

**Directorate of Education, GNCT of Delh**  
**Practice Paper (2023-24)**  
**Engineering Graphics (Code: 046)**  
**Class-XI**

**Time: 3 Hrs.**

**Maximum Marks: 70**

**General Instruction**

- I. Question paper contains two sections Section-A & Section -B respectively.
- II. Attempt all questions.
- 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)

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**SECTION-A**

- Q1) Which of the following bulletin is the recent publication of Bureau of Indian Standards, contains codes for practice in engineering drawing? 1
- (a) IS 696  
(b) BS 46  
(c) SP 46  
(d) ASME Y14.1
- Q2) A device which combines the functions of a T-square, set square, protractor and scale is called: 1
- (a) Fastner  
(b) Template  
(c) Combination set  
(d) Mini Drafter
- Q3) Hidden lines are drawn as 1
- (a) Dashed narrow lines  
(b) Dashed wide lines  
(c) Long-dashed dotted narrow line  
(d) Long-dashed dotted wide line

- Q4) The point where the altitudes drawn from the vertices to the opposite sides of a triangle are concurrent is called the 1
- (a) Incenter
  - (b) Circumcenter
  - (c) Orthocenter
  - (d) Centroid
- Q5) A ten-sided polygon is referred as 1
- (a) Tanagon
  - (b) Decadogon
  - (c) Decagon
  - (d) Dodecagon
- Q6) In comparison to an isometric projection, the appearance of an isometric view is 1
- (a) Larger
  - (b) Smaller
  - (c) More accurate
  - (d) More realistic
- Q7) In isometric scale the angle between true length and isometric length is 1
- (a)  $90^\circ$
  - (b)  $45^\circ$
  - (c)  $30^\circ$
  - (d)  $15^\circ$
- Q8) A polygon having the sum of the measures of the interior angles equal to the sum of the measures of the exterior angles is 1
- (a) Triangle
  - (b) Quadrilateral
  - (c) Hexagon
  - (d) Octagon
- Q9) The number of common tangents that can be drawn to two circles which touch each other externally ? 1
- (a) 1
  - (b) 2
  - (c) 3
  - (d) 4

Q10) Identify the **correct** statements regarding an isometric scale:

1

- A. The true length is marked on the line drawn at an angle of  $30^\circ$  with the horizontal base line.
- B. The isometric scale is used to measure the foreshortened length of any dimensions drawn in its isometric projection.
- C. The isometric length is marked on the line drawn at an angle of  $45^\circ$  with the horizontal base line.
- D. The angular difference in between true length and isometric length is  $15^\circ$ .
- E. The projectors from true length on isometric length is dropped horizontally.

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

- (a) A & D only
- (b) C & E only
- (c) B & D only
- (d) C & E only

Q11) Identify the **correct** statements regarding a circle:

1

- A. The length of a line segment joining the centre and the point on the circumference of the circle is denoted by  $\phi$ .
- B. The length of a line segment joining the points on the circumference of the circle which passes through the centre is denoted by  $\phi$ .
- C. Diameter is the longest chord in a circle.
- D. Circle is defined as the path of a moving point which is equidistant from two given points.
- E. Line segment joining the centre and a point on the circumference of the circle is known as the chord of the circle.

Choose the correct answer from the options given below:

- (a) A & D only
- (b) B & C only
- (c) B & D only
- (d) C & E only

Q12) Identify the correct statements regarding a Regular figure:

1

- A. It is equiangular.
- B. It is equilateral.
- C. It always has diagonals.
- D. Sum of interior angles is always equal to sum of exterior angles.
- E. Sum of interior angles is always  $360^\circ$ .

Choose the correct answer from the options given below:

- (a) A & B only
- (b) B & C only
- (c) C & D only
- (d) D & E only

Q13) Match Column-I with **Column-II** regarding drawing instruments:

1

	<b>Column- I</b> <b>(Instruments)</b>		<b>Column- II</b> <b>(Use)</b>
1	T-Square	(i)	To draw smooth curves of almost any curvature.
2	Spring Bow Compass	(ii)	To draw parallel horizontal lines.
3	Divider	(iii)	To draw circle, arcs etc. of diameter less than 50 mm.
4	French Curves	(iv)	To transfer measurement from one part of drawing to another part.

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

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

Q14) Match Column-I with **Column-II** regarding Circle and Tangents:

1

	<b>Column- I</b> <b>(No. Of Tangents)</b>		<b>Column- II</b> <b>(Position Of Point from Where Tangent to be drawn)</b>
1	ZERO (0)	(i)	A Point on the circumference of the circle.
2	ONE (1)	(ii)	A Point inside the circle.
3	TWO (2)	(iii)	Two Points outside the circle.
4	FOUR (4)	(iv)	A Point is outside the circle

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

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

Q15) Match Column-I with **Column-II** regarding ISOMETRIC PROJECTION/VIEW:

1

	<b>Column- I</b>		<b>Column- II</b>
1	Isometric View	(i)	Ellipse
2	Isometric Projection	(ii)	Rhombus
3	Square	(iii)	True Length
4	Circle	(iv)	Isometric Length

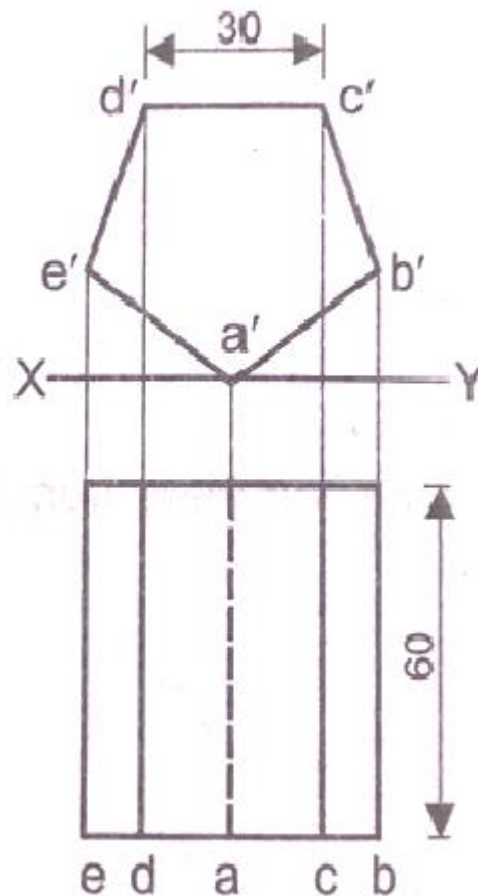
Choose the **correct** answer from the options given below:

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

Read the passage and answer the questions from 16 to 20 given below

1x5=5

Ramesh is a student of class XI in a Sarvodaya Vidyalaya of Government of Delhi. He is a student of commerce stream and one of his friends is studying in science stream with one of his subjects as Engineering Graphics. While exchanging a book of Mathematics, he found a sheet with a drawing on it. The same drawing is placed below as Figure-1 in order to answer the questions asked by Ramesh to his friend as you are also students of Engineering Graphics.



**FIGURE-1**

Q16) The figure-1 shows the orthographic projection of

- (a) A pentagonal pyramid
- (b) A hexagonal pyramid
- (c) A hexagonal prism
- (d) A pentagonal prism

- Q17) The axis of the solid as per the orthographic projection is
- (a) Perpendicular to V.P.
  - (b) Perpendicular to H.P.
  - (c) Parallel to V.P.
  - (d) Parallel to both V.P. and H.P.
- Q18) The solid is
- (a) Resting on one of its base vertex on H.P.
  - (b) Resting on one of its longest edge on H.P.
  - (c) Resting on one of its base vertex on V.P.
  - (d) Resting on one of its longest edge on V.P.
- Q19) If the Top View of the solid is a Triangle instead of Rectangle, then the solid is a
- (a) A pentagonal pyramid
  - (b) A hexagonal pyramid
  - (c) A hexagonal prism
  - (d) A pentagonal prism
- Q20) The edge of the base and height of axis of the solid in figure-1 respectively are:
- (a) 60 mm and 30 mm
  - (b) 60 mm each
  - (c) 30 mm and 60 mm
  - (d) 30 mm each.

### **SECTION-B**

- Q21) Draw the top view & front view of a semi-circular lamina of 70 mm diameter having its surface parallel and 5 mm above to H.P. with its diameter perpendicular to V.P.

**6**

**OR**

A hexagonal lamina of side 25 mm has its surface parallel to and 10 mm in front of V.P. Draw its front view and top view when two of its sides are perpendicular to H.P.

- Q22) A Pentagonal Prism of base edge 35 mm and axis 70 mm resting on its base on H.P. Keeping axis vertical and one of its rectangular face parallel to VP and nearer to the observer, draw its top view and front view. **8**

**OR**

A hexagonal pyramid of base edge 30 mm and axis 60 mm resting on one of its base edges on H.P. Keeping its axis perpendicular to V.P. and hexagonal base in front, draw its front view and top view.

- Q23) Draw the Front view and Sectional Top view of a cylinder of 60 mm diameter and 80 mm height resting on H.P. on one of its circular bases, when it is cut by a horizontal section plane, intersecting the axis at a point 50 mm above the base. **10**

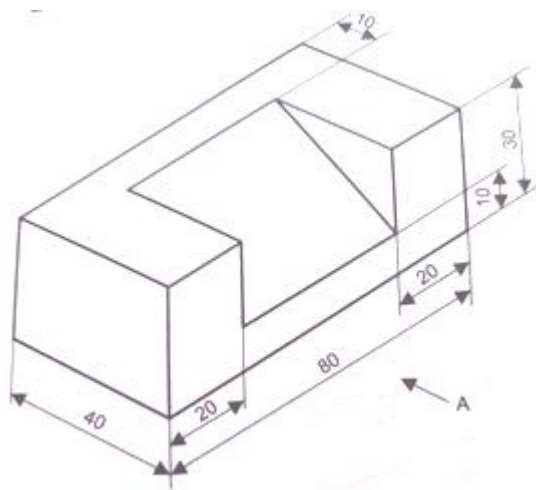
- Q24) Draw to scale 1:1 the following views of any one of the machine blocks given below:

(A) Front View **4**

(B) Top View **4**

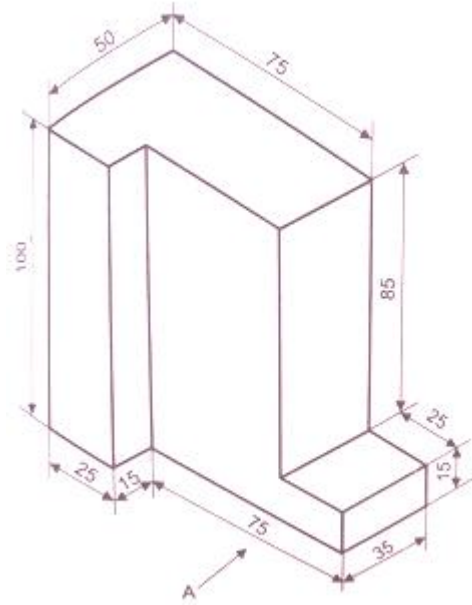
(C) Side View **4**

Print title, scale used, draw projection symbol and give dimensions. **3**



**OR**





Q25(i) Draw an Isometric Scale.

4

(ii) Draw an isometric projection of an equilateral triangle of base edge 50 mm, keeping its surface parallel to H.P. One of the sides of triangle is parallel to V.P. and farther from it. Give dimensions, centre lines and indicate the direction of viewing. 7