FBCA-02

April-2007

Programming in 'C' Language

BCA-102

(New Course)

Time : 3 Hours]   **[Max. Marks : 70**

Instructions :   (1)   Figures to the right indicate full marks of the question.

                   (2)   Make and state necessary assumptions.

1.   (A)   Answer the following : (any **ten**)   **(10)**

         (i)   Give the full form of ASCII.

         (ii)   Convert $(90)_{10}$ into hexadecimal number system.

         (iii)   Give an example of entry-controlled loop.

         (iv)   List all logical operators.

         (v)   What is an assembler ?

         (vi)   Write the syntax of switch statement.

         (vii)   List two operating systems.

         (viii) List any two input and output devices.

         (ix)   Give an example of system software.

         (x)   Convert $(1643)_8$ into binary number system.

         (xi)   List different forms of macro substitution.

         (xii)   What is the value of X, if (X = Y<<1) and Y = 10 ?

(B) Give one word for the following : **(4)**

(i) The function to locate a sub-string in string.

(ii) A data type allowing packaging of multiple data types.

(iii) A self contained block of code, which allows exchange of values.

(iv) A derived data type, which is used to store address.

2. (A) Draw flowchart **OR** write algorithm for the following : (any **three**) **(12)**

(i) Print all the numbers that are divisible by 7 between 100 and 200.

(ii) Generate the following fibonacci series for n values. Read n from the user.

0, 1, 1, 2, 3, 5, 8, 13, 21...

(iii) For N values, print the following series.

$1^1 + 2^2 + 3^3 + 4^4 + 5^5 + 6^6 + ...$

(iv) Read a number and check whether it is palindrome or not.

(v) Read a number and find out whether it is prime or not.

(B) Attempt the following : (any **one**) **(2)**

(i) Define an algorithm.

(ii) List all symbols used in a flowchart.

3. (A) Differentiate between (any **two**) **(8)**

(a) Compiler and Translator

(b) Entry Controlled Loop and Exit Controlled Loop

(c) Array and Structure

(d) Scope and visibility of a variable

(e) Pass by value and Pass by reference

(B) Answer in short. (any **three**)   **(6)**

   (i)   What is prototyping ?

   (ii)   What is explicit conversion ?

   (iii) What is a sentinel-controlled loop ?

   (iv)   What is initialization of a variable ?

   (v)   Which are the storage classes available in 'C' ?

4. (A) Discuss in brief. (any **two**)   **(08)**

   (i)   What is recursion ? Explain with a suitable example.

   (ii)   Explain formal and actual arguments with a suitable example.

   (iii) Explain structure and union with an example.

   (iv)   Draw and explain singly linked list, circular linked list and doubly linked list.

   (v)   Explain fseek and ftell functions.

   (B) Do as required. (any **two**)   **(06)**

   (i)   Find the output of the following :

```
int sum(int,int);

void main()

{

int x = 5, y = 10, z = 15, w = 20;

printf("%d",sum(x,sum(y,sum(z,sum(w, 1)))));

}

int sum(int p, int q)

{

return(p + q);

}
```

(ii)   Find the output in the following :

```
void main()

{

int i;

char book_name[] = "GREAT BRITAIN";

for (i = l; i < = 13; i++)

printf("\n%-13.*s",i,book_name);

}
```

(iii) Find the error in the following 'C' code

```
#DEFINE a = 10

   void main()

   { int b = l;

   while (b < 10)

   { printf("%d,a)

   b++;

   }
```

5.   (A) Write a program in 'C' for the following : (any **two**)   **(10)**

(i)   Write a program to read a string and find out whether it is palindrome or not.

(ii)   Write a program to read n numbers and sort the array.

(iii) Write a program to print the sum of the following series :

1 + 1/4 + 1/9 + 1/16 + 1/25 ......

(iv)   Write a program to create a structure called "DATA", which has the following details :

Department Name, Contact person, cell-number, land-number

Create an array of 10 such records and read the data. Also, find the details of the department, which is entered through keyboard.

(B) Mention whether the following statements are true or false. Re-write the incorrect statement. **(04)**

    (i)   A switch statement can always be replaced by a series of if-else statement.

    (ii)   The modulus operator % can only be used with integers.

    (iii) ANSI C treats name and Name to be same.

    (iv) The return type of a function is int by default.

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Seat No. : _____

FBCA-02

April-2007

Computer Fundamentals & Programming in 'C'-102

(Old Course)

Time : 3 Hours]   **[Max. Marks : 50**

1. Answer the following (any **ten**) :   **(10)**

    1. Find 2's complement of 1011010111000.

    2. Define HYPCOM.

    3. State Demorgan's law.

    4. Draw the symbol of NAND and NOR gate.

    5. What is C token ? Write any 5 tokens.

    6. What is MICR ?

    7. List types of Link List.

    8. Explain parity check bit.

    9. Explain bar coding.

    10. Explain write time and access time.

    11. What are supercomputer and mainframes ?

    12. Subtract 10101-10001.

2. Attempt the following (any **four**) :   **(10)**

    1. Discuss features of Unix o.s.

    2. Explain DMA interface.

    3. Explain serial and parallel adder circuit.

    4. Explain chain printer and memory interleaving.

    5. Explain operators in C language.

3. Attempt the following (any **two**) : **(10)**

    (A) Differentiate the following : **(5)**

        1. Even and odd parity

        2. Entry and exit control loop

        3. Structure and union

    (B) Draw flow chart and write algorithm (any **one**) **(5)**

        1. Find greatest number among n numbers

        2. To check whether a number is prime or not

4. Attempt the following (any **four**) : **(10)**

    1. Write any 3 string handling functions.

    2. Write all categories of C function.

    3. Explain Recursion with example.

    4. What is else if ladder explain with example ?

    5. Explain file and pointer with their uses.

5. Write a C program for the following : (any **two**) **(10)**

    1. To sort an array using bubble sort.

    2. To check whether a number in palindrome or not.

    3. To find factorial of a number using recursion.

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