M.Sc. MATHEMATICS
SECOND SEMESTER
PROGRAMMING WITH C & MATHEMATICA
MSM - 205 [REPEAT] [OLD COURSE]
[USE OMR FOR OBJECTIVE PART]

SET A

Duration : 3 hrs.

Full Marks : 70

[**Objective**]

Time : 30 min.

Marks : 20

Choose the correct answer from the following:

$1\times20=20$

1. Study the following program:

   ```
   main()
   {
   printf("Department of Mathematics");
   main();
   }
   ```

   What will be the output of this program?
   a. Wrong statement
   b It will keep on printing Department of Mathematics
   c. It will Print Department of Mathematics once
   d None of the above

2. If Y is of any integer type, then the expression $3*(Y-8)/9$ and $(Y-8)/9*3$
   a. may or may not yield the same value.
   b. must yield the same values
   c. must yield different values
   d. None of these.

3. To scan a and b given below which scanf() statement would you use? (float a , float b)
   a. scanf("%f %lf", &a,&b);
   b. scanf("%lf %f",&a,&b);
   c. scaf("%f %f",&a &b);
   d. none of the above.

4. Which of the following is not keyword in C?
   a. Printf
   b. main
   c. if
   d. Both a and b

5. The "if, else,switch, case and default are used for _____purposes.
   a. iterative
   b. selection
   c. jumping
   d. None of the above

6. For loop is considered as a --- looping statement.
   a. entry controlled
   b. exit controlled.
   c. performance controlled
   d. both a) and b)

7. What does this declaration mean?   int x : 4;
   a. X is a four-digit integer.
   b. X cannot be greater than a four-digit integer.
   c. X is a four-bit integer.
   d. None of the these

8. In the C language, the constant is defined _____.
   a. Before main
   b. After main
   c. Anywhere, but starting on a new line.
   d. None of the these..

9. Choose the correct statement
   a. break is jump statement used to terminate a switch or loop on some desired condition.
   b. Looping statements whose condition is checked prior to the execution of its body is called as Exit controlled loop.
   c. Looping statements whose condition is checked after execution of its loop body is called as Entry controlled loop.
   d. none of these

10. What are the files which automatically opened when a C file is executed?
    a. stdin
    b. stdiout
    c. stderr
    d. All the above

11. The default parameter passing mechanism is known as....
    a. call by reference
    b. call by value
    c. call by value result
    d. none of these

12. The keyword used to transfer control from a function back to the calling function is
    a. switch
    b. goto
    c. go back
    d. return

13. What is an Array in C language.?
    a. A group of elements of same data type.
    b. An array contains more than one element
    c. Array elements are stored in memory in continuous or contiguous locations.
    d. All the above.

14. Choose a correct statement about C language arrays.
    a. An array address is the address of first element of array itself.
    b. An array size must be declared if not initialized immediately.
    c. Array size is the sum of sizes of all elements of the array.
    d. All the above

15 An array Index starts with.?
   a. 1
   b. 2
   c. 0
   d. -1

16. What is the right way to initialize array ?
    a. int num [5]={4,5,8,10,50}
    int num[5]={1,10,52,7,8,9}
    c. int n()={1,8,9,5}
    int num (5)={4,5,8,10,50}

17. An array elements are always sorted in_____memory location.
    a. sequential
    b. random
    c. sequential and random
    d. none of the above

18. What is the index number of the last element of an array with 29 elements?
    a. 29
    b 28
    c. 0
    d. Programmer-defined

19. Size of the array need not be specified, when
    a. It is a declaration   b. Initialization is a part of definition
    c. It is a formal parameter   d. All the above

20. Syntax of accessing the seventh element
    a. a{7}   b. a(7)
    c. a"7"   d. a[7]

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(**Descriptive**)

Time : 2 hrs. 30 mins.   Marks : 50

[Answer question no.1 & any four (4) from the rest]

1.	Write an algorithm, flowchart and C program to find the sum of numbers from 1 to n	4+2+4 =10
2.	What is language translator? Discuss briefly different types of language translator used in computer programming.	4+6=10
3.	Write difference between algorithm and flowchart? Write a program to display the following pattern.	5+5=10

```
*****
****
***
**
*
```

4.	Discuss about the following operators in C language with example. a. Bitwise operators b. Increment and decrement operators c. Logical operators	4+3+3 =10

[3]

5. Write C program to evaluate each of the following equations. 3+3+4
   (i) V = u + at. =10

      (ii) S = ut+1/2a

      (iii) T=2*a+√b+9c

6. a. What is constant? Explain different constants in C. 2+3=5
   b. What is function in C ? Classify the different types of 3+2=5
      decision making statements in C.

7. What do you mean by Array in C programming language 4+6=10
   ?.How to declare 2D array explain with proper example.

8. a. Write the structure of C program and explain. 5+5=10
   b. Write a program to perform swapping of two numbers
      without using temporary variable.

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[4]