Name: Enrolment No:	

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

Course: Java SE Programming   **Semester:** IV
Program: BCA(IoT & BFSI)   **Time** : 03 hrs.
Course Code: CSBC2015   **Max. Marks: 100**

Instructions:

Section A: Short answer type questions. Attempt all the questions, each Question carries 4 Marks

Section B: Medium answer type questions. Attempt all the questions, each Question carries 10 Marks

Section C: Long answer type questions. Attempt all the questions, each Question carries 20 Marks

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	What is the use of instanceof operator? Write the syntax.	4	CO1
Q 2	Write a short note on DriverManager class.	4	CO4
Q 3	What is the significance of using final keyword? Explain	4	CO1
Q 4	Differentiate between private, protected, default and public access modifiers.	4	CO2
Q 5	Write a short note on conditional statements.	4	CO1

SECTION B
(4Qx10M= 40 Marks)

Q 6	Why we use nested classes? Explain the different categories of Inner classes with suitable programs. **OR** Compare and contrast static nested class and nested interface. Support your explanation with program code.	10	CO2
Q 7	Define Thread. How Process-based Multitasking is different from Thread-based Multitasking? Write the different states of the thread with neat diagram. Write a program to demonstrate the states of the thread using Runnable interface.	10	CO3
Q 8	Write a program to develop a Retail Automation application using List/ArrayList with the use of following details: • Create 3 classes **ProductMethods**, **ProductsList**, and **MainClass** • **Inside ProductsMethods class**	10	CO2

	- o Create methods to get product Name, Price, Stock, and product ID. - o Create a constructor inside this class to initialize the values. **• Inside ProductList class** - o Use the statement to create ArrayList instance of type ProductMethods. - o Create a method with the signature *List<ProductMethods> getProducts()* to return the products information. - o Create a method **public void initStoreItems()** to initialize the productNames[], productPrice[], and Stcok[] arrays inside this method. After initialization display all the values. - o Call initStoreItems() inside constructor **• Inside MainClass** - o Create a method *private void displayStoreProducts()*, and call the getProducts() method of class ProductList and use the type as <ProductMethods> - o Use the above method inside the constructor of the class		
Q 9	Write a program to demonstrate the use of custom exceptions **InvalidAmountException**, **InsufficientFundsException** to handle wrong operations done by customers in deposit, and withdrawal process. Consider the following conditions: • Throw **InvalidAmountException**, if the user enters zero or negative amount in deposit and withdraw operations. • Throw **InsufficientFundsException**, if the user enters the amount greater than the balance in case of withdrawing operations.	**10**	**CO3**
SECTION-C **(2Qx20M=40 Marks)**		
Q 10	A company sells an assortment of products, very different from each other, and needs a way to access financial data in a similar manner. **1) Products include:** a) Crushed Rock- Measured in pounds b) Red Paint- Measured in gallons c) Widgets- Measured by Quantity **2) Need to calculate per item** a) Sales price b) Cost c) Profit You have to create an interface and different products classes to demonstrate, how can interfaces solve this problem? All these products are sold by the same company, but are measured in different ways. *Note:* In an interface, you have to use static method	**20**	**CO1**
Q 11	Define JDBC. What are the different types of JDBC driver? Explain all JDBC drivers with suitable diagrams to represent the connectivity steps with database. Write a program to represent the steps to connect java		

	program with the MySQL database using JDBC.
	
	OR
	
	What are the different interfaces available in Java JDBC? Explain the following interfaces with program code:
	  i. Statement interface
	  ii. ResultSet interface
	 iii. PreparedStatement interface
	      a. Insert record
	      b. Update record
	      c. Delete record
	      d. Retrieve the records
		20	**CO4**