

Roll No.

Y – 3101
M.Sc. (Second Semester)
EXAMINATION, May/June 2021
COMPUTER SCIENCE
Paper – 201
(Computer Oriented Numerical and Statistical Methods)

Time : Three Hours

Maximum Marks : 85

Minimum Pass Marks : 29

Note : Attempt *all* questions.

Unit-I

1. Use the Secant method to determine the root of the equation : 17
$$\cos x - xe^x = 0$$
taking the initial approximation as
$$x_0 = 0, x_1 = 1.$$

Unit-II

2. Explain Hermite interpolation. 17

Unit-III

3. Explain Gauss Legendre three-point formula for Numerical integration. 17

Unit-IV

4. Use the Euler method to solve numerically the IVP. 17
$$u' = -2tu^2, u(0) = 1$$
with $h = 0.2$ on the interval $[0, 1]$. Determine the bound for error and neglecting the round of errors.

Unit-V

5. State and prove Baye's theorem. 17