

Code No: 181AF

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech I Year I Semester Examinations, September - 2023

C PROGRAMMING FOR ENGINEERS

(Common to ECE, EIE)

Time: 3 Hours

Max. Marks: 60

Note: This question paper contains two parts A and B.i) **Part - A** for 10 marks, ii) **Part - B** for 50 marks.

- Part-A is a compulsory question which consists of ten sub-questions from all units carrying equal marks.
- Part-B consists of **ten questions** (numbered from 2 to 11) **carrying 10 marks each**. From each unit, there are two questions and the student should answer one of them. Hence, the student should answer five questions from Part-B.

PART - A**(10 Marks)**

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|------|---|-----|
| 1.a) | What is a compiler? | [1] |
| b) | What is the purpose of loader? | [1] |
| c) | What is the result of $32 \ll 2$? | [1] |
| d) | List the operators at highest precedence level. | [1] |
| e) | What is an array? | [1] |
| f) | How many values can be returned by a function? | [1] |
| g) | What is a macro? | [1] |
| h) | What is the need of #define? | [1] |
| i) | Define union. | [1] |
| j) | What is the time complexity of bubble sort? | [1] |

PART - B**(50 Marks)**

- | | | |
|-----------|--|-------|
| 2.a) | Explain the need of a flowchart in program development. | |
| b) | Write an algorithm to find roots of a quadratic equation. | [5+5] |
| OR | | |
| 3.a) | Differentiate between source code and object code. | |
| b) | What are the various data types supported by 'C'? | [5+5] |
| 4.a) | Illustrate types of assignment operators. | |
| b) | Differentiate between logical not operator and bitwise not operator. | [5+5] |
| OR | | |
| 5.a) | Explain the dangling else problem with an example. | |
| b) | Write a program to find factorial of a number using while loop. | [5+5] |
| 6.a) | What are the disadvantages of recursive functions? | |
| b) | Write a recursive function to print Fibonacci sequence till n. | [5+5] |

OR

7.a) Write a program to find the sum of the primary diagonal of $n \times n$ matrix using two dimensional array.

b) What are the various ways of passing an array to a function? Give illustrations. [5+5]

8.a) What is a pointer? What operators are applicable to pointer variables?

b) Differentiate between malloc and calloc functions. [5+5]

OR

9. Write a program to append the content of a source file to a target file, read both file names as command line arguments. [10]

10.a) In which situations union is preferred over structure?

b) Explain the enumerated data type with an example. [5+5]

OR

11. Make a comparison of bubble sort and insertion sort. Which sorting technique can be recommended for student marks data? Justify your recommendation. [10]

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