Name: Enrolment No:	UPES UNIVERSITY OF TOMORROW

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2022

Course: Advanced Programming   **Semester** : 3rd
Program: B.Tech RSEE   **Time** : 03 hrs.
Course Code: ECEG2038   **Max. Marks: 100**

Instructions: Attempt all sections.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Classify the data structure into linear and non-linear with example.	4	CO2
Q 2	Draw the flow charts for loop statements for, while and do-while.	4	CO2
Q 3	Describe overflow and underflow conditions in stack.	4	CO3
Q 4	Differentiate between linked list and an array data structure.	4	CO3
Q 5	Briefly summarize the time complexities of bubble sort in each case.	4	CO4

SECTION B
(4Qx10M= 40 Marks)

Q 6	List the fundamental data types in C++? Write a program in C++ to find the size of fundamental data types.	10	CO1
Q 7	Discuss the need and benefits of Object-Oriented Programming. Write the principle of OOP also.	10	CO1
Q 8	Describe linked list and its type. Also list benefits of a linked list over a conventional array.	10	CO2
Q 9	Perform enqueue and dequeue operations on queue data structure. OR Write a program for stack implementation using an array in CPP.	10	CO3

SECTION-C
(2Qx20M=40 Marks)

Q 10	Write a CPP program that use insertion sort to sort an unsorted list with 'n' number of elements using array, where n=8.	20	CO4
Q 11	Write a CPP program to read employee details like employee name, employee age and employee salary using structure. Use pointer to structure variable for accessing the elements of structure. OR	20	CO3

	Declare a singly linked list in CPP and implement insert, delete, and display operations on the linked list. Insert Node at the beginning, Delete Node from beginning and display all linked list Nodes.		