

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER-III • EXAMINATION – WINTER - 2013

Subject Code: 630002

Date: 09-12-2013

Subject Name: Fundamentals of Java 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**
- | | | | |
|-----|---|--|----|
| (a) | i. | What is Initializer block? | 02 |
| | ii. | Explain how an instance becomes eligible for garbage collection. | 02 |
| | iii. | What is variable shadowing? | 02 |
| | iv. | What is bytecode? | 01 |
| (b) | Explain the basic principles of object oriented programming. | | 04 |
| | Compare short circuit operators with their counter parts with an example. | | 03 |
- Q.2**
- | | | | |
|-----|---|--|----|
| (a) | Explain the access specifiers which can be applied to members of class and package with an example. | | 07 |
| (b) | i. | Compare Abstract classes and Interfaces. | 04 |
| | ii. | What are Wrapper classes? Explain boxing and unboxing. | 03 |

OR

- | | | | |
|-----|---|--|----|
| (b) | Compare and contrast String, StringBuffer and String Builder classes in java. | | 04 |
| | What is package? State the advantages of creating packages. | | 03 |
- Q.3**
- | | | | |
|-----|---|---|----|
| (a) | Explain the execution of an application with diagrammatic representation of runtime stack, method area and head area using appropriate example. | | 07 |
| (b) | i. | What is exception? State the advantages of exception handling with try and catch block over traditional if else statements. | 04 |
| | ii. | Differentiate between Checked and unchecked exception. | 03 |

OR

- Q.3**
- | | | | |
|-----|---|---|----|
| (a) | Explain collection framework in detail. | | 07 |
| (b) | i. | Compare inner class and top level nested classes. | 04 |
| | ii. | Write short note on enum. | 03 |

Q.4 (a) What is thread synchronization? Explain with an appropriate example. **07**
Compare synchronized methods and synchronized blocks.

(b) i. Name bridge classes from Byte streams to Character streams. **04**
How do they work?

ii. What is Random access File? List any four important methods of it. **03**

OR

Q.4 (a) List possible enum values which may be returned by getState() method of Thread class. Explain thread lifecycle with diagram. **07**

(b) i. Compare Byte Streams and Character Streams. **04**

ii. What is serialization? State the meaning of transient keyword. **03**

Q.5 (a) Explain life cycle of Applet with a properly labeled diagram. state the security restrictions placed on Applet. **07**

(b) i. Explain Event delegation model with an appropriate example. **04**

ii. Compare Swing components and AWT components. **03**

OR

Q.5 (a) Explain the class hierarchy of component class in java.awt package. **07**

(b) i. Write short note on Layout managers. **04**

ii. What are adapter classes? Explain its use. **03**
