

Barrasat College

Internal Assessment Examination-2022

Subject Code: MTMGCOR02T/MTMHGEC02T

F.M.-10 Marks Time: 30 minutes. Sem-II

Differential Equations.

Answer any two questions.

1. a) Solve: $x dy - y dx - 2\sqrt{x^2 - y^2} dx = 0$

b) Examine whether $(2x^3 + 4y) dx + (4x + y - 1) dy$ is exact or not. 3+2

2. Solve: $\frac{dy}{dx} + \frac{y}{x} \log y = \frac{y}{x^2} (\log y)^2$

b) Find the integrating factor of $\cos^2 x \frac{dy}{dx} + y = \tan x$ 3+2

3. Find the general solution of $y = px + \sqrt{a^2 p^2 + b^2}$ 5

4. Solve: $x^2 \frac{d^2 y}{dx^2} - x \frac{dy}{dx} + y = \log x$ 5

5. Solve: $(D^2 + 4)y = \sin 2x$