

द्वैती अखिल्या विश्वविद्यालय इन्दौर
(Regular) छात्रों के लिए

Class: BCA III Sem.

Paper: Mathematics - III

Attempt all the five questions. Each question carry equal marks.

Q.1 (a) Solve: $(px-y)(x-yp) = 2p$

(b) $(x+y)(dx-dy) = dx+dy$

Q.2 (a) Solve: $(D^2 - 4D + 4)y = e^x + \cos 2x$

(b) Solve: $x^2 \frac{d^2y}{dx^2} + 5x \frac{dy}{dx} + 4y = x \log x$

Q.3 (a) Solve by method of variation of parameters
 $\frac{d^2y}{dx^2} - a^2y = \operatorname{cosec} ax$.

(b) Solve $x^2 \frac{d^2y}{dx^2} + x \frac{dy}{dx} - y = 0$, given that $x + \frac{1}{x}$ is

one integral.

Q.4 Solve the following initial value problem:
 $y'' - 2y' + (\pi^2 + 1)y = 0$, given $y(0) = 1$, $y'(0) = 1 - \pi$

Q.5 Solve by Charpit method $z = pq$