

MASTER OF COMPUTER APPLICATION
First Semester
INTRODUCTORY PROGRAMMING WITH C
(MCA - 101)

Duration: 3Hrs.

Full Marks: 70

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

Answer any four from Question no. 2 to 8
Question no. 1 is compulsory.

1. What is pre-processor? Write about the different types of pre-processor directive.
Describe dynamic memory management technique in C. (2+4+4=10)
2. What is a structure? How does a structure differ from array? Describe array of structures with an example. (3+3+4=10)
3. Write a program to display multiplication of two matrices. (10)
4. What is an expression? Write about the different categories of operator in C. (2+8=10)
5. Define an array? Write a function to read and write a 2-Dimensional array. (4+6=10)
6. What is looping in C? Describe different types of looping in C. (3+7=10)
7. Name and describe the four basic data types in C. Describe the rules to declare a variable in C. Differentiate between constant and variable. (4+4+2=10)
8. What is argument? Write a C program to calculate value of n^m using function. (3+7=10)

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Duration: 20 minutes

Marks – 20

(PART A - Objective Type)

I. State true or false:

1×5=5

- a) The functions **malloc () and calloc()** are used to dynamically allocate memory.
- b) Functions cannot return more than one value at a time.
- c) If return type for a function is not specified, it defaults to int.
- d) In C all functions except *main()* can be called recursively.
- e) In C, an argument is passed by VALUE when a copy of its value of is passed to the function's parameter.

II. Choose the correct option:

1×10=10

- 1. Which of the following special symbol allowed in a variable name?
 - a) *(asterisk)
 - b) | (pipeline)
 - c) - (hyphen)
 - d) _ (underscore)
- 2. When we mention the prototype of a function?
 - a) Defining
 - b) Declaring
 - c) Prototyping
 - d) Calling
- 3. We want to round off x, afloat, to an int value, then correct way to do is
 - a) (int)(x+0.5)
 - b) int (x+0.5)
 - c) (int) x+0.5
 - d) (int) ((int)x+0.5)
- 4. Which of the following is not a logical operator?
 - a) &
 - b) &&
 - c) ||
 - d) !

5. Which of the following is the correct usage of conditional operators used in C?
- `a > b ? c = 30 : c = 40;`
 - `a > b ? c = 30;`
 - `max = a > b ? a > c ? a : b > c ? b : c;`
 - `return (a > b) ? (a : b)`
6. Which of the following are unary operator in C language?
1. ! 2. sizeof 3. ~ 4. &&
- 1,2
 - 1,3
 - 2,4
 - 1,2,3
7. Which of the following declares a pointer variable (**ptr**) and initializes it to the address of **x**?
- `int *ptr = *x`
 - `int *ptr = &x`
 - `int &ptr = *x`
 - `int &ptr = &x`
8. The size of a union is
- The sum of the sizes of the union's members.
 - The size of the largest member of the union.
 - Is determined at runtime.
 - Depends on which member of the union is used.
9. The main difference between a structure and a union is:
- The syntax used to define them.
 - The syntax used to access their members.
 - Structure members have separate memory, union members share memory.
 - Structure and Union are really different names for the same thing.
10. The expression **sizeof(int)** refers to
- The largest number that can be stored in an int variable.
 - The number of int variables declared in the current function.
 - The number of bytes needed to store an int variable.
 - The largest number of characters allowed in the name of an int variable.

III. Fill in the blanks:

1×5=5

- Closing a file simply involves calling `fclose` with theas its argument.
- An array of characters is called as.....
- To increment what pointer `p` points to, you can use the expression.....

d) The library function used to copy one string to another is.....

e) The scope of an automatic variable is in.....in which it is declared.
