

B.Sc. Degree Examinations - Even Semester 2021
II Year IV Semester

Allied Mathematics-II

Max Marks: 25

Answer any Five questions (5 * 5 = 25)

1. Find the Fourier series for the function $f(x) = x^2$ in $-\pi \leq x \leq \pi$
2. Solve : $(y - z)p + (z - x)q = x - y$
3. Find $L[e^{-2t} \cos 3t]$
4. Evaluate: $L^{-1}\left[\frac{s}{(s+2)^2 + 4}\right]$
5. Find $\nabla \times \vec{F}$ at the point $(1, -1, 1)$ if $\vec{F} = xz^3\vec{i} - 2x^2yz\vec{j} + 2yz^4\vec{k}$
6. Find $L[t \sin at]$
7. If $\vec{F} = x^2\vec{i} + y^2\vec{j}$, compute $\int_C \vec{F} \cdot d\vec{r}$ along the straight line joining $(0, 0)$ and $(1, 1)$.