

22218

23124

3 Hours / 70 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 FIVE of the following :

10

- (a) Describe the term- Expression in C. Also state its types.
- (b) State the purpose of “break” and “continue” statements.
- (c) Compare “if-else” statement with the use of Conditional operator (? :).
- (d) State the difference between Function definition and Function declaration.
- (e) State the syntax for Pointer declaration and initialization with an example.
- (f) Describe the significance of “*” and “&” operators with respect to Pointer.
- (g) Write a Structure declaration having name- “account” and members- account_no, account_type, account_name and account_balance.

2. Attempt any THREE of the following :

12

- (a) State the different data types ‘C’ supports and differentiate them according to their storage sizes.
- (b) Write the syntax of **for** statement and Explain.
- (c) Illustrate with examples the following string handling functions :
 - (i) strcmp()
 - (ii) strcat()



- (d) State the two types of parameters passing to Functions and explain with example.

3. Attempt any THREE of the following :

12

- (a) State different relational operators in 'C' and explain its usage in programming with the help of a suitable example.
- (b) Explain how multi-dimensional arrays are declared and initialized with suitable example.
- (c) Describe arithmetic operations that can be performed on Pointer variables with suitable example.
- (d) Write a program that will allow you to enter and maintain information of 10 books with the following details using structure :
- | | |
|----------------------|----------------|
| (1) Book Number | (2) Book title |
| (3) Date of purchase | (4) Cost |
| (5) Publication | |

4. Attempt any THREE of the following :

12

- (a) Write a 'C' program to calculate simple interest with the formula $SI = (p \times n \times r) / 100$, where values of p, n & r are given by the user.
- (b) Write a program to calculate and display roots of quadratic equation using formula : $ax^2 + bx + c = 0$
- (c) State the advantages of arrays and explain the process of initializing one dimensional array with example.
- (d) Write a program to store names of 10 cities using array of Pointers. The city names are to be input by user.
- (e) Explain the concept of Structure with a suitable example.

5. Attempt any TWO of the following : 12

- (a) Write a program to calculate sum of digits of a given number.
- (b) Write an algorithm for sorting numbers in an array in ascending order. Also write program for the same.
- (c) Write a program to calculate factorial of a given number using recursion.

6. Attempt any TWO of the following : 12

- (a) Write a program to perform the multiplication of two matrices using two dimensional arrays. The program should first take the elements of the two matrices from the user and store in two arrays. The result of the multiplication should be displayed on the user screen.
 - (b) Write a program to input employee number and basic salary for an employee. Define a user defined function calculate () to calculate & display gross salary with following conditions :
da = 10% of basic salary
hra = 8.3% of basic salary &
gross = basic sal. + da + hra
 - (c) Write a program to define a structure 'product' with product id, product name & rate. Accept data for 2 products & display in suitable format.
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