	Utech
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Invigilator's Signature :	

# CS / BCA / SEM-6 / BCAE-602B / 2011 2011

# **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 )

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- i) String s = "s";System.out.println (s);The output is
  - a) s

- b) "s'
- c) Compile error
- d) Run time error.
- ii) Consider the following statements:

int 
$$a = 3$$
,  $b = 2$ ;  
 $a = (a < b) ? (a + b) : (a - b);$ 

What will be the output of  $\alpha$ ?

a) 5

b) - 1

c) 1

d) 3.

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iii)	Consider the following statements:						
	int $a[]$ = new int $[3]$ ;						
	a [ 3	a[3]=7;					
	Syst	System.out.println ( a [ 3 ] );					
	The	output is					
	a)	3	b)	7			
	c)	Compile error	d)	Run time error.			
iv)	Con	Consider the following statements:					
	Stri	String $s = \text{"BCAE-602B"}$ ;					
	Syst	System.out.println (s.char At (2));					
	The	output is					
	a)	C	b)	A			
	c)	Exception occur	d)	2.			
v)	Which class can not be initialized?						
	a)	Abstract	b)	Public			
	c)	Final	d)	Protected.			
vi) How many catch clauses can try statem				statement have?			
	a)	One	b)	Any number			
	c)	Zero	d)	None of these.			
vii)	An e	exception is	ion is				
	a)	run time error	b)	compile time error			
	c)	machine error	d)	none of these.			
viii)	How many default constructors can a class have, when						
		as constructor ?					
	a)	1	b)	0			
	c)	2	d)	Any number.			
ix)	The JVM complies a java source code to						
	a)	object code	b)	executable code			

d)

none of these.

x) JRE stands for

c)

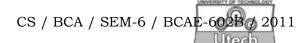
- a) Java Research Engine
- b) Java Remote Engine
- c) Java Runtime Environment

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d) none of these.

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#### **GROUP - B**

### (Short Answer Type Questions)

Answer any three of the following.

- $3 \times 5 = 15$
- 2. Explain method overloading and method overriding with the help of an example.
- 3. What do you mean by interface ? Write the difference between interface and abstract class.
- 4. "Objects are passed by reference in java." Explain with example.
- 5. What is "dynamic method dispatch" ? How is it accomplished?
- 6. What is difference between 'default and public' modifier and 'protected and private' access modifier?

#### **GROUP - C**

## (Long Answer Type Questions)

Answer any *three* of the following.  $3 \times 15 = 45$ 

- 7. a) What is the significance of final keyword used as a modifier before a variable? How is it used for a method or a class? Can an abstract method be declared as final?
  - b) Explain about 'this' keyword. Illustrate with a suitable example. 2 + 2
  - c) What are the differences between private and static modifiers while used in classes?
  - d) What is the purpose of finalization? Can we have more than one constructor in a class? If yes, explain the need of such situation. 2 + 1 + 1
- 8. a) What is multithreading ? Is it synonymous with multiprocessing ? 2 + 1
  - b) What is a thread? How is it different from a process?

1 + 2

- c) In how many ways a thread can be created? Illustrate the pros and cons of the different ways of creating a thread. 2+2
- d) Discuss the following functions with example: 5
  i) run() ii) suspend() iii) setPriorities()

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9. What is the purpose of Runabble Interface? What is the a) collection interface? Illustrate its usage. What is the difference between String & StringBuffer? 3 Write a Java program to add two strings using string c) buffer. What is a wrapper class? Illustrate through example. Is d) String a wrapper class? 10. a) Illustrate the use of serialization and deserialization. b) What is abstract base class? What is concrete derive class? Can there be an abstract class with no abstract methods in it? 1 + 1 + 1Does Java support static or dynamic binding? Explain. c) What is aggregation? How is aggregation different from d) association and generalization? Write a program in Java that demonstrates a three level e) inheritance. Use the various access controls for the same. 4 11. a) What is the difference between procedural programming paradigm and object oriented paradigm? Explain the Java compilation and execution of Java b) programming steps. What is the role of JVM? Is JRE different from JVM? c) What do you mean by automatic garbage collection in d) Java? What is use of finally clause in exception handling? e)

When is the finally clause of a try-catch-finally statement executed? Illustrate through example. 2 + 3

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