

B.A./B.Sc. Part-III (Honours-old) Practical Examination, 2020

Subject: Mathematics

Paper-IX: Computer Aided Numerical Practical

Time: 2Hours

Full Marks: 50

Candidates are requested to give their answers in their own words as far as practicable.

You are required to write the working formula, algorithm and a suitable C program of the assigned problem.

Marks distribution:

Working formula - 5 marks/problem

Algorithm – 10 marks/problem

Correct program - 10 marks/problem

1. Find by Newton-Raphson's method one positive root of the equation

$$X^3 + 6.5X - \sin\left(\frac{5X}{10} + \frac{j}{11}\right) = 0,$$

Correct up to 6 places of decimals.

2. Using the Trapezoidal Rule, find the value of the integral

$$\int_0^1 \frac{2.5X^2 + X + \log(2X^2 + 3X + j)}{\sqrt{X^3 + 2X + 5}} dX,$$

Correct up to 6 places of decimals.