

# 17212

21415

3 Hours / 100 Marks

Seat No.

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- Instructions :** (1) All Questions are *compulsory*.  
(2) Illustrate your answers with neat sketches wherever necessary.  
(3) Figures to the right indicate full marks.  
(4) Assume suitable data, if necessary.

**Marks**

1. Attempt any **TEN** of the following :

**20**

- (a) List the types of constants.
- (b) List bitwise operators and explain any two.
- (c) State the use of continue statement.
- (d) Write output of following program :

```
# include <stdio.h>
void main()
{
    int choice = 0;
    switch (choice)
    {
        case 0;
            printf ("Mumbai");
        case 1;
            printf ("Pune");
    }
    getch();
}
```

**P.T.O.**

- (e) State the use and syntax of strcmp( ) function.  
 (f) Find error in following program and justify it :

```
# include <stdio.h>
void main( )
{
    int i, a[5] = {7, 5, 2, 1, 9, 14};
    for (i = 0; i < 5 ; i + +)
        printf ("%f", a[2]);
    getch( );
}
```

- (g) State call by value with example.  
 (h) State the need of function.  
 (i) What is the use of indirection operator (\*) ?  
 (j) Write the syntax of nested if-else statement.  
 (k) State four rules for choosing variable name.  
 (l) State two differences between switch statement and if statement.

**2. Attempt any FOUR of the following :**

**16**

- (a) Explain increment and decrement operator with example.  
 (b) Explain formatted input and formatted output with example.  
 (c) Enlist the types of tokens available in C and give one example for each.  
 (d) State the importance of flowcharts with the symbols used for drawing flowchart.  
 (e) Write a program to print following pattern :

```
1
2  2
3  3  3
4  4  4  4
5  5  5  5  5
```

- (f) State any four difference between while loop and do-while loop.

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

- (a) Write a program to find the sum of digits of an integer (e.g. input = 1453  
sum =  $1 + 4 + 5 + 3 = 13$ )
- (b) Write a program to find largest of three numbers using nested if-else.
- (c) State use of goto statement with example.
- (d) Write a program to find factorial of a number using for loop. ( $n = 10$ )
- (e) Explain switch statement with flow chart.
- (f) Write a program to find whether the entered number is prime or not.

**4. Attempt any FOUR of following : 16**

- (a) Declare and initialize the one dimensional array with 10 elements. Explain how the elements in an array can be accessed.
- (b) Differentiate between character array and integer array with respect to size and initialization.
- (c) Write a program to sort elements of an array in ascending order.
- (d) State four storage classes. Explain any one.
- (e) Write a program to perform addition, subtraction, multiplication and division of two integer numbers using function.
- (f) Write a program to declare a structure student having data member, roll\_no; name and agg\_marks. Accept data and display this information for one student.

**5. Attempt any FOUR of following : 16**

- (a) State two advantages and two disadvantages of array.
- (b) Write a program for addition of two  $3 \times 3$  matrices.
- (c) Define recursive function. List any two advantages of recursive function.
- (d) Discuss function prototype with syntax. List the four categories of function.
- (e) Write a function to print Fibonacci series upto 10 terms.
- (f) Define structure and array of structure. Declare a structure student with element roll no and name.

**6. Attempt any FOUR of following :****16**

- (a) Write a program to declare a structure book having data members, title, author and price. Accept data and display information for one book.
- (b) Define pointer. How the pointers are declared and initialized ?
- (c) Write a program to exchange values of two variables using pointer.
- (d) State four features and advantages of pointers.
- (e) Write a program to find product of two numbers using pointer.
- (f) Explain meaning of following statement with reference to pointers :

```
Int * p, x ;
```

```
x = 10;
```

```
*p = x;
```

```
P = &x;
```

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