

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2020****Subject Code:3140705****Date:24/02/2021****Subject Name:Object Oriented Programming -I****Time:02:30 PM TO 04:30 PM****Total Marks:56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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|------------|-----|---|-----------|
| Q.1 | (a) | What is the difference between oop and procedural oriented language? | 03 |
| | (b) | Explain type-conversion in java. | 04 |
| | (c) | Explain class and object with respect to java. | 07 |
| Q.2 | (a) | Difference between Nested if and multi-way if statements. | 03 |
| | (b) | What is constructor overloading? | 04 |
| | (c) | What are the data-types and operators available in Java? | 07 |
| Q.3 | (a) | Explain access modifiers with Example. | 03 |
| | (b) | Explain following keywords
1) Static 2) Super | 04 |
| | (c) | Differentiate between final, finally and finalize. What will happen if we make class and method as final? | 07 |
| Q.4 | (a) | Explain abstract class with example. | 03 |
| | (b) | Explain Primitive data type and wrapper class data types. | 04 |
| | (c) | Write a program to rise and handle divide by zero exception. | 07 |
| Q.5 | (a) | Explain mouse and key event handler in JavaFX. | 03 |
| | (b) | Explain following controls
1) text-Area 2) scrollbar 3) checkbox 4) combo-box | 04 |
| | (c) | Write a method for computing x^y doing repetitive multiplication. X and y are of type integer and are to be given as command line arguments. Raise and handle exception(s) for invalid values of x and y. | 07 |
| Q.6 | (a) | Explain following classes in JavaFX.
1) Color class 2) font class 3) Image and image view class | 03 |
| | (b) | What is Exception? Demonstrate how you can handle different types of exception separately. | 04 |
| | (c) | List and explain available type of constructors in java with example. | 07 |
| Q.7 | (a) | Differentiate Text I/O and Binary I/O. | 03 |
| | (b) | Explain usage of class FileInputStream and FileOutputStream by giving an example. | 04 |
| | (c) | Explain Comparable and Cloneable interface. | 07 |
| Q.8 | (a) | What is Collection? Explain list, stack, queue classes. | 03 |
| | (b) | How to access object via reference variable? Explain with example. | 04 |
| | (c) | What do you understand by thread? Describe the complete life cycle of thread. | 07 |

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2021****Subject Code:3140705****Date:05/01/2022****Subject Name:Object Oriented Programming -I****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. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) What are syntax errors (compile errors), runtime errors, and logic errors?	03
	(b) What is Type Casting? Explain widening and narrowing type casting.	04
	(c) Explain Data Types in detail with example.	07
Q.2	(a) What is an interface? Explain with example.	03
	(b) Explain “Passing argument by values” with example.	04
	(c) Explain File class with its methods.	07
	OR	
	(c) What is polymorphism? Explain dynamic binding with example.	07
Q.3	(a) Explain abstract class with example.	03
	(b) Explain Method Overloading and Overriding.	04
	(c) Write a program that counts the number of words in a text file. The file name is passed as a command line argument. The words in the file are separated by white space characters.	07
	OR	
Q.3	(a) Differentiate String class and StringBuffer class.	03
	(b) Explain following keywords (1) super (2) this	04
	(c) Write a program that illustrates interface inheritance. Interface P is extended by P1 and P2. Interface P12 inherits from both P1 and P2. Each interface declares one constant and one method. class Q implements P12. Instantiate Q and invoke each of its methods. Each method displays one of the constants.	07
Q.4	(a) Explain visibility modifiers.	03
	(b) Explain following controls (1) Checkbox (2) Radio Button (3) Textfield (4) Label	04
	(c) What is an Exception? Explain try, catch and finally with example.	07
	OR	
Q.4	(a) What is the keyword “throw” used for? What is the keyword “throws” used for?	03
	(b) What is constructor? Explain constructor overloading.	04
	(c) Explain different layout panes used in JavaFX.	07
Q.5	(a) Differentiate Text I/O and Binary I/O	03
	(b) Explain Inner class with example.	04
	(c) What is thread? Describe the complete life cycle of thread.	07
	OR	

Q.5	(a) Compare List and Set.	03
	(b) Explain static variable and static method with example.	04
	(c) Explain Thread Synchronization with example.	07

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Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– IV EXAMINATION – SUMMER 2020****Subject Code: 3140705****Date: 26/10/2020****Subject Name: Object Oriented Programming -I****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.

		MARKS
Q.1	(a) Explain JRE, JDK and JIT.	03
	(b) Explain static keyword with example.	04
	(c) Explain inheritance with its types and give suitable example.	07
Q.2	(a) Compare object-oriented programming with sequential programming.	03
	(b) Method main is a public static method. Justify	04
	(c) Write a program, which shows an example of function overloading. Also, differentiate between function overloading and overriding.	07
	OR	
	(c) Write a program to take string input as command line argument. In addition, count occurrence of each character in a given string.	07
Q.3	(a) Write difference between String class and StringBuffer class.	03
	(b) Explain super keyword with example.	04
	(c) Describe abstract class called Shape, which has three subclasses say Triangle, Rectangle, and Circle. Define one method area() in the abstract class and override this area() in these three subclasses to calculate for specific object i.e. area() of Triangle subclass should calculate area of triangle likewise for Rectangle and Circle.	07
	OR	
Q.3	(a) How can we protect sub class to override the method of super class? Explain with example.	03
	(b) Define Interface and explain how it differs from the class.	04
	(c) What do you mean by run time polymorphism? Write a program to demonstrate run time polymorphism.	07
Q.4	(a) Differentiate between Text I/O and Binary I/O.	03
	(b) Explain ArrayList class.	04
	(c) What is an Exception? List out various built-in exceptions in JAVA and explain any one Exception class with suitable example.	07
	OR	
Q.4	(a) How do you declare a generic type in a class? Explain.	03
	(b) Write a JAVA program to read student.txt file and display the content.	04
	(c) Explain Thread life cycle in detail. Write a program to create a child thread to print integer numbers 1 to 10.	07
Q.5	(a) Explain in brief: Color class and its methods.	03
	(b) What method do you use to obtain an element in the collection from an iterator? Explain with example.	04
	(c) Enlist various layout panes and explain any two in detail.	07
	OR	
Q.5	(a) Compare Set and List interfaces.	03
	(b) Write importance of JAVAFX compare to AWT and Swing.	04
	(c) How do you create a Scene object? How do you set a scene in a stage? Is it possible to create multiple scenes? Write a program to place a circle in the scene and fill circle with red color.	07

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2021****Subject Code:3140705****Date:11/09/2021****Subject Name:Object Oriented Programming -I****Time:02:30 PM TO 05:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Define object oriented concepts.	03
	(b) What is the difference between the StringBuffer and StringBuilder classes?	04
	(c) Define constructor. How objects are constructed? Explain constructor overloading with an example.	07
Q.2	(a) Explain about arrays, Type of arrays and arrays methods.	03
	(b) Explain about Encapsulation, Abstraction.	04
	(c) State the design hints for class and inheritance. Also discuss the working and meaning of the “static” modifier with suitable examples.	07
	OR	
	(c) Explain in detail how inheritance and polymorphism are supported in java with necessary examples.	07
Q.3	(a) Explain about different types of string methods.	03
	(b) Write short notes on access specifiers and modifiers in java.	04
	(c) What is an Exception? Explain the exception hierarchy. Explain how to throw, catch and handle Exceptions.	07
	OR	
Q.3	(a) Explain about Final class, Fields, Methods.	03
	(b) What is a Package? What are the benefits of using packages? Write down the steps in creating a package and using it in a java program with an example.	04
	(c) Explain the concept of inner classes and explain the types of inner classes with an example program.	07
Q.4	(a) What is Dynamic binding? Show with an example how dynamic binding works.	03
	(b) Write short notes about I/O stream classes.	04
	(c) Explain the thread state, thread properties and thread synchronization.	07
	OR	
Q.4	(a) Explain the concept of finalization.	03
	(b) What is reflection and how does it help to manipulate java code.	04
	(c) Write a java program to implement the multiple inheritance concepts for calculating area of circle and square.	07
Q.5	(a) Explain about callback	03
	(b) Explain the interface with an example program.	04
	(c) What is Generic programming and why is it needed? Explain with example. List the limitations and restrictions of generic programming	07

OR

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|------------|-----|---|-----------|
| Q.5 | (a) | Explain about Proxy class, Interface and Methods. | 03 |
| | (b) | Explain about adapter classes and mouse events with an example. | 04 |
| | (c) | With a neat diagram explain the Model view controller design pattern and list out the advantages and disadvantages of using it in designing an application. | 07 |

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2022****Subject Code:3140705****Date:08-07-2022****Subject Name:Object Oriented Programming -I****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. Simple and non-programmable scientific calculators are allowed.

		Marks
Q.1	(a) List out features of Java. Explain any two features.	3
	(b) Write a single program which demonstrates the usage of following keywords: i) import, ii) new, iii) this, iv) break, v) continue Show how to compile and run the program in java.	4
	(c) Demonstrate use of try-catch construct in case of hierarchical Exception Handling. (i.e handling various exception belongs to the exception hierarchy)	7
Q.2	(a) Explain following Java keywords using appropriate examples: i) static, ii) final, iii) super	3
	(b) Consider class A as the parent of class B. Explain among the following which statement will show the compilation error. i) A a = new A(); ii) A a = new B(); iii) B b = new A(); iv) B b = new B();	4
	(c) Write a java program to take infix expressions and convert it into prefix expressions.	7
	OR	
	(c) Write a java program that evaluates a math expression given in string form from command line arguments.	7
Q.3	(a) Defines types of inheritance.	3
	(b) Explain the following constructors using appropriate example: i) Default constructor and Parameterised constructor ii) Shallow copy and Deep copy constructor	4
	(c) Explain file io using byte stream with appropriate example. hint: use FileInputStream, FileOutputStream	7
	OR	
Q.3	(a) Define types of polymorphism	3
	(b) Explain the following: i) Arguments and Parameters of a function ii) Pass by Value and Pass by reference	4

- (c) Explain file io using character stream with appropriate example. 7
hint: use FileReader, FileWriter
- Q.4** (a) Define Encapsulation and access specifier 3
(b) Explain multithreading using Thread class 4
(c) Write a short note on Java Collections. 7
- OR**
- Q.4** (a) Differentiate between Abstract class and Interfaces 3
(b) Explain multithreading using Runnable interface 4
(c) Write a program to add input elements in ArrayList collection class, then sort the inserted elements in descending order and display the sorted output. 7
hint: use Collections.reverseOrder()
- Q.5** (a) Explain following Java keywords using appropriate examples: 3
i) throw, ii) throws, iii) finally
(b) In multi-threading using Thread class, explain with an example how a start() method call invokes the run method of the class extending Thread class. 4
(c) Write a short note on JAVAFX controls. 7
- OR**
- Q.5** (a) Explain thread life cycle 3
(b) In multi-threads using the Runnable interface, explain with an example how a start() method calls the run() method of a class implementing a runnable interface. 4
(c) Develop a GUI based application using JAVAFX controls. 7
