21314

3 Hours/100 Marks   Seat No. ☐☐☐☐☐☐☐☐

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Instructions *:(1)* ***All*** *questions are* ***compulsory***.

(2) Answer ***each*** *next main question on* ***a new*** *page.*

(3) Illustrate your answers with ***neat*** *sketches* ***wherever*** *necessary.*

(4) Figures to the ***right*** *indicate* ***full*** *marks.*

(5) ***Assume*** *suitable data,* ***if*** *necessary.*

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MARKS

1. Attempt **any ten** of the following :   **20**

   a) Describe generic structure of 'C' program.

   b) State the logical and relational operator available in C-language.

   c) State the use of continue statement.

   d) Write the syntax of switch case statement.

   e) Write the output of following program

      #include < stdio.h >

      void main ( )

      {

          int a [5] = {1, 2, 3, 4, 5};

          printf ("%d",a [4]);

      }

   f) Give the syntax of strcat ( ) string function.

   g) State the scope of local and global variable.

   h) Distinguish between call by value and call by reference [2 points]

   i) Explain the effect of following statement

      int a, * b = & a;

   j) Give the difference between break and continue statement [2 points]

   k) State two features of C-language.

   l) Give the syntax of for loop.

2. Attempt **any four** of the following : **16**

   a) State the constants and variables with example.

   b) Enlist different format specifier with its use.

   c) Explain formatted input-output.

   d) Explain post increment-decrement operator.

   e) Write a C-program to accept an integer number and display whether it is odd or even.

   f) State do while loop with example.

3. Attempt **any four** of the following : **16**

   a) Write a program to accept an integer number and print whether it is palindrome or not.

   b) Find out the errors from following program, justify the same and write correct program :

   ```
   void main ( )
   {
       int j = 1
       for (i = 0; i < 20; i ++)
       printf ("%d", i, j);
       printf ("%d",i);
   }
   ```

   c) Explain nested if-else with example.

   d) Write a program to print the following pattern

   ```
   *
   *   *
   *   *   *
   *   *   *   *
   *   *   *   *   *
   ```

   e) Write a program which will count number of digit in entered number.

   f) Write a program to find out sum of numbers from 1 to 100.

4. Attempt **any four** of the following : 16

   a) Write a program to copy one string into another and count the number of character copied.

   b) Explain the use of the following function with syntax :

      i) strcmp ( )

      ii) strlen ( )

   c) Explain how to initialize two dimensional array with example.

   d) State various categories of function with one example of each.

   e) Explain any two storage classes.

   f) Define :

      i) Function definition

      ii) Function body

      iii) Function call

      iv) Function prototype.

5. Attempt **any four** of the following : 16

   a) Define array with its need and how elements are allocated with space in memory for one dimensional array.

   b) Write a program to sort elements of an array in ascending order. Read elements of array from user [using scanf function].

   c) Write a program to declare structure student having member variables are roll-no., name and marks. Accept data for one student and display it.

   d) Explain recursion with suitable example.

   e) Explain structure with example.

   f) Write a function to swap the value of variables say a and b. Use function name "swap".

MARKS

6. Attempt **any four** of the following : **16**

   a) Write a function to display fibonnacci series up to given number using recursion. Use function name "Fibbo".

   b) Define pointer. State the syntax to declare pointer variable with example.

   c) Give the output of following code :

```
# include <stdio.h>
void main ( )
{
    int * a [4];
    int i;
    int m = 10, n = 20, p =30, q = 40;
    a [0] = & m;
    a [1] = &n;
    a [2] = &p;
    a [3] = &q;
    for (i = 0; i < 4; i ++ )
        printf ("%d \n", * a [1] );
}
```

   d) Write a program in C using pointers to determine length of a string.

   e) Write a program using pointers to compute the sum of all elements stored in an array.

   f) The following is segment of a program :

```
void main ( )
{
    int a, b, * p1, * p2, x, y;
    a = 10;  b = 5;
    p1 = & a;
    p2 = & b;
    x = * p1 * * p2 – 6;
    y = * p1 * * p2 + 10;
    printf ("a = %d, b = %d", a, b);
    printf ("x = %d, y = %d", x, y);
}
```

   What will be the output of program ?

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