Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2150704 **Date: 27/04/2017**

Subject Name: Object Oriented Programming

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.**

Q.1 Answer the following questions. **14**

1 What are the four integer types supported by Java?

2 What will be the result of the following Java expression?
4 * 2 – 5 > 4 && 3 < 5 - 3

3 Create a two dimensional array named 'marks' and initialize it.

4 What makes the signature of a method?

5 When must a class be declared abstract?

6 How would you define a group of constant that will be used by many classes?

7 What does static import do?

8 Which class is at the top of the exception hierarchy?

9 Which class gives you access to the attribute of a file?

10 What is the effect of adding the synchronized keyword to a method?

11 What is UML? How it is useful?

12 What is the difference between uses and extends?

13 How do we represent an abstract class and interface in UML?

14 How do we represent private, public and protected members in class diagrams?

Q.2 **(a)** What are command line arguments? Write a java program which reads a line from command line and prints that line in reverse. **03**

(b) Differentiate following: **04**

i) String and StringBuffer class

ii) Class and Interface

(c) A Consulty Services is organized in to departments. Each department has eployees working in it. The attributes of department include departmnt code and department name. The attributes of employee include employee number, name, date of birth, gender, date of joining, designation, basic pay and skill. Each department has a manager managing it. There are supervisors in each deaprtment who supervise a set of employees. Each department controls a number of projects. A project is controlled only by one department. The attributes of project include project code and project name. An employee can work on any number of distinct projects on a day. The date an employee worked, the in time and out time has to be kept track. Develop a class diagram for above scenario. **07**

OR

(c) Develop a use case model for the following scenario: The goal is to process different types of credit applications at a bank. The credit applications include those for home equity loans, home mortgage loans, auto loans, and cradit cards. From the bank's perspective, thefore, the custopmers are home owners, home buyers, and credit card applicants. To process any type of loan or credit card application, the bank needs to check the applicant's credit history, based on a report from the credit bureau. For the first two types of loans, the bank summons an assessor to assess the property value before making a decision. **07**

Q.3 (a) Write a program that outputs the host name and numerical IP address for your local host machine. **03**

(b) What is the purpose of 'static' and 'this' keyword in Java. Write a program to explain this. **04**

(c) Explain different uses of 'super' keyword with the help of Java program. **07**

OR

Q.3 (a) How a garbage collection done in Java? What is the purpose of finalize () method? **03**

(b) What is compile time polymorphism? Use the compile time polymorphism in a Java program to create the objects. **04**

(c) Write a java program to explain runtime polymorphism using interfaces. **07**

Q.4 (a) What is a CLASSPATH? Explain it by giving an example. **03**

(b) When do we use throws statement? Explain it by giving an example. **04**

(c) Write a java program to search the file named the word entered as a filename from command line: if it exists in the system then program should print the content of a file on console. **07**

OR

Q.4 (a) What is Collection in java? List out various methods of List and Enumeration interfaces. **03**

(b) When do we use 'throw' statement? Explain it by giving an example. **04**

(c) What are the two methods to create thread? Write a multithreaded program to explain the use of join () method. **07**

Q.5 (a) What is modeling? Explain the purpose of modeling. **03**

(b) Explain the following terms: event, state, transition, and condition. **04**

(c) What are the four basic relationships defined in UML about classes? Give suitable examples for usage of each type of relationships? **07**

Q.5 (a) List out the purpose of various interaction modes? **03**

(b) Explain the following terms: association end, constraint, derived data, and meta-data. **04**

(c) What is the purpose of state modeling? Briefly explain the elements of state diagram. Develop a state model for telephone system. **07**

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