Subject: - Computer Programming *(CT 401)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. a) Define a language processor. Explain the main types of language processor in detail. [2+3]

   b) List the basic step of problem solving using computer. Write an algorithm and draw a flowchart to find the sum of N natural number. [1+4]

2. a) Define formatted and unformatted I/O functions. Write the operations of following functions: [2+3]

   (i) getch()
   (ii) getche()
   (iii) getchar()

   b) What is an expression? Write a program to display the smallest number between three integers entered from user using conditional operator. [1+4]

3. a) Differentiate between while and Do-while looping statement with example. [4]

   b) Write a program to evaluate the following series up n term. Prompt the user to input value of n and x. $f(x) = 1-x^2/2!+x^4/4!-x^6/6!+x^8/8!$---------up to n terms. [6]

4. a) What are the different types of functions available in C? What do you mean by pass by reference and pass by value. [2+3]

   b) What are the similarities and difference between iteration and recursive function? Give suitable example. [5]

5. How do you initialize a 2D array? Explain with an example. Write a program to input two matrices of size m×n and p×q respectively. Pass these matrices to the function to calculate the product matrix. Display the product matrix in the main () function. [2+8]

6. a) What is a structure? When do we use structure? [2+2]

   b) Write a program using pointer to swap the value of two variable where the swapping operation is performed in separate function. [6]

7. a) Why are fgets(), fputs(), fgetc() and fputc() used? [4]

   b) Write a program to display the record in sorted order, sorting is performed in ascending order with respect to name using data files concept. [6]

8. a) Compare Logical IF and Arithmetic If statement in FORTRAN with example. [4]

   b) Write a FORTRAN program to sort 10 integers given from user and display the second largest integer. [6]

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