

Maths. (Hons)
(Mid Term: CC - 3)

Full Marks: 15.

Time: $1\frac{1}{2}$ hrs.

Answer any three questions.

1. Define Sequence, Cauchy sequence, Bounds of a sequence
Monotonic sequence. 5.
2. Define convergence sequence and Divergence of a series. 5.
3. State and prove De- Alembert's ratio test. 5.
4. Define limit of a sequence, Monotonic sequence and
Oscillatory sequence. 5.

Maths. (Hons)
(Mid Term: CC - 4)

Full Marks: 15.

Time: $1\frac{1}{2}$ hrs.

Answer any three questions.

1. $x dx + y dy + \frac{x dy - y dx}{x^2 + y^2} = 0$ 5.
2. Prove that $(1 - 2xh + h^2)^{\frac{1}{2}} = \sum_{n=0}^{\infty} h^n P_n(x)$ 5.
3. Solve $(D^2 - 5D + 6)y = x^3 e^{2x}$. 5.
4. If $f(t) = 7t^3 + 7e^{2t} + 9e^{-3t} + 3$, find $L\{f(t)\}$. 5.

Generic Elective (Maths.)
(Mid Term: GE - 2)

Full Marks: 15.

Time: $1\frac{1}{2}$ hrs.

Solve any three questions.

1. $y(1 + xy)dx - x dy = 0$ 5.
2. $p^2 + 2px - 3x^2 = 0$ 5.
3. $y = px + \frac{a}{p}$ 5.
4. $(D^2 - 5D + 6)y = x^3 e^{2x}$ 5.