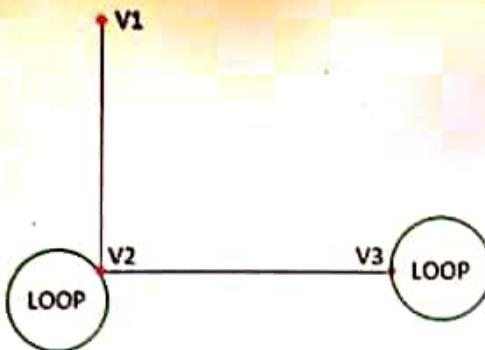


Sections

1

2

**Q 2** Find out the sum of the degree of vertices in the pseudograph as shown in the image.



- Ops:
- A.  12
  - B.  16
  - C.  8
  - D.  4

**Q 3** Why open addressing provides better cache performance than chaining?

- 1. In open addressing, everything is stored in the same table
- 2. In chaining keys, are stored using a linked list

Choose the correct answer from the options given below.

- Ops:
- A.  Only 1 is true
  - B.  Only 2 is true
  - C.  Both 1 and 2 are true
  - D.  Both 1 and 2 are false

**Q 1 Which of the following statements are true about Floyd's Cycle-Finding Algorithm**

**Ops:** A.  It is used to reverse the linked list.

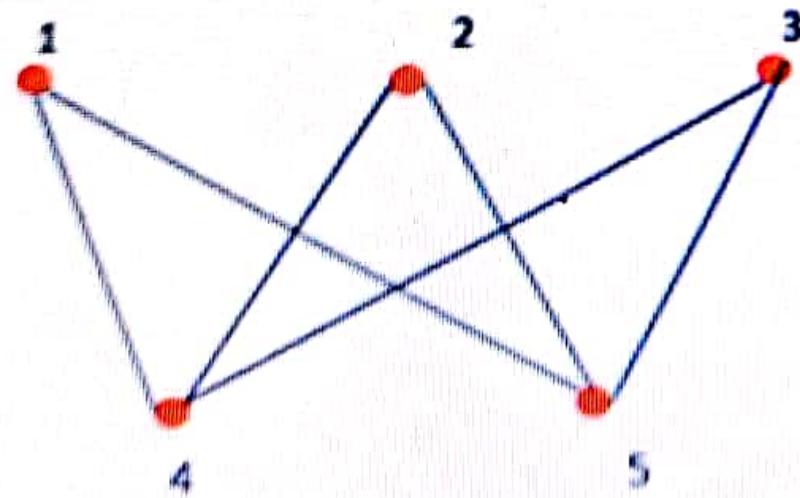
B.  None of the mentioned options

C.  It is used to remove duplicates from the linked list

D.  It is used to detect loop in linked list

---

**Q 2 Which of the following is the correct Adjacency Matrix for the given graph**



## Q. End Function Fun()

- Ops: A.  10  
B.  11  
C.  5  
D.  6

Q 24 What will be the output of the following pseudocode?

1. Integer a, b, c, d
2. set d = 6
3. for(each a from 1 to 2)
4.     for(each b from a to 2)
5.         for(each c from b to 2)
6.             print d
7.         end for
8.     end for
9. end for

- Ops: A.  6 6 6 6 6 6  
B.  6 6  
C.  6 6 6  
D.  6 6 6

Q 25 What will be the output of the following pseudocode?

1. Integer b
2. set b = 1
3. do
4.     print b

- C  Respect  
D  R

Q 22 What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set a = 108, b = 2, c = 3
3. if((a MOD 9) EQUALS 0)
4.   b = b + (a MOD 2)
5.   Print b
6. else
7.   c = c + (a MOD 7)
8.   Print c
9. end if
```

[Note: MOD finds the remainder after the division of one number by another. For example, the expression 2 leaves a quotient of 2 and a remainder of 1]

- Ops: A  2  
B  7  
C  1  
D  3

Q 23 What will be the output of the following pseudocode?

```
1. Integer a, b, c, d
2. set d = 6
3. for(each a from 1 to 2)
4.   for(each b from a to 2)
```



**Important Instructions & Guidelines**

10 questions, 1 mark each

**Data Structures**

Sam is using merge sort to sort an array consisting of 64 elements. After how many passes, each sorted subarray will contain 16 elements?

- Q1: A.  $O^4$   
B.  $O^5$   
C.  $O^2$   
D.  $O^3$

Q2 Henry wants to find out the second largest element of an array using bubble sort. After how many passes will he get the second largest element?

- Ops: A.  $O^2$   
B.  $O^3$  It depends on the number of elements  
C.  $O^1$   
D.  $O^3$

Q3 Consider an undirected graph, G with four vertices. The adjacency matrix of the graph is shown below.

1 0 1 1  
0 0 1 1  
1 1 1 0  
1 1 0 0

Find the number of self loops in the undirected graph, G.

Ops: 1.  $O^3$

**Ops:** A.  2

B.  It depends on the number of elements

C.  1

D.  3

---

**Q 3** Consider an undirected graph, G with four vertices. The adjacency matrix of the graph is shown below.

1 0 1 1

0 0 1 1

1 1 1 0

1 1 0 0

Find the number of self loops in the undirected graph, G.

**Ops:** A.  1

B.  0

C.  3

D.  2

**Q 4** Which of the following statements are true about Floyd's Cycle-Finding Algorithm?

**Ops:** A.  It is used to reverse the linked list.

B.  It is used to detect loop in linked list

C.  It is used to remove duplicates from the linked list

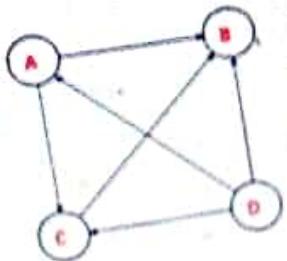
D.  None of the mentioned options



- C.  It is used to remove duplicate elements  
D.  None of the mentioned options

Q5 Which of the following is the correct topological ordering of the given graph?

1. DACB
2. DABD
3. DCAB
4. No topological ordering



- Ops:
- A.  1 and 3
  - B.  Only 1
  - C.  Only 4
  - D.  Only 2

Q6 Identify the effect(s) of using stack in recursion.

1. It is comparatively slower than iteration
2. It uses more memory than iteration

**Q 6** Identify the effect(s) of using stack in recursion.

1. It is comparatively slower than iteration
2. It uses more memory than iteration

Choose the correct answer from the options given below.

- Ops:
- A.  Only 2
  - B.  Both 1 and 2
  - C.  Neither 1 nor 2
  - D.  Only 1

**Q 7** Consider an array A, with n elements. The following operations are performed on array, A:

- i. Right shift
- ii. Right rotation
- iii. Left shift
- iv. Left rotation
- v. Right rotation
- vi. Left shift
- vii. Right rotation

What is the number of elements present in A after the above operations are performed?

- Ops:
- A.  n
  - B.  n - 4
  - C.  n - 3
  - D.  n + 3

**Q 8** In an empty BST, insert the following elements in a similar sequence. Which element will be at the lowest level?



C.  $O(n^3)$

D.  $O(n+3)$

sections

1

2

Q 8 In an empty BST, insert the following elements in a similar sequence. Which element will be at the lowest level?  
105, 95, 122, 99, 97, 120

- Ops: A.  95  
B.  97  
C.  99  
D.  120

Q 9 Consider a two dimensional square matrix A, consisting of 5 rows and 5 columns. The elements of A are given by the formula:  
 $A[k][l] = 1$ , if  $k > l$   
 $A[k][l] = 0$ , if  $k < l$   
 $A[k][l] = 0$ , if  $k=l$  (Assume 0 based indexing)  
Calculate the sum of all elements of A.

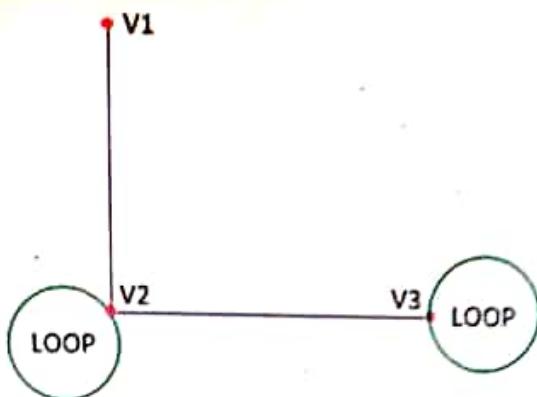
- Ops: A.  60  
B.  32  
C.  28  
D.  None of the mentioned options

Q 10 Find out the correct inorder traversal sequence of a BST?

1. 15, 19, 22, 26, 29, 35  
2. 15, 18, 20, 22, 28, 36, 32  
3. 14, 17, 19, 21, 26, 31, 33

- Ops: A.  Only 3  
B.  Only 1 and 2

**Q 2** Find out the sum of the degree of vertices in the pseudograph as shown in the image.



- Ops:**
- A.  12
  - B.  16
  - C.  8
  - D.  4



**Q 3** Why open addressing provides better cache performance than chaining?

1. In open addressing, everything is stored in the same table
2. In chaining keys, are stored using a linked list

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 1 is true
  - B.  Only 2 is true
  - C.  Both 1 and 2 are true
  - D.  Both 1 and 2 are false

**Q 4** If there is a data structure in which the insertion & deletion operations are very fast, then it is called \_\_\_\_\_.



## Important Instructions & Guidelines



### 1 Data Structures

**Q 1** Why open addressing provides better cache performance than chaining?

1. In open addressing, everything is stored in the same table
2. In chaining keys, are stored using a linked list

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 2 is true
  - B.  Both 1 and 2 are false
  - C.  Both 1 and 2 are true
  - D.  Only 1 is true

1

D.  Search

[reset answer](#)

2

**Q 5** In an empty BST, insert the following elements in a similar sequence. Which element will be at the lowest level?  
105, 95, 122, 99, 97, 120

- Ops:**
- A.  120
  - B.  99
  - C.  97
  - D.  95

**Q 6** Moneta is writing a program to perform insert operation in a binary search tree using recursion. Which of the following types of recursion will she be using in her program?

- Ops:**
- A.  Both A and B
  - B.  Tail recursion
  - C.  Head recursion
  - D.  None of the mentioned options

**Q 7** Consider the following algorithm:

1. Integer fun (Node \*p)
2. Integer x= MIN\_INT
3. while(p not equals NULL)

Instructions & Guidelines

Data Structures

10 questions, 1

- Q1 In an empty BST, insert the following elements in a similar sequence. Which element will be at the lowest level?

Ops: A.

99

B.

120

C.

95

D.

97

Q2

A polynomial,  $f(x)$  is represented by the following array:  
 $\{2, 4, 6, 3, 1\}$

What is the sum of coefficients of  $x^3$  and  $x^1$ ?

Ops: A.

6

B.

7

C.

8

D.

9

following array:

{ 2, 4, 6, 3, 1 }

What is the sum of coefficients of  $x^3$  and  $x^1$ ?

Ops: A.  6

B.  9

C.  7

D.  6

**Q 3** If there is a data structure in which the relationship of adjacency is not maintained between the data items, then which of the following operations is **not** applied to the data structure?

Ops: A.  Sort

B.  Display

D.

reset answer

Q 23 What will be the output of the following pseudocode?

```
1. Integer a, b, c, d
2. set d = 6
3. for(each a from 1 to 2)
4.   for(each b from a to 2)
5.     for(each c from b to 2)
6.       print d
7.     end for
8.   end for
9. end for
```

- Ops: A.  6 6  
B.  6 6 6 6  
C.  6 6 6 6 6  
D.  6 6 6

Q 24 What will be the output of the following pseudocode for a = 6?

```
1. Integer fun(integer a)
2. if(a EQUALS 0)
3.   return a + 2
4. else
5.   return fun(a-1)
6. End function fun()
```

- Ops: A.  9



**Q 21** What will be the output of the following pseudocode?

1. Character p[20], b[20]
2. Set p[20] = "Respect your elders"
3. Integer k
4. Set k = 0
5. While(p[k] not equals null character AND p[k] not equals space)
6.     b[k] = p[k]
7.     k = k + 1
8. End While
9. Set k=0
10. While(b[k] not equals null character)
11.     Print b[k]
12.     k = k + 1
13. End While

[Note: && Logical AND - The logical AND operator (&&) returns the Boolean value true (or 1) if both operands

- Opn: A.  elders  
 B.  Respect elders  
 C.  Resped  
 D.  R

**Q 22** What will be the output of the following pseudocode?

1. Integer a, b, c
2. Set a = 100, b = 2, c = 3
3. If ((a MOD 5) EQUALS 0)
4.     b = b + (a MOD 2)

X	C	D	F	M	B	L	S
\$	%	^	&	*	C	Y	
4	R	5	6	7	8	9	0
R	T	Y	U	V	O		

F

G

H

J

K

L

- D.  None of the mentioned options

Q 20 For which of the following values of 'a', the statement under 'if' will execute?

1. Integer a
2. if( $a \bmod 10 > 5$  OR  $a \bmod 10$  equals 3 AND  $a/100$  equals 1)  
3. print  $a \bmod 10 + a/100$
4. else  
5. print a
6. end if

[Note: mod finds the remainder after the division of one number by another. For example, the expression "5 / 2" leaves a quotient of 2 and a remainder of 1]

Logical AND - The logical AND operator (`&&`) returns the Boolean value true(or 1) if both operands are true and false(or 0) otherwise.

Logical OR - The logical OR operator (`||`) returns the Boolean value TRUE(or 1) if either or both operands is TRUE and false(or 0) otherwise.

- Ops:
- A.  123
  - B.  555
  - C.  111
  - D.  121

Q 21 What will be the output of the following pseudocode?

1. character p[10], b[10]
2. set p[10] = "Respect your elders"
3. Integer k
4. set k = 0
5. while(p[k] not equals null character AND p[k] not equals space)
6.     b[k] = p[k]
7.     k = k + 1



**Q 3** Consider an array A, with n elements. The following operations are performed on array, A:

- i. Right shift
- ii. Right rotation
- iii. Left shift
- iv. Left rotation
- v. Right rotation
- vi. Left shift
- vii. Right rotation

What is the number of elements present in A after the above operations are performed?

**Ops:** A.

B.

C.

D.



**Q 4** A polynomial,  $f(x)$  is represented by the following array:

{ 2, 4, 6, 3, 1 }

What is the sum of coefficients of  $x^3$  and  $x^1$ ?

**Ops:** A.

B.

C.

D.

**Q 5** Consider a two dimensional square matrix  $A$ , consisting of 6 rows and 6 columns. The elements of  $A$  are given by the formula:  
 $A[k][j] = 1$ , if  $k = j$   
 $A[k][j] = j$ , if  $k < j$   
 $A[k][j] = 0$ , if  $k > j$  (Assume 0 based indexing)  
Calculate the sum of all elements of  $A$ .

**Ops:** A.  None of the mentioned options

B.  32

C.  60

D.  28

**Q 6** Moneta is writing a program to perform insert operation in a binary search tree using recursion. Which of the following types of recursion will she be using in her program?



insert operation in a binary search tree using recursion. Which of the following types of recursion will she be using in her program?

- Ops:*
- A.  None of the mentioned options
  - B.  Head recursion
  - C.  Tail recursion
  - D.  Both A and B

**Q 7** Henry wants to find out the second largest element of an array using bubble sort. After how many passes will he get the second largest element?

- Ops:*
- A.  It depends on the number of elements
  - B.  3



**Q 4** Find out the correct inorder traversal sequence of a BST?

1. 15, 19, 22, 26, 29, 35
2. 15, 18, 20, 22, 28, 26, 32
3. 14, 17, 19, 21, 26, 31, 33

**Ops:** A.  Only 3

B.  Only 1 and 3

C.  Only 2

D.  Only 1 and 2

**Q 5** Consider a two dimensional square matrix A, consisting of 5 rows and 5 columns. The



D.  2

[reset answer](#)

**Q 9** Moneta is writing a program to perform insert operation in a binary search tree using recursion. Which of the following types of recursion will she be using in her program?

- Ops:**
- A.  None of the mentioned options
  - B.  Both A and B
  - C.  Head recursion
  - D.  Tail recursion



**Q 10** Consider an undirected graph, G with  $V = \{a, b, c, d, e, f\}$ . There are 6 pairs  $[x, y]$  of nodes such that node x is connected with node y; hence  $E = \{[a, b], [a, e], [b, d], [e, c], [e, f], [b, f]\}$

Identify the correct statements about the graph, G.

- Ops:**
- A.  The graph is disconnected
  - B.  The graph is complete
  - C.  The graph is not loop free
  - D.  The graph can be a spanning tree of some graph

15 questions, 1 mark

## 2 Algorithms

- Ops:** A.  It depends on the number of elements  
B.  2  
C.  1  
D.  3

reset answer

---

**Q 4** Sam is using merge sort to sort an array consisting of 64 elements. After how many passes, each sort

- Ops:** A.  2  
B.  5  
C.  3  
D.  4

---

**Q 5** Which of the following is the correct topological ordering of the given graph?

1. DACB
2. DABD
3. DCAB
4. No topological ordering

following pseudocode will be "difficult"?

```
1. Integer a, i
2. if(a >= 75)
3.     print "easy"
4. else if(a>=65 AND
   a<75)
5.     print
   "moderate"
6. else if(a>=55 OR
   a<65)
7.     print
   "difficult"
8. else
9.     print "very
   difficult"
10. end if
```

[Note: &&: Logical AND - The logical AND operator (`&&`) returns the Boolean value true(or 1) if both operands are true and return false (or 0) otherwise

||: Logical OR - The logical OR operator (`||`) returns the Boolean value TRUE(or 1) if



following array:

{ 2, 4, 6, 3, 1 }

What is the sum of coefficients of  $x^3$  and  $x^1$ ?

Ops: A.  6

B.  9

C.  7

D.  6

**Q 3** If there is a data structure in which the relationship of adjacency is not maintained between the data items, then which of the following operations is **not** applied to the data structure?

Ops: A.  Sort

B.  Display

1

D.  Search

[reset answer](#)

2

**Q 5** In an empty BST, insert the following elements in a similar sequence. Which element will be at the lowest level?  
105, 95, 122, 99, 97, 120

- Ops:**
- A.  120
  - B.  99
  - C.  97
  - D.  95

**Q 6** Moneta is writing a program to perform insert operation in a binary search tree using recursion. Which of the following types of recursion will she be using in her program?

- Ops:**
- A.  Both A and B
  - B.  Tail recursion
  - C.  Head recursion
  - D.  None of the mentioned options

**Q 7** Consider the following algorithm:

1. Integer fun (Node \*p)
2. Integer x= MIN\_INT
3. while(p not equals NULL)



## Important Instructions & Guidelines



### 1 Data Structures

**Q 1** Why open addressing provides better cache performance than chaining?

1. In open addressing, everything is stored in the same table
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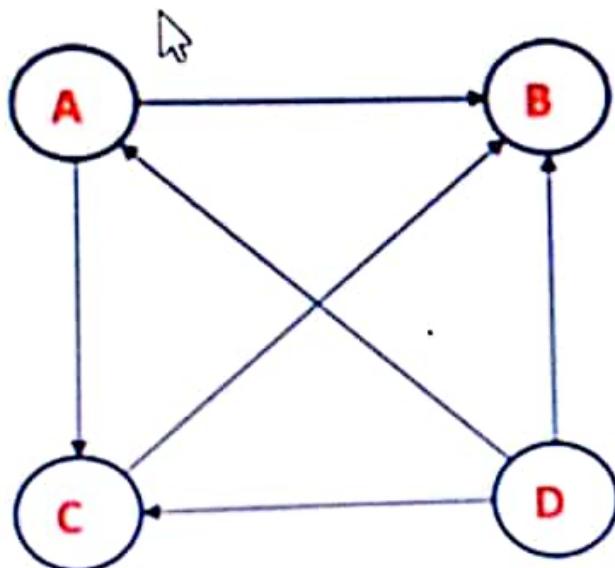
Choose the correct answer from the options given below.

- Ops:**
- A.  Only 2 is true
  - B.  Both 1 and 2 are false
  - C.  Both 1 and 2 are true
  - D.  Only 1 is true

- C.  3  
D.  4

**Q 5** Which of the following is the correct topological order?

1. DACB
2. DABD
3. DCAB
4. No topological ordering



- Ops:
- A.  Only 4
  - B.  1 and 3
  - C.  Only 2
  - D.  Only 1

**Q 6** Consider a two dimensional square matrix A, cons

$$A[k][j] = i, \text{ if } k > j$$

$$A[k][j] = j, \text{ if } k \leq j$$

(Assume 0 based indexing)

Instructions & Guidelines

Data Structures

10 questions, 1

- Q1 In an empty BST, insert the following elements in a similar sequence. Which element will be at the lowest level?

105, 95, 122, 99, 97, 120

Ops: A.

99

B.

120

C.

95

D.

97

Q2

A polynomial,  $f(x)$  is represented by the following array:  
 $\{2, 4, 6, 3, 1\}$

What is the sum of coefficients of  $x^3$  and  $x^1$ ?

Ops: A.

6

B.

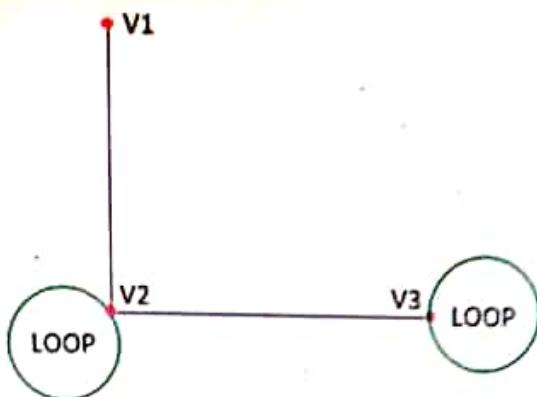
7

C.

8



**Q 2** Find out the sum of the degree of vertices in the pseudograph as shown in the image.



- Ops:**
- A.  12
  - B.  16
  - C.  8
  - D.  4



**Q 3** Why open addressing provides better cache performance than chaining?

1. In open addressing, everything is stored in the same table
2. In chaining keys, are stored using a linked list

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 1 is true
  - B.  Only 2 is true
  - C.  Both 1 and 2 are true
  - D.  Both 1 and 2 are false

**Q 4** If there is a data structure in which the insertion & deletion operations are very fast, then it is called \_\_\_\_\_.

**Q 22** What will be the output of the following pseudocode if run for  $p = 4, q = 1$

```
1. Integer fun(Integer p, Integer q)
2. Integer k
3. Set k = 0
4. if(p > 0 && q > 0)
   k = k + 1
5. fun(p - 1, q)
6. end if
7.
8. return k
9. End function fun()
```

[Note-&&: Logical AND - The logical AND operator (`&&`) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the result is 1. Otherwise, the result is 0.]  
&: bitwise AND - The bitwise AND operator (`&`) compares each bit of the first operand to the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

Ops:

- A.  -1
- B.  2
- C.  1
- D.  3

→ What will be the output of the following pseudocode?  
 $a, b, c = 2, 3$

- Ops:**
- A.  None of the mentioned options
  - B.  Function fun finds the largest element of the linked list.
  - C.  Function fun checks whether a linked list is sorted or not. It returns 0 when the list is not sorted and 1 when it is sorted.
  - D.  Function fun detects a loop in the linked list. It returns 1 when a loop is found and 0 when no loop is found.

**Q 7** Consider an undirected graph, G with four vertices. The adjacency matrix of the graph is shown below:

1 0 1 1  
0 0 1 1  
1 1 1 0  
1 1 0 0

Find the number of self loops in the undirected graph, G.

- Ops:**
- A.  0
  - B.  3
  - C.  2
  - D.  1

**Q 8** Sam is using merge sort to sort an array consisting of 64 elements. After how many passes, each half of the array will be sorted?

- Ops:**
- A.  2
  - B.  5
  - C.  4
  - D.  3

**Q 9** Henry wants to find out the second largest element of an array using bubble sort. After how many passes, he will get the second largest element?

- Ops:**
- A.  1
  - B.  2
  - C.  3
  - D.  It depends on the number of elements



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- Ops: A.  1  
B.  2  
C.  3  
D.  It depends on the number of elements

**Q 10** Which of the following statements are true about Floyd's Cycle-Finding Algorithm?

- Ops: A.  It is used to detect loop in linked list  
B.  It is used to reverse the linked list.  
C.  It is used to remove duplicates from the linked list  
D.  None of the mentioned options

## 2 Algorithms

0 out of 15 questions attempt

**Submit and Log**

DELL

## Data Structures

1

2

10 questions, 1 mark each

- Q 1** Why open addressing provides better cache performance than chaining?
1. In open addressing, everything is stored in the same table
  2. In chaining keys are stored using a linked list

Choose the correct answer from the options given below.

- Ops:
- A.  Only 2 is true
  - B.  Both 1 and 2 are true
  - C.  Only 1 is true
  - D.  Both 1 and 2 are false

- Q 2** A polynomial,  $f(x)$  is represented by the following array:  
 $\{ 2, 4, 6, 3, 1 \}$

What is the sum of coefficients of  $x^3$  and  $x^4$ ?

17

- Ops:
- A.  6
  - B.  6
  - C.  7
  - D.  9

- Q 3** Consider an array  $A_i$  with  $n$  elements. The following operations are performed on array,  $A$ :

DELL

**Q 23** What will be the output of the following pseudocode?

1. Integer a, b, c
2. Set a = 108, b = 2, c = 3
3. if((a MOD 9) EQUALS 0)
4.     b = b + (a MOD 2)
5.     Print b
6. else
7.     c = c + (a MOD 7)
8.     Print c
9. end if

[Note: MOD finds the remainder after the division of one number by another. For example, the expression '15 MOD 2' would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1.]

- Ops:
- A.  1
  - B.  7
  - C.  3
  - D.  2

What will be the output of the following pseudocode?

23 : 14

Sections

1

2

**Q3:** Consider an array  $A_i$  with  $n$  elements. The following operations are performed on array,  $A_i$ :

- i. Right shift
- ii. Right rotation
- iii. Left shift
- iv. Left rotation
- v. Right rotation
- vi. Left shift
- vii. Right rotation

What is the number of elements present in  $A_i$  after the above operations are performed?

- Ops:
- A.  n
  - B.   $n + 4$
  - C.   $n - 3$
  - D.   $n + 3$

**Q4:** Consider a two dimensional square matrix  $A_i$ , consisting of 5 rows and 5 columns. The elements of  $A_i$  are given by the formula:  
 $A[i][j] = i$ , if  $k > j$   
 $A[i][j] = j$ , if  $k < j$   
 $A[i][j] = 0$ , if  $k=j$  (Assume 0 based indexing)  
Calculate the sum of all elements of  $A_i$ .

- Ops:
- A.  28
  - B.  None of the mentioned options
  - C.  60
  - D.  32

DELL

Sections

1

2

- Q 6 Which of the following is the correct topological ordering of the given graph?
- 1. 1,2,3
  - 2. 2,1,3
  - 3. 3,1,2
  - 4. No topological ordering



- Ans: A.  Only 1  
B.  Only 2  
C.  Only 4  
D.  Only 3

Q 7 Consider the following algorithm:

- 1. Integer Fun (Node \*p)
- 2.  int a=100\_000
- 3. while(a>0) cout<<a;
- 4. if (a> data && a<
- 5. return a;

DELL

**Q 25** What will be the output of the following pseudocode for  $a = 6$ ?

1. Integer fun(integer a)
2. if(a EQUALS 0)  
3.     return a + 9  
4. else  
5.     return fun(a-1)  
6. End function fun()

Ops: A.  6

B.  0

C.  9

D.  1

**Submit and Logout**

**Q 25** What will be the output of the following pseudocode for  $a = 6$ ?

1. Integer fun(integer a)
2. if(a EQUALS 0)  
3.     return a + 9  
4. else  
5.     return fun(a-1)  
6. End function fun()

Ops: A.  6

B.  0

C.  9

D.  1

**Submit and Logout**

22 : 33

Sections

1

2

- D.  Function fun checks whether a linked list is sorted or not. It returns 0 when the list is not sorted and 1 when it is sorted.

**Q 8** Henry wants to find out the second largest element of an array using bubble sort. After how many passes will he get the second largest element?

Ops: A.  3

B.  It depends on the number of elements

C.  2

D.  1

**Q 9** Consider an undirected graph, G with  $V = \{a, b, c, d, e, f\}$ . There are 6 pairs  $(x, y)$  of nodes such that node  $x$  is connected with node  $y$ ; hence  $E = \{(a, b), (a, e), (b, d), (e, c), (e, f), (b, f)\}$ . Identify the correct statements about the graph, G.

- Ops: A.  The graph can be a spanning tree of some graph
- B.  The graph is disconnected
- C.  The graph is not loop free
- D.  The graph is complete

**Q 10** Which of the following statements are true about Floyd's Cycle-Finding Algorithm?

- Ops: A.  None of the mentioned options
- B.  It is used to remove duplicates from the linked list
- C.  It is used to detect loop in linked list
- D.  It is used to reverse the linked list.

Algorithms

15 questions, 1 mark each

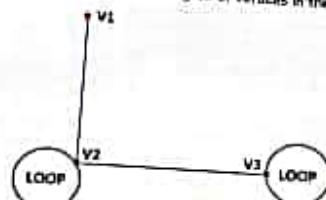
DELL

## Sections

1

2

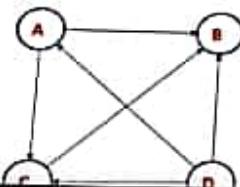
Q 5 Find out the sum of the degree of vertices in the pseudograph as shown in the image.



- Ops: A.  16  
B.  4  
C.  8  
D.  12

Q 6 Which of the following is the correct topological ordering of the given graph?

1. DACB
2. DABD
3. DCAB
4. No topological ordering



DELL

C.  $O(n^3)$

D.  $O(n+3)$

sections

1

2

Q 8 In an empty BST, insert the following elements in a similar sequence. Which element will be at the lowest level?  
105, 95, 122, 99, 97, 120

- Ops: A.  95  
B.  97  
C.  99  
D.  120

Q 9 Consider a two dimensional square matrix A, consisting of 5 rows and 5 columns. The elements of A are given by the formula:  
 $A[k][l] = 1$ , if  $k > l$   
 $A[k][l] = 0$ , if  $k < l$   
 $A[k][l] = 0$ , if  $k = l$  (Assume 0 based indexing)  
Calculate the sum of all elements of A.

- Ops: A.  60  
B.  32  
C.  28  
D.  None of the mentioned options

Q 10 Find out the correct inorder traversal sequence of a BST?

1. 15, 19, 22, 26, 29, 35  
2. 15, 18, 20, 22, 28, 36, 32  
3. 14, 17, 19, 21, 26, 31, 33

- Ops: A.  Only 3  
B.  Only 1 and 2

**Q 6** Identify the effect(s) of using stack in recursion.

1. It is comparatively slower than iteration
2. It uses more memory than iteration

Choose the correct answer from the options given below.

- Ops:
- A.  Only 2
  - B.  Both 1 and 2
  - C.  Neither 1 nor 2
  - D.  Only 1

**Q 7** Consider an array A, with n elements. The following operations are performed on array, A:

- i. Right shift
- ii. Right rotation
- iii. Left shift
- iv. Left rotation
- v. Right rotation
- vi. Left shift
- vii. Right rotation

What is the number of elements present in A after the above operations are performed?

- Ops:
- A.  n
  - B.  n - 4
  - C.  n - 3
  - D.  n + 3

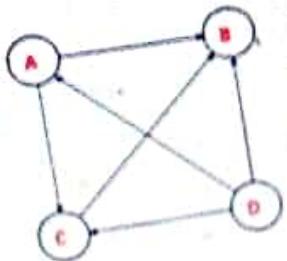
**Q 8** In an empty BST, insert the following elements in a similar sequence. Which element will be at the lowest level?



- C.  It is used to remove duplicate elements  
D.  None of the mentioned options

Q5 Which of the following is the correct topological ordering of the given graph?

1. DACB
2. DABD
3. DCAB
4. No topological ordering



- Ops:
- A.  1 and 3
  - B.  Only 1
  - C.  Only 4
  - D.  Only 2

Q6 Identify the effect(s) of using stack in recursion.

1. It is comparatively slower than iteration
2. It uses more memory than iteration

**Ops:** A.  2

B.  It depends on the number of elements

C.  1

D.  3

---

**Q 3** Consider an undirected graph, G with four vertices. The adjacency matrix of the graph is shown below.

1 0 1 1

0 0 1 1

1 1 1 0

1 1 0 0

Find the number of self loops in the undirected graph, G.

**Ops:** A.  1

B.  0

C.  3

D.  2

**Q 4** Which of the following statements are true about Floyd's Cycle-Finding Algorithm?

**Ops:** A.  It is used to reverse the linked list.

B.  It is used to detect loop in linked list

C.  It is used to remove duplicates from the linked list

D.  None of the mentioned options



**Important Instructions & Guidelines**

10 questions, 1 mark each

**Data Structures**

Sam is using merge sort to sort an array consisting of 64 elements. After how many passes, each sorted subarray will contain 16 elements?

- Q1: A.  $O^4$   
B.  $O^5$   
C.  $O^2$   
D.  $O^3$

Q2 Henry wants to find out the second largest element of an array using bubble sort. After how many passes will he get the second largest element?

- Ops: A.  $O^2$   
B.  $O^3$  It depends on the number of elements  
C.  $O^1$   
D.  $O^3$

Q3 Consider an undirected graph, G with four vertices. The adjacency matrix of the graph is shown below.

1 0 1 1

0 0 1 1

1 1 1 0

1 1 0 0

Find the number of self loops in the undirected graph, G.

Ops: 1.  $O^3$

- C  Respect  
D  R

Q 22 What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set a = 108, b = 2, c = 3
3. if((a MOD 9) EQUALS 0)
4.   b = b + (a MOD 2)
5.   Print b
6. else
7.   c = c + (a MOD 7)
8.   Print c
9. end if
```

[Note: MOD finds the remainder after the division of one number by another. For example, the expression 2 leaves a quotient of 2 and a remainder of 1]

- Ops: A  2  
B  7  
C  1  
D  3

Q 23 What will be the output of the following pseudocode?

```
1. Integer a, b, c, d
2. set d = 6
3. for(each a from 1 to 2)
4.   for(each b from a to 2)
```



**Q 1 Which of the following statements are true about Floyd's Cycle-Finding Algorithm**

**Ops:** A.  It is used to reverse the linked list.

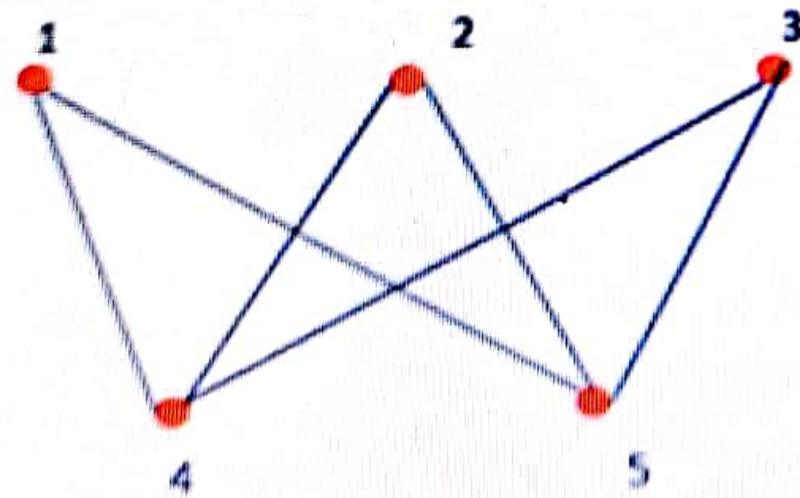
B.  None of the mentioned options

C.  It is used to remove duplicates from the linked list

D.  It is used to detect loop in linked list

---

**Q 2 Which of the following is the correct Adjacency Matrix for the given graph**

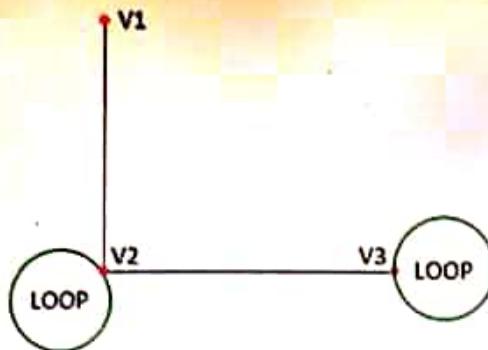


Sections

1

2

**Q 2** Find out the sum of the degree of vertices in the pseudograph as shown in the image.



- Ops:
- A.  12
  - B.  16
  - C.  8
  - D.  4

**Q 3** Why open addressing provides better cache performance than chaining?

- 1. In open addressing, everything is stored in the same table
- 2. In chaining keys, are stored using a linked list

Choose the correct answer from the options given below.

- Ops:
- A.  Only 1 is true
  - B.  Only 2 is true
  - C.  Both 1 and 2 are true
  - D.  Both 1 and 2 are false

## Q. End Function Fun()

- Ops: A.  10  
B.  11  
C.  5  
D.  6

Q 24 What will be the output of the following pseudocode?

1. Integer a, b, c, d
2. set d = 6
3. for(each a from 1 to 2)
4.     for(each b from a to 2)
5.         for(each c from b to 2)
6.             print d
7.         end for
8.     end for
9. end for

- Ops: A.  6 6 6 6 6 6  
B.  6 6  
C.  6 6 6  
D.  6 6 6

Q 25 What will be the output of the following pseudocode?

1. Integer b
2. set b = 1
3. do
4.     print b

Q 23 What will be the output of the following pseudocode?

1. Integer a, b, c, d
2. set d = 6
3. for(each a from 1 to 2)
4.     for(each b from a to 2)
5.         for(each c from b to 2)
6.             print d
7.         end for
8.     end for
9. end for

Ops: A.  66

B.  6666

C.  666666

D.  666

Q 24 What will be the output of the following pseudocode for a = 6?

1. Integer fun(integer a)
2. if(a EQUALS 0)
3.     return a + 9
4. else
5.     return fun(a-1)
6. End function fun()

Ops: A.  0

B.  6

C.  1

D.  9

Q 25 What will be the output of the following pseudocode of fun for p = 1, q = 5?



Q. What will be the output of the following pseudocode?

```
1. Integer i  
2. Set i = 45  
3. if(i mod 2 EQUALS 0 OR i mod 2 AND i)  
4.     print i mod 2  
5. else  
6.     print i  
7. end if
```

[Note: mod finds the remainder after the division of one number by another.  
2 leaves a quotient of 2 and a remainder of 1]

||: Logical OR - The logical OR operator (||) returns the Boolean value TRUE(  
The logical AND operator (&&) returns the boolean value true(or 1) if both op-

- : A.  1
- B.  0
- C.  2
- D.  45

Q 23 What will be the output of the following pseudocode?

1. Integer a, b, c, d
2. set d = 6
3. for(each a from 1 to 2)
4.     for(each b from a to 2)
5.         for(each c from b to 2)
6.             print d
7.         end for
8.     end for
9. end for

Ops: A.  66

B.  6666

C.  666666

D.  666

Q 24 What will be the output of the following pseudocode for a = 6?

1. Integer fun(integer a)
2. if(a EQUALS 0)
3.     return a + 9
4. else
5.     return fun(a-1)
6. End function fun()

Ops: A.  0

B.  6

C.  1

D.  9

Q 25 What will be the output of the following pseudocode of fun for p = 1, q = 5?



## Important Instructions &amp; Guidelines

10 questions, 1 mark each

## Data Structures

Sam is using merge sort to sort an array consisting of 64 elements. After how many passes, each sorted subarray will contain 16 elements?

- Ans: A.  $O^4$   
 B.  $O^5$   
 C.  $O^2$   
 D.  $O^3$

Q 2 Henry wants to find out the second largest element of an array using bubble sort. After how many passes will he get the second largest element?

- Ops: A.  $O^2$   
 B.  $O^3$  It depends on the number of elements  
 C.  $O^1$   
 D.  $O^3$

Q 3 Consider an undirected graph, G with four vertices. The adjacency matrix of the graph is shown below.

1 0 1 1

0 0 1 1

1 1 1 0

1 1 0 0

Find the number of self loops in the undirected graph, G.

Ops: 1.  $O^3$

**Q 3** Moneta is writing a program to perform insert operation in a binary search tree using recursion. Which of the following types of recursions will she be using in her program?

- Ops: A.  None of the mentioned options  
B.  Head recursion  
C.  Tail recursion  
D.  Both A and B

**Q 4** Which of the following statements are true about Floyd's Cycle-Finding Algorithm?

- Ops: A.  None of the mentioned options  
B.  It is used to reverse the linked list.  
C.  It is used to detect loop in linked list  
D.  It is used to remove duplicates from the linked list

**Q 5** Sam is using merge sort to sort an array consisting of 64 elements. After how many passes, each sorted subarray will contain 16 elements?

Ops: A.  2

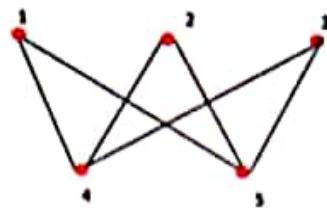
B.  5

C.  4

D.  3

**Q 6** A polynomial,  $f(x)$  is represented by the following array.

**Q 2** Which of the following is the correct Adjacency Matrix for the given graph?



Ops: A.

	1	2	3	4	5
1	0	0	0	1	1
2	0	0	0	1	1
3	0	0	0	1	1
4	1	1	1	1	1
5	1	1	1	1	1

B.

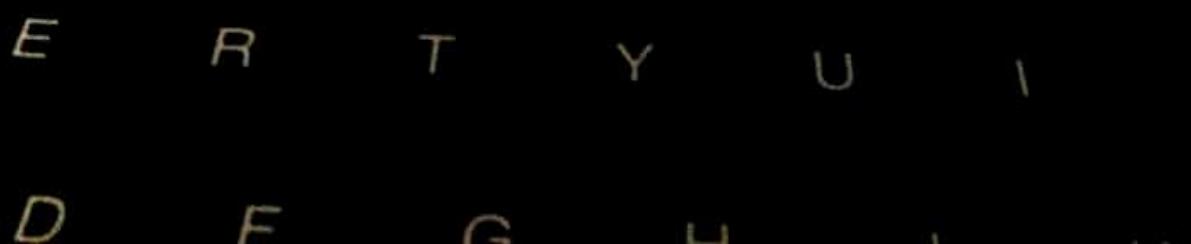
	1	2	3	4	5
1	0	0	0	1	1
2	0	0	0	1	1
3	0	0	0	1	1
4	1	1	1	0	0
5	1	1	1	0	0

C.

	1	2	3	4	5
1	0	0	0	1	1
2	0	0	0	1	1
3	0	0	0	1	1
4	1	1	1	0	1
5	1	1	1	1	0

D.

	1	2	3	4	5
1	0	0	0	1	1
2	0	0	0	1	1
3	0	0	0	1	1
4	1	1	1	1	0
5	1	1	1	0	1

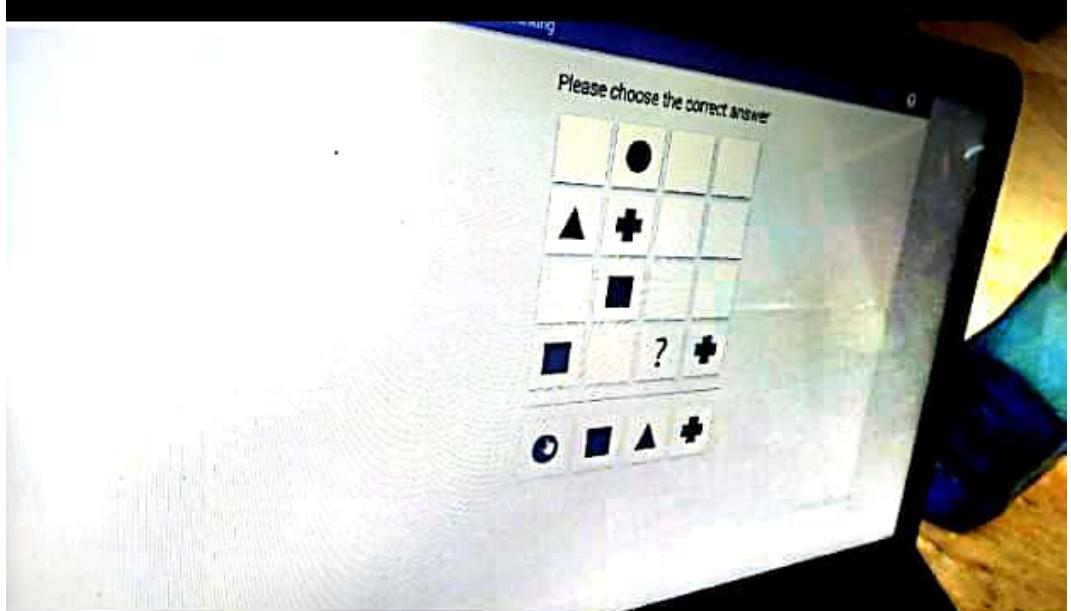


**Q1** Consider the following algorithm:

```
1. Integer fun (Node *p)
2. Integer x = MIN_INT
3. while(p not equals NULL)
4.   if (p-> data < x)
5.     return 0
6.   else
7.     x = p -> data
8.     p = p -> next
9.   End if
10. End loop
11. return 1
12. End fun
```

p is a pointer to the first node of the linked list. Which of the following operations is performed by the function fun?

- Ops:**
- A. ○ Function fun detects a loop in the linked list. It returns 1 when a loop is found and 0 when no loop is found.
  - B. ○ None of the mentioned options
  - C. ○ Functions fun finds the largest element of the linked list.
  - D. ○ Function fun checks whether a linked list is sorted or not. It returns 0 when the list is not sorted and 1 when it is sorted.



III

O

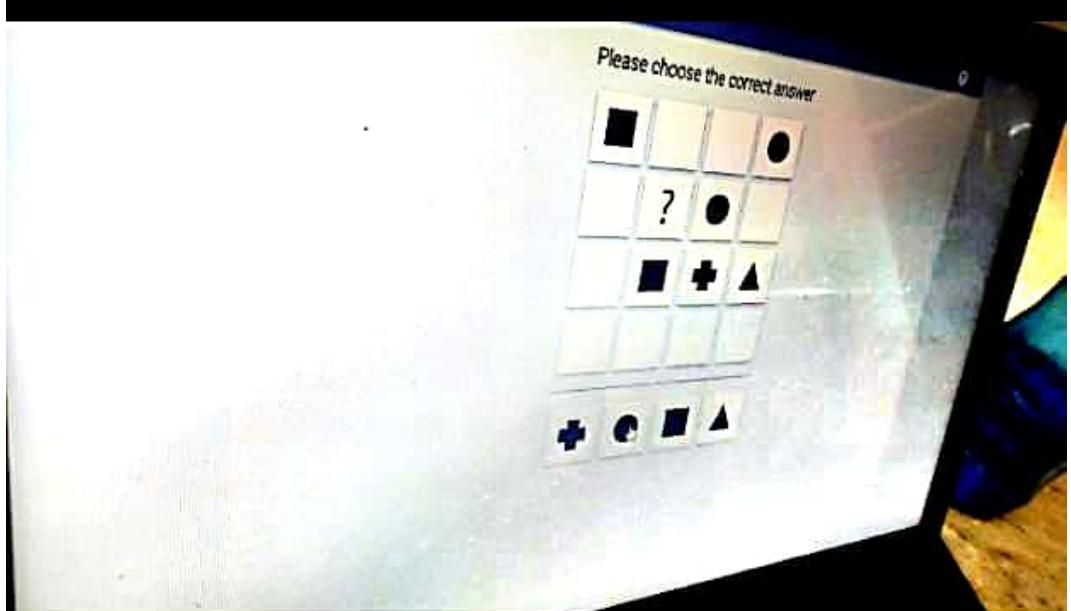
&lt;

Please choose the correct answer



?





**Q 24** The sentences given below form a coherent passage when arranged logically. Choose the option which gives the correct sequence.

- A. Only a very small number of men can save or serve their fellowmen, but it is possible for all men to be amiable.
- B. We may not be able to give them large quantities of wealth, to favour them with high positions, or to give them perfect health. *But we are endowed with the capability to console those who are in distress and resist taunts.*
- C. Every rude person should realize that a small act of unkindness causes great pain. *We not find ourselves able to bestow plentiful gifts on others, but it is quite possible to restrain ourselves from offending them.*
- D. Human activities are made up of trifles and half of our misery is due to our failings. *The real joy in life is derived from peace and ease.*

Ops: A.  ADCB

B.  ABCD

C.  ACDB

D.  DACB

**Q 24** Which of the following statements is supported by the passage?  
Ops: A.  The potato is not the only food plant responsible for catastrophic circumstances in some countries.  
B.  Potatoes and spuds are not the same vegetable  
C.  The author agrees with Thomas Jefferson  
D.  The potato is unhealthy and must be supplemented with other food items for nutrition

**Q 25** Out of the figures mentioned in the options, the author agrees the most with:  
Ops: A.  Augustine Sedgwick  
B.  Charles Trevelyan  
C.  William Cobbett  
D.  Adam Smith

**Q 26** Mark the option best suited to replace the underlined portion of the sentence given below.  
It is crucial that Ray should have been arriving here before meeting.

- Ops: A.  could have arrived  
B.  arrive  
C.  could arrive  
D.  No error

**Q 27** The sentences given below form a coherent passage when arranged logically. Choose the option which gives the correct sequence.

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B. We may not be able to give them large quantities of wealth, to favour them with high positions, or to give them perfect health. But we are end capable to console those who are in distress and resist taunts.  
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C. Every rude person should realize that a small act of unkindness causes great pain. We not find ourselves able to bestow plentiful gifts on other quite possible to restrain ourselves from offending them.



**Q 23** What will be the output of the following pseudocode?

1. Integer a
2. String str1
3. Set str1 = "momo"
4. for (each a from 1 to 2 )
5.     str1 = str1 + "mm"
6. End for
7. Print (stringLength(str1))

[Note- stringLength(): stringLength( ) function counts the

**Ops:** A.  7

B.  4

C.  6

D.  8

What will be the output of the following pseudocode for

```
1. Integer fun(Integer a)
2.     if (a > 0)
3.         return fun(a - 1)
4.     Else
5.         return a + 10
6.     End if
7. End function fun()
```

A.  9

B.  0

C.  10

D.  7

```
1. Integer a
2. Set a = 10
3. while(a NOT EQUALS a/2)
   print "engineering"
   a = a - 1
4. if(a EQUALS 3)
   Print "engineering"
5. end if
6. jump out of the loop
7. Print "engineering"
8. end while
9. if(a EQUALS 2)
10. print "23"
11. else
12. print "engineering"
13. end if
```

- Ops:**
- A.  it will print engineering 3 times
  - B.  it will print engineering 2 times
  - C.  it will print engineering 4 times
  - D.  it will print 23

- D.  A is a sparse matrix

**Q 10** Heap is more efficient for implementing priority queues than a linked list or an array as it supports the following operations in  $O(\log n)$  time.

1. insert()
2. extractmax()
3. decreaseKey()

[NOTE - insert(): Inserts a new key

extractMax(): Removes the maximum element from MaxHeap

decreaseKey(): Decreases value of key.]

- Ops:
- A.  Only 1 and 2
  - B.  Only 2 and 3
  - C.  Only 1 and 3
  - D.  All 1, 2 and 3

- D.  All the nodes are balanced



**Q 6** Linked lists are considered as which type of data structure based on :

1. Storage
2. Access strategies

**Ops:** A.  Linear, Non-linear

B.  Non-linear, Linear

C.  Linear, Linear

D.  Non-linear, Non-linear

reset answer

**Q 7** In which of the following data structure the relationship of adjacency is not maintained between the data items?

**Ops:** A.  Linked List

D.  Only 3

**Q 3** Which of the following conditions should be checked to find if a B-tree of order  $m$  is a multiway search tree?

1. The root has at least two subtrees unless it is the only node in the tree
2. Each nonroot and each nonleaf node have at most  $m$  nonempty children and at least  $m/2$  nonempty children
3. All leaves are on the same level.

Choose the correct answer from the options given below.

**Ops:** A.  Only 1 and 3

B.  Only 1 and 2

C.  Only 2 and 3

D.  All 1, 2, and 3

Which of the following statements is/ are true for the shortest path and minimum spanning tree for unweighted graph?

D.  All 1, 2, and 3

---

**Q 4** Which of the following statements is/ are true for the shortest path and minimum spanning tree for unweighted graph?

1. The shortest path is the path with least number of edges
2. Any spanning tree is Minimum Spanning Tree
3. Only breadth first traversal can be used for finding a spanning tree and not depth first traversal

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 1 and 3
  - B.  Only 1 and 2
  - C.  All 1, 2, and 3
  - D.  Only 2 and 3

- Q 7** Which of the following data structures maintains the relationship between the data items?  
**Ops:**
- A.  Linked List
  - B.  Queue
  - C.  Stack
  - D.  Decision tree
- 
- Q 8** If the speed of packets sent by a server is faster than the speed of receiver, then which of the following would be the most suitable for synchronization?
- Ops:**
- A.  Quad tree
  - B.  B-tree
  - C.  Binary tree
  - D.  Queue
- Q 9** Consider a two-dimensional square matrix, A consisting of 100 rows and 100 columns. The elements of A are given by the formula:

- C.  Binary tree
- D.  Queue

**Q 9** Consider a two-dimensional square matrix, A consisting of 100 rows and 100 columns. The elements of A are given by the formula:

$$A[k][j] = 1, \text{ if } k = j$$

$$A[k][j] = 0, \text{ otherwise}$$

Which of the following statements are correct about A?

- Ops:**
- A.  A is a sparse and diagonal matrix
  - B.  A is diagonal matrix
  - C.  A is a dense matrix
  - D.  A is a sparse matrix

**Q 10** Heap is more efficient for implementing priority queues than a linked list or an array as it supports the following operations in O(log n) time.

A Linear, Linear

D.  Non-linear, Non-linear

[reset answer](#)

**Q 7** In which of the following data structure the relationship of adjacency is not maintained between the data items?

- Ops:**
- A.  Linked List
  - B.  Queue
  - C.  Stack
  - D.  Decision tree

**Q 8** If the speed of packets sent by a server is faster than the speed of receiver, then which of the following would be the most suitable?

- Ops:**
- A.  Quad tree
  - B.  B-tree

2

reset answer

Q 13 What will be the output of the following pseudocode?

```
1. Integer i, k  
2. Set k=0  
3. For (each i from 3^4 to 3^4)  
4.     k=k+i  
5. End for  
6. Print k
```

[Note- ^ is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.  
& - Bitwise AND operator, it takes two numbers as operands and does AND on every bit of two numbers. The result of AND is 1 only if both bits are 1.]

Opst: A.  6

B.  8

C.  7

23 : 58

## Sections

1

2

Q 6 Heap is more efficient for implementing priority queues than a linked list or an array as it supports the following operations in O(log n) time

1. insert()

2. extractMax()

3. decreaseKey()

[NOTE - insert(): Inserts a new key

extractMax(): Removes the maximum element from MaxHeap

decreaseKey(): Decreases value of key.]

- Ops:
- A.  Only 2 and 3
  - B.  Only 1 and 2
  - C.  Only 1 and 3
  - D.  All 1, 2 and 3

Q 7 With the help of the following information find out the sum of the degrees of all vertices in an undirected graph?

- Number of vertices =  $X_1$

- Number of edges =  $X_2$

- Ops:
- A.   $2X_1$
  - B.   $2X_2$
  - C.   $X_1 + X_2$
  - D.   $X_1 * X_2$

Q 8 Consider the following algorithm:

```
1. Integer fun ( Node *p )  
    while( p not equals NULL )  
        print p->data  
        p = p->next  
    end loop
```

## Sections

1

2



Shot on OnePlus  
By Rajesh captures

## 1 Data Structures

- Q1 Consider a BST containing 10 nodes: 20 and 10. It is given that R is the root node. To rotate the tree to make it balanced?

- Ops: A.  LR  
B.  RL  
C.  RR  
D.  RL

A

- Q2 To provide additional assurance that the data are not being tampered, hashing can be used as follows

1. TCP checksum
2. ECC memory
3. MD5 checksum

Choose the correct answer from the options given below.

- Ops: A.  Only 1 and 2  
B.  Only 2 and 3  
C.  All 1, 2, and 3  
D.  Only 3

- Q3 Which of the following statements is/are true for the algorithm and its analysis?
1. The shortest path is the path with  $M^N$  number of edges  
2. Any spanning tree of Minimum Spanning Tree



Consider the following algorithm:

1. Integer fun ( Node \*p )
2.     while( p not equals NULL )
3.         print p-> data
4.         p = p -> next
5.     End loop

p is a pointer to the first node of the linked list. Which of the following operations is performed by the function fun?

- Ops: A.  fun only traverses the linked list. It does not print the elements present in each node.
- B.  fun check whether the linked list is sorted or not
- C.  None of the mentioned options
- D.  fun traverses the linked list and prints the elements present in each node

Q 9 Consider the following polynomial equation:

$$4x^4 + 6x^3 + 7x^2 + 11x + 12$$

What will be the representation of the above polynomial in a single dimension array?

- Ops: A.  4 2 2 11 0
- B.  None of the mentioned options D
- C.  13 31 7 2 8 4
- D.  12 11 7 6 4

Q 10 Find out the sum of the degree of vertices in the graph as shown in the figure.



Dell

**Sections****1****2**

**Q 3** Which of the following statements is/ are true for the shortest path and minimum spanning tree for unweighted graph?

1. The shortest path is the path with least number of edges
2. Any spanning tree is Minimum Spanning Tree
3. Only breadth first traversal can be used for finding a spanning tree and not depth first traversal

Choose the correct answer from the options given below.

Ops: A.  Only 1 and 2  
B.  Only 1 and 3  
C.  Only 2 and 3  
D.  All 1, 2, and 3

**Q 4** Consider an array  $A = \{2, 5, 9, 12, 3, 4, 3, 4, 3, 19\}$ . While sorting the array  $A$  using count sort, what will be the size of the binomial counter array? Hint: the number of occurrences of each element are present?

Ops: A.  5  
B.  20  
C.  None of the mentioned options  
D.  19

**Q 5** Consider a binary search tree,  $T$  which is represented using array as  
 $7, -2, 36, -11, -18$ .  
Which of the following statements is correct about  $T$ ?

Ops: A.  All the nodes are balanced  
B.  Exactly one node is balanced  
C.  Exactly one node is unbalanced  
D.  All the nodes are unbalanced

## Q1 Structures

To provide additional assurance for the data integrity

1. TCP checksums
2. ECC memory
3. MD5 checksums

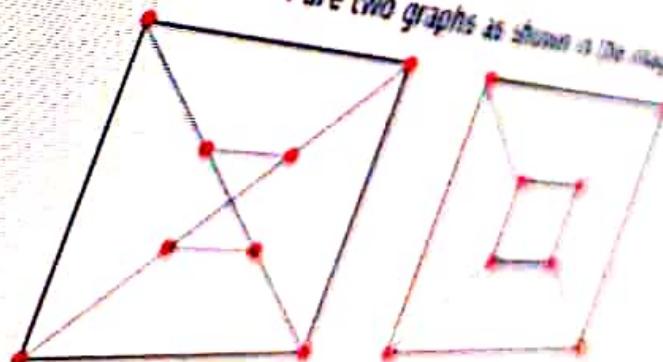
Choose the correct answer from the options given below

Ops:

- A.  All 1, 2, and 3
- B.  Only 3
- C.  Only 2 and 3
- D.  Only 1 and 2

## Q2

If  $G$  and  $H$  are two graphs as shown in the figure, then the graph  $G \oplus H$  is



Sections

1

2

Q 4 What will be the worst case time complexity of insertion of a heap data structure that takes the form of a binary tree?

- Ops:
- A.  O(n)
  - B.  O(logn)
  - C.  O(nlogn)
  - D.  O(1)

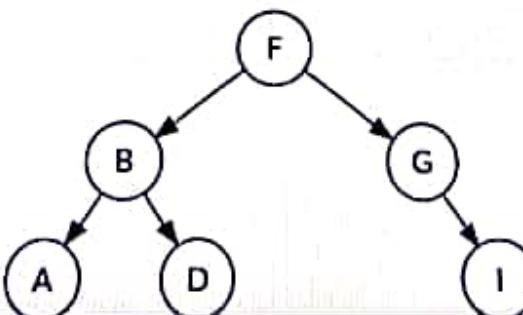
Q 5 Which of the following is the correct condition to check if the queue is empty, where the front, rear and size have their usual meaning?

- Ops:
- A.  rear == size - 1
  - B.  front == rear
  - C.  front + 1 == rear
  - D.  front = rear + 1

Q 6 George is writing a program in which he wants to use the features of two way list and circular header list. Which of the following data struc-

- Ops:
- A.  Two way circular list
  - B.  Array
  - C.  One way list
  - D.  Header list

Q 7 What is the height of the given binary tree?



Sections

1

2

A: D

B: A

C: A

D: B, C

Identify the correct statement(s).

- Ops:
- A.  Out degree of B is 1
  - B.  All of the mentioned options
  - C.  In degree of A is 2
  - D.  G is a strongly connected graph

Q 9 Which of the following expressions is written in polish notation?

- Ops:
- A.  A+B+C
  - B.  \*CD
  - C.  C\*D
  - D.  CD\*

Q 10 Consider a linked list with 5 nodes. The address of the first node is 100. What will be the address of the third node?

- Ops:
- A.  Cannot be determined
  - B.  104
  - C.  102
  - D.  106

2 Algorithms

0 out of 15 questions attempted. Attempt?

Submit and Logout

position.

### Sample Input 0

```
5 3  
0 2 10  
3 5 0  
9 20 6  
10 12 15  
10 10 8
```

### Sample Output 0

```
30.0
```

### Explanation 0

less than 30.0 kWh and the crane would crash before completing the task. More than 30.0 kWh and it'd end up with excess energy.



Current Buffer (saved locally, editable)

You're an engineer at a seaport and the head asks you to come up with an efficient algorithm that calculates the minimum amount of energy required for the automated electric crane to load or unload containers.

You know that the crane burns 1.60 kWh (a kilowatt-hour is an energy unit) for every meter it ascends, and it gains 1.00 kWh for every meter it descends. Moving sideways neither burns nor adds any energy. Assume that the crane starts is at the origin. That is, no energy was expended to place the crane at the starting point.

Given an array route of 3D points , implement a function calcCraneMinEnergy that computes and returns the minimal amount of energy the crane would need to complete its task.

### **Input Format**

The first line of the input consists of two space-separated integers, the number of rows and columns respectively.

Each of the following lines contains three space-separated integers, X, Y, and Z which would be the position of the crane at a different points in time in the 3D space. The last coordinate pair is the final destination of the crane.

### **Constraints**

- [time limit] 5000ms
- $0 \leq X \leq 1024$
- $0 \leq Y \leq 1024$
- $0 \leq Z \leq 1024$

### **Output Format**

The output should be a number representing the minimum Energy required for the crane to start with, rounded to 1 decimal place. Return -1.0 if it is not possible to complete the task or make crane reach at some position.

We need to recognize that, here, in Australia, the way women get 1 into the role of 2 caregiver isn't always explicit — it's insidious. Maybe a husband tells his wife that she's just "better" 3 handling the infant's tantrums, or that the 10-year-old won't listen to him the way she listens to their mom. He doesn't remember the name of the kids' paediatrician and caretaker — because he's not the parent who takes off of work when they're sick — to make their appointment, so his wife might as well do it.

**Q 7** Which of these fits blank 1?

- Ops:
- A.  pushed
  - B.  toted
  - C.  dragged
  - D.  Both "dragged" and "pushed" are correct

[reset answer](#)

---

**Q 8** Which of these fits blank 2?

- Ops:
- A.  secondary
  - B.  None of the mentioned options
  - C.  minor 
  - D.  primary
- 

**Q 9** Which of these fits blank 3?

- Ops:
- A.  on
  - B.  at
  - C.  in
  - D.  for

**Q 3** A type of linked list, say X consists of nodes that is divided into three parts:

The first part contains the address of the previous node.

The second contains the data element.

The third part contains the address of the next node.

Based on the above information, identify X.

**Ops:** A.  Circularly linked list

B.  Singly Linked List

C.  None of the mentioned options

D.  Doubly linked list

**Q 4** Consider an array  $A = \{ 1, 2, 4, 6, 8, 10, 12 \}$  and a key which is equal to 10. How many comparisons would be done to find the key element in the array using the binary search?

**Ops:** A.  1

B.  2

C.  5

D.  3

**Q 5** Consider a stack of letters. The stack is allocated 4 memory cells.

STACK: A, C, B, \_

... performed on the stack-

1

2

**Q 2** Consider the following list of numbers:

**2, 6, 8, 4, 66, 9, 7, 0, 3, 33, 44**

Jack wants to categorize the above numbers in three groups.

Group-1 will contain numbers less than 5

Group-2 will contain numbers between 5 and 10

Group-3 will contain numbers greater than 10

The final output that Jack wants is:

**2, 4, 0, 3 | 6, 8, 9, 7 | 66, 33, 44**

Which data structure should be used to carry out the above operation?

- Ops:**
- A.  Queue
  - B.  Both Queue or Stack can be used
  - C.  Stack
  - D.  None of the mentioned options

reset answer

**Q 3** A type of linked list, say X consists of nodes that is divided into three parts:

## Data Structures

10 questions | 10 marks

**Q 1** Consider an array of float. Calculate the difference between the address of the 1st and 4th element, assuming float occupies 4 bytes of memory.

**Ops:** A.  12

B.  16

C.  8

D.  4

[reset answer](#)

**Q 2** Consider the following list of numbers:

2, 6, 8, 4, 66, 9, 7, 0, 3, 33, 44

Jack wants to categorize the above numbers in three groups.

Group-1 will contain numbers less than 5

Group-2 will contain numbers between 5 and 10

Group-3 will contain numbers greater than 10

The final output that Jack wants is:

2, 4, 0, 3 | 6, 8, 9, 7 | 66, 33, 44

How many comparisons would be needed to carry out the above operation?

D.  Only 1 and 3

- Q 10** Which of the following is the correct reason that should be considered while selecting the correct technique of traversal for Ford-Fulkerson algorithm?
- I. Breadth First Traversal is preferred as it reduces worst case time complexity
  - II. Depth First Traversal is preferred as it reduces worst case time complexity

**Ops:** A.  Both I and II

B.  Only I

C.  Neither I nor II

D.  Only II

## 2 Algorithms

0 out of 15 questions attempted. Attempt?



**Q 9** Which of the following statements is/are correct for a B-tree of order m?

1. The root has at least two subtrees unless it is the only node in the tree
2. All leaves are on different level
3. Each non-root have at least  $m/2$  non-empty children

Choose the correct answer from the options given below.

Ops:

- A.  Only 3
- B.  Only 1
- C.  Only 2
- D.  Only 1 and 3

[reset answer](#)

**Q 8** In which of the following applications, both Breadth First or Depth First Traversal can be used?

1. To test if a graph is Bipartite
2. Finding all nodes within one connected component
3. GPS Navigation systems

Choose the correct answer from the options given below.

**Ops:** A.  Only 2 and 3

B.  All 1, 2, and 3

C.  Only 1 and 3

D.  Only 1 and 2

**Q 9** Which of the following statements is/are correct for a B-tree of order m?

**Q 6** If you find a directed graph where there is a path from each vertex in the graph to every other vertex then what does it indicate?

1. Graph has cycle
2. Graph is bipartite
3. Strongly Connected Components

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 2
  - B.  Only 3
  - C.  Only 1 and 2
  - D.  Only 1

Q 11

Which of the following series will be printed by the given pseudocode?

1. Integer i, j, k, n
2. Set j=1, k=1
3. for(each i from 1 to 5)
4. print k
5. j=j+1
6. k=k+j
7. end for

Ops:

- A.  2 4 6 8 10  
B.  1 3 6 10 15  
C.  1 2 3 4 5  
D.  1 1 2 3 5

Q 12

What will be the output of the following pseudocode?

```
integer a
string str1
string str2 = "HelloWorld"
get str1 = input("Enter string")
```

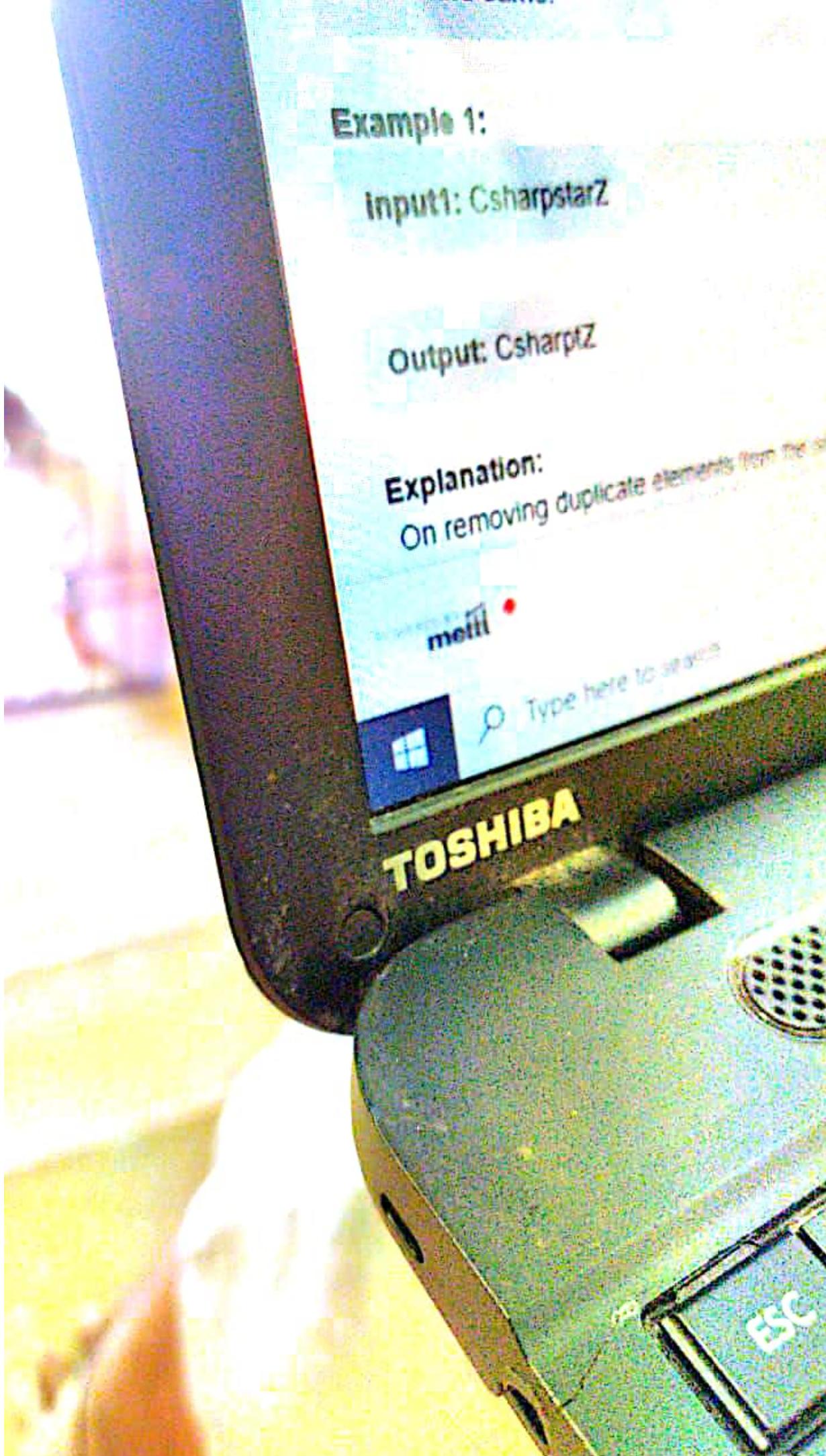
Example 1:

Input1: Csharpstar2

Output: CsharpZ

Explanation:

On removing duplicate elements from the string.



Q Which of the given sets of names will be displayed as a result of the following command?

Q Select emp\_name from employees where emp\_name like '%an' :

- Names starting with the alphabet "a"
- Names starting with the alphabet "A"
- Names containing the alphabet "a"
- Names ending with the alphabet "a"

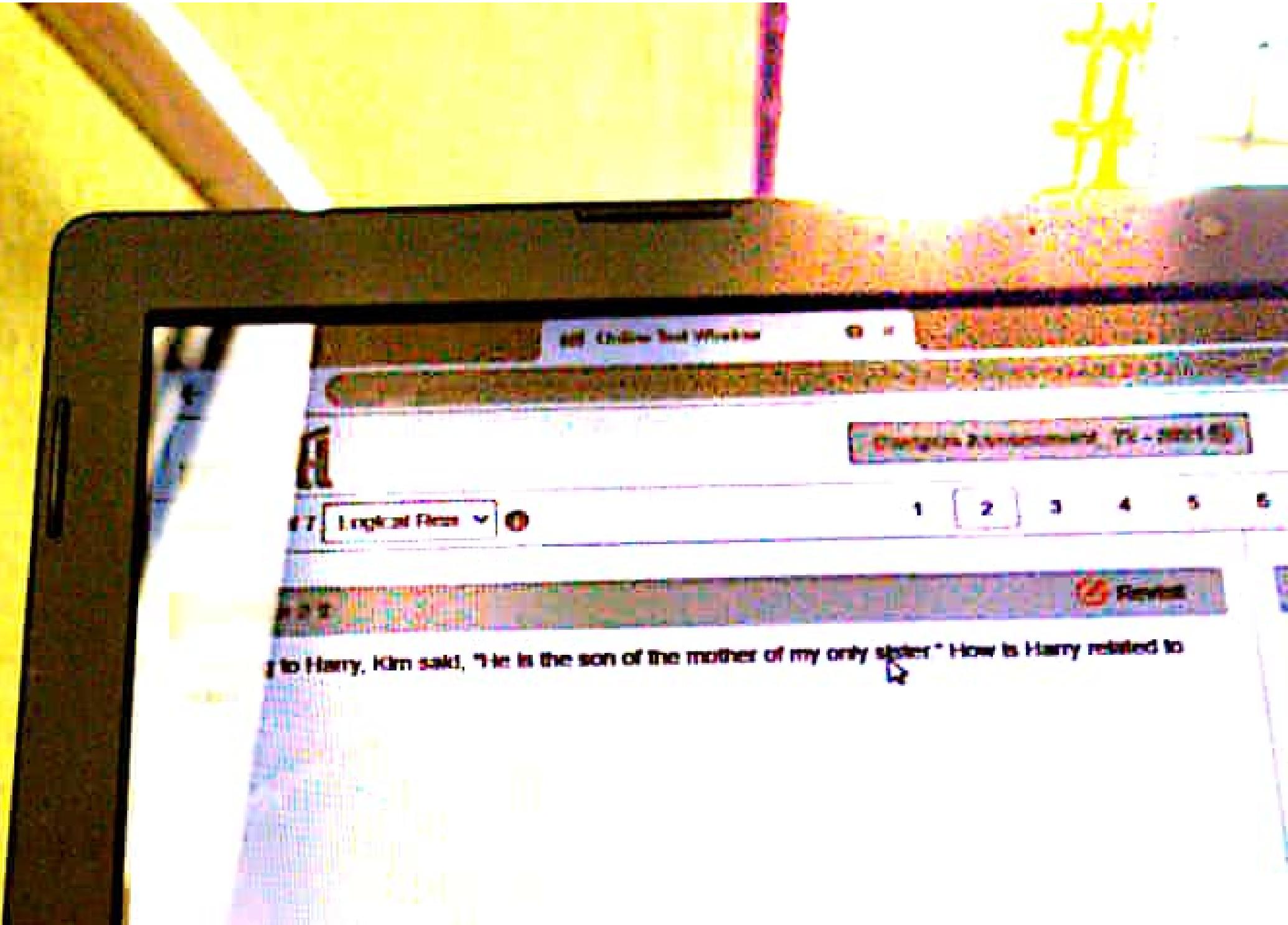
Q 15 What will be the output of the following pseudocode for  $a=2$

```
1. Integer fun(Integer a)
2.   If ( a > 2 )
3.     return a + fun(a - 1)
4.   Else
5.     return 0
6. End If
```

OPS:

- A. 0
- B. 1
- C. 2
- D. 3

What will be the output of the following pseudocode.



9.  $b = a - 1 \quad (1 \wedge 1) \parallel (2, 3))$
10. Else
- 11.
12.  $a = a \wedge 1$
13.  $b = b \wedge 1$
14. End if
15. Print  $a + b + c$

[Note: &- bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

$\wedge$  is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If the corresponding bits are both 0 or both 1, the result is 0. Otherwise, the result is 1.

If(x) gets executed if the value inside if(), i.e., x is not zero

||: Logical OR - The logical OR operator (||) returns the boolean value TRUE if either of the two conditions is true.

OP<sup>s</sup>:

- A. 0 6
- B. 5 1
- C. 3 2
- D. 2 3

Complex Arithmetic - 11 - 2011

1 2 3 4 5 6 7



Cho

O 3

O 40

O 45

O 49

In a row, there are eighteen people. Soorya is the ~~eleventh~~ person from the left end and ~~the twelfth~~ person from the right end. How many people are there?

Soorya is twenty-first from the left end and Soorya is twenty-eighth from the right end. If they interchange their positions, Soorya will be twenty-second from the left end. How many people are there?

Output of the following pseudocode?

1. Integer a, b, c
2. Set b = 2, a = 1
3. for(each c from 1 to 2)
4.     a = a\*c
5.     b = b\*c
6. End for
7. if ((1 & 4) || (1 ^ 1) || (2 ^ 3))
8.     b = a - 1
9.     a = a - 1
10. Else
11.     a = a ^ 1
12.     b = b ^ 1
13. End if
14. Print a + b + c

[Note: &- bitwise AND - The bitwise AND operator (&) compares each bit of the two  
the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.  
exclusive OR operator that compares each bit of the operand with the  
result bit is set to 1. Otherwise, the corresponding result bit is set to 0.

[Note: &- bitwise AND - The bitwise AND operator (&) compares each bit of the two numbers. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is 0.  
^ is the bitwise exclusive OR operator that compares each bit of the two numbers. If one bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is 0.  
| is the bitwise OR operator that compares each bit of the two numbers. It is executed if the value inside the curly braces is not zero.  
~ DR operator (~) inverts the binary representation of the number DR.]

[Note: &- bitwise AND - The bitwise AND operator (&) compares each bit of the two numbers. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is 0.]

$\wedge$  is the bitwise exclusive OR operator that compares each bit of the two numbers. If one bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is 0.

$\vee$  is the logical OR operator. It returns the true value if either or both of the arguments are true.

[Note: & - bitwise AND - The bitwise AND operator (&) compares each bit of the two numbers. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is 0.]

$\sim$  is the bitwise exclusive OR operator that compares each bit of the two numbers. If one bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is 0.

If (x) gets executed if the value inside it is true, i.e., x is not zero.

logical OR - The logical OR operator (||) returns the first true value.

[Note: &- bitwise AND - The bitwise AND operator (&) compares each bit of the two numbers. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.]

$\wedge$  is the bitwise exclusive OR operator that compares each bit of the two numbers. If one bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.

If(x) gets executed if the value inside of x is not zero.

||: Logical OR - The logical OR operator (||) returns the true value if either of the two conditions is true.

[Note: &- bitwise AND - The bitwise AND operator (&) compares each bit of the two numbers. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.]

~ is the bitwise exclusive OR operator that compares each bit of the two numbers. If one bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.

If(x) gets executed if the value inside it is not zero.

||: Logical OR - The logical OR operator (||) returns the true value if either or both of the conditions are true.

[Note: &- bitwise AND - The bitwise AND operator (&) compares each bit of the two numbers. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.]

$\sim$  is the bitwise exclusive OR operator that compares each bit of the two numbers. If one bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.

If(x) gets executed if the value inside it is not zero.

||: Logical OR - The logical OR operator (||) returns the true value if either of the two conditions is true.

M Pravita Allen from LT invites you

Online Test Window



tests.mettl.com/test-window-pi?key=4SeXvOYbVXyVFQhbFTnG2F3FPGtMyKCiHLArmYPiyspJM%3D#/testW

← → C

Campus Assessment\_T2 - 2021



Section 4 of 7 Verbal Ability

1 2 3 4 5 6 7 8

Question # 1

Arrange the following sentences in a logical order to construct a coherent paragraph.

- A. In almost all plants and animals, the individual cells have different functions.
- B. Biologists have researched extensively on living organisms. First of all, they have classified them on the basis of their structure.
- C. For instance, bacteria and algae are single-celled, while insects, fish and flowering plants are multi-celled.
- D. They have divided them into two classes, the single-celled organisms and the multi-celled organisms.

Revisit

choose the best

→  A B D C

C D B A

B A C D

B D C A

Q. What will be the output of the following pseudocode?

1. Integer a, b, c
2. Set b = 10, a = 1
3. if (0)
4.     a = a - 1
5. Else
6.     a = b + 1
7.     b = a - 1
8.     a = a - 1
9. End if
10. Print a

[Note: If(x) gets executed if the value inside if, i.e., x is not zero]

- OPs:
- A.  3
  - B.  5
  - C.  10
  - D.  11

- What will be the output of the following pseudocode?
1. Integer a
  2. String str1
  3. Set str1 = "goose"
  4. a = stringLength(str1)
  5. Print (a ^ 1)

[Note- stringLength(): stringLength() function counts the number of characters in a given string.]

- ops:
- A. 3
  - B. 4
  - C. 5
  - D. 6

Q 11

Which of the following series will be printed by the given pseudocode?

1. Integer i, j, k, n
2. Set j=1, k=1
3. for(each i from 1 to 5)
4. print k
5. j=j+1
6. k=k+j
7. end for

Ops:

- A.  2 4 6 8 10  
B.  1 3 6 10 15  
C.  1 2 3 4 5  
D.  1 1 2 3 5

Q 12

What will be the output of the following pseudocode?

```
integer a
string str1
string str2 = "Hello"
get str1 = input("Enter string")
```

\* For which of the following applications can you use hashing?

1. To construct a message authentication code
2. For Timestamping
3. For detecting cycle in a graph

Choose the correct answer from the options given below.

- Options:
- A.  Only 1 and 2
  - B.  Only 1
  - C.  Only 1 and 3
  - D.  Only 2 and 3

Q 2

- If you are using Depth-first search (DFS) for traversing an unweighted graph, then which of the following will happen?
1. It produces the minimum spanning tree
  2. It produces all pair shortest path tree

Choose the correct answer from the options given below.

Only 2 is true

Only 1 is true

Only 1 and 2 are true

Only 1 and 2 are false

For which of the following applications can you use hashing?

1. To construct a message authentication code
2. For Timestamping
3. For detecting cycle in a graph

Choose the correct answer from the options given below.

- Ops:** A.  Only 1 and 2  
B.  Only 1  
C.  Only 1 and 3  
D.  Only 2 and 3

Q 2

- If you are using Depth-first search (DFS) for traversing a connected graph, then
1. It produces the minimum spanning tree
  2. It produces all pair shortest path tree

Choose the correct answer from the options given below.

Only 2 is true

Only 1 is true

Only 1 and 2 are true

None of the above

reset answer

12 : 17

Q 12 What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set b = 40, a = 20, c = 20
3. if (c > (c + a))
4.     b = 0
5. Else
6.     a = a + 2
7.     c = a + 2
8. End if
9. if (c > (b+a))
10.    b = 0
11. Else
12.    a = a + 2
13.    c = a + 2
14. End if
15. Print a + b + c
```

Ops: A.  60

B.  30

C.  90

D.  39

**Question # 1**

Arrange the following sentences in a logical order to construct a coherent paragraph.

- A. In almost all plants and animals, the individual cells have different functions.
- B. Biologists have researched extensively on living organisms. First of all, they have classified them on the basis of their structure.
- C. For instance, bacteria and algae are single-celled, while insects, fish and flowering plants are multi-celled.
- D. They have divided them into two classes, the single-celled organisms and the multi-celled organisms.



Revisit

- choose the best order
- A B D C
  - C D B A
  - B A C D
  - B D C A

D. ○ 7

Q 12 What will be the output of the following pseudocode?

1. Integer a, b, c
2. Set b = 40, a = 20, c = 20
3. if (c > (c + a))
4.     b = 0
5. Else
6.     a = a + 2
7.     c = a + 2
8. End if
9. if (c > (b+a))

D.  None of the mentioned options

Reset Answer

- Q. 9 Consider an array A of 10 elements, from 0 to 9. The general formula to calculate the value of 'n' element is  $A[n] = n + n + n$ , where  $n < 5$ .  
 $A[n] = n$ , otherwise.  
where n represents the index number.

Find out the value of the largest element of array A.

Ops: A.  12.

B.  10

C.  15

D.  20

Q. 10 Consider an array,  $A = \{2, 4, 6, 7, 8, 9\}$

Carry out the following operations on an array:

- I. Append 12 at the end of the array
- II. Insert 0 in the first position of the array
- III. Delete the third element

What will array look like after the above operations are performed?

Ops: A.  0, 2, 4, 7, 5, 9, 12

B.  0, 4, 7, 8, 9, 12

B.  10

C.  15

D.  20

**Q 10** Consider an array,  $A = \{ 2, 4, 6, 7, 8, 9 \}$

Carry out the following operations on an array:

i. Append 12 at the end of the array

ii. Insert 0 in the first position of the array

iii. Delete the third element

What will array look like after the above operations are performed?

Ops: A.  0, 2, 4, 7, 8, 9, 12

B.  0, 4, 7, 8, 9, 12

C.  None of the mentioned options



Q.5 Which of the following statements is/are correct for a B-tree of order m?

1. The root has at least two subtrees unless it is the only node in the tree
2. All leaves are on different level
3. Each non-root have at least  $m/4$  non-empty children

Choose the correct answer from the options given below.

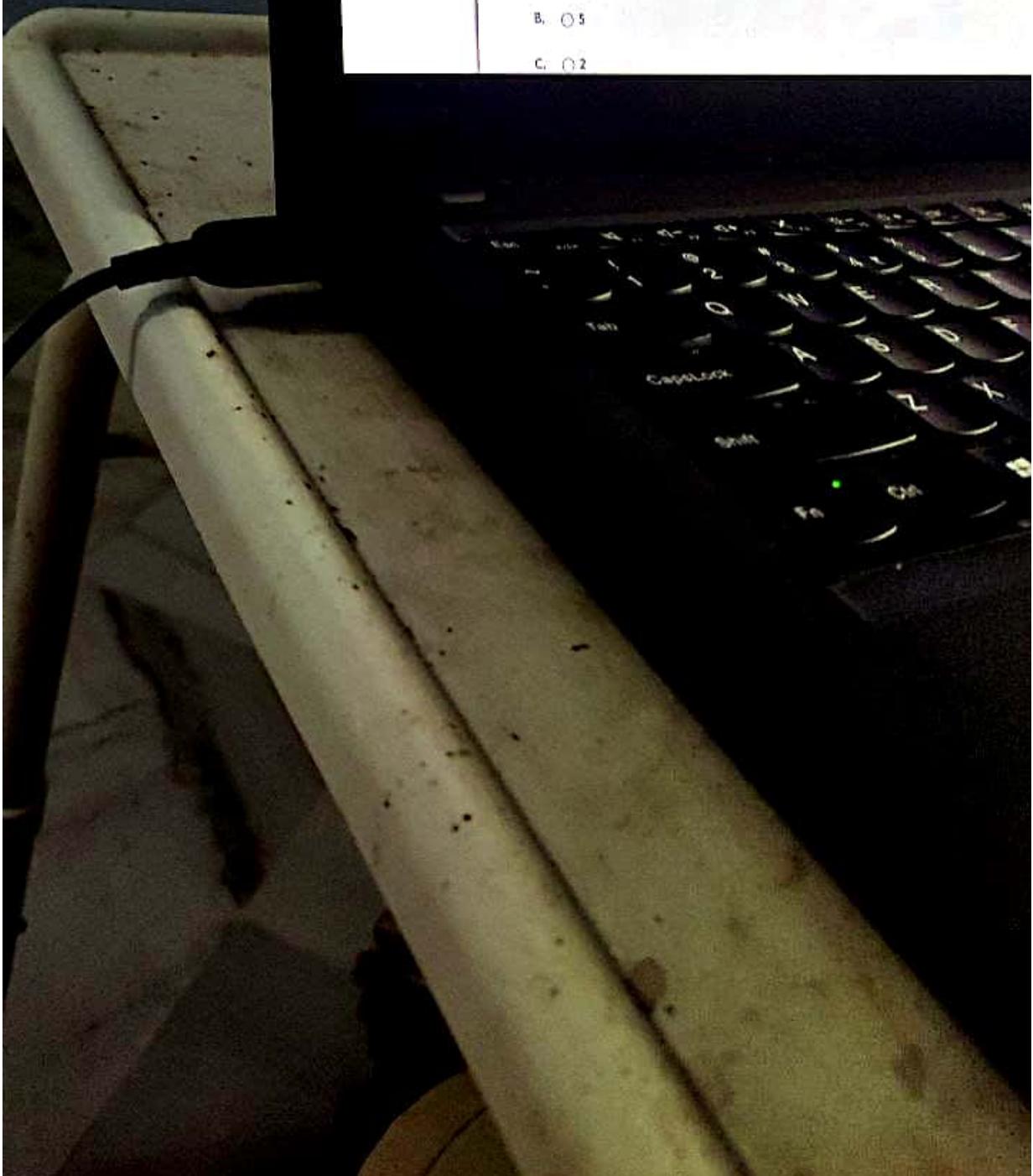
Ops:

- A.  Only 1
- B.  Only 3
- C.  Only 2
- D.  Only 1 and 3.

Q.6 Consider an array  $A = \{1, 2, 4, 6, 8, 10, 12\}$  and a key which is equal to 10. How many comparisons would be done in the binary search?

Ops:

- A.  1
- B.  5
- C.  2





Q.5 Which of the following statements is/are correct for a B-tree of order m?

1. The root has at least two subtrees unless it is the only node in the tree
2. All leaves are on different level
3. Each non-root have at least  $m/4$  non-empty children

Choose the correct answer from the options given below.

Ops: A.  Only 1

B.  Only 3

C.  Only 2

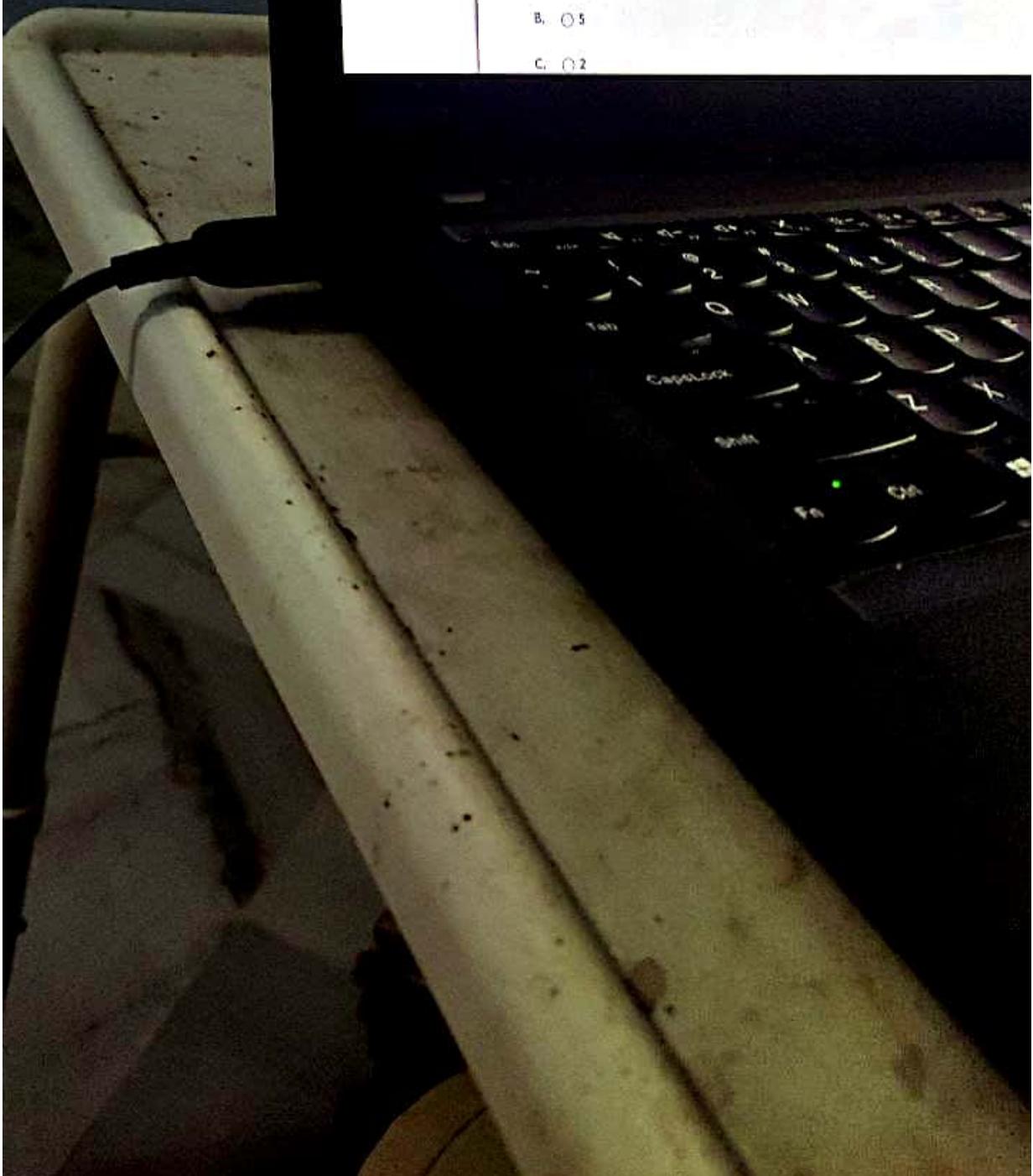
D.  Only 1 and 3.

Q.6 Consider an array  $A = \{1, 2, 4, 6, 8, 10, 12\}$  and a key which is equal to 10. How many comparisons would be done in the binary search?

Ops: A.  1

B.  5

C.  2



- B.  1-C, 2-A, 3-B
- C.  1-B, 2-C, 3-A
- D.  1-B, 2-A, 3-C

**Q 2** When a function makes a nested call, which of the following will happen?

- 1. The current function runs in parallel
- 2. After it ends, the old execution context is retrieved from the stack
- 3. The execution context associated with the current function is remembered in a special data structure called execution context stack

Choose the correct answer from the options given below.

- Ans:
- A.  Only 1 and 2
  - B.  Only 1 and 3
  - C.  All 1, 2 and 3
  - D.  Only 2 and 3



- i. Quick sort
- ii. Bubble sort
- iii. Radix sort
- iv. Shell sort
- v. Insertion sort

Identify the sorting techniques that are stable as well as adaptive.

- A.  Only iii and v
- B.  Only ii and v
- C.  Only i, ii, and v
- D.  None of the mentioned options

1

1. The current function runs in parallel
2. After it ends, the old execution context is retrieved from the stack
3. The execution context associated with the current function is remembered in a special data structure called execution context

2

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 1 and 2
  - B.  Only 1 and 3
  - C.  Only 2 and 3
  - D.  All 1, 2 and 3

[reset answer](#)

**Q 2** Breadth First Traversal can be used for which of the following applications?

1. To find all neighbouring locations in GPS Navigation systems
2. In Social Networking websites to find the people within a given distance
3. For detecting cycle in any graph

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 1 and 2
  - B.  Only 1 and 3
  - C.  All 1, 2 and 3
  - D.  Only 2 and 3

[reset answer](#)



**Q 3** Which of the following criteria are to be considered while analyzing a sorting technique?

- Ops:**
- A.  Number of comparisons and Stability

D.  6

[reset answer](#)

**Q 7** If you are using merge sort, then which of the following statements are correct that need to be considered?

1. It cannot work well with large datasets
2. It is preferred for linked lists
3. It needs auxiliary memory for sorting

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 2 and 3
  - B.  All 1, 2 and 3
  - C.  Only 1 and 2
  - D.  Only 1 and 3

[reset answer](#)

**Q 8** Find out the recursion depth in the given program.

1. function pow(x, n)
2. {

TAKING

1

2

4. I

- Ops:** A.   $O(n^2)$   
B.   $O(n^3)$   
C.   $O(n)$   
D.   $O(1)$

**Q 9** What do you mean by underflow condition in the stack?

- Ops:** A.  It is when the stack is completely filled and try to pop an element from the stack.  
B.  It is when the stack is empty and try to push an element to the stack.  
C.  It is when the stack is completely filled and try to push an element to the stack.  
D.  It is when the stack is empty and try to pop an element from the stack.

[reset answer](#)

**Q 10** Consider a linked list "X", with the following properties:

- i. Last node's link field points to the first node of the list.
  - ii. It allows access to the middle nodes, without starting at the beginning.
- Identify the type of X.

- Ops:** A.  Singly Linked List

**Q 4** Breadth First Traversal can be used for which of the following applications?

1. To find all neighbouring locations in GPS Navigation systems
2. In Social Networking websites to find the people within a given distance
3. For detecting cycle in any graph

Choose the correct answer from the options given below.

**Ops:** A.  Only 2 and 3

B.  Only 1 and 2

C.  Only 1 and 3

D.  All 1, 2 and 3

**Q 5** When a function makes a nested call, which of the following will happen?

1. The current function runs in parallel
2. After it ends, the old execution context is retrieved from the stack
3. The execution context associated with the current function is remembered in a special data structure called execution context

irections

1

2

- C.  Only 1 and 2
- D.  All 1, 2 and 3

**Q 6** Consider an array A={11, 7, 34} and an array B={0, 4, -3}. An array C has been made by sum of the first and last element present in array C.

- Ops:
- A.  B
  - B.  D
  - C.  11
  - D.  1

**Q 7** Which of the following statements is true about the application of double ended queue?

- Ops:
- A.  It can be used as a palindrome checker
  - B.  None of the mentioned options
  - C.  Both A and B
  - D.  It is used in A-steal algorithm (job scheduling)

**Q 8** What do you mean by underflow condition in the stack?

- Ops:
- A.  It is when the stack is completely filled and try to push an element
  - B.  It is when the stack is empty and try to push an element
  - C.  It is when the stack is completely filled and try to push an element
  - D.  It is when the stack is empty and try to pop an element

**Q 9** Which of the following uses divide and conquer algorithm?

- Q 19**
- Options:
- A.  It is when the stack is completely filled and try to pop an element from the stack.
  - B.  It is when the stack is empty and try to push an element to the stack.
  - C.  It is when the stack is completely filled and try to push an element to the stack.
  - D.  It is when the stack is empty and try to pop an element from the stack.
- Correct answer:

**Q 20** Consider a linked list "X", with the following properties:  
1. Last node's link field points to the first node of the list.  
2. It allows access to the middle nodes, without starting at the beginning.  
Identify the type of X.

- Options:**
- A.  Singly Linked List
  - B.  Circularly linked list
  - C.  None of the mentioned options
  - D.  Header linked list

Correct answer:

## 2 Algorithms

0 out of 15 questions attempted. Attempt?

15 quest

1

2

- C.  None of the mentioned options  
D.  1  
[reset answer](#)

**Q 12** What will be the output of the following pseudocode?

1. Integer a, b
2. Set a = 3, b = 5
3. if (a & (b + 1))
4. a = a + a
5. End if
6. Print a + b

[Note: If(x) gets executed if the value inside if(), i.e., x is not zero

&: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

- Ops: A.  11  
B.  30  
C.  8  
D.  7

[reset answer](#)

**Q 13** What will be the output of the following pseudocode?

Choose the correct answer from the options given below.

- Ops:
- A.  Only 2 and 3
  - B.  Only 1 and 2
  - C.  Only 1 and 3
  - D.  All 1, 2 and 3

Q 5 When a function makes a nested call, which of the following statements is true?

- 1. The current function call is pushed
- 2. After it ends, the old execution context is restored from the stack
- 3. The execution context associated with the current function is removed from the stack

Choose the correct answer from the options given below.

- Ops:
- A.  Only 2 and 3
  - B.  Only 1 and 3
  - C.  Only 1 and 2
  - D.  All 1, 2 and 3

Q 6 Consider an array  $A = [1, 2, 3]$  and an integer  $b = 4$ . What will be the sum of the first and last element present in array  $A$ ?

- Ops:
- A.  8
  - B.  5

- B.  Only iii and v  
C.  Only ii and v  
D.  None of the mentioned options

[reset answer](#)

**Q6** John has written a program that traverses a given array linearly and outputs the sum of all the elements of an array which are divisible by 3. If an array {1, 2, 4, 3, 6, 7, 3, 5, 4, 7, 8, 9} is fed into John's program, what will be the output?

- Ops: A.  12  
B.  21  
C.  18  
D.  6

[reset answer](#)

**Q7** If you are using merge sort, then which of the following statements are correct that need to be considered?

1. It cannot work well with large datasets
2. It is preferred for linked lists
3. It needs auxiliary memory for sorting

Choose the correct answer from the options given below.

- Ops: A.  Only 2 and 3

1

2

Q 14 What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set b = 10, a = 1
3. for(each c from 1 to 2)
4.     a = (a+c) * c
5.     b = b - c
6. End for
7. if (0)
8.     b=a-1
9.     a=a-1
10.    a=b+1
11. Else
12.    a=b+1
13.    b=a-1
14.    a=a-1
15. End if
16. Print a + b + c
```

[Note: If(x) gets executed if the value inside if(), i.e., x is not zero]

- Ops:
- A.  20
  - B.  25
  - C.  10
  - D.  17

reset answer

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Choose the correct answer from the options given below.

**Ops:** A.  Only 1 and 2

B.  Only 1 and 3

C.  All 1, 2 and 3

D.  Only 2 and 3

[reset answer](#)

ctions

1

2

**Q 3** Which of the following criteria are to be considered while analyzing a sorting technique?

**Ops:** A.  Number of comparisons and Stability

B.  All of the mentioned options

C.  Adaptive and number of swaps

D.  Stable and adaptive

[reset answer](#)

**Q 4** Match the following types of recursive functions with their correct example.

**Types of Recursive Functions:**

1. Linear Recursion

2. Binary Recursion

3. Tail Recursion

**Examples:**

Sections

1

2

D.  17

reset answer

**Q 15** How many times the following pseudocode will print "btech"?

1. Integer a,b
2. for(each a from 0 to 3)
3. for(each b from 0 to a)
4. print "btech"
5. end for
6. end for

Ops: A.  8 times  
B.  9 times  
C.  10 times  
D.  11 times

reset answer

**Q 16** What will be the output of the following pseudocode for a = 2?

1. Integer fun(Integer a)
2. Integer b = 0
3. if (a + b > 0 )  
    return fun(a - 1)
4. else

reset answer

**Q 4** Match the following types of recursive functions with their correct example.

**Types of Recursive Functions:**

1. Linear Recursion
2. Binary Recursion
3. Tail Recursion

**Examples:**

- A. Greatest Common Denominator of two numbers
- B. Fibonacci function
- C. Factorial

- Ops:**
- A.  1-B, 2-C, 3-A
  - B.  1-C, 2-B, 3-A
  - C.  1-C, 2-A, 3-B
  - D.  1-B, 2-A, 3-C

reset answer

2

D. 20

reset answer

Q 19 What will be the output of the following pseudocode?

1. Integer a, b
2. Set a = 12, b = 5
3. if ((a^b) && (a&b) )
4. a = b
5. End if
6. Print a + b

[Note-&&: Logical AND - The logical AND operator (&&) returns the Boolean value true(or 1) if both operands are true and return false (or 0) otherwise

&: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0

^ is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

- Ops:
- A.  9
  - B.  11
  - C.  17
  - D.  10

reset answer

Q 20 What will be the output of the following pseudocode?

TAKING

**Q5** Consider the following sorting techniques:

- i. Quick sort
- ii. Bubble sort
- iii. Radix sort
- iv. Shell sort
- v. Insertion sort

Identify the sorting techniques that are stable as well as adaptive.

**Ops:** A.  Only i, ii, and v

B.  Only iii and v

C.  Only ii and v

D.  None of the mentioned options

[reset answer](#)



**Q6** John has written a program that traverses a given array linearly and extracts all the elements which are divisible by 3.

D.  10

[reset answer](#)

2

Q 20 What will be the output of the following pseudocode?

1. Integer a, b
2. String str1, str2
3. Set str1 = "Momos"
4. Set str2 = "Pizza"
5. str1 = str1 + str2
6. a = stringLength(str1)
7. b = stringLength(str1 + str2)
8. Print a + b

[Note- stringLength(): stringLength( ) function counts the number of characters in a given string and returns the integer value.]

Ops: A.  25

B.  12

C.  20

D.  15

[reset answer](#)

Q 21 What will be the output of the following pseudocode for a=2?

1. Integer fun(Integer a)
2.     Integer p=1

**Q 17** What will be the output of the following pseudocode for a=3 and b=4?

```
1. Integer foo(Integer a, Integer b)
2. if(a EQUALS 0)
3.     return b
4. else if(a EQUALS 1)
5.     return b+1
6. else
7.     return foo(a - 1, a + b+5)
8. end if
9. End function foo()
```

- Ops:
- A.  20
  - B.  10
  - C.  7
  - D.  5

reset answer

**Q 18** What will be the output of the following pseudocode for a=3 and b=4?

Q 8 It is when the stack is empty and try to pop an element from the stack.

**Q 9** Which of the following uses divide and conquer algorithm design technique?

- I. Quicksort
- II. Merge sort

Choose the correct answer from the options given below.

- Ops: A.  Both I and II  
B.  Only II  
C.  Neither I nor II  
D.  Only I

**Q 10** If you are using merge sort, then which of the following statements are correct that need to be crossed out?

- 1. It cannot work well with large datasets
- 2. It is preferred for linked lists
- 3. It needs auxiliary memory for sorting

Choose the correct answer from the options given below.

- Ops: A.  Only 1 and 3  
B.  All 1, 2 and 3  
C.  Only 2 and 3  
D.  Only 1 and 2

## 2 Algorithms

- A. 0  
B. 1000  
C. 1100  
D. 11100  
 E. None of the above

Q 16. What will be the output of the following pseudocode for a = 2?

```
1. Integer fun(Integer a)
2. Integer b = 0
3. if (a + b > 0 )
4.     return fun(a - 1)
5. else
6.     b = b + 1
7.     return a + b
8. End if
9. End function fun()
```

- A. 0  
B. 1  
C. 00  
D. -1  
 E. None of the above

1

2

Q 22 What will be the output of the following pseudocode?

```

1. Integer a, b, c
2. Set b = 0, a = 1
3. for(each c from 1 to 2)
4.     a = a*c*c
5.     b = b*c*c
6. End for
7. If ((1&4) || 1 || (2^3))
8.     b = a - 1
9.     a = a - 1
10. Else
11.     a = a mod 1
12.     b = b mod 1
13. End if
14. Print a + b + c

```

[Note- mod finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

A: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0

$\wedge$ : is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0  
 II(x) gets executed if the value inside if(), i.e., x is not zero]

- Ops:
- A.  7
  - B.  9
  - C.  8
  - D.  5

reset answer

next question

Q 22 What will be the output of the following pseudocode for n=5?

```
1. Integer sum(Integer n)
2.   Integer p=1
3.   If (n < 0)
4.     return p + sum(n - 1)
5.   Else
6.     p = p + 1
7.   return n + p
8. End If
9. End Function sum()
```

Ans: A.  6

B.  5

C.  4

D.  2

next question

Q 23 What will be the output of the following pseudocode?

```
1. Integer a, b, c
```

Home Page

Next Question

1

reset answer

2

**Q 21** What will be the output of the following pseudocode for a=2?

```
1. Integer fun(Integer a)
2.     Integer p=1
3.     if (a > 0)
4.         return p + fun(a - 1)
5.     Else
6.         p = p + 1
7.         return a + p
8.     End if
9. End function fun()
```

- Ops:
- A.
  - B.
  - C.
  - D.

reset answer



**Q 22** What will be the output of the following code?

**Q 23** What will be the output of the following pseudocode?

```
1. Integer a[10]
2. set a[10] = {1, 2, 3, 4, 5, 6, 7, 8, 9}
3. for(each i from 1 to 4)
4.     if(a[i/2])
5.         print a[i*2]
6.     else
7.         print a[i+2]
8.     end if
9. end for
```

[Note: If(x) gets executed if the value inside If(), i.e., x is not zero]

- Ops:**
- A.  2 4 6 8
  - B.  1 2 3 4 5
  - C.  2 6 8 0
  - D.  1 3 5 7 9

*reset answer*

**Q 24** What will be the output of the following pseudocode?

Sections

1

2

B.  C.  D.  E.

reset answer

Q 24 What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set b = 100, a = 1
3. If (1)
4.     b = a * 1
5.     a = a * 1
6.     a = b * 1
7. Else
8.     a = b + 1
9.     b = a - 1
10.    a = a - 1
11. End if
12. Print a
```

[Note: If(x) gets executed if the value inside if(), i.e., x is not zero]

Ops: A.  1  
B.  10

C.  5  
D.  15

reset answer

- Ops:** A.  The lie spoken by Mac  
B.  Lie was spoken by Mac  
C.  The lie was spoken by Mac.  
D.  The lie was spoke by Mac.

[reset answer](#)



**Q 2** Mark the option which best expresses the sentence in Passive voice.

The inspector caught the thief.

- Ops:** A.  The thief was caught by the inspector.  
B.  The thief had caught by the inspector.  
C.  The thief were caught by the inspector.  
D.  The thief caught by the inspector.

[reset answer](#)

Complete the passage by choosing the most suitable word/phrase from the options to fit the corresponding gap.

Airlines were among the earliest businesses to be 1 by the pandemic. The Aeroman-owned Air Prince suffered a 2 of hundreds and killed more than a 5 people, and became a symbol of nightmare, when it was quarantined for a month. There's been 3 16, the Centres for Disease Control extended a "no flight" order, suspending airline operations, until November 25 — and went out of its industry for practices that spread the virus, resulting in an alarming 86 virus outbreaks on 123 aeroplanes, involving nearly 2,420 passengers and

Complete the passage by choosing the most suitable word/phrase from the options to fit the corresponding gap.

Airlines were among the earliest businesses to be \_\_\_\_1\_\_\_\_ by the pandemic. The Aeroman-owned Air Prince suffered a \_\_\_\_2\_\_\_\_ outbreak that infected hundreds and killed more than a 5 people, and became a symbol of nightmare, when it was quarantined for a month. There's been \_\_\_\_3\_\_\_\_ relief since. On July 16, the Centres for Disease Control extended a "no flight" order, suspending airline operations, until November 25 — and went out of its way to criticize the industry for practices that spread the virus, resulting in an alarming 86 virus outbreaks on 123 aeroplanes, involving nearly 2,420 passengers and 26 deaths.

**Q 3** Which of these fits blank 1?

- Ops:**
- A.  hit hard
  - B.  All of the mentioned options
  - C.  destroyed
  - D.  swallowed

[reset answer](#)

---

**Q 4** Which of these fits blank 2?

- Ops:**
- A.  momentary
  - B.  notorious
  - C.  terrific
  - D.  Both "terrific" and "notorious" are correct

[reset answer](#)

---

- D.  Both "terrific" and "notorious" are correct  
[reset answer](#)
- 

**Q 5** Which of these fits blank 3?

- Ops:** A.  exquisite  
B.  little  
C.  vivid  
D.  evident

[reset answer](#)

**Q 6** A sentence is broken into the following parts. Mark the option containing the correct sequence of these parts to get the complete sentence.

- A. The Kennedy Space Center
- B. The Apollo 11
- C. On July 16, 1969
- D. Spacecraft was launched from

- Ops:** A.  CBAD  
B.  BCDA  
C.  ABCD  
D.  CBDA

[reset answer](#)

**Q 7** A sentence is broken into the following parts. Mark the option containing the correct sequence of these parts to get the complete sentence.

- Ops:**
- A.  CBAD
  - B.  BCDA
  - C.  ABCD
  - D.  CBDA
- [reset answer](#)

**Q 7** A sentence is broken into the following parts. Mark the option containing the correct sequence of these parts to get the complete sentence.

- 1. Observations of the Red Planet
- 2. May have been important
- 3. Indicate that rivers and oceans
- 4. Features in its early history

- Ops:**
- A.  4321
  - B.  4231
  - C.  1324
  - D.  1234
- [reset answer](#)

Read the passage given below and answer the questions that follow.

During our work with people living around the Ranthambhor National Park on issues of conservation, livelihoods, and eco-development, a constant question we were asked was how long we thought we could continue helping them. And then, an accompanying question — would their children never be in a position to help themselves to advocate for and implement the change they wanted to see?

1

1. The current function runs in parallel
2. After it ends, the old execution context is retrieved from the stack
3. The execution context associated with the current function is remembered in a special data structure called execution context

2

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 1 and 2
  - B.  Only 1 and 3
  - C.  Only 2 and 3
  - D.  All 1, 2 and 3

[reset answer](#)

**Q 2** Breadth First Traversal can be used for which of the following applications?

1. To find all neighbouring locations in GPS Navigation systems
2. In Social Networking websites to find the people within a given distance
3. For detecting cycle in any graph

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 1 and 2
  - B.  Only 1 and 3
  - C.  All 1, 2 and 3
  - D.  Only 2 and 3

[reset answer](#)



**Q 3** Which of the following criteria are to be considered while analyzing a sorting technique?

- Ops:**
- A.  Number of comparisons and Stability

irections

1

2

- C.  Only 1 and 2
- D.  All 1, 2 and 3

**Q 6** Consider an array A={11, 7, 34} and an array B={0, 4, -3}. An array C has been made by sum of the first and last element present in array C.

- Ops:
- A.  B
  - B.  D
  - C.  11
  - D.  1

**Q 7** Which of the following statements is true about the application of double ended queue?

- Ops:
- A.  It can be used as a palindrome checker
  - B.  None of the mentioned options
  - C.  Both A and B
  - D.  It is used in A-steal algorithm (job scheduling)

**Q 8** What do you mean by underflow condition in the stack?

- Ops:
- A.  It is when the stack is completely filled and try to push an element
  - B.  It is when the stack is empty and try to push an element
  - C.  It is when the stack is completely filled and try to push an element
  - D.  It is when the stack is empty and try to pop an element

**Q 9** Which of the following uses divide and conquer algorithm?

**Q 4** Breadth First Traversal can be used for which of the following applications?

1. To find all neighbouring locations in GPS Navigation systems
2. In Social Networking websites to find the people within a given distance
3. For detecting cycle in any graph

Choose the correct answer from the options given below.

**Ops:** A.  Only 2 and 3

B.  Only 1 and 2

C.  Only 1 and 3

D.  All 1, 2 and 3

**Q 5** When a function makes a nested call, which of the following will happen?

1. The current function runs in parallel
2. After it ends, the old execution context is retrieved from the stack
3. The execution context associated with the current function is remembered in a special data structure called execution context

Choose the correct answer from the options given below.

- Ops:
- Only 2 and 3
  - Only 1 and 2
  - Only 1 and 3
  - All 1, 2 and 3

Q 5 When a function makes a nested call, which of the following will happen?

1. The current function call is pushed
2. After it ends, the old execution context is restored from the stack
3. The execution context associated with the current function is removed from the stack

Choose the correct answer from the options given below.

- Ops:
- Only 2 and 3
  - Only 1 and 3
  - Only 1 and 2
  - All 1, 2 and 3

Q 6 Consider an array  $A = [1, 2, 3]$  and an integer  $b = 4$ . What will be the sum of the first and last element present in array  $A$ ?

- Ops:
- 8
  - 5

- B.  Only iii and v  
C.  Only ii and v  
D.  None of the mentioned options

[reset answer](#)

**Q6** John has written a program that traverses a given array linearly and outputs the sum of all the elements of an array which are divisible by 3. If an array {1, 2, 4, 3, 6, 7, 3, 5, 4, 7, 8, 9} is fed into John's program, what will be the output?

- Ops: A.  12  
B.  21  
C.  18  
D.  6

[reset answer](#)

**Q7** If you are using merge sort, then which of the following statements are correct that need to be considered?

1. It cannot work well with large datasets
2. It is preferred for linked lists
3. It needs auxiliary memory for sorting

Choose the correct answer from the options given below.

- Ops: A.  Only 2 and 3

ctions

1

2

Choose the correct answer from the options given below.

**Ops:** A.  Only 1 and 2

B.  Only 1 and 3

C.  All 1, 2 and 3

D.  Only 2 and 3

reset answer

**Q 3** Which of the following criteria are to be considered while analyzing a sorting technique?

**Ops:** A.  Number of comparisons and Stability

B.  All of the mentioned options

C.  Adaptive and number of swaps

D.  Stable and adaptive

reset answer

**Q 4** Match the following types of recursive functions with their correct example.

**Types of Recursive Functions:**

1. Linear Recursion

2. Binary Recursion

3. Tail Recursion

**Examples:**

1

2

3

4

5

6

[reset answer](#)

**Q 4** Match the following types of recursive functions with their correct example.

**Types of Recursive Functions:**

1. Linear Recursion
2. Binary Recursion
3. Tail Recursion

**Examples:**

- A. Greatest Common Denominator of two numbers
- B. Fibonacci function
- C. Factorial

- Ops:**
- A.  1-B, 2-C, 3-A
  - B.  1-C, 2-B, 3-A
  - C.  1-C, 2-A, 3-B
  - D.  1-B, 2-A, 3-C

[reset answer](#)

**Q5** Consider the following sorting techniques:

- i. Quick sort
- ii. Bubble sort
- iii. Radix sort
- iv. Shell sort
- v. Insertion sort

Identify the sorting techniques that are stable as well as adaptive.

**Ops:** A.  Only i, ii, and v

B.  Only iii and v

C.  Only ii and v

D.  None of the mentioned options

reset answer



**Q6** John has written a program that traverses a given array linearly and extracts all the elements which are divisible by 3.

Q 8 It is when the stack is empty and try to pop an element from the stack.

**Q 9** Which of the following uses divide and conquer algorithm design technique?

- I. Quicksort
- II. Merge sort

Choose the correct answer from the options given below.

- Ops: A.  Both I and II  
B.  Only II  
C.  Neither I nor II  
D.  Only I

**Q 10** If you are using merge sort, then which of the following statements are correct that need to be crossed out?

- 1. It cannot work well with large datasets
- 2. It is preferred for linked lists
- 3. It needs auxiliary memory for sorting

Choose the correct answer from the options given below.

- Ops: A.  Only 1 and 3  
B.  All 1, 2 and 3  
C.  Only 2 and 3  
D.  Only 1 and 2

## 2 Algorithms

- i. Quick sort
- ii. Bubble sort
- iii. Radix sort
- iv. Shell sort
- v. Insertion sort

Identify the sorting techniques that are stable as well as adaptive.

- A.  Only iii and v
- B.  Only ii and v
- C.  Only i, ii, and v
- D.  None of the mentioned options

1

2

4. I

- Ops:** A.   $O(n^2)$   
B.   $O(n^3)$   
C.   $O(n)$   
D.   $O(1)$

**Q 9** What do you mean by underflow condition in the stack?

- Ops:** A.  It is when the stack is completely filled and try to pop an element from the stack.  
B.  It is when the stack is empty and try to push an element to the stack.  
C.  It is when the stack is completely filled and try to push an element to the stack.  
D.  It is when the stack is empty and try to pop an element from the stack.

[reset answer](#)

**Q 10** Consider a linked list "X", with the following properties:

- i. Last node's link field points to the first node of the list.
  - ii. It allows access to the middle nodes, without starting at the beginning.
- Identify the type of X.

- Ops:** A.  Singly Linked List

- Q 19**
- Options:
- A.  It is when the stack is completely filled and try to pop an element from the stack.
  - B.  It is when the stack is empty and try to push an element to the stack.
  - C.  It is when the stack is completely filled and try to push an element to the stack.
  - D.  It is when the stack is empty and try to pop an element from the stack.
- Correct answer:

**Q 20** Consider a linked list "X", with the following properties:  
1. Last node's link field points to the first node of the list.  
2. It allows access to the middle nodes, without starting at the beginning.  
Identify the type of X.

- Options:**
- A.  Singly Linked List
  - B.  Circularly linked list
  - C.  None of the mentioned options
  - D.  Header linked list

Correct answer:

## 2 Algorithms

0 out of 15 questions attempted. Attempt?

15 quest

D.  6

[reset answer](#)

**Q 7** If you are using merge sort, then which of the following statements are correct that need to be considered?

1. It cannot work well with large datasets
2. It is preferred for linked lists
3. It needs auxiliary memory for sorting

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 2 and 3
  - B.  All 1, 2 and 3
  - C.  Only 1 and 2
  - D.  Only 1 and 3

[reset answer](#)

**Q 8** Find out the recursion depth in the given program.

1. function pow(x, n)
2. {

TAKING

1

2

- C  None of the mentioned options  
D.  1  
[reset answer](#)

**Q 12** What will be the output of the following pseudocode?

1. Integer a, b
2. Set a = 3, b = 5
3. if (a & (b + 1))
4. a = a + a
5. End if
6. Print a + b

[Note: If(x) gets executed if the value inside if(), i.e., x is not zero

&: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

- Ops: A.  11  
B.  30  
C.  8  
D.  7

[reset answer](#)

**Q 13** What will be the output of the following pseudocode?

1

2

Q 14 What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set b = 10, a = 1
3. for(each c from 1 to 2)
4.     a = (a+c) * c
5.     b = b - c
6. End for
7. if (0)
8.     b=a-1
9.     a=a-1
10.    a=b+1
11. Else
12.    a=b+1
13.    b=a-1
14.    a=a-1
15. End if
16. Print a + b + c
```

[Note: If(x) gets executed if the value inside if(), i.e., x is not zero]

- Ops:
- A.  20
  - B.  25
  - C.  10
  - D.  17

reset answer

TAKING YOU TO A  
NEW REALITY

intel OPTANE™

Sections

1

2

D.  17

reset answer

**Q 15** How many times the following pseudocode will print "btech"?

1. Integer a,b
2. for(each a from 0 to 3)
3. for(each b from 0 to a)
4. print "btech"
5. end for
6. end for

Ops: A.  8 times  
B.  9 times  
C.  10 times  
D.  11 times

reset answer

**Q 16** What will be the output of the following pseudocode for a = 2?

1. Integer fun(Integer a)
2. Integer b = 0
3. if (a + b > 0 )  
    return fun(a - 1)
4. else

2

D. 20

reset answer

Q 19 What will be the output of the following pseudocode?

1. Integer a, b
2. Set a = 12, b = 5
3. if ((a^b) && (a&b) )
4. a = b
5. End if
6. Print a + b

[Note-&&: Logical AND - The logical AND operator (&&) returns the Boolean value true(or 1) if both operands are true and return false (or 0) otherwise

&: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0

^ is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

- Ops:
- A.  9
  - B.  11
  - C.  17
  - D.  10

reset answer

Q 20 What will be the output of the following pseudocode?

TAKING

D.  10

[reset answer](#)

2

**Q 20** What will be the output of the following pseudocode?

1. Integer a, b
2. String str1, str2
3. Set str1 = "Momos"
4. Set str2 = "Pizza"
5. str1 = str1 + str2
6. a = stringLength(str1)
7. b = stringLength(str1 + str2)
8. Print a + b

[Note- stringLength(): stringLength( ) function counts the number of characters in a given string and returns the integer value.]

**Ops:** A.  25

B.  12

C.  20

D.  15

[reset answer](#)

**Q 21** What will be the output of the following pseudocode for a=2?

1. Integer fun(Integer a)
2.     Integer p=1

- A. 0  
B. 1000  
C. 1100  
D. 11100  
**Next Question**

**Q 16.** What will be the output of the following pseudocode for a = 2?

```
1. Integer fun(Integer a)
2. Integer b = 0
3. if (a + b > 0 )
4.     return fun(a - 1)
5. else
6.     b = b + 1
7.     return a + b
8. End if
9. End function fun()
```

- Ans:** A. 0  
B. 1  
C. 00  
D. 1  
**Next Question**

**Q 17** What will be the output of the following pseudocode for a=3 and b=4?

```
1. Integer foo(Integer a, Integer b)
2. if(a EQUALS 0)
3.     return b
4. else if(a EQUALS 1)
5.     return b+1
6. else
7.     return foo(a - 1, a + b+5)
8. end if
9. End function foo()
```

- Ops:
- A.  20
  - B.  10
  - C.  7
  - D.  5

reset answer

**Q 18** What will be the output of the following pseudocode for a=3 and b=4?

1

2

Q 22 What will be the output of the following pseudocode?

```

1. Integer a, b, c
2. Set b = 0, a = 1
3. for(each c from 1 to 2)
4.     a = a*c*c
5.     b = b*c*c
6. End for
7. If ((1&4) || 1 || (2^3))
8.     b = a - 1
9.     a = a - 1
10. Else
11.     a = a mod 1
12.     b = b mod 1
13. End if
14. Print a + b + c

```

[Note- mod finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

A: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0

$\wedge$ : is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0  
 II(x) gets executed if the value inside if(), i.e., x is not zero]

- Ops:
- A.  7
  - B.  9
  - C.  8
  - D.  5

reset answer

next question

Q 22 What will be the output of the following pseudocode for n=5?

```
1. Integer sum(Integer n)
2.   Integer p=1
3.   If (n < 0)
4.     return p + sum(n - 1)
5.   Else
6.     p = p + 1
7.   return n + p
8. End If
9. End Function sum()
```

Ans: A.  5

B.  6

C.  8

D.  9

next question

Q 23 What will be the output of the following pseudocode?

```
1. Integer a, b, c
```

Home Page

Next Question

1

reset answer

2

**Q 21** What will be the output of the following pseudocode for a=2?

```
1. Integer fun(Integer a)
2.     Integer p=1
3.     if (a > 0)
4.         return p + fun(a - 1)
5.     Else
6.         p = p + 1
7.         return a + p
8.     End if
9. End function fun()
```

- Ops:
- A.
  - B.
  - C.
  - D.

reset answer



**Q 22** What will be the output of the following code?

**Q 23** What will be the output of the following pseudocode?

```
1. Integer a[10]
2. set a[10] = {1, 2, 3, 4, 5, 6, 7, 8, 9}
3. for(each i from 1 to 4)
4.     if(a[i/2])
5.         print a[i*2]
6.     else
7.         print a[i+2]
8.     end if
9. end for
```

[Note: If(x) gets executed if the value inside If(), i.e., x is not zero]

- Ops:**
- A.  2 4 6 8
  - B.  1 2 3 4 5
  - C.  2 6 8 0
  - D.  1 3 5 7 9

*reset answer*

**Q 24** What will be the output of the following pseudocode?

Sections

1

2

B.  C.  D.  E.

reset answer

Q 24 What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set b = 100, a = 1
3. If (1)
4.     b = a * 1
5.     a = a * 1
6.     a = b * 1
7. Else
8.     a = b + 1
9.     b = a - 1
10.    a = a - 1
11. End if
12. Print a
```

[Note: If(x) gets executed if the value inside if(), i.e., x is not zero]

Ops: A.  1  
B.  10

C.  5  
D.  15

reset answer

- Ops:** A.  The lie spoken by Mac  
B.  Lie was spoken by Mac  
C.  The lie was spoken by Mac.  
D.  The lie was spoke by Mac.

[reset answer](#)



**Q 2** Mark the option which best expresses the sentence in Passive voice.

The inspector caught the thief.

- Ops:** A.  The thief was caught by the inspector.  
B.  The thief had caught by the inspector.  
C.  The thief were caught by the inspector.  
D.  The thief caught by the inspector.

[reset answer](#)

Complete the passage by choosing the most suitable word/phrase from the options to fit the corresponding gap.

Airlines were among the earliest businesses to be 1 by the pandemic. The Aeroman-owned Air Prince suffered a 2 of hundreds and killed more than a 5 people, and became a symbol of nightmare, when it was quarantined for a month. There's been 3 16, the Centres for Disease Control extended a "no flight" order, suspending airline operations, until November 25 — and went out of its industry for practices that spread the virus, resulting in an alarming 86 virus outbreaks on 123 aeroplanes, involving nearly 2,420 passengers and

Complete the passage by choosing the most suitable word/phrase from the options to fit the corresponding gap.

Airlines were among the earliest businesses to be \_\_\_\_1\_\_\_\_ by the pandemic. The Aeroman-owned Air Prince suffered a \_\_\_\_2\_\_\_\_ outbreak that infected hundreds and killed more than a 5 people, and became a symbol of nightmare, when it was quarantined for a month. There's been \_\_\_\_3\_\_\_\_ relief since. On July 16, the Centres for Disease Control extended a "no flight" order, suspending airline operations, until November 25 — and went out of its way to criticize the industry for practices that spread the virus, resulting in an alarming 86 virus outbreaks on 123 aeroplanes, involving nearly 2,420 passengers and 26 deaths.

**Q 3** Which of these fits blank 1?

- Ops:**
- A.  hit hard
  - B.  All of the mentioned options
  - C.  destroyed
  - D.  swallowed

[reset answer](#)

---

**Q 4** Which of these fits blank 2?

- Ops:**
- A.  momentary
  - B.  notorious
  - C.  terrific
  - D.  Both "terrific" and "notorious" are correct

[reset answer](#)

---

- D.  Both "terrific" and "notorious" are correct  
[reset answer](#)
- 

**Q 5** Which of these fits blank 3?

- Ops:** A.  exquisite  
B.  little  
C.  vivid  
D.  evident

[reset answer](#)

**Q 6** A sentence is broken into the following parts. Mark the option containing the correct sequence of these parts to get the complete sentence.

- A. The Kennedy Space Center
- B. The Apollo 11
- C. On July 16, 1969
- D. Spacecraft was launched from

- Ops:** A.  CBAD  
B.  BCDA  
C.  ABCD  
D.  CBDA

[reset answer](#)

**Q 7** A sentence is broken into the following parts. Mark the option containing the correct sequence of these parts to get the complete sentence.

- Ops:**
- A.  CBAD
  - B.  BCDA
  - C.  ABCD
  - D.  CBDA
- [reset answer](#)

**Q 7** A sentence is broken into the following parts. Mark the option containing the correct sequence of these parts to get the complete sentence.

- 1. Observations of the Red Planet
- 2. May have been important
- 3. Indicate that rivers and oceans
- 4. Features in its early history

- Ops:**
- A.  4321
  - B.  4231
  - C.  1324
  - D.  1234
- [reset answer](#)

Read the passage given below and answer the questions that follow.

During our work with people living around the Ranthambhor National Park on issues of conservation, livelihoods, and eco-development, a constant question we were asked was how long we thought we could continue helping them. And then, an accompanying question — would their children never be in a position to help themselves to advocate for and implement the change they wanted to see?

**Note:** `String.length()`: `String.length()` function counts the number of characters in a given string and returns the integer value.

- Dps: A.  25  
B.  20  
C.  15  
D.  12

**Q 25** What will be the output of the following pseudocode?

- ```

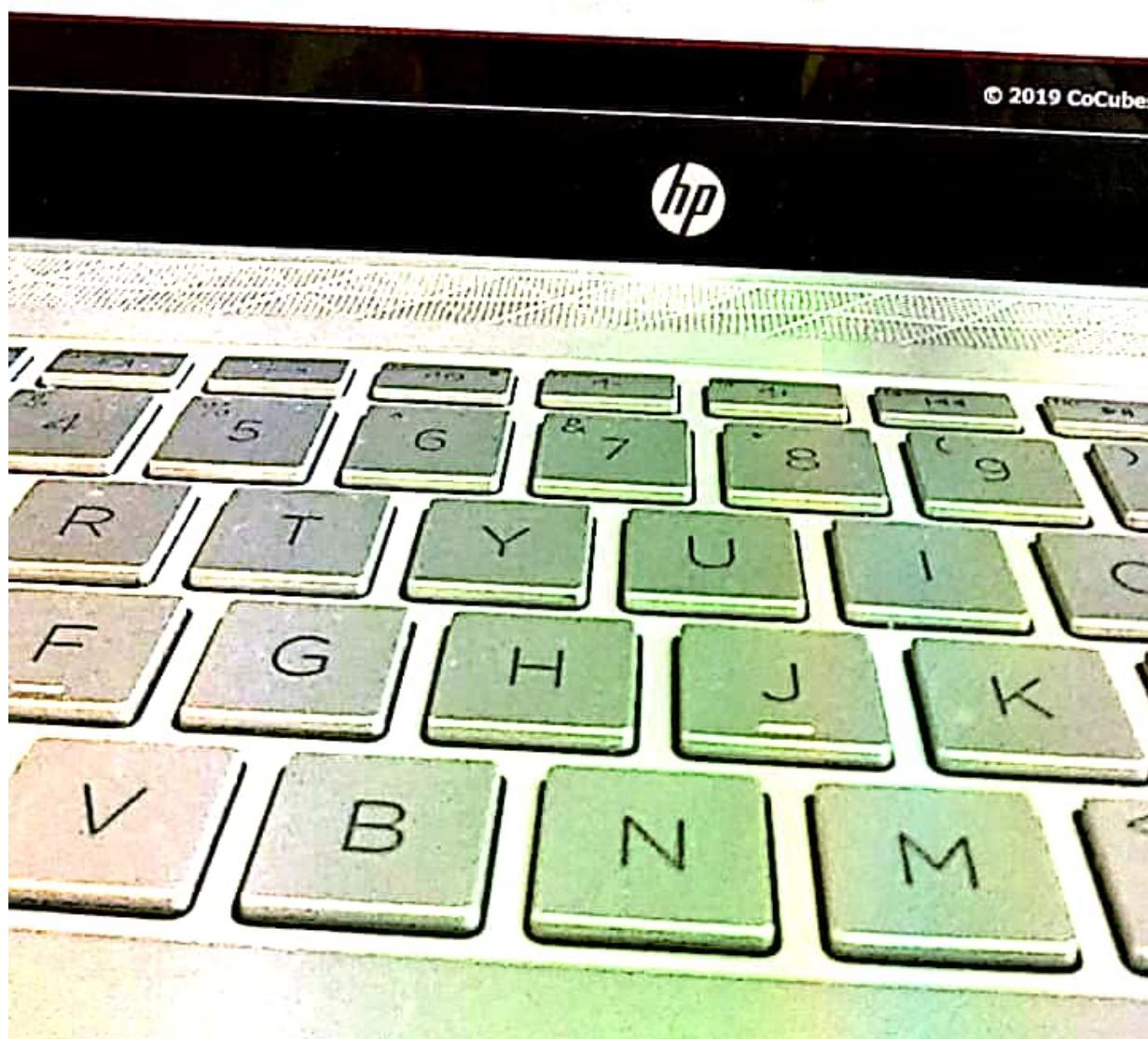
1. Integer a, b, c
2. Set b = 5, a = 2, c = 2
3. If (b > a AND a > c AND c > b)
4.     b = a + 1
5. Else
6.     a = b + 1
7. End if
8. Print a + b + c

```

[Note-&&: Logical AND - The logical AND operator (`&&`) returns the Boolean value true(or 1) if both operands are true and return false(0) otherwise.  
&: bitwise AND - The bitwise AND operator (`&`) compares each bit of the first operand to the corresponding bit of the second operand. If the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.]

- Ops:** A.  26  
B.  5  
C.  2  
D.  12

**Submit and Logout**



Q.24 What will be the output of the following pseudocode?

1. Integer a, b
2. String str1, str2
3. Set str1 = "Hello"
4. Set str2 = "World"
5. str1 = str1 + str2
6. a = stringlength(str1)
7. b = stringlength(str1 + str2)
8. Print a + b

[Note: stringlength() function counts the number of characters in a given string and returns the integer value.]

- Ques. A.  25  
B.  20  
C.  15  
D.  12

Q.25 What will be the output of the following pseudocode?

1. Integer a, b, c
2. Set b = 5, a = 2, if = 0
3. If (b > a AND a < c AND c > b)  
4.     b = a + 1
5. Else  
6.     a = b + 1
7. End if
8. Print a + b + c

[Note: AND: Logical AND] The logical AND operator (AND) returns the Boolean value true (or 1) if both operands are true and return false (or 0) otherwise.



Q 23 What will be the output of the following pseudocode?

1. Integer a, b
2. Set a = 5
3. b = a & a
4. b = b & a
5. b = b & a
6. b = b & a
7. b = b & a
8. b = b & a
9. b = b & a
10. If (b)
11.     a=aaa
12. End If
13. a = ab
14. Print a

[Note- >> - Bitwise right shift operator, it takes two numbers, right shifts the bits of the first operand, the second operand decides the no. shift.

&: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.  
If(x) gets executed if the value inside if(), i.e., x is not zero]

- Ops:
- A.  0
  - B.  3
  - C.  2
  - D.  1

Q 24 What will be the output of the following pseudocode?

1. Integer a, b
2. String str1, str2



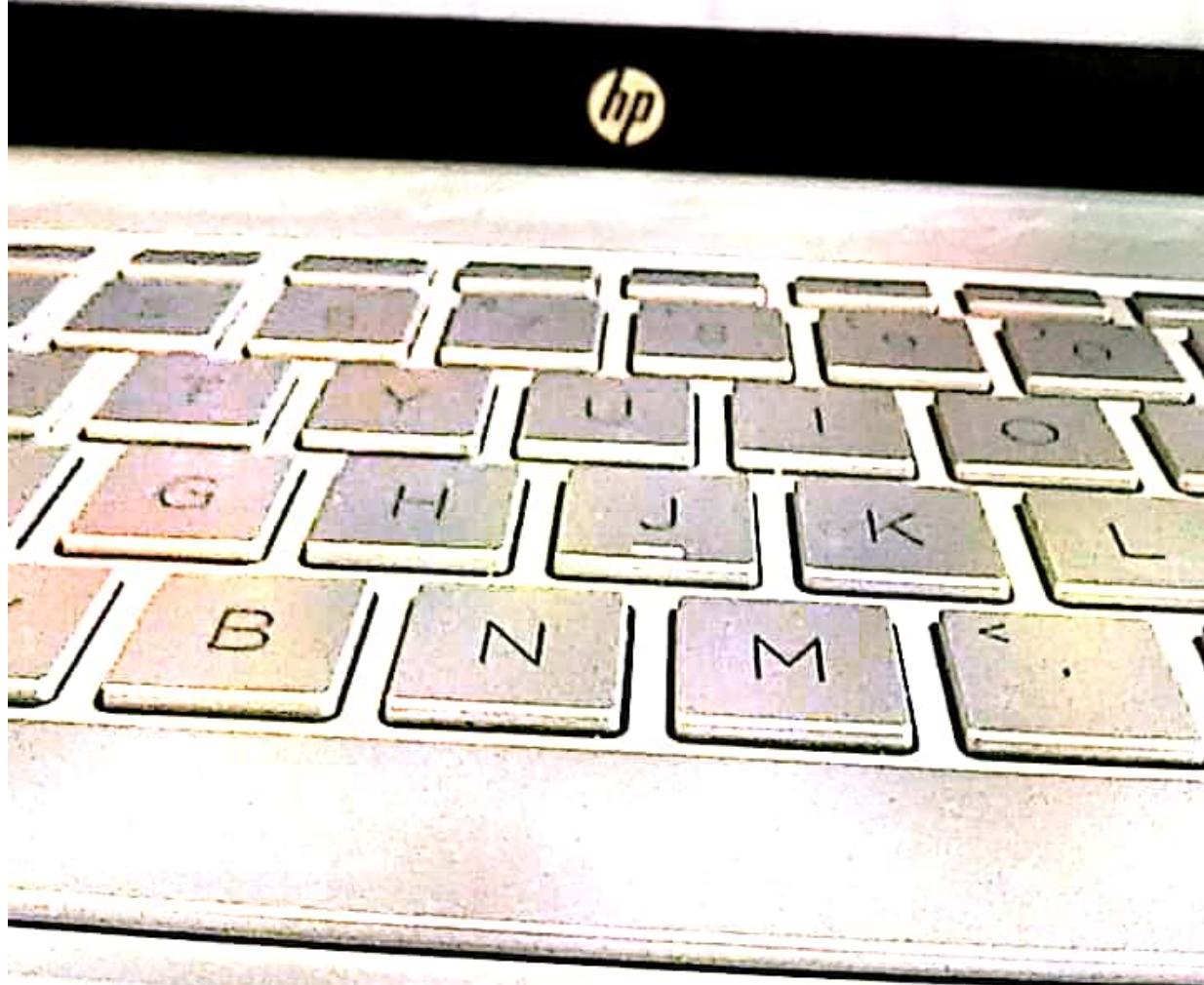
2000. 1000 2000 3000 4000 5000 6000 7000 8000 9000

- 卷之三

Private health-care services & take the right care right with the aim of the law to expand the private medical facilities and services.

**4. Home ASL**: No student older than 10 years old can learn all the words associated to the corresponding test of the second component of home ASL, consequently about 10 years old children can comprehend these words at least 50%.

*Wijzig niet de wijze waarin de informatie wordt ver-*



Q 21. What will be the output of the following pseudocode for a=9?

```
1. Integer fun(Integer a)
2.   Integer b
3.   Set b = a
4.   If (a > 20)
5.     return fun(a - 10) + fun(a - 10)
6.   Else
7.     return b
8. End If
```

Opt: A  14

B  20

C  40

D  10

Q 22. How many times the given pseudocode will print "Hello"?

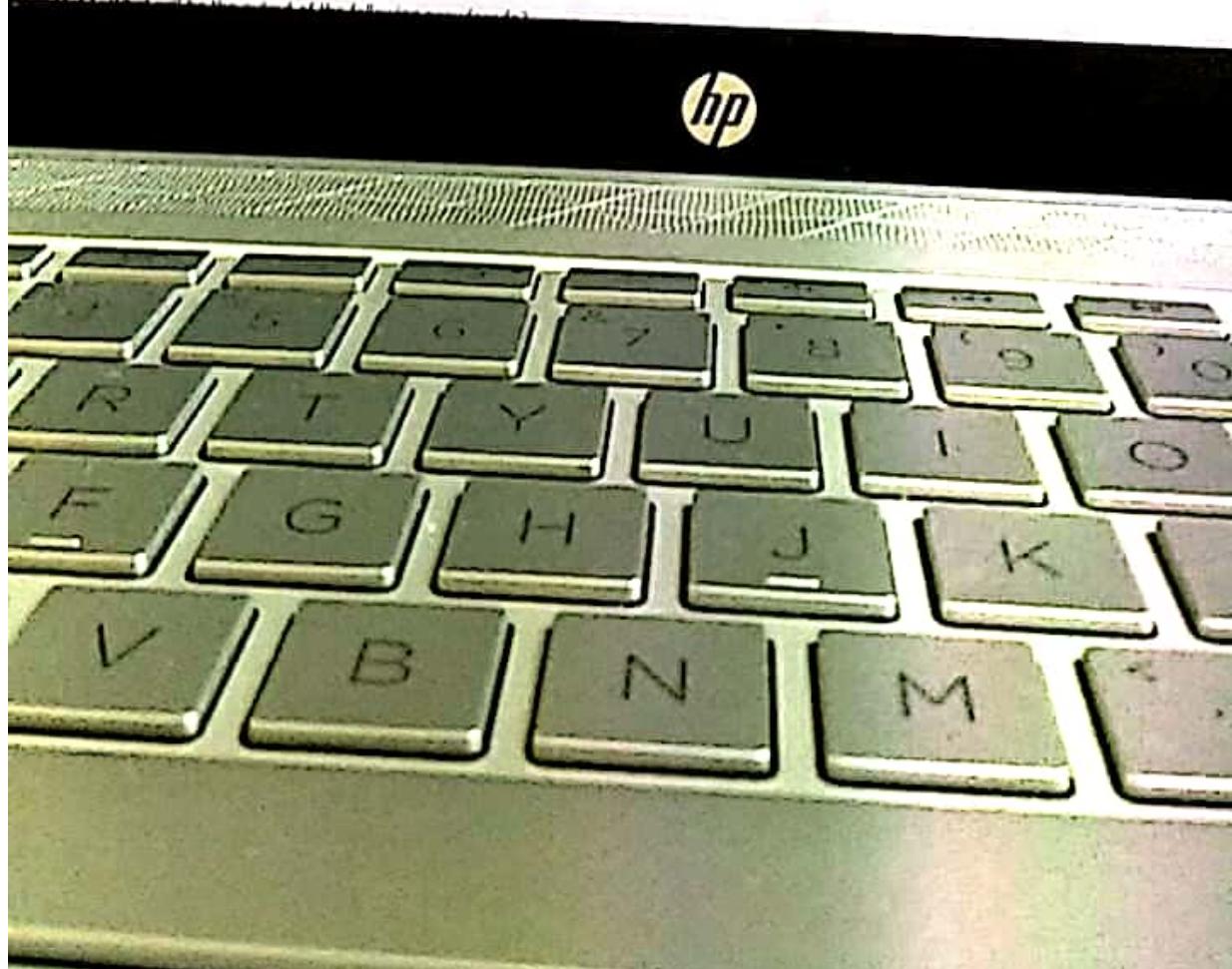
```
1. Integer i, j, k
2. For(each i from 1 to 3)
3.   for(each j from 1 to 3)
4.     for(each k from 1 to 3)
5.       print "Hello"
6.     end for
7.   end for
8. end for
```

Opt: A  3

B  6

C  9

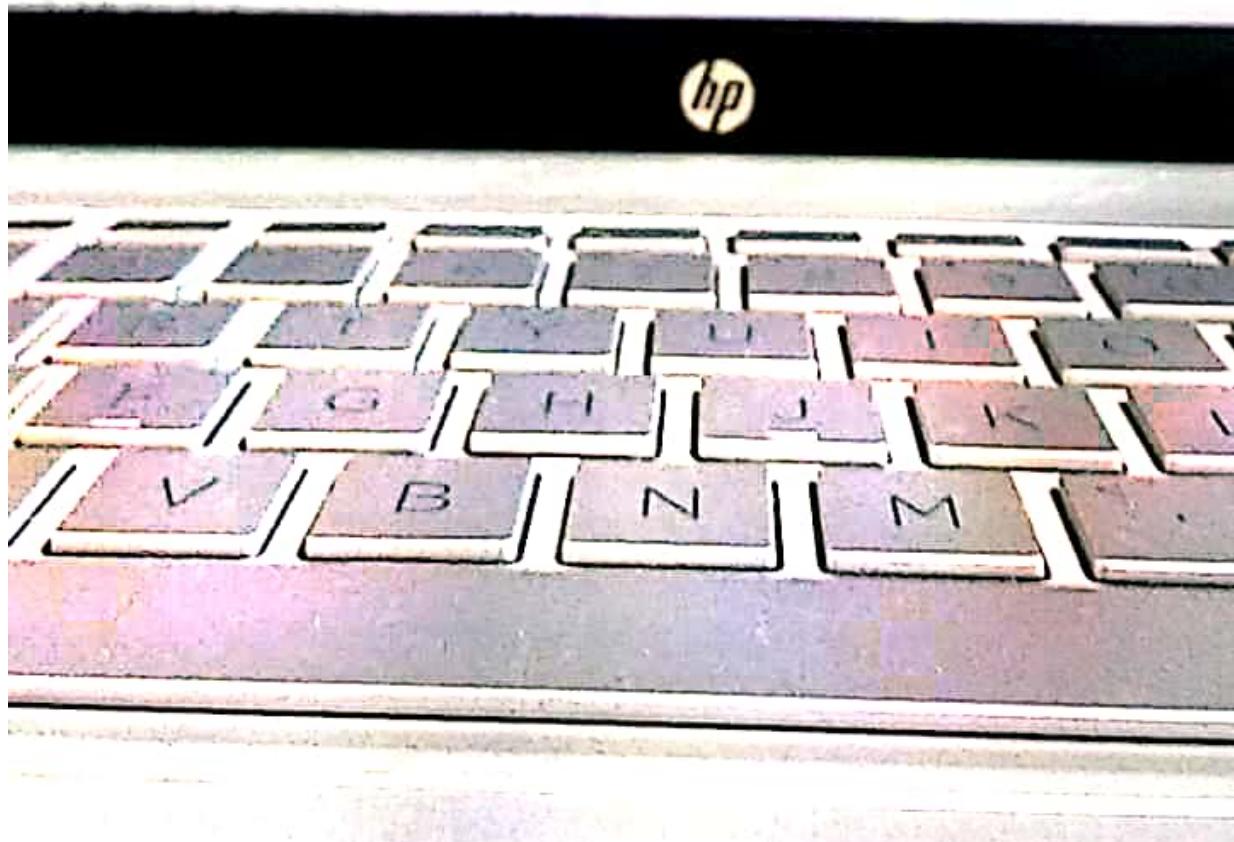
D  27



*Widely used by many authors*

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

• 21. The major cities in which countries are you from?



Q 20 What will be the output of the following pseudocode?

1. Integer a, b
2. Set a = 10, b = 5
3. If ((a > b) AND (a < b))
4. a = b
5. End If
6. Print a + b

(Note-AND: Logical AND - The logical AND operator (AND) returns the Boolean value true (or 1) if both operands are true and return false (or 0) otherwise.

&: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.

^: the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.

- Options:
- A.  17
  - B.  10
  - C.  9
  - D.  11

Q 21 What will be the output of the following pseudocode for a=50?

1. Integer fun(Integer a)
2.     Integer b
3.     Set b = a
4.     If (a > 20)
5.         return fun(a - 10) \* fun(a - 30)
6.     Else
7.         return b
8. End If



Q 19. What will be the output of the following pseudocode?

```
1. Integer a[4], k
2. Set a[4] = {1, 5, 3, 4}
3. for(each k from 1 to 3)
4.   If(a[k] < a[k + 1])
5.     If(k equals 2)
6.       jump out of loop
7.     else
8.       continue with next iteration
9.   end if
10. end if
11. end for
12. print "unsorted"
13. print "sorted"
```

- Ops:
- A.  None of the mentioned options
  - B.  unsorted sorted
  - C.  unsorted
  - D.  sorted

Q 20. What will be the output of the following pseudocode?

```
1. Integer a, b
2. Set a = 12, b = 5
3. If ((a&b) && (a&~b) )
4.   a = b
5. End if
6. Print a + b
```

[Note &&: Logical AND - The logical AND operator (&&) returns the Boolean value true (or 1) if both operands are true and return false (or 0)

&: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both



Q 18. What will be the output of the following pseudocode?

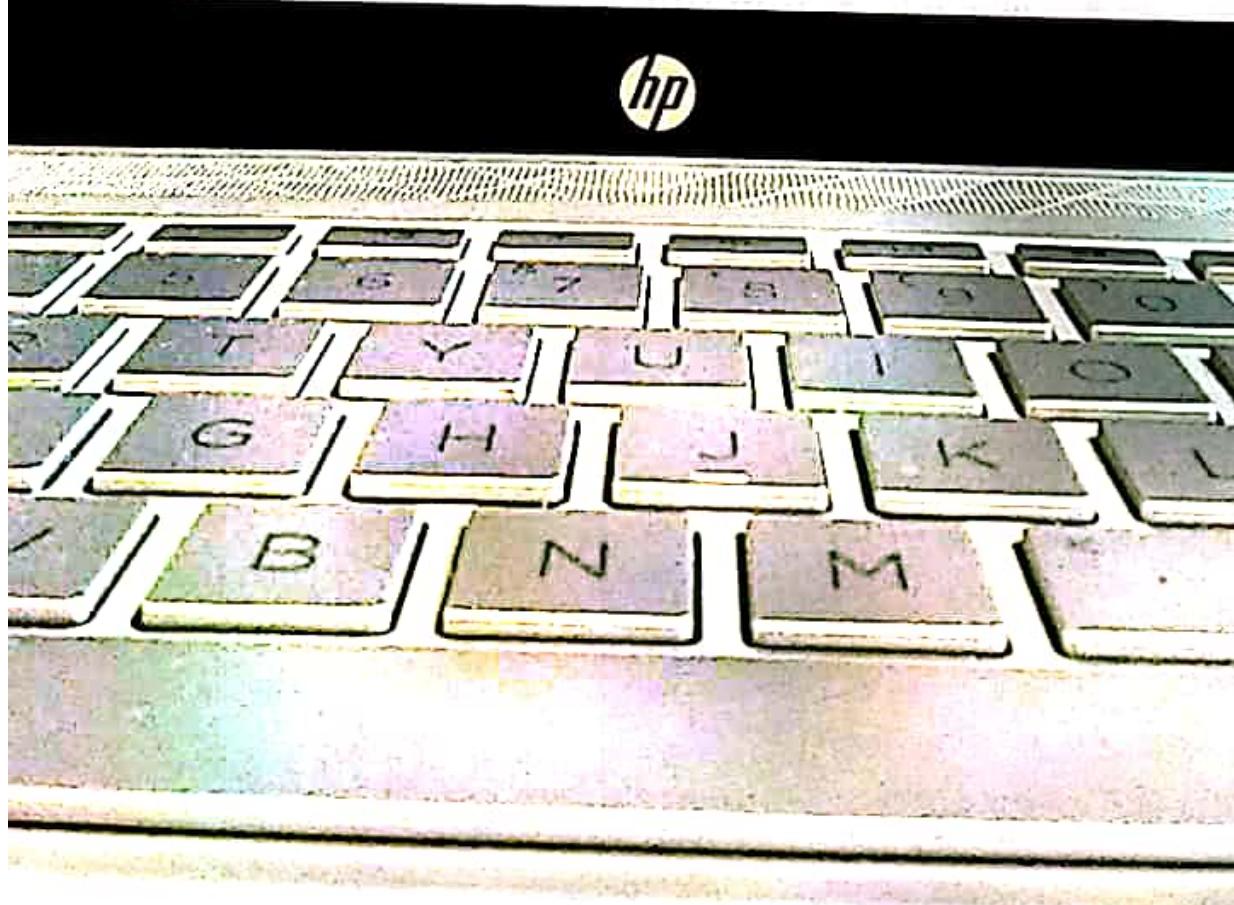
```
1. Integer a, b, c
2. Set b = 5, a = 1, c = 2
3. If (b > 0)
4.     a = a + 1
5. Else
6.     a = a + b + c
7.     c = c + 1
8.     a = a + 1
9. End If
10. Print a
```

[Note: &- bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.  
If(s) gets executed if the value inside If(), i.e., x is not zero]

- Ops: A.  6  
B.  7  
C.  5  
D.  4

Q 19. What will be the output of the following pseudocode?

```
1. Integer a[4], k
2. Set a[4] = {1, 6, 8, 9}
3. for(each k from 1 to 3)
4.     if(a[k] < a[k + 1])
5.         if(k equals 2)
6.             jump out of loop
7.         else
8.             continue with next iteration
9.     end if
```



Q 17. What will be the output of the following pseudocode?

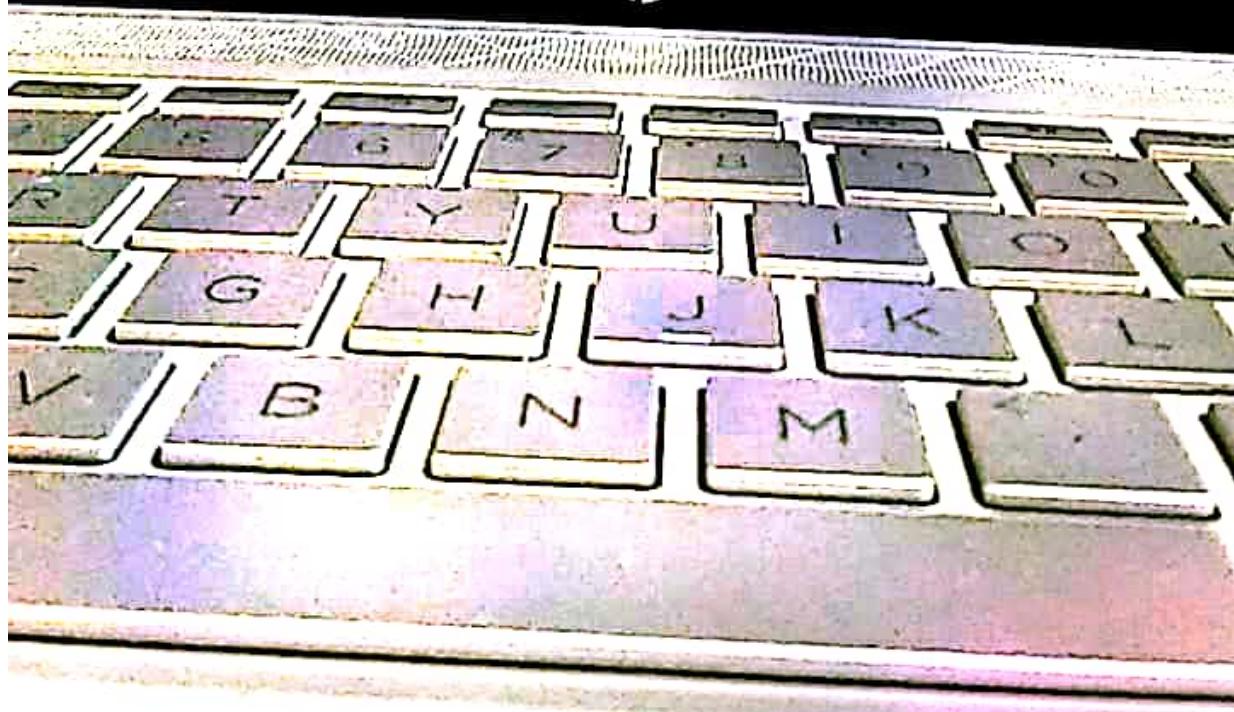
```
1. Integer a, b, c  
2. Set b = 100, a = 1  
3. If (1)  
4.     b = a + 1  
5.     a = a + 1  
6.     a = b + 1  
7. Else  
8.     a = b + 1  
9.     b = a + 1  
10.    a = b + 1  
11. End If  
12. Print a
```

[Note: If(x) gets executed if the value inside If(), i.e., x is not zero]

- Ops: A.  15  
B.  1  
C.  10  
D.  5

Q 18. What will be the output of the following pseudocode?

```
1. Integer a, b, c  
2. Set b = 5, a = 1, c = 2  
3. If (a > 2)  
4.     a = a + 1  
5. Else  
6.     a = a + b + c  
7.     c = c + 1  
8.     a = a + 1  
9. End If
```



1. Integer a  
2. Set  $a = 32$   
3.  $a = a \text{ mod } 2$   
4.  $a = a / 2$   
5. Print a

[Note: mod finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 5 leaves a quotient of 2 and a remainder of 1.]

\* is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.

- Ques: A.  25  
B.  21  
C.  25  
D.  24

Q 17. What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set b = 100, a = 4
3. If (1)
4.     b = a * 1
5.     a = a * 1
6.     a = b * 1
7. Else
8.     a = b + 1
9.     b = a - 1
10.    a = a + 1
11. End If
```



Q14 What will be the output of given pseudocode for  $a = 15$  and  $b = 7$ ?

```

1. Integer foo(Integer a, Integer b)
2. If(a <= b)
3.     return b
4. Else
5.     return foo(a-1,a+b)
6. End function foo()

```

A.  128

B.  7

C.  1

D.  127

What will be the output of the following pseudocode?

```

1. Integer a, b
2. Set a = 0
3. a = a ^ 1
4. a = a ^ 2
5. a = a ^ 3
6. Print a

```

Note:  $\wedge$  is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.

A.  3  
 B.  2  
 C.  1  
 D.  0

ef answer



**Q 13** What will be the output of the following pseudocode?

```

1. Integer a, b, c
2. set b = 0, a = 1
3. for(each c from 1 to 2)
4.     a = a*c*c
5.     b = b*c*c
6. End for
7. If ((1&1) || 1 || (2^1))
8.     b = a + 1
9.     a = a - 1
10. Else
11.     a = a mod 1
12.     b = b mod 1
13. End If
14. Print a + b + c

```

[Note: mod finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1. 2 leaves a quotient of 2 and a remainder of 1]

&: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0

^: is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0

If(x) gets executed if the value inside If(), i.e., x is not zero]

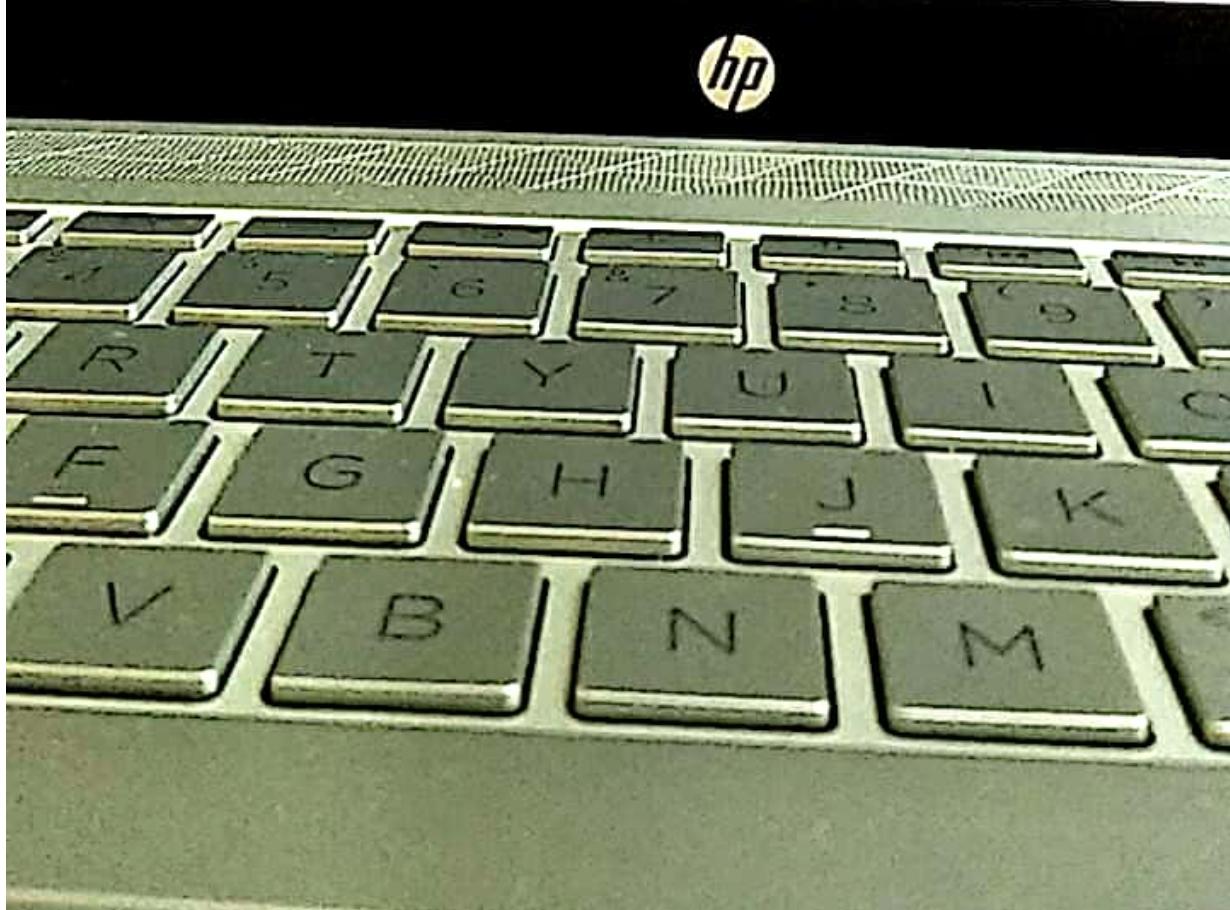
- Ops:
- A.  7
  - B.  5
  - C.  8
  - D.  9

**Q 14** What will be the output of given pseudocode for a = 15 and b = 7?

```

1. Integer foo(integer a, integer b)
2. If(a EQUALS 0)
3.     return b

```



Q 12 What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set b = 5, a = 1, c = 2
3. If (a)
4.     c = c + 1
5. Else
6.     c = c + 1
7. End If
8. If (a>1)
9.     c = c + 1
10. Else
11.     c = c + 1
12. End If
13. Print a
```

[Note: If(x) gets executed if the value inside if(), i.e., x is not zero]

- Ops:
- A.  2
  - B.  3
  - C.  4
  - D.  1

Q 13 What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set b = 0, a = 1
3. for(each c from 1 to 2)
4.     a = a*c*c
5.     b = b*c*c
6. End for
7. If ((1&a) || 1 || (2&b))
8.     b = a + 1
```



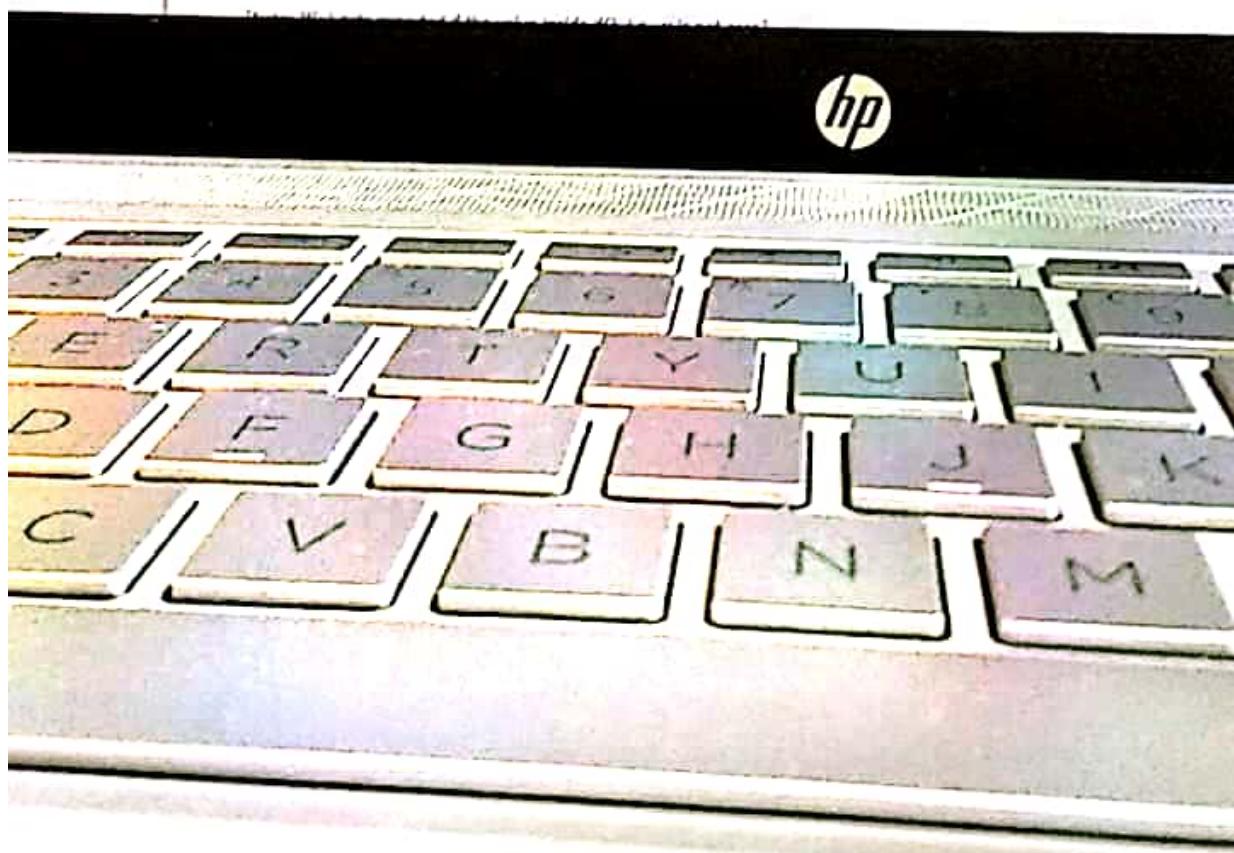
1  
2

```
3.     return p + fun(a - 1)
4.
5. Else
6.     p = p + 1
7.     return a + p
8. End If
9. End function fun()
```

- Qps: A.  6  
B.  8  
C.  4  
D.  2

Q 12. What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set b = 5, a = 1, c = 2
3. If (a)
4.     c = c + 1
5. Else
6.     c = c + 1    b
7. End If
8. If (a+1)
9.     c = c + 1
10. Else
11.     c = c + 1
12. End If
13. Print a
```



**Sections**

1

2

2. Topological sorting
3. For detecting cycle in a graph

Choose the correct answer from the options given below.

- Ques: A.  Only 1 and 2  
B.  All 1, 2 and 3  
C.  Only 1 and 3  
D.  Only 2 and 3

**Q 10** Consider the following sorting techniques:

- I. Quick sort
- II. Bubble sort
- III. Radix sort
- IV. Shell sort
- V. Insertion sort

Identify the sorting techniques that are stable as well as adaptive.

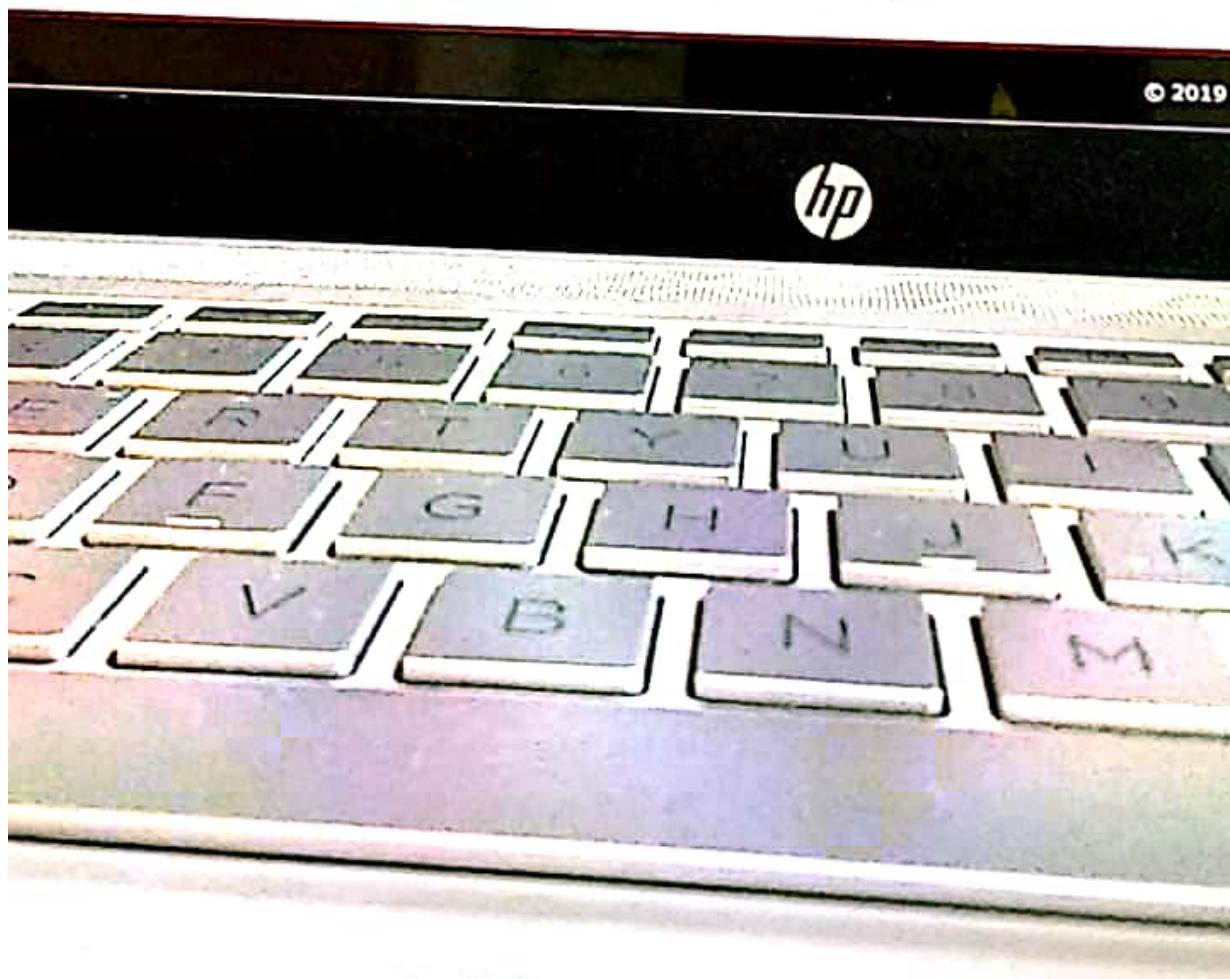
- Ops: A.  Only I, II, and V  
B.  Only II and V  
C.  Only III and V  
D.  None of the mentioned options

---

**2 Algorithms**

1 out of 15 questions attempted. Review?

**Submit and Logout**



1

Example:

- A. Greatest Common Divisor of two numbers
- B. Fibonacci function
- C. Factorial

2

Ques: A.  1C, 2B, 3A

B.  1C, 2A, 3B

C.  1B, 2C, 3A

D.  1B, 2A, 3C

Q 8 Which of the following criteria are to be considered while analyzing a sorting technique?

- Ops: A.  Number of comparisons and Stability  
B.  Adaptive and number of swaps  
C.  All of the mentioned options  
D.  Stable and adaptive

Q 9 Depth first search (DFS) traversal can be used for which of the following applications?

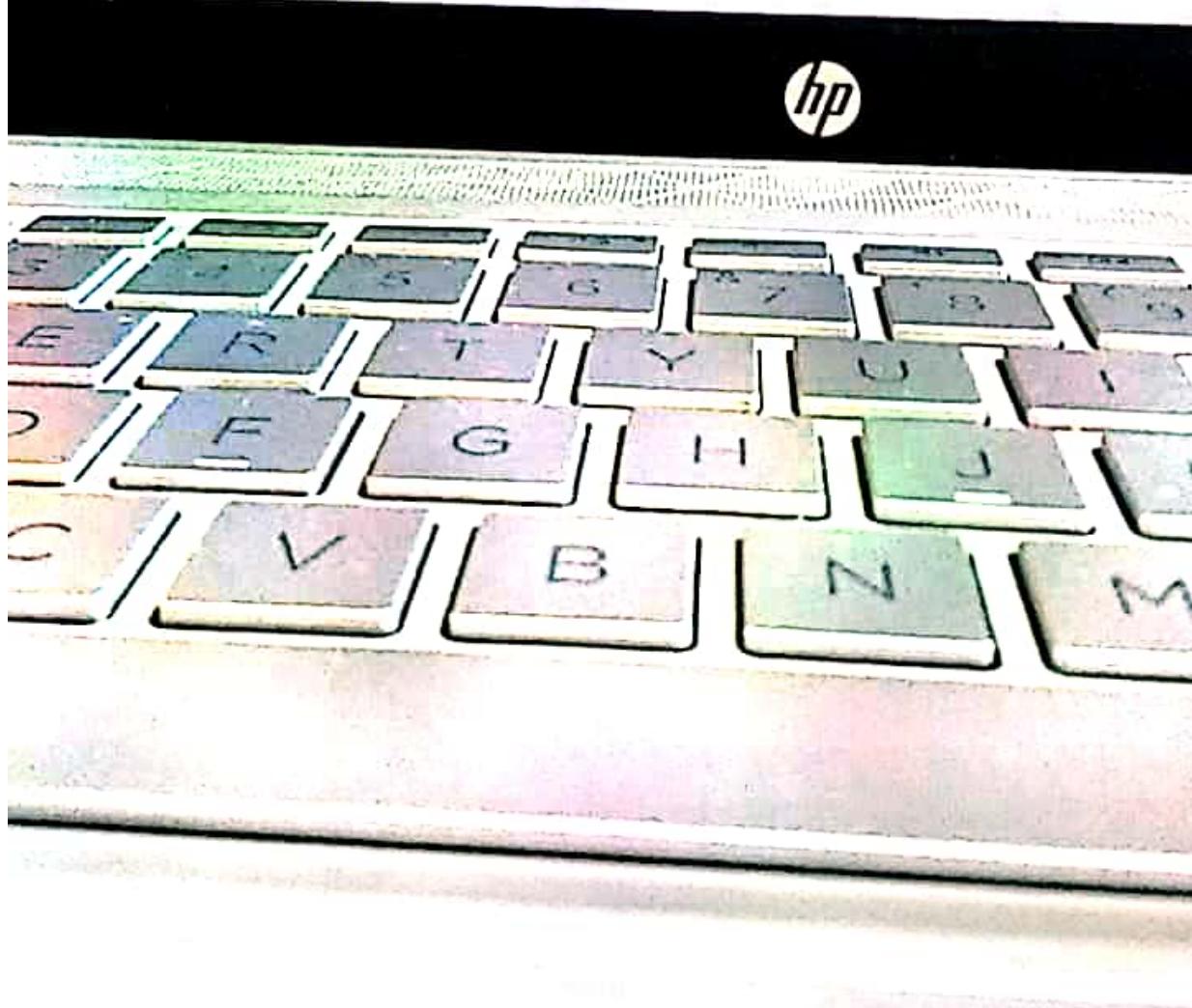
- 1. To find strongly connected components of a graph
- 2. Topological sorting
- 3. For detecting cycle in a graph

Choose the correct answer from the options given below.

Ops: A.  Only 1 and 2

B.  All 1, 2 and 3

C.  Only 1 and 3



**Example:**

- A. Greatest Common Divisor of two numbers
- B. Fibonacci function
- C. Factorial

- Ques: A.  1 C. 2 B. 3 A  
B.  1 C. 2 A. 3 B  
C.  1 B. 2 C. 3 A  
D.  1 B. 2 A. 3 C

**Q.8** Which of the following criteria are to be considered while analyzing a sorting technique?

- Ques: A.  Number of comparisons and Stability  
B.  Adaptive and number of swaps  
C.  All of the mentioned options  
D.  Stable and adaptive

**Q.9** Depth first search (DFS) traversal can be used for which of the following applications?

- 1. To find strongly connected components of a graph
- 2. Topological sorting
- 3. For detecting cycle in a graph

Choose the correct answer from the options given below.

- Ques: A.  Only 1 and 2  
B.  All 1, 2 and 3



**Q 4** Match the following statements with correct sheet document

1. It is recursive when the program repeatedly calls itself
2. It is iterative when a loop runs to repeat
3. It creates multiple execution threads created for the tasks for each child

Choose the correct answer from the options given below

Ques. A.  Child 1 and 2

B. Child 1 and 3

C. Child 1 and 2

D. Child 3

**Q 5** Match the following types of recursive functions with their correct example

**Types of Recursive Functions:**

1. Linear Recursion
2. Binary Recursion
3. Self Recursion

**Example:**

- A. Function Common Denominator of two numbers
- B. Fibonacci function
- C. Factorial

Ques. A.  C. B. A.

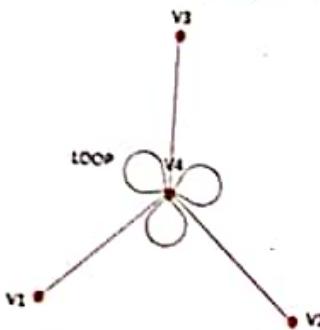


Q2 Find out the recursion depth in the given program.

```
1. function pow(x, n)
2. {
3.     return (n == 1) ? x : (x * pow(x, n - 1));
4. }
```

- Ops: A.  n<sup>2</sup>  
B.  1  
C.  n  
D.  n-1

Q3 Find out the sum of the degree of vertices in the pseudograph as shown in the image.



- Ops: A.  12  
B.  16  
C.  8



**Q 23.** What does the word "vocations" mean in the context of the passage?

- Ops:**
- A.  roles
  - B.  challenges
  - C.  rewards
  - D.  opportunities
- 

**Q 24.** The passage is primarily concerned with:

- Ops:**
- A.  Helping readers identify most useful and rewarding tasks in their week's schedule
  - B.  Criticising toxic working environments
  - C.  Discussing challenges working mothers face
  - D.  Advocating fewer than 40 working hours for professionals to attain a healthy lifestyle
- 

**Q 25.** Which of these could the given passage have been picked from?

- Ops:**
- A.  A newspaper report
  - B.  A book review
  - C.  A lifestyle magazine
  - D.  A scientific magazine

We've been taught that if we want more — money, achievement, vitality, joy, peace of mind — we need to do more, to add more to our ever-growing to-do list. But what if we've been taught wrong? What if the answer to getting more of what we want isn't addition at all, but subtraction?

As it turns out, evidence supports that if we want to ramp up our productivity and happiness, we should actually be doing less. David Rock, author of *Your Brain at Work*, found that we're truly focused on our work a mere six hours per week, which starkly contrasts our collective buy-in to the 40-hour workweek. When you stop doing the things that make you feel busy but aren't getting you results (and are draining you of energy), then you end up with more than enough time for what matters and a sense of peace and spaciousness that constant activity has kept outside your reach.

As people with full lives — kids, careers, friends, passions, logistics, and more — how can we apply the wisdom of doing less to give ourselves more time and alleviate stress without jeopardizing our results?



We need to identify what not to do. But this determination can't be random. It must be methodical and evidence-based. Through my work with women navigating the dual vocations of entrepreneurship and motherhood, I've created a surprisingly simple exercise to help individuals decide what activities on their to-do list bring them the most value, and which they can stop doing.

**Q 22** What is the role of the first paragraph in the given passage?

- Ops:**
- A.  It introduces an idea.
  - B.  It counters a previous point to show contrast.
  - C.  It builds on a previous idea.
  - D.  It sums up the main idea of the paragraph.
- 

**Q 23** What does the word "vocations" mean in the context of the passage?

- Ops:**
- A.  roles

- ...we are now told that democracy is not just good for the soul, it is good for the body too.  
3. The study, published in the Lancet recently, revealed that people living in democratic countries live longer than those who don't; they also have less chance of dying from heart disease, strokes, and even road accidents.  
4. Without pressure from voters or foreign-aid agencies, dictators have less incentive to finance more expensive prevention and treatment of heart disease, cancers, and other chronic illnesses.

**Ops:** A.  1234

B.  2134

C.  3214

D.  4231

---

**Q 27** A sentence is broken into the following parts. Mark the option containing the correct sequence of these parts to get the complete sentence.

A. So that the patient recovers fast

B. A doctor is a person

C. People and prescribes medicines

D. Who looks after the sick

**Ops:** A.  CDBA

B.  BDCA

C.  BCAD

D.  ABCD

- B.  destroyed  
C.  swallowed  
D.  hit hard

**Q 5** Which of these fits blank 2?

- Ops:** A.  Both "terrific" and "notorious" are correct  
B.  momentary  
C.  terrific  
D.  notorious

**Q 6** Which of these fits blank 3?

- Ops:** A.  little  
B.  evident  
C.  exquisite  
D.  vivid

## English Communication

Complete the passage by choosing the most suitable word/phrase from the options to fit the corresponding gap.

There's a Western paradigm of development, that I believe 'modern' India has \_\_\_\_ 1 \_\_\_\_\_. This was not the case when I first came to India in the 1970s; there was still a strong Gandhian ethic. I believe India has strayed from that ethic, even though it likes to trade on it. But India has so much more to draw on to create a better development model.

The Western model of development throws a lot of money at a/an \_\_\_\_ 2 \_\_\_\_\_. It defines the solution, even though it often doesn't define the problem very well. Then it \_\_\_\_ 3 \_\_\_\_ the time frame within which it will execute the solution. That paradigm is not people- or culture-based; it is GDP-based, and normative. For example, we see it when suddenly there is a plan to build 10,000 kilometres of new roads, or 200 new dams.

**Q 1** Which of these fits blank 1?

- Ops:
- A.  produced
  - B.  seen
  - C.  accepted
  - D.  run

**Q 2** Which of these fits blank 2?

Q 9 Mark the option containing the word that has been used incorrectly in the sentence given below.

Phones was not permitted in our college.

- Ops:**
- A.  Was
  - B.  Permitted
  - C.  Phones
  - D.  None of the mentioned options

Q 10 Which part of the sentence has an error in it?

Life on the earth / was not have / evolved without water.

- Ops:**
- A.  was not have
  - B.  evolved without water.
  - C.  No error
  - D.  Life on the earth

- Ops:**
- A.  produced
  - B.  seen
  - C.  accepted
  - D.  run
- 

**Q 2** Which of these fits blank 2?

- Ops:**
- A.  None of the mentioned options
  - B.  potential
  - C.  image
  - D.  issue
- 

**Q 3** Which of these fits blank 3?

- Ops:**
- A.  None of the mentioned options
  - B.  unlearns
  - C.  notes
  - D.  decides

Complete the passage by choosing the most suitable word/phrase from the options to fit the corresponding gap.

**Q 6** Which of these fits blank 3?

- Ops:** A.  little  
B.  evident  
C.  exquisite  
D.  vivid

**Q 7** Mark the option best suited to replace the underlined portion of the sentence given below.

This is exactly what he wanted me to solve the issue.

- Ops:** A.  How did he want me  
B.  How does he want me  
C.  How he wanted me  
D.  What he wants from I

**Q 8** Mark the option best suited to replace the underlined portion of the sentence given below.

She firmly belief is that exercise is the permanent solution to any disease.

- Ops:** A.  Her firmly belief

**Q 8** Mark the option best suited to replace the underlined portion of the sentence given below.

She firmly belief is that exercise is the permanent solution to any disease.

- Ops:**
- A.  Her firmly belief
  - B.  She is firm in belief
  - C.  She firmly believes
  - D.  Her firm belief



**Q 9** Mark the option containing the word that has been used incorrectly in the sentence given below.

Phones was not permitted in our college.

- Ops:**
- A.  Was
  - B.  Permitted
  - C.  Phones
  - D.  None of the mentioned options

**Q 10** Which part of the sentence has an error in it?

... on the earth / was not have / evolved without water.

tions

1

2

- B.  25
- C.  20
- D.  10

**Q 25** What will be the output of the following pseudocode?

```
1. Integer a, b
2. Set a = 0
3. a = a ^ 1
4. a = a ^ 2
5. a = a ^ 3
6. Print a
```

[Note- ^ is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 1 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

- Ops:**
- A.  3
  - B.  0
  - C.  1
  - D.  2

**Submit and Logout**

- C.  Only 1 and 3
- D.  Only 1 and 2

**Q 3** Which of the following statement is/are correct about Recursion?

- 1. It terminates when the loop-continuation condition fails
- 2. It terminates when a base case is recognized
- 3. It creates multiple activation records created on the stack for each call

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 1 and 3
  - B.  Only 1 and 2
  - C.  Only 2 and 3
  - D.  Only 2

[reset answer](#)

**Q 4** Suppose there is a 1-D array Arr[10] with the lower bound as 1 and starting base address as 1020. F



SHOT ON REDMI 7  
AI DUAL CAMERA

reset answer

**Q 2** When a function makes a nested call, which of the following will happen?

1. The current function runs in parallel
2. After it ends, the old execution context is retrieved from the stack
3. The execution context associated with the current function is remembered in a special data structure called execution context stack

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 2 and 3
  - B.  All 1, 2 and 3
  - C.  Only 1 and 3
  - D.  Only 1 and 2

**Q 3** Which of the following statement is/are correct about Recursion?



SHOT ON REDMI 7  
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**Q 1** Match the following types of recursive functions with their correct example.

**Types of Recursive Functions:**

1. Linear Recursion
2. Binary Recursion
3. Tail Recursion

**Examples:**

- A. Greatest Common Denominator of two numbers
- B. Fibonacci function
- C. Factorial

- Ops:**
- A.  1-C, 2-B, 3-A
  - B.  1-C, 2-A, 3-B
  - C.  1-B, 2-C, 3-A
  - D.  1-B, 2-A, 3-C

**Q 2** When a function makes a nested call, which of the following will happen?

1. The current function runs in parallel
- Once it ends, the old execution context is retrieved from the stack

... special data structure called execution

- B.  1-C, 2-A, 3-B
  - C.  1-B, 2-C, 3-A
  - D.  1-B, 2-A, 3-C
- 

**Q 2** When a function makes a nested call, which of the following will happen?

1. The current function runs in parallel
2. After it ends, the old execution context is retrieved from the stack
3. The execution context associated with the current function is remembered in a special data structure called execution context stack

Choose the correct answer from the options given below.

- Ans:
- A.  Only 1 and 2
  - B.  Only 1 and 3
  - C.  All 1, 2 and 3
  - D.  Only 2 and 3



D.  Only 2 and 3

---

**Q 3** Which of the following statement is/are correct about Recursion?

1. It terminates when the loop-continuation condition fails
2. It terminates when a base case is recognized
3. It creates multiple activation records created on the stack for each call

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 1 and 2
  - B.  Only 2
  - C.  Only 1 and 3
  - D.  Only 2 and 3
- 

**Q 4** Suppose there is a 1-D array Arr[24] with the lower bound as 1 and starting base address as 1030. Find the

- Ops:**
- A.  950



**Q 5** Depth-first search (DFS) traversal can be used for which of the following applications?

1. To find strongly connected components of a graph
2. Topological sorting
3. For detecting cycle in a graph

Choose the correct answer from the options given below.

**Ops:** A.  Only 2 and 3

B.  Only 1 and 3

C.  Only 1 and 2

D.  All 1, 2 and 3

---

**Q 6** Find out the recursion depth in the given program.

1. function pow(x, n)

2. {

- B.  Only 2
  - C.  Only 1 and 3
  - D.  Only 2 and 3
- 

**Q 4** Suppose there is a 1-D array Arr[24] with the lower bound as 1 and starting base address as 1030. Find the address of Arr[21] if the size of each element is 2 bytes.

- Ops:**
- A.  950
  - B.  1110
  - C.  1180
  - D.  970

**5** Depth-first search (DFS) traversal can be used for which of the following applications?

1. To find strongly connected components of a graph



- B.  n
  - C.  n<sup>x</sup>
  - D.  1
- 

**Q 7** Which of the following is **NOT** a type of linked list?

- Ops:**
- A.  Header linked list
  - B.  None of the mentioned options
  - C.  Circular linked list
  - D.  Doubly linked list
- 

**Q 8** Consider a linked list "X", with the following properties:

- i. Last node's link field points to the first node of the list.
- ii. It allows access to the middle nodes, without starting at the beginning.

Identify the type of X.



**Q 10** If you are using merge sort, then which of the following statements are correct that need to be considered?

1. It cannot work well with large datasets
2. It is preferred for linked lists
3. It needs auxiliary memory for sorting

Choose the correct answer from the options given below.

- Ops:**
- A.  Only 1 and 3
  - B.  Only 1 and 2
  - C.  All 1, 2 and 3
  - D.  Only 2 and 3

## 2 Algorithms

4 out of 15 questions attempted. Review?

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**Q 20** What will be the output of the following pseudocode for  $a = 27$ ?

```
1. Integer fun(Integer a)
2.     Integer arr[] = {6, 1, 2, 3}
3.     Integer x, y
4.     Set y = 0
5.     for (each x from 0 to a-1)
6.         y = y ^ arr[x]
7.     End for
8.     return y
9. End function fun()
```

[Note-  $\wedge$  is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

- Ops:**
- A.
  - B.
  - C.
  - D.

**Q 21** How many times the following pseudocode will print "btech"?

2

```
1. Integer a, b, c
2. Set b = 4, a = 2, c = 1
3. if (c > (b - a))
4.     b = a + 1
5. Else
6.     a = b + 1
7.     c = 0
8. End if
9. Print a + b + c
```

- Ops:
- A.  7
  - B.  5
  - C.  9
  - D.  6

**Q 20** What will be the output of the following pseudocode for a = 2?

```
1. Integer fun(Integer a)
2.     Integer arr[] = {6, 1, 2, 3}
3.     Integer x, y
4.     Set y = 0
```

**2**

**Q 18** What will be the output of the following pseudocode?

1. Integer a, b.
2. Set a = 3, b = 7
3. if (b ^ 3)
4. a = a + (b mod 3)
5. End if
6. Print a + b

[Note- mod finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

$\wedge$  is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0

If(x) gets executed if the value inside if(), i.e., x is not zero]

- Ops:**
- A.  11
  - B.  1
  - C.  2
  - D.  12

**Q 19** What will be the output of the following pseudocode?

1

2

What will be the output of the following pseudocode?

1. Integer a
2. Set a = 0
3. a=(a ^ 1) & (2 ^ 3)
4. Print a

[Note- &: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

^ is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

Ops: A.  0



B.  1

C.  2

D.  4

Q 18 What will be the output of the following pseudocode?

1. Integer a, b
2. Set a = 3, b = 7
3. if (b ^ 3)
4. a = a + (b mod 3)
5. End if

the following pseudocode for  $a > 27$

```
1.  fun(Integer a)
2.  Integer arr[] = {6, 1, 2, 3}
3.  Integer x, y
4.  Set y = 0
5.  for (each x from 0 to a-1)
6.      y = y ^ arr[x]
7.  End For
8.  return y
9. End function fun()
```

[Note-  $\wedge$  is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

- Ops:**
- A.  6
  - B.  5
  - C.  7
  - D.  4

**Q 21** How many times the following pseudocode will print "bttech"?

```
1. Integer a,b  
2. for(each a from 1 to 4)  
3.   for(each b from 1 to a)  
4.     print "bttech"  
5.   end for  
6. end for
```

Ops: A.  9 times

B.  8 times

C.  11 times

D.  10 times

**Q 22** What will be the output of the following pseudocode?

```
1. Integer a, b  
2. String str1, str2  
3. Set str1 = "Momas"  
4. Set str2 = "Pizza"
```

Sections

1

2

Q 22 What will be the output of the following pseudocode?

```
1. Integer a, b
2. String str1, str2
3. Set str1 = "Momo"
4. Set str2 = "Pizza"
5. str1 = str1 + str2
6. a = stringlength(str1)
7. b = stringlength(str1 + str2)
8. Print a + b
```

[Note: stringlength(): stringlength( ) function counts the number of characters in a given string and returns the integer value.]

- Ops: A.  12  
B.  25  
C.  20  
D.  15

Q 23 What will be the output of the following pseudocode for a=50?

```
1. Integer fun(Integer a)
2.     Integer b
3.     Set b = 2
4.     If (a > 20)
            return fun(a - 10) * fun(a - 10)
```

1

2

```
1  /* Q. 25. What will be the output of the following pseudocode?
2  Integer a, b, c
3  Set b = 5; a = 2; c = 2
4  If (a)
5    a = a + 1
6    a = c
7  Else
8    c = c + 1
9  End if
10 If (a)
11   c = c + 1
12 Else
13   c = c + 1
14 End if
15 Print a + c
```

[Note: If(x) gets executed if the value inside if(), i.e., x is not zero]

- Ops:**
- A.  15
  - B.  20
  - C.  5
  - D.  10

**Q. 25** What will be the output of the following pseudocode?

Sections

1

2

```
1. Integer fun(Integer a)
2.     Integer b
3.     Set b = 2
4.     if (a > 20)
5.         return fun(a - 10) * fun(a - 30)
6.     Else
7.         return b
8.     End if
```

- Ops:
- A.  14
  - B.  18
  - C.  16
  - D.  20

Q 24 What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set b = 5, a = 2, c = 2
3. if (a)
4.     a = a-1
5.     a = c
6. Else
7.     c = c + 1
8. End if
9. if (a)
10.    c = c + 1
```

**Ops:** A.  Stable and adaptive

B.  All of the mentioned options

C.  Adaptive and number of swaps

D.  Number of comparisons and Stability

**Q 2** Suppose there is a Column major order  $3 \times 4$  integer array with the base address as 1000. Find out the address of element as 2.

**Ops:** A.  1020

B.  1010

C.  1018

D.  1016

**Q 3** Suppose there is a 1-D array Arr[24] with the lower bound as 1 and starting base address as 1030. Fin

**Ops:** A.  1180

T81



Welcome Venkata Ramana Tulluri



You need to attach webcam and microphone to support video proctoring . .

Please make sure webcam and microphone is ready to use . . .

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B.  1110

C.  970

D.  950

**Q 4** Suppose there is a 1-D array Arr[10] with the lower bound as 1 and starting base address as 1020. Find the address of Arr[5] if the size of each element is 2 bytes.

**Ops:** A.  1024

B.  1028

C.  1016

D.  1012

**Q 5** Breadth First Traversal can be used for which of the following applications?

1. To find all neighbouring locations in GPS Navigation systems
2. In Social Networking websites to find the people within a given distance
3. For detecting cycle in any graph

Choose the correct answer from the options given below.

- C. Adaptive and number of swaps  
 D. Number of comparisons and Stability

**Q 2** Suppose there is a Column major order  $3 \times 4$  integer array with the base address as 1000. Find out the address of element A[3, 2]. Consider the size of element as 2.

- Ops:** A.  1020  
B.  1010  
C.  1018  
D.  1016

**Q 3** Suppose there is a 1-D array Arr[24] with the lower bound as 1 and starting base address as 1030. Find the address of Arr[21] if the size

- Ops:** A.  1180  
B.  1110

**Q 4** Suppose there is a 1-D array  $\text{Arr}[10]$  with the lower bound as 1 and starting base address as 1020. Find the address of  $\text{Arr}[5]$  if the size of each element is 2.

Ops: A.  1024

B.  1028

C.  1016

D.  1012

**Q 5** Breadth First Traversal can be used for which of the following applications?

1. To find all neighbouring locations in GPS Navigation systems
2. In Social Networking websites to find the people within a given distance
3. For detecting cycle in any graph

Choose the correct answer from the options given below.

Ops: A.  Only 1 and 3

B.  All 1, 2 and 3

C.  Only 2 and 3

D.  Only 1 and 2

**Q 5** Breadth First Traversal can be used for which of the following applications?

1. To find all neighbouring locations in GPS Navigation systems
2. In Social Networking websites to find the people within a given distance
3. For detecting cycle in any graph

Choose the correct answer from the options given below.

**Ops:** A.  Only 1 and 3

B.  All 1, 2 and 3

C.  Only 2 and 3

D.  Only 1 and 2

**Q 6** John has written a program that traverses a given array linearly and outputs the sum of all the elements of an array which are divisible by 3. If {1, 2, 4, 3, 6, 7, 3, 5, 4, 7, 8, 9} is fed into John's program, what will be the output?

**Ops:** A.  18

B.  6

C.  21

- C.  Only 2 and 3
- D.  Only 1 and 2

**Q 6** John has written a program that traverses a given array linearly and outputs the sum of all the elements of an array which are divisible by 3. If an array  $x = \{1, 2, 4, 3, 6, 7, 3, 5, 4, 7, 8, 9\}$  is fed into John's program, what will be the output?

- Ops:**
- A.  18
  - B.  6
  - C.  21
  - D.  12

**Q 7** If you are using merge sort, then which of the following statements are correct that need to be considered?

- 1. It cannot work well with large datasets
- 2. It is preferred for linked lists
- 3. It needs auxiliary memory for sorting

Choose the correct answer from the options given below.

- A.  All 1, 2 and 3

D.  12

**Q 7** If you are using merge sort, then which of the following statements are correct that need to be considered?

1. It cannot work well with large datasets
2. It is preferred for linked lists
3. It needs auxiliary memory for sorting

Choose the correct answer from the options given below.

**Ops:** A.  All 1, 2 and 3

B.  Only 2 and 3

C.  Only 1 and 2

D.  Only 1 and 3

**Q 8** Which of the following is **NOT** a type of linked list?

**Ops:** A.  None of the mentioned options

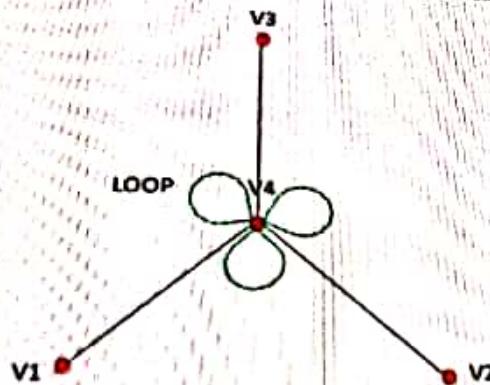
B.  Doubly linked list

C. Circular linked list

D. Header linked list

reset answer

**Q 9** Find out the sum of the degree of vertices in the pseudograph as shown in the image.



Ops: A.  12

B.  14

C.  16

D.  8

**Q 10** Consider an array A={11, 2, 34} and an array B={0, 4, -3}. An array C has been made by joining array A and B, in order (C has six elements). Calculate the sum of C.

b.  12

**Q 7** If you are using merge sort, then which of the following statements are correct that need to be considered?

1. It cannot work well with large datasets
2. It is preferred for linked lists
3. It needs auxiliary memory for sorting

Choose the correct answer from the options given below.

**Ops:** A.  All 1, 2 and 3

B.  Only 2 and 3

C.  Only 1 and 2

D.  Only 1 and 3

**Q 8** Which of the following is **NOT** a type of linked list?

**Ops:** A.  None of the mentioned options

B.  Doubly linked list

**1**

**2**

C.  Only 1 and 2

D.  Only 1 and 3

**Q 8** Which of the following is NOT a type of linked list?

**Ops:** A.  None of the mentioned options

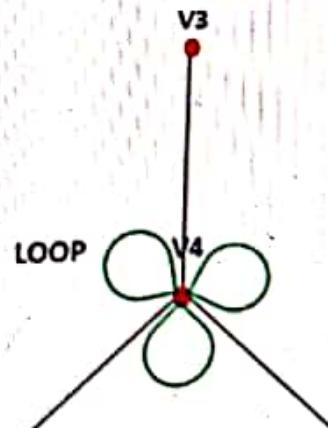
B.  Doubly linked list

C.  Circular linked list

D.  Header linked list

reset answer

**Q 9** Find out the sum of the degree of vertices in the pseudograph as shown in the image.



**1**

**2**

**Ops:** A.  12

B.  14

C.  16

D.  8

**Q 10** Consider an array  $A=\{11, 2, 34\}$  and an array  $B=\{0, 4, -3\}$ . An array  $C$  has been made by joining array  $A$  and  $B$ , in order ( $C$  has six elements). Calculate the sum of the first and last element present in array  $C$ .

**Ops:** A.  11

B.  8

C.  1

D.  0

15 questions,

## **2** Algorithms

0 out of 15 questions attempted. Attempt?

## How to attempt?

Question :

Write a program to display whether input 3D array is Identity matrix or not. Function should return true when the matrix is identity else return false.

Input: [[1,0,0][0,1,0][0,0,1]]

Output: true

Input: [[1,0,0],[1,0,0],[0,0,1]]

Output: false



**Q 2** The sentences given below form a coherent passage when arranged logically. Choose the option which gives the correct sequence.

- A. It reduced Raven's need to go in
- B. Give better yields,
- C. Search of animals and wild plants
- D. As the crops began to

**Ops:** A.  BCDA

B.  DBAC

C.  ABCD

D.  ADBC

**Q 3** Read the statement given below and decide whether it is a Fact, an Inference or a Judgement.

Around 20 percent of the politicians are in support of the protesters.



**Ops:** A.  Fact

B.  Judgement

C.  Inference

Complete the passage by choosing the most suitable word/phrase from the options to fit the corresponding gap.

has a new ship on the way, and it's a \_\_\_\_\_. The Shipora is a 60,000,000-ton, 25-deck marvel, accommodatin  
other amenities what is billed as the country's first at-sea roller coaster. Based in California's Port Canaveral, it is inter  
spaces for drinking, and spectacularly \_\_\_\_\_, " the company says, including a new Ch

**Q 24** What will be the output of the following pseudocode?

```
1. Integer a[5], k
2. Set a[5] = {1, 2, 3, 4, 5}
3. for(each k from 0 to 4)
4.     if(k mod 2 equals 0)
5.         print a[k]*2
6.     else
7.         print a[k]
8.     end if
9. end for
```

[Note: mod finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

- Ops:**
- A.  1 4 3 8 5
  - B.  None of the mentioned options
  - C.  1 2 6 4 10
  - D.  2 2 6 4 10



**Q 25** What will be the output of the following pseudocode?

1. Integer x
2. Set x = 15
3. while(x EQUALS 15)
  - 4.     print "student"
  - 5.     jump out of the loop
6. end while

- Ops:**
- A.  It will print 'student' 16 times
  - B.  It will print 'student' unlimited number of times
  - C.  It will print 'student' only one time
  - D.  It will print 'student' 15 times

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**Q 19** What will be the output of the following pseudocode?

```
1. Integer i, j, k, m
2. Set j = 16, i = 8, k = 2, m = 1
3. if ((j^i) mod k EQUALS 0)
4.     m = m + 1
5. else
6.     m = m - 1
7. End if
8. Print m
```

[Note: mod finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 2 leaves a quotient of 2 and a remainder of 1]

$\wedge$  is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

- Ops:**
- A.  1
  - B.  0
  - C.  3
  - D.  2

- 2  
A.   B.  
B.  C.  D.

Q. 17. What will be the output of the following program?

1.  Integer a, b
2.  float a, b
3.  for (each i from 0 to 4, step 1) {  
4.      b = b + i  
5.  }  
6.  cout << b

Note: ^ is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.

b. Bitwise AND operator, it takes two numbers as operands and does AND on every bit of two numbers. The result of AND is 1 only if both bits are 1.

- Ops: A.   B.  
B.  C.  D.  E.

**Q 16** What will be the output of the following pseudocode?

```
1. Integer a, b, c
2. Set b = 300, a = 5, c = 1
3. if (b > a)
4.     b = a
5. else
6.     a = b
7. End if
8. for(each b from 0 to 5)
9.     a = a + 1
10. End for
11. Print a + c
```

- Ops:**
- A.  13
  - B.  12
  - C.  1
  - D.  15

**Q 18** What will be the output of the following pseudocode?

```
1. Integer array1[6], p, j, q
2. Set p = 3
3. Set array1[6] = {3, 6, 10, 12, 23, 33}
4. for(each j from 0 to 5)
5.     if((array1[j] MOD p) EQUALS 0)
6.         p = array1[j] - (p*3)
7.     end if
8.     q = p + array1[j] - 3
9. end for
10. Print q
```



[Note: MOD finds the remainder after the division of one number by another. For example, the expression "5 MOD 2" would evaluate to 1  
2 leaves a quotient of 2 and a remainder of 1]

- Ops:**
- A.  34
  - B.  54
  - C.  44
  - D.  64

**Q 15** What will be the output of the following pseudocode?

```
1. Integer i, j
2. Set i = 0, j = 9
3. do
4.     i = i + 1;
5.     if ((j=j-1) < (i=i+1))
6.         JUMP OUT OF LOOP
7.     end if
8.     while (i < 5);
9.     Print i, j
```

- Ops:**
- A.  6, 6
  - B.  5, 5
  - C.  5, 6
  - D.  4, 4

**Q 16** What will be the output of the following pseudocode?

**Q 14** What will be the output of the following pseudocode?

```
1. Integer p, q, r, s, t
2. Set q = 12, r = 3
3. while(q > (r - 1))
4.     r = r * 2
5.     s = r + q
6.     t = (s MOD 4) + r
7. end while
8. if(s > t)
9.     Print t
10. else
11.     Print s
12. end if
```

[Note: MOD finds the remainder after the division of one number by another. For example, the expression "5 MOD 2" would evaluate to 1 because 2 leaves a quotient of 2 and a remainder of 1]

- Ops:**
- A.  24
  - B.  20
  - C.  26
  - D.  22

Q 12 What will be the output of given pseudocode for b = 18?

```
1. Integer calculate(Integer b)
2. If(b EQUALS 1)
3.     return 0
4. else
5.     return 5 + calculate(b / 2)
6. End function calculate()
```

- Ops:
- A.  56
  - B.  34
  - C.  20
  - D.  21

D.  21

**Q 13** What will be the output of the following pseudocode for k = 50?

```
1. fun(integer k) →  
2.     if(k > 55)  
3.         return  
4.     end if  
5.     print k  
6.     fun(k+4)  
7.     print k  
8. End function fun()
```

**Ops:** A.  50 50 50 50

B.  50 54 54 50

D.  21

**Q 13** What will be the output of the following pseudocode for k = 50?

```
1. fun(integer k) ↴  
2.   if(k > 55)  
3.     return  
4.   end if  
5.   print k  
6.   fun(k+4)  
7.   print k  
8. End function fun()
```

- Ops: A.  50 50 50 50  
B.  50 54 54 50

**Q 11** What will be the output of the following pseudocode?

1. Integer a, b
2. Set a = 10, b = 10
3. a = a & b
4. b = b & 10
5. a = a & b
6. b = b & 10
7. Print a + b

[Note- &: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

- Ops:**
- A.  None of the mentioned options
  - B.  0
  - C.  20
  - D.  5

**Q 12** What will be the output of given pseudocode for b = 18?

6 out of 10 questions attempted. Review?

15 question

 Algorithms**Q 11** What will be the output of the following pseudocode?

1. Integer a, b
2. Set a = 10, b = 10
3. a = a & b
4. b = b & 10
5. a = a & b
6. b = b & 10
7. Print a + b

[Note- &: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

- Ops:**
- A.  None of the mentioned options
  - B.  0

..... of the following is the correct condition to check if the queue is empty, where the front, rear and size have their usual meanings?

- Ops:**
- A.  front + 1 = rear
  - B.  front = rear + 1
  - C.  rear = size - 1
  - D.  front == rear

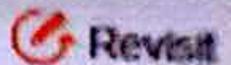
**Q 6** What do you mean by overflow condition in the stack?

- Ops:**
- A.  It is when the stack is completely filled and you try to pop an element from the stack.
  - B.  It is when the stack is empty and you try to push an element to the stack.
  - C.  It is when the stack is completely filled and you try to push an element to the stack.
  - D.  It is when the stack is empty and you try to pop an element from the stack.

**Q 7** Consider an array A={1,2,3} and an array B={-1,-2,-3}. An array C has been made by taking the sum of corresponding elements). Calculate the sum of the first and third element present in array C.

- Ops:**
- A.  6
  - B.  0
  - C.  3
  - D.  -6

### Question # 6



A bus goes to City 1 from City 2 at the speed of 60 mph. Another bus leaves City 1 for City 2 at the same time as the first bus, at the speed of 70 mph. What is the average speed for the journeys of the two buses combined, if it is known that the distance from City 1 to City 2 is 420 m?



$$3^* P(3,1)^* P(3,1)$$

$$3^* 3^* P(3,0)^* 3^* P(3,0)$$

$$\cancel{3^*} \ 3^* 3$$

## Section 6 of 7 Numerical A

## Question # 5



\$2,250 is divided among three friends A, B and C in such a way that 1/6th of A's share, 1/4th of B's share and 2/5th of C's share are equal. Share of 'A' is:

## Sections

1

2

- Q 21
- B.  It will print the sum of the elements of the second row of given 2 D array
  - C.  It will print the sum of the elements of the second column of given 2 D array
  - D.  It will print the sum of the elements of the first column of given 2 D array

Q 22 What will be the output of the following pseudocode?

1. Integer a1, p
2. Set a1 = 8
3. p = a1 + 5/7 \* 4
4. print p \* 8

Ops: A.  8

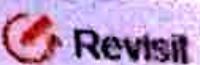
B.  64

C.  0

D.  7

Q 23 What will be the output of given pseudocode for b = 18?

- ```
1. Integer calculate(Integer b)
2. If(b EQUALS 1)
   return b
3.
4. else
5.   return 5 + calculate(b / 2)
6. end function calculate()
```

**Question # 4**

The salaries of A, B, and C are in the ratio of 1:2:3. If the salary of B and C together is \$5,000, by what percentage is the salary of C greater than that of A?

1

2

**Q 18** What will be the output of the following pseudocode for x=y=3?

```
1. Integer p(integer x, integer y)
2. if (y EQUALS 0)
3.     return 1
4. else if (y mod 2 EQUALS 0)
5.     return p(x,y/2) * p(x,y/2)
6. else
7.     return x* p(x,y/2)* p(x,y/2)
8. end if
9. End function p()
```

[Note: mod finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

- Ops:
- A.  9
  - B.  81
  - C.  36
  - D.  27

**Q 19** What will be the output of the following pseudocode of fun for a = b = 8 and c = 2?

```
1. void fun(Integer a, Integer b, Integer c)
2. r = c * c * c * c -a
```

D.  b

**Q 17** Select the appropriate option for the given pseudocode.

```
1. Integer a[3][3], k, j, sum
2. Set sum = 0
3. Set a[ 3 ][ 3 ] = { { 1, 2, 3 }, { 4, 5, 6 }, { 7, 8, 9 } }
4. for(each k from 0 to 2)
5.   for(each j from 0 to 2)
6.     sum = sum + a[k][j]
7.   end for
8. jump out of the loop
9. end for
10. print sum
```

**Ops:** A.  It will print the sum of the elements of the first row of given 2-D array

B.  It will print the sum of the elements of the first column of given 2-D array

C.  It will print the sum of the elements of the second row of given 2-D array

D.  It will print the sum of the elements of the second column of given 2-D array

**Q 18** What will be the output of the following pseudocode for x=y=3?

```
1. Integer p(integer x, integer y)
2. if (y EQUALS 0)
```

- D. It will print student 13 times

**Q 16** What will be the output of the following pseudocode?

1. Integer a1, p
2. Set a1 = 8
3.  $p = a1 + 5/7 * 4$
4. print p \* 8

Ops: A.  7

B.  0

C.  64

D.  8

**Q 17** Select the appropriate option for the given pseudocode.

1. Integer a[ 3 ][ 3 ], k, j, sum
2. Set sum = 0
3.  $\{ \text{set } a[ i ][ j ] = \{ \{ 1, 2, 3 \}, \{ 4, 5, 6 \}, \{ 7, 8, 9 \} \}$
4.  $\{ \text{for (each) } k \text{ from 0 to 2 } \}$
5.  $\{ \text{for (each) } j \text{ from 0 to 2 } \}$
6.  $\{ \text{sum} = sum + a[ k ][ j ] \}$
7.  $\{ \text{end for} \}$
8.  $\{ \text{print sum if (else) loop} \}$

- Q 7** Consider a directed graph,  $G$  with 4 nodes,  $A$ ,  $B$ ,  $C$  and  $D$ . The adjacency lists of
- A: D
  - B: A
  - C: A
  - D: B, C

Identify the correct statement(s).

- Ops:**
- A.   $G$  is a strongly connected graph
  - B.  In degree of  $A$  is 2
  - C.  Out degree of  $B$  is 1
  - D.  All of the mentioned options

- 
- Q 8** How will you initialize a multidimensional array on data structures?

- Ops:**
- A.  int a[][]
  - B.  int []a[]
  - C.  int a[]
  - D.  int a[[]]

- 
- Q 9** What do you mean by overflow condition in the stack?

- Ops:**
- A.  It is when the stack is empty and you try to push an element to the stack.
  - B.  It is when the stack is completely filled and you try to pop an element from the stack.
  - C.  It is when the stack is empty and you try to pop an element from the stack.
  - D.  It is when the stack is completely filled and you try to push an element to the stack.

- 
- Q 10** Which of the following expressions is written in polish notation?

- Ops:**
- A.  \*CD
  - B.  ABC+\*

**Q.13** What will be the output of the following pseudocode?

1. Integer a, k, j, i
2. Set a = **10**, k = **a/4**, j = **k/1**
3. for (each i from **1** to j)
4.     print j•i, i•i
5. end for

Ops:

A.  4 5 4 5

B.  5 4 5 5

C.  4 4 4 4

D.  5 4 5 4

**Q.14** What will be the output of the following pseudocode?

1. Integer a, b
2. Set a = **10**, b = **10**
3. a = a & b
4. b = b & **10**
5. a = a & b
6. b = b & **10**
7. print a + b

[Note: & between AND operation (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1,

- C. ○ 6 6 12  
D. ○ 6 6 12 18

**Q 12** What will be the output of the following pseudocode?

1. Integer a, b, c
2. Set b = 1, c = 1
3. for(each a from 1 to 3)
  - 4.     b = b >> 1
  - 5.     c = c << b
6. End for
7. Print b+c

[Note- >> - Bitwise right shift operator, it takes two numbers, right shifts the bits of the first operand, the second operand decides the number of places to shift  
<< - Bitwise left shift operator, it takes two numbers, left shifts the bits of the first operand, the second operand decides the number of places to shift]

- Ops:** A. ○ 2  
B. ○ 4  
C. ○ 3  
D. ○ 1

1 What will be the output of given pseudocode for b = 18?

```
1. Integer calculate(Integer b)
2. If(b EQUALS 1)
3.     return 0
4. else
5.     return 5 + calculate(b / 2)
6. End function calculate()
```

- is:
- A.  34
  - B.  20
  - C.  21
  - D.  56

2 Select the appropriate option for the given pseudocode.

```
1. Integer a[3][3], k, j, sum
2. Set sum = 0
3. Set a[3][3] = { {1, 2, 3}, {4, 5, 6}, {7, 8, 9} }
4. for(each k from 0 to 2)
5.     for(each j from 0 to 2)
6.         sum = sum + a[k][j]
7.     end for
8.     jump out of the loop
9. end for
10. print sum
```

- is:
- A.  It will print the sum of the elements of the second row of given 2-D array
  - B.  It will print the sum of the elements of the first column of given 2-D array
  - C.  It will print the sum of the elements of the second column of given 2-D array
  - D.  It will print the sum of the elements of the first row of given 2-D array

```

1. Integer p, q, r
2. Set p = 6, q = 3, r = 0
3. while(1)
4.   r = p - q
5.   p = p + r
6.   if(p > 23)
7.     Jump out of the loop
8.   else
9.     q = p - q
10.  end if
11.  Print q
12. end while

```

[Note: While(1): It is an infinite loop which will run till a break or similar statement is issued explicitly.]

**Ops:**

- A.  3 6 12
- B.  7 7 14
- C.  6 6 12
- D.  6 6 12 18

**Q.12** What will be the output of the following pseudocode?



**Q 19** What will be the output of the following pseudocode?

1. Integer a1, p
2. Set a1 = 8
3. p = a1 + 5/7 \* 4
4. print p \* 8

**Ops:** A.  8

B.  64

C.  0

D.  7

**Q 20** What will be the output of the following pseudocode?

1. Integer x, y, z
2. Set x = 0, y = 1
3. for(each z from 0 to 2)
  - 4. x = x + y + z
  - 5. end for
6. Print x

**Ops:** A.  7

B.  5

C.  6

D.  8

**Q 21** What will be the output of given pseudocode for b = 18?

1. Integer calculate(Integer b)
2. If(b EQUALS 1)
  - 3. return 0

**Sections**

**1**

**2**

**Q 15** What will be the output of the following pseudocode for  $a=50$ ?

```
1. Integer fun(Integer a)
2.   Integer b
3.   Set b = 10
4.   return a - b
5. End function fun()
```

- Ops:**
- A.  None of the mentioned options
  - B.  40
  - C.  60
  - D.  50

**Q 16** What will be the output of the following pseudocode?

```
1. Integer i, j, k, m
2. Set j = 1, i = 8, k = 2, m = 1
3. if ( (j^i) mod k EQUALS 0)
4.   m = m + 1
5. else
6.   m = m - 1
7. End if
8. Print m
```

[Note: mod finds the remainder after the division of one number by another. For example, the expression "5 mod 2" would evaluate to 1 because 5 divided by 2 leaves a quotient of 2 and a remainder of 1]

$\wedge$  is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bit of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0]

- Ops:**
- A.  3
  - B.  0
  - C.  1

2

C.  B-tree

D.  Queue

**Q 4** Consider the following polynomial equation:  
 $4x^4 + 6x^3 + 7x^2 + 11x + 12$ .

What will be the representation of the above polynomial in a single dimension array?

Ops: A.  None of the mentioned options

B.  4, 3, 2, 11, 0

C.  13, 11, 7, 3, 6, 4

D.  12, 11, 7, 6, 4

**Q 5** In a one dimensional array int a[n], find the value of n if the lower bound is 0 and upper bound is 50.

Ops: A.  0

B.  51

## Algorithms

0 out of 10 questions attempted. Attempt?

13 questions, 1 mark each

- Q 1. What will be the output of given pseudocode?

```

1. Integer h
2. Set h = 42
3. do
4.   print h
5.   h++
6.   if(h > 45)
7.     jump out of the loop
8.   while(1)
9. end dowhile

```

[Note: A do while loop is a control flow statement that executes a block of code at least once, and then repeatedly executes the block, or not, depending on given Boolean condition at the end of the block.]

While(1): It is an infinite loop which will run till a break or similar statement is issued explicitly.]

- Ops:
- A.  42 43 44 45  
 B.  43  
 C.  42  
 D.  42 44 45 46

- Q 12. What will be the output of the following pseudocode for a = 17

```

1. Integer f1(Integer a)
2.   Integer arr[] = {10, 7, 2, 6, 1, 3, 1}

```

Q.5 Consider the following algorithm:

1. Integer fun ( Node \*p )
2. While( p not equals NULL )
3.     print p-> data
4.     p = p -> next
5. End loop

p is a pointer to the first node of the linked list. Which of the following operations is performed by the function fun?

- Ops:
- A.  None of the mentioned options
  - B.  fun only traverses the linked list. It does not print the elements present in each node
  - C.  fun traverses the linked list and prints the elements present in each node
  - D.  fun check whether the linked list is sorted or not

Q.6 While performing deletion from a B-tree, in which of the following cases, all of the keys from the leaf and sibling will be redistributed to the separator key from the parent to the leaf and moving the middle key from the node and the sibling combined to the parent?

1. If there is a left or right sibling with the number of keys exceeding the minimum requirement
2. If the number of keys in the sibling does not exceed the minimum requirement
3. If the leaf is at least half full after deleting the desired value

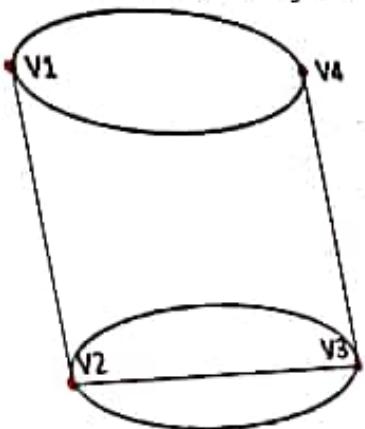
Choose the correct answer from the options given below.

- Ops:
- A.  Only 2
  - B.  Only 1
  - C.  Only 3
  - D.  Only 2 and 3

Q.7 Consider a hypothetical situation, in which there is infinite memory available to you. In such a given to you which

- Following statements are correct about A?
- A.  A is diagonal matrix
  - B.  A is a sparse matrix
  - C.  A is a sparse and diagonal matrix
  - D.  A is a dense matrix

Q 2 Find out the sum of the degree of vertices in the graph as shown in the image.



- Ops:
- A.   $^{14}$
  - B.   $^{12}$
  - C.   $^{16}$
  - D.   $^8$

# Welcome Ramisetti Bhargavi

Q 3 Linked lists are considered as which type of data structure based on:

1. Storage
2. Access strategies

Ops: A.  Linear, Linear  
B.  Linear, Non-linear  
C.  Non-linear, Non-linear  
D.  Non-linear, Linear

Q 4 If the speed of packets sent by a server is faster than the speed of receiver, then which of

Ops: A.  Quad tree  
B.  Binary tree  
C.  B-tree  
D.  Queue

Q 5 Consider the following algorithm:

1. Integer fun ( Node \*p )
2. while(p not equals NULL)
3.     print p-> data
4.     p = p -> next
5. End loop

n is a pointer to the first node of the linked list. Which of the following is

correct options

## Sections

1

2

## Important Instructions &amp; Guidelines

## Data Structures

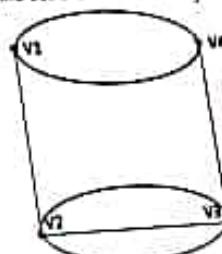
10 Questions, 1 mark each

Q 1 Consider a two-dimensional square matrix, A consisting of 100 rows and 100 columns. The elements of A are given by the formula:  
 $A[i][j] = 1$ , if  $i = j$   
 $A[i][j] = 0$ , otherwise

Which of the following statements are correct about A?

- Ops:
- A.  A is a diagonal matrix.
  - B.  A is a sparse matrix.
  - C.  A is a sparse and diagonal matrix.
  - D.  A is a dense matrix.

Q 2 Find out the sum of the degree of vertices in the graph as shown in the image.



- Ops:
- A.  14
  - B.  17
  - C.  16

**Q 16** Mark the option best suited to replace the underlined portion of the sentence given below.

At least 70 people come of contact with the person.

- Ops: A.  Came for  
B.  Came in  
C.  Come in  
D.  Came of

**Q 17** Mark the option best suited to replace the underlined portion of the sentence given below.

Riley can fluently speaks in three languages - Mandarin, Japanese, and Cantonese.

- Ops: A.  speaking  
B.  spoken  
C.  to speak  
D.  speak.

**Q 18** Mark the option best suited to replace the underlined portion of the sentence given below.

He may have a honest personality.

- Ops: A.  An honest personal  
B.  Honest personality  
C.  Honest a personality  
D.  An honest personality

**Q 19** Mark the option which best expresses the sentence in Passive voice.



Complete the passage by choosing the most suitable word/phrase from the options to fit the corresponding gap.

Culture usually shifts gradually—painfully gradually for those of us who want \_\_\_\_\_ 1 \_\_\_\_\_. But, occasionally, attitudes swing quite suddenly, as if pressure had been silently building up behind a dam until it \_\_\_\_\_ 2 \_\_\_\_\_. That silently building pressure usually takes the form of good organizing by intellectuals and observers, and the breach itself usually comes from events. The video of this recent event was so stark that it summed up how big the problem is, in a manner that nobody could \_\_\_\_\_ 3 \_\_\_\_\_ understanding.

**Q 13** Which of these fits blank 1?

- Ops: A.  difference  
B.  increase  
C.  change  
D.  peace
- 

**Q 14** Which of these fits blank 2?

- Ops: A.  floats  
B.  bursts  
C.  swallows  
D.  calms
- 

**Q 15** Which of these fits blank 3?

- Ops: A.  avoid  
B.  enquire  
C.  inhibit  
D.  exhibit

**Q 16** Mark the option best suited to replace the underlined portion of the sentence given below.

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**Q 13** Which of these fits blank 1?

- Ops: A.  difference  
B.  increase  
C.  change  
D.  peace
- 

**Q 14** Which of these fits blank 2?

- Ops: A.  floats  
B.  bursts  
C.  swallows  
D.  calms
- 

**Q 15** Which of these fits blank 3?

- Ops: A.  avoid  
B.  enquire  
C.  inhibit  
D.  exhibit

**Q 16** Mark the option best suited to replace the underlined portion of the sentence given below.

- C.  Cannot be determined
  - D.  She thinks the free market system is not doing what it proposes to do.
- 

**Q 27** Mark the option which best expresses the given sentence in Indirect speech.

"**You have all performed poorly in the business studies test!**" remarked the class teacher.

- Ops:**
- A.  The class teacher said that they all had performed poorly in the business studies test.
  - B.  The class teacher remarked that you all have performed poorly in the business studies test.
  - C.  The class teacher remarked that they all had performed poorly in the business studies test.
  - D.  They were told by the class teacher that they had performed poorly in the business studies test.
- 

**Q 28** Mark the option best suited to replace the underlined portion of the sentence given below.

At least 70 people come of contact with the person.

- s:**
- A.  Came for
  - R.  Came in

- C.  Cannot be determined
  - D.  She thinks the free market system is not doing what it proposes to do.
- 

**Q 27** Mark the option which best expresses the given sentence in Indirect speech.

"**You have all performed poorly in the business studies test!**" remarked the class teacher.

- Ops:**
- A.  The class teacher said that they all had performed poorly in the business studies test.
  - B.  The class teacher remarked that you all have performed poorly in the business studies test.
  - C.  The class teacher remarked that they all had performed poorly in the business studies test.
  - D.  They were told by the class teacher that they had performed poorly in the business studies test.
- 

**Q 28** Mark the option best suited to replace the underlined portion of the sentence given below.

At least 70 people come of contact with the person.

- s:**
- A.  Came for
  - R.  Came in

- D.  came of

**Q 29** Mark the option best suited to replace the underlined portion of the sentence given below

Riley can fluently speaks in three languages - Mandarin, Japanese, and Cantonese.



- Ops:**
- A.  speaking
  - B.  spoken
  - C.  to speak
  - D.  speak

**Q 30** Which part of the sentence given below has an error in it?

As the thunderstorm continua / for the rest of the night. / I had to stay at offi

D.  speak

**Q 30** Which part of the sentence given below has an error in it?

As the thunderstorm continue / for the rest of the night, / I had to stay at office.

- Ops:**
- A.  At office
  - B.  As the thunderstorm continue
  - C.  I had to stay at office.
  - D.  for the rest of the night,

Submit