Register Number: ……

B.E DEGREE EXAMINATIONS: APRIL/MAY 2010

First Semester

U07GE101: ENGINEERING GRAPHICS

(Common to All branches)

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. When a line is perpendicular to a plane, its projection on that plane is:
   (A) a line shorter than the true length of the line
   (B) a line greater than the true length of the line
   (C) a line equal to the length of the line
   (D) a point
2. Tetrahedron belongs to the group of
   (A) Regular solids (B) Polyhedra (C) Solids of revolution (D) None of these
3. Isometric projection is shorter than isometric drawing by
   (A) 10% (B) 30% (C) 18.5% (D) 82%
4. When the axis of the solid is parallel to both HP and VP, _____ view reveals the true shape of the base
   (A) side (B) front (C) top (D) rear
5. When a section plane cutting a solid is parallel to VP, the true shape of section is revealed in the _____ view
   (A) side (B) front (C) top (D) rear
6. A circle in isometric projection appears as
   (A) circle (B) hyperbola (C) ellipse (D) parabola
7. The vanishing point is located
   (A) on the horizon (B) below horizon (C) above horizon (D) at station point
8. In third angle projection, the left side view is to the _____ of the _____ view
   (A) left, top (B) left, front (C) right, front (D) right, top
9. The perspective of a circle which is parallel to the picture plane is a _____
   (A) ellipse (B) circle (C) sphere (D) parabola
10. When a line is perpendicular to VP, its _____ is a point
    (A) top view (B) left side view (C) front view (D) right side view

PART B (10 x 2 = 20 Marks)

11. How are the projections of a straight line drawn?
12. What is regular polyhedral?
13. What is a truncated solid?
14. When will the true shape of the section available when the cutting plane is parallel to HP?
15. List out any two uses of development.
16. What are isometric lines and non-isometric lines?
17. What is vanishing point in perspective projection?
18. What is a tetrahedron?
19. How will the projections of a straight line be, when it is inclined to one plane and parallel to the other plane?
20. What is an apparent section?

PART C (5 x 14 = 70 Marks)

21. a. A line AB is 75 mm long. A is 50 mm infront of VP and 15 mm above HP. B is 15 mm infront of VP and is above HP. Top view of AB is 50 mm long. Find the front view length and true inclinations.

(OR)

b. A hexagonal lamina of 24 mm side has its surface inclined at 30º to HP. Its one side is parallel to HP and inclined at 45º to VP. Draw its projections.

22. a. A hexagonal pyramid side of base 25 mm, axis 50 mm long lies with one of its triangular faces on the HP and its axis is parallel to the VP. Draw its projections.

(OR)

b. A pentagonal prism side of base 25 mm and axis 50 mm long rests with one of its edges on HP such that the base containing that edge makes an angle of 30º to HP and its axis is parallel to VP. Draw its projections.

23. a. A cone base 50 mm diameter and axis 65 mm long rests with its base on HP. It is cut by a section plane perpendicular to VP, inclined at 45º to HP and passing through a point on the axis 35 mm above the base. Draw the sectional top view and true shape of section.

(OR)

b. A pentagonal pyramid side of base 30 mm and height 52 mm, stands with its base on HP and an edge of the base is parallel to VP and nearer to it. It is cut by a plane perpendicular to VP, inclined at 40º to HP and passing through a point on the axis, 32 mm above the base. Draw the sectional top view. Develop the lateral surfaces of the truncated pyramid.

24. a. A cylinder of 50 mm diameter and 60 mm height stands on HP. A section plane perpendicular to VP, inclined at 55º to HP cuts the cylinder and passes through a point on the axis at a height of 45 mm above the base. Draw the isometric projection of the truncated portion of the cylinder, when the cut surface is clearly visible to the observer.

(OR)

b. A rectangular prism, side of base 50 mm x 30 mm and height 55 mm, rests with its base on the ground plane. A vertical edge is in the picture plane and one of the longer edges of its base is inclined at 45º to PP and behind it. The station point is 50 mm infront of PP, 75 mm above the ground plane and lies in a central plane which passes through the center of the prism. Draw the perspective projection of the solid.

25. a. With free hand sketching, draw the front view, top view and right side view of the component shown in fig.1

(OR)

b. With free hand sketching, convert the orthographic views shown in fig.2 in to pictorial view.

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