

GUJARAT TECHNOLOGICAL UNIVERSITY
Diploma Engineering – SEMESTER – 4 (NEW) – EXAMINATION – Summer-2025

Subject Code: 4340701

Date: 13-05-2025

Subject Name: Advanced Object Oriented Programming

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make Suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of simple calculators and non-programmable scientific calculators are permitted.
5. English version is authentic.

		Marks
Q.1	(a) Explain main method in java.	03
પ્રશ્ન.1	(અ) Java માં main method સમજાવો.	૦૩
	(b) Discuss scope of variables.	04
	(બ) Scope Variable વિશે ચર્ચા કરો.	૦૪
	(c) Write a java program that takes an integer input(n) and print out the first n terms of the Fibonacci sequence.	07
	(ક) એક જાવા પ્રોગ્રામ લખો જે પૂર્ણાંક ઇનપુટ(n) લે છે અને ફિબોનાકી ક્રમની પ્રથમ n terms છાપે છે	૦૭
OR		
	(c) Write a java program that takes an integer input(n) and check given number is palindrome or not.	07
	(ક) એક જાવા પ્રોગ્રામ લખો જે પૂર્ણાંક ઇનપુટ(n) લે અને આપેલ નંબર પેલિન્ડ્રોમ છે કે નહીં તે તપાસો.	૦૭
Q.2	(a) what is Wrapper class? Explain use of any one wrapper class.	03
પ્રશ્ન.2	(અ) રેપર ક્લાસ શું છે? કોઈપણ એક રેપર class નો ઉપયોગ સમજાવો.	૦૩
	(b) Explain Class Variable and local variable.	04
	(બ) Class Variable and local variable સમજાવો.	૦૪
	(c) Create a class named “Calculator” that perform add, subtract, multiply and division operation. Create separate method for each operation.	07
	(ક) Create a class named “Calculator” that perform add, subtract, multiply and division operation. Create separate method for each operation.	૦૭
OR		
Q.2	(a) How to prevent method overriding?	03
પ્રશ્ન.2	(અ) Method overriding કેવી રીતે રોકી શકાય?	૦૩
	(b) What is abstraction? How to achieve it in Java?	04
	(બ) Abstraction શું છે? તે કેવી રીતે પ્રાપ્ત કરવું?	૦૪
	(c) Write a java program to demonstrate use of “String” class methods : chatAt(), contains(), format(), length(), split()	07
	(ક) Write a java program to demonstrate use of “String” class methods : chatAt(), contains(), format(), length(), split()	૦૭
Q. 3	(a) Define ‘static’ keyword in Java.	03

પ્રશ્ન.3	(અ) Static કીવર્ડ સમજાવો.	૦૩
	(b) Explain different visibility controls used in Java.	૦૪
	(બ) Java માં ઉપયોગમાં લેવાતા વિવિધ Visibility Control સમજાવો.	૦૪
	(c) Write a Java program to create a class known as "BankAccount" with methods called deposit() and withdraw(). Create a subclass called SavingsAccount that overrides the withdraw() method to prevent withdrawals if the account balance falls below one hundred.	૦૭
	(ક) Write a Java program to create a class known as "BankAccount" with methods called deposit() and withdraw(). Create a subclass called SavingsAccount that overrides the withdraw() method to prevent withdrawals if the account balance falls below one hundred.	૦૯
OR		
Q. 3	(a) Explain copy constructor with example.	૦૩
પ્રશ્ન.3	(અ) Copy constructor ઉદાહરણ સાથે સમજાવો.	૦૩
	(b) Differentiate Abstract class and Interface.	૦૪
	(બ) તફાવત લખો: Abstract class અને Interface.	૦૪
	(c) Create interface "Shape" having method getArea() and getPerimeter(). Create class Rectangle and Circle that override getArea() and getPerimeter() method to calculate area and perimeter of Rectangle and Circle.	૦૭
	(ક) Create interface "Shape" having method getArea() and getPerimeter(). Create class Rectangle and Circle that override getArea() and getPerimeter() method to calculate area and perimeter of Rectangle and Circle.	૦૯
Q. 4	(a) How to use 'this' keyword in Java program?	૦૩
પ્રશ્ન.4	(અ) જાવા પ્રોગ્રામ માં 'this'નો ઉપયોગ કેવી રીતે થાય છે ?	૦૩
	(b) Discuss the various levels of protection available for packages and their implications.	૦૪
	(બ) પેકેજો અને તેમની અસરો માટે ઉપલબ્ધ સુરક્ષાના વિવિધ સ્તરોની ચર્ચા કરો.	૦૪
	(c) Write a program that executes two threads. One thread displays "Thread1" every 1000 milliseconds, and the other displays "Thread2" every 2000 milliseconds. Create the threads by extending the Thread class.	૦૭
	(ક) Write a program that executes two threads. One thread displays "Thread1" every 1000 milliseconds, and the other displays "Thread2" every 2000 milliseconds. Create the threads by extending the Thread class.	૦૯
OR		
Q. 4	(a) Explain package. List out steps to create package.	૦૩
પ્રશ્ન.4	(અ) પેકેજ સમજાવો. પેકેજ બનાવવા માટેના steps ની યાદી આપો.	૦૩
	(b) Explain how to implement multiple inheritance in java through interface?	૦૪
	(બ) ઇન્ટરફેસ દ્વારા જાવામાં multiple inheritance કેવી રીતે અમલમાં મૂકવું તે સમજાવો?	૦૪
	(c) What is Thread? Describe the complete life cycle of a thread.	૦૭
	(ક) થ્રેડ શું છે? થ્રેડના સંપૂર્ણ જીવન ચક્રનું વર્ણન કરો.	૦૯
Q.5	(a) Explain try and catch.	૦૩
પ્રશ્ન.5	(અ) Try અને catch સમજાવો.	૦૩
	(b) Explain method of Inputstream (any four).	૦૪
	(બ) ઇનપુટસ્ટ્રીમની પદ્ધતિ સમજાવો (કોઈપણ ચાર).	૦૪

- (c) 1. Create an ArrayList of String type called “colors” and add the following colors to it. **07**
 Red, Green, Blue, Yellow, Orange
 2. Display the contents of the “colors” ArrayList on the console.
 3. Remove the Yellow color from the “colors” Arraylist and verify it.
- (ક) 1. Create an ArrayList of String type called “colors” and add the following colors to it. **૦૭**
 Red, Green, Blue, Yellow, Orange
 2. Display the contents of the “colors” ArrayList on the console.
 3. Remove the Yellow color from the “colors” Arraylist and verify it.

OR

- Q.5** (a) Explain Finally. **03**
- પ્રશ્ન.5 (અ) Finally સમજાવો. **૦૩**
- (b) Define Stream. Explain method of Outputstream. **04**
- (બ) Stream વ્યાખ્યાન કરો. Outputstream ની methodmethod સમજાવો. **૦૪**
- (c) Explain HashSet and TreeSet with program. **07**
- (ક) પ્રોગ્રામ સહિત HashSet અને TreeSet સમજાવો. **૦૭**