

Exam.	New Back (2066 Batch)		
Level	BE	Full Marks	80
Programme	All (Except B.Arch.)	Pass Marks	32
Year / Part	I / I	Time	3 hrs.

*Subject: - Computer Programming*

- ✓ 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. Differentiate interpreter and compiler. Briefly explain the steps followed for developing computer software. [2+3]
2. What is a data type? Explain the operators available in C along with their precedence and associativity. [1+4]
3. "You are given a task to develop a system to read at least 50 integer numbers and continue until the user enters NO. Your system must have capacity to calculate the sum and average of those numbers which are exactly divisible by 9 but not by 6 and lies in between 1- to 100 and display a suitable message if no such number is read". Write algorithm and flowchart to develop such system. [5+5]
4. How recursion is different from iteration? Write code in C to calculate the sum of following series up to n terms specified by the user where n is passed to the function that calculates the sum. Your program should have more than two functions. [1+7]  
 $(2*3/5) + (4*5/7) + (6*7/9) + \dots$
5. Describe the limitations of using getchar and scanf functions for reading strings. Write a complete program to insert a string into another string in the location specified by the user. Read the string in main function, pass them to another function along with inserting position and returns the resulting string. [2+8]
6. Explain the relation of array and pointer. What is meant by call by value and call by reference? Write a complete program that adds the corresponding elements of two matrices if the elements are positive, otherwise multiply the corresponding elements using the concept of passing array to the function and pointer. [2+3+5]
7. Define the structures in C programming? Explain nested structure with suitable example. Write a program using structure and passing the structure to the function that returns the result to convert the date (in format YY/MM/DD) in B.S. to A.D. [2+2+6]
8. Explain the I/O operations on file with suitable example and also state the typical error situations during I/O operations in file. How the contents in the file can be randomly accessed? [6+4]
9. What are FORTRAN's constants, variables and library functions? Explain. Write a program in FORTRAN to take a position and a number and insert this number on this position inside an array containing n elements. [4+8]