Final

**Directions**: For questions 1-2, use the following method that is intended to return a random letter from word.

1 public static String getRandomLetter(String word){

2 int wordLength = word.length();

3 int letterIndex = (int) Math.random() \* wordLength;

4 String letter = word.substring(letterIndex, 1);

5 return letter;

6 }

1. Which of the following options is the best replacement for line 3?

1. int letterIndex = ((int) Math.random()) \* wordLength;
2. int letterIndex = (int) (Math.random() \* wordLength) + 1;
3. int letterIndex = (int) (Math.random() \* wordLength);
4. int letterIndex = (int) Math.random() \* wordLength + 1;
5. Line 3 is best as-is.

2. Which of the following options is the best replacement for line 4?

1. String letter = word.charAt(letterIndex);
2. String letter = word.substring(letterIndex);
3. String letter = word.substring(letterIndex, letterIndex + 1);
4. String letter = word.substring(letterIndex, letterIndex);
5. Line 4 is best as-is.

3. What is the output of the following code segment?   
  
List<String> a = new ArrayList<String>();

List<String> b = new ArrayList<String>();

List<String> c = b;

a.add(“apple ”);

b.add(“banana ”);

c.add(“cherry ”);

b = a;

a.add(“durian ”);

b.add(“elderberry “);

c.add(“fruit” );

a.remove(0);

b.remove(0);

c.remove(0);

System.out.println(a.get(0) + b.get(0) + c.get(0));

1. apple apple cherry
2. durian durian durian
3. durian elderberry fruit
4. elderberry elderberry cherry
5. The code throws an IndexOutOfBoundsException exception.

**Directions**: Use the following class declaration to answer questions 4-5.

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6. Which of the following is NOT a valid escape sequence in Java?

(A) \”

(B) \\

(C) \n

(D) \t

(E) These are all valid Java escape sequences.

7. Which of the following variables could be assigned a value of null?

1. String a
2. boolean b
3. double c
4. int d
5. None of the above



Text

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Graphical user interface, text, application, letter

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Consider the linked list code below:

public class ListNode<T> {

private T data;

private ListNode<T> next;

public ListNode(T data, ListNode<T> next) {

this.data = data;

this.next = next;

}

public void setData(T data) {

this.data = data;

}

public T getData() {

return data;

}

public void setNext(ListNode<T> next) {

this.next = next;

}

public ListNode<T> getNext(){

return next;

}

}

public class MyLinkedList<T> {

private ListNode<T> head;

private int size;

public void addToFront(T data){

//to be completed in part a

}

public boolean contains(T data){

//to be completed in part b

}

//other methods not shown

}

Complete the addToFront method below. The method adds data to the front of the list. You may not call any method not given on the test.

public void addToFront(T data)

Complete the contains method below. The method returns true if data is contained in the list and false if the data is not contained in the list. You may not call any method not given on the test.

public boolean contains(T data)