Math-3.5

Sl.No. : **Total No. of Pages : 2**

III Semester M.Sc. Degree Examination, May - 2025

(Non CBCS, SLM Scheme)

MATHEMATICS

Computer Programming

Time : 3 Hours **Max. Marks : 80**

Instructions: *1) Answer any five full questions.*

2) All questions carry equal marks.

Q1) a) Explain the working organization of a computer.

b) What are the differences between analog and digital computer.

c) Describe the sequences of steps involved in problem solving of computer programming.

[4+5+7]

Q2) a) Write an algorithm and flow chart to compute the circumference of a circle.

b) Explain the basic structure of a C-program.

c) Write a list of range of data types on 16 bit machine.

[6+5+5]

Q3) a) Explain the following.

i) Keywords

ii) Identifier

iii) Data type

b) Explain the four types of integer constants in C.

c) Write a program to illustrate nested if else and multiple arguments to the scanf function.

[6+4+6]

Q4) a) Explain the following along with example

i) Loop ii) for Loop

iii) While Loop iv) Do while Loop

b) What is comma operator? Explain by an example.

c) Write a program using switch-case statement.

[8+4+4]

Q5) a) What is the difference between break and continue statements. Explain with an example.

b) Write an algorithm for binary searching.

c) Write a program to find the largest and smallest numbers in array.

[6+4+6]

Q6) a) Explain the categories of functions with an example.

b) Explain the pointer declaration along with examples.

c) Explain the following:

i) Dynamic memory allocation

ii) Allocating a block of memory

iii) Allocating multiple blocks of memory

[4+6+6]

Q7) a) Write an algorithm and C-program for the bisection method

b) Write an algorithm and C-program for Gauss elimination method

[8+8]

Q8) a) Write an algorithm and C-program for Trapezoidal rule.

b) Write an algorithm and C-program for Simpson's $3/8^{th}$ rule.

[8+8]