## Code: 4G513

B.Tech. I Year Supplementary Examinations March 2021

## Engineering Drawing

( Common to EEE, ECE, CSE \& IT )

## Max. Marks: 70

Answer all five units by choosing one question from each unit ( $5 \times 14=70$ Marks )

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## UNIT-I

1. Draw a hyperbola when the distance between its focus and directrix is 50 mm . Also draw a tangent and a normal at a point 70 mm from the directrix.

## OR

2. To construct regular pentagon of given side 25 mm by using Inscribe circle method

## UNIT-II

3. $A$ line $A B$ is 30 mm long and inclined at $30^{\circ}$ to $V P$ and parallel to HP. The end $A$ of the line is 15 mm above HP and 20 mm in front of VP. Draw its projections.

OR
4. $\quad A$ line $A B 65 m m$ long, has its end $A 20 \mathrm{~mm}$ above $H P$ and 25 mm in front of VP. The end $B$ is 40 mm above HP and 65 mm in front of the VP. Draw the projections of $A B$ and show its inclinations with the HP and the VP

UNIT-III
5. A thin rectangular plate of $60 \times 40 \mathrm{~mm}$ size has its shorter edge on HP and inclined at 300 to VP. Draw the projections of the plate when the top view is a square of 40 mm side

OR
6. A circular plate of negligible thickness and 50 mm diameter appears as an ellipse in the front view, having its major axis 50 mm long and minor axis 30 mm long. Draw its top view when the major axis of the ellipse is horizontal.

## UNIT-IV

7. Draw the projections of a cylinder of base 30 mm diameter and axis 50 mm long when it is resting on HP on one of its base.

## OR

8. a) Draw the isometric view of a pentagon of 50 mm side, plane in vertical and horizontal
b) Draw the isometric projections of a circle of 50 mm diameter with its plane horizontal and vertical

## UNIT-V

9. Draw the Front View, Top View and Side View of


OR
10. Draw the isometric view of


# B.Tech. I Year Supplementary Examinations March 2021 <br> Mathematics-I <br> ( Common to All Branches ) 

Max. Marks: 70
Time: 3 Hours
Answer all five units by choosing one question from each unit ( $5 \times 14=70$ Marks )

## UNIT-I

1. Find the orthogonal trajectories of the family of curves $r^{n}=a^{n} \cos n \theta$

OR
2. Solve $\left(D^{3}+1\right) y=e^{-x}+\cos (2 x-1)$

## UNIT-II

3. Verify Rolle' theorem for $f(x)=e^{-x} \sin x$ in $[0, \pi]$.

OR
4. Verify the Meclaurin's theorem for $f(x)=(1-x)^{\frac{5}{2}}$ with Lagrange's form of remainder up to 3 terms with $\mathrm{x}=1$.

## UNIT-III

5. Trace the curve $y^{2}(2 a-x)=x^{3}$

## OR

6. Change of order of integration and hence evaluate the double integral $\int_{0}^{1} \int_{x^{2}}^{2-x} x y d x d y$

## UNIT-IV

7. Find the Laplace transform of periodic function

$$
f(t)=\left\{\begin{array}{ll}
1, & 0<t<a / 2 \\
-1, & a / 2<t<a
\end{array}\right\} \text { And } f(t+a)=f(t) .
$$

## OR

8. Solve $y^{11}+2 y^{1}+5 y=e^{-t}, y(0)=0, \quad y^{1}(0)=1 \quad$ using Laplace transform technique.

## UNIT-V

9. Find the directional derivative of $2 x y+z^{2}$ at $(1,-1,3)$ in the direction of $\bar{i}+2 \bar{j}+3 \bar{k}$.

OR
10. Verify Gauss divergence theorem for $\bar{F}=\left(x^{3}-y z\right) \bar{i}-2 x^{2} y \bar{j}+z \bar{k}$ taken over the surface of cube bounded by the planes $x=y=z=a \quad \& \quad x=y=z=0$.

