

# CAT Mock Paper 4

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## Data Interpretation & Logical Reasoning

**DIRECTIONS for questions 35 to 38:** Answer the questions on the basis of the information given below.

A waiting room has ' $n$ ' equally spaced seats in a single row. The 1<sup>st</sup> person who enters the room can sit anywhere in the row. The 2<sup>nd</sup> person who enters, sits in the row such that he maintains maximum distance from the 1<sup>st</sup> person. The distance between any two persons is the number of seats between them (excluding their own seats). The 3<sup>rd</sup> person who enters, sits in the row such that the sum of his distances from the 1<sup>st</sup> and the 2<sup>nd</sup> person is maximum, and the process continues in the same way for all the remaining persons who enter the room.

**Q 35.** If  $n = 17$ , find the maximum possible sum of distances of the 7<sup>th</sup> person from the 1<sup>st</sup> person to the 6<sup>th</sup> person.

- (1) 35
- (2) 37
- (3) 36
- (4) 40
- (5) 42

**Q 36.** If the maximum possible sum of distances of the 9<sup>th</sup> person from the 1<sup>st</sup> person to the 8<sup>th</sup> person is 36, find the value of ' $n$ '.

- (1) 17
- (2) 15
- (3) 19
- (4) 13
- (5) Cannot be determined

**Q 37. If  $n = 9$ , which of the following is not a possible seating arrangement, where '\_' and 'p' denote an empty seat and an occupied seat respectively?**

- (1)  $\underline{P} \_ \_ \underline{P} \_ \_ \_ \underline{P} \underline{P}$
- (2)  $\underline{P} \underline{P} \_ \_ \underline{P} \_ \_ \_ \underline{P}$
- (3)  $\underline{P} \underline{P} \_ \_ \_ \_ \_ \_ \underline{P} \underline{P}$
- (4)  $\underline{P} \_ \underline{P} \_ \_ \_ \underline{P} \_ \underline{P}$
- (5) None of these

**Q 38. If  $n = 13$ , then which among the following cannot be the sum of the distances of the 8<sup>th</sup> person from the 1<sup>st</sup> person to the 7<sup>th</sup> person?**

- (1) 29
- (2) 28
- (3) 26
- (4) 25
- (5) None of these

**DIRECTIONS for questions 39 and 42: Answer the questions independently of each other.**

**Q 39. It is believed by some cardiologists that a mechanical pump can be used as an artificial heart for those who suffer from a heart attack. Some experts however are in favour of only a human heart being used for patients who need a heart transplant.**

**Which of the following most seriously undermines the recommendation of mechanical pumps as an artificial heart?**

- (1) A heart transplant may not help patients who do not restrict the amount of salt in their diet.
- (2) A major part of treatment for heart ailments is the post-operative regimen that results in strengthening of heart tissue and muscle.
- (3) Only the human heart secretes a particular hormone that regulates blood pressure in the patient recuperating from a heart attack.
- (4) There aren't many cardiologists who understand how a mechanical pump could be made to work efficiently.
- (5) What it is that enables the body to accept an artificial heart is yet to be understood.

**Q 40. Szymanski suggests that the problem of racism in football may be present even today. He begins by verifying an earlier hypothesis that clubs' wage bills explain 90% of their performance. Thus, if players' salaries were to be only based on their abilities, clubs that spend more should finish higher. If there is pay discrimination against some group of players - fewer teams bidding for black players thus lowering the salaries for blacks with the same ability as whites - that neat relation may no longer hold. He concludes that certain clubs seem to have achieved much less than what they could have, by not recruiting black players. Which one of the following findings would best support Szymanski's conclusion?**

- (1) Certain clubs took advantage of the situation by hiring above-average shares of black players.
- (2) Clubs hired white players at relatively high wages and did not show proportionately good performance.
- (3) During the study period, clubs in towns with a history of discrimination against blacks, under-performed relative to their wage bills.
- (4) Clubs in one region, which had higher proportions of black players had significantly lower wage bills than their counterparts in another region which had predominantly white players.
- (5) Black players are as good as white players, in any circumstances and conditions.

***Directions for questions 41 and 42:* The question given below is followed by two statements, I and II. Study the information given in the two statements. Assess whether the statements are sufficient to answer the question and choose the appropriate option among the given choices.**

**Q 41. Is  $a > b$ ?**

**I.  $8 - (a - b)^3$  is a positive number.**

**II.  $4 - (a - b)^2$  is a negative number.**

- (1) The question can be answered by using one of the statements alone, but cannot be answered by using the other statement alone.
- (2) The question can be answered by using either statement alone.
- (3) The question can be answered by using both statements together, but cannot be answered by using either statement alone.
- (4) The question cannot be answered even by using both the statements together.

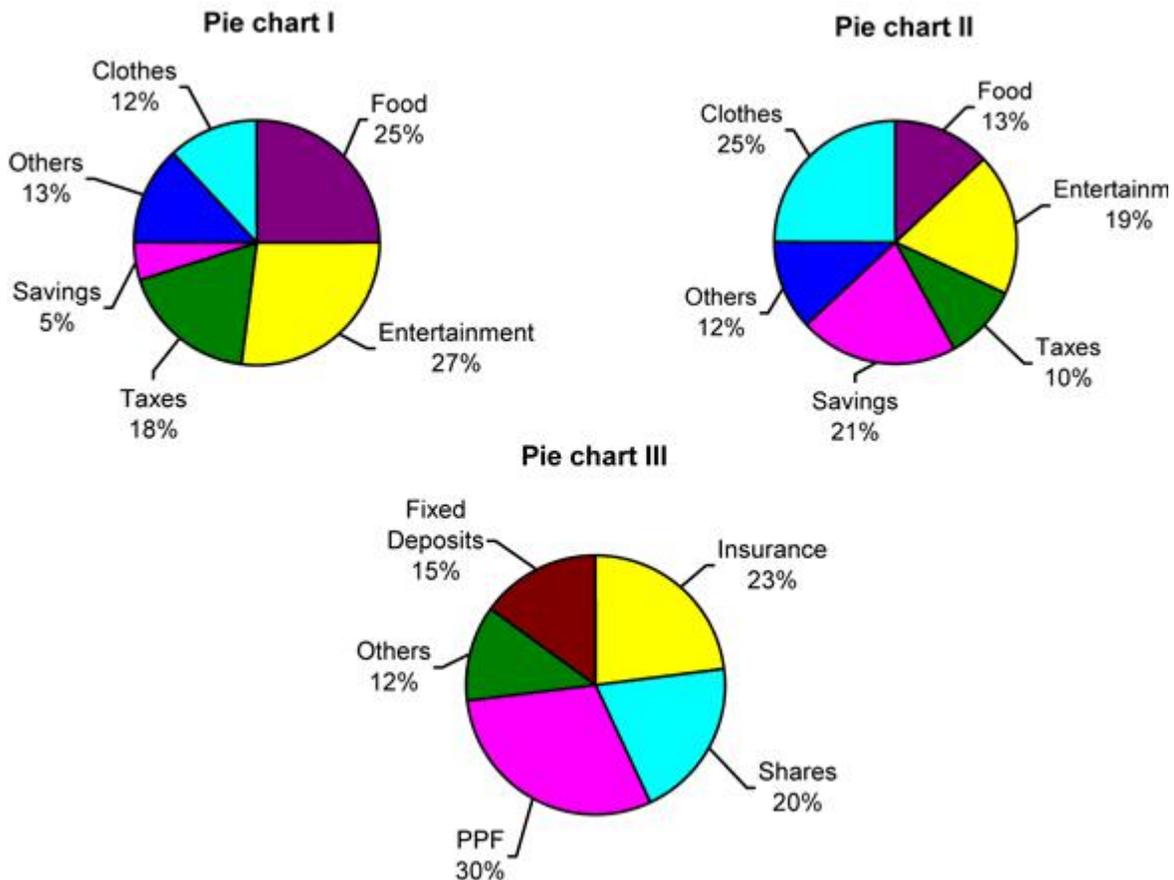
**Q 42. a, b, and c are three distinct integers. Is b the greatest of the three?**

**I. a is less than at least one of the two integers b and c. II. c is less than at least one of the two integers a and b.**

- (1) The question can be answered by using one of the statements alone, but cannot be answered by using the other statement alone.
- (2) The question can be answered by using either statement alone.
- (3) The question can be answered by using both statements together, but cannot be answered by using either statement alone.
- (4) The question cannot be answered even by using both the statements together.

**DIRECTIONS for questions 43 to 46: Answer the questions on the basis of the information given below.**

**Pie chart I and Pie chart II show the break up - according to different expenditure heads and savings - of the incomes of Mr. and Mrs. Anand respectively. Pie chart III shows the break up - according to the type of savings - of the total savings of the couple (i.e., the savings of Mr. and Mrs. Anand put together).**



**Q 43. If Mr. Anand's savings are twice the total savings of the couple invested in fixed deposits, what is the ratio of the income of Mr. Anand to that of Mrs. Anand?**

- (1) 7 : 3
- (2) 3 : 7
- (3) 5 : 9
- (4) 9 : 5
- (5) None of these

**Q 44. If the ratio of the income of Mr. Anand to that of Mrs. Anand is 3 : 1, the total savings of the couple invested in PPF as a percentage of Mr. Anand's savings are**

- (1) 50%
- (2) 65%
- (3) 72%
- (4) 78%
- (5) 70%

**Q 45. If for an income of upto Rs.1 lakh, no tax is charged and for any income above Rs.1 lakh, the rate of tax for males and females is 30% and 20% respectively of the income in excess of Rs.1 lakh, then what is the ratio of the income of Mr. Anand to that of Mrs. Anand?**

- (1) 3 : 4
- (2) 5 : 4
- (3) 4 : 5
- (4) 23 : 22
- (5) None of these

**Q 46. If the expenditure on clothes by Mr. Anand and that by Mrs. Anand are in the ratio 2 : 5, then what is the ratio of the income of Mrs. Anand to that of Mr. Anand?**

- (1) 5 : 6

- (2) 4 : 5
- (3) 5 : 4
- (4) 3 : 5
- (5) None of these

**DIRECTIONS for questions 47 to 50:** Answer the questions on the basis of the information given below.

Each person, out of the 200 people in a certain community, speaks at least one language among English, Spanish and French. 37% of the people speak at least two of the three languages, while 15% of the people speak only Spanish. It was also known that 23% of the people speak English and French, while 20% speak English and Spanish and 12% speak all the three languages.

**Q 47.** If the number of people who speak English is less than that of those who speak French, at least what percentage of the people do not speak English?

- (1) 46.50%
- (2) 41.50%
- (3) 39.50%
- (4) 37.50%
- (5) 42.50%

**Q 48.** If the number of people who speak Spanish is less than that of those who speak English, then at most what percentage of the people speak French but not Spanish?

- (1) 46.50%
- (2) 48.50%
- (3) 53.50%
- (4) 50.50%
- (5) None of these

**Q 49.** If the total number of people who speak English is twice that of those who speak French, what percentage of the people speak English or Spanish?

- (1) 82%
- (2) 84%

- (3) 87%
- (4) 93%
- (5) 91%

**Q 50.** If the number of people who speak French or Spanish is 144. Then what is the ratio of number of people who speak Spanish to that of English?

- (1) 41 : 59
- (2) 59 : 41
- (3) 58 : 41
- (4) 41 : 58
- (5) None of these

**DIRECTIONS for questions 51 to 53:** Answer the questions on the basis of the information given below.

The following table gives the percentage of marks scored by three students - Ramu, Rakesh and Rohan, in five subjects. The maximum mark in two of the five subjects is 50 and the maximum mark in the other subjects is 100. Further, the marks scored by any person in any subject need not be an integer.

Subject	Student		
	Ramu	Rakesh	Rohan
A	80%	84%	52%
B	68%	85%	88%
C	56%	72%	76%
D	92%	63%	60%
E	76%	66%	80%

**Q 51.** If it is known that Rohan had the highest total marks among the three, then how many marks did Ramu score in total?

- (1) 372
- (2) 286
- (3) 284
- (4) 312
- (5) Cannot be determined

**Q 52. If Ramu scored 72% marks in total, then for which two subjects was the maximum mark 50?**

- (1) A and E
- (2) B and D
- (3) A and B
- (4) C and E
- (5) None of these

**Q 53. Which two subjects had the maximum mark as 50, if it is known that Rakesh had the highest total marks among the three?**

- (1) A and E
- (2) B and D
- (3) C and D
- (4) C and B
- (5) Cannot be determined

**DIRECTIONS for questions 54 and 55: Answer the questions on the basis of the information given below.**

**In a Hockey Tournament, exactly three teams participated. Each team played exactly one match with the other two teams. The total number of goals scored by the teams in the three matches played were 9, 7 and 5, not necessarily in any specific order. At the end of the tournament, the teams with the highest, second highest and least number of matches won are declared as the Winner, the Runner-up and the Loser, respectively.**

**In the tournament, the total number of goals scored by the Winner is distinctly the highest and the Loser scored three goals less than the Winner.**

**The average goal difference (the difference between the number of goals scored by the two teams in a match) in the tournament was 1.**

**Q 54. What is the total number of goals scored by the Runner-up in the tournament?**

- (1) 8

- (2) 7
- (3) 6
- (4) 4
- (5) 5

**Q 55.** If the 12<sup>th</sup> goal in the tournament, made during one of the matches, made one of the teams win that match, then it could have been scored by

**I) The Winner over the Loser  
II) The Runner-up over the Loser III) The Winner over the Runner-up**

- (1) Only I or II
- (2) Only II or III
- (3) Only I or III
- (4) Only I
- (5) Cannot be determined

**DIRECTIONS for question 56: Answer the questions independently of each other.**

**Q 56.** Ashok, Akash, Akshay, Amar and Anoop are at a Party and are having a cocktail each. Each cocktail is made using exactly two drinks from among -Whisky, Brandy, Rum, Gin and Vodka. The cocktails are named A, B, C, D and E. Whisky and Vodka cannot be mixed together. Brandy cannot be mixed with Rum or Vodka. Amar takes drinks made only from among Brandy, Rum, Gin and Vodka. Akash's cocktail is made by mixing Whisky and Brandy. Ashok does not take anything containing Whisky, Rum or Vodka. Akash, Ashok and Anoop are having cocktails A, B and C respectively. Cocktails A and E have exactly one drink in common. Only cocktails C and D are made from the same two drinks. The cocktail of Akshay can contain

- (1) Gin and Rum
- (2) Rum and Vodka
- (3) Gin and Whisky
- (4) Gin and Brandy
- (5) None of these

**Directions for questions 57 to 60: Answer the question on the basis of the information given below.**

A company has six production units, seven godowns and nine sales distributors. The production units are PA, PB, PC, PD, PE and PF. The godowns are GA, GB, GC, GD, GE, GF and GG. The sales distributors are SAA, SAB, SAC, SAD, SAE, SAF, SAG, SAH and SAI. Table I gives the cost (in Rs.) of transporting one unit from different production units to the godowns. Table II gives the cost (in Rs.) of transporting one unit from different godowns to the sales distributors.

Table – I

	PA	PB	PC	PD	PE	PF
GA	724.5	471.3	423.7	441.3	461.5	627.5
GB	213.2	507.8	681.3	628.5	628.5	523.4
GC	347.6	347.6	0	492.3	688.5	806.1
GD	310.2	121.3	206.3	687.4	502.3	752.4
GE	934.6	187.6	278.2	921.1	931.6	826.3
GF	543.2	386.5	562.8	858.3	0	296.4
GG	587.6	287.9	478.3	821.4	921.5	478.5

Q 57. What is the least cost (in Rs.) of transporting one unit from any production unit to any sales distributor?

	GA	GB	GC	GD	GE	GF	GG
SAA	421.4	731.5	231.4	761.1	0	648.2	471.4
SAB	436.5	721.3	264.1	703.4	121.3	591.4	402.5
SAC	591.5	703.4	291.3	331.4	191.2	543.4	363.4
SAD	78.6	256.3	273.4	291.6	431.5	481.3	521.3
SAE	231.4	201.4	0	161.5	381.7	406.4	193.4
SAF	323.1	456.5	431.6	253.8	761.8	396.1	281.5
SAG	479.6	231.7	543.4	171.8	639.4	0	234.3
SAH	331.4	161.8	581.4	250.7	941.5	273.4	367.2
SAI	547.0	192.0	381.5	107.5	641.3	196.3	121.5

Q 58. What is the least cost (in Rs.) of transporting one unit from the production unit PD to the sales distributor SAA?

- (1) 921.1
- (2) 862.7
- (3) 723.7
- (4) None of these

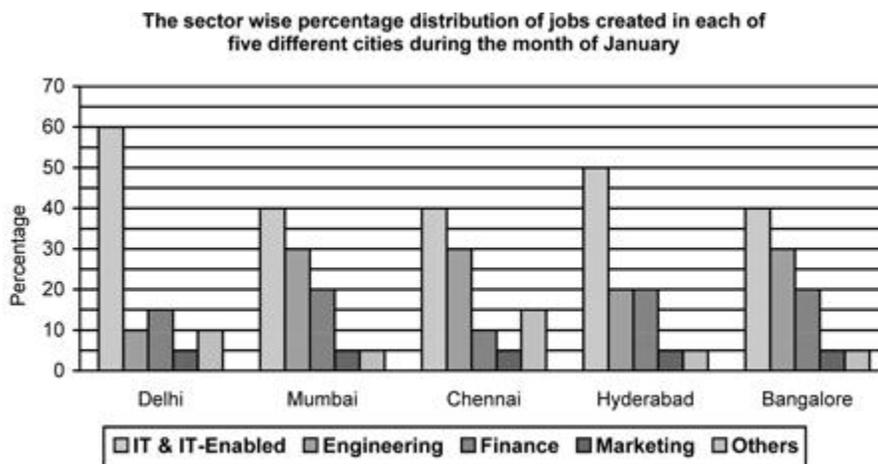
Q 59. How many possible ways are there for transporting the goods from any production unit to any sales distributor?

- (1) 42
- (2) 63
- (3) 105
- (4) 378

Q 60. What is the maximum cost (in Rs.) of transporting one unit from any production unit to any sales distributor?

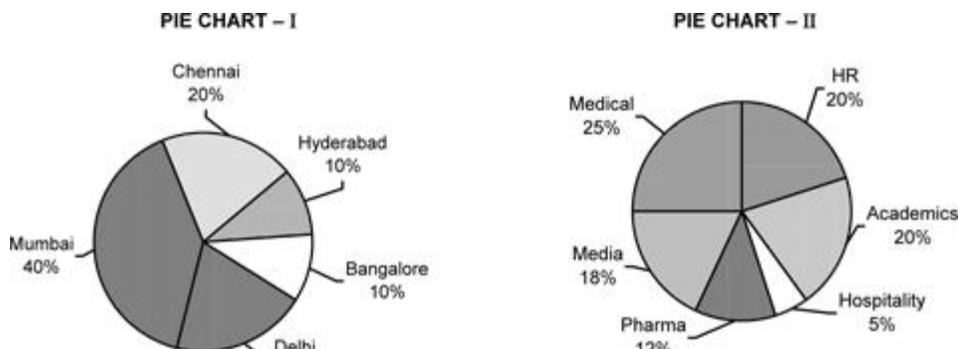
- (1) 1873.1
- (2) 1876.1
- (3) 1861.4
- (4) None of these

**Directions for questions 61 to 64:** Answer the question on the basis of the information given below.



**Note:** The total number of jobs created during the month of January in all the five cities together is 10,000.

The following two pie-charts give further information regarding the total jobs mentioned in the above bar graph. Pie chart - I gives the city wise percentage distribution of the total number of jobs created in the month of January. Pie chart - II gives the sector wise percentage distribution of the total number of jobs created in the "Others" category in the month of January across all the five cities together.



**Q 61.** Considering the five cities, the total number of jobs created in the Pharma sector is what percentage of the total number of jobs created in the Engineering sector?

- (1) 3.84%
- (2) 38.4%
- (3) 0.384%
- (4) None of these

**Q 62. The number of HR jobs created in Mumbai is what percentage more than the number of Media jobs created in Bangalore?**

- (1) 10%
- (2) 25%
- (3) 20%
- (4) Cannot be determined

**Q 63. The difference between the total number of Finance jobs and Marketing jobs created in all the five cities together is**

- (1) 1200
- (2) 1000
- (3) 2500
- (4) 2000

**Q 64. The total number of Hospitality jobs created in all the five cities together is what percentage of the total number of jobs created in Hyderabad?**

- (1) 4%
- (2) 0.25%
- (3) 40%
- (4) 25%

**Directions for questions 65 and 66: Answer the question independently of the other questions.**

**Q 65. A dealer purchased a total of 60 pairs of coloured and white shoes, all either Reebok shoes or Adidas shoes. The dealer arranged these pairs of shoes by different categories and found the following. The number of pairs of white casual Adidas shoes is a two-digit positive number. The number of pairs of white casual Adidas shoes equals the**

number of pairs of white casual Reebok shoes. All non-white Adidas shoes were formals and there are four times as many of them as there are white formal Adidas shoes. There are no casual Reebok shoes that are not white. There are exactly 10 pairs of white formal Reebok shoes. There are exactly 20 pairs of Reebok shoes that are neither casuals nor white coloured. Find the number of white formal Adidas shoes.

- (1) 2
- (2) 4
- (3) 10
- (4) 20

**Q 66.** Four officers, designated as CEO, COO, CFO, and CIO, read a certain number of newspapers early in the morning. One of them reads four newspapers, another reads three newspapers, the third reads two newspapers while the fourth one reads one newspaper. Below are some additional facts regarding the names of these officers.

- Michael isn't the CFO.
- John is the CIO.
- Michael isn't the CEO and he reads more number of newspapers than Patterson.
- The one who is the CEO reads more number of newspapers than Patterson.
- The person who is the COO reads the maximum number of newspapers.
- Anderson doesn't read two newspapers.

**Which of the following statements is necessarily true?**

- (1) John is the CIO and reads 2 newspapers.
- (2) Patterson is the CFO and reads 1 newspaper.
- (3) Anderson is the CEO and reads 3 newspapers.
- Michael is the CFO and reads 4 newspapers.