

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

31 to 32

Java

Section Id :	64065360928
Section Number :	6
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	16
Number of Questions to be attempted :	16
Section Marks :	100
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	No
Section Maximum Duration :	0
Section Minimum Duration :	0
Section Time In :	Minutes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653126855
Question Shuffling Allowed :	No

Question Number : 89 Question Id : 640653852423 Question Type : MCQ

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : PROGRAMMING CONCEPTS USING JAVA (COMPUTER BASED EXAM)"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406532867095. ✓ YES

6406532867096. ❌ NO

Sub-Section Number :	2
Sub-Section Id :	640653126856
Question Shuffling Allowed :	Yes

Question Number : 90 Question Id : 640653852424 Question Type : MCQ

Correct Marks : 6

Question Label : Multiple Choice Question

Consider the Java code given below.

The method `boolean containsKey (Object key)` in the class `Map` returns `true` if and only if the map contains an entry for a key `k` such that `Objects.equals(key, k)`.

```
import java.util.*;
interface Vehicle {
    void start();
}
class Car implements Vehicle {
    public void start() {
        System.out.println("Starting a Car");
    }
}
class Motorcycle implements Vehicle {
    public void start() {
        System.out.println("Starting a Motorcycle");
    }
}
class Garage<T extends Vehicle> {
    private Map<String, T> vehicles;
    public Garage() {
        vehicles = new LinkedHashMap<String, T>(); //LINE A
    }
    public void add(String name, T vehicle) {
        vehicles.put(name, vehicle);
    }
    public void startVehicle(String name) {
        if (vehicles.containsKey(name)) {
            T v = vehicles.get(name); //LINE B
            v.start();
        } else {
            System.out.println("Vehicle not found");
        }
    }
}
public class TestGarage {
    public static void main(String[] args) {
        Garage<Vehicle> g = new Garage<Vehicle>();
        Vehicle v1 = new Car();
        Vehicle v2 = new Motorcycle();
        g.add("car", v1);
        g.add("motorcycle", v2);
        g.startVehicle("car");
        g.startVehicle("bicycle");
    }
}
```

Choose the correct option.

Options :

6406532867097. ✖ LINE A generates compilation error because type T is not known

This program generates output:

Starting a Car

6406532867098. ✔ Vehicle not found

LINE B generates compilation error because a variable of type Vehicle cannot refer to objects of type Car and Motorcycle

6406532867099. ✖

This program generates output:

Starting a Car

6406532867100. ✖

Question Number : 91 Question Id : 640653852430 Question Type : MCQ

Correct Marks : 6

Question Label : Multiple Choice Question

Consider two Java files located in two different packages as shown below.

Vehicle.java:

```
package com.transport;
public class Vehicle {
    void startEngine() {
        System.out.println("Engine started");
    }
    private void stopEngine() {
        System.out.println("Engine stopped");
    }
    protected void accelerate() {
        System.out.println("Accelerating");
    }
    public void brake() {
        System.out.println("Braking");
    }
}
```

Car.java

```
package com.automobile;
import com.transport.Vehicle;
public class Car extends Vehicle {
    public static void main(String[] args) {
        Car car = new Car();
        car.startEngine(); // LINE A
        car.stopEngine(); // LINE B
        car.accelerate(); // LINE C
        car.brake(); // LINE D
    }
}
```

Choose the correct option.

Options :

- 6406532867121. ✖ LINE A and LINE C generate compilation errors.
- 6406532867122. ✖ LINE B and LINE C generate compilation errors.
- 6406532867123. ✔ LINE A and LINE B generate compilation errors.
- 6406532867124. ✖ Only LINE B generates a compilation error.

Question Number : 92 Question Id : 640653852431 Question Type : MCQ

Correct Marks : 6

Question Label : Multiple Choice Question

Consider the Java code given below.

```
class NewUser{
    private String name, password;
    public NewUser(String s, String p) {
        this.name = s;
        this.password = p;
    }
    public String getUser_name() {
        assert name != null : "Invalid name"; //LINE 1
        assert password.length() == 10 : "Should be 10 characters"; //LINE 2
        return name + "@acct.com";
    }
}

public class Test {
    public static void main(String[] args) {
        NewUser u1 = new NewUser("", "password");
        NewUser u2 = new NewUser("Sudarshan", "1234567890");
        String username1 = u1.getUser_name(); //LINE 3
        assert username1 != null : "Should not be null"; // LINE 4
        String username2 = u2.getUser_name(); //LINE 5
        assert username2 != null : "Should not be null"; // LINE 6
        System.out.println(username1);
        System.out.println(username2);
    }
}
```

Choose the correct option when the program is executed as:

java -ea Test

Options :

6406532867125. ✖ LINE 1 throws AssertionError.

6406532867126. ✔ LINE 2 throws AssertionError.

6406532867127. ✖ LINE 4 throws AssertionError

6406532867128. ✖ LINE 6 throws AssertionError

Question Number : 93 Question Id : 640653852433 Question Type : MCQ

Correct Marks : 6

Question Label : Multiple Choice Question

Consider the Java code given below.

```
import java.util.*;
public class Test {
    public static void main(String[] args) {
        Map<String, Integer> match1 = new TreeMap<String, Integer>();
        match1.put("Sachin", 100);
        match1.put("Virat", 75);
        match1.put("Dhoni", 50);
        match1.put("Rohit", 120);

        Map<String, Integer> match2 = new TreeMap<String, Integer>();
        match2.put("Sachin", 80);
        match2.put("Virat", 90);
        match2.put("Dhoni", 60);
        match2.put("Rohit", 110);

        Map<String, Integer> totalRuns = new TreeMap<String, Integer>();

        for (Map.Entry<String, Integer> m1 : match1.entrySet())
            totalRuns.put(m1.getKey(), m1.getValue());

        for (Map.Entry<String, Integer> m2 : match2.entrySet())
            totalRuns.merge(m2.getKey(), m2.getValue(), Integer::sum); //LINE 1

        System.out.println(totalRuns);
    }
}
```

Choose the correct option.

Options :

6406532867133. ✖ LINE 1 generates compilation error because of invalid key.

This program generates the output:

6406532867134. ✔ {Dhoni=110, Rohit=230, Sachin=180, Virat=165}

This program generates the output:

6406532867135. ✖ {Sachin=180, Virat=165, Dhoni=110, Rohit=230}

This program generates the output:

6406532867136. ✖ {Virat=165, Sachin=180, Rohit=230, Dhoni=110}

Question Number : 94 Question Id : 640653852434 Question Type : MCQ

Correct Marks : 6

Question Label : Multiple Choice Question

Consider the Java code given below.

```
import java.util.*;
public class SequenceChecker {
    public static boolean isMirroredSequence(List<Integer> sequence) {
        Stack<Integer> s1 = new Stack<>();
        Deque<Integer> q1 = new ArrayDeque<>();
        for (int num : sequence) {
            s1.push(num);
            q1.add(num);
        }
        // CODE BLOCK
        return true;
    }
    public static void main(String[] args) {
        List<Integer> sequence1 = Arrays.asList(1, 2, 3, 2, 1);
        List<Integer> sequence2 = Arrays.asList(1, 2, 3, 4, 5);
        System.out.println
            ("Is sequence1 mirrored? " + isMirroredSequence(sequence1));
        System.out.println
            ("Is sequence2 mirrored? " + isMirroredSequence(sequence2));
    }
}
```

Choose the correct option(s) to fill in place of CODE BLOCK so that the output is:

Is sequence1 mirrored? true

Is sequence2 mirrored? false

Please note the following methods from type Stack and Deque.

pop(): Removes the object at the top of this stack and returns that object as the value of this function.

poll(): Retrieves and removes the head of this deque, or returns null if this deque is empty.

peek(): Retrieves, but does not remove, the head of this deque, or returns null if this deque is empty.

Options :

```
while (!s1.isEmpty()) {
    if (s1.pop().equals(q1.peek())) {
        return false;
    }
}
```

6406532867137. ✖ }

```
while (!s1.isEmpty()) {  
    if (s1.pop().equals(q1.poll())) {  
        return false;  
    }  
}
```

6406532867138. ✖ }

```
while (!s1.isEmpty()) {  
    if (!s1.pop().equals(q1.poll())) {  
        return false;  
    }  
}
```

6406532867139. ✔ }

```
while (!s1.isEmpty()) {  
    if (!s1.pop().equals(q1.peek())) {  
        return false;  
    }  
}
```

6406532867140. ✖ }

Question Number : 95 Question Id : 640653852435 Question Type : MCQ

Correct Marks : 6

Question Label : Multiple Choice Question

Consider the Java code given below.

```
import java.util.*;
class Book implements Cloneable {
    String title;
    String author;
    public Book(String t, String a) {
        this.title = t;
        this.author = a;
    }
    public Book clone() throws CloneNotSupportedException {
        return (Book) super.clone();
    }
    public String toString() {
        return title + ":" + author;
    }
}
class Library implements Cloneable {
    String libraryName;
    List<Book> books;
    public Library(String l, List<Book> b) {
        this.libraryName = l;
        this.books = b;
    }
    public Library clone() throws CloneNotSupportedException {
        Library clonedLibrary = (Library) super.clone();
        clonedLibrary.books = new ArrayList<>();
        for (Book book : this.books) {
            clonedLibrary.books.add(book.clone());
        }
        return clonedLibrary;
    }
}
public class TestCloning {
    public static void main(String[] args) throws CloneNotSupportedException {
        List<Book> books = new ArrayList<>();
        books.add(new Book("1984", "George Orwell"));
        books.add(new Book("Outline", "Rachel Cusk"));
        Library library1 = new Library("Central Library", books);
        Library library2 = library1.clone();
        library2.books.get(0).title = "Hanging";
        System.out.println(library1.books);
        System.out.println(library2.books);
    }
}
```

What will the output be?

Options :

6406532867141. ✖ [Hanging:George Orwell,Outline:Rachel Cusk]
[Hanging:George Orwell,Outline:Rachel Cusk]

6406532867142. ✖ [1984:George Orwell,Outline:Rachel Cusk]
[1984:George Orwell,Outline:Rachel Cusk]

6406532867143. ✖

[1984:George Orwell, Outline:Rachel Cusk]
[Hanging:George Orwell, Hanging:Rachel Cusk]

[1984:George Orwell, Outline:Rachel Cusk]
6406532867144. ✓ [Hanging:George Orwell, Outline:Rachel Cusk]

Question Number : 96 Question Id : 640653852436 Question Type : MCQ

Correct Marks : 6

Question Label : Multiple Choice Question

Consider the Java code given below.

```
import java.util.*;
import java.util.stream.*;
class Transaction {
    String id;
    double amount;
    public Transaction(String i, double a) {
        this.id = i;
        this.amount = a;
    }
    public String toString() {
        return id + ": $" + amount;
    }
}
public class TransactionProcessor {
    public static void main(String[] args) {
        List<Transaction> transactions = new ArrayList<Transaction>();
        transactions.add(new Transaction("TXN1", 999.99));
        transactions.add(new Transaction("TXN2", 5000.00));
        transactions.add(new Transaction("TXN3", 1234.56));
        transactions.add(new Transaction("TXN4", 2500.00));
        transactions.add(new Transaction("TXN5", 330.40));
        transactions.stream()
            .filter(t -> t.amount > 1000)
            .forEach(t -> System.out.print(t.id + " "));
    }
}
```

What will the output be?

Options :

6406532867145. ✗ TXN1 TXN2 TXN3 TXN4 TXN5

6406532867146. ✓ TXN2 TXN3 TXN4

6406532867147. ✗ TXN3 TXN4 TXN2

6406532867148. ✗ TXN1 TXN3 TXN4 TXN2

Sub-Section Number :	3
Sub-Section Id :	640653126857
Question Shuffling Allowed :	Yes

Question Number : 97 Question Id : 640653852426 Question Type : MCQ
Correct Marks : 7
Question Label : Multiple Choice Question

Consider the Java code given below.

```
interface Operable {
    void operate();
}
class Robot implements Operable {
    public void operate() {
        System.out.println("Operating Robot");
    }
}
class Drone implements Operable {
    public void operate() {
        System.out.println("Operating Drone");
    }
}
class MachineShop {
    private Object[] oArr = new Object[]{new Robot(), new Drone(), "String Object"};
    public void operateMachines() {
        for (int i = 0; i < oArr.length; i++) {
            // LINE X
        }
    }
}

public class TestMachines {
    public static void main(String[] args) {
        MachineShop mShop = new MachineShop();
        mShop.operateMachines();
    }
}
```

Identify the appropriate option to fill in place of LINE X such that the output is:

Operating Robot

Operating Drone

Options :

6406532867105. ✖ `oArr[i].operate();`

6406532867106. ✔ `if(oArr[i] instanceof Operable)
((Operable)oArr[i]).operate();`

6406532867107. ✖ `((Robot)oArr[i]).operate();`

6406532867108. ✖ `((Drone)oArr[i]).operate();`

Question Number : 98 Question Id : 640653852427 Question Type : MCQ

Correct Marks : 7

Question Label : Multiple Choice Question

Consider the Java code given below.

```
public class ArrayOperations {  
    public <T> void reverse(T[] array) {  
        // Reverses the order of elements in the array  
    }  
    public <T extends Number> double sum(T[] array) {  
        // Calculates the sum of elements in the array  
    }  
}
```

After type erasure, which of the following correctly represents the ArrayOperations class?

Options :

```
public class ArrayOperations {  
    public void reverse(Object[] array) {  
        // Reverses the order of elements in the array  
    }  
    public double sum(Number[] array) {  
        // Calculates the sum of elements in the array  
    }  
}
```

6406532867109. ✓ }

```
public class ArrayOperations {  
    public void reverse(Object[] array) {  
        // Reverses the order of elements in the array  
    }  
    public double sum(Object[] array) {  
        // Calculates the sum of elements in the array \
```

6406532867110. ✗ }

```
public class ArrayOperations {  
    public void reverse(T[] array) {  
        // Reverses the order of elements in the array  
    }  
    public double sum(T[] array) {  
        // Calculates the sum of elements in the array  
    }  
}
```

6406532867111. ✗ }

```

        public class ArrayOperations {
            public void reverse(Object[] array) {
                // Reverses the order of elements in the array
            }
            public double sum(Double[] array) {
                // Calculates the sum of elements in the array
            }
        }
    }
}
6406532867112. ✖

```

Question Number : 99 Question Id : 640653852429 Question Type : MCQ

Correct Marks : 7

Question Label : Multiple Choice Question

Consider the Java code given below.

```

class InvalidTemperatureException extends RuntimeException {
    public InvalidTemperatureException(String message) {
        super(message);
    }
}

class Thermostat {
    private double temperature;
    private final double MIN = 0.0;
    private final double MAX= 35.0;
    public Thermostat(double t) {
        if (t < MIN || t > MAX) {
            throw new InvalidTemperatureException
                ("Temperature out of operating range");
        }
        this.temperature = t;
    }
}

public class ClimateControl {
    public static void main(String[] args) {
        try {
            Thermostat t1 = new Thermostat(22.0);
            Thermostat t2 = new Thermostat(36
                .0);
        } catch (InvalidTemperatureException e) {
            System.out.println("Error: " + e.getMessage());
        }
    }
}

```

Choose the correct option.

Options :

6406532867117. ✖ This program runs without any exception.

This program generates the output:

6406532867118. ✔ Error: Temperature out of operating range

6406532867119. ✖ This program compiles successfully but generates no output.

This program generates the output:

6406532867120. ✖ Error: InvalidTemperatureException

Question Number : 100 Question Id : 640653852432 Question Type : MCQ

Correct Marks : 7

Question Label : Multiple Choice Question

Consider the Java code given below.

```
import java.util.*;
class Player {
    String nickname;
    int score;
    boolean isPremium;
    //Constructor to initialize instance variables
    public String toString() {
        return nickname;
    }
}
public class GameLobby {
    public static boolean isEligible(int score, boolean isPremium) {
        if(isPremium){
            return true;
        }
        return (score >= 10);
    }
    public static void filterPlayers(List<Player> players) {
        ListIterator<Player> iterator = players.listIterator();
        while (iterator.hasNext()) {
            Player p = iterator.next();
            if (!isEligible(p.score, p.isPremium))
                ----- // LINE 1
        }
    }
    public static void main(String[] args) {
        var players = new LinkedList<Player>();
        players.add(new Player("Sharon", 15, false));
        players.add(new Player("Rohit", 8, false));
        players.add(new Player("Arjun", 20, true));
        players.add(new Player("Ambani", 9, true));
        filterPlayers(players);
        System.out.println(players);
    }
}
```

Choose the correct option to be filled in place of LINE 1 so that the output is:
[Sharon, Arjun, Ambani]

Options :

6406532867129. ✖ iterator.remove(p);

6406532867130. ✔ iterator.remove();

6406532867131. ✖ players.remove();

6406532867132. ✖ `players.remove(p);`

Question Number : 101 Question Id : 640653852437 Question Type : MCQ

Correct Marks : 7

Question Label : Multiple Choice Question

From among the options, choose the code segment that gives the same output as is given by the Java code inside the CODE BLOCK.

```
import java.util.stream.*;
public class Example {
    public static void main(String[] args) {
        //CODE BLOCK starts here
        long count = Stream.iterate(1, n -> n + 2)
            .map(n -> n * n)
            .limit(4)
            .count();
        //CODE BLOCK ends here
        System.out.println(count);
    }
}
```

Options :

6406532867149. ✖ `long count = Stream.iterate(1, n -> n + 2)
 .map(n -> n * n)
 .filter(n -> n < 81)
 .count();`

6406532867150. ✔ `long count = Stream.iterate(1, n -> n + 2)
 .map(n -> n * n)
 .takeWhile(n -> n < 81)
 .count();`

6406532867151. ✖ `long count = Stream.iterate(1, n -> n + 2)
 .map(n -> n * n)
 .skipWhile(n -> n < 81)
 .count();`

6406532867152. ✖ `long count = Stream.iterate(1, n -> n + 2)
 .map(n -> n * n)
 .dropWhile(n -> n < 81)
 .count();`

Question Number : 102 Question Id : 640653852438 Question Type : MCQ

Correct Marks : 7

Question Label : Multiple Choice Question

Consider the Java code given below.

```
import java.util.*;
public class MapTest {
    public static void printPlayers(Map<String, Integer> m) {
        var map1 = new LinkedHashMap<String, Integer>();
        var map2 = new TreeMap<String, Integer>();
        String[] players = {"Virat", "Rohit", "Rahul"};
        for (String p : players) {
            if (m.containsKey(p)) {
                map1.put(p, m.get(p));
                map2.put(p, m.get(p));
            } else {
                map1.put(p, 0);
                map2.put(p, 0);
            }
        }
        System.out.println(map1);
        System.out.println(map2);
    }
    public static void main(String[] args) {
        var map = new HashMap<String, Integer>();
        map.put("Rohit", 45);
        map.put("Rahul", 60);
        map.put("Virat", 100);
        map.put("Pant", 32);
        printPlayers(map);
    }
}
```

What will the output be?

Options :

6406532867153. ✖ {Virat=100, Rahul=60, Rohit=45}
{Rahul=60, Rohit=45, Virat=100}

6406532867154. ✖ {Virat=100, Rohit=45, Pant=32}
{Rohit=45, Virat=100, Pant=32}

6406532867155. ✖ {Virat=100, Rohit=45, Rahul=60, Pant=32}
{Rohit=45, Virat=100, Rahul=60, Pant=32}

6406532867156. ✓ {Virat=100, Rohit=45, Rahul=60}
{Rahul=60, Rohit=45, Virat=100}

Sub-Section Number : 4
Sub-Section Id : 640653126858
Question Shuffling Allowed : Yes

Question Number : 103 Question Id : 640653852425 Question Type : MSQ
Correct Marks : 8 Max. Selectable Options : 0
Question Label : Multiple Select Question

Consider the Java code given below.

```
interface Element {
    void display();
}
class PeriodicTableElement {
    private String group;
    public void setGroup(String g) {
        this.group = g;
    }
    public String getGroup() {
        return group;
    }
    public Element createElement() {
        switch (getGroup()) {
            case "Metal":
                return new Metal();
            case "Nonmetal":
                return new Nonmetal();
            case "Metalloid":
                return new Metalloid();
            default:
                return null;
        }
    }
    private class Metal implements Element {
        public void display() {
            System.out.println("Metal properties");
        }
    }
    private class Nonmetal implements Element {
        public void display() {
            System.out.println("Nonmetal properties");
        }
    }
    private class Metalloid implements Element {
        public void display() {
            System.out.println("Metalloid behavior");
        }
    }
}
public class ChemistryLab {
    public static void main(String[] args) {
        PeriodicTableElement pt = new PeriodicTableElement();
        pt.setGroup("Metalloid");
        // ----- Line X -----
    }
}
```

Identify the appropriate option to fill in place of LINE X such that the output is:
Metalloid behavior

Options :

6406532867101. ✓ `Element e = pt.createElement();
e.display();`

6406532867102. ✗ `pt.display();`

6406532867103. ✓ `pt.createElement().display();`

```
Element e = pt;  
e.display();
```

6406532867104. ✖

Question Number : 104 Question Id : 640653852428 Question Type : MSQ

Correct Marks : 8 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the Java code given below that prints the most impressive act among a set of given Performer objects. From among the options, identify the appropriate function header for the function `printMostImpressiveAct` that takes as input an array of Performer objects and prints the act with the highest score.

```
import java.util.*;  
interface Performer {  
    int performAct();  
}  
class Magician implements Performer {  
    private int tricksPerformed;  
    public Magician(int tricks) {  
        this.tricksPerformed = tricks;  
    }  
    public int performAct() {  
        return tricksPerformed;  
    }  
}  
class Juggler implements Performer {  
    private int ballsJuggled;  
    public Juggler(int balls) {  
        this.ballsJuggled = balls;  
    }  
    public int performAct() {  
        return ballsJuggled;  
    }  
}  
public class TalentShow {  
    // LINE X: FUNCTION HEADER  
    {  
        // invokes method performAct()  
        // to print the value of the most impressive act  
    }  
    public static void main(String[] args) {  
        Performer[] performers = {new Magician(5), new Juggler(3), new Magician(8)};  
        printMostImpressiveAct(performers);  
    }  
}
```

Choose the correct option(s).

Options :

6406532867113. ✖ `public static void printMostImpressiveAct(<?> performers)`

6406532867114. ✔ `public static <T extends Performer> void
printMostImpressiveAct(T[] performers)`

6406532867115. ✖ `public static <T extends Magician> void
printMostImpressiveAct(T[] performers)`

6406532867116. ✔ `public static void printMostImpressiveAct(Performer[] performers)`

AppDev2

Section Id :	64065360929
Section Number :	7
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	17
Number of Questions to be attempted :	17
Section Marks :	50
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	No
Section Maximum Duration :	0
Section Minimum Duration :	0
Section Time In :	Minutes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653126859
Question Shuffling Allowed :	No

Question Number : 105 Question Id : 640653852439 Question Type : MCQ

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : MODERN APPLICATION DEVELOPMENT II (COMPUTER BASED EXAM)"