328552(28)

B. E. (Fifth Semester) Examination, April-May/ Nov.-Dec. 2020

(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 question is compulsory. Attempt any two from (b), (c) and (d) of each question.*

Unit-I

1. (a) What are the benefits of object oriented pro-gramming language.   2

(b) Define constructor and destructor. Explain different types of constructor with sample code. 7

(c) What do you mean by friend function? Write a program to demonstrate use of friend function. 7

(d) Explain array of objects with an example. 7

Unit-II

2. (a) Differentiate between private & protected data member. 2

(b) What is Inheritance? What are the different types of inheritance? 7

(c) Explain binary operator over loading using friends function with suitable program. 7

(d) Write a program to find the area of rectangle and circle using the concept of function overloading. 7

Unit-III

3. (a) What do you mean by Polymorphism? 2

(b) What is this pointer? Explain with suitable example. 7

(c) What is Virtual Function? Why do we need virtual function? Explain with an example. 7

(d) Explain pure virtual function and its usage with example. 7

Unit-IV

4. (a) Define the term Data structure. List the various types of data structure. 2

(b) Define Sorting. Explain selection sort algorithm with the help of a suitable example. 7

(c) Explain the concept of linear search. How can we implement it using array? 7

(d) Write short notes on the following : 7

(i) Linked list

(ii) Queue

Unit-V

5. (a) What are the file stream classes? 2

(b) Explain the following functions :

seekp( ), seekg( ), tellp( ), tellg( ) 7

(c)   What do you mean by Exception handling? Write
a program to declare try, throw & catch keywords.   7

(d)   Write short notes on the following :

(i)   Template   3.5

(ii)   Command line Arguments   3.5