

P P SAVANI UNIVERSITY

First Semester of B. Tech. Examination

January 2023

SECE1050 Programming for Problem Solving

10.01.2023, Tuesday

Time: 10:00 a.m. To 12:30 p.m.

Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION - I

- Q - 1** MCQ/Short Question/Fill in the Blanks (Any Five) [05] / CO BTL
- (i) Why 'C' is called high level language? (True/False) Justify. 2 U
- (ii) How many bits are allocated to store a value of char data type? 1 R
- (iii) What is the use of semicolon (;) and comma (,) in C programming? 1 R
- (iv) Define machine level programming language? 1 R
- (v) What is logical error in programming? 2 U
- (vi) _____ is the format specifier of long double data type in C? 1 R
- (vii) What is the output of C program? 2 U
- ```
int main()
{
 int x=10;
 printf("%d",&x);
 return 0;
}
```
- Q - 2 (a)** Explain flow chart symbols with its use. Draw a flow chart to print first N odd numbers. [05] 1,4 R, A
- Q - 2 (b)** (i) List out types of software with Examples. [05] 1 R
- (ii) Explain compilation process in detail with diagram
- OR**
- Q - 2 (a)** Define Algorithm. Write an algorithm to generate Fibonacci series of first N numbers. [05] 1,4 R, A
- Q - 2 (b)** Enlist and explain different types of operators with examples. [05] 1 R
- Q - 3 (a)** Enlist and explain primary data types in C with example. [05] 1 R
- Q - 3 (b)** Explain basic structure of C program with example. [05] 2 U
- OR**
- Q - 3 (a)** Write detailed note on types of errors in C. [05] 2 U
- Q - 3 (b)** (i) What is enumerated data type in C? Explain with example. [05] 1,2 R, U
- (ii) Discuss the important of stdio.h header file.

|              |                                                                                        |             |  |   |
|--------------|----------------------------------------------------------------------------------------|-------------|--|---|
| <b>Q - 4</b> | Attempt any one/two.                                                                   | <b>[05]</b> |  |   |
| <b>(i)</b>   | Write a C program to find minimum between three numbers using nested if statement.     | 6           |  | C |
| <b>(ii)</b>  | Write a C program to print following pattern when N=4.<br>%<br># #<br>% % %<br># # # # | 6           |  | C |

**SECTION - II**

|                  |                                                                                                                            |             |   |   |
|------------------|----------------------------------------------------------------------------------------------------------------------------|-------------|---|---|
| <b>Q - 1</b>     | Answer the following.                                                                                                      | <b>[05]</b> |   |   |
| <b>(i)</b>       | How macros are undefined in C?                                                                                             | 2           |   | U |
| <b>(ii)</b>      | Sate difference between fclose() , fflush() and fflushall()                                                                | 2           |   | U |
| <b>(iii)</b>     | Differentiate between arrays and structure.                                                                                | 2           |   | U |
| <b>(iv)</b>      | What does static variable mean?                                                                                            | 1           |   | R |
| <b>(v)</b>       | What are the uses of a pointer?                                                                                            | 1           |   | R |
| <b>(vi)</b>      | What is recursion?                                                                                                         | 2           |   | U |
| <b>(vii)</b>     | Is it possible to have negative index in an array?                                                                         | 2           |   | U |
| <b>Q - 2 (a)</b> | Explain Nested Structure with example.                                                                                     | <b>[05]</b> | 1 | R |
| <b>Q - 2 (b)</b> | What is an array? Explain one dimensional and two dimensional array declarations and initialization with suitable example. | <b>[05]</b> | 1 | R |
| <b>OR</b>        |                                                                                                                            |             |   |   |
| <b>Q - 2 (a)</b> | Explain array of pointers with suitable example.                                                                           | <b>[05]</b> | 1 | R |
| <b>Q - 2 (b)</b> | What is recursive function? Explain with suitable example.                                                                 | <b>[05]</b> | 2 | U |
| <b>Q - 3 (a)</b> | What is dynamic memory allocation? Explain important functions associated with it.                                         | <b>[05]</b> | 2 | U |
| <b>Q - 3 (b)</b> | Explain how structure variable is initialized with suitable example.                                                       | <b>[05]</b> | 1 | R |
| <b>OR</b>        |                                                                                                                            |             |   |   |
| <b>Q - 3 (a)</b> | What is a string? Explain at least 4 built-in string functions with example.                                               | <b>[05]</b> | 6 | C |
| <b>Q - 3 (b)</b> | Create a function to check number is prime or not. If number is prime then function return value 1 otherwise return 0.     | <b>[05]</b> | 6 | C |
| <b>Q - 4</b>     | Attempt any one/two.                                                                                                       | <b>[05]</b> |   |   |
| <b>(i)</b>       | Why it is necessary to give the size of an array in array declaration? Explain with example.                               | 2           |   | U |



(ii) Write a note on following: (a) File inclusion directive, (b) Macro substitution directives and (c) Compiler control directives.

1 R

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CO : Course Outcome Number

BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

|             |               |           |
|-------------|---------------|-----------|
| 1: Remember | 2: Understand | 3: Apply  |
| 4: Analyze  | 5: Evaluate   | 6: Create |