

17212

11819

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. **Solve any TEN :**

10 × 2 = 20

- (a) Define algorithm and flowchart.
- (b) State the use of scanf statement and write its syntax.
- (c) State the use of break statement with its syntax.
- (d) Write syntax of do-while loop.
- (e) What is an array ?
- (f) Give syntax of strcat () string function.
- (g) State four relational operators with their meaning.
- (h) What do you mean by recursion ?
- (i) Explain the use of ampersand (&) operator in pointers.
- (j) Give the syntax of nested if-else statement.
- (k) Write any two advantages of pointers.
- (l) State any two differences between if and switch statement.

2. Solve any FOUR :**4 × 4 = 16**

- (a) Distinguish between variables and constants.
- (b) Write a program to display following pattern :

1

1 2

1 2 3

1 2 3 4
- (c) What is array of structure ? Explain with example.
- (d) Explain strlen () and strcmp () string functions.
- (e) Write a program to calculate factorial of a number using recursion.
- (f) Define pointer. State the syntax to declare pointer variable with example.

3. Solve any FOUR :**4 × 4 = 16**

- (a) Write a program to display Fibonacci series upto given number using function.
- (b) State the use of increment and decrement operator with example.
- (c) Write a program to find reverse of a string.
- (d) Explain use of if-else statement with example.
- (e) Write a program to search an element in an array of 10 numbers using function.

(f) Write a program to display following menu and do operation as per user's choice using switch case statement :

- | | |
|-------------------|----------------|
| 1. Addition | 2. Subtraction |
| 3. Multiplication | 4. Division |

4. Solve any FOUR :

4 × 4 = 16

- (a) State rules for choosing variable name.
- (b) Write a program to declare a structure book having data members, title, author and price. Accept data and display information for one book.
- (c) Write a program to accept 10 numbers in an array and print average of it.
- (d) Explain pointer arithmetic with example.
- (e) Differentiate between while and do-while loop.
- (f) Write a program to print sum of all odd numbers between 1 – 100.

5. Solve any FOUR :

4 × 4 = 16

- (a) Write a program to find sum of digits of an integer e.g. (input = 1234, sum = $1 + 2 + 3 + 4 = 10$).
- (b) Write a program to print largest of three numbers.
- (c) Explain any two storage classes.
- (d) Explain formatted input and output.
- (e) Write a program to add two 2×2 matrices and print result.
- (f) Write a program to swap the values of two integer numbers using pointer.

P.T.O.

6. Solve any FOUR :**4 × 4 = 16**

- (a) Write a program to read two strings and find whether they are equal or not.
 - (b) Write a program to sort an array of 10 integers in ascending order.
 - (c) Write algorithm and draw flowchart to print whether entered number is even or odd.
 - (d) Differentiate between call by value and call by reference.
 - (e) Write a program to calculate area of circle using function.
 - (f) Write a program to reverse a 3 digit integer number.
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