Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 75480

5 Year M.Sc. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Second Semester

Software Engineering

ESE 023 — PROGRAMMING IN C

(Regulation 2010)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   Draw the flowchart to find the roots of the quadratic equation.

2.   List out any five system software programs.

3.   Write data types in C with the memory occupied by each data type.

4.   Differentiate Entry controlled and Exit controlled loop.

5.   What will be the output of this program?

     Void main () { static char str[] = "Welcome to C language"; printf("%s\n%s\n%s", str, str+6, str+9);

6.   What is the use of Enumeration?

7.   Calculate the memory needed for this program. Struct { int a; long b; union { char *s; double d} }

8.   In which header file is the NULL defined?

9.   How many bytes are occupied by *near, far* and *huge* pointers?

10. Write the syntax for malloc, calloc functions.

PART B — (5 × 16 = 80 marks)

11. (a) (i)   Draw the flowchart for finding the largest of three numbers and also explain the algorithm and calculate the time taken. (8)

         (ii) Write a simple C program to print the Pascal triangle. (8)

Or

     (b) (i)   Write short notes :

               (1)   Compiler

               (2)   Interpreter

               (3)   Loader

               (4)   Linker. (8)

         (ii) Write the steps to create an efficient algorithm. (8)

12. (a) (i)   Find the value of a in each of the following statements (8)

               int i = 5, j =5, K = 7;

               float a = 3.5, b = 5.5, c = 2.5;

               (1)   a=b-i/j+c/j;

               (2)   a=(b-i)/(j+c)/j;

               (3)   a=b-((i+j)/(k+j))*c;

               (4)   a=b-i+j/k-+i*c;

         (ii) Write a C program to accept a String and to calculate the sum of its ASCII values of each character. (8)

Or

     (b) (i)   Write a C program to accept the number from the command prompt and print the same in words. (8)

         (ii) Write a function B_DOH() to accept the binary number and display its equivalent decimal, octal and hexadecimal. Use proper validations for the number passed to the function. (8)

13. (a) (i)   Write a C program that accepts an array of integers and find maximum and minimum value and calculate the difference between the minimum and maximum number. (8)

         (ii) Discuss the various input and output operators used in C. (8)

Or

     (b) (i)   Discuss branching statements in C with example. (8)

         (ii) Write a C program to find the given string is palindrome or not without using string functions. (8)

14. (a) (i) Write a 'C' program to multiply 2 matrices, using pointers. (8)

   (ii) In C, how can you create user defined functions? (8)

Or

   (b) Explain structures and union with example. (16)

15. (a) Write a C program to copy the contents of file 1 to File2 skipping all the vowels from file1. (16)

Or

   (b) (i) Explain preprocessor in C with example. (8)

   (ii) Summarize memory allocation methods in C. (8)

——————