# The University of Burdwan

**M.Sc. 3rd Semester Examination, 2020(CBCS)**

**Subject: Computer Science and Application**

**Paper: MCSA-MIE-303**

**(Java for Scientific Computing)**

**Full Marks: 20**                                                    **Time: 1 Hours**

Answer any *four* questions (All questions contain equal marks)    (4 X 5 =20)

1. Write a Java program to solve the following equation (for positive root) using Bisection method.

$$x^2 - 2x - 80 = 0$$

2. Write a Java program to solve the follow differential equation at x=1. Take h=0.02.

$$\frac{dy}{dx} = x - 2y + 4, Given\ y(0) = 1.$$

3. Write a Java program to compute the mean of a set of 10 numbers stored in an array.

4. Write and explain the algorithm for Trapezoidal rule for computing integration.

5. Write a short note on different types of loops available in Java.

6. What are the different types of variables available in java? What are the advantages of Java.