

**MASTER OF COMPUTER APPLICATION
FIRST SEMESTER (SPECIAL REPEAT)
PROGRAMMING CONCEPTS & METHODOLOGY
MCA-102**

**SET
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

(Objective)

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

- Call by reference passes the _____ of the variable to the function called.
 - Address
 - Value
 - Copy of argument
 - None of the above
- _____ mode is used to open a file to store records and access them later for processing.
 - w
 - r
 - a+
 - w+
- Which function locates the current position of a file pointer?
 - ftell()
 - fseek()
 - fread()
 - None of the above
- Specify the correct way of declaring main() when it receives command-line arguments.
 - ```
void main(int argc, char *argv[])
```
  - ```
void main(argc, argv)
{int argc;
char *argv;
}
```
 - ```
void main()
{ int argc;
char *argv;
}
```
  - None of the above
- Find the output  

```
define ABC printf("Some error.")
int main()
{
printf("C-program.");
ABC;
Return 0;
}
```

  - C-program.
  - C-program.Some error.
  - C-program.  
Some error.
  - ERROR
- C pre-processor is conceptually the first step during compilation.
  - True
  - False
  - Depends on the compiler
  - Depends on the standard

7. Recursion provides no saving in storage.
- True
  - False
  - Depends on the function definition
  - None
8. 

```
struct student
{ int roll;
char name[20];
}S, std[100];
printf("%d", sizeof(struct S));
```
- Output is \_\_\_\_\_
- 100
  - 22
  - ERROR
  - 2
9. The function used to allocate memory in multiple blocks of same size during program execution is \_\_\_\_\_.
- sizeof()
  - calloc()
  - malloc()
  - realloc()
10. Any executable program can be included as a header file in a new program.
- True
  - False
  - Depends on the compiler
  - Depends on the standard
11. Any unchanged value in a program during execution is called \_\_\_\_\_.
- Key word
  - Constant
  - Variable
  - a and b
12. \_\_\_\_\_ bytes are occupied in RAM for unsigned long integers.
- 2
  - 1
  - 8
  - 4
13.  $\sin(wt^3) \cos((3x)/3)$  in C-expression is written as \_\_\_\_\_.
- `pow(sin(w*t), 3) * cos(3*x)/3`
  - `sin(w*pow(t,3))*cos((3*x)/3)`
  - `sin(pow((w*t), 3)) * cos((3*x)/3)`
  - `sin w*pow(t,3) * cos(3*x)/3`
14. The format to print a horizontal space is \_\_\_\_\_.
- `printf("\n")`
  - `printf("/n")`
  - `printf("\t")`
  - `printf("/t")`
15. Number of values returned by a function at a time is \_\_\_\_\_.
- 1
  - 2
  - 3
  - Any number of values
16. Which variable has the longest scope in the following C code?
- ```
#include<stdio.h>
int b;
void main( )
{ int c;
return 0; }
int a;
```
- a
 - b
 - c
 - Both a and b

17. Print the output

```
int x=0, i, j;
for (i=1; i<=3; i++)
{
    for (j=i; j<=2; j++)
    {
        x=x*i+j;
        printf("%d ", x);
    }
}
```

- a. 1 3 8
b. 0 3 12
c. 2 5 9
d. None of the above
18. getch() function to read character from a file is within _____ header file.
a. stdio.h
b. string.h
c. stdlib.h
d. None of the above
19. The associativity of ternary operator (?) is Right to Left.
a. True
b. False
c. Depends on the compiler
d. Depends on the standard
20.

```
Void main()
{ int a=5, b= 10;
  int *aptr, *bptr=&b;
  aptr=&a;
  aptr=bptr;
}
```

 Address of a= 20502
Address of a= 20504
- The value of *aptr++ is_____.
- a. 20503
b. 6
c. 11
d. 20505

(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

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

1. Write an algorithm to find the highest of N numbers. Based on the algorithm derived, write a C-program for the same problem (to find the highest of N numbers). 5+5=10
2. Define a function, FAC(int) to find the factorial of any number. Write a C program to find the sum of the series given below:
Sum= $1+(2!/2)+(3!/3)+(4!/4)+\dots\dots\dots+n!/n$
(Hints: Use the defined function FAC(int) to find the factorials. i.e. in place of $2!, 3!, \dots$ just call FAC(2), FACT(3) and so on.) 5+5=10
3. Differentiate between: 4×2.5=10
 - a) Call by value and call by reference
 - b) EXTERN and STATIC storage classes
 - c) Algorithm and flowchart
 - d) Pre increment and post increment operator
4. Discuss in brief: 4×2.5=10
 - a) Reserved words
 - b) Register storage class
 - c) Library functions
 - d) Dynamic memory allocation
5. Draw a flowchart to find the summation of two $m \times n$ matrices. Define a function to find the transpose of a given matrix. 5+5=10
6. Create a structure to hold the record of 70 employees having the following fields: employee's id, name, date of birth and date of joining the organization. Write a C-program to find the total number of employees whose age is more than 45 years and who is working in the organization more than 15 years. 10
7. What is C-preprocessor? Name and define the different types of preprocessor directives in C using examples. 2+8=10
8. Write a program to copy the content of a file to another file. Also define a command which will convert all the lower case alphabets to upper case alphabets during the process of copying. (The file names will be read from command line.) 5+5=10

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