# Programming Logic & Design Using C

P. Pages : 2

Time : Three Hours

**PSM/KW/23/2582**

Max. Marks : 70

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Notes : 
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Due credit will be given to neatness and adequate dimensions.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) What is algorithm? Explain the properties of algorithm with suitable example. **6**

   b) Explain different data types available in 'C' language. **4**

   c) Write a 'C' program to print the following output:- **4**

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

**OR**

2. a) Write a menu driven program in 'C' which has following option:- **8**
   1) Factorial          2) Primer or Not
   3) Odd/Even          4) Exit

   b) What is an operator? Explain arithmetic, Relational and logical operators with suitable example. **6**

3. a) What do you mean by array? Why are array used? How are array elements accessed? **6**

   b) Write a program for the multiplication of two (3 * 3) matrices. **8**

**OR**

4. a) Write a program to search a given elements in an array of dimension 10 using binary search. **7**

   b) Write a program to check whether the string is palindrome or not using user defined function. **7**

5. a) Giving an example for each, discuss the call by value and call by reference method of parameter passing. 7

   b) Define a structure called cricket game that stores the following information:-
   Player_name, team_name, batting_average, player_age. Using cricketgame declare an array player with 100 elements and write a program to read information about all the 100 players and display team-wise list containing names of players with their batting average and age. 7

**OR**

6. a) State the difference between structure and union with suitable example. 7

   b) A 5 digit number is entered through the keyboard. Write a recursive function to calculate the sum of the 5 digit. 7

7. a) Write a program to copy the contents of one file to another using low level file I/O. 6

   b) What is difference between text file and binary file. 4

   c) Explain fread ( ) and fwrite ( ). 4

**OR**

8. a) Write a program to count the number of character, space, tab and newline in a file. 6

   b) Write short notes on:- 4
   i)   Enumerated data types          ii)   Type casting

   c) Write different file opening modes. 4

9. a) Explain in detail malloc ( ) and Calloc ( ) functions. 5

   b) Write a program using graphics. The program should be a menu-driven program and have following options:- 9
   1) Draw line
   2) Draw Rectangle
   3) Draw Circle
   4) Draw Ellipse
   5) Draw arc
   6) Exit

**OR**

10. a) Write a program to draw 5 concentric circles with different colors. Fill the innermost circle with RED color. 5

    b) Explain in detail initgraph ( ). What are graphics drivers and modes? 4

    c) Explain the working of setlinestyle ( ) and settextstyle ( ) with syntax. 5

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