



Indian School Al Wadi Al Kabir

Final Examination (2025-2026)

Class: XI

Subject: ENGINEERING GRAPHICS (046)

Max. marks:70

Date: 24/02/2026

SET-1

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)

20 × 1 = 20

SECTION – A

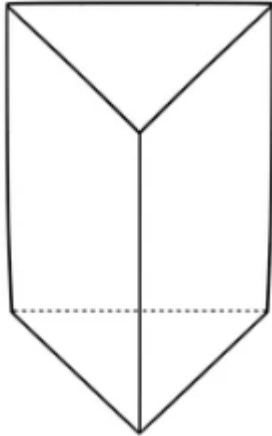
Q.1 to Q.20: Answer the following multiple-choice questions. Print the correct choice on your drawing sheet.

1. Which type of line is used to represent the axis of a solid?
 - (a) Continuous thick
 - (b) Dashed
 - (c) Chain thin
 - (d) Zig-zag

2. The top view of a cone with its axis perpendicular to HP will be a:
 - (a) Circle
 - (b) Triangle
 - (c) Ellipse
 - (d) Rectangle

3. A polygon having eight equal sides and angles is called -----.
 - (a) Hexagon
 - (b) Octagon
 - (c) Heptagon
 - (d) Pentagon

4. Identify the solid shown below:



- (a) Cylinder
- (b) Triangular prism
- (c) Triangular pyramid
- (d) Cone

5. The view seen from the front of the object is called:

- (a) Plan
- (b) Elevation
- (c) Section
- (d) Profile

6. A section plane parallel to the HP will cut a solid to give:

- (a) Vertical section
- (b) Horizontal section
- (c) Oblique section
- (d) Inclined section

7. Under the first angle method of projection, the right-side view is placed:

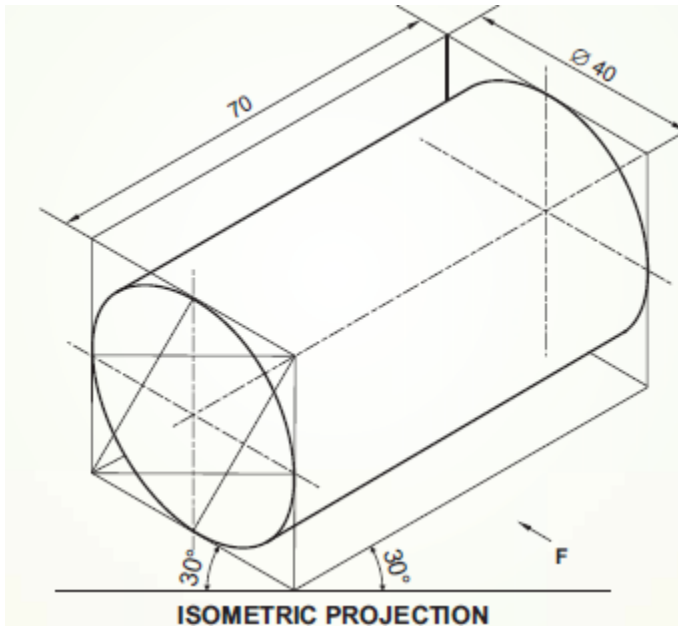
- (a) To the right of the front view
- (b) Above the top view
- (c) To the left of the front view
- (d) Below the front view

8. Match List I with List II:

LIST I	LIST II
1. True length	i. Thin continuous lines
2. Isometric length	ii. 45° inclined line
3. Hatching lines	iii. 30° inclined line
4. Projection lines	iv. Thin continuous 45° inclined lines

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

9. Which of the following is correct for a cylinder lying on HP with axis parallel to VP?



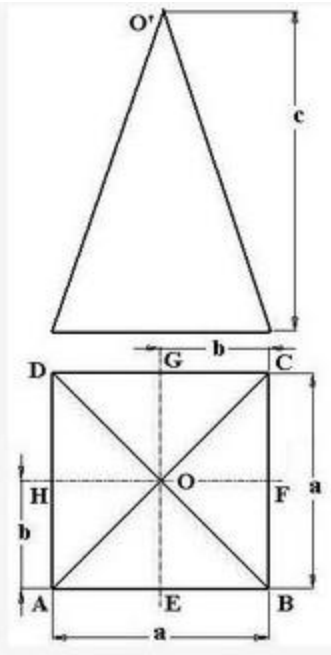
- (i) Top view will be a rectangle.
- (ii) Front view will be a circle.
- (iii) Axis is parallel to VP.
- (iv) Axis is perpendicular to HP.

- (a) (i) & (ii)
- (b) (i) & (iii)
- (c) (ii) & (iv)
- (d) (iii) & (iv)

10. A triangle with all sides different is called:

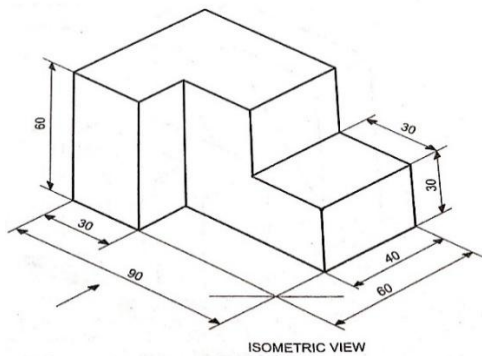
- (a) Equilateral
- (b) Isosceles
- (c) Scalene
- (d) Right-angled

11. Identify the solid from its orthographic views given.



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

12. Analyse the given machine block and, as per the direction of viewing, identify where the side view is placed.



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

13. The purpose of sectioning is to show:

- (a) Hidden edges
- (b) Interior details
- (c) Surface finish
- (d) Dimensions

14. What is the angle between the main scale and the isometric scale in the construction of the isometric scale?

- (a) 15°
- (b) 30°
- (c) 45°
- (d) 60°

15. The isometric view of a square lamina resting in VP appears as a:

- (a) Line
- (b) Rectangle
- (c) Parallelogram
- (d) Square

Q16 to 20: Read the following paragraph and answer the questions given below

You are assigned to draw the projections of a **hollow cylindrical pipe** used in an exhaust system. The pipe has an outer diameter of 60 mm, an inner diameter of 40 mm, and a length of 80 mm. You need to create its front view and top view using first-angle projection.



16. The outer and inner circles in the front view represent:

- (a) Section view
- (b) Hidden view
- (c) Concentric circles
- (d) Ellipse

17. The top view of the pipe will appear as:

- (a) Two concentric circles
- (b) A rectangle
- (c) A square
- (d) A triangle

18. The thickness of the pipe is:

- (a) 10 mm
- (b) 15 mm
- (c) 20 mm
- (d) 5 mm

19. Which line type is used to draw the invisible inner edges in top view?

- (a) Thick
- (b) Thin continuous
- (c) Dashed
- (d) Chain

20. The projections must follow:

- (a) Third angle method
- (b) Enlarged scale
- (c) First angle method
- (d) Pictorial drawing

SECTION B

2 × 3 = 6

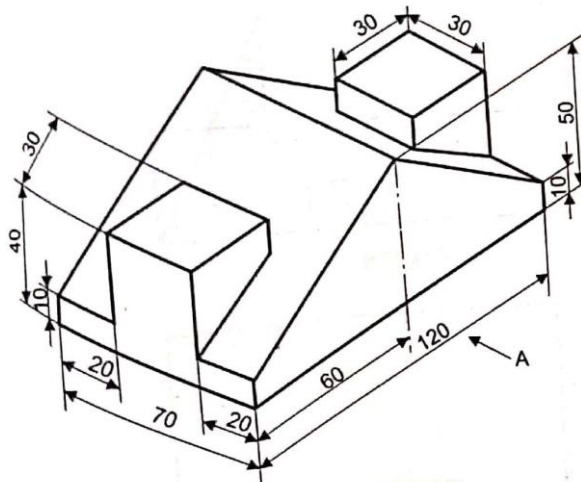
21. Divide the line AB in the ratio 4:6.

22. Inscribe a circle in a regular hexagon whose side is given as 40 mm.

2 × 5 = 10

23. The frustum of a cone with base diameter = 50 mm, top face diameter = 25 mm, and vertical axis = 30 mm is resting on its base on H.P. Project its Front View and Top View.

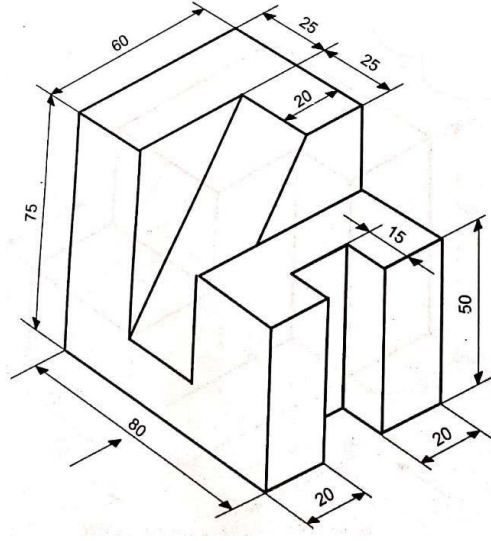
24. Project front view, side view, and top view of the machine block, to scale 1:1.



$$2 \times 7 = 14$$

25. A cylinder of 40 mm diameter and a length of 60 mm is resting on its curved surface on HP, with its axis parallel to both HP and VP. Draw its front view and top view.

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



$$2 \times 10 = 20$$

27. A hexagonal pyramid of 25 mm base edges and 60 mm long horizontal axis, is resting on one corner of its base, on HP with two opposite base edges parallel to VP. It is sectioned by a vertical plane parallel to VP and 10 mm from its axis. Project its top view and sectional front view. (10)

28. (a) Construct an isometric scale of 70mm. (4)

(b) Draw the isometric projection of a circle of diameter 40 mm in H.P. (6)