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F.Y. B.Sc. (Computer Science) EXAMINATION, 2018

COMPUTER SCIENCE

Paper-I

CS-101 : Problem Solving using Computers and 'C' Programming
(2013 PATTERN)

Time : Three Hours

Maximum Marks : 80

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

1. Attempt *all* of the following : [10×1=10]

- (a) What is a compiler ?
- (b) Explain ones complement operator with example.
- (c) Define flowchart.
- (d) Give any *two* limitations of an array.
- (e) Which standard input-output library functions are used for string input and output respectively ?
- (f) What is the scope of a variable ?
- (g) What is the newline character ?
- (h) State the use of fopen() function.
- (i) Define Macro.
- (j) What is dynamic memory allocation ?

2. Attempt any *four* of the following : [4×5=20]

- (a) What are command line arguments ? Explain.
- (b) Explain *two* methods of passing arguments to function with example.

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- (c) What is an identifier ? Give the rules of identifier.
- (d) Differentiate between structure and union.
- (e) Explain the following functions with proper syntax :
 - (1) fflush()
 - (2) remove()
 - (3) rename()
 - (4) ftell()

3. Attempt any *four* of the following : [4×5=20]

- (a) Differentiate between if-else and switch statement.
- (b) Write an algorithm and draw a flowchart to find the maximum of 3 no's.
- (c) Find the output of the following program and justify :

```
main( )
{
  int x = 100;
  printf (“\n x = %d”, 10 + x++);
  printf (“\n x = %d”, 10 + ++x);
}
```

- (d) Find and justify the output of the following program :

```
main( )
{
  int x [25];
  x[0] = 100;
  x[24] = 400;
  printf (“\n %d %d”, *x, *(x + 24) + * (x + 0));
}
```

- (e) Find and justify the output of the following program :

```
main( )
{
  int i;
  for (i = 0; i < 5; i++)
    func1( );
}
```

```

func1( )
{
    static int count = 0;
    count = count +1;
    printf ("%d \t", count);
}

```

4. Attempt any *four* of the following : [4×5=20]

- (a) Write a 'C' program to accept a number and check whether it is an Armstrong number.
- (b) Write a 'C' program to accept a m×m matrix and display the sum of diagonal elements of the matrix.
- (c) Write a 'C' program to accept 'n' numbers and print the even numbers.
- (d) Write a 'C' program to display the following pattern :

```

A
B C
D E F
G H I J

```

- (e) Write a 'C' program for creating a structure employee with employee number, employee name and salary. Accept details of *n* employees and display the employee details having the highest salary.

5. Attempt any *two* of the following : [2×5=10]

- (a) Explain for loop with example.
- (b) Explain any *four* string handling functions with usage.
- (c) Explain any *two* storage classes with proper example.