FACULTY OF ENGINEERING

B.E. I-Semester (Suppl.) Examination, June / July 2017

Subject : Computer Programming and Problem Solving

Time : 3 hours   **Max. Marks : 70**

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (20 Marks)

1 Convert the given Binary number into its equivalent Octal and decimal number systems   i) 1110.1001   ii) 11110101   2

2 What is the output for the program given below?   2
```
#include<stdio.h>
void main ( )
{
int x = 5, y, a = 5

y = x * a++ ;

x + = y * a;
printf ("%d %d" , x,y) ;
}
```

3 Write the syntax of switch statement. Give an example.   2

4 Differentiate between while and do-while.   2

5 Write a C function to find the greatest of three integers.   2

6 Declare a two dimensional array of size 15 and 5. Write C-statements to declare and read elements into that two dimensional array.   2

7 If the following numbers 10,19,30,40,79,89,98,100,120,150,300 are input to the binary search algorithm how many comparisons are done to find the number 120.   2

8 What is the output of the following code fragment?   2
```
        int x[4] = {4,5,9,10}

        int * ptr = x;
        ptr + = 2 ;

        printf ("%d", *ptr);
```

9 Define a structure. Give example and write the number of bytes required to store the structure variable.   2

10 What is the difference between opening a file in 'write' mode and 'append' mode?   2

PART – B (50 Marks)

11 a) One Apple contains about 225 calories. A person burns up 100 calories by running a mile. Write an algorithm which asks a person to type in the number of apples he/she wants to eat and displays the number of miles he/she should run to burn up the calories.   5

   b) Draw flowchart to print the first and second largest number among three numbers.   5

12 a) Write a C program to print the Fibonacci series.   5

   b) Write a C program to find the average of 'n' numbers using for-loop and without using arrays.   5

..2

13 a) Explain the selection sort technique to sort 'n' numbers.   5
    b) Write a C program to check whether the given matrix is identity matrix (or) not.   5

14 a) Differentiate between call by value and call by reference with suitable example.   3
    b) Write two C programs that calculate power of a number using recursion and iteration? Compare two approaches.   7

15 a) Explain the different string handling functions. Give examples.   5
    b) Write a C program to check if the given string is a palindrome or not.   5

16 a) What are the arithmetic operations that can be performed using pointer variables? Explain with example.   5
    b) Write a C program to search for a given value in an array using binary search technique.   5

17 Write short notes on the following :
    a) Storage classes   4
    b) Dynamic memory allocation   3
    c) Unions   3

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