Name:	
Enrolment No:	

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

Course: Object Oriented Programming   Semester: II
Program: B. Tech. APE (Gas)   Time 03 hrs.
Course Code: CSEG1008   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 OR 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. OR 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 *class B{* *public:* *myfunc()* *{* *Cout<< "I am function in base class"<<endl* *}};* Write a C++ code to demonstrate function overloading and function overriding of this function in derived class D.	CO3