

KARIMPUR PANNADEVI COLLEGE

MATHEMATICS-HONOURS (Fourth Semester)

Internal Assessment, 2020

MATH-H-GE-T-02

Duration: 30 mins.

Full Marks: 10

*Answer any two questions*

Q.1) Find the ordinary differential equation of the curve  $e^{y-x} = \lambda(y+x)$ ,  $\lambda$  being a parameter. 5 marks

Q.2) Solve  $\frac{dy}{dx} = \frac{y}{x} + \sin \frac{y}{x}$ . 5 marks

Q.3) Reduce the equation  $x^2(y - px) = p^2y$  to Clairaut's form by making the substitution  $x^2 = u$  and  $y^2 = v$  and then find its general solution. 5 marks

Q.4) Form a partial differential equation by eliminating  $a$  and  $b$  from  $z = (x+a)(y+b)$ . 5 marks