70582

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MCS-011

MCA (Revised)/BCA (Revised)
(MCA/BCA)
Term-End Examination
June, 2019
MCS-011 : PROBLEM SOLVING AND PROGRAMMING

Time : 3 Hours *Maximum Marks : 100*
(Weightage : 75%)

Note : *Question No. 1 is compulsory. Answer any* ***three*** *questions from the rest.*

1. (a) Write an algorithm to find largest and smallest number among three numbers given as input. Also draw flowchart for this algorithm. 10

   (b) Explain the use of ***break*** and ***continue*** statements with the help of a program. 10

   (c) Write a program to generate the following pattern : 10

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

(d) Write a menu-driven program using switch statement to perform the following arithmetic operations on ***two*** variables : 10

(i) Add

(ii) Subtract

(iii) Multiplication

(iv) Division

2. (a) Write a C program using array of pointers to strings to read name of your five friends and display them. 10

(b) Write a C program to calculate simple interest. If principal amount, rate of interest and duration are given as input. 10

$$\left(\text{Note : SI} = \frac{P \times R \times T}{100}\right)$$

3. (a) Write a C program to create two matrices A and B of size 3 × 3 and find A × B. 10

(b) Explain the following with the help of an example for each : 10

(i) Static variable

(ii) Global variable

(iii) Register variable

(iv) Local variable

4. (a) Write a C program to create a macro to evaluate : 5 5

$$f(x) = 3x^3 + 2x^2 + x$$

(b) Write a C program which display the number of lines in a given file. 10 10

(c) Define recursion. With the help of a small C program segment and explain it. 5 5

5. (a) Explain the use of the following file functions : $4 \times 2\frac{1}{2} = 10$ 10

(i) fseek( )

(ii) rewind( )

(iii) ftell( )

(iv) fwrite( )

(b) Write a program to check whether a given string is a palindrone or not. 10 10