

CAT 2016 DILR Slot 1 Question Paper

Time Allowed :3 Hours	Maximum Marks :300	Total questions :100
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General Instructions

Read the following instructions very carefully and strictly follow them:

- 1. Duration of Section:** 40 Minutes
- 2. Total Number of Questions:** 22 Questions (as per latest pattern, may vary slightly)
- 3. Section Covered:** Quantitative Aptitude (QA)
- 4. Type of Questions:**
 - Multiple Choice Questions (MCQs)
 - Type In The Answer (TITA) Questions – No options given, answer to be typed in
- 5. Marking Scheme:**
 - +3 marks for each correct answer
 - -1 mark for each incorrect MCQ
 - No negative marking for TITA questions
- 6. Syllabus Coverage:** Arithmetic, Algebra, Geometry, Number System, Modern Math, and Mensuration
- 7. Skills Tested:** Numerical ability, analytical thinking, and problem-solving

Passage: Q1 - Q4

Recently, the answers of a test held nationwide were leaked to a group of unscrupulous people. The investigative agency has arrested the mastermind and nine other people A, B, C, D, E, F, G, H and I in this matter. Interrogating them, the following facts have been obtained regarding their operation. Initially the mastermind obtains the correct answer-key. All the others create their answer-key from one or two people who already possess the same. These people are called his/her “sources”. If the person has two sources, then he/she compares the answer keys obtained from both sources. If the key to a question from both sources is identical, it is copied, otherwise it is left blank. If the person has only one source, he/she copies the source’s answers into his/her copy. Finally, each person compulsorily replaces one of the answers (not a blank one) with a wrong answer in his/her answer key. The paper contained 200 questions; so the investigative agency has ruled out the possibility of two or more of them introducing wrong answers to the same question. The investigative agency has a copy of the correct answer key and has tabulated the following data. These data represent question numbers.

Name	Wrong Answer (s)	Blank Answer (s)
A	46	---
B	96	46, 90, 25
C	27, 56	17, 46, 90
D	17	---
E	46, 90	---
F	14, 46	92, 90
G	25	---
H	46, 92	---
I	27	17, 26, 90

1. Which one among the following must have two sources?

- (A) A
- (B) B
- (C) C
- (D) D

2. How many people (excluding the mastermind) needed to make answer keys before C could make his answer key?

- (A) 2

- (B) 3
 - (C) 4
 - (D) 5
-

3. Both G and H were sources to

- (A) F
 - (B) B
 - (C) I
 - (D) None of the nine
-

4. Which of the following statements is true?

- (A) C introduced the wrong answer to question 27
 - (B) E introduced the wrong answer to question 46
 - (C) F introduced the wrong answer to question 54
 - (D) H introduced the wrong answer to question 46
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The table below gives information about four different crops, their different quality categories, and the regions where they are cultivated. Based on the information given, answer the questions given below.

Type of Crops with Quality and Region

Crop-1 ⇒ **High:** R1, R2, R3, R4, R5 **Medium:** R6, R7, R8 **Low:** R9, R10, R11

Crop-2 ⇒ **High:** R5, R8, R12 **Medium:** R9, R13 **Low:** R6

Crop-3 ⇒ **High:** R2, R6, R7, R13 **Medium:** R3, R9, R11 **Low:** R1, R4

Crop-4 ⇒ **High:** R3, R10, R11 **Medium:** R1, R2, R4 **Low:** R5, R9

5. How many regions produce medium qualities of Crop 1 or Crop 2 or Crop 3 or Crop 4 or all of them?

6. Which of the following statements is true?

- (A) All medium quality Crop 2 producing regions are also high quality Crop 2 producing regions

- (B) All high quality Crop 2 producing regions are also medium quality Crop 2 producing regions
- (C) There are quality free Crop 3 producing regions, which also produce Crop 2 but not Crop 2
- (D) There are quality free Crop 4 producing Crop 3, and high quality Crop 2

7. How many low quality Crop 3 producing regions are either high quality Crop 3 producing regions or medium quality Crop 3 producing regions?

8. How many high quality Crop 4 producing regions are there?

Passage: Q9 - Q12

A study was conducted to ascertain the relative importance that employees in five different countries assigned to five different traits in their Chief Executive Officers. The traits were compassion (C), decisiveness (D), negotiation skills (N), public visibility (P), and vision (V). The level of dissimilarity between two countries is the maximum difference in the ranks allotted by the two countries to any of the five traits. The following table indicates the rank order of the five traits for each country.

Rank	India	China	Japan	Malaysia	Thailand
1	C	N	D	V	V
2	P	C	N	D	C
3	N	P	C	P	N
4	V	D	V	C	P
5	D	V	P	N	D

9. Three of the following four pairs of countries have identical levels of dissimilarity.

Which pair is the odd one out?

- (A) Malaysia & China
- (B) China & Thailand
- (C) Japan & Japan
- (D) Japan & Malaysia

10. Which amongst the following countries is most dissimilar to India?

- (A) China
 - (B) Japan
 - (C) Malaysia
 - (D) Thailand
-

11. Which of the following countries is least dissimilar to India?

12. Which of the following pairs of countries are most dissimilar?

- (A) China & Japan
 - (B) India & China
 - (C) Malaysia & Japan
 - (D) Thailand & Japan
-

Passage: Q13 - Q16

Purana and Naya are two brands of kitchen mixer-grinders available in the local market. Purana is an old brand that was introduced in 1990, while Naya was introduced in 1997. For both these brands, 20 particular year are disposed off as junk exactly two years later. It is known that 10 Purana mixer-grinders were disposed off in 1997. The following figures show the number of Purana and Naya mixer-grinders in operation from 1995 to 2000, as at the end of the year.

	1995	1996	1997	1998	1999	2000
Purana	120	162	182	222	236	236
Naya	0	0	30	80	124	134

13. How many Naya mixer-grinders were disposed off by the end of 2000?

14. How many Naya mixer-grinders were purchased in 1999?

15. How many Purana mixer-grinders were purchased in 1999?

16. How many Purana mixer-grinders were disposed off in 2000?

Passage: Q17 - Q20

The year was 2006. All six teams in Pool A of World Cup hockey, play each other exactly once. Each win earns a team three points, a draw earns one point and a loss earns zero points. The two teams with the highest points qualify for the semi-finals. In case of a tie, the team with the highest goal difference (Goal For – Goals Against) qualifies.

In the opening match, Spain lost to Germany. After the second round (after each team played two matches), the pool table looked as shown below and no match was a draw.

Teams	Games Played	Won	Goals For	Goals Against	Point
Germany	2	2	3	1	6
Argentina	2	2	2	0	6
Spain	2	1	5	2	3
Pakistan	2	1	2	1	3
New Zealand	2	0	1	6	0
South Africa	2	0	1	4	0

In the third round, Spain played Pakistan, Argentina played Germany, and New Zealand played South Africa. All the third round matches were drawn. The following are some results from the fourth and fifth round matches.

- (a) Spain won both the fourth and fifth round matches.
- (b) Both Argentina and Germany won their fifth round matches by 3 goals to 0.
- (c) Pakistan won both the fourth and fifth round matches by 1 goal to 0.

17. Which one of the following statements is true about matches played in the first two rounds?

- (A) Germany beat Pakistan by 2 goals to 1
- (B) Argentina beat Pakistan by 2 goals to 0
- (C) Germany beat Pakistan by 2 goals to 1
- (D) Argentina beat Pakistan by 2 goals to 1

18. Which one of the following statements is true about matches played in the first two rounds?

- (A) Spain beat Germany by 2 goals to 0
- (B) Spain beat New Zealand by 2 goals to 0

- (C) Spain beat South Africa by 2 goals to 0
 - (D) Spain beat New Zealand by 2 goals to 1
-

19. If Pakistan qualified as one of the two teams from Pool A, which was the other team that qualified?

- (A) Argentina
 - (B) Germany
 - (C) Spain
 - (D) Cannot be determined
-

20. Which team finished at the top of the pool after five rounds of matches?

- (A) Argentina
 - (B) Germany
 - (C) Spain
 - (D) Cannot be determined
-

Passage: Q21 - Q24

Venkat, a stockbroker, invested a part of his money in the stock of four companies - A, B, C and D. Each of these companies belonged to different industries, viz., Cement, Information Technology (IT), Auto, and Steel, in no particular order. At the time of investment, the price of each stock was Rs.100. Venkat purchased only one stock of each of these companies. He was expecting returns of 20 percent, 10 percent, 30 percent, and 40 percent from the stock of companies A, B, C and D, respectively. Returns are defined as the change in the value of the stock after one year, expressed as a percentage of the initial value. During the year, two of these companies announced extraordinarily good results. One of these two companies belonged to the Cement or the IT industry, while the other one belonged to either the Steel or the Auto industry. As a result, the returns on the stocks of these two companies were higher than the initially expected returns. For the company belonging to the Cement or the IT industry with extraordinarily good results, the returns were twice that of the initially expected returns. For the company belonging to the Steel or the Auto industry, the returns on announcement of extraordinarily good results were only one and a half times that of the

initially expected returns. For the remaining two companies, which did not announce extraordinarily good results, the returns realized during the year were the same as initially expected.

21. What is the minimum average return Venkat would have earned during the year?

- (A) 30%
 - (B) 31.25%
 - (C) 32.5%
 - (D) Cannot be determined
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22. If Venkat earned a 35% return on average during the year, then which of these statements would necessarily be true?

- I. Company A belonged either to Auto or to Steel Industry.
 - II. Company B did not announce extraordinarily good results.
 - III. Company D did not announce extraordinarily good results.
 - IV. Company C announced extraordinarily good results.
- (A) I and II only
 - (B) II and III only
 - (C) I and IV only
 - (D) II and IV only
-

23. If Venkat earned a 38.75% return on average during the year, then which of these statement(s) would necessarily be true?

- I. Company C belonged either to Auto or to Steel Industry.
 - II. Company A announced extraordinarily good results.
 - III. Company B did not announce extraordinarily good results.
 - IV. Company D announced extraordinarily good results.
- (A) I and II only
 - (B) II and III only
 - (C) I and III only
 - (D) III and IV only
-

24. If Company C belonged to the Cement or the IT industry and did announce extraordinarily good results, then which of these statement(s) would necessarily be true?

I. Venkat earned not more than 36.25% return on average. II. Venkat earned 33.75% return on average.

III. If Venkat earned extraordinarily good results.

IV. If Venkat earned 33.75% return on average, Company A belonged either to Auto or to Steel Industry.

(A) I only

(B) II and IV only

(C) I and III only

(D) III and IV only

Passage: Q25 - Q28

The year is 2089. Beijing, London, New York, and Paris are in contention to host the 2096 Olympics. The eventual winner is determined through several rounds of voting by members of the IOC with each member representing a different city. All the four cities in contention are also represented in IOC. In any round of voting, the city receiving the lowest number of votes in that round gets eliminated. The survivor after the last round of voting gets to host the event. A member is allowed to cast votes for at most two different cities in all rounds of voting combined. (Hence, a member becomes ineligible to cast a vote in a given round if both the cities (s)he voted for in earlier rounds are out of contention in that round of voting). A member is also ineligible to cast a vote in a round if the city (s)he represents is in contention in that round of voting. As long as the member is eligible, (s)he must vote and vote for only one candidate city in any round of voting. The following incomplete table shows the information on cities that received the maximum and minimum votes in different rounds, the number of votes cast in their favour, and the total votes that were cast in those rounds.

Round	Total votes cast	Maximum votes cast		Eliminated	
		City	No. of votes	City	No. of votes
1		London	30	New York	12
2	83	Paris	32	Beijing	21
3	75				

It is also known that: All those who voted for London and Paris in round 1, continued to vote for the same cities in subsequent rounds as long as these cities were in contention. 75 percent of those who voted for Beijing in round 1, voted for Beijing in round 2 as well. Those who voted for New York in round 1, voted either for Beijing or Paris in round 2. The difference in votes cast for the two contending cities in the last round was 1. 50 percent of those who voted for Beijing in round 1, voted for Paris in round 3.

25. What percentage of members from among those who voted for New York in round 1, voted for Beijing in round 2?

- (A) 33.33
- (B) 50
- (C) 66067
- (D) 75

26. What is the number of votes cast for Paris in round 1?

- (A) 16
- (B) 18
- (C) 22
- (D) 24

27. What percentage of members from among those who voted for Beijing in round 2 and were eligible to vote in round 3, voted for London?

- (A) 33.33
- (B) 38.10
- (C) 50
- (D) 66067

28. Which of the following statements must be true? a. IOC member from New York must have voted for Paris in round 2. b. IOC member from Beijing voted for London in round 3.

- (A) Only a
- (B) Only b
- (C) Both a and b
- (D) Neither a nor b

Passage: Q29 - Q32

The table below presents the revenue (in million rupees) of four firms in three states. These firms, Honest Ltd., Aggressive Ltd., Truthful Ltd. and Profitable Ltd. are disguised in the table as A, B, C and D, in no particular order.

States	Firm A	Firm B	Firm C	Firm D
UP	49	82	80	55
Bihar	69	72	70	65
MP	72	63	72	65

Further, it is known that: In the state of MP, Truthful Ltd. has the highest market share.

Aggressive Ltd.'s aggregate revenue differs from Honest Ltd.'s by Rs. 5 million.

29. What percentage of members from among those who voted for Beijing in round 1 and were eligible to vote in round 3, voted for London?

- (A) 33.33
- (B) 50
- (C) 66.67
- (D) 75

30. What is the number of votes cast for Paris in round 1?

- (A) 16
- (B) 18
- (C) 22
- (D) 24

31. What percentage of members from among those who voted for Beijing in round 1 and were eligible to vote in round 3, voted for London?

- (A) 33.33
- (B) 38.33
- (C) 50
- (D) 60.67

32. Which of the following statements must be true? a. IOC member from New York must have voted for Paris in round 2. b. IOC member from Beijing voted for London in round 3.

- (A) Only a
 - (B) Only b
 - (C) Both a and b
 - (D) Neither a nor b
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