

**SECOND SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
APRIL 2020****B.C.A.****BCA 2B 02—PROBLEM SOLVING USING C****(2017 Admissions)****Time : Three Hours****Maximum : 80 Marks****Part A***Write short answer on all questions.**Each question carries 1 mark.*

1. List the name of type modifiers. Explain any one.
2. What is the difference between "=" and "==" ?
3. When and why we use modular division operator ?
4. What will be output if you will compile and execute the following c code ?

```
void call(int,int,int);  
  
void main()  
{  
int a=10;  
call(a,a++,++a);  
}  
  
void call(int x, int y, int z)  
{  
printf("%d %d %d",x,y,z);  
}
```

5. Explain the use of formal arguments.
6. Explain the use and way of defining symbolic constants.
7. What is meant by type casting ?
8. Explain methods for initialization of variable.

Turn over

9. What is union ?
10. How to open a data file in C ?

(10 × 1 = 10 marks)

Part B

Write a paragraph on all questions.

Each question carries 2 marks.

11. Why break statement is essential in the switch statement. Explain.
12. Explain do...while loop with suitable example.
13. Write a program to check whether given number is Armstrong or not.
14. What is the relation between array name and element number ? How elements are referred using base address ?
15. Differentiate array and structure.
16. When is the comma operator used in the 'for' statement ? Explain.
17. Explain how Function is defined and declared.
18. What is the purpose of calloc() function ? Explain.

(8 × 2 = 16 marks)

Part C

Write short essay on any six questions.

Each question carries 4 marks.

19. What are the different formatted input and output statements ? Explain each.
20. Write a program to input a list of numbers and find the prime number from the list.
21. What is a NULL character ? Why is it important ? Explain strcmp(), strlen() and strcpy() in detail.
22. Write a program to find second largest and smallest element from a list of numbers without use an array. <https://www.keralaguru.com>
23. Is it possible to pass structure variable to function ? Explain in detail the possible ways with example.
24. Explain merits and demerits of switch statement with syntax and example.
25. Write a C program to swap two numbers using call by value method.
26. Explain the concept of structure with structure. Write a program to find the next date to the given date in the format dd:mm:yyyy using structure.
27. What do you mean by precedence of operators ? Explain with example.

(6 × 4 = 24 marks)

Part D

Write essays on any three questions.

Each question carries 10 marks.

28. (a) Explain different input and output statements used in C. (6 marks)
(b) Write C program to search a number in an array and display its position. (4 marks)
29. (a) Explain pointer and structure and pointer and character array with examples. (5 marks)
(b) Write a C program to read n unsorted numbers to an array of size m and pass the address of this array to a function to sort the numbers in ascending order. (5 marks)
30. (a) What is the difference between call by value and call by reference ? Explain with the help of an example. (6 marks)
(b) What do you mean by precedence of operators ? Explain with example. (4 marks)
31. (a) Write a C program to multiply two matrices, use user defined functions and pass parameters. (7 marks)
(b) Differentiate structure and union ? (3 marks)
32. (a) What do you mean by scope of a variable ? What are local and global variables ? Give examples. (4 marks)
(b) What is dynamic memory allocation ? Write a C program to find average of list of numbers. The program is terminated either the sum ≥ 255 or counter variable ≤ 10 . (Use do..while loop). (6 marks)

[3 × 10 = 30 marks]