(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 1 6 0 2   Roll No. [| | | | | | | | | |]

B.Tech.

(SEM II) EVEN SEMESTER THEORY EXAMINATION, 2009-2010

COMPUTER CONCEPTS & PROGRAMMING IN C

Time : 3 Hours   *Total Marks : 100*

Section-A

This question contains **10** questions of multiple choice. Attempt **all** parts of this **(10x2=20)** section :

1. (a) C is a :

    (i)   High Level Language

    (ii) Low Level Language

    (iii) High Level Language with some low level features.

    (iv) Low Level Language with high level features.

    (b) Windows Xp is a :

    (i)   Multi user multi tasking OS

    (ii) Multi user single tasking

    (iii) Single user multi tasking

    (iv) Single user single tasking

    (c) The purpose of the following program fragment :

    b=s+b;

    s=b-s;

    b=b-s;

    where s, b are two integers is to :

    (i)   Transfer the content of s to b

    (ii) Transfer the content of b to s

    (iii) Negate the content of s and b

    (iv) Swap the contents of s and b

(d) Consider the function

Find(int x, int y)

{ return ((x<y?0:(x-y));}

let a, b be two non negative integers. The call find (a, find(a,b)) can be used to find the :

   (i)   Maximum of a, b

   (ii)   Postive difference of a, b

   (iii)   Sum of a, b

   (iv)   Minimum of a, b

(e) The maximum value of a signed integer is :

   (i) $2^{16}-1$

   (ii) $2^{15}-1$

   (iii) 2^{16}

   (iv) 2^{15}

(f) The value of an automatic variable that is declared but not initialized will be :

   (i)   0

   (ii)   Unpredictable

   (iii)   -1

   (iv)   None of these

(g) If n=3 then the output of the statement printf("%d %d", n++, ++n); will be :

   (i)   3 5

   (ii)   4 5

   (iii)   4 4

   (iv)   is implementation dependent

(h) The following program fragment

for(i=3;i<15;i=i+3);

printf("%d",i);

results in

   (i)   A syntax error

   (ii)   An execution error

   (iii)   Printing of 12

   (iv)   Printing of 15

(i) 2s complement of $(5)_{10}$ will be :

(i) 5

(ii) 6

(iii) -5

(iv) Not possible

(j) Select the odd man out :

(i) Integer

(ii) Structure

(iii) Union

(iv) Array

Section-B

Note : Attempt any *three* questions. All questions carry *equal* marks : (3x10=30)

2. (a) (i) Differentiate between DOS, UNIX and Windows Operation System.

(ii) Explain the following UNIX command.

ls, chmod, sh, su, who.

(b) Explain the various data types in C giving suitable examples of each.

(c) Convert the following numbers as specified

(i) $(1011011101.01101)_2 = (?)_{10}$

(ii) $(3142.28)_{10} = (?)_2$

(iii) $(110111101010.01101)_2 = (?)_{16}$

(iv) 2s complement of 110100100

(v) $(AC01.2DB)_2 = (?)_8$

(d) Write a program in C to copy the content of a given file say "a.txt" to another file "b.txt".

(e) Differentiate between call by value and call by reference. Make a program in C to show the usage of both.

Note : Attempt **any two** parts from each question. All questions are *compulsory* :

(5x10=50)

3. (a) Write a program in C to find whether the given number is prime or not.

    (b) Write a program in C to find out second largest element of a given list of integers.

    (c) Write a program in C to sort the given list of names.

4. (a) Define the storage class in C.

    (b) What are the merits and demerits of static and dynamic memory allocation techniques ?

    (c) What are the different bit operators used in C ? Give an example of each.

5. (a) Simulate calculator using switch statement.

    (b) Implement Stack using Linked List.

    (c) Write a program in C to multiply two matrices. Take the size and element of matrice through keyboard.

6. (a) Show the usage of break and continue statement by taking an example.

    (b) Write an algorithm to sort the given list of integers.

    (c) Discuss the usage of macro in C.

7. (a) What is the use of header file ? Discuss.

    (b) Write a program to show the usage of structure in C.

    (c) Write a program in C to find the factorial of a given number by recursion.

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