

# END TERM EXAMINATION

FIRST SEMESTER [BCA] NOV.-DEC. - 2019

<b>Paper Code: BCA105</b>	<b>Subject: Introduction to Programming Languages Using C</b>
<b>Time: 3 Hours</b>	<b>Maximum Marks: 75</b>
<b>Note: Q. No. 1 is compulsory. Attempt one question from each unit.</b>	

Q1 Answer briefly (**Any Five**):- (5x5=25)

- a) Discuss pre processor directives in c.
- b) What do you understand by dynamic memory allocation? Explain malloc(), calloc(), realloc() and free() functions with their syntax and a suitable example.
- c) Write a short note on storage classes in c.
- d) Discuss the various operators in c.
- e) Explain the different loop structures in c through suitable examples.
- f) Distinguish between a structure and a union through a suitable example.

### UNIT I

- Q2. a) Explain the if..else statement with all its variations. Compare it with switch..case. Write a c program that demonstrates the difference between the two. (7)
- b) Write a c program to test whether a given integer is a prime number or not. Display an appropriate message in the output. (5.5)

- Q3.a) What do you understand by type casting? Why is it required? Explain using an example. (6)
- b) Write a C program to display the following pattern (for n lines): (6.5)

```

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

```

### UNIT II

- Q4.a) Write a short note on recursion. (5.5)
- b) Write a complete c program that displays the first n Fibonacci numbers through a recursive function Fibonacci. (7)
- Q5.a) Differentiate between call by value and call by reference methods of passing parameters to functions using an appropriate example. (7)
- b) Write a c function that searches for an element x in an array of integers. (5.5)

### UNIT III

- Q6.a) What are structures and what are Bit Field structures? How are they different from Unions? (4)
- b) Explain how structures can be passed as parameters to functions, by value and by reference? And how they can be returned from function? (6)
- c) What do you understand by pointers to structures? How can we access the elements of a structure through a pointer to the structure? (2.5)

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- Q7.a) Write a c program that creates and displays a text file on screen. (7.5)  
b) Discuss the following file handling functions, through syntax and examples: (5)
- i) fopen()
  - ii) fclose()
  - iii) fseek()
  - iv) fwrite()
  - v) fread()

**UNIT IV**

- Q8. a) Write a c program that counts the number of occurrences of a character in a given string without the use of any string handling library functions. (7.5)  
b) Explain any five string handling functions from string.h with syntax and example. (5)
- Q9. a) Write a short note on header files. (2.5)  
b) Explain any two functions each from the following header files: Stdio.h, math.h, stdlib.h, ctype.h, string.h (10)

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