

Printed Pages– 4

Roll No. ....

**328552(28)**

**B. E. (Fifth Semester) Examination, April-May 2021**

**(New Scheme)**

**(Et&T Engg. Branch)**

**DATA STRUCTURE & PROGRAMMING with C++**

***Time Allowed : Three hours***

***Maximum Marks : 80***

***Minimum Pass Marks : 28***

***Note : Attempt all questions. Part (a) of each unit is compulsory and carries 2 marks. Attempt any two parts from (b), (c) and (d) which carry 7 marks each.***

**Unit-I**

1. (a) Explain Class and Object.

**328552(28)**

**PTO**

[ 2 ]

- (b) What is a Class? How does a class accomplish abstraction, encapsulation and data hiding?
- (c) What do you mean by Constructors? Explain its types by suitable examples.
- (d) What do you mean by Friend Function? Write a program to demonstrate use of Friend function.

### Unit-II

- 2. (a) Define Operator Overloading.
- (b) Explain binary operator overloading using Friends function with suitable program.
- (c) Write a program to overload a function area and calculate :
  - (i) Area of a Circle
  - (ii) Area of a Square
- (d) What is Inheritance? Write a program to show Hybrid inheritance.

### Unit-III

328552(28)

[ 3 ]

- 3. (a) What do you mean by this pointer?
- (b) What do you mean by Polymorphism? Explain runtime polymorphism & compile time polymorphism with example.
- (c) What is Virtual Function? Write a program to demonstrate use of Virtual function.
- (d) Write short notes on the following : (any two)
  - (i) Pure Virtual Function
  - (ii) Run Time Memory Management
  - (iii) Pointer Arithmetic

### Unit-IV

- 4. (a) Define the term Data structure. List the various types of data structure.
- (b) Explain the concept of bubble sort using example.
- (c) Explain the basic operation of stack and write an algorithm for push and pop operation.
- (d) Write short notes on the following : (any two)
  - (i) Linked list

328552(28)

PTO

[ 4 ]

(ii) Queue

(iii) Binary search

### Unit-V

5. (a) What are the different file modes?

(b) Discuss template in C++.

(c) Explain the following function with example :

(i) seekp()

(ii) tellp()

(iii) seekg()

(iv) tellg()

(d) Explain the concept of command line argument with example.