6406532049723. ✖ {18, 60}

6406532049724. ✖ {30, 75}

6406532049725. ✖ {10, 30}

6406532049726. ✔ {10, 30, 75}

Sw Testing

Section Id :	64065341410
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	17
Number of Questions to be attempted :	17
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 :	64065388793
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 27 Question Id : 640653613993 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 :

6406532049771. ✔ YES

6406532049772. ✖ NO

Sub-Section Number :	2
Sub-Section Id :	64065388794
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 28 Question Id : 640653613994 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 parameters of the software system are tested in security testing?

Options :

6406532049773. ✔ Confidentiality

6406532049774. ✖ Compatibility

6406532049775. ✖ Reliability

6406532049776. ✔ Availability

Sub-Section Number :	3
Sub-Section Id :	64065388795
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 29 Question Id : 640653613995 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 type of software metric involves parameters like team size, project cost, schedule, and productivity?

Options :

6406532049777. ✖ Product metrics

6406532049778. ✖ Process metrics

6406532049779. ✔ Project metrics

6406532049780. ✖ Software quality metrics

Question Number : 30 Question Id : 640653614006 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 tries to verify web applications by executing test cases that break the normal execution sequence?

Options :

6406532049809. ✖ User-session data based testing

6406532049810. ✖ Value level bypass testing

6406532049811.

✖ Parameter level bypass testing

6406532049812. ✔ Control flow level bypass testing

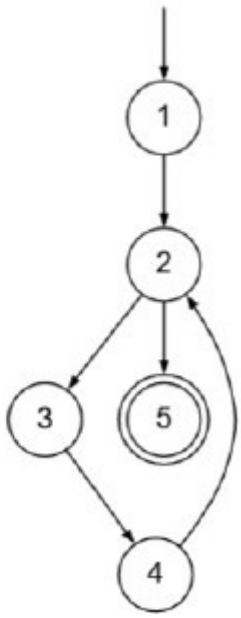
Sub-Section Number :	4
Sub-Section Id :	64065388796
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653613996 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 : (31 to 32)

Question Label : Comprehension

Consider the control flow graph (CFG) below.



Based on the above data , answer the given sub questions.

Sub questions

Question Number : 31 Question Id : 640653613997 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 :

6406532049781. ✖ 4

6406532049782. ✖ 5

6406532049783. ✔ 6

6406532049784. ✖ 7

Question Number : 32 Question Id : 640653613998 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 is the minimum number of test paths required for prime path coverage?

Options :

6406532049785. ✖ 1

6406532049786. ✔ 2

6406532049787. ✖ 3

6406532049788. ✖ 4

Question Id : 640653614002 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 : (33 to 34)

Question Label : Comprehension

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) 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) {
	for (Double c : salary_comp) {
P_2	total_salary += c;
	}
	if(total_salary < 25000.00) {
P_3	out.println("Status : Eligible</BR>");
	}
	else
P_4	{}
	}
	else{
P_5	out.println("Invalid employee ID</BR>");
	}
P_6	out.println ("</BODY></HTML>"); out.close();

Based on the above data , answer the given sub questions.

Sub questions

Question Number : 33 Question Id : 640653614003 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

Identify the component expression corresponding to the given code .

Options :

6406532049797. ✖ $P_1 \cdot (P_2^* \cdot P_3 \cdot (P_4|P_5))|P_6$

6406532049798. ✖ $P_1 \cdot (P_2|(P_3^* \cdot (P_4|P_5))) \cdot P_6$

6406532049799. ✔ $P_1 \cdot ((P_2^* \cdot (P_3|P_4))|P_5) \cdot P_6$

6406532049800. ✖ $P_1 \cdot ((P_2^*|P_3) \cdot (P_4|P_5)) \cdot P_6$

Question Number : 34 Question Id : 640653614004 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 empty atomic section in the given code.

Options :

6406532049801. ✖ P_2

6406532049802. ✖ P_3

6406532049803. ✔ P_4

6406532049804. ✖ P_5

Question Id : 640653614013 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 : (35 to 36)

Question Label : Comprehension

Consider the following code segment for symbolic testing and answer the given subquestions.

```
//code base
int Product(int n) {
    int prod = 1;
    int r;
    for(int i = 0; i < n; i++) {
        r = sym_input();
        if(r == 0)
            break;
        prod *= r;
    }
    return prod;
}
```

Sub questions

Question Number : 35 Question Id : 640653614014 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 `true`s followed by a `false`. Consider each r_i is a fresh symbolic value.

Options :

6406532049837. ✔ $(\bigwedge_{[0,m-1]}(r_i \neq 0)) \bigwedge (r_m == 0)$

6406532049838. ✖ $(\bigwedge_{[1,m]}(r_i == 0)) \bigwedge (r_{m+1} \neq 0)$

6406532049839. ✖ $(\bigwedge_{[0,n-1]}(r_i \neq 0)) \bigwedge (r_n == 0)$

6406532049840. ✖ $(\bigwedge_{[0,n]}(r_i \neq 0)) \bigwedge (r_{n+1} == 0)$

Question Number : 36 Question Id : 640653614015 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 `prod` at the end of the symbolic execution of the `for` loop with a sequence of m `trues` followed by a `false`.

Options :

6406532049841. ✖ $\{r \mapsto r_n, prod \mapsto \prod_{i \in [0,n-1]} r_i\}$

6406532049842. ✖ $\{r \mapsto r_{m+1}, prod \mapsto \prod_{i \in [1,m]} r_i\}$

6406532049843. ✔ $\{r \mapsto r_m, prod \mapsto \prod_{i \in [0,m-1]} r_i\}$

6406532049844. ✖ $\{r \mapsto r_{m+n}, prod \mapsto \prod_{i \in [1,m+n]} r_i\}$

Sub-Section Number :	5
Sub-Section Id :	64065388797
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653613999 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 : (37 to 38)

Question Label : Comprehension

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

Based on the above data , answer the given subquestions.

Sub questions

Question Number : 37 Question Id : 640653614000 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 :

6406532049789. ✖ $(\neg b \wedge \neg c)$

6406532049790. ✖ $(\neg b \vee \neg c)$

6406532049791. ✔ $(b \wedge c)$

6406532049792. ✖ $(b \vee c)$

Question Number : 38 Question Id : 640653614001 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 :

6406532049793. ✖ $\{(a = T, b = T, c = T), (a = F, b = T, c = T)\}$

6406532049794. ✖ $\{(a = T, b = F, c = F), (a = F, b = F, c = F)\}$
$\{(a = T, b = F, c = T), (a = F, b = F, c = T)\}$

6406532049795. ✔ $\{(a = T, b = T, c = F), (a = F, b = T, c = F)\}$
$\{(a = T, b = F, c = T), (a = F, b = F, c = T)\}$
$\{(a = T, b = F, c = F), (a = F, b = F, c = F)\}$

6406532049796. ✖ $\{(a = T, b = T, c = F), (a = F, b = T, c = F)\}$
$\{(a = T, b = T, c = T), (a = F, b = T, c = T)\}$
$\{(a = T, b = F, c = T), (a = F, b = F, c = T)\}$

Sub-Section Number :	6
Sub-Section Id :	64065388798
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 39 Question Id : 640653614005 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

"For testing a web application, testing each layer separately and their integration is also important."
Match the following from the above context of web application layers:

Layer	Roles
1. Presentation layer	A. Permanent data storage to methods within the class
2. Data content layer	B. Computation, data access
3. Data representation layer	C. HTML, output and UI
4. Data storage layer	D. In-memory data storage

Options :

6406532049805. ✖ 1-B, 2-C, 3-A, 4-D

6406532049806. ✖ 1-B, 2-C, 3-D, 4-A

6406532049807. ✖ 1-C, 2-B, 3-A, 4-D

6406532049808. ✔ 1-C, 2-B, 3-D, 4-A

Sub-Section Number : 7

Sub-Section Id : 64065388799

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 40 Question Id : 640653614016 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 Numbers {
    private int[] num;
    public Numbers(int[] num) {
        this.num = num;
    }
    //find the frequency of a digit
    public int countFreq(int key) {
        int count = 0;
        for(int i = 0; i < num.length - 1; i++)
            if(num[i] == key)
                ++count;
        return count;
    }
}
```

```
//test class
import static org.junit.Assert.*;
import org.junit.Test;

public class NumbersTest {
    private Numbers n;
    @Test
    public void testCase1() {
        int[] a = {20, 50, 10, 50, 50};
        n = new Numbers(a);
        assertTrue(n.countFreq(50) == 3);
    }
    @Test
    public void testCase2() {
        int[] a = {10, 50, 10, 10, 50};
        n = new Numbers(a);
        assertTrue(n.countFreq(10) == 3);
    }
    @Test
    public void testCase3() {
        int[] a = {10, 20, 10, 20, 50};
        n = new Numbers(a);
        assertEquals(2, n.countFreq(20));
    }
    @Test
    public void testCase4() {
        int[] a = {10, 20, 10, 20, 50};
        n = new Numbers(a);
        assertEquals(1, n.countFreq(50));
    }
}
```

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

Options :

6406532049845. ✔ testcase1( )

6406532049846. ✖ testcase2( )

6406532049847. ✖ testcase3( )

6406532049848. ✔ testcase4( )

Sub-Section Number :	8
Sub-Section Id :	64065388800
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 41 Question Id : 640653614007 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{
    private int x;
    public A() { x = 0; }
    public void set(int _x) {
        this.x = _x;
    }
}
class B extends A{
    private int y;
    public void setY(int _y) {
        y = _y;
    }
}

class C extends B{
    private int z;
    public void set(int _x, int _z) {
        x = _x;
        z = _z;
    }
}
public class Ex1 {
    public static void main(String[] args) {
        C obj = new C();
        obj.set(10, 20);
    }
}
```

On compilation, the above program generates an error: "The field A.x is not visible".
Identify the type of anomaly/fault in the given scenario.

Options :

6406532049813. ✖ Inconsistent type use

6406532049814. ✖ State definition anomaly

6406532049815. ✖ State definition inconsistency anomaly

6406532049816. ✔ State visibility anomaly

Question Number : 42 Question Id : 640653614008 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{
    public void f() { }
    public void g() { }
    public void h() { }
}
class B extends A{
    public void g() { }
    public void i() { }
}
class C extends B{
    public void f() { }
    public void i() { }
 }
 public class Ex1 {
     public static void main(String[] args) {
         C obj = new C();
         obj.f();
         obj.g();
         obj.h();
         obj.i();
     }
 }
```

Which of the following sets of the methods will be invoked in the above program?

Options :

6406532049817. ✖ {C::f(), A::g(), A::h(), C::i()}

6406532049818. ✖ {A::f(), B::g(), A::h(), B::i()}

6406532049819. ✖ {A::f(), A::g(), A::h(), C::i()}

6406532049820. ✔ {C::f(), B::g(), A::h(), C::i()}

Question Number : 43 Question Id : 640653614009 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 $\sum = \{a, b\}$, with the production rules as follows:

$$S \rightarrow aXbb,$$
$$X \rightarrow abb.$$

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

Options :

6406532049821. ✖ $\{a^n b^{2n} \mid n \geq 1\}$

6406532049822. ✔ $\{a^n b^{2n} \mid n \geq 2\}$

6406532049823. ✖ $\{(abb)^n \mid n \geq 1\}$

6406532049824. ✖ $\{(abb)^n \mid n \geq 2\}$

Question Number : 44 Question Id : 640653614010 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 `if(x > y)` to statements like `if(x >= y)`, `if(x <= y)`, `if(x < y)`, etc. are examples of which kind of mutation operator?

Options :

6406532049825. ✖ Conditional operator replacement

6406532049826. ✖ Logical operator replacement

6406532049827. ✔ Relational operator replacement

6406532049828. ✖ Unary operator insertion

Question Number : 45 Question Id : 640653614011 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

An academic institution has announced scholarships on merit for its students. The scholarship price is calculated as follows:

- If the CGPA is ≥ 91 and ≤ 100, then Rs. 1,00,000/- per annum.
- If the CGPA is ≥ 81 and ≤ 90, then Rs. 50,000/- per annum.
- If the CGPA is ≥ 71 and ≤ 80, then Rs. 25,000/- per annum.
- If the CGPA is ≥ 0 and ≤ 70, then there will be no scholarship.

A software application has been developed to calculate the scholarship, which needs to be tested. What is the minimum number of test cases to be prepared for testing the software system using the equivalence class partitioning technique?

Options :

6406532049829. ✖ 4

6406532049830. ✔ 5

6406532049831. ✖ 6

6406532049832. ✖ 7

Question Number : 46 Question Id : 640653614012 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, 60 ≤ AGE ≥ 18, AGE > 60], and ["Rural", "Urban", "Suburban"]. What will be the minimum number of tests that need to be prepared using the Each Choice Coverage (ECC) criteria?

Options :

6406532049833. ✔ 3

6406532049834. ✖ 6

6406532049835. ✖ 18

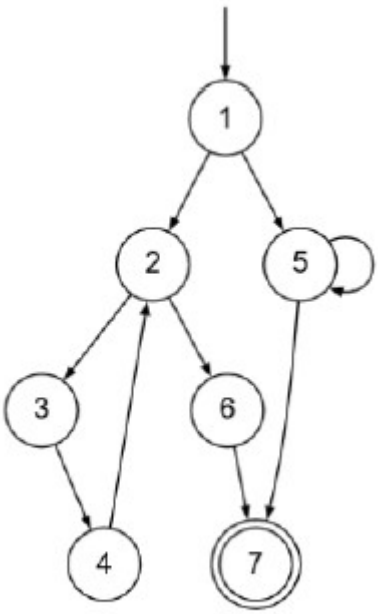
6406532049836. ✖ 27

Question Number : 47 Question Id : 640653614017 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 control flow graph (CFG) below.



What is the cyclomatic complexity?

Options :

6406532049849. ✔ 4

6406532049850. ✖ 5

6406532049851. ✖ 6

6406532049852. ✖ 7

AI

Section Id :	64065341411
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 :	64065388801
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 48 Question Id : 640653614018 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