

**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: 1IT201**

**Date: 26-05-2025**

**Subject Name: FUNDAMENTALS OF 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**

	<b>Marks</b>	<b>BL</b>	<b>CO</b>
<b>Q.1 Multiple-Choice Questions</b>	<b>[05]</b>		
<b>(a) What is the process of converting one data type into another in programming?</b>	<b>1</b>		<b>1</b>
(i) Encapsulation			
(ii) Type conversion			
(iii) Polymorphism			
(iv) Inheritance			
<b>(b) Which of the following is the correct way to define a method in Java?</b>	<b>1</b>		<b>2</b>
(i) function int sum(int a, int b)			
(ii) int sum(int a, int b)			
(iii) def sum(int a, int b)			
(iv) method sum(int a, int b)			
<b>(c) Which access modifier makes a method accessible from any other class?</b>	<b>1</b>		<b>2</b>
(i) private			
(ii) Protected			
(iii) public			
(iv) default			
<b>(d) Which type of inheritance allows a class to inherit properties from only one parent class?</b>	<b>1</b>		<b>4</b>
(i) Single inheritance			
(ii) Multiple inheritance			
(iii) Multilevel inheritance			
(iv) Hybrid inheritance			

<b>(e) Method overriding is resolved:</b>	<b>1</b>	<b>4</b>
(i) At compile-time	(ii) At runtime	
(iii) During linking	(iv) None of the above	

<b>Q.2 Attempt Any Two</b>	<b>[10]</b>		
(a) Differentiate between Object oriented programming vs Procedural Oriented programming.	<b>5</b>	<b>R</b>	<b>1</b>
(b) What is Inheritance? Explain Types of inheritance with an example.	<b>5</b>	<b>U</b>	<b>4</b>
(c) Write a Program to Display Fibonacci Series.	<b>5</b>	<b>A</b>	<b>4</b>
<b>Q.3 Attempt Any Two</b>	<b>[10]</b>		
(a) Explain Method Overloading with an example.	<b>5</b>	<b>U</b>	<b>2</b>
(b) What is Parameter and Arguments in OOP.? Explain Types of arguments with an example.	<b>5</b>	<b>R</b>	<b>2</b>
(c) Define class calculator. Create a method addition(), subtraction(), multiplication(), division(), modulo(). Create an object to perform different methods.	<b>5</b>	<b>A</b>	<b>2</b>
<b>Q.4 Attempt Any Two</b>	<b>[10]</b>		
(a) What is the use of super keyword in oop? Explain it with an example.	<b>5</b>	<b>U</b>	<b>4</b>
(b) Differentiate between Constructor() and Methods().	<b>5</b>	<b>R</b>	<b>4</b>
(c) Write a Program to create a Person Class with Encapsulating the name and age only and define the methods getName(), setName(), getAge() and setAge() that are accessible in the main class.	<b>5</b>	<b>A</b>	<b>4</b>

## SECTION B

	Marks	BL	CO
<b>Q.5 Multiple-Choice Questions</b>	<b>[05]</b>		
<b>(a)</b> What will be the output of the following code? <pre>class p1 {     public static void main(String[] args) {         System.out.println("\Java Programming!\");     } }</pre>	<b>1</b>	<b>E</b>	<b>3</b>
(i) Java Programming! (ii) "Java Programming!" (iii) (iii) Java Programming. (iv) ""Java Programming!""			
<b>(b)</b> Which of these keywords are used to define an abstract class?	<b>1</b>	<b>E</b>	<b>5</b>
(i) abst (ii) Abstract (iii) abstract (iv) Abstract class			
<b>(c)</b> In Java, instance variables are encapsulated by using the	<b>1</b>	<b>E</b>	<b>5</b>
(i) private keyword (ii) public keyword (iii) protected keyword (iv) None			
<b>(d)</b> A Class consists of which of these abstractions?	<b>1</b>	<b>E</b>	<b>5</b>
(i) Attributes (ii) Set of objects (iii) Operations (iv) All of the mentioned			
<b>(e)</b> An object symbol is divided into what parts?	<b>1</b>	<b>E</b>	<b>5</b>
(i) Top compartment (ii) All of the mentioned (iii) Bottom Compartment (iv) None of the mentioned			
<b>Q.6 Attempt Any Two</b>	<b>[10]</b>		
<b>(a)</b> Enlist and explain types of constructors in detail.	<b>5</b>	<b>R+</b> <b>U</b>	<b>3</b>
<b>(b)</b> Explain the life cycle of an object with all the stages.	<b>5</b>	<b>U</b>	<b>3</b>
<b>(c)</b> Discuss public, private and protected access modifiers with an example.	<b>5</b>	<b>U</b>	<b>3</b>

<b>Q.7 Attempt Any Two</b>	<b>[10]</b>		
(a) Explain how to achieve encapsulation in java with a suitable example.	5	U	3
(b) Define getters and setters.	5	R	3
(c) Design a class to represent a bank account. Include the following members: Data Members <ul style="list-style-type: none"> <li>• Name of Depositor</li> <li>• Account Number</li> </ul> Methods <ul style="list-style-type: none"> <li>• To assign initial values</li> <li>• To deposit an amount</li> <li>• Type of account</li> <li>• Balance amount in the account</li> <li>• To withdraw an amount after checking balance</li> <li>• To display the name and balance</li> </ul>	5	C	3
<b>Q.8 Attempt Any Two</b>	<b>[10]</b>		
(a) Explain abstract class and abstract method with an example.	5	U	5
(b) Discuss dependency, generalization and association in detail.	5	A	5
(c) Differentiate abstraction and encapsulation.	5	U	5

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