BCS306A

Third Semester B.E./B.Tech. Degree Examination, June/July 2025
Object Oriented Programming with Java

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Outline primitive data types in Java.	5	L1	CO1
	b.	Explain Java type conversion and casting with a code snippet.	5	L2	CO1
	c.	Develop java code to transpose a matrix.	10	L3	CO1
		OR			
Q.2	a.	Summarize Java Operators.	5	L2	CO1
	b.	Explain Java control statements.	5	L2	CO1
	c.	Develop Java code to add two matrices.	10	L3	CO1
		Module – 2			
Q.3	a.	Define class, object, new, constructor and garbage collection in Java.	5	L1	CO2
	b.	Explain the general form of a class in Java and with an example.	5	L2	CO2
	c.	Develop a stack class to hold a maximum of 10 integers with suitable methods. Develop a java main method to illustrate stack operations.	10	L3	CO2
		OR			
Q.4	a.	Define static, final, this keywords and access control in Java.	5	L1	CO2
	b.	Explain Java method overloading with a code snippet.	5	L2	CO2
	c.	Develop a class employee details with attributes ID, name and salary. Implement a method raise salary (percent) which raises salary of an employee for a given percent. Implement a class employee to demonstrate the employee details and his salary increase by the given percent.	10	L3	CO2
		Module – 3			
Q.5	a.	Define method overriding, dynamic method dispatch, abstract class and uses of super in Java.	5	L1	CO3
	b.	Explain with a java code snippet how inheritance can be prevented?	5	L2	CO3
	c.	Develop a Java program to create a class named shape. Create three sub-classes namely : circle, triangle and square, each class has two member functions named draw( ) and erase( ). Demonstrate polymorphism concepts by developing suitable methods, defining member data and main program.	10	L3	CO3

		OR			
Q.6	a.	Define interface, interface reference, variables in interfaces, nested interface and multiple inheritance in Java.	5	L1	CO3
	b.	Explain the general form of an interface and implementing interface with an example.	5	L2	CO3
	c.	Develop a Java program to create an interface resizable with methods resize width (int size) and resize height (int height) that allow an object to be resized. Create a class rectangle that implements the resizable interface and implements both resize methods.	10	L3	CO3
		Module – 4			
Q.7	a.	Define package, access protection, import packages, exception and exception types in Java.	5	L1	CO4
	b.	Summarize class member access in Java.	5	L2	CO4
	c.	Develop a Java program to create a package named my pack and import and implement it in a suitable class.	10	L3	CO4
		OR			
Q.8	a.	Define try, catch, throw, throws and finally keywords in java exception handling.	5	L1	CO4
	b.	Explain the general form of an exception handling block and throws clause in Java exception handling.	5	L2	CO4
	c.	Develop a Java program to raise a custom exception (user defined exception) for division by zero using try, catch, throw and finally.	10	L3	CO4
		Module – 5			
Q.9	a.	Define multi-threaded programming, thread priorities, synchronization, messaging and the main thread in Java.	5	L1	CO5
	b.	Explain the different methods of creating threads in Java.	5	L2	CO5
	c.	Implement Java code to demonstrate auto-boxing and auto-unboxing of type wrappers.	10	L3	CO5
		OR			
Q.10	a.	Define inter-thread communication, enumeration, type wrappers, auto-boxing and auto-unboxing in Java.	5	L1	CO5
	b.	Explain with syntax values( ) and values of ( ) methods in Java.	5	L2	CO5
	c.	Develop a Java program to illustrate creation of threads using runnable interface (start method start each of the newly created thread. Inside the run method there is sleep( ) method for suspending the thread for 500 mill-seconds).	10	L3	CO5

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