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Name...................................

Reg. No..............................

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2016

(CUCBCSS–UG)

Core Course—Computer Science

BCS 1B 01—PROBLEM SOLVING USING C

Time : Three Hours

Maximum : 80 Marks

I. Answer the following :

1 Define algorithm.

2 What is the output of the following code ?

```c
# include <studio.h>
int main()
 {
  int i=1;
 printf("%d %d %d", ++i, i++, ++i);
  return (0);
 }
```

3 Differentiate between Keyword and Identifier.

.4 Define symbolic constant.

5 What is the associativity of conditional operator ?

6 Name the command that is used to skip the rest of a loop and carry on from the top of the loop again.

7 Define a pointer variable.

8 What is printed when this program is executed ?

```c
int f(int x) {
       if (x<=4)
             return x;
             return f(--x);
             }
       void main () {
             printf ("%d/n", f(7));
             }
```

9 Define Union.

10 Define macros.

(10 × 1 = 10 marks)

Turn over

II. Answer *all* questions :

11 What is bottom up approach in C ?

12 What is the general form of conditional operator ? Give an example.

13 Write a program to read three numbers and print them in ascending order.

14 Distinguish between break and continue statement.

15 Explain the use of * operator.

(5 × 2 = 10 marks)

III. Answer any *five* questions :

16 Explain the basic structure of C program.

17 Write a program to find the product of two matrices.

18 Differentiate with suitable examples, actual and formal arguments in C function.

19 Write a program to count the number of boys whose weight is less than 50 kg. and height is greater than 170 cm. from a list of *n* boys using for loop.

20 Write any four string handling functions and explain with example.

21 What are pointers ? Explain how to perform arithmetic operations on pointers.

22 What are files ? Explain how files are opened.

23 Explain dynamic memory allocation.

(5 × 4 = 20 marks)

IV. Answer any *five* questions :

24 Explain different looping structures available in C with examples.

25 Write short ntoes on :

    (a) Global variables.

    (b) Structures in C.

    (c) Multidimensional arrays.

26 Write a program to find the roots of a quadratic equation.

27 Define a structure called *cricket* that will describe the following information :

    Player name, team name, batting average. Using *cricket* declare an array player with 50 elements and write a program to read the information about all the 50 players and print a team-wise list containing names of players with their batting average.

28 (a) Write a program to merge two sorted array in to a single sorted array in ascending order.

   (b) Write a function to remove duplicates from an ordered array.

29 Write a recursive function to generate and print first *n* Fibonacci numbers.

30 What are preprocessor directives in C ? Explain various forms of macro substitution.

31 Two files DATA1 and DATA2 contain sorted list of integers. Write a program to produce a third file DATA which holds a single sorted, merged list of these two lists.

(5 × 8 = 40 marks)