COMMON ANNUAL PRACTICE PAPER (2025-26)
CLASS: XI
SUBJECT: ENGINEERING GRAPHICS (046)

Time Allowed: 3 Hour **Maximum Marks: 70**

General Instructions:

I. This question paper contains three sections Section-A, Section-B & Section-C respectively.
II. All questions are compulsory.
III. Use both sides of the drawing sheet, if necessary.
IV. All dimensions are in millimetres.
V. Missing and mismatching dimensions, if any, may be suitably assumed.
VI. Follow the SP: 46 – 2003 revised codes. (with first angle method of projection).
VII. In question 28, hidden edges or lines are to be shown in views without section.

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SECTION – A

Answer the following multiple-choice questions. Print the correct option on your drawing sheet.

(14x1 = 14)

1. The H on a 2H pencil indicates its degree of_____.
    a) Handiness
    b) Hardness
    c) Harmless
    d) Heating Capacity
2. Those angles which lie on either side of a common arm are called:
    a) Adjacent Angle
    b) Obtuse Angle
    c) Acute Angle
    d) Reflex Angle

3. Match **Column-I** with **Column-II**:

	Column- I **(Position of object)**		**Column- II** **(Types of Orthographic Projection)**
1	Below H.P. & in front of V.P.	(A)	First Angle Projection
2	Below H.P. & Behind V.P.	(B)	Second Angle Projection
3	Above H.P. & in front of V.P.	(C)	Third Angle Projection
4	Above H.P. & Behind V.P.	(D)	Fourth Angle Projection

Choose the **correct** answer from the options given below:

a) 1-(B), 2-(D), 3-(C), 4-(A)

b) 1-(C), 2-(A), 3-(B), 4-(D)

c) 1-(B), 2-(A), 3-(D), 4-(C)

d) 1-(D), 2-(C), 3-(A), 4-(B)

4. Identify the **correct** statements regarding dimensioning process:

I. Dimension lines should be drawn parallel to the feature being dimensioned.

II. Hidden lines should be used to place dimensions if the feature is not visible.

III. It is acceptable to cross dimension lines and extension lines frequently.

IV. All dimensions must be in the same unit system throughout the drawing

Choose the **correct** answer from the options given below:

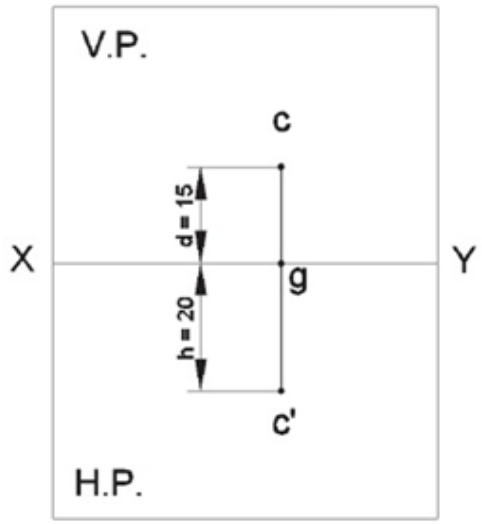
a) (II) & (III) only

b) (III) & (IV) only

c) (I) & (IV) only

d) (I) & (II) only

5. Choose the **correct** option for the given first angle projection of a point:



a) Point is placed 20 mm above H.P.

b) Point is placed 20 mm in front of V.P.

c) Point is placed 20 mm below H.P.

d) Point is placed 20 mm behind V.P.

6. Match **Column-I** with **Column-II**:

	Column- I **(Construction of Lines)**		**Column- II** **(Types of Lines)**
1		(A)	Visible Line
2		(B)	Hidden Line
3		(C)	Axis Line
4		(D)	Long Break Line

Choose the **correct** answer from the options given below:

a) 1-(A), 2-(B), 3-(C), 4-(D)

b) 1-(C), 2-(A), 3-(D), 4-(B)

c) 1-(D), 2-(C), 3-(B), 4-(A)

d) 1-(B), 2-(C), 3-(D), 4-(A)

7. Which of the following line is **not** drawn using thin continuous line:

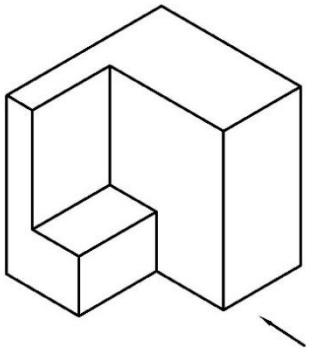
   a) To draw extension lines

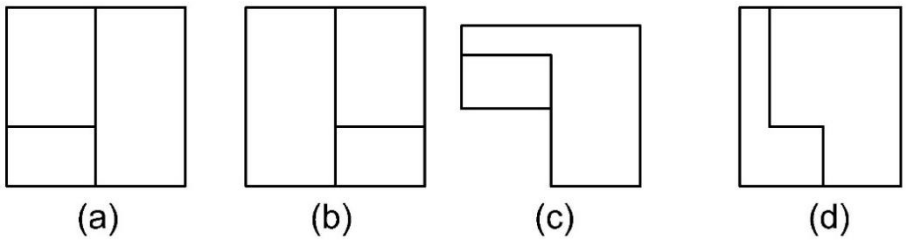
   b) To draw dimension lines

   c) To represent hidden edges

   d) To draw projection lines

8. Identify the **correct** Front View of the given machine block:





9. Identify the **correct** statements regarding Isometric scale:

   I. Isometric length is marked on a line at 30° with base line.

   II. The isometric scale provides the foreshortened dimension for isometric projection.

   III. Isometric scale provides the extended length for isometric projection.

   IV. The ratio between isometric length to true length is 1:1.

   Choose the **correct** answer from the options given below:

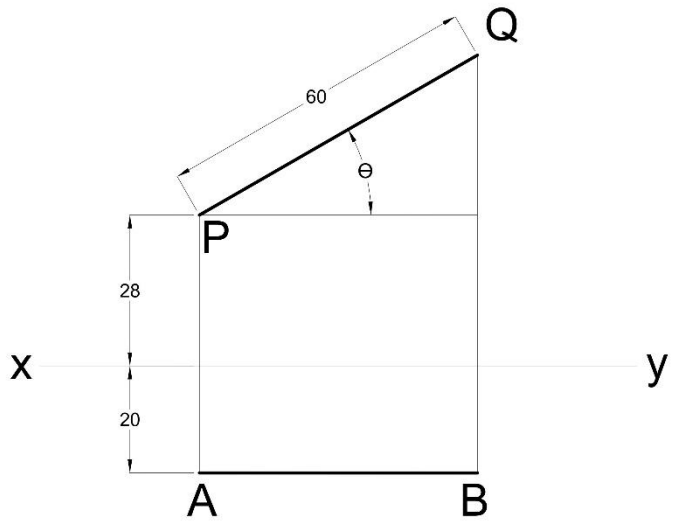
   a) (II) & (IV) only

   b) (I) & (IV) only

   c) (II) & (III) only

   d) (I) & (II) only

10. Identify the **correct** statements regarding given first angle projection of a Line:



I. The line 'AB' represent the true length of the line.

II. The line 'PQ' is the front view of the given line.

III. The given line is parallel to the vertical plane.

IV. The Point 'P' is 28mm below of the HP.

Choose the **correct** answer from the options given below:

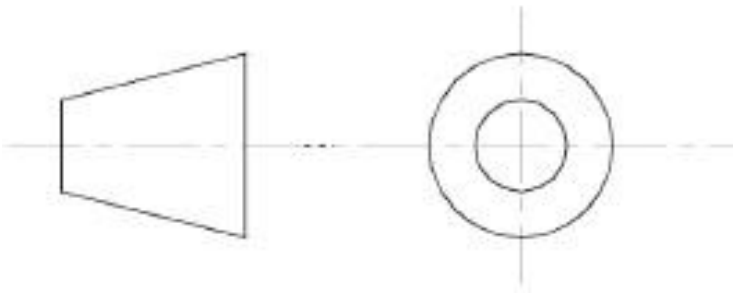
a) (I) & (IV) only

b) (I) & (II) only

c) (II) & (III) only

d) (III) & (IV) only

11. The projection symbol shown in the given figure represents:



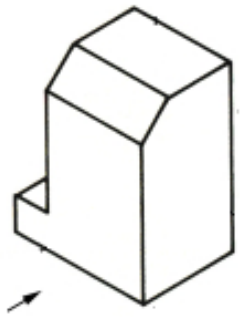
a) Third Angle Projection

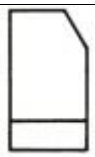
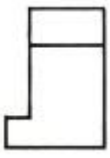
b) First Angle Projection

c) Fourth Angle Projection

d) Second Angle Projection

12. Match **Column-I** with **Column-II** for the orthographic views of given machine block:



	Column- I **(Orthographic View)**		**Column- II** **(View)**
1	Front View	(A)	
2	Top View	(B)	
3	Left Side View	(C)	
4	Rear View	(D)	

Choose the **correct** answer from the options given below:

a) 1-(C), 2-(D), 3-(B), 4-(A)

b) 1-(D), 2-(A), 3-(B), 4-(C)

c) 1-(D), 2-(C), 3-(A), 4-(B)

d) 1-(A), 2-(C), 3-(D), 4-(B)

13. Choose the **correct** option for the rhombus:

a) All angles are right angles

b) All sides are equal

c) Diagonals are equal

d) Opposite angles are unequal

14. Four centre method is used to draw isometric projection of a:

a) Square

b) Circle

c) Pentagon

d) Hexagon

SECTION – B

Read the passage and answer the questions from 15 to 18 given below: **(4x1 = 4)**

The circle plays a vital role in machine design as most rotating parts are circular in shape. Components like gears, pulleys, bearings, shafts, flywheels, and wheels are designed using circular geometry to ensure smooth motion and balance. Circular motion helps in transferring power efficiently and minimizing vibration. The use of circles in machine design simplifies assembly, reduces wear, and improves performance. Accurate circular dimensions are essential in manufacturing processes like turning and drilling. Thus, the concept of the circle forms the foundation of rotational mechanisms, making it one of the most important shapes in engineering and machine design.

15. Which of the following is not related to a circle?

a) Radius

b) Tangent

c) Vertex

d) Chord

16. The diameter of a circle is represented by:

a) Ø

b) μ

c) π

d) β

17. A circular part used to transmit motion is called:

a) Washer

b) Nut

c) Bolt

d) Gear

18. All points exist on circumference of a circle are:

a) On single straight line

b) Equidistant from the centre

c) Randomly distributed Radius is the distance between two points on circle

d) Coordinate Dimensioning

Read the passage and answer the questions from 19 to 22 given below: **(4x1 = 4)**

The shape of the building is a frustum of a regular pentagonal pyramid. In orthographic projection, this solid is represented using three standard views: the front view, top view, and side view. The top view shows a regular pentagon, indicating uniform tapering. The front view displays a truncated shape with slant edges, while the side view reveals the inclined faces and reduced top portion. Orthographic projection helps accurately capture dimensions, angles, and true shapes of faces. This method is crucial in engineering drawing, enabling designers and manufacturers to interpret the complex 3D form into precise 2D representations for production and analysis.

19. In the front view, the frustum appears as:

a) Circular

b) Trapezoidal

c) Triangular

d) Pentagonal

20. In the top view of the building, we will see:

a) Two pentagons

b) Two squares

c) Two triangles

d) Two hexagons

21. The number of visible faces in the front view of the given frustum are —

    a) Five

    b) Four

    c) Three

    d) Two

22. A frustum is produced using a cutting plane:

    a) Perpendicular to base

    b) Parallel to base

    c) Inclined to base

    d) Vertical and along the axis

23. A protractor (D) of diameter 50mm is lying on a table, such that its curved side is towards observer and straight side is parallel to VP. Draw its isometric projection and give the dimension. (6)

24. A regular hexagonal window of side 40mm is installed 30mm above the floor. Consider the floor as H.P., wall as V.P. and yourself as observer. Draw the front view and top view of the window (ignoring its thickness). Give dimensions. (6)

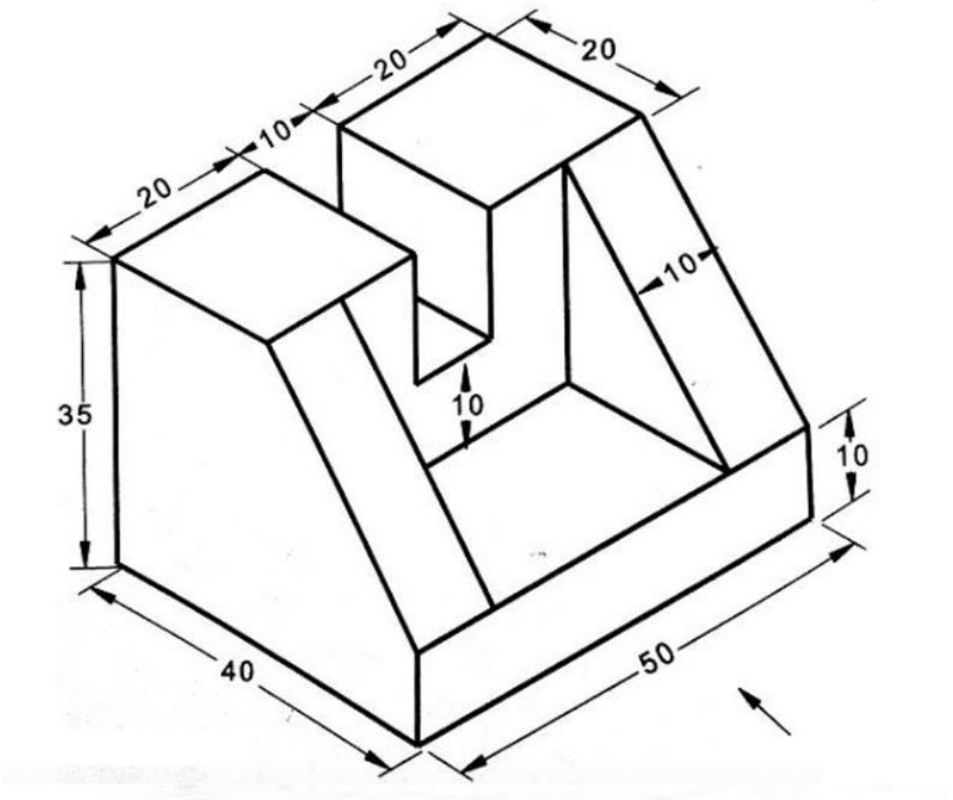
25. Draw these Orthographic Views of any one of the given Machine blocks to the scale 1:1:

    a) Front View (4)

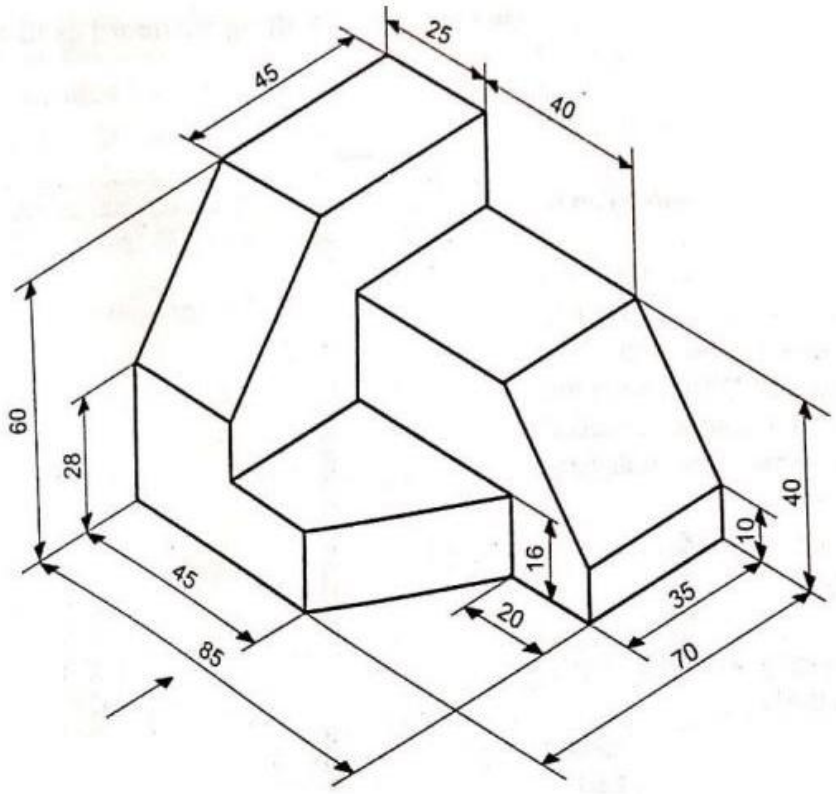
    b) Top View (4)

    c) Side View (4)

    Draw the projection symbol, scale used, print the title, Give dimensions. (3)



MACHINE BLOCK-1



MACHINE BLOCK-2

SECTION – C

26. Construct an isometric scale which can measure up to 100 mm. (4)

27. Draw the front view and top view of an equilateral triangular prism of base edge 50 mm and its vertical axis is 75mm high. One of its base edge is parallel to VP and near to it. Give all dimensions. (8)

OR

Draw the front view and top view of a hexagonal pyramid (Base edge = 42 mm and axial height = 60 mm) resting on H.P. on its apex, keeping its axis perpendicular to HP and two of its base edges are perpendicular to VP. Give all dimensions. (8)

28. A Square Pyramid of base edge 50 mm is resting on H.P. on its square face. Its 75 mm long axis is perpendicular to H.P. Two of its base edges are equally inclined to V.P. Draw its sectional front view and top view, when it is sectioned by a vertical cutting plane parallel to V.P. at 10 mm from its centre towards observer. Give dimensions and indicate cutting plane. (9)