## Introduction

In this topic, questions are asked from a given scenario, which could be based on games, sports, or tournaments. It is another important topic that keeps appearing year after year. It tests the candidate's ability to analyse the given information and think logically to get the solution.

The questions can be based on popular games like cricket, football, shooting, etc., or tournaments like IPL, FIFA World Cup, Wimbledon, or some other games (which you might have never heard of).

Let's wrap our heads around the concept first.

Tournaments
↙ ↘
Knock out   Round Robin
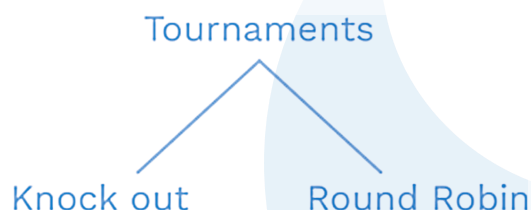
Knockout

As the name suggests, in a knockout tournament, the losing team is eliminated from the tournament after every single match.

Seed

Seed is the ranking given to a team based on its previous performance.

Bye

In a knockout tournament, when there are odd number of participants, one or more participants (usually the top ranked) are promoted to the next round without playing any match in the 1st round. This is done to ensure parity in the 1st round as well as in the subsequent rounds.

CAT Mantra

If the number of players is N,

such that $2^k < N < 2^{k+1}$, Then

the number of byes = $2^{k+1} - N$,

Where k is a positive integer.

Upsets

If a lower-seeded player wins over a higher-seeded player, it is called an upset.

Important

Number of matches played in a knockout tournament: (N–1)

Number of rounds in a knockout tournament

Number of Players (P)	Number of Rounds (R)
P = 2	R = 1
$2 < P \leq 2^2$	R = 2
$2^2 < P \leq 2^3$	R = 3
$2^3 < P \leq 2^4$	R = 4 and so on

Example 1:

Sixteen players are participating in a state tennis tournament that has three knockout rounds (i.e., 1st round, 2nd round, and semifinals) before the final.

In the first round, the highest rank (seed) player plays the lowest rank player, and it is called match Number 1 of the first round; the 2nd rank player plays the 15th rank player which is designated as match Number 2 of the first round, and so on. The winners proceed to the next round and the same process is followed. Consider that the higher rank player beats the lower rank player unless mentioned otherwise.

If a lower rank player beats a higher rank player, it is called an *Upset*.

1. Who will play the 6th match of round 1 (Identify the ranks)?
    (A) 6-8
    (B) 6-9
    (C) 6-10
    (D) 6-11

Keynote

Seed 1 → highest-ranked player

Seed 16 → lowest-ranked player

Solution: (D)
As there are 16 players in the 1st round, the sum of the ranks of two players in any match will always be 17. For example, 1-16, 2-15, etc.
Also, the nth match of any round will be played by the nth rank player as one of the players. (Assuming there are no upsets)
So, the 6th match of round 1 will be between players of ranks 6 and 11.
Hence, (D) is the correct answer.

2. Who will play the third match of round 2 (Identify the ranks)?
    (A) 2-6
    (B) 3-6
    (C) 3-7
    (D) 4-5

Rack Your Brain

1. In a knockout championship trophy, 65,536 teams are participating. Find the total number of rounds of matches?

Solution: (B)

As mentioned earlier, the nth match of any round will be played by the nth rank player as one of the players.

Since there will be eight players in round 2, the sum of the ranks of the players should also be 9

So, the third match of round 2 will be between players of ranks 3 and 6.

Hence, (B) is the correct answer.

3. If there are 32 players in the tournament at the beginning, who will play the third match of round 3 if there was an upset in the third match of round 1 (Identify the ranks)?
    (A) 3-6
    (B) 31-6
    (C) 14-6
    (D) 30-7
    Solution: (C)
    If there is no upset, the nth match of any round will be played by the nth rank player as one of the players.
    Also, if there are 8 players around, the sum of the ranks of the players should also be 9.
    So, without any upsets in the previous rounds, players of ranks 3 and 6 would have played the third match in round 3.
    But there is an upset in the third match of round 1 (which should be between players of rank 3 and 30), so the player who is ranked 30 must beat player rank 3, and proceed to the subsequent round.
    Now in round 2, in the normal scenario (i.e., without any upset), player rank 3 would have played against player rank 14 (16 players, so the sum should be 17) in the 3rd match. Since player rank 3 lost to the player rank 30 in the 1st round, the player rank 30 will play with player rank 14th and lose the match as there is no mention of upset in the 2nd round. So, finally, the player ranked 14th will play in the place of the player ranked 3.
    So, the 3rd match of round 3 will be played between players of ranks 14 and 6.
    Hence, (C) is the correct answer.

Round Robin (Tournament)

In Round Robin, every team plays with each of the other teams.

Points to note

- In a single Round Robin Tournament, each team plays with every other team exactly once.
- In double Round Robin Tournament, each team plays with every other team exactly twice.
- The total number of matches played in a single Round Robin Tournament (consisting of 'n' teams) = $^nC_2$.
- However, the sum of the number of matches played by each team will be double the actual number of matches, because each match is counted in two teams.

Example 2:

Three teams are playing a cricket tournament in which each team plays 1 match with every other team in the league stage. There are no draws in the tournament. The top two teams from the league stage enter the final, where one team emerges as the winner of the tournament.

1. How many matches were played in total?
   - (A) 6
   - (B) 5
   - (C) 4
   - (D) 7

   Solution: (C)
   Suppose A, B, and C are the three teams.
   So, the matches would be:
   A-B, B-C, A-C
   So, a total of three matches at the league stage.
   Also, 1 more match would be played in the final.
   So, a total of four matches were played in the tournament.
   Hence, option (C) is correct.

2. What is the minimum number of wins with which a team enters the final?

   - (A) 1
   - (B) 2
   - (C) 3
   - (D) 0

   Solution: (A)
   Suppose A, B, and C are the three teams. As there were a total of three matches, the number of wins for each team (without any draws) can be as follows:
   A - 2 wins
   B - 1 win
   C - 0 win
   So, the minimum number of wins with which a team enters the final is 1.
   Hence, option (A) is correct.

Other Games

Tournament-based questions, as discussed before, are more frequent. But the CAT exam is known for surprising the students by introducing some unconventional games based caselets. Chango games, Hi-Lo games, Shooting competitions, etc., are some of the recent examples.

So, the aspirant needs to practice different varieties of questions from the games and tournament topic. Let's look at one more such illustration which, once again, tests the reasoning capability of the students.

Example 3:

'X-Numero' is a two-player board game. This fancy name was coined by Mr. Shah, keeping in mind the rules of the game, where each player selects the half part of a number-matrix, turn-by-turn. The game goes as mentioned below.

- A 4 × 4 number-matrix is drawn on a board.
- Then, the first player splits the matrix vertically into two equal halves and chooses one half for further play.
- The next move on this half is by the other player who will split it only horizontally and choose one half for further play.
- The game will continue in this manner. In the end, the last number selected is the second player's gain (in terms of the equivalent rupees).

Answer all the questions considering the following number matrix:

6	2	5	1
3	1	4	7
4	1	9	5
3	1	2	4

1. If you start the game, and retain the right half, what is the maximum amount that your opponent can win?
   (A) ₹9
   (B) ₹5
   (C) ₹4
   (D) ₹7
   Solution: (B)
   If you start the game and retain the right half, then the following four possibilities will be considered by your opponent (Let's call him B).
   i) If B selects the top of the right half (i.e., top right quadrant), then you select the left half of that quadrant (i.e., the column with numbers 5 and 4), and then B selects the top number (to maximise his gain). So, his gain will be ₹5.
   ii) If B selects the top of the right half (i.e., Top right quadrant), then you select the right half of that quadrant (i.e., the column with numbers 1 and 7), and then B selects the bottom number (to maximise his gain). So, his gain will be ₹7.
   iii) If B selects the bottom of the right half (i.e., bottom right quadrant), then you select the left half of that quadrant (i.e., the column with numbers 9 and 2), then B selects the top number (to maximise his gain). So, his gain will be ₹9.
   iv) If B selects the bottom of the right half (i.e., bottom right quadrant), then you select the right half of that quadrant (i.e., the column with numbers 5 and 4), then B selects the top number (to maximise his gain). So, his gain will be ₹5.

So, if B selects the top half of the part you selected first, then the least gain that he can expect is 5. Similarly, if B selects the bottom half of the part you selected first, then the least gain that he can expect is ₹5.
So, B will gain ₹5 if both the players are playing intelligently.
Hence, option (B) is correct.

2. If you start the game, retain the right half, and again the right half after your opponent's first move, then how should your opponent play (in the first move and second move) to minimise your gain?
   (A) Retain upper, retain lower
   (B) Retain upper, retain upper
   (C) Retain lower, retain upper
   (D) Retain lower, retain lower
   Solution: (C)
   Here, it is given that the 1st player (i.e., you) retained the right half, and then again the right half.
   Now, consider the four possibilities mentioned in the previous question. You will never select the right half in your 2nd move if your opponent has selected the top half in his first move (because it will maximise the gain of your opponent, as per case II). That means the opponent must have selected the bottom half after your first move. And then, you selected the right half, so the opponent will select the top half part of that (i.e., number 5). So, the opponent's move should be bottom half and then top half.
   Hence, option (C) is correct.

3. What is the maximum amount that your opponent can win if both of you play logically?

(A) ₹6

(B) ₹4

(C) ₹2

(D) Cannot be determined

Solution: (D)

Since we do not know who started the game, we can't find out the maximum amount that your opponent can win.

(Note: If you start the game and select the right half in your first move, then the maximum gain of your opponent can be ₹5 (As explained through four possibilities, earlier).

Similarly, we can figure out that the maximum gain of your opponent can be ₹2 when you select the left half in your first move).

Hence, option (D) is correct.

Example 4:

1. Prakash and Nitin are playing Ludo for a stake of ₹1 a game. At the end of the evening, Prakash has won 3 games and Nitin has won ₹3. How many games did they play?

(A) 6

(B) 8

(C) 10

(D) None of these

Solution: (D)

Most of the students answer this question incorrectly. Observe carefully. It says that Prakash has won 3 games and Nitin has won ₹3, i.e., Nitin must have lost 3 games and won another 6, only then he can have ₹3 more than what he started with.

So, they must have played a total of 9 games.

Hence, option (D) is correct.

Level of Difficulty – 1

Set 1

Directions for Questions 1 to 5

There are five batsmen A, B, C, D, and E who come together to play a match. Their ratings depend on the performance based on that match. There are certain rules regarding their hits. If a batsman hits 6s, he gets +4 points for every 6, if hits 4s, he gets +2. If he takes 3s, he gets +1, for 2s, he gets 0 points. For every single, he gets –1 point and for dot balls, he gets –2 points.

No player scored more than four 4s and five 3s.

	6s	4s	3s	2s	Singles	Dots	Total runs
A	1	1				5	
B	2		3				60
C		4		20			48
D	3		2			3	
E		4		6	5		

1. How many minimum balls does A have to face to score 31 runs, if he has taken three 3s and two 2s?
   (A) 18 balls
   (B) 19 balls
   (C) 20 balls
   (D) 21 balls

2. How many points does E get, if he scores 48 runs in 19 balls, without facing any dot balls?
   (A) 10 points
   (B) 13 points
   (C) 20 points
   (D) 23 points

3. How many minimum balls did B face?
   (A) 25 balls
   (B) 20 balls
   (C) 18 balls
   (D) 21 balls

4. What can be the minimum number of dot balls that C faced if he scored his runs in 40 balls?
   (A) 5 balls
   (B) 6 balls
   (C) 7 balls
   (D) 8 balls

5. What should be the maximum number of runs D scores if he faces 14 balls without hitting any 4s?
   (A) 30 runs
   (B) 36 runs
   (C) 42 runs
   (D) 48 runs

Set 2

Directions for Questions 6 to 9

Anand, Bumrah, Chandrika, Dev, Ewsal, and Famul stay in the same apartment. Every Sunday they meet and play a new game 'Pick the Slip'. However, the game is played only between two players, so everyone plays with each other exactly once. Now, the game consists of six slips on which a number is written from (i) to (vi). No two slips have the same number on them. The slips are folded such that no one can see the numbers on them. When a game is played between two players each player picks a slip one after the other. The slip once picked is put back before the next player picks it. However, a player who is not involved in that particular game sees the result, i.e., the number written on the slip of each player and calls it out. Such a player is always unbiased towards anyone. Also, the player who picks a slip with a larger number on it is the winner of the game. If the game ends in a tie, i.e., the same numbered slip is picked by both players then a coin is tossed to decide the winner. The winner of each game gets as many ₹100 notes as the number written on the slip. A player can receive an amount only in multiples of 100.

This Sunday the following was observed:

i) No game resulted in a tie.

ii) The total number of games won by each person was distinct.

iii) Bumrah won the game against Anand.

iv) Famul lost only against Chandrika and Dev.

v) No one won as much money as Chandrika.

vi) Eswal won at least 2 games.

6. The number of games that Bumrah won is:

(A) 1

(B) 2

(C) 3

(D) 4

7. Who won five games?

(A) Chandrika

(B) Dev

(C) Ewsal

(D) Cannot be determined

8. Chandrika loses one game and still wins ₹1200. Also, the total money won by all the players (who won at least 1 game) was in proportion to their number of wins, then the amount of money (in ₹) won by Ewsal is:

(A) 400

(B) 600

(C) 900

(D) None of these

9. Who won two games?

(A) Dev

(B) Chandrika

(C) Ewsal

(D) Cannot be determined

Set 3

Directions for Questions 10 to 14

Four teams are participating in a football tournament in which, each team plays 2 matches with every other team in the league stage. Three points are awarded for a win and zero for a loss. There are no draws in the tournament. The top two teams from the league stage enter the final where one team emerges victorious. It is known that in the league stage, no two teams had the same points.

10. How many matches were played in the league stage?

(A) 6

(B) 12

(C) 8

(D) 10

11. What can be the maximum points scored by a team in the league stage?

(A) 9

(B) 6

(C) 12

(D) 18

12. What can be the minimum number of matches won by a team that wins the tournament?

(A) 5

(B) 2

(C) 4

(D) 3

13. What is the minimum number of points scored to reach the final?

(A) 6

(B) 9

(C) 12

(D) 18

14. If the teams can end with the same points in the league stage, and in the case of a tie for the qualifiers, the team/s with higher goals can proceed to the finals, then what can be the minimum points in the league stage with which a team can win the tournament?

(A) 6

(B) 9

(C) 12

(D) 18

Level of Difficulty – 2

Set 1

Directions for Questions 1 to 6

Sixty-four sportsmen participated in the badminton tournament. The players are seeded from 1 to 64 in the top to bottom order. The knockout format is followed, which means that the losing sportsman doesn't make it to the next round, until the finals. The first seeded sportsman plays with the 64th seeded sportsman in the first round. Similarly, 2nd plays with 63rd, 3rd with 62nd… 32nd with 33rd. There were no upsets.

1. Find the number of rounds in the badminton tournament.

2. Find the number of matches in the badminton tournament.

3. Who plays against the third-seeded player in the quarterfinals?

4. In which round was the player seeded 15 eliminated?

5. How many matches did the loser of the semifinals, win in the badminton tournament?

6. If there were 65 players in the tournament, what can be the minimum number of players who should be given byes in the 1ˢᵗ round so that no one requires to be given a bye from the 2nd round onwards.

Set 2

Directions for Questions 7 to 10

A, B, C, and D are 4 friends who live on floors 1, 2, 3, and 4, respectively, of Sneh society. The building has a parking lot (P) on the ground floor (below floor 1) and a rooftop (R), along with the four floors. During lockdown days, these friends decided to play a game within the building called "Hide and Guess". The rules of the game are:

i) Three of the friends will hide on different floors and one person will have a turn (called den) to guess the friends hiding on floors.

ii) A person can hide only on the floor just below or above his own floor.

iii) A person with a den will guess and call out the name of a friend or will say 'no one' on every floor, starting from G and moving up to R. The person hiding on a particular floor will show up if the guess of the Denner stands correct and the Denner will get 2 points. But if the guess of the Denner is wrong, he will get -1 point. (For example, the Denner says 'No one' on floor 2, but C shows up there, then the Denner will get -1 point.)

iv) Person with a den will guess on all 6 floors including ground floor (G) and roof (R).

v) All the friends will have 1 turn each and at the end of the game, the one with the highest points tally is declared the winner.

7. It was A's den. A saw B going up from B's floor by stairs to hide, what is the minimum score A can have if he plays smartly?

8. It was A's den. In how many different ways can B, C and D hide?

9. Its B's den, and he knows that A, C, and D are not hiding on any consecutive floors which of the following is definitely true?
   (A) A is hiding on floor number 2.
   (B) B is hiding on floor number 2.
   (C) D is hiding on the roof.
   (D) None of these.

10. Now, they decided to allow everyone to hide on his/her own floor too. If it's a B's den, and he knows that exactly 1 of A, C, and D is hiding on his own floor then which of the following is definitely false?
(A) If A hides on the 2nd floor, B can get a minimum of 6 points if he plays smartly.
(B) If A hides on the ground floor, B can get a minimum of 6 points if he plays smartly.
(C) There are exactly 3 cases where A can hide on the 1st floor.
(D) If A hides on 1st floor, B can get a minimum of 3 points if he plays smartly.

Set 3

Directions for Questions 11 to 15

Four teams: A, B, C, and D played four different games—chess, kabaddi, hockey, and tennis—among themselves.

Each team played at least one match with any of the other teams. No team played two matches of the same game with the same team. The matches were played in any particular order. Following are some additional facts related to a total of 10 matches, which were played.

i) Every team, except D, played at least one match in each of the four games. D did not play the Kabaddi match but played at least one match in each of the other three games.

ii) None of the teams played more than two matches in any game.

iii) The total number of matches played for the three games—Chess, Kabaddi and Tennis—were equal.

11. If the total number of matches played by teams A and C were the same, then who played kabaddi with team A?
(A) Only team C
(B) Only team B
(C) Both teams C and B
(D) Only team D

12. Team D played a total of how many matches?
(A) 2
(B) 5
(C) 6
(D) 4

13. How many Hockey matches were played?
(A) 3
(B) 6
(C) 4
(D) 7

14. Which of the following teams played two kabaddi matches?
(A) Team A
(B) Team B
(C) Team C
(D) Cannot be determined

15. The total of how many matches played by Team A is:
(A) 2
(B) 5
(C) 6
(D) Cannot be determined

Keynote

Do not use previous question's information, unless it is mentioned clearly in the next questions.

Set 1

Directions for Questions 1 to 4: Answer the following questions based on the information given.

Four teams, having four members each, participated in a 4 × 100 metres relay race. The race track has four lanes as shown. Members from the same team run in their designated lane only. Each member runs for 100 m; which is called one *leg*. Each team needs to complete all four legs to finish the race. Every team has been allocated a unique colour from among blue, red, green, and yellow. One member from each team carries the baton and starts running from the start points (shown through the blue markings in the diagram below). The batons are then passed on to the next team members waiting at subsequent takeover points (shown through the red markings in the diagram below). A person running from 'Start' to 'Takeover Point 1' is said to be running in leg 1; and so on. The person crossing the finish line first among the last four runners is adjudged the winner, and his team is adjudged the overall winner. Between any two lanes, the 'inside lane' refers to the lane closer to the centre of the race track.

i) The blue team was assigned the inside lane immediately adjacent to the lane of the red team, which did not run in lane 2. D, who ran the final leg, was not part of the blue team.

ii) J received the baton in lane 3 at takeover point 1, where B also waited in one of the inside lanes.

iii) N ran before P, both for the green team, though not in consecutive legs. They did not run in lane 2 and N did not start the race.

iv) O and K waited for the baton at the same takeover point.

v) A, who had E as his neighbour in the adjoining lane, ran the first leg for the yellow team in an odd-numbered lane. The yellow team eventually finished third.

vi) F handed the baton to G at takeover point 2, where C waited in the immediate inside lane.

vii) L, who ran in lane 3, finished the race only later than H.

viii) I, who was a team-mate of K, ran the same leg as M, who had the highest lane number. M did not run in leg 3.
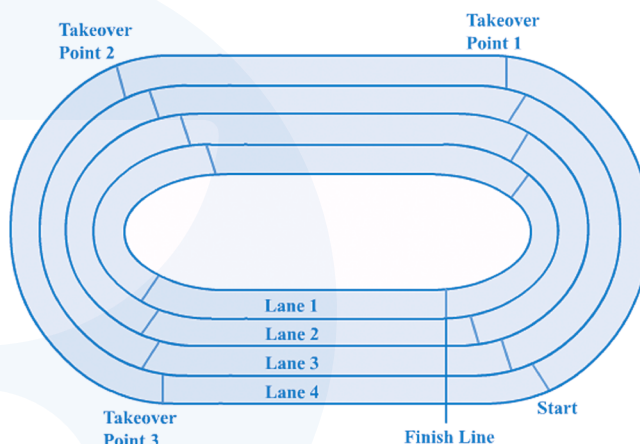
1. Which team won the race?
   (A) Red
   (B) Blue
   (C) Green
   (D) Indeterminate

2. Who ran the final leg for the Green team?
   (A) B
   (B) C
   (C) D
   (D) P

3. Who among the following was a recipient of the baton at Takeover point 2?
   (A) B
   (B) O
   (C) I
   (D) N

4. Which of these is a valid group of players waiting at Takeover point 1 to run Leg 2?

(A) A, I, M, E

(B) C, E, M, O

(C) I, J, D, E

(D) None of these

Set 2

Directions for Questions 5 and 6

Three couples, Mr. and Mrs. Khan, Mr. and Mrs. Ganguly, and Mr. and Mrs. Tendulkar play a game at a party where the game requires only two persons at a time. Mr. Khan plays against Mrs. Tendulkar, Mr. Ganguly plays against Mrs. Khan. The remaining two persons play the third game. The final score table of each match reads 'a-b' where a and b represent the points scored by the winner and the loser respectively (a and b may vary for different matches). When all the matches are finished, Mrs. Khan leave the room. Further information is given below.

i) Mr. Khan noticed that all the people present in the room had scored a distinct number of points, whereas his wife scored the same number of points as he did.

ii) Exactly two ladies present in the room scored exactly 2 points more than her husband.

iii) Nobody scored more than five or less than one point. Mrs. Khan won by a prime number of points.

5. What is the total number of points scored by the Ganguly couple?

(A) 4

(B) 6

(C) 8

(D) 9

6. Who scored the minimum number of points?

(A) Mr. Tendulkar

(B) Mr. Ganguly

(C) Mr. Khan

(D) Mrs. Khan

Set 3

Directions for Questions 7 to 9: Study the following information carefully and answer the given questions.

A team of five players: Manik, Qadir, Lalit, Abhi, and Kunal participated in a tournament and played four matches, namely M1, M2, M3, and M4. The following table gives partial information about their individual scores and the total runs scored by the team in each match.

Players	M1	M2	M3	M4
Manik		100		53
Qadir	88	65		52
Lalit			110	
Abhi	72	75	20	56
Kunal	60		78	
Total	270	300	240	200

Each column has two values missing. These are the runs scored by the two lowest scorers in that match. None of the two missing values is more than 10% of the total runs scored in that match.

7. If the absolute difference between the total runs scored by Manik and Lalit in the four matches is minimum possible, then what is the absolute difference between the total runs scored by Qadir and Kunal in the four matches?

(A) 35

(B) 37

(C) 32

(D) 36

8. If the absolute difference between the total runs scored by Manik and Lalit in the four matches is the minimum possible, then what is the ratio of the total runs scored by Manik and Lalit in the four matches?
(A) 187:189
(B) 189:188
(C) 189:187
(D) 183:187

9. What is the maximum possible percentage contribution of Kunal in the total runs scored in the four matches?
(A) 18.6%
(B) 18.2%
(C) 18.5%
(D) 18.9%

Set 4

Directions for Questions 10 to 15: Refer to the data given below and answer the questions that follow.

A cricket tournament involving 6 teams, namely Afghanistan, Argentina, Russia, Indonesia, Iran, and Iraq, was won by Indonesia. In the first round of the tournament, all the teams played against every other team exactly once. The winning team in a match was awarded 2 points while the losing team was not awarded any points. No match was drawn in the tournament. The teams were arranged in descending order of the total points scored. In case of a tie in the number of points scored, the team that maintained a higher run rate was ranked higher than the team that maintained a lower run rate. The top 4 teams moved to the semifinal. In the semifinal, the team ranked first and played against the team ranked fourth while the team ranked second and played against the team ranked third. The two teams that won the semifinal matches moved to the finals.

The following points are known:
i) In the first round, Afghanistan defeated Iran.

ii) In the tournament, Iraq played more matches than the number of matches played by both Russia and Argentina. Afghanistan and Iran played fewer matches than Russia.

iii) In the first round, the top 4 teams won an equal number of matches and as a result, the ranking was decided on the basis of the run rates of the four teams.

iv) The team that was eventually the runner-up in the finals lost against the teams that were ranked 5th and 6th in the first round.

v) In the two semifinal matches played, the teams that were ranked first and second in the first round lost.

vi) In both semifinals, the team that actually won had also won the first-round match against the same team.

vii) The team that won the final match against the runner-up team had lost its first-round match to the runner-up team.

10. If Russia defeated Argentina in the first round, then against which of the following teams, Indonesia won the first-round match?
(A) Iraq
(B) Argentina
(C) Russia
(D) Cannot be determined

11. Out of the four teams that reached the semifinals, for how many teams who lost their first round match can the opponent in the first round match be exactly determined?
(A) 1
(B) 2
(C) 3
(D) 4

12. Consider the following two statements:

Statement I: Indonesia lost to Argentina in the first round

Statement II: Russia lost to Iraq in the first round

What can be concluded about these two statements?

(A) Both statements are definitely correct
(B) Only one of the statements is definitely correct
(C) Statement II is correct only if statement I is correct and statement II is incorrect if statement I is incorrect
(D) Statement I is correct only if statement II is correct and statement I is incorrect if statement II is incorrect.
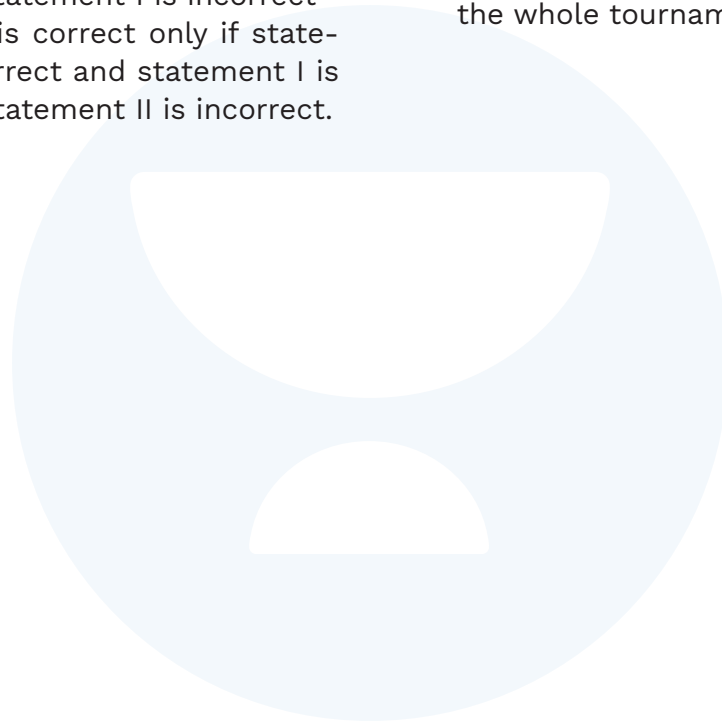
13. What was the rank of Russia in the first round?

(A) 1st
(B) 2nd
(C) 4th
(D) Cannot be determined

14. How many matches did Iraq win in the whole tournament?

(A) 3
(B) 4
(C) 5
(D) 6

15. How many matches does Russia play in the whole tournament?

Level of Difficulty – 1

1. (C)

Given:

1 six = 6 runs → 1 ball

1 four = 4 runs → 1 ball

5 dots = 0 runs → 5 balls

Three 3s = 3 × 3 = 9 runs → 3 balls

Two 2s = 2 × 2 = 4 runs → 2 balls

Total = 23 runs → 12 balls

Now, to score 31 runs in minimum balls A must take 8 singles (1 run) in 8 balls.

So, in total, he faced a minimum of 20 balls to score 31 runs.

Hence, option (C) is correct.

2. (A)

Given,

Four 4s → 4 × 4 = 16 runs (4 balls) → + 8 points

Six 2s → 6 × 2 = 12 runs (6 balls) → + 0 points

Five 1s → 5 × 1 = 5 runs (5 balls) → − 5 points

Total = 33 runs (15 balls) → + 3 points

Now, if he scores 48 runs in 19 balls, then 15 runs in 4 balls are needed.

Hence, the condition will be,

One 6s → 6 runs (1 balls) → + 4 points

Three 3s → 3 × 3 = 9 runs (3 balls) → +3 points

So, E gets a total of 10 points after scoring 48 runs in 19 balls.

Hence, option (A) is correct.

3. (D)

Given:

Two 6s → 6 × 2 = 12 runs → 2 balls

Three 3s → 3 × 3 = 9 runs → 3 balls

Total = 21 runs in 5 balls

Remaining runs → 60 − 21 = 39 runs

Now, to face minimum balls to score the remaining 39 runs.

We get,

Four 4s → 4 × 4 = 16 runs → 4 balls

Eleven 2s → 2 × 11 = 22 runs → 11 balls

One 1 → 1 × 1 = 1 Run → 1 ball

That is, a total of 5 + 4 + 11 + 1 = 21 balls

So, a minimum of 21 balls B have to face to score 60 runs.

Hence, option (D) is correct.

4. (D)

Given,

Four 3s → 4 × 3 = 12 runs → 4 balls

Twenty 1s → 20 × 1 = 20 runs → 20 balls

Total = 32 runs in 24 balls

Remaining runs → 16 runs

Now, to face minimum dots balls, we have to take as many 2's as we can.

Eight 2s = 8 × 2 = 16 runs → 8 balls

So, minimum dot balls face by C = 40 − (24 + 8) = 8 balls

Hence, option (D) is correct.

5. (B)

Given:

Three 6s → 6 × 3 = 18 runs → 3 balls

Two 3s → 2 × 3 = 6 runs → 2 balls

Three 0s → 0 × 3 = 0 runs → 3 balls

Total = 24 runs in 8 balls

Remaining balls → 14 − 8 = 6 balls

Now, to score maximum in the remaining 6 balls without hitting any 4's, we have to take maximum 2's.

∴ 6 × 2 = 12 runs

So, the Total Runs = 18 + 6 + 12 = 36 runs

Hence, option (B) is correct.

Common analysis for Questions 6 to 9

Let's analyse the given data.

- From (iii) and (iv), Bumrah won his game against Anand. Famul lost only against Chandrika and Dev, i.e., he won 3 games (against Anand, Bumrah, and Ewsal).
- From (ii), the total number of games won by each person is distinct, therefore, one player wins 5 games, another player wins 4 games, and so on.
- As per the information given, every person other than Anand has at least 1 win, therefore Anand must have lost all his games.
- Also, Bumrah lost to Famul, so he cannot win 5 games. He also cannot win 4 games as he will lose to the person who wins 5 games. Also, Famula has won 3 games, So Bumrah can have either 2 or 1 win.
- Further, Ewsal has already lost to Famul, and also lost to the persons who won 5 games and 4 games. So, Eswal can have 2 or 3 wins (as from (vi), he won at least 2 games). But Famula has won 3 games. So, Eswal must have won 2 games.
- So, Bumrah can have just 1 win.
- So, Chandrika and Dev must have won 5 games and 4 games, in some order.

6. (A)
As explained earlier, Bumrah won just 1 game.
Hence, option (A) is correct.

7. (D)
As explained earlier, Chandrika and Dev must have won 5 games and 4 games in some order.
Hence, option (D) is correct.

8. (B)
As explained earlier, Chandrika and Dev must have won 5 games and 4 games. But in this question, it is mentioned that Chandrika lost 1 game. So, she must have won 4 games and got ₹1,200, then Eswal must have won ₹600 (as he won 2 games

and the total money won by each player was also in proportion to the number of wins).
Hence, option (B) is correct.

9. (C)
As explained earlier, Eswal won 2 games.
Hence, option (C) is correct.

10. (B)
Suppose a, b, c, and d are four teams. So, the matches between any two teams would be:
$^4C_2 = 6$
(a-b, a-c, a-d, b-c, b-d, c-d).
Since it was a double round-robin tournament, the total matches played = 6 × 2 = 12.
Hence, option (B) is correct.

11. (D)
A particular team can win all its matches. Also, the winning team gets 3 points. So, the maximum points by a team can be 6 × 3 = 18.
Hence, option (D) is correct.

12. (C)
Out of the total matches (i.e., 12), let us assign maximum wins to a particular team, which would be 6.
Now, the remaining 6 matches (i.e.,, 6 wins) are to be divided among the remaining 3 teams in such a way that one team gets minimum wins and qualifies.
So, the following can be the number of matches won by the teams:
a - 6
b - 3
c - 2
d - 1
So, B will go to the final, along with A.
Now, in the final, b can win the match.
So, the minimum number of wins with which a team can win the tournament is:
= 3 + 1 = 4 matches
Hence, option (C) is correct.

13. (B)

As explained in the previous question, B can go to the finals with just 3 wins, i.e.,, 9 points

Hence, option (B) is correct.

14. (A)

Total matches to be played = 12

Consider a situation where Team A won all its 6 matches, and each of the remaining teams won exactly 2 matches. Also, team B qualifies for the finals with a higher goals margin, and also wins the finals.

So, team B can win the finals with just 3 victories (2 in the league stage and 1 final). So, the minimum points in the league stage can be 6.

Hence, option (A) is correct.

Level of Difficulty - 2

Common analysis for all the questions

Round 1

Seed 1	Seed 2	Seed 3	....	Seed 32
Seed 64	Seed 63	Seed 62	....	Seed 33

Trick : Seed 1 + Seed 64 = 65
Seed 2 + Seed 63 = 65

⋮   ⋮

Seed 32 + Seed 33 = 65   ⎫ Pattern

Round 2

Seed 1	Seed 2	....	Seed 16
Seed 32	Seed 31	....	Seed 17

Trick : Seed 1 + Seed 32 = 33
Seed 2 + Seed 31 = 33

⋮   ⋮

Seed 16 + Seed 17 = 33   ⎫ Pattern

Round 3

Seed 1	Seed 2	....	Seed 8
Seed 16	Seed 15	....	Seed 9

Trick : Seed 1 + Seed 16 = 17
Seed 2 + Seed 15 = 17

⋮   ⋮

Seed 8 + Seed 9 = 17   ⎫ Pattern

Round 4   (Quarter Final)

Seed 1	Seed 2	··········	Seed 4
Seed 8	Seed 7	··········	Seed 5

Trick : Seed 1 + Seed 8 = 9
             Seed 2 + Seed 7 = 9
             ⋮
             Seed 4 + Seed 5 = 9 } Pattern

Round 5   (Semi Final)

Seed 1	Seed 2
Seed 4	Seed 3

Seed 1 + Seed 4 = 5 ⎫
Seed 2 + Seed 3 = 5 ⎭ Pattern

Round 6   (Final)

Seed 1
Seed 4

Seed 1 + Seed 2 = 3

1. **6**

   Total number of rounds in the tournament = 6

   Hence, answer 6 is correct.

2. **63**

   As the tournament started with 64 players and in the end, only one player was undefeated,

   a total of 63 matches are played as one player is eliminated per match.

   OR

   We can also say that in the 1st round, 32 matches were played. In the 2nd round, 16, 3rd round 8, and so on till the final where 1 match was played.

   So, the total number of matches played were: 32 + 16 + 8 + 4 + 2 + 1 = 63

   (Remember that $2^0 + 2^1 + ... + 2^{(n-1)} = 2^n - 1$)

   Hence, answer 63 is correct.

3. **6**

   In the quarter-final, the sum of seeds is 9.

   Seed 3 + (6) = 9

   Player seeded 3 will play with player seeded 6.

   Hence, answer 6 is correct.

4. **3**

   In round 3, the player seeded 2 will beat the player seeded 15, i.e., 3rd round.

Shortcut

Since there are no upsets, seed 15 will be eliminated only when it plays a higher seed.

1st round – 64/2 = 32. So, seed 15 plays against a lower seeded player.

2nd round –32/2 = 16. So, seed 15 plays against a lower seeded player.

3rd round – 16/2 = 8. Here seed 15 plays against a higher seeded player and will be eliminated.

Hence, answer 3 is correct.

5. **4**

   Semifinals is round 5 ⇒ He won four matches and reached in 5th round.

   Hence, 4 is the correct option.

   Note: Seed 1 is the highest seeded player

   Seed 64 is the lowest seeded player

   In case of no upsets, the highest-seeded player will beat the lowest-seeded player.

   Hence, the answer is 4.

6. **63**

   A knock-out tournament proceeds without any byes only if the number of player in every round is of the form 2^n.

   If we give a bye to just 1 player in the 1st round then there will be 64 players left in the 1st round, and hence, 32 winners, who will proceed to the 2nd. So, in the

2nd round, along with the player who got a bye in the 1st round, there will be 33 players. This will not work.

So, let's assume that we are giving byes to P player. Now, of the remaining (65-P) players (which has to be an even number), (65-P)/2 will proceed to the next round (as half of the players who played in the 1st round will be eliminated).

So, $P + (65-P)/2 = 2^n$

Multiplying both sides by 2,

$2P + (65-P) = 2^n \times 2 = 2^{(n+1)}$

So, $P + 65 = 2^{(n+1)}$

The minimum value of P = 63, i.e.,, Seed 1 to Seed 63 will get byes and only Seed 64 and Seed 65 will play the match.

Don't be surprised by this answer! 😲

Hence, answer 63 is correct.

7. 9

B can hide only on floor number 1 or 3 as he stays on the 2nd floor. But it is given in the question that he is going up, so he must be hiding on floor 3. Also, it is known that each player hides on different floors. So, the possible positions of B, C, and D (as thought by the Denner, i.e., A) are as shown below.

G	1	2	3	4	R
-	-	C	B	-	D
-	-	-	B	C	D

Now, A will surely say 'No one' on the ground floor and 1st floor and will get 4 points for 2 correct guesses.

Also, he knows that B will be on floor 3, so one more correct guess, i. e. 2 more points.

Now, considering the worst possible scenario. A guesses that C is on floor 2, but no one is there, so he will figure out that C has to be on floor 4 and D on the rooftop. So, he will get -1 for one incorrect guess and 4 more points for 2 correct guesses.

So, the minimum score of A will be: 4 + 2 - 1 + 4 = 9 Points

(Even if you consider the other scenario, the least points that A can get will be 9).

Hence, 9 is the correct answer.

8. 6

It is given that each person can hide only on the floor just above or below his floor, and all of them hide on different floors, then the following possibilities are there

G	1	2	3	4	R
-	B	C	D	-	-
-	B	C	-	-	D
-	B	-	D	C	-
-	B	-	-	C	D
-	-	-	B	C	D
-	-	C	B	-	D

So, when A is the Denner, B, C, and D can hide in 6 ways.

Alternatively

We can also do it by using the concept of permutations and combinations.

There are 2 positions for B (i.e., floor 1 or 3), 2 positions for C (i.e., floor 2 or 4), and 2 positions for D (i.e., floor 3 or R). So, let's consider the following cases (by fixing the position of C as he has floors common with both B and D):

i) C is on floor 2 and B is on floor 1, then D can be on floors 3 or R, i.e., 2 ways.

ii) C is on floor 2 and B is on floor 3, then D can only be on floor R, i.e., 1 way.

iii) Similarly, when C is on floor 3, three more ways will be there in total

So, when A is the Denner, B, C, and D can hide in 6 ways.

Hence, answer 6 is correct.

9. (D)

Here, there will be three possible cases, as shown below.

So, none of the options is definitely true.

Hence, option (D) is correct.

G	1	2	3	4	R
A	-	C	-	D	-
A	-	C	-	-	D
A	-		C	-	D

10. (D)

Let's check each option one by one.

For Option A,

If A hides on 2nd floor there is only 1 case which is shown below. (As exactly one person is hiding on his own floor).

G	1	2	3	4	R
-	-	A	C	-	D

Now, B will have to say 'A' and 'no one' on G and 1st floor, in any order.

Hence B can get a minimum of 6 points even if he guesses the first 2 wrong.

For option B, if A hides on the ground floor, there are only 2 cases as shown below.

G	1	2	3	4	R
A	-	C	-	D	-
A	-	-	C	-	D

Again, B will have to say 'A' and 'no one' on G and 1st floor, in any order.

So, the minimum score B can have after 1st floor is 1, afterwards if he gets 2nd floor wrong only 1 case remains so he can get the rest 3 correct. So the minimum score will be 6 points.

Option C,

The possible cases are,

G	1	2	3	4	R
-	A	C	-	-	D
-	A	C	D	-	-
-	A	-	-	C	D
-	A	-	D	C	-

So, option (C) is wrong.

Hence, option (D) is correct.

11. (B)

The following table can be created as per the information given, where a and c indicates the counts of total matches played for those games.

	Chess	Kabaddi	Hockey	Tennis
A				
B				
C				
D		0		
	a	a	c	a

Since a total of 10 matches were played, there must be a total of 20 instances of match counts for all the 4 teams combined. (For example, when team A and team B play a match, it is counted in team A as well as team B)

So, 3a + c = 20

Also, c > 4 (as each team must have played at least 1 game of hockey)

So, 3a < 16

i.e., a < 55

Also, a ≠ 5, as a should be an even number]

Also, a > 4 (as each team must have played at least 1 game of chess)

So, a = 4 and c = 8

Now, the following table shows the number of matches played by each of the teams.

	Chess	Kabaddi	Hockey	Tennis
A	1		2	1
B	1		2	1
C	1		2	1
D	1	0	2	1
	4	4	8	4

Exactly one team out of three Teams (i.e., A, B, and C) played two kabaddi matches.

As given in the question - Teams A and C played the same total number of matches, this implies that each of Teams A and C had played exactly one Kabaddi match.

So, we can say that Team B played a kabaddi match with team A.

Hence, option (B) is correct.

12. (D)

As explained earlier, Team D played a total of 4 matches.

Hence, option (D) is correct.

13. (C)

As we can see in the table created earlier a total of 4 hockey matches were played. (As explained earlier, the total match count in the table shows double the actual number of matches splayed. So, it is not 8, but 4).

Hence, option (C) is correct.

14. (D)

Since we do not know the Number of Kabbadi matches played by each team (except Team D), we cannot answer this question. (Do not use the additional information of previous Questions here, unless it is clearly stated).

Hence, option (D) is correct.

15. (D)

As explained in the previous question, cannot determine the number of matches played by A.

Hence, option (D) is correct.

Common analysis for Questions 1 to 4

Let's first identify the team colour and the lane allotted to them, and then the members of each team and their respective 'Running leg'.

It is directly mentioned in (i) and (iii) that the red and green teams did not run in Lane 2. Also, from (v), the yellow team ran in an odd-numbered lane. So, the yellow team could not have run in lane 2. Hence, *Blue Team = Lane 2*

Since the blue and red teams were in adjacent lanes such that the blue team was in an inside lane (i.e., closer to centre), *Red Team = Lane 3*

Hence,

Yellow Team = Lane 1 [odd-numbered lane as per (v)] and *Green Team = Lane 4*

Lane	Team
Lane 1	Yellow
Lane 2	Blue
Lane 3	Red
Lane 4	Green

Now, some of the directly given data points are mentioned below.

- From (ii), J was in the Red team (lane 3) and ran 2nd leg.
- From (iii), N and P are in the Green team and N ran Leg 2 and P ran Leg 4.
- From (v), A ran the first Leg for the Yellow team. The yellow team finished 3rd.
- From (v), E should be in Lane 2. (as he was in the adjoining lane of A.
- From (vii), L ran for the Red team.
- From (viii), I and K were in the same team.
- From (viii), M ran for the Green team.

So, the following table can be created using the information obtained so far:

Lane	Team	Runners	Leg 1 S-TP1	Leg 2 TP1-TP2	Leg 3 TP2-TP3	Leg 4 TP3-F	Final Position
Lane 1	Yellow	A	A				3
Lane 2	Blue	E	E				
Lane 3	Red	JL		J			
Lane 4	Green	NPM		N		P	

- Now, M ran in Lane 4 [as per point (viii)],
- but not in Leg 3. Hence, M ran in Leg 1 (from the Start point to Takeover Point 1).
- I ran the same leg as M. From the table above, I could have run in Leg 1 (like M) only in Lane 3. Also, I and K ran in the same team i.e., team Red in Lane 3.
- L, running in Lane 3, finished the race only after H. This implies that L and H both ran the last leg, i.e., Leg 4. Also, L (team Red) finished second and H finished first. Hence, the Green team finished last.
- Now, H cannot be in Lane 1 (as the team in that lane finished third). Hence, H was in Lane 2.
- D also ran the final leg. The only lane left for D to run the final leg is Lane 1.

So, data as furnished in the following table can be obtained.

Centre							
Lane	**Team**	**Runners**	**Leg 1**	**Leg 2**	**Leg 3**	**Leg 4**	**Final Position**
			S-TP1	**TP1-TP2**	**TP2-TP3**	**TP3-F**	
Lane 1	Yellow	A	A			D	3
Lane 2	Blue	E	E			H	1
Lane 3	Red	JLIK	I	J	K	L	2
Lane 4	Green	NPM	M	N		P	4

- From the table, K has to wait at Takeover Point 2 and run Leg 3. K and O waited for the baton at the same point. Hence, O ran Leg 3 for some team.
- F handed over the baton to G at takeover point 2. This is only possible in Lane 1 or 2.
- It is known that C waited in the same lane as G in the lane that is immediately adjacent to it and inside. Hence, C was in Lane 1 while F and G were in Lane 2. Also, C and F were in Leg 3. Hence, O could be in Leg 3 only in Lane 4.
- B ran the same Leg as J but in an inside lane. Hence, B was in Lane 1.

So, the final table will be as shown below.

Now, let's answer each question one by one.

1. **(B)**

    As explained earlier, the Blue team won the race.

    Hence, option (B) is correct.

2. **(D)**

    Considering the information in the table, P ran the final Leg for the Green team.

    Hence, option (D) is correct.

3. **(B)**

    Considering the information in the table, the people who waited at takeover point 2 were C, G, K, and O. Of them, only O is mentioned in the options.

    Hence, option (B) is correct.

4. **(D)**

    Considering the information in the table, the players who waited at takeover point 1 were B, F, J, and N.

    Hence, option (D) is correct.

5. **(B)**

    Let's analyse the given information in a step-by-step manner.

Centre							
Lane	**Team**	**Runners**	**Leg 1**	**Leg 2**	**Leg 3**	**Leg 4**	**Final Position**
			S-TP1	**TP1-TP2**	**TP2-TP3**	**TP3-F**	
Lane 1	Yellow	ABCD	A	B	C	D	3
Lane 2	Blue	EFGH	E	F	G	H	1
Lane 3	Red	JIKL	I	J	K	L	2
Lane 4	Green	MNOP	M	N	O	P	4

- From (iii), it is known that the points were in the range of 1 to 5.
- Using statements (i) and (ii) we can say that Ganguly couple and Tendulkar couple must have scored {(1, 3), (2, 4)} or {(2, 4), (3, 5)}. Hence Mr. and Mrs. Khan must have scored 5 each or 1 each.
- From (iii), Mrs. Khan won the game, so it can be concluded that Khan Couple scored 5 points each, and the other two couples scored {(1, 3), (2, 4)} points. Also, Mrs. Khan can't win by 2 points [as per (II)], so she must have won by 3 points as she won by a prime number of points.
- Since Mrs. Khan played against Mr. Ganguli, scored 5 points and won by 3 points, so Mr. Ganguli must have scored 2 points.
- So, Mrs. Tendulkar and Mrs. Ganguly must have scored 3 and 4 points, and Mr. Tendulkar and Mr. Ganguly must have scored 1 and 2 points, respectively.

The final scores look like this:

Mr. Khan - Mrs. Tendulkar = 5-3

Mr. Ganguly - Mrs Khan = 2-5

Mr. Tendulkar - Mrs Ganguly = 1-4.

So, the points scored by the Ganguly couple were 2 + 4 = 6.

Hence, option (B) is correct.

6. (A)

As explained in the previous question, Mr. Tendulkar scored the minimum number of points

Hence, option (A) is correct.

7. (B)

Let's try to figure out the possible values of the missing scores in each match. (Note that the missing values are those of the two lowest scorers in that match).

- Manik (M1) + Lalit (M1) = 270 − (88 + 72 + 60) = 270 − 220 = 50, and no value is greater than 10% of 270, i.e., 27.
- Similarly, Lalit (M2) + Kunal (M2) = 300 − (100 + 65 + 75) = 60, and no value is greater than 10% of 300, i.e., 30.
- Similarly, Manik (M3) + Qadir (M3) = 240 − (110 + 20 + 78) = 32, and no value is greater than 10% of 240, i.e., 24.
- Similarly, Lalit (M4) + Kunal (M4) = 200 − (53 + 52 + 56) = 39, and no value is greater than 10% of 200, i.e., 20.
- Now, let us create a table using the above information:

Players	M1	M2	M3	M4
Manik	(23~27)	100	(13~19)	53
Qadir	88	65	(13~19)	52
Lalit	(23~27)	(30)	110	(19~20)
Abhi	72	75	20	56
Kunal	60	(30)	78	(19~20)
Total	270	300	240	200

Note: In column 3, the missing value cannot be greater than 24. But it is given in the question that the two missing values are the lowest, so they cannot be 20 or greater. Hence, the maximum value can be 19.

It can be observed from the values in the above table that Lalit's Total scores of 4 matches will be less than that of Manik.

So, to minimise the absolute difference between the total runs scored by Manik

and Lalit, we need to take minimum possible values for Manik and maximum possible values for Lalit.

Total runs scored by Qadir = 88 + 65 + (19) + 52 = 224
↓
(As Manik's score in M3 is minimum and 13)

Total runs scored by Kunal = 60 + 30 + 78 + (19) = 187
↓
(As Lalit's score in M4 is maximum and 20)

Hence, the absolute difference between the total runs scored by Qadir and Kunal in the four matches = 224 − 187 = 37

Hence, option (B) is correct.

8. (C)

Consider the table created earlier.

To minimize the absolute difference between the total runs scored by Manik and Lalit, we need to take minimum possible values for Manik and maximum possible values for Lalit. (Since, the sum of known values of Manik is (100 + 53), i.e., 153, and that of Lalit is (110 + 30), i.e., 140).

The required ratio

$$= \frac{23 + 100 + 13 + 53}{27 + 30 + 110 + 20} = \frac{189}{187}$$

Hence, option (C) is correct.

9. (A)

Consider the table created earlier.

For maximum possible percentage contribution of Kunal,

T = 60 + 30 + 78 + 20 = 188

∴ The required percentage

$$= \frac{188}{(270 + 300 + 240 + 200)} \times 100\%$$

$$= \frac{188}{1010} \times 100\% = 18.6\%$$

Hence, option (A) is correct.

Common analysis for all the questions

There are 6 teams in the tournament and since each team plays against every other team in the first round, the total number of matches in the first round will be 15.

It is given that there were no draws and the top 4 teams won an equal number of matches. This is possible only if the top 4 teams won 3 matches each. The 5th and 6th ranked teams won 3 matches in all. It is given that the eventual runner-up lost to both 5th and 6th ranked teams. That means the 6th ranked team won 1 match and the 5th ranked team won the remaining two matches.

Indonesia won the tournament, so Indonesia was in the final and played the maximum number of matches in the tournament. From statement 2, we can say that the final was played between Indonesia and Iraq. The teams that were defeated in the semifinal were Russia and Argentina. So, Afghanistan and Iran were ranked 5th and 6th. It is given that Afghanistan defeated Iran in the first round. This concludes that Afghanistan ranked 5th and Iran ranked 6th.

We know that Indonesia won the tournament which means that Iraq was the runner-up. This means that in the first round Iraq defeated Indonesia. Also, both Iran and Afghanistan won against Iraq in the first round. The top 4 teams won 3 matches each. So, we can finally get down to the following table.

	Playing against					
	Afghanistan	Argentina	Russia	Indonesia	Iran	Iraq
Afghanistan	X	Lost	Lost	Lost	Won	Won
Argentina	Won	X			Won	Lost
Russia	Won		X		Won	Lost
Indonesia	Won			X	Won	Lost
Iran	Lost	Lost	Lost	Lost	X	Won
Iraq	Lost	Won	Won	Won	Lost	X

The two semifinals can be:

1. Indonesia vs Russia AND Iraq vs Argentina, Or

2. Indonesia vs Argentina AND Iraq vs Russia.

Considering Case 1:

We know that Argentina lost to Iraq in the first round. Therefore, Indonesia won against Russia in the first round.

Case 1 gives us the following table:

	Playing against					
	Afghanistan	Argentina	Russia	Indonesia	Iran	Iraq
Afghanistan	X	Lost	Lost	Lost	Won	Won
Argentina	Won	X	Won	Lost	Won	Lost
Russia	Won	Lost	X	Won	Won	Lost
Indonesia	Won	Won	Lost	X	Won	Lost
Iran	Lost	Lost	Lost	Lost	X	Won
Iraq	Lost	Won	Won	Won	Lost	X

Considering Case 2:

We already know that Russia lost to Iraq in the first round. Therefore, Indonesia won against Argentina in the first round.

Case 2 gives us the following table:

	Playing against					
	Afghanistan	Argentina	Russia	Indonesia	Iran	Iraq
Afghanistan	X	Lost	Lost	Lost	Won	Won
Argentina	Won	X	Lost	Won	Won	Lost
Russia	Won	Won	X	Lost	Won	Lost
Indonesia	Won	Lost	Won	X	Won	Lost
Iran	Lost	Lost	Lost	Lost	X	Won
Iraq	Lost	Won	Won	Won	Lost	X

10. (C)

From the common analysis, if Russia defeated Argentina in the first round, the first case holds true. In that case, Indonesia won against Russia.

Hence, option (C) is correct.

11. (A)

From the common analysis, we can uniquely determine the names of the teams that Iraq lost to, in the first-round matches, but not for other teams.

Hence, option (A) is correct.

12. (B)

From the common analysis, statement I is correct only in the first case, while statement II is correct in both cases.

Hence, option (B) is correct.

13. (D)

The only thing we know for sure is that Russia was in the top 4 in the first round. But we don't know the exact rank.

Hence, option (D) is correct.

14. (B)

Iraq won 3 matches in the first round and also the semifinal but lost the finals. So, overall, Iraq won 4 matches in the whole tournament.

Hence, option (B) is correct.

15. 6

Russia played 5 matches in the first round and lost the semifinal. So, Russia played 6 matches in the whole tournament.

Hence, the answer 6 is correct.

Keynote

If such a question comes as TITA, don't miss to enter the answer as you know that it can only be 5, 6, or 7.

Rack Your Brain

1. As explained earlier, if the total number of rounds in a knockout tournament is 'n', then

   $2^n \geq$ number of participants (for the minimum value of 'n')

   So, $2^n \geq 65536$

   So, $n = 16$