

Prabhat Kumar College, Contai

Department of Mathematics

2nd Year Mathematics (Hons) Annual Pattern

Paper: 4

Time: 1 hours

Answer any one :-

1. Solve: $\frac{dx}{x^2+y^2+yz} = \frac{dy}{x^2+y^2-xz} = \frac{dz}{z(x+y)}$

2. Solve $(x^2 + y^2 + z^2)dx + 2xy dy - 2xz dz = 0$

3. Let t_1 and t_2 be the periods of vertical oscillations of two different weights suspended by an elastic string and c_1 and c_2 be the statistical extensions due to these weights, prove that $g(t_1^2 - t_2^2) = 4\pi(c_1 - c_2)$.