

**D 74361**

(Pages : 2)

Name.....

Reg. No.....

**FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2014**

(CUCBCSS-UG)

Core Course

Computer Science

**BCS IB 01—PROBLEM SOLVING USING C**

Time : Three Hours

Maximum : 80 Marks

I. Answer the following :—

- 1 Name the fundamental data types in C.
- 2 Define operator.
- 3 Give the syntax of else-if ladder.
- 4 What are arrays ?
- 5 What will be the output of the following program if 'e' is the input to the program ?

```
main( )  
{  
    int lower, upper,  
    upper = getchar( );  
    upper = toupper( lower );  
    putchar( upper );  
}
```

- 6 What is the result for the following declaration ?  
int array [ ] = {1, 2, 3, 4, 5} ;  
printf( "%d", & array[4] - &array [0] );
- 7 What is type casting ?
- 8 What are the two predefined FILE pointers in C ?
- 9 Define a string constant.
- 10 Define structure.

(10 × 1 = 10 marks)

**Turn over**

II. Answer *all* questions :

- 11 Explain any *four* types of operators in C.
- 12 What are the characteristics of a good program ?
- 13 How one dimensional and two dimensional arrays are initialized ?
- 14 Write a program to find whether a number is odd *or* even without using else statement.
- 15 Define a program loop. Write the steps included in the looping process.

(5 × 2 = 10 marks)

II. Write any *five* questions.

- 16 What are symbolic constants ? How it is defined ?
- 17 Write an algorithm and flowchart for finding first and second largest of n numbers.
- 18 Write a program to display the prime numbers in a list of numbers.
- 19 Explain the scope and lifetime of any three storage classes in C.
- 20 Explain the syntax and execution of for loop.
- 21 Write a program to compute the sum of digits of a given integer number.
- 22 Explain any *two* string handling functions with example.
- 23 Write a program which will read a text and count all occurrences of a particular word.

(5 × 4 = 20 marks)

V. Answer any *five* questions :

- 24 What are data types in C ? Explain the different types of data types with examples.
- 25 (a) What is the difference between passing by value and passing by reference ? To what types of arguments does each apply ?  
(b) Write a function that calculate and display the real roots of the quadratic equation  $ax^2 + bx + c = 0$ .
- 26 Explain :  
(a) Nested structure ;                      (b) Array of structures ;  
(c) size of structure.
- 27 Write a program using pointers to read in an array of integers and print its elements in reverse order.
- 28 Write a function program that allow a floating point numbers to be raised to an integer power,  $y = x^{11}$ .
- 29 Define a file. Explain the basic file operations.
- 30 What is meant by dynamic memory allocation? Write a program to store a character string in a block of memory space created by malloc and then modify the same to store a larger string.
- 31 (a) Write a program to merge two sorted arrays in to a single sorted array in ascending order.  
(b) Write a function to remove duplicates from an ordered array.

(5 × 8 = 40 marks)