2021

Applied Mathematics with Oceanology and Computer Programming

[P.G.]

(CBCS)

(M.Sc. First Semester EndExaminations-2021)

MTM – 104

(*ADVANCED PROGRAMMING IN C AND MATLAB*)

Full Marks: 50   **Time: 02 Hrs**

The figures in the right hand margin indicate marks
Candidates are required to give their answers in their own words as far as practicable
Illustrate the answers wherever necessary

1. **Answer any FOUR questions**   **4x2=8**

   a) Explain 'comma' operator in C

   b) What is cell array ? How will you write name, address and the age of the three students in cell array in MATLAB ?

   c) What is the differential between **if** and # **if** in C?

   d) What is the differential between 'putc' and 'putw' function in C?

   e) Write a program in MATLAB to find the sum of integer and fraction parts of a series of number.

f) What is the difference between 'getc' and 'gets' function in C.

2. **Answer any FOUR questions**   4x4=16

a) Write a script in MATLAB to find the roots of a quadratic function by on user defined function.

b) What do you mean by sub-function and nested function? How it is defined in MATLAB? Explain with example.

c) What do you understand by 'Call by value' and 'Call by reference'? Explain these two in swapping two values through two program.

d) Write a program in MATLAB to add the matrics?

e) Describe 'switch' statement in MATLAB write a script to check whether a word is upper case or lower case.

f) Describe the two types of variable in MATLAB according to their scope in two or more functions.

3. **Answer any TWO questions**   2x8=16

a) What is recursion ? Write a program in C to find the value of x^n recursively.   2+6

b) How is a numeric array converted into a cell array ? Write a program which reads a line of characters using getchar(). Each character entered from the keyboard is tested for

determining its case, and is then written to a data file in the opposite case.

c) What is the function of feval() ? Write a function in MATLAB to find the root of $f(x)=0$ by N – R method checking for divergence to be modified so that error keep on increasing for five continuous iteration.

[Internal Marks – 10]