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Uni. Roll No.

Program/ Course: B.Tech. (Sem. – 1st/2nd)

Name of Subject: Programming for Problem Solving

Subject Code: ESC-18104

Paper ID: 15935

Time Allowed: 3 Hours

Max. Marks: 60

NOTE:

- 1) Parts A and B compulsory
- 2) Part-C has two Questions Q8 and Q9 and both are compulsory, but with internal choice
- 3) Any missing data may be assumed appropriately

Part – A

[Marks: 02 each]

Q1.

- a) Define an array.
- b) Compare tokens and keywords.
- c) Explain the difference between compiler and interpreter.
- d) Define the term recursion.
- e) Develop a program to find if a number is even or odd.
- f) Determine the values of x and y for the following expression:
 $y = x++$ (Assume the initial value of x to be 2)

Part – B

[Marks: 04 each]

- Q2. Outline the concept of pointers.
- Q3. Explain the concept of structures with suitable program.
- Q4. What is problem solving? Explain various program design tools.
- Q5. Distinguish between call by value and call by reference.
- Q6. Discuss the concept of complexity. Write an algorithm for bubble sort.
- Q7. Develop a program to print the elements of a 2-D array.

Part – C

[Marks: 12 each]

- Q8. Explain in detail various components of a computer system with the help of a block diagram.

Or

Compare and contrast 'while' and 'do while' statements. Draw the flowcharts to illustrate the working of each looping statement. Also write a program to find if a number is palindrome or not.

- Q9. Explain the process of opening and closing a file. Also write a program to demonstrate the concept.

Or

Develop a recursive program for quick sort.
