

2017

M.Sc.

1st Semester Examination

**APPLIED MATHEMATICS WITH OCEANOLOGY
AND
COMPUTER PROGRAMMING**

PAPER—MTM-104

Subject Code—21

Full Marks : 50

Time : 2 Hours

The figures in the right hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

[Advanced Programming in C and MATLAB]

1. Answer any five questions :

5×1

(i) What are the functions of 'margin' and 'margout' functions ?

(Turn Over)

- (ii) How can you access first and last element together in an array by a single statement in MATLAB ?
- (iii) What is the output when you execute the following ?
- $$\gg A = [1:2:9; 2:2:10; 11:-2:3; 3:7]$$
- (iv) How can you determine the length and the size of a matrix in MATLAB ?
- (v) What is the function of indirection operator in C ?
- (vi) If a variable is a pointer to a structure, then how data members of the structure could be accessed through the pointer variable ?
- (vii) What is stream in C ?
- (viii) What is macro ? Explain with example.

2. Answer any *seven* questions :

7×5

- (i) What is structure in C ? Using structure to define a complex number, write a program in C for the multiplication of two complex numbers.

- (ii) Write a program in C to find the largest number from a list of numbers using `calloc()` function accessing all elements through pointer.
- (iii) Write a program in C to convert the content of a text file to uppercase.
- (iv) Write a program in C to write and retrieve records of students from a file.
- (v) What is register variable ? Explain different types of bitwise operators in C.
- (vi) What is matrix in MATLAB ? How elements of a matrix are accessed in various ways ? Explain elaborately with examples.
- (vii) What is a persistent variable ? How is it defined ? To illustrate this, write a script in MATLAB for adding some inputs.
- (viii) Describing 'if-else-if' statement in MATLAB, write a script to assign different grades to students based on their numbers.

- (ix) Write a script in MATLAB to find the median of a set of data using a user defined function.
- (x) Write MATLAB programme to check a word is palindrome or not.

(Internal Assessment : 10 Marks)
