Options :

6406532052061. ✖ There is an inheritance relation between class *Product* and *Order*

6406532052062. ✔ There is an inheritance relation between class *Book* and *Product*

6406532052063. ✔ There is a composition relation between class *Order* and *Product*

6406532052064. ✖ There is a composition relation between class *Customer* and *Order*

Sw Testing

Section Id :	64065341440
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	18
Number of Questions to be attempted :	18
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 :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065388983
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 27 Question Id : 640653614733 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DEGREE LEVEL : SOFTWARE TESTING (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 :

6406532052090. ✔ YES

6406532052091. ✖ NO

Sub-Section Number :	2
Sub-Section Id :	64065388984
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 28 Question Id : 640653614734 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following classes for the code base to be tested and the test class.

```
//code base
public class Divisor {
    private int n;
    public Divisor(int n) {
        this.n = n;
    }
    public int countDivisor() {
        int count = 1;
        for(int i = 1; i < n / 2; i++) {
            if(n % i == 0)
                ++count;
        }
        return count;
    }
}
 //test class
 import static org.junit.Assert.*;
 import org.junit.Test;

 public class TestDivisor {
     private Divisor d;

     @Test
     public void testCase1() {
         d = new Divisor(15);
         assertEquals(4, d.countDivisor());
     }

     @Test
     public void testCase2() {
         d = new Divisor(10);
         assertEquals(4, d.countDivisor());
     }

     @Test
     public void testCase3() {
         d = new Divisor(7);
         assertTrue(d.countDivisor() == 2);
     }

     @Test
     public void testCase4() {
         d = new Divisor(24);
         assertTrue(d.countDivisor() == 8);
     }
 }
```

Identify the test case method(s) that will fail for the given code base.

Options :

6406532052092. ✖ testcase1( )

6406532052093. ✔ testcase2( )

6406532052094. ✖ testcase3( )

6406532052095. ✔ testcase4( )

Sub-Section Number : 3

Sub-Section Id : 64065388985

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 29 Question Id : 640653614735 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

During testing a web application, the number of users suddenly increased by a very large amount, and the performance of the application was measured. What type of testing was applied in this case?

Options :

6406532052096. ✖ Load testing

6406532052097. ✖ Stress testing

6406532052098. ✖ Soak testing

6406532052099. ✔ Spike testing

Question Number : 30 Question Id : 640653614736 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Backlog Management Index (BMI) belongs to which of the following software quality metrics?

Options :

6406532052100. ✖ Product metrics

6406532052101. ✖ Product quality metrics

6406532052102.

✖ In-process quality metrics

6406532052103. ✔ Maintenance quality metrics

Question Number : 31 Question Id : 640653614738 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Which kind of client-side testing of a web application verifies if the web application appropriately checks the inputs for various types of violations, like datatype conversion violations, built-in length restrictions violations, built-in value restrictions violations, etc.?

Options :

6406532052108. ✖ User-session data based testing

6406532052109. ✔ Value level bypass testing

6406532052110. ✖ Parameter level bypass testing

6406532052111. ✖ Control flow level bypass testing

Sub-Section Number :	4
Sub-Section Id :	64065388986
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 32 Question Id : 640653614737 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider test-driven development (TDD) for a mobile app in which the user can set a password to restrict access to certain folders in the internal memory of the mobile. The test cases for the user story *password validation* are provided below.

```
import static org.junit.Assert.*;
import org.junit.Test;

public class TestPriceValidation {
private PriceValidation obj;
    @Test
    public void test() {
        obj = new PriceValidation();
        assertEquals(false, obj.isValid(1000.00));
        assertEquals(false, obj.isValid(10001.00));
        assertEquals(true, obj.isValid(5000.50));
    }
}
```

Which of the following are the appropriate implementations for the user story?

Options :

```
public class PriceValidation {
    public boolean isValid(double price) {
        if(price <= 1000.00) {
            System.out.println("Price is less than minimum allowed price");
            return false;
        }
        else if(price > 10000.00) {
            System.out.println("Price is more than maximum allowed price");
            return false;
        }
        else
            return true;
    }
}
```

6406532052104. ✔

6406532052105. ✖

```
public class PriceValidation {
    public boolean isValid(double price) {
        if(price < 1000.00) {
            System.out.println("Price is less than minimum allowed price");
            return false;
      }
      else if(price > 10000.00) {
          System.out.println("Price is more than maximum allowed price");
          return false;
           }
           else
               return true;
       }
   }
```

6406532052106.

```
public class PriceValidation {
    public boolean isValid(double price) {
        if(price < 1000.00) {
            System.out.println("Price is less than minimum allowed price");
            return false;
        }
        else if(price >= 10000.00) {
            System.out.println("Price is more than maximum allowed price");
            return false;
        }
        else
            return true;
    }
}
```

6406532052107.

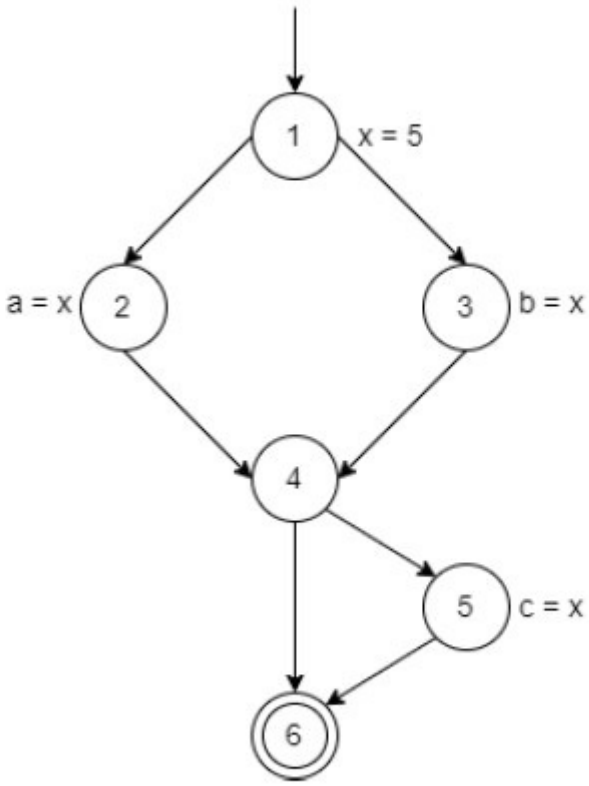
```
public class PriceValidation {
    public boolean isValid(double price) {
        if(price < 1001.00) {
            System.out.println("Price is less than minimum allowed price");
            return false;
        }
        else if(price > 10000.00) {
            System.out.println("Price is more than maximum allowed price");
            return false;
        }
        else
            return true;
        }
}
```

Question Number : 33 Question Id : 640653614756 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the annotated control flow graph (CFG) below.



Identify the correct set(s) of test paths for all du-paths coverage for x.

Options :

6406532052168. ✖ [1, 2, 4, 6], [1, 3, 4, 6]

6406532052169. ✖ [1, 2, 4, 6], [1, 2, 4, 5, 6]

6406532052170. ✔ [1, 2, 4, 5, 6], [1, 3, 4, 5, 6]

6406532052171. ✔ [1, 3, 4, 6], [1, 2, 4, 5, 6]

Sub-Section Number : 5

Sub-Section Id : 64065388987

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 34 Question Id : 640653614751 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following predicate(s) is/are in Disjunctive Normal Form (DNF)?

Options :

6406532052152. ✔ $a \vee b$

6406532052153. ✖ $(a \wedge b) \wedge c$

6406532052154. ✔ $(a \wedge b) \vee (c \wedge d) \vee e$

6406532052155. ✖ $(a \vee b) \wedge (c \vee d)$

Sub-Section Number : 6

Sub-Section Id : 64065388988

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 35 Question Id : 640653614739 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6

Question Label : Multiple Choice Question

Consider the code segment of a Java servlet below. The atomic sections are marked as $P_1, P_2, P_3, \cdots$.

	/* salary_comp stores values for different components of salary like (basic, DA, TA, etc.) of an employee */ ArrayList<Double> salary_comp = null; response.setContentType("text/html"); PrintWriter out = response.getWriter();

P_1	out.print("<HTML><HEAD><TITLE>");
	out.print("Eligibility for bonus");
	out.println("</TITLE></HEAD><BODY>)");
	String emp_id = request.getParameter("EID");
	/*
	getSalaryComponents() considers the employee ID (emp_id) of an
	employee as input, runs a query in the database, and returns an
	ArrayList object containing the values for different components
	of the salary of the given employee
	*/
	salary_comp = getSalaryComponents(emp_id);
	double total_salary = 0.0;

	if(salary_comp == null){
P_2	out.println("Invalid employee ID</BR>");
	}
	else { for (Double c : salary_comp) {
P_3	total_salary += c;
	} if(total_salary < 25000.00)
P_4	out.println("Status : Eligible</BR>");
	else
P_5	out.println("Status : Not eligible</BR>");
	}
P_6	out.println ("</BODY></HTML>"); out.close();

Identify the component expression corresponding to the given code above.

Options :

6406532052112. ✖ $P_1 \cdot (P_2 \cdot P_3^* \cdot (P_4|P_5))|P_6$

6406532052113. ✔ $P_1 \cdot (P_2|(P_3^* \cdot (P_4|P_5))) \cdot P_6$

6406532052114.

✖ $P_1 \cdot (P_2|P_3) \cdot (P_4|P_5) \cdot P_6$

6406532052115. ✖ $P_1 \cdot ((P_2|P_3^*) \cdot (P_4|P_5)) \cdot P_6$

Question Number : 36 Question Id : 640653614740 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6

Question Label : Multiple Choice Question

Match the following for four levels of class testing.

Type testing	Description
1. Intra-method testing	A. Tests are constructed for a single class, usually as sequences of calls to methods within the class
2. Intra-class testing	B. Tests are constructed for individual methods
3. Inter-method testing	C. Tests are constructed for more than one class to be tested at the same time
4. Inter-class testing	D. Tests are constructed for multiple methods within a class to be tested in concert

Options :

6406532052116. ✖ 1-D, 2-C, 3-B, 4-A

6406532052117. ✔ 1-B, 2-A, 3-D, 4-C

6406532052118. ✖ 1-B, 2-A, 3-C, 4-D

6406532052119. ✖ 1-C, 2-D, 3-A, 4-B

Question Number : 37 Question Id : 640653614752 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6

Question Label : Multiple Choice Question

Match the following regarding integration testing.

Terms	Descriptions
1. Caller	A. The statement or node where the call appears in the code
2. Callee	B. The module that is called
3. Call site	C. A module that invokes another module
4. Actual parameter(s)	D. Variables(s) in the callee
5. Formal parameter(s)	E. Variable(s) in the caller

Options :

6406532052156. ✖ 1-C, 2-B, 3-A, 4-D, 5-E

6406532052157. ✔ 1-C, 2-B, 3-A, 4-E, 5-D

6406532052158. ✖ 1-A, 2-B, 3-C, 4-D, 5-E

6406532052159. ✖ 1-A, 2-B, 3-C, 4-E, 5-D

Sub-Section Number : 7

Sub-Section Id : 64065388989

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 38 Question Id : 640653614741 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the following Java program.

```
class A{
    protected int x, y, z;
    public A() { x = y = z = -1; }
    public void setX(int _x) {
        this.x = _x;
    }
    public void setY(int _y) {
        this.y = _y;
    }
    public void setZ(int _z) {
        this.z = _z;
    }
    public void show() {
        System.out.println(x + ", " + y + ", " + z);
    }
}

class B extends A{
    public void setY(int _y) {
        y = _y;
    }
}
class C extends A{
    protected int z;
    public void setX(int _x) {
        x = _x;
    }
    public void setZ(int _z) {
        this.z = _z;
    }
}


public class Ex1 {
    public static void main(String[] args) {
        A obj = new C();
        obj.setX(10);
        obj.setY(20);
        obj.setZ(30);
        obj.show();
    }
}
```

The above program generates output as `10, 20, -1`, instead `10, 20, 30`, which is due to the inherited `z` is overridden in the descendant `C` that hides the inherited variable `z` in `A`. Identify the type of anomaly/fault in the given scenario.

Options :

6406532052120. ✖ Inconsistent type use

6406532052121. ✖ State definition anomaly

6406532052122. ✔ State definition inconsistency anomaly

6406532052123. ✖ State visibility anomaly

Question Number : 39 Question Id : 640653614742 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Given a context free grammar over a finite alphabet $\sum = \{a, b, c\}$, with the production rules as follows:

$$S \to aX,$$
$$X \to bX,$$
$$X \to cX,$$
$$X \to a$$

Let S be the starting variable. Which of the following sets below corresponds to the language generated by the given grammar?

Options :

6406532052124. ✖ $\{ab^n c^n a \mid n \geq 0\}$

6406532052125. ✖ $\{a(b^n + c^n)a \mid n \geq 1\}$

6406532052126. ✖ $\{a(b + c)^n a \mid n \geq 1\}$

6406532052127. ✔ $\{a(b + c)^n a \mid n \geq 0\}$

Question Number : 40 Question Id : 640653614743 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Mutations of the statement `a = w * h` to the statements like `a = a * h`, `w = w * h`, `h = w * h`, etc. are examples of which kind of mutation operator?

Options :

6406532052128. ✖ Conditional operator replacement

6406532052129. ✖ Logical operator replacement

6406532052130. ✔ Scalar variable replacement

6406532052131. ✖ Unary Operator Insertion

Question Number : 41 Question Id : 640653614744 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Let the three partitions with blocks be ["MALE", "FEMALE", "OTHER"], [0 ≤ AGE < 18, AGE ≥ 18], and ["Rural", "Urban", "Suburban"]. Consider the base test is {"FEMALE", AGE = 21, "Rural"}. What will be the minimum number of total tests (including the base case) that need to be prepared using the Base Choice Coverage (BCC) criteria?

Options :

6406532052132. ✖ 4

6406532052133. ✖ 5

6406532052134. ✔ 6

6406532052135. ✖ 7

Sub-Section Number :	8
Sub-Section Id :	64065388990
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653614745 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (42 to 43)

Question Label : Comprehension

Consider the predicate $p = (a \vee b) \wedge \neg c$.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 42 Question Id : 640653614746 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

What will be p_a?

Options :

6406532052136. ✔ $(\neg b \wedge \neg c)$

6406532052137. ✖ $(\neg b \vee \neg c)$

6406532052138. ✖ $(b \wedge c)$

6406532052139. ✖ $(b \vee c)$

Question Number : 43 Question Id : 640653614747 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6

Question Label : Multiple Choice Question

From the given options identify all pairs test requirements to satisfy restricted inactive clause coverage (RICC) for clause *a*.

Options :

6406532052140. ✖ $\{(a = T, b = F, c = F), (a = F, b = F, c = F)\}$

6406532052141. ✖ $\{(a = T, b = F, c = F), (a = F, b = F, c = F)\}$
$\{(a = T, b = F, c = T), (a = F, b = F, c = T)\}$

6406532052142. ✖ $\{(a = T, b = T, c = F), (a = T, b = F, c = F)\}$
$\{(a = T, b = T, c = T), (a = T, b = F, c = T)\}$
$\{(a = F, b = T, c = T), (a = F, b = F, c = T)\}$

6406532052143. ✔ $\{(a = T, b = T, c = F), (a = F, b = T, c = F)\}$
$\{(a = T, b = T, c = T), (a = F, b = T, c = T)\}$
$\{(a = T, b = F, c = T), (a = F, b = F, c = T)\}$

Sub-Section Number :	9
Sub-Section Id :	64065388991
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653614748 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (44 to 45)

Question Label : Comprehension

Consider the following code segment for symbolic testing.

```
//code base
int pvsum(int n1, int n2) {
    int sum = 0;
    int r;
    for(int i = n1; i < n2; i++) {
        r = sym_input();
        if(r < 0)
            break;
        sum += r;
    }
    return sum;
}
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 44 Question Id : 640653614749 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Identify the appropriate program condition (PC) for the `for` loop with a sequence m of `trues` followed by a `false`. Consider each r_i is a fresh symbolic value.

Options :

6406532052144. ✖ $\bigwedge_{[n1,n2-1]}(r_i \geq 0) \bigwedge(r_{n1+n2} < 0)$

6406532052145. ✖ $\bigwedge_{[1,m]}(r_i < 0) \bigwedge(r_{1+m} \geq 0)$

6406532052146. ✔ $\bigwedge_{[n1,n1+m-1]}(r_i \geq 0) \bigwedge(r_{n1+m} < 0)$

6406532052147. ✖ $\bigwedge_{[n1,n2+m-1]}(r_i < 0) \bigwedge (r_{n2+m} \geq 0)$

Question Number : 45 Question Id : 640653614750 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Identify the value of `sum` at the end of the symbolic execution of the `for` loop with a sequence of m `trues` followed by a `false`.

Options :

6406532052148. ✖ $\{r \mapsto r_{n2}, sum \mapsto \sum_{i \in [n1,n2-1]} r_i\}$

6406532052149. ✖ $\{r \mapsto r_{m+1}, sum \mapsto \sum_{i \in [n1,m]} r_i\}$

6406532052150. ✔ $\{r \mapsto r_{n1+m}, sum \mapsto \sum_{i \in [n1,n1+m-1]} r_i\}$

6406532052151. ✖ $\{r \mapsto r_{n2+m}, sum \mapsto \sum_{i \in [n1,n2+m-1]} r_i\}$

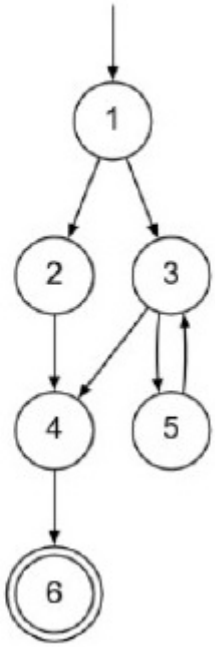
Sub-Section Number :	10
Sub-Section Id :	64065388992
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653614753 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (46 to 47)

Question Label : Comprehension

Consider the control flow graph (CFG) below.



Based on the above data, answer the given subquestions.

Sub questions

Question Number : 46 Question Id : 640653614754 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Identify the number of prime paths in the given CFG.

Options :

6406532052160. ✖ 4

6406532052161. ✖ 5

6406532052162. ✔ 6

6406532052163. ✖ 7

Question Number : 47 Question Id : 640653614755 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Identify the correct set with the minimum number of test paths required for prime path coverage.

Options :

6406532052164. ✖ [1, 2, 4, 6], [1, 3, 4, 6]

6406532052165. ✖ [1, 2, 4, 6], [1, 3, 4, 6], [1, 3, 5, 3, 4, 6]

6406532052166. ✔ [1, 2, 4, 6], [1, 3, 4, 6], [1, 3, 5, 3, 5, 3, 4, 6]

6406532052167. ✖ [1, 2, 4, 6], [1, 3, 5, 3, 5, 3, 4, 6]

AI

Section Id :	64065341441
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	8
Number of Questions to be attempted :	8
Section Marks :	25
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065388993
Question Shuffling Allowed :	No