BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – BCA(MAWT)-Hons-2024
Course Name – Advance Java
Course Code - BMT47108 (T)
(Semester IV)

Full Marks : 40 **Time : 2:0 Hours**

[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 Question) 1 x 10=10

1. *Choose the correct alternative from the following :*

(i) Which code snippet correctly removes duplicates from an ArrayList?
a) Using for loop only b) Using contains() check
c) Using indexOf() only d) Using get() only

(ii) If subList(2,5) is applied on a list of size 10, how many elements will it return?
a) 2 b) 3
c) 4 d) 5

(iii) Which code retrieves the first element without deleting it from a LinkedList?
a) removeFirst() b) getFirst()
c) pop() d) poll()

(iv) How can a Vector be traversed in reverse order?
a) Using for-each loop b) Using Iterator
c) Using ListIterator from end d) Using Enumeration

(v) Which Queue implementation is suitable for producer–consumer problems?
a) ArrayDeque b) PriorityQueue
c) BlockingQueue d) AbstractQueue

(vi) If thread safety is required without manual synchronization, which should be used?
a) Vector b) ArrayList
c) Stack only d) ArrayDeque

(vii) What does AbstractList mainly provide to developers?
a) Data storage b) Ready-made objects
c) Skeletal implementation d) Thread safety

(viii) Which method is used to add elements at a specific position?
a) append() b) add(int,E)
c) insert() d) push()

(ix) Which structure minimizes random access effort?

a) ArrayList
b) Vector
c) AbstractSequentialList
d) Stack

(x) Which method checks if more elements are present in an Iterator?

a) next()
b) hasNext()
c) checkNext()
d) isNext()

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Demonstrate the use of the Vector class by explaining how elements can be added and accessed in a multi-threaded environment. (3)
3. Select and justify a thread-safe collection that can be used in a concurrent application scenario. (3)
4. Show how the Stack class is accessed by identifying its package and using it in a simple Java program. (3)
5. Explain the purpose of AbstractList in the Java Collections Framework. (3)
6. Create a Java Map-based solution for storing configuration settings where Keys are fixed and known at compile time. (3)

OR

Evaluate HashMap, Hashtable with most suitable examples. (3)

Group-C

(Long Answer Type Questions) 5 x 3=15

7. Explain the Vector class in Java and discuss its key features with appropriate use-cases. (5)
8. Write a Java program demonstrating sequential access using AbstractSequentialList. (5)
9. Design a Java program using NavigableMap for range-based data retrieval. (5)

OR

Design a multi-threaded Java program using ConcurrentHashMap. (5)

****