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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY :: PUTTUR**  
(AUTONOMOUS)**B.Tech I Year II Semester (R16) Regular Examinations May/June 2017****ENGINEERING GRAPHIS**

(Common to ME, EEE &amp; CE)

(For Students admitted in 2016 only)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 X 12 = 60 Marks)

**UNIT-I**

- 1 The distance between a fixed straight line and a fixed point is 65. Trace the path of a point 'p' moving in such a way that the ratio of its distance from the fixed point, to its distance from the straight line is '2/3'. Name the curve. Draw a tangent and normal to the curve at a point on it 50 from the fixed point. 12M

**OR**

- 2 Draw an involute of a circle of 40 dia. Also, draw a tangent and normal to the curve at a point 100 from the center of the circle. 12M

**UNIT-II**

- 3 a. Draw the projections of the following points on the same reference line keeping the projectors 25 apart.  
i) A is in H.P and 20 mm in front of V.P.  
ii) B is in H.P and 2 cm behind V.P.  
iii) C is in V.P and 40 mm above H.P.  
iv) D is in V.P and 40 mm below H.P. 6M
- b. A point at 25 mm above the reference line xy is the front view of two points A and B. The top view of A is 40 mm behind V.P and the top view of B is 50 mm in front of V.P. Draw the projections of the points and state their positions relative to the planes of projection and the quadrants in which they lie. 6M

**OR**

- 4 A line AB is 75 mm long. A is 50 mm in front of V.P and 15 mm above H.P. B is 15 mm in front of V.P. and is above H.P. Top view of AB is 50 mm long. Draw and measure the front view. Find the true inclinations. Also, locate traces. 12M

**UNIT-III**

- 5 A hexagonal lamina has its one side in HP and its opposite parallel side is 25 mm above HP and In VP. Draw its projections. Take side of hexagon 30 mm long. 12M

**OR**

- 6 Draw the projection of a cone, base 30 mm diameter and axis 50 mm long, when (a) resting on H.P, on a point of its base circle with the axis makes an angle of  $45^\circ$  with H.P and parallel to V.P. (b) resting with one of its generators on H.P and axis parallel to V.P. 12M

**UNIT-IV**

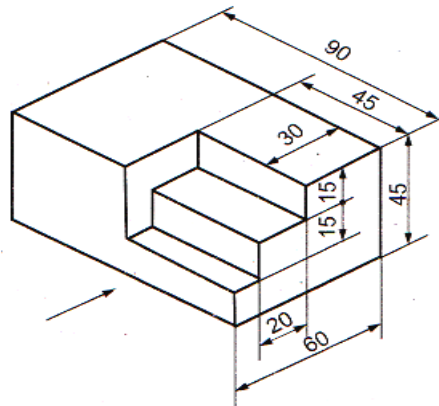
- 7 A hexagonal pyramid base 30 and axis 75 long is resting on H.P, with two edges parallel to V.P. It is cut by a section plane  $\perp$  to V.P and inclined at  $55^\circ$  to H.P and passing through the axis, 30 above the base. Draw the projections and the true shape of the section. 12M

**OR**

- 8 A cone of base 50 diameter and height 65 rests with its base on H.P. A section plane perpendicular to V.P and inclined at  $30^\circ$  to H.P bisects the axis of the cone. Draw the development of the lateral surface of the truncated cone. 12M

**UNIT-V**

- 9 Draw the front view, top view and side view of the object shown in fig. 1. (Follow the first angle projection).

**Fig. 1**

12M

**OR**

- 10 A square prism of base side 60 mm rests on one of its ends on the HP with the base sides equally inclined to the VP. It is penetrated fully by another square prism of base side 45 mm with the base side equally inclined to the HP. The axes intersect at right angles. The axis of the penetrating prism is parallel to both the HP and the VP. Draw the projections of the prisms and show the lines of intersection. 12M

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