



# BRAINWARE UNIVERSITY

Course – MCA

C Programming (MCA102)

(Semester – 1)

**Time allotted: 3 Hours**

**Full Marks: 70**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

## Group –A

(Multiple Choice Type Questions)

10 x 1 = 10

1. Choose the correct alternative from the following

(i) What will be the output of the following program?

```
main()
{
    char ch;
    if((ch = printf(1234)))
        printf("It matters \n");
    else
        printf("It does not matter\n");
}
```

- |               |                       |
|---------------|-----------------------|
| a. It matters | b. It does not matter |
| c. Matters    | d. No Output          |

(ii) Pointer is \_\_\_\_\_

- |  |                  |
|--|------------------|
| a. a variable containing the address of a variable | b. a value       |
| c. a memory location                               | d. None of these |

(iii) A function may contain \_\_\_\_\_

- |                                    |                          |
|------------------------------------|--------------------------|
| a. One return statement            | b. Two return statements |
| c. More than two return statements | d. None of these         |

(iv) Which one of the following is a bitwise operator?

- |       |       |
|-------|-------|
| a. <  | b. >= |
| c. && | d. << |

- (v) The output of,  

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

```

is
- a. 24
  - b. 5
  - c. Infinite loop
  - d. None of these
- (vi) Which one of the following declaration is invalid?
- a. int 2A
  - b. int A2A
  - c. int A2
  - d. int AA2
- (vii) Which one is the correct output?  

```
char a[]="computer";
printf("%d",strlen(a));

```
- a. 9
  - b. 10
  - c. 8
  - d. 11
- (viii) What will be the output for the following program?  

```
main()
{
int i=2;
switch(i)
{
case 1:printf("one")
case 2:printf("two")
case 3:printf("three")
default:printf("error");
}
}

```
- a. one two three error
  - b. two three error
  - c. two
  - d. two three.
- (ix) Find out the output for the following program.  

```
main()
{
int x=4;
if(x=2)
printf("you are right");
else
printf("you are wrong");
}

```
- a. you are right
  - b. you are wrong
  - c. compilation error
  - d. syntax error.

- (x) What is the output for the following program?

```
main()
{
int i;
for(i=0;i<10;i++);
{
printf("%d",i);
}
}
```

- a. 9  
b. 0123456789  
c. 10  
d. 012345678910

### Group – B

(Short Answer Type Questions)  
(Answer any *three* from the following)

- |    |  |            |
|----|--|------------|
|    |  | 3 x 5 = 15 |
| 2. | (a) What is Recursion?   | [2]        |
|    | (b) What do you mean by pointer arithmetic? Explain with the example   | [3]        |
| 3. | Write a C program to generate Fibonacci Series.  | [5]        |
| 4. | Discuss the difference between while, do-While and For loop.   | [5]        |
| 5. | Write a function (Recursive/Non-Recursive) power (a, b) that can calculate $b^a$ for any floating a and positive integer b. Invoke this function into main() function to calculate $n^x$ . | [5]        |
| 6. | (a) What is a file?  | [1]        |
|    | (b) What are the different modes of operation in a file?   | [2]        |
|    | (c) What is the use of fseek(), rewind() functions in a file ?   | [2]        |

### Group – C

(Long Answer Type Questions)  
(Answer any *three* from the following)

- |    |   |             |
|----|---|-------------|
|    |   | 3 x 15 = 45 |
| 7. | (a) What is ternary operator? Explain with an example.  | [4]         |
|    | (b) Write a C program to check whether a number is palindrome or not                              | [5]         |
|    | (c) Write a C function to swap two integer data and call the function from the main ( ) function. | [6]         |

8. (a) Write the names of four string functions whose prototypes are defined in the “string.h” header file. [4]
- (b) Write a C program to find the number of vowels and consonants in a line of text. [5]
- (c) What are the differences in opening a file in ‘r+’ and ‘w+’ modes? [4]
- (d) What value is returned by the printf() function? [2]
9. (a) Distinguish between Array and Structure. [4]
- (b) Write a C program to copy the content of a text file 'file1.txt' into another 'file2.txt'. [6]
- (c) Write a C program to print the following pattern (till n rows, where n is taken as an input)
- ```

*
* *
* * *
* * * *
* * * * *

```
- [5]
10. (a) What is subscripted variable? [2]
- (b) Explain "C doesn't support Bound Checking". [3]
- (c) Write a complete C program to convert a decimal number consisting of arbitrary number of digits into its binary form using 1-D array. [5]
- (d) Write a complete C program to find out the Trace of a square matrix [Trace means the sum of Principal Diagonal Elements]. [5]
11. Write short note of any *three* of the following [3x5]
- (a) Storage Class in C Language
- (b) Two Dimensional Array
- (c) Bit wise Operator
- (d) Pointer Arithmetic
- (e) Pointer to function and function returning to pointer