Faculty of Science & Technology

First Semester B. Tech. (ET in ET) Common) (NEP)

(AI/AIDS/AIML/RoAI/I IOT) Examination (2024-25)

PROGRAMMING FOR PROBLEM SOLVING

Time – Three Hours] [Maximum Marks—70

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.

(2) Solve Question No. **1 OR** Question No. **2.**

(3) Solve Question No. **3 OR** Question No. **4.**

(4) Solve Question No. **5 OR** Question No. **6.**

(5) Solve Question No. **7 OR** Question No. **8.**

(6) Solve Question No. **9 OR** Question No. **10.**

(7) Due credit will be given to neatness and adequate dimensions.

(8) Assume suitable data whenever necessary.

1. (a) What is pseudo code ? Explain with example, how it is used as a problem solving tool. 7

(b) Where are computer programs typically stored ? Describe the difference between volatile and non-volatile memory. 7

OR

2. (a) Define algorithm. Write an algorithm to find the area and perimeter of circle and compare pseudo code with an algorithm. 7

(b) Explain formatted input and output statement with examples. 7

3. (a) Explain the different types of loops in C with syntax. 7

(b) Show how break and continue statements are used in a C-program, with example. 7

OR

4. (a) Develop a C program to generate and plot the Pascal triangle. 7

(b) Define :

(i) Variable

(ii) Constant

(iii) Key words

(iv) Precedence

(v) Data types 7

5. (a) Construct a C program to search an element using linear and binary techniques. 8

(b) Define an array. How to initialize one-dimensional array ? Explain with suitable examples. 6

OR

6. (a) Construct a C program for [consider integer data] :

(i) Bubble sort

(ii) Linear search 7

(b) Explain with syntax and example, the different string manipulation library functions with example. 7

7. What is function ? Explain different classification of user defined functions based on parameter passing and return type with examples. https://www.rtmnuonline.com 14

OR

8. (a) Write a C-program using functions to generate the Fibonacci series. 7

(b) What is recursion ? What are the advantages and disadvantages of recursion ? 7

9. (a) With proper examples explain different arithmetic operations on pointers. 5

(b) What is structure ? Explain C syntax of structure declaration with example. 9

OR

10. Write a C-program using structures to read, write, compute average - marks and display the students scoring above and below the average marks for a class of N students. 14

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