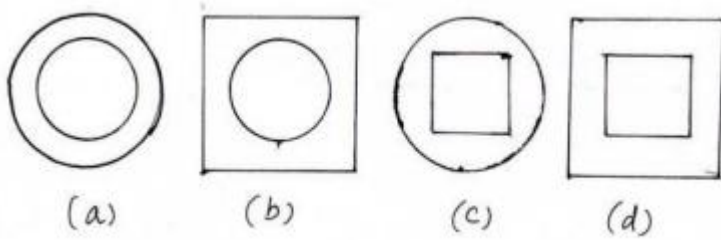
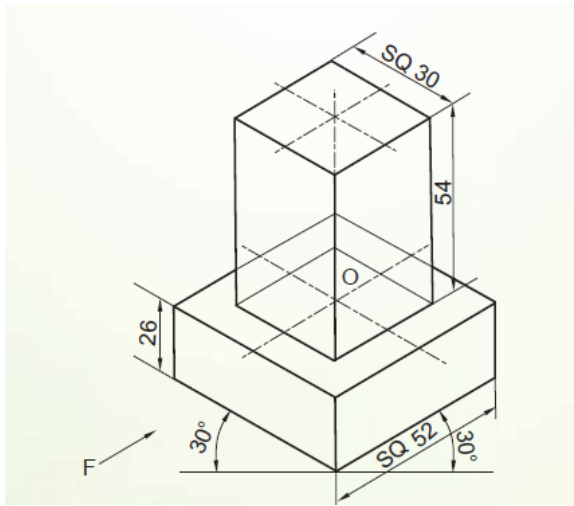
10. Match LIST – I with LIST – II, for the given three-dimensional solid:



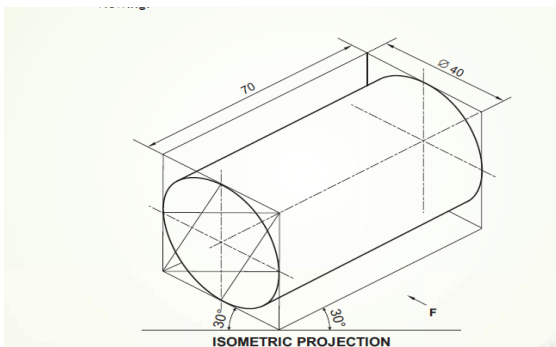
LIST 1:	LIST II:
1. Total number of pentagonal bases	(i) Parallel to HP
2. Total number of rectangular faces	(ii) Perpendicular to HP
3. Base of the solid	(iii) Five
4. Axis of the solid	(iv) Two

- (a) 1-(iv), 2-(iii), 3-(i), 4-(ii)
- (b) 1-(i), 2-(iii), 3-(ii), 4-(iv)
- (c) 1-(iii), 2-(ii), 3-(i), 4-(iv)
- (d) 1-(ii), 2-(iv), 3-(iii), 4-(i)

11. The isometric projection of a combination of solids is shown. Choose the correct top view in orthographic projection for this combination.

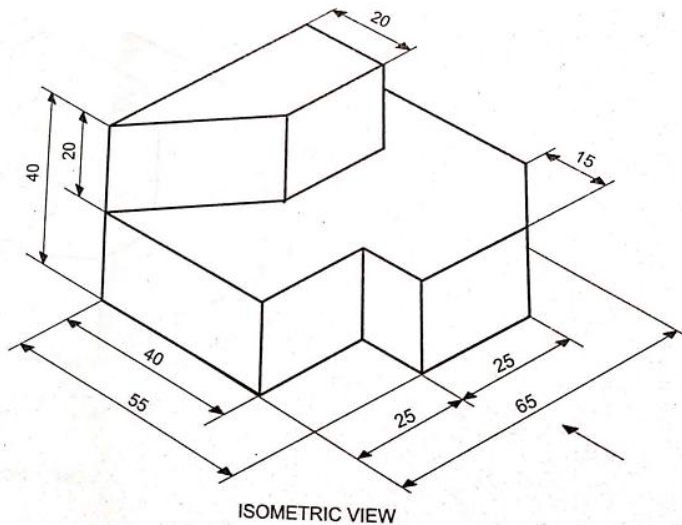


12. Choose the correct statement for the given figure:



- (a) The figure shows a cylinder with an axis perpendicular to HP.
- (b) The figure shows a cone with axis perpendicular to HP.
- (c) The figure shows a cylinder with an axis parallel to both HP and VP.
- (d) The figure shows a cone with an axis parallel to both HP and VP.

13. Identify which side view is visible to the observer and where is it represented?



- (a) Right side view, represented at the left side of the front view.
- (b) Left side view, represented at the left side itself.
- (c) Right side view, represented at the left side of the top view.
- (d) Left side view, represented at the right side of the front view.

14. Which of the following solids will have a circular plan when its axis is perpendicular to HP?

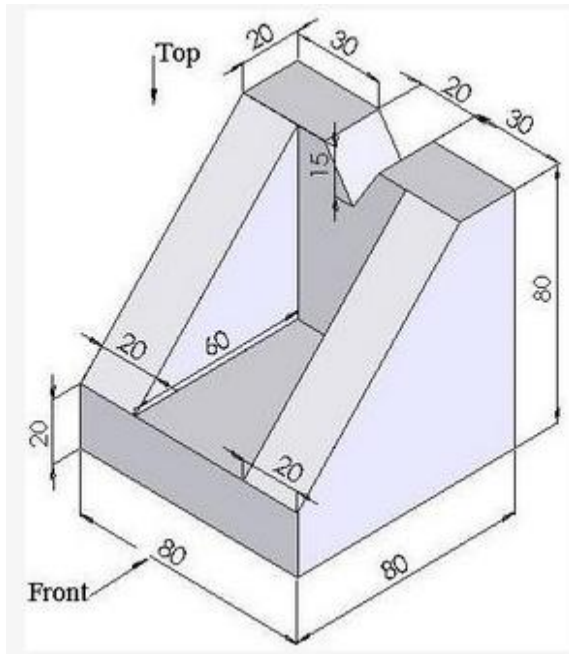
- (a) Cube
- (b) Square pyramid
- (c) Cylinder
- (d) Hexagonal prism

15. In orthographic projection, the projectors are always:

- (a) Inclined to the plane of projection.
- (b) Parallel to each other and perpendicular to the plane of projection.
- (c) Converging to a single point.
- (d) Randomly oriented.

Q. 16. To Q. 20: Read the following paragraph and answer the questions given below.

You are a trainee draftsman working with a mechanical design team. Your responsibility is to create the orthographic projections of a simple machine block that will later be used for fabrication in a larger machine assembly. The block has a rectangular base that supports two inclined faces, forming a V-shaped groove on top. The goal is to create accurate orthographic projections (top view, front view, and side view) for the block, which will be used for fabrication.



16. In which orthographic view will the V-shaped groove formed by two inclined faces be clearly visible?
- Top view
 - Front view
 - Side view
 - Bottom view
17. In which view will the rectangular base of the block appear as a rectangle of 80×80 mm?
- Top view
 - Front view
 - Side view
 - Isometric view
18. The purpose of creating orthographic projections for the machine block is to:
- Decorate the design sheet.
 - Visualise the 3D model in colour.
 - Provide accurate 2D dimensions for fabrication.
 - Show only pictorial representation.
19. In which view will the inclined surfaces forming the V-groove appear as lines (edges) instead of surfaces?
- Top view
 - Front view
 - Side view
 - Auxiliary view

20. The projection with multiple views is known as -----.
- (a) isometric projection
 - (b) orthographic projection
 - (c) perspective projection
 - (d) oblique projection

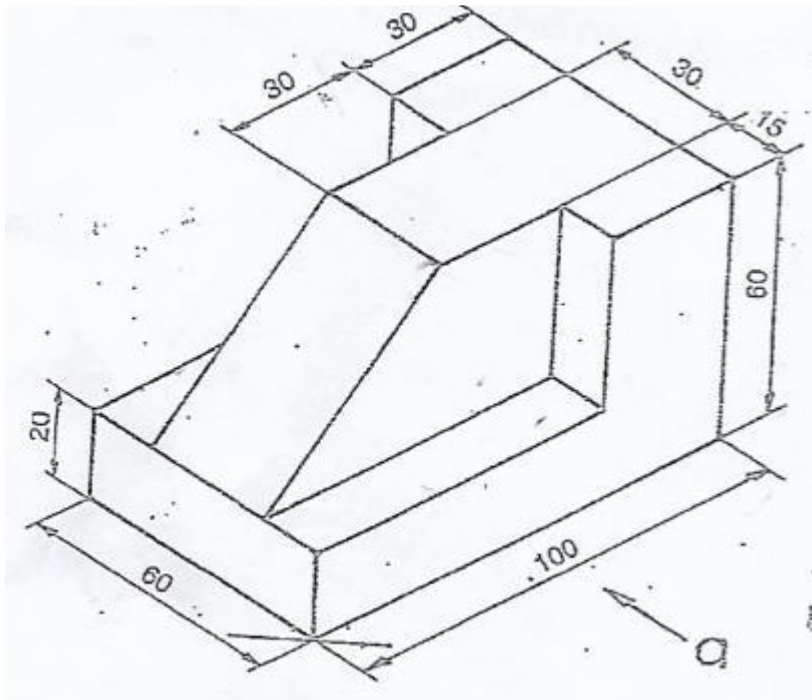
SECTION B

2 × 3 = 6

21. Draw a circle passing through three non-collinear points A, B, and C.
22. Construct a quadrilateral with AB = 45 mm, BC = 55 mm, CD = 40 mm, AD = 60 mm, AC = 70 mm.

2 × 5 = 10

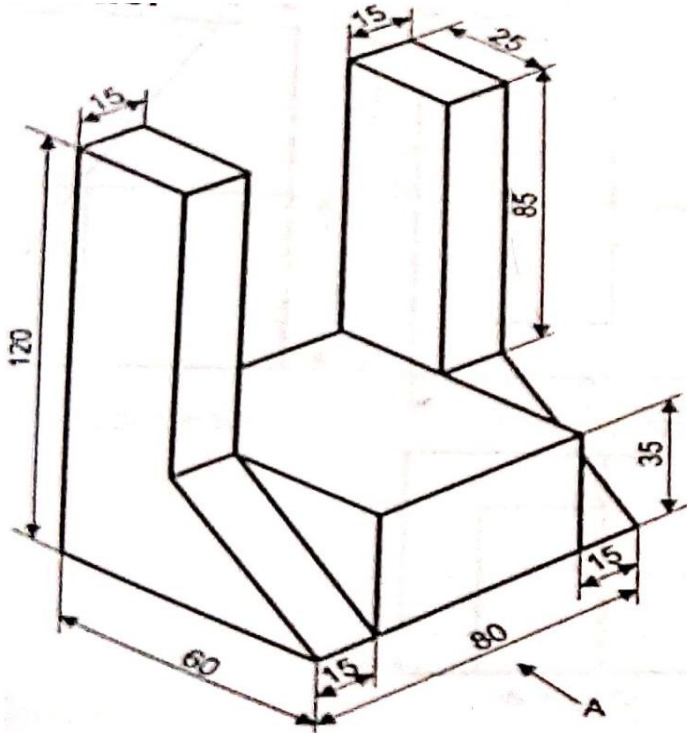
23. A line AB has its end A 5mm from VP and 10 mm from HP, and B is 40mm from HP and 25mm from VP. The distance between its end projectors is 50mm. Draw its front view and top view. Also, find its true length and the true length of inclination with HP and VP using the trapezoid method. Follow the first angle method of projection.
24. Project front view, side view, and top view of the machine block, to scale 1:1.



2 × 7 = 14

25. Project the front view and sectional top view of a square pyramid with 50 mm base edges and 60 mm high axis, resting vertically on HP on its base, with two edges of its base parallel to VP, sectioned by a plane perpendicular to VP and inclined to HP at 60 degrees, and intersecting the axis at a point 35 mm above its base.

26. Project front view, side view, and top view of the machine block, to scale 1:1.



$2 \times 10 = 20$

27. A cone of 50 mm base diameter and 60 mm horizontal axis is resting on the HP with its base vertical and at right angles to VP. It is sectioned by a vertical plane parallel to VP and 15 mm away from its axis. Project its top view and sectional front view.

28. A pentagonal prism having a 30 mm edge of its base and an axis of 60 mm length is resting on one of its rectangular faces with the axis perpendicular to the side plane (axis parallel to both HP and VP). Draw the projections of the prism.