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SHAMBHUNATH INSTITUTE OF ENGINEERING AND TECHNOLOGY

Subject Code: BCS403

Subject: Object Oriented Programming with Java

Course: B. Tech

SEMESTER: IV

SECOND SESSIONAL EXAMINATION, ODD-SEMESTER, (2023-2024)

Branch: Computer Science & Engineering

Time –2hrs

Maximum Marks –45

1. Attempt any five questions.

Q N	QUESTION	Marks	CO	BL
a.	Explain Base64 encode and decode with examples.	2	CO3	L1
b.	What are static methods in Interfaces?	2	CO3	L3
c.	Explain lambda expressions in java with examples.	2	CO3	L2
d.	What are some standard Java pre-defined functional interfaces?	2	CO3	L3
e.	Explain Some of the Functional Interfaces in the Standard Library.	2	CO3	L1
f.	Discuss the purpose and usage of the Stream API in Java.	2	CO3	L2

2. Attempt any one of the following.

Q N	QUESTION	Marks	CO	BL
a.	How to implement an interface using an anonymous inner class in Java?	5	CO3	L2
b.	Explain method reference in Java with its types.	5	CO3	L1
c.	Discuss the Java Module system and its advantage and disadvantages.	5	CO3	L3

3. Attempt any five questions.

Q N	QUESTION	Marks	CO	BL
a.	What is the Java Collection framework?	2	CO4	L1
b.	Explain the hierarchy of the collection framework in Java.	2	CO4	L3
c.	What is Collection interface?	2	CO4	L1

d.	Which classes implement link interface?	2	CO4	L3
e.	What do you mean by Set interface?	2	CO4	L1
f.	Explain TreeSet and give its key characteristics.	2	CO4	L2

4. Attempt any one of the following.

a.	Write a short note on HashSet and LinkedHashSet.	5	CO4	L4
b.	How can sorting be performed in Java collection framework?	5	CO4	L5
c.	Differentiate between Comparable and Comparator interface.	5	CO4	L3

5. Attempt any five questions.

Q N	QUESTION	Marks	CO	BL
a.	What are the spring core and it uses?	2	CO5	L1
b.	What is dependency Injection in Spring?	2	CO5	L2
c.	Illustrate Aspect Oriented Programming in Spring Framework.	2	CO5	L3
d.	What is the prototype scope in Spring?	2	CO5	L2
e.	How dependency management helps in Spring Boot build system.	2	CO5	L1
f.	Explain application runner and command line runner.	2	CO5	L2

6. Attempt any one of the following.

Q N	QUESTION	Marks	CO	BL
a.	Explain the concept of Inversion of Control (IoC) in Spring framework.	5	CO5	L4
b.	What is the Session Scope in Spring and how it is different from other scopes?	5	CO5	L6
c.	Explain different types of life cycle callbacks in Spring.	5	CO5	L3