Enrolment No/Seat No.: _____

R.N.G.PATEL INSTITUTE OF TECHNOLOGY-RNGPIT

(An Autonomous College U/s UGC Act 1956)

B.Tech SEMESTER-II, SEMESTER END EXAMINATION – SUMMER-2025

Subject Code: 1CS201 **Date: 26-05-2025**

Subject Name: OBJECT ORIENTED PROGRAMMING

Time: 11:00 AM to 01:30 PM **Total Marks: 70**

Instructions

1. It is **compulsory** for students to write **Enrolment No. /Seat No.** on the question paper.
2. Write answers of **Section A** and **Section B** in **separate answer books**.
3. Attempt all questions from both **Section A** and **Section B**.
4. Each section carries **35 marks**, with a total of **70 marks** for the examination.
5. The figures to the right of each question indicate full marks, make suitable assumptions with justification.
6. BL - Bloom's Taxonomy Levels (R-Remember, U-Understanding, A –Application, N –Analyze, E – Evaluate, C -Create), CO - Course Outcomes.

SECTION A

		Marks	BL	CO
Q.1	**Multiple-Choice Questions**	**[05]**		
	(a) Which of the following is not a thread state in Java?	**1**	**R**	**5**
	(i) Ready **(ii)** Deleted			
	(iii) Running **(iv)** Blocked			
	(b) Which package contains the classes for input and output in Java?	**1**	**R**	**5**
	(i) java.util **(ii)** java.lang			
	(iii) java.io **(iv)** java.net			
	(c) How many threads can be executed at a time in a Java program?	**1**	**R**	**5**
	(i) Only one **(ii)** least one			
	(iii) At least two **(iv)** Multiple			
	(d) Which Java package contains classes and interfaces for multithreading?	**1**	**R**	**5**
	(i) java.util **(ii)** java.io			
	(iii) java.multi **(iv)** java.lang			

(e) Identify the type of inheritance from following code: **1** **U** **3**

```
class A {
 //statements
 }
class B extends A {
//statements
 }
```

(i) Multiple **(ii)** Hierarchical

(iii) Simple **(iv)** Multi-level

Q.2 Attempt Any Two **[10]**

(a) Create class calculate which has the method area() to calculate the perimeter of circle, square and rectangle. Write a program to demonstrate method overloading. **5** **A** **3**

(b) Define inheritance. Enlist types of Inheritance in Java and explain any with an example. **5** **U** **3**

(c) Enlist and explain types of constructors in Java with an example. **5** **U** **3**

Q.3 Attempt Any Two **[10]**

(a) Explain sleep() method and join() method in thread class with an example. **5** **U** **5**

(b) Explain setName() and getName() methods of thread class with an example. **5** **U** **5**

(c) Write a program that executes two threads. One thread Displays "I'm JavaThread 1"every 1,500 milliseconds. And the other displays "I'm JavaThread 2 "every 2,500 milliseconds. Create the threads by extending Thread class. **5** **A** **5**

Q.4 Attempt Any Two **[10]**

(a) Explain following string conversion methods with an example: **5** **U** **3**
a. length()
b. indexOf()

(b) Explain the concept of Class and Object in details with an example. **5** **U** **3**

(c) Create class Box having data members width, height, depth and method volume which finds the volume of Box. Use default and parameterized constructor to initialize the values of variables. Write a program to calculate the volume for two boxes. **5** **A** **3**

SECTION B

		Marks	BL	CO
Q.5	**Multiple-Choice Questions**	**[05]**		
(a)	Automatic type conversion is possible in which of the possible cases?	**1**	**U**	**2**
	(i) long to int **(ii)** int to String			
	(iii) int to long **(iv)** String to int			
(b)	Select the valid statement to declare and initialize an array.	**1**	**R**	**2**
	(i) int A[] = {}; **(ii)** int A= {1,2,3};			
	(iii) int A[] =(1,2,3); **(iv)** int A[] = {1,2,3};			
(c)	What is Exception in Java	**1**	**R**	**4**
	(i) Compile Time Error **(ii)** Run-time Error			
	(iii) Warning Issued by Compiler **(iv)** All of above			
(d)	Which of these keywords must be used to monitor for exceptions?	**1**	**R**	**4**
	(i) try **(ii)** catch			
	(iii) throw **(iv)** throws			
(e)	When does method overloading is determined?	**1**	**U**	**1**
	(i) At coding time **(ii)** At compile time			
	(iii) At run time **(iv)** None of above			
Q.6	**Attempt Any Two**	**[10]**		
(a)	Why Java is called platform independent? Explain in detail.	**5**	**U**	**1**
(b)	Enlist and explain features of Java.	**5**	**U**	**1**
(c)	Explain continue and break statement in Java.	**5**	**U**	**2**
Q.7	**Attempt Any Two**	**[10]**		
(a)	Explain for and while control structure with example.	**5**	**U**	**2**
(b)	Define exit control loop. Explain using appropriate example.	**5**	**R**	**2**
(c)	Write a program in Java that calculates factorial of n using while loop.	**5**	**A**	**2**

Q.8	**Attempt Any Two**	**[10]**		
(a)	Explain the try and catch block with example.	**5**	**U**	**4**
(b)	Distinguish: Throw vs. throws.	**5**	**A**	**4**
(c)	Write the checkBalance method to check the balance in the account. Implement the checkBalance method to throw an exception InsufficientBalanceException if the balance is less than 2000.	**5**	**A**	**4**

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