

Roll No. ....

Total Pages : 3

**GSM/M-20**

**1581**

**MATHEMATICS**

(Programming in C & Numerical Method)

Paper–BM–243

Time Allowed : 3 Hours]

[Maximum Marks : 20

**Note** : Attempt **five** questions in all, selecting at least **one** question from each Unit. Question No. 1 is compulsory. Calculator is allowed.

**Compulsory Question**

1. (a) Draw flow chart to find area of circle of given radius. 1
- (b) Write syntax of printf. 1
- (c) What is difference between character and string? 1
- (d) What is order of convergence of Newton's method or Newton-Raphson's method? 1

**UNIT-I**

2. (a) What is difference between algorithm and Flowchart? 2

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- (b) What is an operand ? What is an operator ?  
Explain with the help of example. 2
3. (a) What is difference between  $\backslash n$  and  $\backslash v$  ? 2
- (b) Write characteristics of C. 2

### UNIT-II

4. Differentiate between the following :
- (a) While and do while.
- (b) Break and continue. 2,2
5. (a) What is difference between local variables and  
global variables ? 2
- (b) Write a programme in C to find factorial of a  
number. 2

### UNIT-III

6. (a) What is pointer and how is it initialized ? 2
- (b) How a string is stored in C ? Write a C program  
to reserve all strings stored in an array. 2
7. (a) Find a root of the equation  $x \log_{10} x - 1.2 = 0$   
by secant method. 2
- (b) Find the cube root of 5, correct to three places  
of decimal by Iterative method. 2

## UNIT-IV

8. Solve the following equation by Relaxation method :

$$9x - y + 2z = 9$$

$$x + 10y - 2z = 15$$

$$x + 2y + 13z = -17. \quad 4$$

9. Solve the following equation by using Crout's triangularization method :

$$2x - y + 3z = 13$$

$$x + 5y - z = 14$$

$$3x + y + 4z = 17. \quad 4$$