SECOND SEMESTER B.Sc. DEGREE EXAMINATION, MAY 2011

Computer Science—Complementary Course

CMCA 02—PROGRAMMING IN C

Time : Three Hours   Maximum : 30 Weightage

Section A

*Answer **all** questions.*

1. Local variable which exists and retains its value even after the control is transferred to the calling function belongs to _____ storage class.

2. The range of values that can be represented by a variable of type char is _____

3. The _____ is a compile time operator and, when used when an operand, it returns the number of bytes the operand occupies.

4. What is the value of y, given $x = 6$ and $y = (x > 10 ? (2* x + 5) : (3* x/2))$.

5. The _____ statement is used to skip a part of the statements in a loop.

6. The following statement block :

    sum = 0 ;

    $i = 1;$

    for (; $i < = 10$) ;

        {sum + = i ;

        $i++$;}

    (a)   is valid and find the sum **1** + 2 +   + 10.

    (b)   will result in endless loop.

    (c)   The for loop is incorrect.

7. Which of the following declaration is wrong ?

    (a) int x [ ] [2] = {1, 2, 3, 4}.   (b) int x [2] [2] = {1, 2, 3, 4}.

    (c) int x [2] [2] = {(1, 2), (3, 4)}.   (d) int x [ ] [2] = ((1, 2), (3, 4)).

8. The process of combining two strings together is called _____

.9. Pick incorrect statement for the following _____

    (a)   C supports recursion.

    (b)   A function returns float value by default.

    (c)   One a function is defined, it can be called anywhere.

Turn over

10. In ———————— values of actual parameters are copied to the variables.

11. The ———————— allocates a block of memory of requested size and returns a pointer to the first byte of the block.

12. The function ———————— returns the current position of the file pointer.

(12 x   = 3 weightage)

Section B

Answer **all** *questions.*

13. List the logical operators in C.

14. What is a library function ?

15. Give the syntax of 'do while' and 'while'.

16. Give any *two* rules to be observed when we write nested for loops.

17. Write any *four* string functions.

18. Define structure.

19. Give any *two* advantages of user defined functions.

20. What is a Pointer ?

21. What is a data file ?

(9 x **1** = 9 weightage)

Section C

Answer any **five** *questions.*

22. Write a C program to read values of u, v and w and print the results of the expression :

$$\frac{\sqrt{((u + \mathbf{0}^2)}}{w(u - v)}$$

23. Write a program to print the following using for loops :-

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

24. With suitable example, explain switch statement.

25. Write a function to reverse and print a given string.

26. Write a program to read a square matrix and print its transpose.

27. With suitable **example(s)** explain formal and actual parameters.

28. Write note on dynamic memory allocation.

(5 x 2 = 10 **weightage**)

Section D

Answer any **two** *questions.*

29. With suitable examples, explain **:** **(i)** if statements **;** (ii) file handling function.

30. Write a program to read a list of n integers into a one dimensional array and print the sum of all even numbers. Use pointers to access array elements.

31. Give a detailed account of "structure" and "union".

(2 x 4 = 8 **weightage**)