



Indian School Al Wadi Al Kabir

Assessment 1 (2026-2027)

Sub: ENGINEERING GRAPHICS (046)

Class: XI

Set - 1

Max. Marks: 70

Date: 27/09/2026

Time: 3 Hours

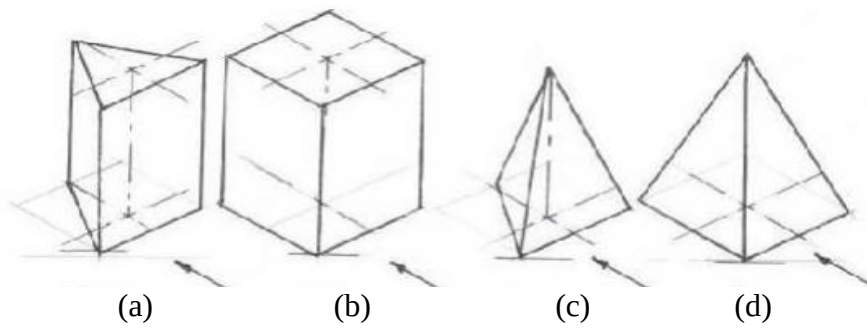
General Instructions:

- (i) Attempt all the questions.
- (ii) Use both sides of the drawing sheet, if necessary.
- (iii) All dimensions are in millimetres.
- (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)
- (vi) In question 23, hidden edges or lines are to be shown in views without section.
- (vii) In question 24, no hidden edges or lines are required.

SECTION - A

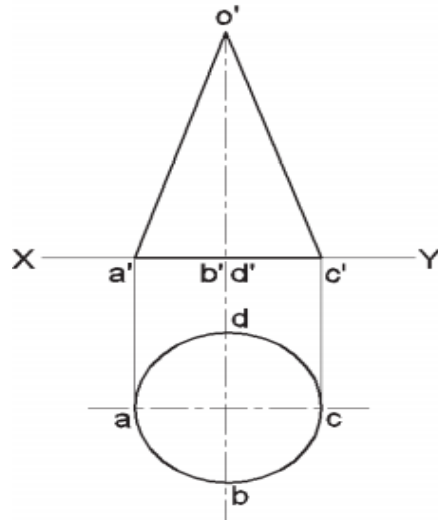
Questions

1. Which line is used if the outline is not visible on the viewing surface? This line is represented by short, thick dashes spaced evenly apart. 1
(a) Continuous thick line
(b) Hidden lines
(c) Cutting plane
(d) Continuous thin line
2. Two circles having the same centre but different radii are called: 1
(a) Eccentric circles
(b) Inscribed circles
(c) Concentric circles
(d) Circumscribed circles
3. Orthographic projection represents a three-dimensional object by: 1
(a) A pictorial view only
(b) Different two-dimensional views
(c) A perspective sketch
(d) A freehand sketch
4. Identify a vertical triangular pyramid whose axis is perpendicular to HP and parallel to VP from the following figures. 1



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

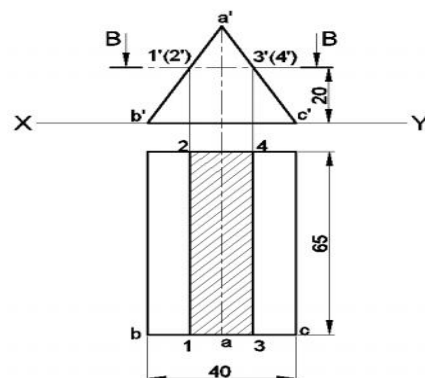
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- (a) Triangular prism and axis perpendicular to HP
- (b) Cone and axis perpendicular to HP
- (c) Triangular prism and axis parallel to both HP and VP.
- (d) Cone and axis parallel to both HP and VP

6. Which type of section plane is shown in the given figure?

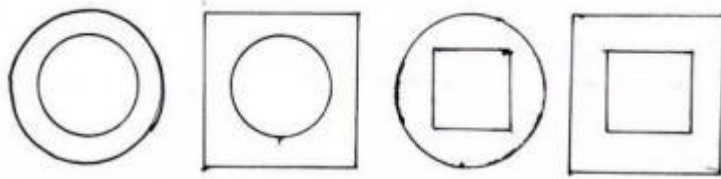
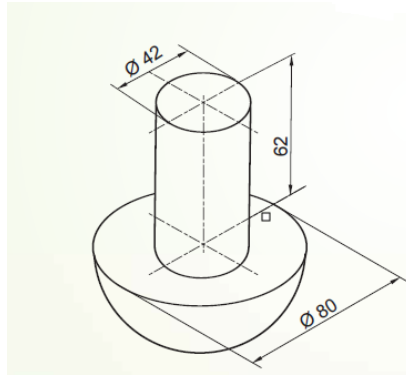
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- (a) Vertical section plane
- (b) Horizontal section plane
- (c) Oblique section plane
- (d) Inclined section plane

7. Select the top view of the combination of solids

1



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

8. Match LIST I with LIST II

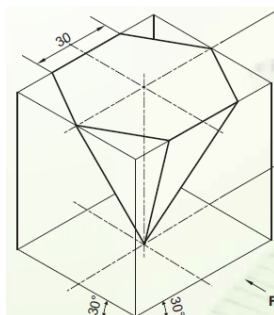
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LIST I – TYPES OF FIGURES	LIST II – ANGLE INCLUDED
1. Cylinder	(i) Solid having triangular bases and rectangular lateral faces.
2. Triangular prism	(ii) Solid having four equal triangular faces.
3. Cube	(iii) Solid having two equal and parallel circular bases.
4. Regular tetrahedron	(iv) Six equal square faces.

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

9. Choose the correct statements for the given figure.

1



- (i) The figure shows an image of a pentagonal prism.
- (ii) The figure shows an image of an inverted hexagonal pyramid.
- (iii) The front view of the figure will be an inverted triangle.
- (iv) The axis of the figure is perpendicular to VP.

- (a) (i) and (iii) only
- (b) (i) and (iv) only
- (c) (i) and (ii) only
- (d) (ii) and (iii) only

10. Match LIST I with LIST II

1

LIST 1 - QUADRANTS	LIST II - RULES
1. First quadrant	(i) Above HP, behind VP
2. Second quadrant	(ii) Below HP, in front of VP
3. Third quadrant	(iii) Below HP, behind VP
4. Fourth quadrant	(iv) Above HP, in front of VP

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

11. The angle between the hatching lines used in sectional views is generally:

1

- (a) 30°
- (b) 45°
- (c) 60°
- (d) 90°

12. The main purpose of sectioning a solid is to:

1

- (a) Increase the size of the drawing.
- (b) Show the internal details clearly.
- (c) Remove all visible edges.
- (d) Convert a solid into a plane figure.

13. If the axis of a regular prism is perpendicular to HP, its top view will show:

1

- (a) The true shape of its base.
- (b) Only its height.
- (c) A rectangle in every case.
- (d) A triangle in every case.

14. In First Angle Projection, the top view is placed:

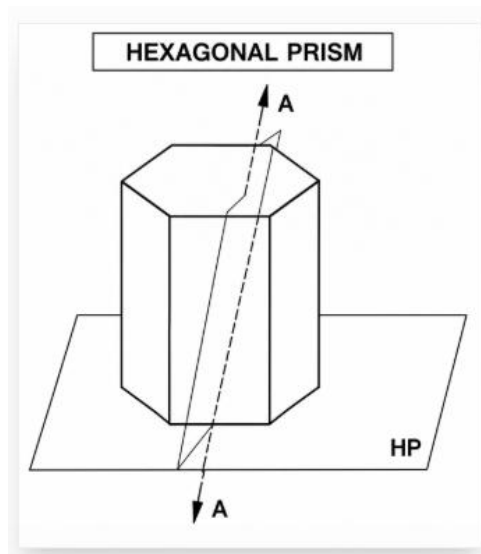
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- (a) Above the front view.
- (b) Below the front view.
- (c) To the right of the front view.
- (d) To the left of the front view.

15. A circle drawn outside a regular polygon and passing through all its vertices is called a/an: 1
- (a) Inscribed circle
 - (b) Concentric circle
 - (c) Circumscribed circle
 - (d) Eccentric circle

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

A student is working on the sectional representation of a hexagonal prism in Engineering Graphics. The prism is resting on its base on the Horizontal Plane (HP). A cutting plane is introduced to obtain a sectional view. The student has to understand the position of the cutting plane, identify the resulting sectional shape, and apply the correct conventions for representing the cut surface. The teacher reminds the student that sectional views clearly show the internal features of a solid.



16. The hexagonal prism is resting on its base on HP. If the cutting plane is parallel to HP, the shape obtained in the sectional view will correspond to: 1
- (a) A rectangle
 - (b) A triangle
 - (c) A hexagon
 - (d) A circle
17. A student says, "Whenever a prism is cut by a plane, the sectional shape will always be a hexagon because the original solid is a hexagonal prism." Which statement correctly evaluates the student's reasoning? 1
- (a) Correct, because the original base determines every section.
 - (b) Correct, because all sections of prisms have the same shape.
 - (c) Incorrect, because the sectional shape depends on the orientation and position of the cutting plane.
 - (d) Incorrect, because a prism cannot be sectioned.
18. The line representing the position of the cutting plane is generally shown in the drawing using: 1
- (a) Thin continuous line.
 - (b) Thick continuous line.
 - (c) Chain line with thick line at ends.
 - (d) Freehand line.
19. When a solid is cut by a section plane, the surface exposed by the cutting plane is represented by: 1

- (a) Dimension lines
- (b) Hatching lines
- (c) Centre lines
- (d) Construction lines

20. A student has drawn hatching lines over the entire object instead of only on the surface actually cut by the section plane. What is the most appropriate correction? 1
- (a) Remove all hatching lines.
 - (b) Hatch only the areas actually intersected by the cutting plane.
 - (c) Hatch the visible surfaces also.
 - (d) Replace hatching with hidden lines.

SECTION B

21. Construct a regular pentagon ABCDE of 30 mm sides using a compass. 3
22. Draw a given rhombus with each side = 60 mm and inscribe a circle in it. 3
23. A thin horizontal hexagonal plate of 20 mm sides is inclined at 45° to the H.P. and perpendicular to the V.P.; two of its parallel edges are parallel to the V.P. The plate is 10 mm above the H.P. and 15 mm in front of the V.P. Draw the projections of the plate. 5
24. A cylinder of base diameter 50 mm and height 70 mm is resting on its curved surface on HP such that the axis is normal to VP. A section plane inclined to HP at an angle of 60° passes through the axis and cuts the solid into two halves. Draw the Front View and sectional Top View. 5
25. Project the front view and sectional top view of a square pyramid, 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. 7
26. A line AB has its end point A located 5 mm from the VP and 10 mm from the HP, while the end point B is located 25 mm from the VP and 40 mm from the HP. The distance between its end projectors is 50mm. Draw its front view and top view. Find its true length and true length of inclination with HP and VP using the trapezoid method. Follow the first angle method of projection. 7
27. A pentagonal prism with a base edge of 30 mm and an axis length of 60 mm is resting on one of its rectangular faces, with its axis perpendicular to the profile plane. Draw the projections of the prism. 10
28. A hexagonal pyramid of 25 mm base edges and 60 mm long horizontal axis is resting with one corner of its base on HP, with two opposite base edges parallel to VP. It is sectioned by a vertical plane parallel to the VP and located 10 mm from its axis. Project its top view and sectional front view. 10

All the Best!