

# Programming and Problem Solving through C Language

Max. Marks 100

JULY 2019

## PART ONE (Answer all Questions)

1. Each question below gives a multiple choice of answers. Choose the most appropriate one and enter in the OMR answer sheet supplied with the question paper, following instructions therein.(1x10)

1.1 Which of the following is a keyword used for a storage class?

- A. Printf
- B. External
- C. Auto
- D. scanf.

1.2 Which pair of functions below are used for single character I/O?

- A. getchar () and putchar()
- B. scanf () and print()
- C. input () and printf()
- D. None of these

1.3 What is the output of below program?

```
void main(){  
char *p="Hello world";  
int *q;  
p++;  
printf("\n%s\n%s",p,q); }
```

- A. ello world  
Ello world
- B. Compiler error
- C. lo world  
lo world
- D. ello world  
world

1.4 Which of the following is a Scalar Data type?

- A. Float
- B. Union
- C. Array
- D. Linked list

1.5 Header files in C contain:

- A. Compiler commands
- B. Library functions

- C. Header information of C programs
- D. Operator for files

1.6 What is the binary number equivalent of the decimal number 12?

- A. 1100
- B. 1010
- C. 1001
- D. 1110

1.7 Pointers are of :

- A. integer data type
- B. character data type
- C. unsigned integer data types
- D. none of these

1.8 In C, if you pass an array as an argument to a function, what actually passed ?

- A. Value of elements in array
- B. First element of the array
- C. Base address of the array
- D. Address of the last element of array

1.9 Which of the following fopen () statements is illegal in C?

- A. fp=fopen("abc.txt", "r");
- B. fp=fopen("c:/user1/abc.txt", "w");
- C. fp=fopen("abc", "w");
- D. none of the mentioned

1.10 Which one of the following is not a keyword in C language

- A. Main
- B. endl
- C. float
- D. switch

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and enter in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

- 2.1 Array int a[5] can be used to store five character a, b, c, d and e into it. **[FALSE]**
- 2.2 C language was initially designed and developed at Microsoft Corporation of USA. **[FALSE]**
- 2.3 A semicolon must be placed after closing the conditional expression in a do-while construct. **[TRUE]**
- 2.4 Ternary expression is a selective control construct. **[TRUE]**
- 2.5 All the functions, except main() function do not execute on their own, they require a calling function. **[TRUE]**

- 2.6 Recursive call is not allowed for main() function. **[FALSE]**  
 2.7 A structure cannot contain the structure itself as its member. **[FALSE]**  
 2.8 Pointers to pointers is a term used to describe pointer whose contents are the address of another pointer. **[TRUE]**  
 2.9 In C, there is a function name strcat () used to concatenate two strings. **[TRUE]**  
 2.10 Values of predefined macros can be printed using printf statements in C program. **[TRUE]**

3 Match words and phrase in column X with the closest related meaning/ word(s)/ phrase(s) in column Y. Enter your selection in the “OMR” answer sheet supplied with the question paper, following instructions therein.

X		Y	
3.1	Keyword used to transfer control from a function back to the calling function <b>[H]</b>	A	fseek()
3.2	Statement used to go to the next iteration in a loop <b>[I]</b>	B	malloc()
3.3	Library function used to clear the specified buffer <b>[F]</b>	C	switch-case control
3.4	Relational operators cannot be used on <b>[D]</b>	D	loops control
3.5	Function that allocate and clear allocated memory <b>[M]</b>	E	argument
3.6	If you have to use many if –else conditions, they can be usually implemented by <b>[C]</b>	F	fflush()
3.7	A price of information passed to a method <b>[E]</b>	G	for(;;)
3.8	Function that all allocates memory but does not clear allocated memory <b>[B]</b>	H	return
3.9	Function used for file pointer movement <b>[A]</b>	I	continue
3.10	Unending loop if no break statement inside the body <b>[G]</b>	J	break
		K	main()
		L	structure
		M	calloc

4 Each space below has a blank space to fit one of the word(s)/phrase(s) in the list below. Choose the most appropriate one and enter in the “OMR” answer sheet supplied with the question paper, following instructions therein. (1x10)

A	Ternary	B	sizeof	C	null
D	void	E	semicolon	F	#

G	increment	H	extern	I	static
J	structure	K	pointer to pointer	L	reference
M	getch()				

- 4.1 C language is well suited for **[J]** programming.
- 4.2 An **[H]** storage class can be used to declare global variable known to all the functions in the file.
- 4.3 **[M]** function can be used to read a single character.
- 4.4 The operator “++” is known as **[G]** operator .
- 4.5 The **[F]** operator can be used to allocate memory space dynamically to variables during execution of a program.
- 4.6 A **[K]** variable points to another pointer.
- 4.7 A function with no return type is declare as **[D]**.
- 4.8 A function prototype is always terminated by **[E]** sign.
- 4.9 When a structure is passed to a function, then it should pass by **[L]**.
- 4.10 The conditional operator (?:) is a **[A]** operator.

## PART TWO

(Answer any four questions)

5.

- What do you mean by pre-processor directives? List and explain its different categories.
- List out the advantage of functions in C. Also write a function to find second largest number form 1D array of n number.
- What is the recursive function ? List out their merits and demerits. Also write a C program to calculate factorial of a number using recursion.

6.

- Write a C Program using function to print equivalent binary number of decimal number input by keyboard.
- What do you mean by algorithm? Also write the algorithm to find multiplication of two matrices.
- Differentiate between the following:
  - Function definition and function declaration.
  - Actual parameter and formal parameter.

7.

- Write a C Program to print and count all numbers between 1 to 100 divisible by 11.
- What is difference between pass by value and pass by reference with example?
- Write a C program to swap values of two variables without using temporary variable?

8.

- a) Write a C language program to copy the contents of one file to another file.
- b) What is command line argument? Give example through 'C' program.
- c) What do you understand by 'pointer to function'? Explain it using an example.

9.

- a) What do you mean by linked list? Write a function in C to delete a node at particular position from linked list.
- b) Differentiate between do-while loop and while loop with the help of one example for each.