

Total No. of printed pages = 4

CS 181106

Roll No. of candidate

14/2/23

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2023

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Azara, Hadhewapara,
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B.Tech. 1st Semester End-Term Examination

Civil/Mechanics/Chemical (Group - A)

PROBLEM SOLVING THROUGH PROGRAMMING USING C

(New Regulation and New Syllabus)

Full Marks - 70

Time - Three hours

The figures in the margin indicate full marks
for the questions.

Answer question No. 1 and any *Four* from the rest.

1. Answer the following MCQs (10 × 1 = 10)
- (i) The output of the expression $12 \% -5$ is
- (a) 2
 - (b) -2
 - (c) 0
 - (d) Error
- (ii) Size of integer data type is _____ bytes
- (a) 2
 - (b) 4
 - (c) 8
 - (d) compiler dependent
- (iii) Which of the following is not a system software?
- (a) Ubuntu
 - (b) Open-SUSE
 - (c) Microsoft Office
 - (d) Windows 11

[Turn over

- (iv) Which of the following is not a ANSI C language keyword?
- (a) void
 - (b) enum
 - (c) goto
 - (d) error
- (v) If $i = 2$, find the output to be generated by the following statement `printf("%d", ++i+5)`,
- (a) 7
 - (b) 8
 - (c) 3
 - (d) function
- (vi) What will be the output of the following code, if $i = 10$ and $a[10]=20$:
`a[i]=i++;`
- (a) `a[10]` will be 10
 - (b) `a[11]` will be 11
 - (c) `a[11]` will be 10
 - (d) compiler dependent
- (vii) Find the output for the following C program statement `f=(x>y)?x:y`
- (a) `f` points to max of `x` and `y`
 - (b) `f` points to min of `x` and `y`
 - (c) error
 - (d) None of the mentioned

(viii) Find the output of the following code snippet

```
int sum(int n){
    if(n<1) return n;
    else return (n+sum(n-1));
}
main() {
    printf("%d",sum(5));
}
```

- (a) 10
- (b) 16
- (c) 14
- (d) 15

- (ix) Which of the following is valid?
- (a) void p
 - (b) void *p
 - (c) void **p
 - (d) All of the mentioned.
- (x) How long does the following loop will run
for(x=0; x=3; x++)
- (a) Never
 - (b) Three Times
 - (c) Forever
 - (d) Error
2. (a) Differentiate System software and Application software. (5)
- (b) Draw the flowchart for finding the sum of n natural numbers. (5)
- (c) What is modular programming? How it helps in software design? (5)
3. (a) Write a program to find the largest of three numbers. (5)
- (b) Write a program to find the sum and average of any five integers. (5)
- (c) Write a program to check a given number is even or odd using switch-case. (5)
4. (a) Write a program to add two matrices. (5)
- (b) Write a program to find the length of a string. (5)
- (c) Write a program to compare two strings. (5)
5. (a) Apply Bubble sort algorithm on the following set of numbers and show each step <20, 31, 7, 5, 8> (5)
- (b) Write a program to implement the linear search algorithm. (5)
- (c) Write a program using function to find the factorial of two numbers. (5)
6. (a) Write a program using *structure* named STUDENT with the members *name, rollNo, semester*. Implement the code to insert the information of any *five* students. (5)
- (b) Write a program to swap any two numbers. (5)
- (c) Write a program to find the real roots of a quadratic equation. (5)

7. Write short notes on (any three)

(3 × 5 = 15)

- (a) Pointers in C
- (b) Pre-processor directives
- (c) Operators in C
- (d) Call by value and call by reference
- (e) Control statements in C

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