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BCACAC 109

Credit Based First Semester B.C.A. Degree Examination, Oct./Nov. 2013
(New Syllabus) (2012-13 Batch Onwards)

PROGRAMMING IN C

Time : 3 Hours

Max. Marks : 80

Note : Answer any ten questions from Part A and any one full question from each Unit of Part B.

PART – A**(2×10=20)**

1. a) What is declaration ? Why is it necessary to declare a variable ?
- b) What are the rules for naming an identifier ?
- c) Differentiate (i) & and && (ii) / and %
- d) Determine the value of each of the following Assume $a = 6$, $b = -2$ and $c = -7$:
 - i) $X = (a < b) ? a + 5 : b + 5 * c$
 - ii) $Y = \text{pow}(\text{sqrt}(9), 2)$
- e) Differentiate entry controlled and exit controlled looping statements.
- f) Write a equivalent while loop for the following for loop

```
for(p = 10; p < 20; p++)  
printf("%d\t", p);
```
- g) Give the general format of switch statement.
- h) What is the purpose of break and continue statements in C ?
 - i) What is function declaration and function definition ?
 - j) What are the limitations of using getchar() and scanf() functions for reading strings ?
 - k) What is a pointer ? How it is declared ?
 - l) What is a union ? How it differs from structure ?



PART - B

UNIT - I

2. a) Explain different data types supported by the 'C'-language by giving its associated storage format and declaration key words.
- b) Give the syntax of printf() function and explain the commonly used conversion characters with examples.
- c) What is implicit type conversion ? Explain how the same technique is used to evaluate the expression $X=A/I+I*B - C$. Assume int I, X ; float B; double C; long int A. (5+5+5)
3. a) Give the basic structure of C program and explain each section.
- b) Describe the different ways to utilize the increment and decrement operators. How do the two methods differ ?
- c) Explain getchar() and putchar() functions with syntax.
- d) Give the value of x, y and z, write a program to rotate their values such that x has value of y, y has value of z and z has value of x. (5+4+3+3)

UNIT - II

4. a) Explain nested if and else if ladder statements with syntax and example.
- b) What do you mean by nesting of loops ? Explain with example.
- c) Write a program to generate n Fibonacci numbers. (5+5+5)
5. a) What is an array ? Explain how two dimensional array is declared and initialized in a program with example.
- b) Explain while loop structure with syntax and example.
- c) Write a program to N elements in the descending order. (5+5+5)



UNIT – III

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- 6. a) Explain any four string handling functions with syntax.
- b) Explain any two categories of user-defined functions with examples.
- c) What do you mean by scope of variable ? Explain automatic and static variables with example. (6+4+5)

- 7. a) What is a user-defined function ? Explain how it will be declared, defined and called in a program.
- b) What is recursion ? Explain with an example.
- c) Write a program to reverse a string and check whether it is palindrome or not. (6+4+5)

UNIT – IV

- 8. a) With syntax and example explain how structure variables and members are declared and defined in C.
 - b) What is meant by passing arguments by value and by reference ? Explain with examples.
 - c) What is the purpose of following functions in C ?
i) `getc()` ii) `putc()` iii) `fscanf()` iv) `fclose()` (5+6+4)

 - 9. a) What is bit field ? Give the general form of bit field definition with an example.
 - b) What is scale factor in pointer increments ? Explain with example.
 - c) What is command line argument ? Explain.
 - d) What is pre-processor directive ? Explain macros with arguments. (4+4+3+4)
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