



## BRAINWARE UNIVERSITY

Course – B.Sc. (CS)

Principle of Programming Language (BCS201 / BCSC201)

(Semester – 2)

**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) Which one of the following is a bitwise operator?

- |       |       |
|-------|-------|
| a. >  | b. >> |
| c. && | d. ?: |

(ii) What is the output of the following C code?

```
#include <stdio.h>
void main()
{
    int a = 10, b = 5, c = 5;
    int d;
    d = a == (b + c);
    printf("%d", d);
}
```

- |                 |      |
|-----------------|------|
| a. Syntax error | b. 1 |
| c. 10           | d. 5 |

(iii) The keyword used to transfer the control from a function back to the calling function is

- |           |           |
|-----------|-----------|
| a. switch | b. static |
|-----------|-----------|

- c. goto
- d. return

(iv) What will be the output of the following code?

```
#include <stdio.h>
#define A 1 + 2
#define B 3 + 4
int main()
{
int var = A * B;
printf("%d\n", var);
}
```

- a. 9
- b. 11
- c. 12
- d. 21

(v) Recursive function are executed in a

- a. first in first out order
- b. parallel fashion
- c. last in first out order
- d. None of these

(vi) The correct syntax to send an array "array" as a parameter to function "func" is

- a. func ( & array );
- b. func ( array );
- c. func ( \* array );
- d. func ( array [ size ] );

(vii) ASCII value of 'a' is

- a. 65
- b. 97
- c. 32
- d. 48

(viii) What is the output of the following C code?

```
#include <stdio.h>
void main()
{
static int x=-1;
if (x++ < 2)
main();
}
```

- a. Infinite calls to main
  - b. Run time error
  - c. Main is called thrives
  - d. Compile time error
- (ix) When applied to a variable, what does the unary operator ‘&’ yield?
- a. The variable’s address
  - b. The variable’s right value
  - c. The variable’s binary form
  - d. The variable’s value
- (x) Pointer is
- a. a variable containing the address of variable
  - b. a value
  - c. a memory location
  - d. None of these

**Group – B**

(Short Answer Type Questions)

3 x 5 = 15

Answer any *three* from the following

- 2. Write a C program to reverse a string, without using any library function. [5]
- 3. Write a C program to find the GCD of two numbers. [5]
- 4. What is recursion? Explain with an example. [5]
- 5. Explain ‘call by value’ and ‘call by reference’ with proper example. [5]
- 6. Write a C program to check whether a number is palindrome or not. [5]

**Group – C**

(Long Answer Type Questions)

3 x 15 = 45

Answer any *three* from the following

7. (a) Explain different types of operators present in C. [8]
- (b) Write a C program to multiply two rectangular matrices with conformable dimensions. [7]
8. (a) What is entry control loop and exit control loop? Explain purpose of 'break' and 'continue' statement with proper example. [4+4]
- (b) Write a C program to store information (name, roll, marks) of 10 students using structure and print the name of the student who got the highest marks. [7]
9. (a) What are the basic data types used in C language ? What are the user defined data types ? Explain briefly. [2+3]
- (b) Write a C program to create a file contains a series of integer numbers and then reads all numbers of this file and writes all odd numbers to a file called odd and writes all even numbers to a file called even. [10]
10. (a) What is the difference between arrays within a structure and the array of structure ? [5]
- (b) Write a C program to print the prime numbers between 1 to 100. [5]
- (c) What is meant by the scope of a variable within a program ? What is the purpose of external variable ? [5]
11. (a) Write a C program to find the sum of the series  $1 + 3^2/3^3 + 5^2/5^3 + 7^2/7^3 + \dots$  till N terms, where N is given by user. [6]
- (b) Write short note on dynamic memory allocation. [5]
- (c) What is array? How an array can be declared and initialised ? [2+2]

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