B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2024

Third Semester

23CS301-OBJECT ORIENTED PROGRAMMING

(Common to: CSE/CSE(CS))

(Regulation 2023)

QUESTION BANK

(Applicable for Theory Courses)

Unit I

Q.No	Part – A Questions	COs	Bloom's Level
1.	what is meant by Object Oriented Programming.	CO1	K1
2.	Compare class and object.	CO1	K2
3.	List the core OOP's concepts.	CO1	K1
4.	List Some of JAVA buzzwords or features of java	CO1	K1
5.	Define what is meant by abstraction.	CO1	K1
6.	Define Encapsulation, Inheritance and Polymorphism.	CO1	K1
7.	Justify the statement "Java is platform independent".	CO1	K2
8.	List the various access specifiers supported by OOPS.	CO1	K1
9.	Write syntax for class creation in java	CO1	K1
10.	Write the syntax for one-dimensional and two-dimensional array declaration and instantiation	CO1	K1
11.	What is meant by method over loading?	CO1	K1
12.	Define static variable and static method.	CO1	K1
13.	Differentiate between java constructors and java methods	CO1	K1
14.	What is a default constructor? Illustrate.	CO1	K1
15.	List out four Java doc comments.	CO1	K1

Part – B			
1.	i. Explain OOPS and its feature.(7) ii. Summarize about how classes and objects are created and instantiated(6)	CO1	K2
2.	Illustrate the control flow statements in Java with suitable examples	CO1	K2
3.	Explain the various types of constructor with example.	CO1	K2
4.	i. Develop a simple Java program to sort the given numbers in increasing order.(7) ii.Explain with an example the structure of Java Program.(6)	CO1	K2
5.	i. Illustrate the working principles of Java Virtual Machine.(7) ii.Write a Java program to reverse the given number.(6)	CO1	K2
6.	Explain various operators in java with an example program (13)	CO1	K2
7	Develop a Java application to generate Electricity bill. Create a class with the following members: Consumer no., consumer name, previous month reading, current month reading, type of EB connection (i.e domestic or commercial). Compute the bill amount using the following tariff. If the type of the EB connection is domestic, calculate the amount to be paid as follows: i. First 100 units - Rs. 1 per unit ii. 101-200 units - Rs. 2.50 per unit iii. 201 -500 units - Rs. 4 per unit iv. > 501 units - Rs. 6 per unit	CO1	K3
8	i)Explain method overloading in java with an example program ii)Explain constructor overloading in java with an example program	CO1	K3

UNIT II

Q.No	Part – A	CO's	Bloom's Level
1	List out the importance of inheritance.	CO2	K1
2	What is meant by object cloning?	CO2	K1

3	Identify what are the two ways of using super keyword.	CO2	K1
4	What modifiers may be used with top-level class?	CO2	K1
5	How protected members in a subclass can be accessed in Java?	CO2	K1
6	List out the methods provided by the object class.	CO2	K1
7	List out the conditions to be satisfied while declaring abstract classes.	CO2	K1
8	List the use of final keyword.	CO2	K1
9	Define what is protected visibility .	CO2	K1
10	Describe the role of clone() method in Java.	CO3	K2
11	Define interface and write the syntax of the interface	CO3	K1
12	What is Dynamic Binding?	CO3	K1
13	What is a cloneable interface and how many methods does it contain.	CO3	K1
14	Show whether you can have an inner class inside a method and what variables can you access.	CO3	K2
15	Compare abstract class and interface.	CO3	K2
	Part – B		
1	i. Explain in detail about inheritance. (7) ii. Illustrate with a program for inheriting a class.(6)	CO2	K2
2	i. Illustrate what is super and subclass in Java. (7) ii Illustrate how the objects from sub class are inherited by the super class. (6)	CO2	K2
3	Describe in brief about object class and its methods in Java with suitable example.	CO2	K2
4	i. Explain with an example what is meant by object cloning? (7) ii. Summarize in detail about inner class with its usefulness. (6)	CO2	K2
5	Explain how packages are imported in java with an example	CO3	K2
6	Explain how interface is declared and implemented in JAVA. Give example.	CO3	K2
7	Construct an inheritance hierarchy for classes Quadrilateral, Trapezoid, Parallelogram, Rectangle and Square. Use Quadrilateral as the superclass of the hierarchy. Specify the instance variable and methods for each class. The private instance variables of Quadrilateral should be the x-y coordinate pairs for the four end points of the quadrilateral.	CO2	K3

	Write a program that instances objects of your classes and outputs each objects area(except Quadrilateral).		
8	Write a Java Program to create an abstract class named Shape that contains two integers and an empty method named printArea(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contains only the method printArea( ) that prints the area of the given shape. Solve the above problem using an interface.	CO3	K3

UNIT III

Q.No	Part-A Questions	CO's	Bloom's Level
1	How will create throw exception in exception handling?	CO4	K1
2	List out the different ways to generate an Exception?	CO4	K1
3	What are the advantages of using exception handling?	CO4	K1
4	Define run time exceptions in java. Give example.	CO4	K1
5	Show whether we write only try block without catch and finally blocks?	CO4	K2
6	List out the different states of a thread?	CO4	K1
7	Compare checked and unchecked exception.	CO4	K2
8	List out the purpose of the finally clause of a try-catch- finally statement.	CO4	K1
9	Compare exception and error.	CO4	K2
10	Which is the superclass of Exception?	CO4	K1
11	State the catch or declare rule for method declarations.	CO4	K1
12	How to create custom exceptions?	CO4	K1
13	List out any four thread constructors.	CO4	K1
14	Compare wait and sleep?	CO4	K2
15	Define daemon thread?	CO4	K1
	Part- B		
1	Illustrate the concept of synchronization in thread.	CO4	K2
2	Illustrate in detail about multithread programming with example.	CO4	K2

3	Explain the concept of throwing and catching exception in java.	CO4	K2
4	Explain briefly about user defined exceptions and stack trace elements in exception handling mechanisms.	CO4	K2
5	Illustrate how to implement runnable interface for creating and starting threads?	CO4	K3
6	Explain the following states of a thread with a neat diagram.	CO4	K2
7.	Develop a java program that implements a multi-threaded application that has three threads. First thread generates a random integer every 1 second and if the value is even, the second thread computes the square of the number and prints. If the value is odd, the third thread will print the value of the cube of the number.	CO4	K3

8.	Custom exception has been created in the code given below. Correct and evaluate the code .
	Class myexception extends Exception
	{
	Myexception(string s)
	{
	super(s)
	}
	}
	Class excep
	{
	Public static void main (String args [])
	{ if (args [0] == "Hello") System.out.println("String is right");
	else try
	{
	Throw new myexception("Invalid string");
	}
	Catch(myexception ex)
	{
	System.out.println(ex.gemessage());
	}
	}
	}
	ii.The program calculates sum of two numbers inputted as command-line arguments.When will it give an exception?
	Class execp
	{
	Public static void main(String []args)
	{
	try{
		CO4	K3

	int n= Integer.parseInt(arg[0]); int n1=Integer.parseInt(arg[1]); int n2=n+n1;
	System.out.println("Sum is:" +n2);
	}
	Catch(NumberFormatException ex)
	{
	System.out.println(ex);
	}
	}
	}		

UNIT IV

Q.No	Part-A Questions	CO's	Bloom's Level
1	How to read input from a console?	CO5	K1
2.	List out the commands for mutable sequence of characters for manipulating strings.	CO5	K1
3	List out the commands for immutable sequence of characters for manipulating strings.	CO5	K1
4	How to write output to a console?	CO5	K1
5	How to restrict generics to specific types or their subclasses.	CO5	K1
6	What are the commands for reading to files?	CO5	K1
7	What are the commands for writing to files?	CO5	K1
8	How to check the starting and ending point of a string?	CO5	K1
9	List the ways to search the strings.	CO5	K1
10	List out the constructors used for creating a string with byte array?	CO5	K1
11	Define generic class.	CO5	K1
12	How to create a simple generic class.	CO5	K1
13	Summarize the advantages of generic programming	CO5	K1
14	What is the need for generic programming?	CO5	K1

15	List out the methods that can operate on generic types.	CO5	K1
	Part - B		
1	Explain how strings are handled in java? Explain with code, the creation of Substring, Concatenation and testing for equality.	CO5	K2
2	Illustrate the Java program to concatenate the two files and produce the output in the third file.	CO5	K2
3	Explain string handling classes in Java with examples.	CO5	K2
4	Explain how strings are handled in java? Explain with code, the creation of Substring, concatenation and testing for equality.	CO5	K2
5	Explain with a program to show generic class and methods.	CO5	K2
6	i. Illustrate the motivations of generic programming. (7) ii.List the inheritance rules for generic types with example.(6)	CO5	K2
7	Illustrate a Java program that reads a file name from the user,displays information about whether the file exists, whether thefile is readable, or writable, the type of file and the length of the file in bytes.	CO5	K3
8	Develop a simple generic class example with two type parameters, so that we can define two types of parameters called U & V, separated by ",".	CO5	K3

UNIT V

Q.No	**Part-A Questions**	**CO's**	**Bloom's Level**
1	What is an event in JavaFX?	CO6	K1
2.	List out the commonly used event handler in JavaFX.	CO6	K1
3	How mouse events are handled in JavaFX?	CO6	K1
4	What is the purpose of a Checkbox control in JavaFX?	CO6	K1
5	Compare and contrast ComboBox and ChoiceBox in JavaFX.	CO6	K2
6	What is the purpose of a ScrollPane in JavaFX?	CO6	K1
7	How are the components arranged in a FlowPane in JavaFX?	CO6	K1
8	Compare and contrast HBox and VBox in JavaFX.	CO6	K1
9	What is the usage of a BorderPane in JavaFX?	CO6	K1
9	What is stacking behavior of a StackPane in JavaFX?	CO6	K1
10	How does a GridPane arrange components in JavaFX?	CO6	K1
11	What components are typically found in a JavaFX menu bar?	CO6	K1

12	What is the purpose of a Menu in JavaFX?	CO6	K1
13	How is a MenuBar added to a JavaFX application?	CO6	K2
14	List out the functionality of a MenuItem in JavaFX.	CO6	K1
15	Compare TextField and a TextArea in a JavaFX layout.	CO6	K1
	Part- B		
1	Explain the event handling mechanism in JavaFX with an example	CO6	K2
2	Explain how to handle a custom event in JavaFX.	CO6	K2
3	Explain how to handle key events globally in a JavaFX application.	CO6	K2
4	Illustrate scenarios where handling key events is essential for user interaction	CO6	K2
5	Explain how to handle state changes and events for both controls.	CO6	K2
7.	Demonstrate the use of both TextField and TextArea in a form layout for ERP application.	CO6	K3
8	Demonstrate the use of BorderPane, StackPane, and GridPane layouts in resume builder.	CO6	K3