



Name :

Roll No. :

Invigilator's Signature :

**CS/MCA/SEM-5/MCAE-503B/2010
2010**

OBJECT ORIENTED PROGRAMMING WITH JAVA

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :

$$10 \infty 1 = 10$$

```
i) int j;

for ( int i = 0 ; i < 14 ; i ++ ) {

if ( i < 10 {

j = 2 + i ;

}

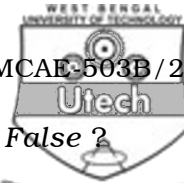
system.out.println ( "j :" + j + "i :" + i ) ;

}
```



What is illegal in the above code ?

- a) Integer 'j' is not initialized
 - b) Nothing
 - c) You cannot declare integer 'i' inside the for-loop declaration
 - d) The syntax of the 'if' statement is incorrect
 - e) You cannot print integer values without converting them to strings.
- ii) Which one of the following is a valid declaration of an applet ?
- a) Public class MyApplet extends java.applet.Applet {
 - b) Public Applet MyApplet {
 - c) Public class MyApplet extends applet implements Runnable {
 - d) Abstract class MyApplet extends java.applet.Applet {
 - e) Class MyApplet implements Applet {
- iii) What will be the output of the following line ?
- ```
System.out.println ("The full marks is : "+ 17 + 3);
```
- a) 20
  - b) 17 + 3
  - c) 173
  - d) 371
  - e) None of these.



- iv) Which one of the following statements is *False* ?
- a) Java supports multi-threaded programming
  - b) Threads in a single program can have different priorities
  - c) Multiple threads can manipulate files and get user input at the same time
  - d) Two threads can never react on the same object at the same time
  - e) None of these.
- v) What is the value of Y ?
- ```
int Y = 8/3
```
- a) 1
 - b) 2.6666667
 - c) 3
 - d) 2
 - e) None of these.
- vi) Which one of the following is the equivalent of main() in a thread ?
- a) start()
 - b) go()
 - c) run()
 - d) begin()
 - e) The class constructor.



- vii) What does it mean if a method is final synchronized ?
- a) Methods which are synchronized cannot be final
 - b) This is the same as declaring the method private
 - c) Only one synchronized method can be invoked at a time for the entire class
 - d) The method cannot be overridden and is always threadsafe
 - e) All final variables reference in the method can be modified by only one thread at a time.
- viii) An interface can never be private or protected.
- a) True
 - b) False
 - c) Sometimes true
 - d) Sometimes false
 - e) None of these.
- ix) Class implementing that interface should
- a) necessarily be an abstract class
 - b) have the method `public abstract void someMethod() ;`
 - c) have the method `public void someMethod()` which has to throw an exception which is a subclass of `java.lang.Exception`
 - d) should have the method `public void someMethod()` which need not throw an Exception
 - e) none of these.



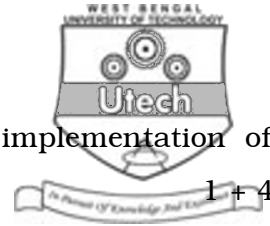
- x) A is a variable that may not be serialized.
- local variable
 - transient variable
 - instance variable
 - class variable
 - none of these.
- xi) Inheritance can be prevented by the keyword.
- static
 - super
 - final
 - this
 - none of these.
- xii) Interface should be declared as
- protected
 - public
 - private
 - default
 - none of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

- What is byte code ? How does JVM help to implement the platform independence nature ? $2 + 3$
- What is 'this' keyword ? What is constructor ? What are the benefits of using constructor rather than function ? $1 + 1 + 3$



4. What is 'super' keyword ? Explain the implementation of super with a suitable example. 1 + 4
5. Explain the difference between throw and throws. What is chained exception ? Give an example. 1 + 2 + 2
6. a) Can you set priorities in a thread ? Explain.
- b) What do you mean by synchronization ? 3 + 2

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 ∞ 15 = 45

7. a) What is method overriding ?
- b) "Method overriding can be prevented in Inheritance." Justify with example.
- c) What is wrapper class ? 2 + 10 + 3
8. a) Explain the Applet Life Cycle.
- b) "Applet class never declared as private." Why ?
- c) Develop an Applet class that receives n number of values as input from the user and displays the maximum, minimum and average numbers. 4 + 4 + 7
9. a) Define the term 'Runnable Interface'.
- b) Why is interface implemented by all threads ?
- c) Write a program to implement the deadlock situation using thread. 3 + 2 + 10



10. a) What is package ?
- b) Explain the different types of package.
- c) Design a package that contain the class Worker and another package to contain the interface Wages. Now write a program to display the details of workers along with their wages by using the above mentioned package and interface.
11. Write short notes on any *three* of the following : 3 ∞ 5
- a) Inter-thread Communication
- b) AWT
- c) Abstract Class
- d) Garbage Collection
- e) Dynamic Method Dispatch.
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