

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**MCA - SEMESTER- III • EXAMINATION – SUMMER - 2016**

**Subject Code: 2630002****Date: 03/06/ 2016****Subject Name: Fundamentals of Java Programming****Time: 02.30 PM 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.

- Q.1 (a) State whether the following statements are true or false. Justify your answers if false. 07**
- i) We can implement destructor in java.
  - ii) We can't overload constructor in java.
  - iii) The size of "char" data type is 1 byte.
  - iv) Each reference variable always refers to different instances (object), i.e. two references variables cannot refer to the same instance.
  - v) Constructor cannot be declared within "Abstract class" in java.
  - vi) "Object" is a class in java.
  - vii) The default access specifier for members of a class in java is "public".
- b) i) How can we declare and use an array for primitive data type variables and user defined data type objects? 05**
- ii) How does "%" operator behave in java? Explain with java code. 02**
- Q.2 (a) i) What is the difference between "class" and "abstract class"? 07**
- ii) Differentiate between "class" and "enum" type. 07**
- (b) What will be the output of following code? Give the proper justification in case of error (compilation or runtime) in code and modify the error for generating output. 07**

```
class Student{
public void get_marks(){System.out.println("get marks of students"); }
}
class MCA_student extends Student{
public void get_marks(){ System.out.println("get marks of MCA students"); }
public void get_job(){ System.out.println("get jobs of MCA students "); }
}
public class Student_main{
public static void main(String args[]){
Student obj_ref1;
obj_ref1.get_marks();
obj_ref1.get_job();
MCA_student mobj_ref1;
mobj_ref1=new MCA_student();
mobj_ref1.get_job();
}
}
```

**OR**

- (b) i) What is the use of "interface" in java? 03**
- ii) A static block is declared within a class. But, object of that class is not created within an application.**

- Write down two java instruction code through which, static block of above mentions class, is executed without creation of object of that class. **04**
- Q.3 (a) i)** Explain all available access specifiers associated with members of a class using inheritance in java. **03**
- ii)** Explain “implements” and “extends” keywords with java code. **04**
- (b) i)** Explain “method overriding” and “final” method within a class. **05**
- ii)** Explain “boxing” and “unboxing” conversions. **02**
- OR**
- Q.3 (a) i)** Differentiate between “checked” and “unchecked” exceptions. **02**
- ii)** Explain the use of “throw”, “throws”, “catch” keywords with java code. **05**
- (b) i)** Explain the syntax and use of “Anonymous class” within an application. **04**
- ii)** What is the use of “File” class for managing files in file system? **03**
- Q.4 (a) i)** What are the steps for creating a new thread of execution? Explain the steps with the help of class which is derived from “Thread” class or “Runnable” interface. **05**
- ii)** Explain daemon thread. **02**
- (b) i)** Write an application which creates a frame which is derived from “Frame” class and displays “Hello MCA Student” by overriding paint() of “Frame” class. **05**
- ii)** Write down the class hierarchy of “Panel” and “Frame” class **02**
- OR**
- Q.4 (a) i)** Explain the various “Layout Managers” available in AWT. **04**
- ii)** Implement “FileDialog” class within java application. **03**
- (b)** Explain thread “synchronization” with java code. **07**
- Q.5 (a)** What is the use of “Annotation” in java? **03**
- Can we declare main () in applet application? Justify your answer. **04**
- (b)** Write a java application which takes the name of the directory as a command line argument and prints the list of files in the directory with its’ last modification date, file size, file name. **07**
- OR**
- Q.5 (a)** Explain life cycle of “Applet” class. **07**
- (b)** Create an application which creates a Frame that has two text boxes .One text box for accepting integer value and 2<sup>nd</sup> text box is used for display reverse integer value of input value. Application is capable to handle run time Exception (input error or any logical error) using Exception handling technique. **07**

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