VR20 Reg. No: | | | | | | | | | | |

VELAGAPUDI RAMAKRISHNA

SIDDHARTHA ENGINEERING COLLEGE

(AUTONOMOUS)

I/IV B.Tech. DEGREE EXAMINATION, JULY - 2023

Second Semester

20ES2105 ENGINEERING GRAPHICS

(AI&DS)

Time: 3 hours ***Max. Marks: 70***

Part-A is compulsory

Answer One Question from each Unit of Part - B

Answer to any single question or its part shall be written at one place only

PART-A

5 x 2 = 10M

1. a. Draw a scale 1 cm = 1m to read decimeters, to measure maximum distance of 6 m. Show on it a distance of 4 m and 6 dm. **(CO1 K2)**

   b. What is meant by orthographic projection. **(CO2 K1)**

   c. A Straight line 'GH' of 60 mm long is parallel to both H.P. and V.P. The straight line is 25mm below H.P. and 20 mm behind V.P. Draw the projections of the straight line. **(CO2 K2)**

   d. Draw the projections of a cylinder of base 40 mm diameter and axis 70 mm long, resting on the H.P. on its respective base. **(CO3 K1)**

   e. Define a section and sectional view. **(CO4 K1)**

PART-B

4 x 15 = 60M

UNIT-I

2. A rectangular plot of land measuring 1.28 hectors is represented on a map by a similar rectangle of 8 sq. cm. Calculate RF of the scale. Draw a diagonal scale to read single meter. Indicate on it following distances. i) 222 km ii) 336 km iii) 459 km iv) 569 km **(CO1 K2) 15M**

(or)

3. The vertex of a hyperbola is 45 mm from its focus. Draw the curve if the eccentricity is 3/2. Draw a normal and a tangent at a point on the curve, 75 mm from the directrix. **(CO1 K3) 15M**

UNIT-II

4. A line AB 80 mm long is inclined at an angle of 30^0 to H.P. and 45^0 to V.P. The point A is on the H.P. and 30 mm in front of V.P. Draw the projections of the straight line. **(CO2 K3) 15M**

(or)

5. a. A circular plane of diameter 50 mm is resting on a point of the circumference on the H.P. The plane is inclined at 30^0 to the H.P. and its centre is 35 mm infront of the V.P. Draw its projections. **(CO2 K3) 8M**

b. An equilateral triangular lamina of side 30 mm is parallel to H.P. and perpendicular to V.P. One of its side is 20 mm in front of V.P. and 30 mm above H.P. Draw its projections. **(CO2 K3) 7M**

UNIT-III

6. a. Draw the projections of a cone, base 40 mm diameter and axis 60 mm long, lying on the H.P. on one of its generators with the axis parallel to the V.P. **(CO3 K3) 8M**

b. A hexagonal prism has one of its rectangular faces parallel to the H.P. Its axis is perpendicular to the V.P. and 3.5 cm above the ground. Draw its projections when the nearer end is 2 cm in front of the V.P. Side of base 2.5cm long, axis 5 cm long. **(CO3 K3) 7M**

(or)

7. A pentagonal pyramid, base 25 mm side and axis 65 mm long, has an edge of its base on the ground. Its axis is inclined at 30^0 to the ground and parallel to the V.P. Draw its projections. **(CO3 K3) 15M**

UNIT-IV

8. A hexagonal pyramid ,side of base 30 mm and axis 60 mm long is resting on its base on H.P., with an edge of base perpendicular to V.P. It is cut by a sectional plane inclined at 30^0 to H.P. and passing through the axis at 20 mm from the base. Draw its sectional side view of the solid and obtain the true shape of the section. **(CO4 K4) 15M**

(or)

9. A pentagonal prism, 30 mm base side and 50 mm axis is standing on H.P. on its base with one side of the base perpendicular to V.P. It is cut by a section plane inclined at 45° to the H.P., through mid-point of axis. Draw the development of surface of remaining solid. **(CO4 K4) 15M**

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