Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY M. E. - SEMESTER – I • EXAMINATION – WINTER • 2013

Subject code: 712303N Date: 03-01-2014

Subject Name: Object Oriented Methodology

Time: 10.30 am – 01.00 pm Total Marks: 70

Instructions:

Q.2

(b)

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full mark.
- Q.1 (a) We want to implement a text paragraph. A paragraph is a sequence of lines. 10 Each line is represented by a string. The Paragraph class has to provide at least the following methods:

List<*String*>*alignedText()*;//Returns list of formatted line in paragraph.

String getLine(int i); // Returns the line at the ith position.

int getCountLines(); // Returns the number of lines in the paragraph.

void addLine(String s); // Appends a line to the paragraph.

We want to develop a Java AWT component that can display formatted text in a flexible way. To do that, we want to reuse the Paragraph class. Each Java AWT component inherits from class Component. Our FormattedTextArea will inherit from the following library classes:

public class TextComponent extends Component implements Accessible {
... }

public class TextArea extends TextComponent
{

public void append(String str) { ... }
public String getText() { ... } ... }

Develop a design for FormattedTextArea that allows us to reuse Paragraph and to inherit from TextArea. Which design pattern could you use? Draw appropriate diagram for that design pattern.

OR

(b) Compare Class and State Diagram.

- 07
- **(b)** Explain various properties of Association Ends with example.

List out various UML diagram by their category.

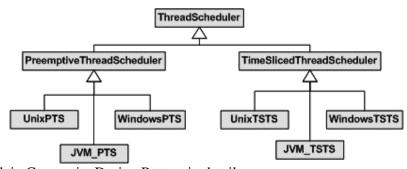
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04

Explain Abstract Classes in details.

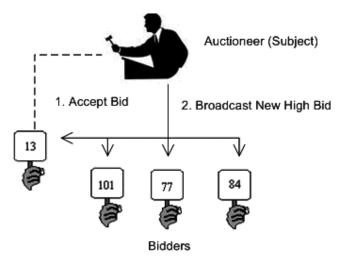
- 07
- **Q.3** (a) Suggest a suitable design pattern for following diagram (situation).

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(b) Explain Composite Design Pattern in detail.

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(b) Explain Visitor Design Pattern in detail.

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- Q.4 (a) Write down steps for Design and Analysis procedure.
 (b) Consider an information system to be created for handling the business of a supermarket. For each of the following, state if it is a possible class. If not, explain why not. Otherwise, Why would you consider it to be a class? What is its role in the system?
 - (a) Customer
- (b) Vegetable
- (c) Milk (f) Quantity on hand for product
- (d) Stock(e) Canned Food(c) Explain Bags and Sequences in brief.

04

OR

O.4 (a) Explain in brief EXTRACT Method.

03

Q.4 (b) Among the following requirements, which are functional and which are **07** non-functional?

(a) Paychecks should be printed every two weeks.

- (b) Database recovery should not take more than one hour.
- (c) The system should be implemented using the C++ language.

OR

- (d) It should be possible to selectively print employee checks.
- (e) Employee list should be displayed in lists of size 10.
- (c) Explain Cohesion and Coupling in brief.

04

Q.5 (a) Explain Cloneable interface.

- (b) Explain design of View Subsystem.

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Q.5 (a) Explain Runnable interface.

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(b) Explain Java RMI in brief.

07
