# Indian School Al Wadi Al Kabir
## Final Examination (2024-2025)

Class: XI Subject: ENGINEERING GRAPHICS(046) Max. marks:70
Date: 04/03/2025 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 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 type of line is used to draw hidden edges?
(a) Hatching line
(b) Dashed line
(c) Construction line
(d) Continuous thick line

2. When the axis of a regular solid is perpendicular to VP, then its base will be seen in:
(a) Top view
(b) Front view
(c) Right side view
(d) Left side view

3. When all the sides and angles in a polygon are equal, it is called a ----------.
(a) irregular polygon
(b) parallel polygon
(c) regular polygon
(d) non-parallel polygon

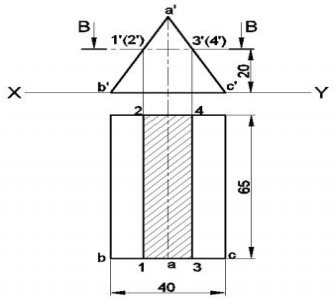
4. A vertical square pyramid

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

5. The top view of an object is also known as ----------.

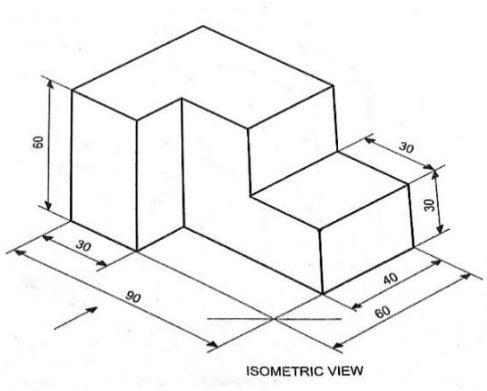
(a) elevation
(b) station points
(c) plan
(d) projectors

6. Which type of section plane is happening in this given figure?




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

7. Identify which side view is viewable to the observer and where we have to represent it?




(a) Right side view and represent at left side of front view.

(b) Left side view and represent at left side itself.
(c) Right side view and represent at left side of top view.
(d) Left side view and represent at right side of front view.

8. Match the List I with List II

| List I | List II |
|---|---|
| 1. Two-dimensional projection | i. Hatching lines |
| 2. Sectional view | ii. Orthographic projection |
| 3. Section plane | iii. Isometric projection |
| 4.Three-dimensional projection | iv. Oblique section |

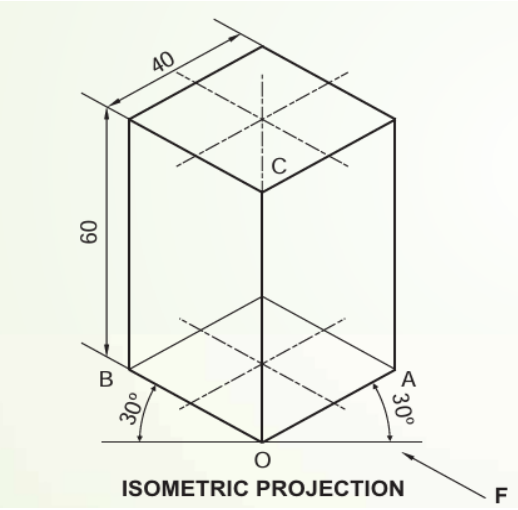
(a) 1-iii, 2-iv, 3-i, 4-ii

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

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

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

9. Choose the incorrect statement/s for the given figure.




(i) The figure shows an image of a vertical square pyramid.
(ii) The figure shows an image of a vertical square prism.
(iii) The front view of the figure will be a square.
(iv) The axis of the figure is perpendicular to HP.

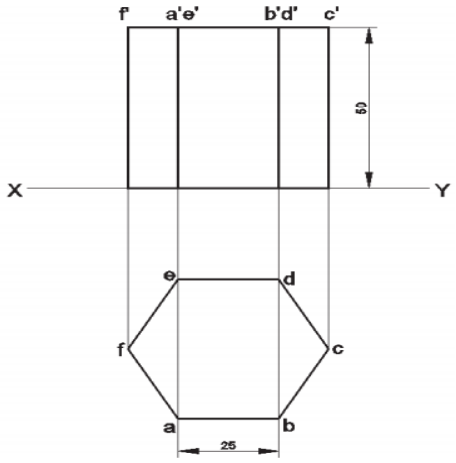
(a) (i) and (iii) only

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

10. Name the quadrilateral with all the sides and angles equal.

(a) Rectangle
(b) Rhombus
(c) Square
(d) Trapezium

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




(a) Hexagonal prism and axis perpendicular to VP.
(b) Hexagonal prism and axis perpendicular to HP.
(c) Hexagonal pyramid and axis perpendicular to HP.
(d) Hexagonal pyramid and axis perpendicular to VP.

12. In isometric projection, all the three principal axes are equally inclined at an angle of ---------.

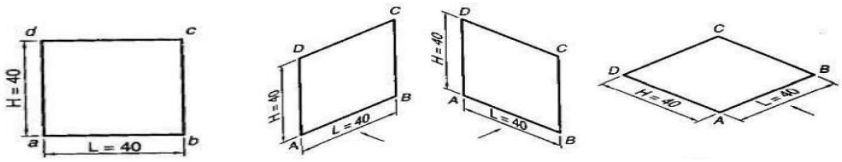
(a) 45 degree
(b) 30 degree
(c) 120 degree
(d) 15 degree

13. ---------- reveal or show the interior structure of an object, which are not directly visible.
(a) fastening
(b) welding
(c) riveting
(d) sectioning
14. According to first angle method of projection, the front view is a circle and top view is a

rectangle, the axis is perpendicular to VP. Name the three dimensional solid.

(a) Cone
(b) Pentagonal prism
(c) Cylinder
(d) Sphere

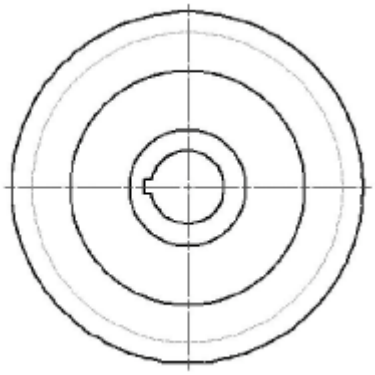
15. Identify the isometric projection of square lamina which is kept in HP




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

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

You are a student in Class 11, studying Engineering Graphics as part of your CBSE curriculum. Your teacher has assigned a project where you need to create an isometric projection of a mechanical part for a new product design. The part is a simple pulley (circular in shape) that will be used in a machine assembly. You have been given a 2D orthographic drawing of the pulley and are required to convert it into an isometric projection to present to your classmates.



16. Which method you must have used to draw the isometric projection of a circle?

(a) Line rotation method
(b) Trapezoid method
(c) Four centre method
(d) Parallel line method

17. You must have used _____ in the isometric projection method.

(a) True scale
(b) Isometric scale
(c) Vernier scale
(d) Diagonal scale

18.What will be the isometric projection of a circle?

(a) Sphere
(b) Circle
(c) Hemisphere
(d) Ellipse

19. After constructing the isometric projection of pulley, the dimensions are ----------.
(a) Doubled
(b) Halved
(c) Foreshortened
(d) Remains the same

20. In isometric scale, the isometric length is measured at an angle of ----------.
(a) 45 degree
(b) 30 degree
(c) 15 degree
(d) 120 degree

## SECTION B

21.Construct a quadrilateral with AB = 45 mm, BC = 55 mm, CD = 40 mm, AD = 60 mm, AC = 70 mm. (3)

22. Draw a given rhombus with side = 60 mm and inscribe a circle in it. (3)

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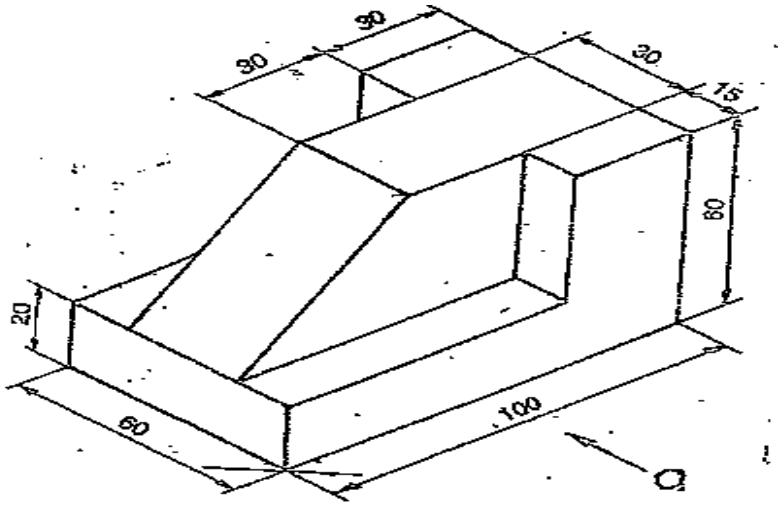
23. The frustum of a cone of 40 mm base diameter and 20 mm cut face diameter, rests on H.P. with its 40 mm long axis parallel to H.P. and at right angles to V.P. the cut face is in front. Project its Front View and Top View. (5)

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 perpendicular 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. Draw the front view and top view of an equilateral triangular prism of base side 30mm and height 60 mm kept in the horizontal position, with the axis parallel to both H.P. and V.P. (7)

26. Project front view, side view and top view of the machine block, to scale 1:1 (7)




27.A hexagonal prism of 25 mm base edges and 60 mm length is resting on one of its rectangular faces on the HP with its hexagonal ends at right angles to VP. It is cut by an oblique plane inclined to HP towards the right and intersecting the axis at a point 20 mm away from one of its ends. Project its front view and Sectional top view. (10)

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

28.(b) Draw the isometric projection of a regular hexagon of base side 30 mm in H.P. (6)