Started on	Friday, 30 May 2025, 4:00 PM
State	Finished
Completed on	Friday, 30 May 2025, 4:21 PM
Time taken	20 mins 54 secs
Marks	14.00/20.00
Grade	**70.00** out of 100.00

Question 1

Complete

Mark 1.00 out of 1.00

What does the following metaclass-based code output?

```
class Meta(type):
    def __new__(cls, name, bases, dct):
        dct['added'] = lambda self: "added method"
        return super().__new__(cls, name, bases, dct)

class MyClass(metaclass=Meta):
    pass

obj = MyClass()
print(obj.added())
```

a. <function>

b. None

c. "added method"

d. Error

Question 2

Complete

Mark 0.00 out of 1.00

Given:

```
1. class Dims {
2. public static void main(String[] args) {
3. int[][] a = {{1,2,}, {3,4}};
4. int[] b = (int[]) a[1];
5. Object o1 = a;
6. int[][] a2 = (int[][]) o1;
7. int[] b2 = (int[]) o1;
8. System.out.println(b[1]);
9. } }
```

What is the result?

- a. Compilation fails due to an error on line 5
- b. Compilation fails due to an error on line 4
- c. 4
- d. An exception is thrown at runtime
- e. 2
- f. Compilation fails due to an error on line 6
- g. Compilation fails due to an error on line 7

Question 3

Complete

Mark 1.00 out of 1.00

What does this query return?

```
SELECT name, LENGTH(name) AS name_length
FROM customers
WHERE LENGTH(name) = (SELECT MAX(LENGTH(name)) FROM customers);
```

- a. Customers with the longest name
- b. Customer with the shortest name
- c. All customers
- d. Syntax error in subquery

Question 4

Complete

Mark 1.00 out of 1.00

What will the following code print?

```
let obj = {
  valueOf() {
    return {};
  },
  toString() {
    return "5";
  }
};

console.log(obj == 5);
console.log(obj === 5);
```

a. false false

b. true false

c. false true

d. true true

Question 5

Complete

Mark 1.00 out of 1.00

What is the result of the following query?

```
SELECT e.name, d.department_name
FROM employees e
JOIN departments d ON e.department_id = d.id
WHERE d.location = 'Hyderabad';
```

a. Names of all employees

b. Names of employees in Hyderabad departments

c. Names of departments in Hyderabad

d. Names of employees not in Hyderabad

Question 6

Complete

Mark 1.00 out of 1.00

What is the output of this code?

```
async function* gen() {
  yield await Promise.resolve(1);
  yield 2;
}

(async () => {
  for await (const val of gen()) {
    console.log(val);
  }
})();
```

- a. 1 2
- b. 1 undefined
- c. Promise { 1 } 2
- d. undefined 2

Question 7

Complete

Mark 1.00 out of 1.00

What does the following query return?

```
SELECT department_id, COUNT(*) AS num_employees
FROM employees
GROUP BY department_id
HAVING COUNT(*) > 5;
```

- a. All departments
- b. Departments with more than 5 employees
- c. Employees with department_id greater than 5
- d. Syntax error due to HAVING clause

Question 8

Complete

Mark 1.00 out of 1.00

What is logged to the console?

```
function counter() {
  let count = 0;
  return {
    inc: () => ++count,
    dec: () => --count
  };
}

const a = counter();
const b = counter();

a.inc(); a.inc();
b.inc();

console.log(a.dec(), b.dec());
```

- a. 2 0
- b. 1 1
- c. 1 0
- d. 2 1

Question 9

Complete

Mark 1.00 out of 1.00

What will be the output of the following code?

```
console.log('start');

setTimeout(() => console.log('timeout 1'), 0);

Promise.resolve().then(() => {
  console.log('promise 1');
  setTimeout(() => console.log('timeout 2'), 0);
});

queueMicrotask(() => console.log('microtask'));

console.log('end');
```

a. start end timeout 1 promise 1 timeout 2 microtask

b. start microtask end promise 1 timeout 1 timeout 2

c. start end microtask promise 1 timeout 1 timeout 2

d. start end promise 1 microtask timeout 1 timeout 2

Question 10

Complete

Mark 1.00 out of 1.00

What will be printed?

```
function A() {}
A.prototype.value = 1;

const a1 = new A();
A.prototype = { value: 2 };

const a2 = new A();

console.log(a1.value, a2.value);
```

a. 1 2

b. undefined 2

c. 2 2

d. 1 1

Question 11

Complete

Mark 0.00 out of 1.00

Given:

```
3. class A { }
4. class B extends A { }
5. public class ComingThru {
6. static String s = "-";
7. public static void main(String[] args) {
8. A[] aa = new A[2];
9. B[] ba = new B[2];
10. sifter(aa);
11. sifter(ba);
12. sifter(7);
13. System.out.println(s);
14. }
15. static void sifter(A[]... a2) { s += "1"; }
16. static void sifter(B[]... b1) { s += "2"; }
17. static void sifter(B[] b1) { s += "3"; }
18. static void sifter(Object o) { s += "4"; }
19. }
```

What is the result?

- a. -124
- b. -134
- c. -434
- d. Compilation fails
- e. -424
- f. -444

Question 12

Complete

Mark 0.00 out of 1.00

You're designing a new online board game in which Floozels are a type of Jammers, Jammers can have Quizels, Quizels are a type of Klakker, and Floozels can have several Floozets. Which of the following fragments represent this design? (Choose all that apply.)

a.
```
import java.util.*;
class Klakker { Set<Quizel> q; }
class Quizel extends Klakker { }
class Jammer { List<Floozel> f; }
class Floozet extends Floozel { }
public class Floozel { Set<Klakker> k; }
```

b.
```
import java.util.*;
class Floozet { }
class Quizel implements Klakker { }
class Jammer { List<Quizel> q; }
interface Klakker { }
class Floozel extends Jammer { List<Floozet> f; }
```

c.
```
import java.util.*;
interface Jammer extends Quizel { }
interface Klakker { }
interface Quizel extends Klakker { }
interface Floozel extends Jammer, Floozet { }
interface Floozet { }
```

d.
```
import java.util.*;
interface Klakker { }
class Jammer { Set<Quizel> q; }
class Quizel implements Klakker { }
public class Floozel extends Jammer { List<Floozet> f; }
interface Floozet { }
```

Question 13

Complete

Mark 1.00 out of 1.00

What will the following query output?

```
SELECT DATE_FORMAT(order_date, '%M %Y') AS month_year, COUNT(*) AS total_orders
FROM orders
GROUP BY month_year
ORDER BY total_orders DESC
LIMIT 1;
```

a. Month and year with the least orders

b. Month and year with the most orders

c. Total orders of all months

d. Syntax error in DATE_FORMAT

Question 14

Complete

Mark 0.00 out of 1.00

Given:

```
class Alien {
 String invade(short ships) { return "a few"; }
 String invade(short... ships) { return "many"; }
}
class Defender {
 public static void main(String [] args) {
 System.out.println(new Alien().invade(7));
} }
```

What is the result?

a. Compilation fails

b. The output is not predictable

c. An exception is thrown at runtime

d. a few

e. many

Question 15

Complete

Mark 1.00 out of 1.00

What will be the output of the following code?

```
def func(val, lst=[]):
    lst.append(val)
    return lst

print(func(1))
print(func(2))
```

a. [1]
[2, 1]

b. [1]
[2]

c. [1, 2]
[1]

d. [1]
[1, 2]

Question 16

Complete

Mark 1.00 out of 1.00

What will be the output of the following Python program?

```
z=set('abc')
z.add('san')
z.update(set(['p', 'q']))
z
```

a. {‘a’, ‘b’, ‘c’, ‘p’, ‘q’, ‘san’}

b. {‘abc’, ‘p’, ‘q’, ‘san’}

c. {‘a’, ‘c’, ‘c’, ‘p’, ‘q’, ‘s’, ‘a’, ‘n’}

d. {‘a’, ‘b’, ‘c’, [‘p’, ‘q’], ‘san}

Question 17

Complete

Mark 0.00 out of 1.00

Given:

```
class CardBoard {
 Short story = 200;
 CardBoard go(CardBoard cb) {
 cb = null;
 return cb;
 }
 public static void main(String[] args) {
 CardBoard c1 = new CardBoard();
 CardBoard c2 = new CardBoard();
 CardBoard c3 = c1.go(c2);
 c1 = null;
 // do Stuff
} }
```

When // doStuff is reached, how many objects are eligible for GC?

- a. 2
- b. An exception is thrown at runtime
- c. Compilation fails
- d. It is not possible to know
- e. 0
- f. 1

Question 18

Complete

Mark 1.00 out of 1.00

What will be the output of the following query?

```
SELECT name, salary
FROM employees
WHERE salary > (SELECT AVG(salary) FROM employees);
```

- a. Syntax error due to subquery
- b. Employees whose salary is more than the average salary
- c. All employees with the highest salary
- d. Only employees with minimum salary

Question 19

Complete

Mark 0.00 out of 1.00

What will be the value of 'result' in following Python program?

```
list1 = [1,2,3,4]
list2 = [2,4,5,6]
list3 = [2,6,7,8]
result = list()
result.extend(i for i in list1 if i not in (list2+list3) and i not in result)
result.extend(i for i in list2 if i not in (list1+list3) and i not in result)
result.extend(i for i in list3 if i not in (list1+list2) and i not in result)
```

- a. [1, 2, 4, 7, 8]
- b. [1, 3, 5, 7, 8]
- c. error
- d. [1, 7, 8]

Question 20

Complete

Mark 1.00 out of 1.00

What does this code output?

```
def counter():
    count = 0
    def inner():
        nonlocal count
        count += 1
        return count
    return inner

c1 = counter()
print(c1(), c1(), c1())
```

- a. 1 2 3
- b. 3 3 3
- c. 1 1 1
- d. Error