INDIAN SCHOOL MUSCAT
# HALF YEARLY EXAMINATION 2022
ENGINEERING GRAPHICS (046)

CLASS : XI
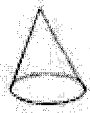DATE: 12-02-2023

TIME ALLOTED   : 3 HRS.
MAXIMUM MARKS: 70

GENERAL INSTRUCTIONS:

1. Attempt all questions.

2. Follow SP-46-1988 Codes. Use first angle method of projection.

3. Missing and mismatching dimensions should be assumed suitably.

4. All dimensions are in millimeters.

5. Use both sides of the drawing sheet.

1. Construct an Isometric Scale.   3

2. Construct the isometric projection of a circle of 60 mm diameter, having its surface vertical   5
    and parallel to VP.

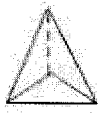3. Draw the orthographic Projection of a following machine block   10
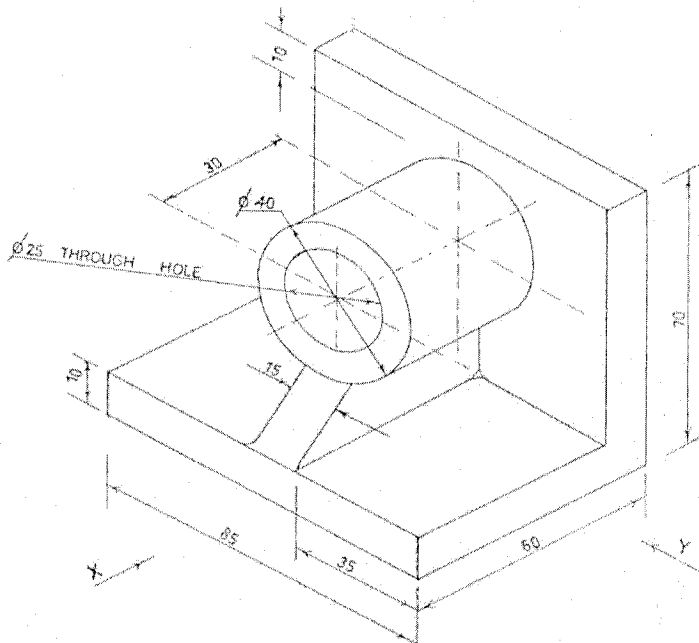
4. A right regular pentagonal prism, side of base 25 mm and height 65 mm rests on an edge of **12** its base on the HP, such that a rectangular face containing the base edge is inclined at 30° to the HP. A section plane perpendicular to the HP and inclined at 45° to the VP cuts the prism such that longer edge farthest away from the VP is bisected. Draw the following views of the prism a) Top view b) Sectional front view c) True shape of the section.

5. A square prism, base 40 mm side and height 65 mm is resting on HP on one of its base edges. **10** The axis of the prism is inclined at 45° to the HP and the base edge on which it is resting is inclined at 30° to VP. Draw the projections of the square prism.

6. A semi-circular plate of 80 mm diameter has its straight edge in the VP and inclined at 45° to **7** the HP. The surface of the plate makes an angle of 30° with the VP. Draw its projections.

7. Draw the orthographic projection of following points **3**

       a) Point 'D' in VP and 40 mm above HP.

       b) Point 'F' in HP and 40 mm behind VP.

       c) Point 'G' 40 mm below HP and 25 mm in front of VP.

8. The angle between the isometric axes is _____ **1**

a) 180 degrees

b) 60 degrees

c) 90 degrees

d) 120 degrees

9. The center of gravity of a triangle is on _____ **1**

a) centroid

b) circum center

c) in center

d) ortho center

10. Name the solid with apex. **1**

a) Square prism

b) Triangular prism

c) Cone

d) Sphere

11. A vertical pentagonal pyramid   1

         (a)   (b)   (c)   (d)
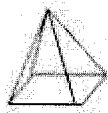
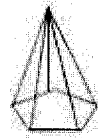12.   1
    The most advantageous point of .... projection is that it needs a single scale to measure
    along each of the three axes.

    a. Orthographic

    b. Isometric

    c. Axonometric

    d. Perspective

13. To find the true shape of the section, it must be projected on a plane parallel to the   1

    _____

    a) Profile plane

    b) Vertical plane

    c) Auxiliary plane

    d) Section plane

14. At Least two orthographic views are necessary to represent a 3D solid in 2D, flat surface.   1
    a) True
    b) False

15. Prism is polyhedron with at least _____ equal and parallel.   1
    a) Three Faces
    b) Two Faces
    c) Six faces
    d) Eight faces

16. The side view, top view and front view of a regular hexagonal pyramid placed base parallel to   1
    profile plane.
    a) Triangle, triangle and hexagon
    b) hexagon, triangle and triangle
    c) hexagon, triangle and hexagon
    d) triangle, hexagon and triangle

3

17. When the axis of a solid perpendicular to H.P_____ should be drawn first.   1

     a) Top view

     b) Front view

     c) Side view

     d) Rare view

18. A triangle is placed perpendicular to both the reference planes (horizontal and vertical plane)   1
which of the following statement is true.

     a) Front view-line, top view- triangle

     b) Front view-triangle, top view- line

     c) Front view –line, top view-line

     d) Front view-triangle, side view- line

19. A circle is placed parallel to vertical plane which of the following projection is false?   1

     a) Front view-circle, top view- line

     b) Length in top view and side view will be same

     c) Circle is perpendicular to horizontal plane

     d) The traces of plane containing this circle intersect at xy reference line

20. The sizes from A0 to A5 increases.   1

     a) True

     b) False

21. In preparing isometric scale, true or actual scale is drawn at ___ to the horizontal.   1

     (A) 15°

     (B) 30°

     (C) 45°

     (D) 60°

22. To show the surface of section, hatching lines are drawn at   1

     (A) 30°

     (B) 45°

     (C) 60°

     (D) 90°

23. A right cylinder is placed on HP on its base. A cutting plane parallel to horizontal plane cuts   1
the cylinder, the shape of sectional view is

     (A) an ellipse

(B) a circle

(C) a parabola

(D) a hyperbola

24. The following is not included in title block of drawing sheet.   1

   A. Sheet No

   B. Scale

   C. Name of the Designer.

   D. Size of sheet

25. The dotted lines represents   1

   A. Hidden edges

   B. Projection line

   C. Centre line

   D. Hatching line

26. In the term ortho-graphic, 'orthos' means   1

   A. Drawing

   B. Straight

   C. Projection

   D. View

27. What is the next size of 210 mm x 297 mm in drawing papers?   1

   a) 148 mm x 210 mm

   b) 297 mm x 420 mm

   c) 420 mm x 594 mm

   d) 105 mm x 148 mm

****END OF THE QUESTION PAPER****

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5. Use both sides of the drawing sheet.

1.   Construct an Isometric Scale.   3

2.   Construct the Isometric Projection of a regular hexagon 0f 35 mm sides, with a side parallel   5

to HP and the hexagonal face parallel to VP.

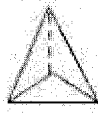3.   Draw the orthographic Projection of a following machine block   10
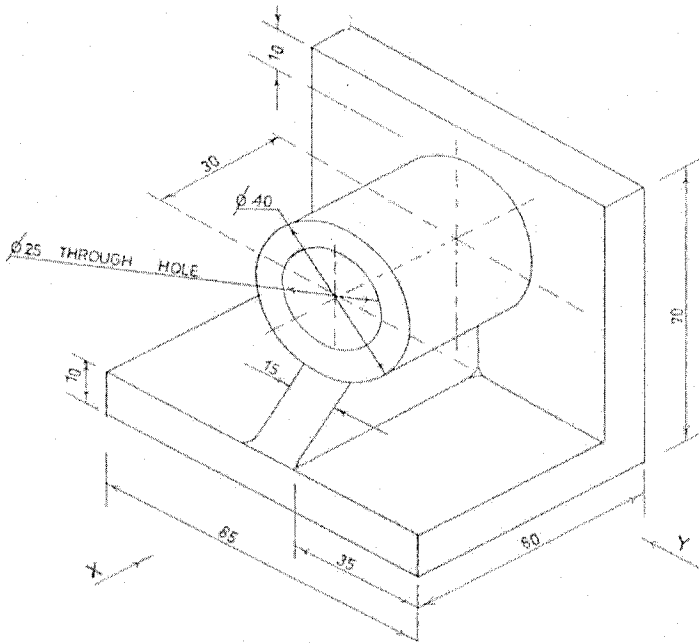
4. A hexagonal pyramid, base 30 mm side and axis 70 mm long, is resting one of its slant edges on the HP. A section plane, perpendicular to the VP and inclined to HP passes through the highest corner of the base and intersecting the axis at 25 mm from the base. Draw the following views of the pyramid and also determine the inclination of the section plane with the HP a) Front view b) Sectional top view c) True shape of the section.   12

5. A hexagonal pyramid, base 35mm side and height 60mm is resting on HP one of its base edges. The axis of the pyramid is inclined at 45° to the HP and the base edge on which it is resting is inclined at 60° to the VP. Draw the projections of the hexagonal pyramid.   10

6. A circular plate of negligible thickness and 50 mm diameter appears as an ellipse in the front view having its major axis 50 mm long and minor axis 30 mm long. Draw its top view when the major axis of the ellipse is horizontal.   7

7. Draw the orthographic projection of following points   3

   a) Point 'B' in HP and 25 mm in front of VP.

   b) Point 'C' 25 mm above HP and 40 mm behind VP.

   c) Point 'E' 30 mm below HP and 50 mm behind VP.

8. The angle between the isometric axes is _____   1

   a) 180 degrees

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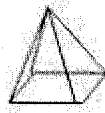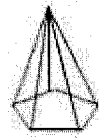
    d) Sphere

11. A vertical pentagonal pyramid   1

2

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

12. 1

The most advantageous point of ……. projection is that it needs a single scale to measure along each of the three axes.

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