

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, April/May 2018

Course: OOPs with C++
Program: BCA
Time: 03 hrs.

Semester: II

Max. Marks: 100

Instructions:

SECTION A

Note: All 5 questions are compulsory. Each question of Section A carries 4 marks.

S. No.		Marks	CO
Q 1	List unique advantages of object oriented programming paradigm.	4	CO1
Q 2	Elaborate the situation when we use protected visibility specifier to class member along example.	4	CO3
Q 3	Differentiate virtual class & abstract class.	4	CO4
Q 4	Write a C++ program to create Employee class. Define proper constructor and Destructor. Define the method to display employee information such as name, Age and designation. Also define the method to calculate salary. Salary = Basic + TA + DA; TA is 10% of the Basic and DA is 80% of the Basic. Make necessary assumption required.	4	CO2
Q 5	Identify the scope where we will use virtual base class along with example.	4	CO5

SECTION B

Note: All 4 questions are compulsory. Each question of Section B carries 10 marks. Q9 have internal choice

Q6.	Construct classes and methods as per the relationship given: 1. Two wheeler , manual, electric and automatic. 2. Three wheeler manual, automatic and electric 3.	10	CO4
Q7.	Elaborate the working of friend function. Apply friend function to perform multiplication of two private data members of two different classes in C++.	10	CO4
Q8.	Write C++ Code for class definition given below: Private Members A data member Flight number of type integer Destination of type string Distance of type float	10	CO3

	<p>Fuel of type float</p> <p>Public Members</p> <p>A Method FEEDINFO() to allow user to enter values for Flight Number, Destination, Distance & call method CALFUEL() to calculate the quantity of Fuel</p> <p>SHOWINFO() to allow user to view the content of all the data members.</p> <p>CALFUEL() to calculate the value of Fuel as per the following criteria</p> <table> <tr> <td>Distance</td> <td>Fuel</td> </tr> <tr> <td><=1000</td> <td>500</td> </tr> <tr> <td>more than 1000 and <=2000</td> <td>1100</td> </tr> <tr> <td>more than 2000</td> <td></td> </tr> </table>	Distance	Fuel	<=1000	500	more than 1000 and <=2000	1100	more than 2000			
Distance	Fuel										
<=1000	500										
more than 1000 and <=2000	1100										
more than 2000											
Q9.	Elaborate the concept of this pointer. Specify the real life-programming situation where we use this pointer along with example. OR	10	CO5								
	Elaborate the concept of polymorphism. Write C++ code to overload “*” operator to multiply int, long, flont data members of the class.										
SECTION-C											
Note: All 2 questions are compulsory. Each question of Section C carries 20 marks.Q11 have internal choice											
Q10	<p>Write C++ program</p> <p>(a) Create a Student class with basic data members, member functions and constructor.</p> <p>(b) Derive UG - Student and PG - student classes from student class with additional details of their specialized courses. Define appropriate constructor and methods in derived classes also.</p> <p>(c) Define proper destructor with appropriate message about its execution for all the three classes. You are free to make necessary assumptions required.</p>	20	CO4								
Q11	Elaborate the concept of Exception handling. Compare synchronous and Asynchronous exceptions. Write C++ code to handle multiple exceptions through multiple catch. OR	20	CO5								
	Write a menu driven C++ program having option of Addition, Subtraction and multiplication of two 3 x 3 matrices. Define proper constructor initialized matrices and methods for each operation.										