Previous Year Questions (GATE ECE): Logical Reasoning

(1 Mark Questions)

Year: GATE ECE 2026

Question 1: The statements (S1), (S2), and (S3) pertain to the scores obtained by students in an exam. The maximum possible marks in the exam is 150.

(S1) The highest score is 100.

(S2) The fourth highest score is 76.

(S3) There are at least four students whose scores are within 25 of each other.

Which one of the following options is necessarily correct?

A: (S1) and (S2) together imply (S3)

B: (S1) and (S3) together imply (S2)

C: (S2) and (S3) together imply (S1)

D: (S1) implies (S3)

Answer: A

Solution:

(S1) : Highest score = 100

(S2) : Fourth Highest Score $= 76$

So, the maximum difference among these four students is

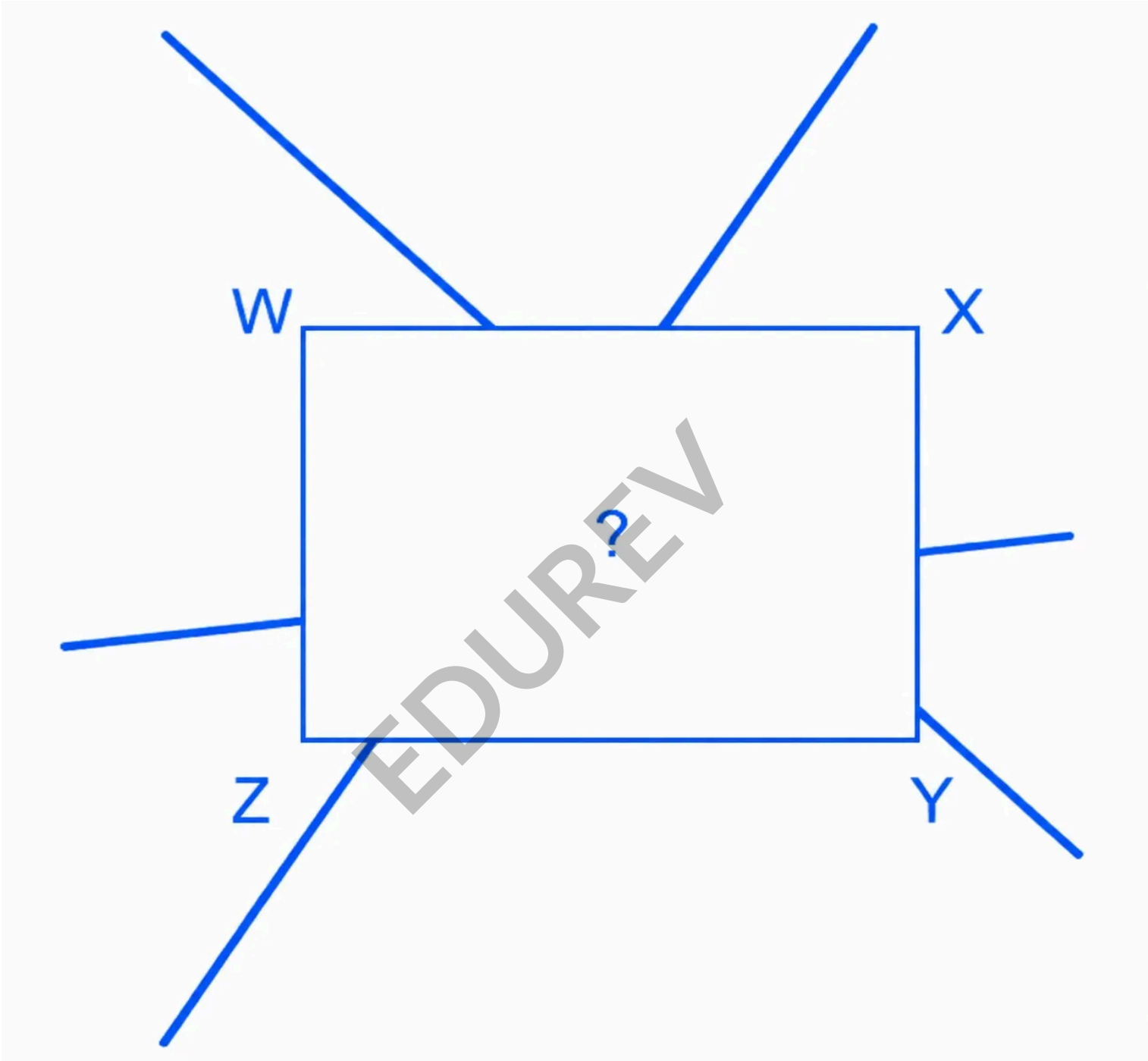
$100 - 76 = 24$

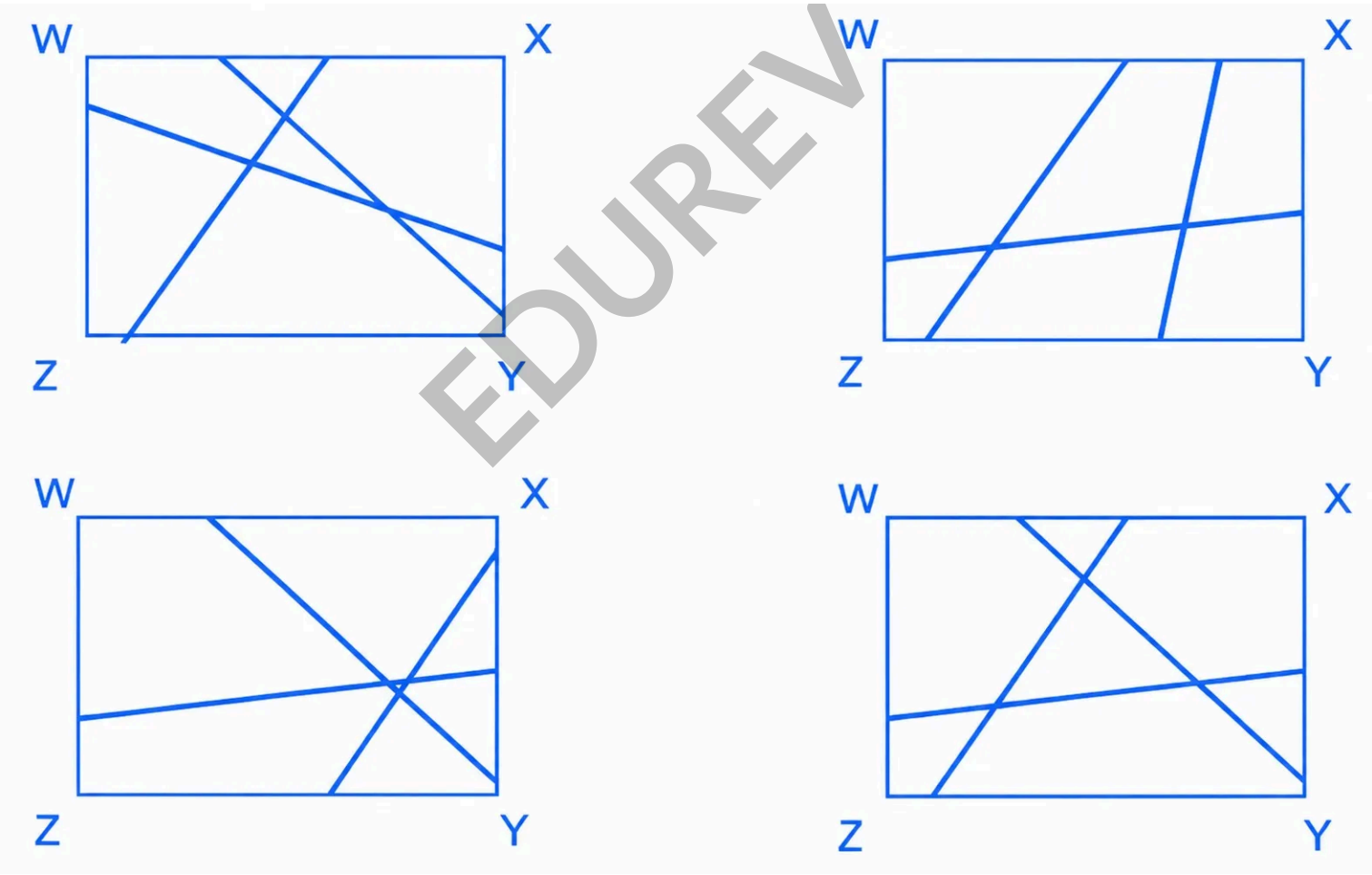
Since, $24 \leq 25$, these four students are within 25 marks of each other.

Hence, (S3) must be true.

Year: GATE ECE 2026

Question 2: The figure below has exactly three intersecting line segments with a rectangular portion WXYZ missing. Which one of the following options P, Q, R, and S is the missing portion WXYZ?





A: P

B: Q

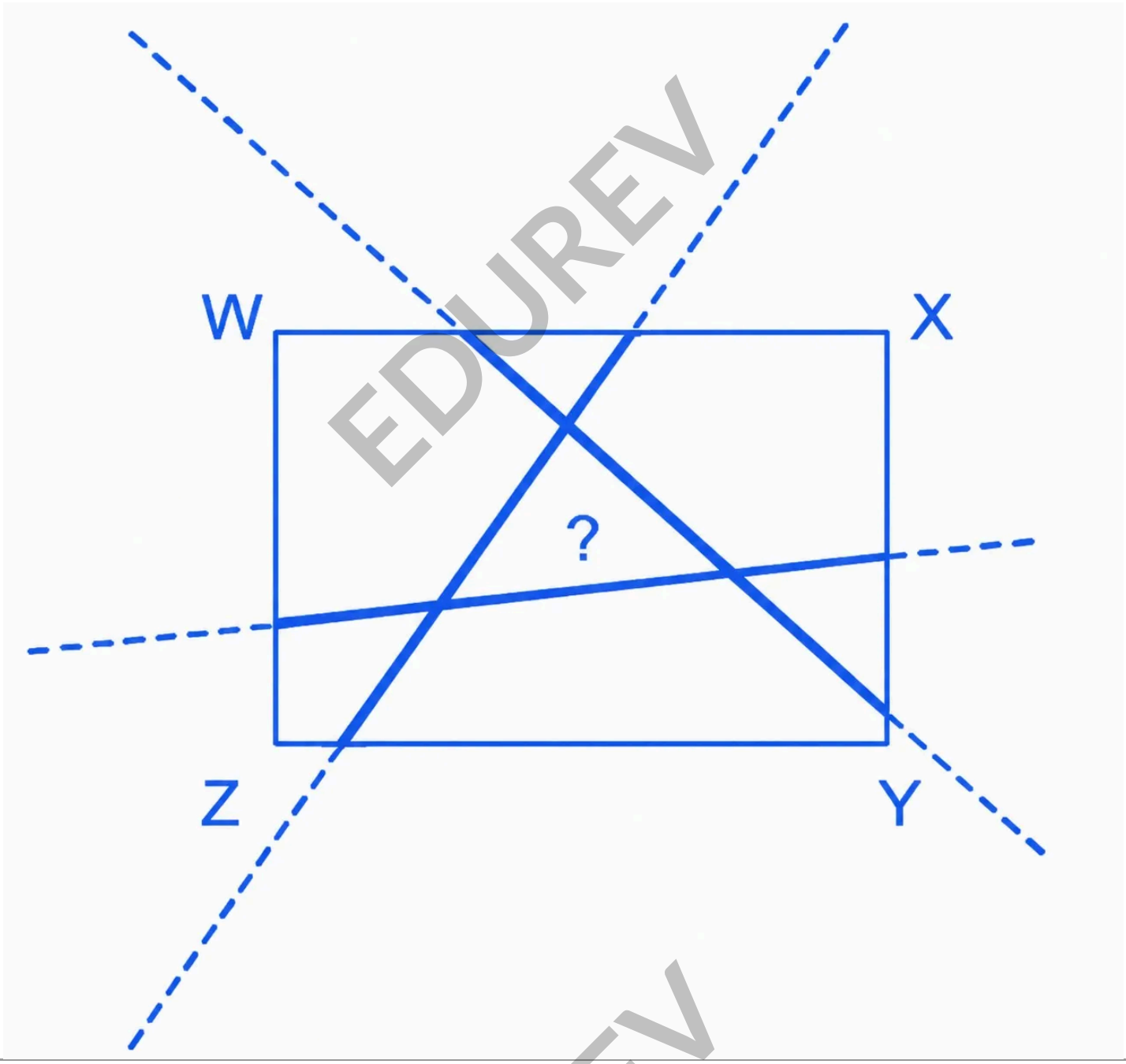
C: R

D: S

Answer: D

Solution:

The missing portion WXYZ shown below:



Year: GATE ECE 2026

Question 3: The following observation is made about the scores obtained by 100 students in an exam: 'For each student, there exists another student in the class such that their scores are at most ten marks away.'

If the above statement is false, which one of the following statements is necessarily true?

A: For each student, the scores of all the other students are more than 10 marks away.

B: There exists at least one student in the class for whom the scores of all the other students are more than 10 marks away.

C: There is exactly one student in the class for whom the scores of some students are more than 10 marks away.

D: For each student, the score of exactly one other student is more than 10 marks away.

Answer: B

Solution:

Year: GATE ECE 2024

Question 4: P, Q, R, S, and T have launched a new startup. Two of them are siblings. The office of the startup has just three rooms. All of them agree that the siblings should not share the same room.

If S and Q are single children, and the room allocations shown below are acceptable to all,

PR | TS | Q

PQ | RT | S

Then, which one of the given options is the siblings?

A: P and T

B: P and S

C: T and Q

D: T and R

Answer: A

Solution:

To determine the siblings among P, Q, R, S, and T, we need to use the given constraints and the acceptable room allocations. The key points are:

S and Q are single children, meaning they cannot have any siblings.
The siblings should not share the same room.
The acceptable room allocations given are:

PR | TS | Q

PQ | RT | S

From the above allocations:

1. **PR | TS | Q**
   Room 1: P and R
   Room 2: T and S
   Room 3: Q
2. **PQ | RT | S**
   Room 1: P and Q
   Room 2: R and T
   Room 3: S

Since S and Q cannot have siblings, we can remove options that include them:

Option B: P and S (Invalid because S is single child)
Option C: T and Q (Invalid because Q is single child)

Now, let's check the remaining options:

Option A: P and T

In both valid allocations, P and T are never in the same room:

PR | TS | Q (P is with R, and T is with S)

PQ | RT | S (P is with Q, and T is with R)

So, this is a valid combination.

Option D: T and R

In the second allocation:

PQ | RT | S

T and R are in the same room, so this option is invalid.

Therefore, the correct option is:

Option A: P and T

(2 Marks Questions)

Year: GATE ECE 2026

Question 1: Three children P, Q, R and two grown-ups X, Y play a badminton doubles tournament. X and Y are parents to two of the children playing. The child of X is not the same as the child of Y . Exactly one of the children does not have a parent playing in the tournament. The following rules are followed:

(i) A parent and his/her child cannot be on the same team.

(ii) A match can feature at most one parent and his/her child, that is, a maximum of one parent-child pair can play in a match.

The following matches were played:

	TEAM 1	TEAM2
MATCH 1	P and X	Q and R
MATCH 2	P and R	X and Y
MATCH 3	R and X	Q and Y

Which one of the following options is correct?

A: P does not have any parent playing

B: Q does not have any parent playing

C: R does not have any parent playing

D: X does not have a child playing

Answer: C

Solution:

From Match 1 and Match 3

P and X are together so, P is not child of X .

R and X are together so R is not child of X

Therefore, Q must be child of X.

Since, exactly one child has no parent playing and X already has Q as child, Y must be parent of either P or R .

Checking all only option (c) is possible.

Year: GATE ECE 2026

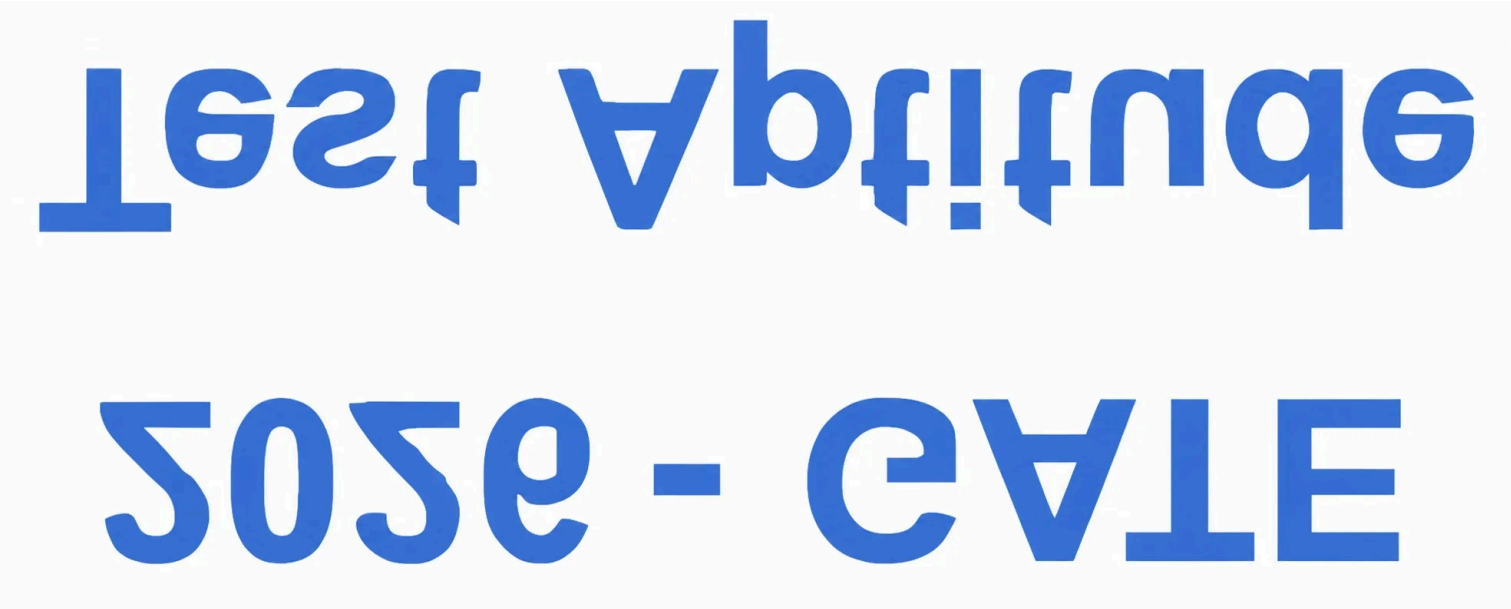
Question 2:

A:

B:

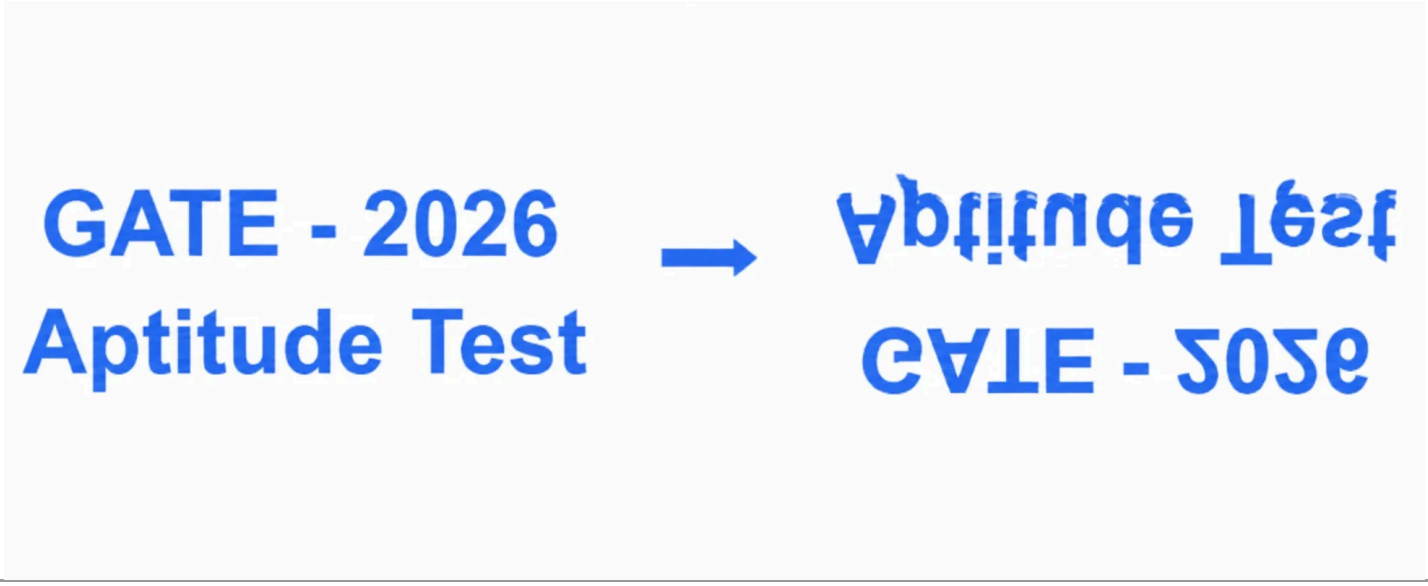
C:

D:



Answer: C

Solution:



Year: GATE ECE 2020

Question 3: The global financial crisis in 2008 is considered to be the most serious world-wide financial crisis, which started with the sub-prime lending crisis in USA in 2007. The sub-prime lending crisis led to the banking crisis in 2008 with the collapse of Lehman Brothers in 2008. The sub-prime lending refers to the provision of loans to those borrowers who may have difficulties in repaying loans, and it arises because of excess liquidity following the East Asian crisis. Which one of the following sequences shows the correct precedence as per the

given passage?

A: East Asian crisis $\rightarrow$ subprime lending crisis $\rightarrow$ banking crisis $\rightarrow$ global financial crisis.

B: Banking crisis $\rightarrow$ subprime lending crisis $\rightarrow$ global financial crisis $\rightarrow$ East Asian crisis.

C: Global financial crisis $\rightarrow$ East Asian crisis $\rightarrow$ banking crisis $\rightarrow$ subprime lending crisis.

D: Subprime lending crisis $\rightarrow$ global financial crisis $\rightarrow$ banking crisis $\rightarrow$ East Asian crisis.

Answer: A

Solution:

According to the given paragraph, because of East Asian crisis, sub-prime lending crisis occurred due to access liquidity and hence banking crisis taken place resulting in the global financial crisis.

Hence, the correct option is (A).