Instructions

Sections

01. Pseudo Code
00 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

Q 03. What will be the output of the following pseudocode?

```
1.
2.
3.  SET n = 11
4.  SET c = 0
5.  WHILE n > 0
6.      IF n MOD 4 = 0 THEN
7.          n = n - 1
8.          c = c + 2
9.      ELSE IF n MOD 2 = 0 THEN
10.         n = n - 3
11.         c = c + 1
12.     ELSE
13.         n = n - 5
14.         c = c + 3
15.     END IF
16. END WHILE
17. PRINT c
18.
```

Ops: A. ○6
B. ○7
C. ○8
D. ○9

7

Q 04. What will be the output of the following pseudocode?

```
1.
2.
3.  SET s = 0
4.  SET flip = 0
```

Instructions

Reset

Sections

01. Pseudo Code
14 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

Q 15. What will be the output of the following pseudocode?

```
1.
2.
3.  SET acc = 0
4.  FOR i = 1 TO 4
5.      SET tmp = i
6.      FOR j = 1 TO i
7.          IF j MOD 2 = 0 THEN
8.              tmp = tmp + j
9.          ELSE
10.             tmp = tmp - (i - j)
11.         END IF
12.     END FOR
13.     acc = acc + tmp
14. END FOR
15. PRINT acc
16.
```

Ops:
A. ○ 14
B. ○ 15
C. ○ 13
D. ○ 12

13

Q 16. What will be the output of the following pseudocode?

```
1.
```

Instructions

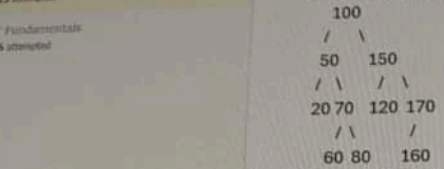
Sections

01. Pseudo Code
23 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

Q 17. A developer is tasked with optimizing an existing BST deletion function. The current function recursively searches for the node to delete. If the node to be deleted has two children, it always finds the in-order successor, copies its value to the target node, and then recursively calls delete on the in-order successor.

Consider the following BST:



If the node 50 is deleted using this logic, and then subsequently the node 150 is deleted, what is the value of the root's right child after both deletions?

Ops: A. 80
B. 160
C. 120
D. 170

Reset

160

Q 18. What will be the output of the following pseudocode?

```
1.
2.
3.  SET x = 5
4.  SET y = 9
5.  SET z = (x XOR y) + ((x AND y) << 1) - ((x OR y) >> 1)
6.  PRINT z
7.
```

Ops: A. 10
B. 9
C. 7
D. 8

Reset

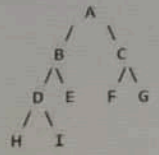
8

Submit

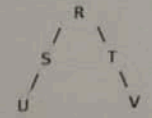
D. ○8

Q 05. A company models two different caching strategies for its cloud data centers. Each cache hierarchy is stored as a binary tree:

Cache Design T1 (balanced hierarchy):



Cache Design T2 (skewed hierarchy):



The performance audit defines a metric:
Metric T1 = (Height of the cache tree + Number of leaf caches in it)

The compliance audit defines a metric:
Metric T2 = (Height of the cache tree + Number of internal caches in it)

What is the difference between the performance metric of T1 and the compliance metric of T2?

Ops:
A. ○3
B. ○4
C. ○2
D. ○5

2

If N = 256, and you iterate over the

```
edges = [(0,1),(0,2),(1,3),(2,4),(3,5),(4,5)]
for u,v in edges:
matrix[v] = 1
matrix[v] = 1
```

A DFS is executed starting from vertex 0 (S1). Which of the following is the correct DFS traversal?

Ops: A. ○ 0 → 2 → 4 → 5 → 3 → 1
B. ○ 0 → 1 → 3 → 5 → 4 → 2
C. ○ 0 → 2 → 1 → 3 → 5 → 4
D. ○ 0 → 1 → 2 → 4 → 5 → 3

Q 24. A programmer is given the prefix expression *+AB/CD. If they convert this expression to infix notation and then evaluate it using th values A=5, B=3, C=10, and D=2, what is the final numerical result?

Ops: A. ○ 20
B. ○ 15
C. ○ 40
D. ○ 45

40

Q 25. A production line queue is represented by [5, 3, 3, 4, 2]. Each unit can only swap with its neighbour, but identical units must re their original relative order.

After sorting, what is the minimum swap count?

Ops: A. ○ 7
B. ○ 8
C. ○ 6
D. ○ 9

7

Instructions

Sections

01. Pseudo Code
23 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

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

```
1.
2.
3.  SET a = 14
4.  SET b = 7
5.  SET r = (a MOD 5) * b - (a / (b - 3)) + (b MOD a)
6.  PRINT r
7.
```

32

Ops: A. ○ 31
B. ○ 33
C. ○ 34
D. ◉ 32

Reset

Q 23. A microservice dependency graph is represented as both an adjacency matrix and an adjacency list.
The undirected graph has 6 services with edges:

S1-S2, S1-S3, S2-S4, S3-S5, S4-S6, S5-S6

Adjacency Matrix representation (0-indexed):

```
1.  n = 6
2.  matrix = [[0]*n for _ in range(n)]
3.  edges = [(0,1),(0,2),(1,3),(2,4),(3,5),(4,5)]
4.  for u,v in edges:
5.  matrix[v] = 1
6.  matrix[v] = 1
```

A DFS is executed starting from vertex 0 (S1). Which of the following is the correct DFS traversal?

b

Ops: A. ◉ 0 → 2 → 4 → 5 → 3 → 1
B. ○ 0 → 1 → 3 → 5 → 4 → 2
C. ○ 0 → 2 → 1 → 3 → 5 → 4

Submit

Instructions

Sections

01. Pseudo Code
00 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

Q 04. What will be the output of the following pseudocode?

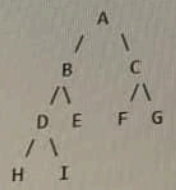
```
1.
2.
3.  SET s = 0
4.  SET flip = 0
5.  FOR i = 1 TO 6
6.      IF flip = 0 THEN
7.          s = s + i
8.      ELSE
9.          s = s - 1
10.     END IF
11.     flip = 1 - flip
12. END FOR
13. PRINT s
14.
```

Ops: A. ○5
B. ○7
C. ○6
D.. ○8

6

Q 05. A company models two different caching strategies for its cloud data centers. Each cache hierarchy is stored as a binary tree:

Cache Design T1 (balanced hierarchy):



AON

Instructions

Sections

01. Pseudo Code
14 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

15 questions

02. IT Fundamentals

Q 26. A government agency is digitising land records. Each plot of land is identified by a combination of (DistrictCode, VillageCode, PlotNumber), but developers propose adding a new auto-generated column PlotID to simplify joins across multiple applications. The agency wants to avoid performance bottlenecks but also preserve natural identifiers for legal validation.

Which design decision balances usability and compliance?

Ops: A. ○ Use only the surrogate column and ignore natural keys in legal queries.
B. ○ Keep both: composite key for legal checks, surrogate key for joins.
C. ○ Create alternate keys for all three natural identifiers separately.
D. ○ Use only the composite natural key and drop the surrogate column.

b

Q 27. In a ticket booking platform, several users may attempt to reserve the same seat simultaneously. Without proper locking, this could result in double-bookings and disputes during payment. The system must ensure that when one transaction updates a seat record, no other transaction can update it until the first completes.

Which locking mechanism resolves this?

Ops: A. ○ Denormalisation of booking tables.
B. ○ Exclusive lock on seat records during update.
C. ○ Shared lock on seat records during read.
D. ○ Hash partitioning of seat records.

b

Q 28. A financial database processes thousands of critical transactions daily. If a sudden power failure occurs just after a transaction is committed, the system must guarantee that the committed changes are not lost. During recovery, the database should be able to reapply all confirmed updates to restore consistency.

Which mechanism ensures this?

Ops: A. ○ Undo logs to roll back uncommitted work.
B. ○ Savepoints to isolate partial work.
C. ○ Indexes to optimise recovery queries.
D. ○ Redo logs to reapply committed changes.

d

Sections

01. Pseudo Code
14 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

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

```
1.
2.
3.  SET x = 13
4.  SET y = 9
5.  SET r = ((x AND y) << 1) + ((x XOR y) >> 1) - ((x OR y) MOD 5)
6.  PRINT r
7.
```

17

Ops: A. ○ 20
B. ○ 19
C. ○ 18
D. ○ 17

Q 20. A social network has n=10 users. The administrator guarantees that every user has a minimum of 6 friends. Which of the following statements must be true about this network?

Ops: A. ○ The network is a complete graph (K_{10}).
B. ○ The network has no triangles (K_3 subgraphs).
C. ○ There are at most 3 users with a degree of 6.
D. ○ The network must contain at least one triangle (K_3 subgraph).

d

Q 21. Consider a Min-Heap represented by the array [10, 20, 30, 40, 50, 60]. If the element 10 is removed (which is the minimum), and the last element 60 is moved to the root, what is the sequence of values that 60 will be compared against during the heapify-down process until it finds its correct position?

Ops: A. ○ 20, 40
B. ○ 30, 60 (no further comparisons for 60)
C. ○ 20, 30
D. ○ 20 (no further comparisons for 60)

20,40

Instructions

Sections

01. Pseudo Code
23 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

Q 16. What will be the output of the following pseudocode?

```
1.
2.
3.  FUNCTION inc(n):
4.      n = n + 2
5.      RETURN n
6.
7.  SET x = 3
8.  SET y = inc(x)
9.  PRINT x + y
10.
```

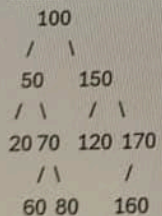
Ops: A. ○ 10
B. ◉ 7
C. ○ 9
D. ○ 8

Reset

8

Q 17. A developer is tasked with optimizing an existing BST deletion function. The current function recursively searches for the node to delete. If the node to be deleted has two children, it always finds the in-order successor, copies its value to the target node, and then recursively calls delete on the in-order successor.

Consider the following BST:



160

If the node 50 is deleted using this logic, and then subsequently the node 150 is deleted, what is the value of the root's right child after both deletions?

AON

Instructions

Sections

01. Pseudo Code
14 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

Q 29. An insurance company has set up a warm standby in another region for disaster recovery. During a quarterly drill, engineers find that DNS failover took too long, delaying recovery. The CIO asks for improvements without incurring the full cost of active-active deployments.

Which change best balances cost and recovery time?

Ops: A. ○ Moving all workloads to a private cloud environment.
B. ○ Implementing pilot-light recovery with fewer standby resources.
C. ○ Automating DNS failover with health checks and routing policies.
D. ○ Stopping DR drills to reduce downtime risk.

b

Q 30. An e-commerce company discovers that developers with admin rights were also able to approve production changes. This violates separation-of-duties requirements under compliance audits. The security team wants to enforce policies where no single role has full control.

Which approach is most appropriate?

Ops: A. ○ Deploying workloads across multiple availability zones.
B. ○ Assigning multi-factor authentication to all employees.
C. ○ Encrypting customer data with provider-managed keys.
D. ○ Using role-based IAM with least privilege and approval workflows.

d

Q 31. A digital marketing firm deploys multiple analytics clusters for short campaigns. Finance reports huge monthly variances in cloud bills because engineers often forget to shut down clusters. Management wants controls that enforce policies such as mandatory tags, scheduled shutdowns, and budget alerts, without restricting innovation.

Which feature best supports this?

Ops: A. ○ Cost governance with tagging and budget enforcement.
B. ○ Multi-cloud deployments across providers.
C. ○ File storage lifecycle policies for older data.
D. ○ Reserved instances with long-term commitments.

a

Q 32. An engineering office experiences very slow VPN file transfers. Packet captures show large packets being fragmented repeatedly as

```
10.                 x = x + (i + j)
11.             ELSE
12.                 x = x - 1
13.             END IF
14.         END FOR
15.     END FOR
16.     PRINT x
17.
```

Ops: A. ○22
B. ○20
C. ○23
D. ○21

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

```
1.
2.
3.  SET acc = 0
4.  FOR i = 1 TO 3
5.      SET k = i + 2
6.      WHILE k >= i
7.          IF (k - i) MOD 2 = 0 THEN
8.              acc = acc + (k - i + 1)
9.          ELSE
10.             acc = acc + i
11.         END IF
12.         k = k - 1
13.     END WHILE
14. END FOR
```

15

Submit

01. Pseudo Code
00 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

```
1.
2.
3.  SET s = "ALGORITHM"
4.  SET out = ""
5.  FOR i = 0 TO LENGTH(s) - 1
6.      IF i MOD 2 = 0 THEN
7.          out = s[i] + out
8.      ELSE
9.          out = out + s[LENGTH(s) - 1 - i]
10.     END IF
11. END FOR
12. PRINT out
13.
```

Ops:
A. ○ MRTAHGIOL
B. ○ MTRGAHIOL
C. ○ MTRGIAHOL
D. ○ MTRGAHILO

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

```
1.
2.
3.  SET x = 0
4.  FOR i = 2 TO 5
5.      FOR j = 1 TO 3
6.          IF i + j > 6 THEN
7.              BREAK
8.          END IF
9.          IF (i + j) MOD 2 = 0 THEN
10.             x = x + (i + j)
11.         ELSE
12.             x = x - 1
13.         END IF
14.     END FOR
```

22

Submit

Sections

01. Pseudo Code
00 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

```
2.
3.  FUNCTION mix(REF x, y):
4.      x = x + y
5.      RETURN x - 2 * y
6.
7.  SET p = 3
8.  SET q = 5
9.  SET r = mix(p, q)
10. SET s = mix(p, 2)
11. PRINT p + r + s
12.
```

Ops: A. ○14
B. ○16
C. ○13
D. ○15

Q 11. What will be the output of the following pseudocode?

```
1.
2.
3.  SET s = "DATABASE"
4.  SET out = ""
5.  SET rev = ""
6.  FOR i = 0 TO LENGTH(s) - 1
7.      IF s[i] IN ['A','E','I','O','U'] THEN
8.          out = s[i] + out
9.      ELSE
10.         rev = s[i] + rev
11.     END IF
12. END FOR
13. PRINT out + rev
14.
```

a

Submit

Ops: A. ○AAAESBTD

Instructions

Sections

01. Pseudo Code
00 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

Q 15. What will be the output of the following pseudocode?

```
1.
2.
3.  SET acc = 0
4.  FOR i = 1 TO 4
5.      SET tmp = i
6.      FOR j = 1 TO i
7.          IF j MOD 2 = 0 THEN
8.              tmp = tmp + j
9.          ELSE
10.             tmp = tmp - (i - j)
11.         END IF
12.     END FOR
13.     acc = acc + tmp
14. END FOR
15. PRINT acc
16.
```

13

Ops:
A. ○14
B. ○15
C. ○13
D. ○12

Q 16. What will be the output of the following pseudocode?

```
1.
2.
3.  FUNCTION inc(n):
4.      n = n + 2
5.      RETURN n
6.
7.  SET x = 3
8.  SET y = inc(x)
9.  PRINT x + y
```

4

Q 38. When a device wants to send data to another host in the same subnet, it first needs the destination's MAC address?

Ops: A. ○ DNS query
B. ○ NAT translation
C. ○ ARP request
D. ○ ICMP echo

c

Q 39. A shipping company embeds tax calculation logic in multiple applications. The DBA suggests moving this logic into the database so it can be reused centrally.

Which feature achieves this?

Ops: A. ○ Foreign keys
B. ○ Triggers
C. ○ Views
D. ○ Stored procedures

d

Q 40. A finance database stores loan amounts. When FLOAT is used, results show small rounding errors in interest calculations.

Which data type should replace FLOAT to ensure precision?

Ops: A. ○ INTEGER
B. ○ DECIMAL
C. ○ CHAR
D. ○ VARCHAR

b

Submit

SECTION 01/02
Previous Section

Next Section

Sections

01. Pseudo Code
00 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

Q 08. What will be the output of the following pseudocode?

```
1.
2.
3.  FUNCTION bump(REF p, k):
4.      SET temp = p
5.      p = p + k
6.      RETURN temp
7.
8.  SET p = 3
9.  SET q = 4
10. SET r = bump(p, q) + bump(p, 1)
11. PRINT p + r
12.
```

18

Ops:
A. ○ 16
B. ○ 17
C. ○ 15
D. ○ 18

Q 09. What will be the output of the following pseudocode?

```
1.
2.
3.  FUNCTION acc(REF a):
4.      STATIC s = 5
5.      a = a + s
6.      s = s - 2
7.      RETURN a + s
8.
9.  SET x = 3
10. SET r1 = acc(x)
11. SET r2 = acc(x)
12. PRINT x + r1 + r2
```

34

Submit

Sections

01. Pseudo Code
14 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

Which deployment strategy should they use?

Ops: A. ○ On-premises hosting only.
B. ○ Multi-cloud with different vendors for redundancy.
C. ○ Hybrid cloud combining private and public.
D. ○ Community cloud for all workloads.

c

Q 36. A company uses several SaaS applications and wants to reduce the number of login credentials employees need to remember.

Which solution should the company implement?

Ops: A. ○ Role-based IAM policies
B. ○ Object storage for credential files
C. ○ Single Sign-On (SSO)
D. ○ Multi-cloud deployment

c

Q 37. A company tests IPv6 alongside IPv4 on the same routers and clients to ensure service continuity.

What is this setup called?

Ops: A. ○ Dual-stack
B. ○ Tunnelling
C. ○ Translation
D. ○ NAT overload

a

Q 38. When a device wants to send data to another host in the same subnet but only knows the IP address, which process is used to find th
MAC address?

Ops: A. ○ DNS query
B. ○ NAT translation
C. ○ ARP request
D. ○ ICMP echo

c

Submit

Instructions

Sections

01. Pseudo Code
00 / 25 attempted

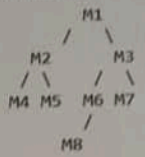
02. IT Fundamentals
00 / 15 attempted

Q 06. A 2D array A[N][N] is stored in row-major order. Each element is 8 bytes. A cache line is 128 bytes. If N = 256, and you iterate over the array such that you access A[i] [j] then A[i] [j+1] then A[i+1][j] then A[i+1][j+1] (a 2x2 block traversal, then moving to the next 2x2 block in a row-major fashion) how many cache misses will occur for the first full row of 2x2 blocks (i.e., for i=0 and j varying from 0 to N-2 with step 2)?

Ops: A. ○ 64
B. ○ 256
C. ○ 128
D. ○ 32

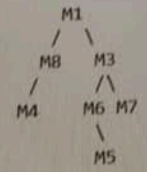
256

Q 07. A monitoring hierarchy is stored as a binary tree:



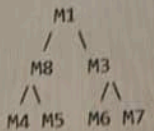
During restructuring, node M2 (and its subtree) is removed and replaced by its in-order successor from within the same tree. Which of the following represents the correct new structure?

Ops: A. ○



a

B. ○



Instructions

Sections

01. Pseudo Code
14 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

D. ○ 20 (no further ...)

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

```
1.
2.
3.  SET a = 14
4.  SET b = 7
5.  SET r = (a MOD 5) * b - (a / (b - 3)) + (b MOD a)
6.  PRINT r
7.
```

32

Ops: A. ○ 31
B. ○ 33
C. ○ 34
D. ○ 32

Q 23. A microservice dependency graph is represented as both an adjacency matrix and an adjacency list. The undirected graph has 6 services with edges:

S1-S2, S1-S3, S2-S4, S3-S5, S4-S6, S5-S6

Adjacency Matrix representation (0-indexed):

```
1.  n = 6
2.  matrix = [[0]*n for _ in range(n)]
3.  edges = [(0,1),(0,2),(1,3),(2,4),(3,5),(4,5)]
4.  for u,v in edges:
5.  matrix[v] = 1
6.  matrix[v] = 1
```

0,1,3,5,4,2

A DFS is executed starting from vertex 0 (S1). Which of the following is the correct DFS traversal?

Sections

01. Pseudo Code
14 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

Q 32. An engineering office experiences very slow VPN file transfers. Packet captures show large packets being fragmented repeatedly as they traverse the tunnel.

Which configuration change should the administrators make to optimise throughput?

Ops: A. ○ Enable VLAN tagging on the tunnel.
B. ○ Switch to static IP addressing.
C. ○ Increase DHCP lease times.
D. ○ Reduce MTU on VPN tunnel interfaces.

d

Q 33. A university deploys VLANs for different departments. Students in VLAN 20 cannot access central library servers in VLAN 40 even though both VLANs have been created on the switch. Network engineers confirm the servers and clients have valid IPs.

Which additional configuration is required to enable communication?

Ops: A. ○ Expand the subnet mask for both VLANs to include more hosts.
B. ○ Enable inter-VLAN routing on a router or Layer 3 switch.
C. ○ Configure STP priority for VLAN 20 to prevent loops.
D. ○ Increase DHCP lease time on VLAN 40 to avoid conflicts.

b

Q 34. A multinational enterprise connects to two different ISPs for redundancy. They require a routing protocol that can handle external connectivity and select optimal internet paths dynamically.

Which protocol should be deployed?

Ops: A. ○ EIGRP
B. ○ OSPF
C. ○ BGP
D. ○ RIP

c

Q 35. A bank wants to keep sensitive transaction data in a private setup but also run large-scale risk analysis using public cloud ML service

Instructions

Sections

01. Pseudo Code
14 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

Q 16. What will be the output of the following pseudocode?

```
1.
2.
3.  FUNCTION inc(n):
4.      n = n + 2
5.      RETURN n
6.
7.  SET x = 3
8.  SET y = inc(x)
9.  PRINT x + y
10.
```

Ops: A. ○10

B. ○7

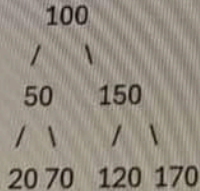
C. ○9

D. ○8

8

Q 17. A developer is tasked with optimizing an existing BST deletion function. The current function recursively searches for the node to delet
the node to be deleted has two children, it always finds the in-order successor, copies its value to the target node, and then recursivel
calls delete on the in-order successor.

Consider the following BST:



Instructions

Sections

01. Pseudo Code
00 / 25 attempted

02. IT Fundamentals
00 / 15 attempted

Q 03. What will be the output of the following pseudocode?

```
1.
2.
3.  SET n = 11
4.  SET c = 0
5.  WHILE n > 0
6.      IF n MOD 4 = 0 THEN
7.          n = n - 1
8.          c = c + 2
9.      ELSE IF n MOD 2 = 0 THEN
10.         n = n - 3
11.         c = c + 1
12.     ELSE
13.         n = n - 5
14.         c = c + 3
15.     END IF
16. END WHILE
17. PRINT c
18.
```

Ops: A. ○6
B. ○7
C. ○8
D. ○9

7

Q 04. What will be the output of the following pseudocode?

```
1.
2.
3.  SET s = 0
4.  SET flip = 0
```

```
5.  matrix[v] = 0
6.  matrix[v] = 1
```

A DFS is executed starting from vertex 0 (S1). Which of the following is the correct DFS traversal?

Ops: A. 0 → 2 → 4 → 5 → 3 → 1
B. 0 → 1 → 3 → 5 → 4 → 2
C. 0 → 2 → 1 → 3 → 5 → 4
D. 0 → 1 → 2 → 4 → 5 → 3

Reset

Q 24. A programmer is given the prefix expression *+AB/CD. If they convert this expression to infix notation and then evaluate it using the values A=5, B=3, C=10, and D=2, what is the final numerical result?

Ops: A. 20
B. 15
C. 40
D. 45

40

Q 25. A production line queue is represented by [5, 3, 3, 4, 2]. Each unit can only swap with its neighbour, but identical units must remain in their original relative order.

After sorting, what is the minimum swap count?

Ops: A. 7
B. 8
C. 6
D. 9

7

Submit

SECTION 02/02
Previous Section
SECTION 02/02
Next Section