Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Third Semester B.Tech Degree Examination December 2020 (2019 Scheme)

Course Code: CST205
Course Name: OBJECT ORIENTED PROGRAMMING USING JAVA

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions. Each question carries 3 marks Marks

1	Discuss the concept of classes and objects in Java language using an example of a 'student' object in a Student management application.	(3)
2	What are the advantages of using UML? Sketch the UML class diagram for an entity 'book'.	(3)
3	List out any three literal types in Java .Give examples for each.	(3)
4	Differentiate between Arrays and Vector class in Java.	(3)
5	How do you create and import a package in Java?	(3)
6	Write an example of implementing an interface in Java.	(3)
7	Illustrate the working of any two methods of String class that compare strings.	(3)
8	List and explain any three methods defined by the 'List' interface in Java.	(3)
9	Point out the use of a Swing Layout Manager. Explain any one type.	(3)
10	Compare any three types of Swing button classes .	(3)

PART B

Answer any one full question from each module. Each question carries 14 marks

Module 1

11	a) Bring out the difference between function oriented software design approach and object oriented software design approach using the example of an automated fire alarm system.	(4)
	b) Describe buzzwords of Java that defines the Java programming language.	(10)
12	a) Comapre and contrast Java Applets and Java Application.	(4)
	b) Illustrate the Java Programming and Runtime Environment. Explain the roles of each component of it while compiling and executing a java program.	(10)

Module 2

13	a) Discuss about bitwise, relational and conditional operators in Java with examples and compare its precedence.	(6)
	b) Demonstrate the role of 'super' keyword in the context of inheritance in Java with appropriate examples.	(8)
14	a) Point out the significance of 'this' keyword with an example.	(4)
	b) Write a java program to show the significance of method overriding in achieving run time polymorphism. Discuss difference between method overriding and method overloading.	(10)

Module 3

15	a) Write a Java program to copy the contents of one file to another file using FileInputStream and FileOutputStream classes.	(5)
	b) Describe various methods of reading data from the keyword with appropriate examples in Java.	(9)
16	a) Differentiate between checked and unchecked exceptions in Java with examples.	(4)
	b) Demonstrate the significance of the keywords 'try', 'catch', 'finally', 'throw' and 'throws' in exception handling of Java with appropriate examples.	(10)

Module 4

17	a) Discuss the event handling mechanism in Java using the Delegation Event Model?	(8)
	b) How mouse events are handled in Java? Give suitable Java source code.	(6)
18	a) Discuss the methods of creating threads in Java using appropriate examples	(8)
	b) Write a Java program that creates multiple child threads to print odd and even numbers from **50-100**.	(6)

Module 5

19	a) What is use of Swing package in java? Discuss any two features.	(6)
	b) Write a program to illustrate the use of JFrame, JTextField and JLabel.	(8)
20	a) Write sample code to establish database connectivity in Java. Discuss the various steps involved.	(10)
	b) Write Java code to demonstrate the execution of create and insert queries using JDBC.	(4)

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Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Third Semester B.Tech Degree Examination December 2021 (2019 scheme)

Course Code: CST205

Course Name: OBJECT ORIENTED PROGRAMMING USING JAVA

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions. Each question carries 3 marks Marks

1	What is Just-In-Time compiler?	(3)
2	Why Java is said to be a secure programming language?	(3)
3	Does Java support multiple inheritance? Justify your answer.	(3)
4	Why is the 'main' method in Java qualified as public, static, and void?	(3)
5	Explain any three Byte Stream classes in Java.	(3)
6	What are Checked Exceptions? Give an example.	(3)
7	List any six Event Listener interfaces.	(3)
8	Explain any three special string operations in Java	(3)
9	Summarize any three features of Swing API.	(3)
10	Differentiate between Components and Containers in Swing.	(3)

PART B

Answer any one full question from each module. Each question carries 14 marks

Module 1

11	a) Explain Lexical issues in Java with examples.	(6)
	b) Differentiate between function oriented and object orientedsoftware design approaches using a suitable example.	(8)
12	a) Construct a UML Class diagram for Online Movie Ticket Booking System. The various entities involved in the system are Admin, Registered User, Visitor / Guest User, Movie, Book Ticket, Make Payment.	(8)
	b) Construct a UML Activity diagram for Food Ordering System, which shows the flows between the activity of Order, Delivery, Food Item, Category, Payment.	(6)

Module 2

13	a) Explain different data types in Java. Give examples.	(8)
	b) Write a Java program to reverse bits of a given integer.	(6)
14	a) Demonstrate how objects are passed as function parameters with a suitable example.	(8)
	b) Write a Java program to find the frequency (count the occurrence) of each element in an integer array.	(6)

Module 3

15	a) Develop a Java package named '*evenpackage'*, with a class *Even* containing a static method that check whether a number is even or not, and returns that	(8)

information. Import this package in another class and use to check a number is even or not.

b) Differentiate between *try-catch*, *throw* and *throws* keywords. (6)

16 a) Write a Java program that reads a binaryfile and write to another file. (8)

b) Write Java code that reads a character file and prints the contents of file on the display, with a line number before each line. (6)

Module 4

17 a) Write a Java program to find the duplicate characters in a string. (8)

b) What are the uses of *synchronized* keyword in Java? Explain with examples. (6)

18 a) Write a Java program that creates three threads. First thread generates a random positive number (>1) every 1 second. If the number is even, the second thread prints all even numbers between 1 and the generated number. If the number is odd, the third thread will print all odd numbers between 1 and the generated number. (10)

b) Differentiate between Collection Interface and Collections Class. (4)

Module 5

19 a) How do you establish connection between a Java program and database? Explain the steps with sample code. (10)

b) Write java code to demonstrate the execution of select and delete queries using JDBC (4)

20 a) How events are handled in java Swing? (4)

b) Write a Java program using Swing to create a frame having three text fields, threelabels and a button. The interface has to accept a number in the first text field. While clicking the button, the second and third textfields have to display the previous number and next number respectively, of the accepted input number. (10)

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Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Third Semester B.Tech Degree Regular and Supplementary Examination December 2022 (2019 Scheme)

Course Code: CST205

Course Name: OBJECT ORIENTED PROGRAMMING USING JAVA

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions. Each question carries 3 marks Marks

1		How is platform independence achieved in Java?	(3)
2		Explain how garbage collection is done in Java.	(3)
3		Explain the use of static variable with the help of an example.	(3)
4		Can final modifier be used with an abstract class. Justify your answer.	(3)
5		Differentiate between the usage of keywords throw and throws.	(3)
6		Explain the significance of CLASSPATH environment variable in Java.	(3)
7		List any three event sources and their corresponding event types and listeners used.	(3)
8		Illustrate the creation of arraylist with the help of a sample program.	(3)
9		Compare Swing API and AWT API.	(3)
10		What are layout managers? List any twolayout managers.	(3)

PART B

Answer any one full question from each module. Each question carries 14 marks

Module 1

11	a	Consider the problem of a Service Station which provides three types of services to its customers: refuelling, vehicle maintenance and parking. Customer can pay using cash, card or cheque. The pricing for vehicle maintenance depends on the cost of parts and labour. Parking areas are rented according to weekly and monthly rates. Construct an UML class diagram for the above problem by identifyingatleast six entities in the system which can be represented using classes and show the relationship between them.	(10)
	b	Describe programming structure of Java that deals with the organization of Java code.	(4)
12	a	Differentiate between the two main approaches of software design.	(7)

	b	Construct a UML Activity diagram for an online Hotel Reservation System, which shows the flow of activities for booking rooms at a hotel.	(7)

Module 2

13	a	Write a Java program by creating a 'Student' class having the following data members: rollNumber, name, mathMarks, phyMarks, chemMarks and methods getRequiredDetails() – to get required input and displayAverage() – to calculate average marks and display it. In class 'Implement' create an object of the Student class and get the required details from user and display the average marks of that student.	(7)
	b	Write a java program that illustrates how 'this' keyword can be used to resolve the ambiguity between formal parameters and instance variables.	(7)
14	a	Explain the concept of method overloading with the help of a program.	(7)
	b	What is inheritance? Illustrate hierarchical inheritance using a sample program.	(7)

Module 3

15	a	Write a program to read the first n characters in a file where n is given by the user. The characters read from file has to be reversed and displayed on screen. Built in methods can be used in the program.	(7)
	b	Explain the role of access modifiers when packages are used in Java.	(7)
16	a	Create a user defined exception 'InvalidAgeException'. Write a Java program that takes age as a Command Line Argument. Raise the Exception 'InvalidAgeException' if age is less than 18.	(7)
	b	Explain the concept of Serialization and demonstrate how an object can be serialized with a sample program.	(7)

Module 4

17	a	Illustrate the event handling mechanism in Java using the Delegation Event Model with the help of a diagram.	(8)
	b	Illustrate the usage of the following methods related to String with appropriate sample code. (i) find() (ii)substring() (iii) replace()	(6)
18	a	What is multithreading? Write a multithreaded Java program that demonstrates the working of wait() and notify() methods.	(7)

	b	Explain how ActionEvent class and FocusEvent class is used with emphasis on the methods and constants provided by the given classes.	(7)

Module 5

19	a	Write a Java program that uses two textfields and a button. The first textfield accepts temperature in Celsius. When the 'Convert' button is clicked the second textfield displays the temperature in Fahrenheit. Use appropriate Swing components and event handling techniques. F=(C*9/5)+32	(9)
	b	Describe the two different ways to create frames using Swing package with appropriate examples.	(5)
20	a	Discuss the Model View Controller (MVC) Architecture using a diagram. Also list out the advantages of writing programs based on MVC Architecture.	(7)
	b	Explain the various steps for connecting to database using JDBC API, using a sample program.	(7)