Register Number | | | | | | | |

SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E/B.Tech - AERO/AUTO/CIVIL/M&P/ MECH/CHEM

Title of the Paper: Engineering Graphics – I — Max. Marks: 80

Sub. Code: 5ET107-6C0006 (2007/08/09) — Time: 3 Hours

Date: 11/12/2010 — Session: AN

PART - A (10 X 2 = 20)

Answer ALL the Questions

1. List out different grades of pencils.

2. List out rules of dimensioning.

3. Define hypocycloid.

4. How are cycloid generated?

5. Define trace of a line.

6. List out positions of planes.

7. Define suspended solids.

8. How are solids of revolution formed?

9. Define cutting plane.

10. Define a parent section.

PART – B (5 x 12 = 60)

Answer ALL the Questions

11. Draw an ellipse having major axis of 70 mm and the minor axis of 40 mm.

(or)

12. Draw a parabola having an abscissa of 30 mm and the double ordinate of 70 mm.

13. Draw an epicycloid if a circle of 40 mm diameter rolls outside another circle of 120 mm diameter for one revolution.

(or)

14. A circle of diameter 40 mm rolls inside another circle of radius 60 mm. Draw the hypocycloid traced by a point on the rolling circle initially in contact with the directing circle for one revolution.

15. A line AB, 100mm long, is inclined at 50° to HP. The end A is 10 mm above the HP and end B is 65 mm in front of the VP. Draw projections of the line if its FV measures 90 mm. Locate traces and find the inclination of the line with the VP.

(or)

16. A rectangular pentagonal plane ABCDE of 40 mm side has side AB in the HP making an angle of 15° with the VP. The plane makes an angle of 50° with the HP and the point D lies in the VP. Draw the projections of the plane and find its angle with VP.

17. A cone of diameter 60mm and height 60 mm is resting on the HP on one of its generators. Draw the projections of its axis parallel to the VP.

(or)

18. A square pyramid of side of base 40 mm and length of axis 60 mm is resting on its corner of base on ground with an edge of the base through that corner making an angle of 60° with the HP. The

apex is away from the observer and the axis is parallel to the HP. Draw the projections if the axis is inclined to the VP at 20.

19. A cone with a 70 mm diameter of base and a 90 mm length of axis rests on its base on the HP, is cut by AIPs in such a way that the true shapes of the sections are

    (a) A hyperbola with a double-ordinate of 68 mm and 48 mm abscissa, and

    (b) An isosceles triangle with a 54 mm base.

    Draw FV, Cutting planes, sectional TV and true shapes of the sections. Assume the part of the cone between the two cutting is retained.

(or)

20. A horizontal cylinder (axis parallel to the VP) with a 60 mm diameter and 100 mm length is cut by two AIPs such that the true shape of the section is

    (a) An ellipse of maximum major axis.

    (b) An ellipse of major axis 90 mm

    Draw FC and SV and locate the cutting planes. Also, draw the true shapes of sections.