First/Second Semester B.E. Degree Examination, June/July 2017
Programming in C and Data Structures

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting ONE full question from each module.*

Module – 1

1.   a.   What is variable? What is the purpose of variable? What are the rules of variables? **(07 Marks)**
   b.   What is operator? Explain any four operator with an example. **(09 Marks)**
   c.   Define (i) Keyword (ii) Constants (iii) Datatype (iv) Delimiters **(04 Marks)**

2.   a.   Explain the formatted and unformatted I/O function in C language. Give example for each. **(10 Marks)**
   b.   Write a C program to find the largest of three numbers. **(04 Marks)**
   c.   What is execution character? What are the different escape sequence character in C language? **(06 Marks)**

Module – 2

3.   a.   What is branching? Explain if, if….else and switch with syntax and example. **(10 Marks)**
   b.   Write a C program to generate N prime numbers. **(06 Marks)**
   c.   Explain the significance of goto statement in a C program. **(04 Marks)**

4.   a.   What is the difference between break and continue statements? Explain with example. **(06 Marks)**
   b.   Write a C program to find the GCD and LCM of two integer numbers. **(07 Marks)**
   c.   What is loop? List and explain the different type of loops. **(07 Marks)**

Module – 3

5.   a.   What is an array? Explain the declaration and initialization of one and two dimensional array. **(06 Marks)**
   b.   What is string? Explain any five string manipulation functions. **(06 Marks)**
   c.   Write a program to find the product of two matrices with suitable messages. **(08 Marks)**

6.   a.   What is recursion function? Find the factorial of number using recursive function. **(06 Marks)**
   b.   Explain with an example of different passing parameter to function. **(08 Marks)**
   c.   Write a C program to check the given string is palindrome or not. **(06 Marks)**

Module – 4

7.   a.   Explain the structures and function with an example. **(08 Marks)**
   b.   What is structure? Explain with an example of structure declaration and accessing elements. **(06 Marks)**
   c.   Write C program to accept roll no, name, marks of students and display the sum and average the marks. **(06 Marks)**

8.   a.   What is file? Explain how the file open and file close function. **(04 Marks)**
   b.   Write the concepts of array of structures with a suitable C program. **(08 Marks)**
   c.   Write a C program to read a text file and count numbers of characters, words and lines. **(08 Marks)**

Module – 5

9 a. What is pointer? Explain how pointer variables are declared and initialized with example.
(04 Marks)

b. Write a C program using pointer to compute the sum, mean and standard deviation of all elements stored in an array of n real numbers. (10 Marks)

c. What is dynamic memory allocation? Explain different dynamic memory allocation.
(06 Marks)

10 a. What is preprocessor? Explain # define preprocessor directive. (04 Marks)

b. What is data structure? What are primitive and non primitive data types? (04 Marks)

c. Write note on:
(i) Stack   (ii) Queue   (iii) Linked list   (iv) Tree   (12 Marks)

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