

BCA 2nd Semester Exam., 2016

PROBLEM SOLVING TECHNIQUE AND PROGRAMMING IN C

Time : 3 hours

Full Marks : 60

Instructions : akubihar.com

- (i) The marks are indicated in the right-hand margin.
- (ii) There are **SEVEN** questions in this paper.
- (iii) Attempt **FIVE** questions in all.
- (iv) Question Nos. 1 and 2 are compulsory.

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1. Choose the correct option/Answer the following (any six) : $2 \times 6 = 12$

- (a) While calling the `fprintf()` function in the format string conversion specifier `%s` can be used to write a character string in capital letters.
 - (i) True
 - (ii) False
- (b) In a call of `printf()` function, the format specifier `%b` can be used to print binary equivalent of an integer.
 - (i) True
 - (ii) False akubihar.com

(Turn Over)

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- (c) If an array is declared as
`int a[4] = { 3, 0, 1, 2 }`
then the values assigned to `a[0]` and `a[4]` will be
 - (i) 3, 2
 - (ii) 0, 2
 - (iii) 3, 0
 - (iv) 0, 4 akubihar.com
- (d) The process of repeating a group of statements in an algorithm is known as
 - (i) sequence
 - (ii) iteration
 - (iii) flow
 - (iv) selection
- (e) The individual units of a C program are known as
 - (i) records
 - (ii) tokens
 - (iii) units
 - (iv) program akubihar.com
- (f) How many values a function can return at a time?
 - (i) Only 1
 - (ii) Depends on the system
 - (iii) Infinite values
 - (iv) 2

(g) When compared to call by value, the call by reference is ____ in execution.

- (i) fast
- (ii) neither slow nor fast
- (iii) slow
- (iv) equal

(h) Identify the incorrect declaration of arrays from the following :

- (i) int a[50]
- (ii) floatvalues[10][20]
- (iii) double a[50]
- (iv) int score[10, 15]

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(i) Which of the following statements is wrong with respect to a storage class?

- (i) It specifies the default initial value
- (ii) It specifies the life of a variable
- (iii) By default a storage class is static
- (iv) It specifies where variable is stored

(j) What is 'C' language?

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2. Answer any three of the following : 4×3=12

(a) What do you mean by call by value and call by reference? Write a program to swap the two numbers by using third variable with both call by value and call by reference.

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(Turn Over)

(b) What is a storage class? Discuss the various storage classes.

(c) What is an array? What are its merits and demerits? What is 2-dimensional array? How are 2-dimensional arrays initialized? Also explain how array elements are accessed in 2-dimensional arrays.

(d) Write a program to implement a structure variable. Give some differences between structure and union.

(e) Discuss different types of operators using in C language.

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GROUP—C

Answer any three questions : 12×3=36

3. Why are files needed? How we open and close an existing file in C? Also discuss the various modes to open a file.

4. Write a program to print the second largest number between 10 numbers.

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5. Give the advantages of array using pointers. Write a program to access elements of an array by using pointers.

6. Discuss the following :
- (a) Preprocessor commands
 - (b) Difference between `calloc()` and `malloc()` functions
 - (c) Difference between functions and macros
7. What are the advantages and disadvantages of a recursive function? Write a program to find the sum of first n numbers using recursion.
