

Name:

Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**Online End Semester Examination, June 2020**

**Course: Object Oriented Programming**  
**Program: B. Tech. Mechanical**  
**Course Code: CSEG1008**

**Semester: II**  
**Time 03 hrs.**  
**Max. Marks: 100**

**SECTION A**

- 1. Each Question will carry 5 Marks**
- 2. Instruction: Complete the statement / Select the correct answer(s)**

S. No.	Question	CO
Q 1	Which of the following is/are not valid control structures? a) Sequence structure b) Redundant structure c) Lop structure d) Selection structure	CO1
Q2	Read the following statements Statement 1: A pointer can be incremented (++) or decremented (--) Statement 2: One pointer can be added to another pointer Statement 3: One pointer can be subtracted from another pointer Which of these above statements are True?	CO2
Q3	Fill in the blanks. __ and __ operators cannot be overloaded in C++.	CO1
Q4	Which keyword can be used in template? a) Class b) Typename c) Both class & typename d) Function	CO4
Q5	The wrapping up of data and functions into a single unit is called __. a) Encapsulation b) Abstraction c) Polymorphism d) Inheritance	CO2
Q6	Which of the following is used to handle the exceptions in C++? a) catch handler b) handler c) exception handler d) throw	CO4

**SECTION B**

1. Each question will carry 10 marks
2. Instruction: Write short / brief notes

S. No.	Question	CO
Q 7	Write a C++ program to print a table of values of the function $y = x^2$ when x varies like 1, 5, 10, 15..... to 100 (step size of 5).	CO1
Q28	Does a global function in a C++ program have access to private data member of a class? If yes, please write a C++ statement to demonstrate the access. In no, how can the global function be given access? Also, state other ways to allow access of a function to a private data member of a class.	CO2
Q39	What are pure virtual functions? How are they different from simple virtual functions? Demonstrate the significance of pure virtual functions and abstract base classes with a C++ example. Explain your example code in detail.	CO3
Q10	Can we have more than one destructor and more than one constructor in a single class in C++ program? If yes, please explain with examples.	CO3
Q11	Write a simple C++ program to handle different kinds of exceptions <p style="text-align: center;">OR</p> What is template? Explain different types of templates. What is the difference between function overloading and template?	CO4

**SECTION C**

1. Each question will carry 20 marks
2. Instruction: Write long answers.

S. No.	Question	CO
Q12	What is ISA relationship in context to object oriented programming and how C++ allows the implementation of ISA relationship? What are the different forms/types of inheritances allowed in C++? Discuss with the help of diagrams. <p style="text-align: center;">OR</p> Differentiate between function overloading and operator overloading with appropriate examples. Suppose you obtained a derived class, D from a base class, B using simple inheritance. The base class B had a function <pre>class B{ public:     myfunc()     {         Cout&lt;&lt; "I am function in base class"&lt;&lt;endl     } };</pre> Write a C++ code to demonstrate function overloading and function overriding of this function in derived class D.	CO3