Started on	Wednesday, 11 May 2022, 10:13 AM
State	Finished
Completed on	Wednesday, 11 May 2022, 12:41 PM
Time taken	2 hours 27 mins
Marks	43.00/50.00
Grade	**86.00** out of 100.00

Question 1

Complete

Mark 1.00 out of 1.00

```
class Main
{
    public static void main(String args[])
    {
        Main obj= null;
        obj.nonStaticMethod();
    }
     private void nonStaticMethod()
    {
        System.out.print(" Non-static method ");
    }
}
```

Select one:

a.

None of these

b.

Non-static method

c.

compilation fails

d.

Restuls in Null pointer exception

Question 2

Complete

Mark 1.00 out of 1.00

Let P be a singly linked list. Let Q be the pointer to an intermediate node x in the list. What is the worst-case time complexity of the best known algorithm to delete the node x from the list?

Select one:

a. O(log2 n)

b. O(1)

c. O(logn)

d. O(n)

Question 3

Complete

Mark 1.00 out of 1.00

Semaphore is a/an _____ to solve the critical section problem.

Select one:

- a. integer variable
- b. None of these
- c. hardware for a system
- d. special program for a system

Question 4

Complete

Mark 1.00 out of 1.00

Given the following Managers Schema

Managers –

Id	Name	Salary
1	Harpreet	20000
2	Ravi	30000
3	Vinay	10000
4	Ravi	30000
5	Harpreet	20000
6	Vinay	10000
7	Rajeev	40000
8	Vinay	10000
9	Ravi	30000
10	Sanjay	50000

What will happen when the following Query is Executed

```
DELETE M1
From managers M1, managers M2
Where M2.Name = M1.Name AND M1.Id>M2.Id;
```

Select one:

a.

Sql Query has a syntax error

b.

Id	Name	Salary
1	Harpreet	20000
2	Ravi	30000
3	Vinay	10000
7	Rajeev	40000
10	Sanjay	50000

c.

```
Deletes the complete table Managers
```

d.

```
C) Id   Name    Salary
1       Harpreet        20000
2       Ravi            30000
3       Vinay   10000
4       Ravi            30000
5       Harpreet        20000
6       Vinay   10000
7       Rajeev  40000
10      Sanjay  50000
```

Question 5

Not answered

Marked out of 1.00

```
lass 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 G
C?
```

Select one:

a.

```
It is not possible to know
```

b.

```
An exception is thrown at runtime
```

c. 0

d. 1

e. 2

f.

```
Compilation fails
```

Question 6

Complete

Mark 1.00 out of 1.00

What will be the output of the following pseudocode for input 7 ?

```
1. Read the value of N.
2. Set m=1, T=0.
3. if m > N
4.    Go to line no.9
5. else
6.       T=T+m
7.       m=m+1
8.  Go to line no.3
9.  Display the value of T
10. Stop
```

Select one:

- a. 56
- b. 28
- c. 32
- d. 76

Question 7

Complete

Mark 1.00 out of 1.00

The following postfix expression with single digit operands is evaluated using a stack:

```
8 2 3 ^ / 2 3 * + 5 1 * -
```

Note that ^ is the exponentiation operator. The top two elements of the stack after the first * is evaluated are:

Select one:

- **a. 6, 1**
- **b. 1, 5**
- **c. 5, 7**
- **d.**

```
3, 2
```

Question 8

Complete

Mark 0.00 out of 1.00

```
class Test {
public static void swap(Integer i, Integer j) {
      Integer temp = new Integer(i);
      i = j;
      j = temp;
   }
   public static void main(String[] args) {
      Integer i = new Integer(10);
      Integer j = new Integer(20);
      swap(i, j);
      System.out.println("i = " + i + ", j = " + j);
   }
}
```

Select one:

a.

```
i = 10, j = 20
```

b.

```
i = 10, j = 10
```

c.

```
 i = 10, j = 10
```

d.

```
 i = 10, j = 20
```

Question 9

Complete

Mark 1.00 out of 1.00

Which of the following statements are TRUE about an SQL query?
1 : An SQL query can contain a HAVING clause even if it does not have a GROUP BY clause
2 : An SQL query can contain a HAVING clause only if it has a GROUP BY clause
3 : All attributes used in the GROUP BY clause must appear in the SELECT clause
4 : Not all attributes used in the GROUP BY clause need to appear in the SELECT clause

Select one:

a. 1 and 3

b. 2 and 3

c. 2 and 4

d. 1 and 4

Question 10

Complete

Mark 1.00 out of 1.00

In SQL, GRANT command is used to

Select one:

a.
allow user to create databases

b.
allow user to access databases

c.
None of the above

d.
grant system privileges, roles, and object privileges to uses and roles

e.
choose auditing for specific SQL commands

Question 11

Complete

Mark 1.00 out of 1.00

Consider page reference string 1, 3, 0, 3, 5, 6, 3 with 3 page frames.
Find the number of page faults. (Page Replacement Algorithm used is FIFO)

Select one:

- a. 4
- b. 5
- c. 6
- d. 1

Question 12

Complete

Mark 1.00 out of 1.00

A view is which of the following?

Select one:

- a. A virtual table that can be accessed via SQL commands
- b. A base table that can be accessed via SQL commands
- c. A virtual table that cannot be accessed via SQL commands
- d. A base table that cannot be accessed via SQL commands

Question 13

Complete

Mark 1.00 out of 1.00

Each answer below shows example data from a table. Which answer is an example of the missing values problem?

Select one:

a.

Three rows have the values Brown, NULL, and Blue in the same column.

b.

One row has the value "He is interested in a Silver Porsche from the years 1978-1988" in a column.

c.

Three columns have the values 534-2435, 534-7867, and 546-2356 in the same row.

d.

Three rows have the values Brown Small Chair, Small Chair Brown, and Small Brown Chair in the same column.

Question **14**

Complete

Mark 1.00 out of 1.00

Linked lists are used to implement
1. Stack
2. Queue
3. Trees

Select one:

a. All 1, 2, and 3

b. 1 and 3

c. 1 and 2

d. 2 and 3

Question **15**

Complete

Mark 1.00 out of 1.00

A process executes the following code

```
for (i = 0; i < n; i++) fork();
```

The total number of child processes created is

Select one:

- **a.** 2^n
- **b.** $2^n - 1$
- **c.** n
- **d.** $2^{(n+1)} - 1$

Question 16

Complete

Mark 1.00 out of 1.00

```
Given:
3. public class Ouch {
4. static int ouch = 7;
5. public static void main(String[] args) {
6. new Ouch().go(ouch);
7. System.out.print(" " + ouch);
8. }
9. void go(int ouch) {
10. ouch++;
11. for(int ouch = 3; ouch < 6; ouch++)
12. ;
13. System.out.print(" " + ouch);
14. }
15. }
What is the result?
```

Select one:

- **a. 5 7**
- **b.**

```
An exception is thrown at runtime
```

- **c. 5 8**
- **d. 8 7**
- **e.**

```
Compilation fails
```

- **f. 8 8**

Question 17

Complete

Mark 1.00 out of 1.00

```
 Given:
class Plane {
static String s = "-";
public static void main(String[] args) {
new Plane().s1();
System.out.println(s);
}
void s1() {
try { s2(); }
catch (Exception e) { s += "c"; }
}
void s2() throws Exception {
s3(); s += "2";
s3(); s += "2b";
}
void s3() throws Exception {
throw new Exception();
} }
What is the result?
```

Select one:

a.

```
-c
```

b.

```
-c22b
```

c.

```
-2c2b
```

d.

-2c2bc

e.

-

f.

-c2

g.

-2c

h.

Compilation fails

Question 18

Complete

Mark 1.00 out of 1.00

How many nodes are present in a strictly binary tree with 8 leaves?

Select one:

a. 7

b. 15

c. 16

d. 17

Question 19

Complete

Mark 1.00 out of 1.00

Given:

```
3. public class Dark {
4. int x = 3;
5. public static void main(String[] args) {
6. new Dark().go1();
7. }
8. void go1() {
9. int x;
10. go2(++x);
11. }
12. void go2(int y) {
13. int x = ++y;
14. System.out.println(x);
15. }
16. }
```

What is the result?

Select one:

a.

```
An exception is thrown at runtime
```

b. 5

c.

```
Compilation fails
```

d. 3

e. 2

f. 4

Question **20**

Complete

Mark 1.00 out of 1.00

```
class Main
{
    public static void main(String args[])
    {
        Main obj= null;
        obj.staticMethod();
    }

    private static void staticMethod()
    {
        System.out.println("static method");
     }
 }
```

Select one:

a.

```
static method
```

b.

```
compilation fails
```

c.

```
Results in Null pointer exception
```

d.

```
None of these
```

Question 21

Complete

Mark 1.00 out of 1.00

```
CREATE TABLE temp
  (
     id   INT,
     name VARCHAR(100)
  );

INSERT INTO temp VALUES (1, "abc");
INSERT INTO temp VALUES (2, "abc");
INSERT INTO temp VALUES (3, "bcd");
INSERT INTO temp VALUES (4, "cde");

SELECT Count(*)
FROM   temp
GROUP  BY name;
```

Select one:

a.

```
count(*)
      1
      2
      3
```

b.

```
Syntax error in Sql Query
```

c.

```
 count(*)
       2
       1
       1
```

d.

```
count(*)
       2
```

Question 22

Complete

Mark 1.00 out of 1.00

```
class Test {
     public static void main(String[] args)        throws java.l
ang.Exception
    {
          // Integer literal
         int inum = 1_00_00_000;
         // Double literal
         double dnum = 2.10_12_001;

          System.out.println("inum:" + inum);
          System.out.println("dnum:" + dnum);
    }
}
```

Select one:

a.

```
inum:10000000
dnum:2.1012001
```

b.

```
 None of these
```

c.

```
compilation fails
```

d.

```
inum:1_00_00_000
dnum:2.10_12_001
```

Question 23

Complete

Mark 1.00 out of 1.00

Given:

```
3. interface Vessel { }
4. interface Toy { }
5. class Boat implements Vessel { }
6. class Speedboat extends Boat implements Toy { }
7. public class Tree {
8. public static void main(String[] args) {
9. String s = "0";
10. Boat b = new Boat();
11. Boat b2 = new Speedboat();
12. Speedboat s2 = new Speedboat();
13. if((b instanceof Vessel) && (b2 instanceof Toy)) s += "1";
14. if((s2 instanceof Vessel) && (s2 instanceof Toy)) s += "2";
15. System.out.println(s);
16. }
17. }
```

What is the result?

Select one:

- **a. 012**
- **b.**

```
Compilation fails
```

- **c. 01**
- **d. 02**
- **e.**

```
An exception is thrown at runtime
```

- **f. 0**

Question **24**

Complete

Mark 1.00 out of 1.00

```
class Feline {
public static void main(String[] args) {
Long x = 42L;
Long y = 44L;
System.out.print(" " + 7 + 2 + " ");
System.out.print(foo() + x + 5 + " ");
System.out.println(x + y + foo());
}
static String foo() { return "foo"; }
}
What is the result?
```

Select one:

a.

```
 9 foo47 4244foo
```

b.

```
72 foo425 86foo
```

c.

```
9 foo425 4244foo
```

d.

```
72 foo425 4244foo
```

e.

```
9 foo425 86foo
```

f.

```
9 foo47 86foo
```

g.

```
72 foo47 86foo
```

h.

```
Compilation fails
```

i.

```
72 foo47 4244foo
```

Question **25**

Complete

Mark 1.00 out of 1.00

To define what columns should be displayed in an SQL SELECT statement:

Select one:

a.

use SELECT to name the source table(s) and list the columns to be shown after USING.

b.

use FROM to name the source table(s) and list the columns to be shown after SELECT.

c.

use USING to name the source table(s) and list the columns to be shown after SELECT.

d.

use USING to name the source table(s) and list the columns to be shown after WHERE.

Question 26

Complete

Mark 1.00 out of 1.00

What is the Time Complexity of the below Code

```
for (int i = 1; i <=n; i *= c) {
        // some O(1) expressions
    }
    for (int i = n; i > 0; i /= c) {
        // some O(1) expressions
    }
```

Select one:

a.

O(n^2)

b.

O(1)

c.

O(logn)

d.

O(n)

Question 27

Complete

Mark 1.00 out of 1.00

```
public class Test
{
    public static void main (String[] args) throws java.lang.Exc
eption
    {
            Integer i = null;
            int a = i;
            System.out.println(a);
    }
}
```

Select one:

a. **null**

b. **b.**

```
compile time error
```

c. **0**

d. **d.**

```
Null pointer exception
```

Question **28**

Complete

Mark 0.00 out of 1.00

```
 Given:
class Hexy {
public static void main(String[] args) {
Integer i = 42;
String s = (i<40)?"life":(i>50)?"universe":"everything";
System.out.println(s);
}
}
What is the result?
```

Select one:

a.

```
An exception is thrown at runtime
```

b. null

c. life

d.

```
Compilation fails
```

e.

```
everything
```

f.

```
universe
```

Question **29**

Complete

Mark 1.00 out of 1.00

```
public class Test
{
    private static Object obj;
    public static void main(String args[])
    {
        // it will print null;
        System.out.println("Value of object obj is : " + obj);
    }
}
```

Select one:

a.

```
Null pointer exception
```

b.

```
 prints nothing
```

c.

```
prints null
```

d.

```
prints hashcode
```

Question 30

Complete

Mark 1.00 out of 1.00

what will be the output of the following pseudocode
for input 134 ?

```
int fun1(int num)
      static int a=0
           if( num >0)
                a=a+1
                fun1(num/10)
           else
                return a
```

Static variables have a property of preserving their value even after they are out of their scope

Select one:

- a. 8
- b. 2
- c. 431
- d. 3

Question 31

Complete

Mark 1.00 out of 1.00

```
public class Test
{
    public static void main (String[] args) throws java.lang.Exc
eption
    {
        Integer i = null;
        Integer j = 10;

         System.out.println(i instanceof Integer);
         System.out.println(j instanceof Integer);
    }
}
```

Select one:

a.

```
true true
```

b.

```
false false
```

c.

```
false true
```

d.

```
true false
```

```
true false
```

Question 32

Complete

Mark 1.00 out of 1.00

The result of a SQL SELECT statement is a(n) _____ .

Select one:

a.

report

b.

table

c.

file

d.

form

Question 33

Complete

Mark 1.00 out of 1.00

A process which is copied from main memory to secondary memory on the basis of requirement is known as -

Select one:

a. **Demand Paging**

b. **Threads**

c. **Paging**

d. **Segmentation**

Question **34**

Complete

Mark 1.00 out of 1.00

Given:

```
class Fizz {
int x = 5;
public static void main(String[] args) {
final Fizz f1 = new Fizz();
Fizz f2 = new Fizz();
Fizz f3 = FizzSwitch(f1,f2);
System.out.println((f1 == f3) + " " + (f1.x == f3.x));
}
static Fizz FizzSwitch(Fizz x, Fizz y) {
final Fizz z = x;
z.x = 6;
return z;
} }
```

What is the result?

Select one:

a.

```
Compilation fails
```

b.

```
true true
```

c.

```
true false
```

d.

```
false false
```

e.

```
false true
```

Question 35

Complete

Mark 1.00 out of 1.00

what is the output of the following pseudocode ?

```
1.int i=5,j=7
2. if(i+j > 5)
3.       j=i+2
4.       if(j<5)
5.                print i
6.       else
7.                print j
8.  else
9.       print i+1
```

Select one:

a. 6

b. 12

c. 5

d. 7

Question 36

Complete

Mark 0.00 out of 1.00

Let A be a square matrix of size n x n. Consider the following program. What is the expected output?

```
C = 100
for i = 1 to n do
    for j = 1 to n do
    {
        Temp = A[i][j] + C
        A[i][j] = A[j][i]
        A[j][i] = Temp - C
    }
for i = 1 to n do
    for j = 1 to n do
        Output(A[i][j]);
```

Select one:

a.

The matrix A itself

b.

Transpose of matrix A

c.

Adding 100 to the upper diagonal elements and subtracting 100 from diagonal elements of A

d. None of these

Question 37

Complete

Mark 1.00 out of 1.00

```
public class Twisty {
4. { index = 1; }
5. int index;
6. public static void main(String[] args) {
7. new Twisty().go();
8. }
9. void go() {
10. int [][] dd = {{9,8,7}, {6,5,4}, {3,2,1,0}};
11. System.out.println(dd[index++][index++]);
12. }
13. }
What is the result? (Choose all that apply.)
```

Select one:

a.

```
An exception is thrown at runtime
```

b. 2

c.

```
Compilation fails
```

d. 4

e. 8

f. 1

g. 6

Question 38

Complete

Mark 1.00 out of 1.00

```
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?
```

Select one:

a.

```
-424
```

b.

```
-124
```

c.

```
Compilation fails
```

d.

-444

e.

-434

f.

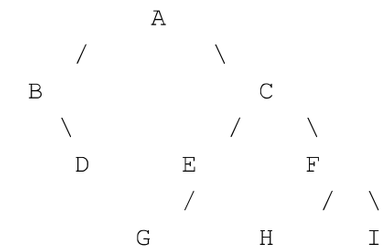
-134

Question 39

Complete

Mark 1.00 out of 1.00

Which of the following is the correct order of the nodes visited during an in-order traversal of the given noded tree?



Select one:

a. B-D-A-G-E-C-H-F-I

b. D-B-A-G-E-C-H-I-F

c. B-D-A-G-E-C-H-I-G

d. D-B-A-G-E-C-H-F-I

Question **40**

Complete

Mark 1.00 out of 1.00

Find out the array representation of the given min-heap, if the value 110 is inserted in it.
1,2,3,17,19,36,7,25,100

Select one:

a.

1,2,3,17,19,36,7,110,100,25

b.

1,2,3,17,19,36,7,25,100,110

c.

1,3,2,17,19,36,7,110,100,25

d.

1,2,3,17,1,36,9,7,110,100,25

Question **41**

Complete

Mark 0.00 out of 1.00

```
 class Fork {
public static void main(String[] args) {
if(args.length == 1 | args[1].equals("test")) {
System.out.println("test case");
} else {
System.out.println("production " + args[0]);
}
}
}
```

And the command-line invocation: java Fork live2

What is the result?

Select one:

a.

```
 test case live2
```

b.

```
An exception is thrown at runtime
```

c.

```
Compilation fails
```

d.

```
test case
```

e.

```
production live2
```

Question **42**

Not answered

Marked out of 1.00

what will be the output of the following pseudocode ?

```
Integer a,b,c,d,
Set b=18,c=12
a=b-c
for(each c from 1 to a-1)
        b=b+c+12
        b=b/5
        d=b+a
end for
c=a+b+c
print a b c
```

Select one:

a.

```
6 15 18
```

b.

```
6 18 12
```

c.

```
6 18 15
```

d.

```
6 4 16
```

Question 43

Not answered

Marked out of 1.00

Consider a database table T containing two columns X and Y each of type integer. After the creation of the table, one record (X= 1, Y=1) is inserted in the table.

Let MX and My denote the respective maximum values of X and Y am ong all records in the table at any point in time. Using MX and MY, new records are inserted in the table 128 times with X and Y values being MX+1, 2*MY+1 respectively. It may be noted that eac h time after the insertion, values of MX and MY change. What wil l be the output of the following SQL query after the steps menti oned above are carried out?

```
SELECT Y FROM T WHERE X=7;
```

Select one:

- **a. 127**
- **b. 257**
- **c.**

  ```
  255
  ```

- **d. 129**

Question **44**

Complete

Mark 1.00 out of 1.00

Which of the following are states of the process ?

Select one:

- **a. All of these**
- **b. Wait (or Block)**
- **c. run**
- **d. Ready**
- **e. Complete (or Terminated)**
- **f. new**

Question 45

Complete

Mark 1.00 out of 1.00

Which of the following is an advantage of adjacency list representation over adjacency matrix representation of a graph?

Select one:

a.

Adding a vertex in adjacency list representation is easier than adjacency matrix representation.

b.

DFS and BSF can be done in O(V + E) time for adjacency list representation. These operations take O(V^2) time in adjacency matrix representation. Here is V and E are number of vertices and edges respectively.

c.

In adjacency list representation, space is saved for sparse graphs.

d. All of the above

Question 46

Complete

Mark 1.00 out of 1.00

Find the SQL statement below that is equal to the following:

```
SELECT NAME FROM CUSTOMER WHERE STATE = 'TS';
```

Select one:

a.

```
SELECT NAME FROM CUSTOMER WHERE STATE IN ('TS');
```

b.

```
SELECT NAME IN CUSTOMER WHERE STATE = 'T';
```

c.

```
SELECT NAME IN CUSTOMER WHERE STATE = 'TS';
```

d.

```
SELECT NAME IN CUSTOMER WHERE STATE IN ('TS');
```

Question 47

Complete

Mark 1.00 out of 1.00

Given:

```
class Mixer {
Mixer() { }
Mixer(Mixer m) { m1 = m; }
Mixer m1;
public static void main(String[] args) {
Mixer m2 = new Mixer();
Mixer m3 = new Mixer(m2); m3.go();
Mixer m4 = m3.m1; m4.go();
Mixer m5 = m2.m1; m5.go();
}
void go() { System.out.print("hi "); }
}
```

What is the result?

Select one:

a.

```
hi, followed by an exception
```

b.

```
hi hi hi
```

c. hi

d.

```
hi hi, followed by an exception
```

e.

```
Compilation fails
```

f.

```
hi hi
```

Question **48**

Complete

Mark 1.00 out of 1.00

What will be the output of the following pseudocode for n2?

```
1.int fun(int n)
2.   if( n EQUALS 4)
3.           return n
4.    else
5.              return 2*fun(n+1)
```

Select one:

a. 4

b. 2

c. 16

d. 8

Question 49

Complete

Mark 1.00 out of 1.00

Which of the following statements is/are correct for Double Linked List?

1. All the nodes have two links
2. Provides bidirectional traversing
3. Provides only unidirectional traversing

Select one:

a. Only 1

b. 1 and 2

c. 1 and 3

d. Only 3

Question **50**

Complete

Mark 1.00 out of 1.00

```
Given:
3. class Building {
4. Building() { System.out.print("b "); }
5. Building(String name) {
6. this(); System.out.print("bn " + name);
7. }
8. }
9. public class House extends Building {
10. House() { System.out.print("h "); }
11. House(String name) {
12. this(); System.out.print("hn " + name);
13. }
14. public static void main(String[] args) { new House("x "); }
15. }

What is the result?
```

Select one:

a.

```
b h hn x
```

b.

```
b hn x h
```

c.

```
hn x h
```

d.

```
Compilation fails
```

e.

```
bn x h hn x
```

f.

```
h hn x
```

g.

```
b bn x h hn x
```

h.

```
bn x b h hn x
```