

ASSIGNMENT-6 (REVISION)

- ① Write Fourier Series and find its coefficients in terms of Sine and cosine functions [Consider expanding $f(x)$]? 20m
- ② Make the change of variables $\gamma = x + vt$, $S = x - vt$ in the wave equation $\frac{\partial^2 F}{\partial x^2} - \frac{1}{v^2} \frac{\partial^2 F}{\partial t^2} = 0$ and solve? 20m
- ③ Derive and discuss the Velocity and acceleration in Polar Coordinates? 20m
- ④ Derive kinematical equations of velocity and position 20m
- ⑤ Find $A \cdot (A \times B)$ where $A = 3\hat{i} + 4\hat{j} - 5\hat{k}$ and $B = -\hat{i} + 2\hat{j} + 6\hat{k}$ 20m