



BRAINWARE UNIVERSITY

Course – BCA

Object Oriented Technologies (BCA402)

(Semester – 4)

Time allotted: 3 Hours

Full Marks : 70

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group –A

(Multiple Choice Type Questions)

10 x 1 = 10

1. *Choose the correct alternative from the following*

(i) Which of the following tool is used to compile java code ?

- | | |
|------------|----------|
| a. jar | b. javac |
| c. javadoc | d. java |

(ii) Which of the following is used to interpret and execute Java Applet Classes hosted by HTML?

- | | |
|------------------|-----------------|
| a. appletshow | b. appletviewer |
| c. appletwatcher | d. appletscreen |

(iii) Which one of the following is a valid java statement?

- | | |
|---|---|
| a. <code>char[] c = new char();</code> | b. <code>char[] c = new char[];</code> |
| c. <code>char[] c = new char(4);</code> | d. <code>char[] c = new char[5];</code> |

(iv) In which area of memory, the system stores parameters and local variables whenever a method is invoked?

- | | |
|----------|--------------------------|
| a. Stack | b. Heap |
| c. Array | d. None of the mentioned |

(v) Which of the following is the functionality of ‘Data Abstraction’?

- | | |
|----------------------|---------------------------------|
| a. Reduce Complexity | b. Binds together code and data |
| c. Parallelism | d. None of the mentioned |

- (vi) Which of these is the functionality of 'Encapsulation'?
- a. Binds together code and data
 - b. Uses single interface for general class of actions.
 - c. Reduce Complexity
 - d. All of the mentioned
- (vii) Which of the following is a mechanism by which object acquires the properties of another object?
- a. Encapsulation
 - b. Abstraction
 - c. Inheritance
 - d. Polymorphism
- (viii) Which Keyword from the following is used to inherit properties from one class into another?
- a. extends
 - b. implements
 - c. native
 - d. All of the mentioned
- (ix) What part of object-oriented technology defines superclass and subclass relationships?
- a. Polymorphism
 - b. Scalability
 - c. Encapsulation
 - d. Inheritance
- (x) What is the super class of an array in Java?
- a. Array
 - b. Object
 - c. Super
 - d. None of the mentioned

Group – B

(Short Answer Type Questions)

3 x 5 = 15

Answer any *three* from the following

2. What do you mean by an abstract class? What is the utility of an abstract class in Java? [2+3]
3. Explain the static method in Java. [5]
4. What is the utilization of an ArrayList? Explain with Java code. [2+3]
5. Write Java code to print the summation of first 10 odd numbers. [5]
6. What do you mean by overriding method? Explain it with proper Java code. [2+3]

Group – C

(Long Answer Type Questions)

3 x 15 = 45

Answer any *three* from the following

7. (a) What is the utility of “synchronized” keyword in Java? [8]
(b) Write appropriate Java code to explain its utilization. [7]
8. (a) What is the utility of “final” keyword? Write Java code to illustrate it. [3+5]
(b) Compare between a constructor and a member method of a class. [3]
(c) Write Java code to illustrate constructor overloading. [4]
9. (a) Can we declare a class in a method definition? Write Java code to justify your answer. [3+5]
(b) Discuss Thread Life Cycle with proper diagram. [7]
10. (a) What is access modifier? Discuss about the access modifier of Java with respect to a class. [2+4]
(b) Write a Java program to print factorial of a given number. [5]
(c) Write a recursive method to compute 2^N , N is a +ve integer. [4]
11. Write Short notes on the following topics.
- (a) Data Encapsulation [5]
(b) Run time Polymorphism [5]
(c) Nested static class [5]