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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR

(AUTONOMOUS)

B.Tech I Year I Semester Supplementary Examinations November-2021

ENGINEERING GRAPHICS

(Common to EEE, ECE & ME)

Time: 3 hours

Max. Marks: 60

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

UNIT-I

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|---|-------------------------------------------------------------------------------------------|----|----|
| 1 | a Draw the involute of a regular pentagon of side 20 mm. | L1 | 4M |
| | b Construct a parabola with base 120 and length of the axis 60 by using Rectangle method. | L3 | 4M |
| | c Draw the involute of a square of side 25 mm. | L4 | 4M |

OR

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|
| 2 | Construct a hypo cycloid of a circle of 50 mm diameter, which rolls inside another circle of 180 mm diameter for one revolution counter clockwise. | L3 | 12M |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|

UNIT-II

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|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|
| 3 | a State the quadrants in which the following points are located
A – Front view below xy and top view above xy
B – Front and top views are above xy
C – Front view above xy and top view below xy
D – Front and top views are below xy | L3 | 6M |
| | b Identify the relative positions of the projections of the following points with respect to xy
A – In the second quadrant
B – In the third quadrant
C – In the first quadrant
D – In the fourth quadrant | L3 | 6M |

OR

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|
| 4 | A regular hexagonal plane of 45 mm side has a corner on HP, and its surface is inclined at 45° to HP. Draw the projections, when the diagonal through the corner, which is on HP makes 30° with VP | L3 | 12M |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|

UNIT-III

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|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|
| 5 | A square plane ABCD of side 30mm is parallel to HP and 20mm away from it. Draw the projections of the plane, when (i) two of its sides are parallel to VP and (ii) one of its side is inclined at 30° to VP. | L3 | 12M |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|

OR

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|
| 6 | A semi circular plane of diameter 70mm has its straight edge on the VP and inclined at 30° to the HP. Draw the projection of the plane when its surface is inclined at 45° to VP | L3 | 12M |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|

UNIT-IV

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|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|
| 7 | A cube of side 40 mm is resting on HP on one of its faces, with a vertical face inclined at 30° to VP. It is cut by a section plane inclined at 45° to HP and passing through the axis at 8 mm from the top surface. Draw the projections of the solid and also show the true shape of the section. | L3 | 12M |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|

OR

- 8 A square prism of side of base 40 mm and axis 80 mm long, is resting on its base on HP L3 12M such that, a rectangular face of it is parallel to VP. Draw the development of the prism.

UNIT-V

- 9 a Draw the isometric projection of a hexagonal prism of base side 30 mm and axis 70mm. L3 6M
The prism rests on its base on the HP with an edge of the base parallel to the VP.
- b Draw the isometric projection of the frustum of a cone of base diameter 60 mm ,top L3 6M
diameter 30mm,and height 55mm.

OR

- 10 a Draw the isometric view of a cylinder of base diameter 50mm and axis 60 mm the axis L3 6M
of the cylinder is perpendicular to the (a)HP (b)VP
- b Draw the isometric view of a circular lamina of diameter 50mm on all the three L3 6M
principal planes using four centre methods.

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