

SECOND INTERNAL ASSESSMENT 2019

MATHEMATICS –G-CC-T-01

FM-10 TIME:30 Minute

Answer any 4 questions:

1. Verify Rolle's theorem for $f(x) = x^2$ in $[-1,1]$.
2. Using Leibnitz's theorem find the n-th derivative of $y = x^3 \sin x$.
3. Find the extreme value (maximum or minimum) of $f(x) = x^5 - 5x^4 + 5x^3 + 12$ at $x=1$.
4. State Euler's theorem on homogeneous functions.
5. Find the radius of curvature of the curve $\sqrt{x} + \sqrt{y} = 1$ at $(\frac{1}{4}, \frac{1}{4})$.
6. Write the equations of the asymptotes of the hyperbola $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$.
7. What is the parametric representation of the parabola $y^2 = 4ax$?