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## INTRODUCTION TO PROGRAMMING

Time Allotted: 3 Hours Full Marks: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

#### **GROUP - A**

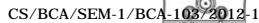
## (Multiple Choice Type Questions)

- 1. Choose the correct alternatives for any *ten* of the following :  $10 \times 1 = 10$ 
  - i) C is a
    - a) middle level language
    - b) high-level language
    - c) low-level language
    - d) none of these.
  - ii) A do-while loop is useful when we want that the statements within the loop must be executed
    - a) only once
- b) at least once
- c) more than once
- d) none of these.

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- iii) Every C function
  - a) by default return an integer value
  - b) by default return more than one integer value
  - c) by default return an floating costant
  - d) none of these.
- iv) An array is a collection of
  - a) different data types scattered through memory
  - b) the same data type scattered throughout the memory
  - c) the same data type placed next to each other in memory
  - d) different data types placed next to each other in memory.
- v) When you pass an array as an argument to a function, what actually gets passed
  - a) address of the array
  - b) value of the elements of the array
  - c) address of the first element of the array
  - d) number of elements of the array.

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- vi) What is a preprocessor directive?
  - a) A message from compiler to the programmer
  - b) A message from compiler to the linker
  - c) A message from programmer to the preprocessor
  - d) A Message from programmer to the microprocessor.
- vii) A header file is
  - a) a file that contains standard library functions
  - b) a file that contains definitions & macros
  - c) a file that contains user defined functions
  - d) a file that is present in current working directory.
- viii) The break statement is used to exit from
  - a) an if statement
  - b) a for loop
  - c) a program
  - d) the main () function.

ix)	Which function would you use if a	single key is to be
	received through the keyboard?	In Phones CV Execution 2nd College

a) scanf()

- b) gets()
- c) getcha()
- d) getchar().
- x) If  $^*p$  &  $^*q$  are two pointer variables, then which of the following statements are true
  - a) \*p + \*q
- b) \*p/\*q
- c) \*p + 10
- d) none of these.
- xi) What is the output of the following programs?

main()

{ int i = 1

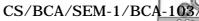
printf("%d%d%", *i*, ++*i*, *i*++ );

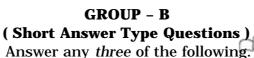
}

- a) 1 3 3
- b) 3 2 2

c) 3 1 1

d) 3 3 1.







- 2. Describe the different symbols used in a flowchart with a suitable example. What do you mean by debugging of a program? 4+1
- 3. Briefly describe the different loop control structures in 'C' with syntax, example and explanation.
- 4. What are the advantages of using functions in 'C' programming? What is the difference between users defined functions & library functions? What is recursion in programming? What advantage is there in its use?

2 + 1 + 1 + 1

- 5. What is dynamic memory allocation ? Why a linked list is called a dynamic data structure ? What are the advantages of using linked lists over arrays ? 1 + 2 + 2
- 6. What is structure? How is a structure member accessed?

  What is an array of structures described with an example?

1 + 1 + 3

# GROUP - C ( Long Answer Type Questions ) Answer any three of the following.



7. Explain the difference between 'call by reference' and 'call by value'. What is the difference between global & local variable. Write a recursive function for GCD calculation.

5 + 3 + 7

- 8. What do you mean by storage classes in 'C' ? Name different storage classes and explain each with examples. Write a 'C' program that implements the matrix multiplication using 2-D array. 2+6+7
- 9. What is linked list? What are the advantages of switch case? Describe different types of data types. Write a 'C' program to calculate factorial of a number. 2 + 2 + 6 + 5
- 10. What is union? How does a union differ from a structure?
  How a union member accessed? Write a 'C' program that implements a structure person that would contain person name, data\_of\_joining & salary.
  2 + 3 + 2 + 8

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- a) Preprocessor directives
- b) strcpy() and strcm () function
- c) Automatic and satic variables
- d) getc() and getchar() function
- e) Actual & formal arguments.

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