

Mock Test 8

Logical Reasoning & Data Interpretation LRDI Set-8

Set 1: Omega-Particle Puzzles (Questions 1–5)

While roaming an exo-planet, we have encountered a set of mysterious particles with a charge associated with them. The charge can be any integer.

We observe that there are n such particles in a straight line, and they display the following properties:

1. When we touch a particle that is not at the ends, it disappears, and the two adjacent particles combine to form a single particle with a charge equal to the sum of their charges.
2. When we touch a particle on either end, it simply disappears.

The objective is to perform operations in such a way that exactly one particle remains – called the **Omega-Particle** – and its charge is **maximized** (numerically, not in absolute value).

Question 1.

Suppose the set of mysterious particles we encounter is:

(5, 2, 7, 4, 3, 1)

Find the charge of the Omega-Particle.

Question 2.

Suppose the set of mysterious particles we encounter is:

(-6, 1, 4, -1, 5, -7)

Find the charge of the Omega-Particle.

Question 3.

We come across a set of mysterious particles where the charge of all the particles is negative:

(-4, -2, -3, -6, -11, -7)

Find the charge of the Omega-Particle.

- A. -4
 - B. -2
 - C. 0
 - D. -1
-

Question 4.

After exploring the planet thoroughly, we come across a long chain of these mysterious particles of size n , which follow a specific pattern. The magnitude of charges is from 1 to n in that order. The signs follow this pattern:

- 1st and 2nd particles: positive
- 3rd and 4th: negative
- 5th and 6th: positive
- 7th and 8th: negative
- ...and so on.

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Find the charge of the Omega-Particle if $n = 20$.

Question 5.

Now, we come across the same set of mysterious particles as in the previous question, but this time, the signs alternate between positive and negative, starting with a **positive** sign for the 1st particle.

Find the charge of the Omega-Particle if $n = 20$.

Set 2: Sports Puzzle – Time, Person, Sport & Colour (Questions 6–10)

Seven persons – **P, Q, R, S, T, U, and V** – represent their nations in seven different sports: **Badminton, Hockey, Volleyball, Football, Tennis, Kabaddi, and Sprinting**.

They arrive at **ABC Stadium in Mumbai** for their practice in **different time slots**. Each one wears a **different colour of sports shoes**. The sports administrator records the following practice details:

Recorded Time Slots:

1. The person who plays **Hockey** reaches the ground at **7:00 PM**.
2. The person who plays **Badminton** arrives at **9:00 PM**, and the **Kabaddi** player arrives at **6:00 PM**.
3. The **Football** player arrives at **3:00 PM**, and the **Tennis** player at **8:00 PM**.
4. The **Volleyball** player arrives at **5:00 PM**, and the **Sprinter** at **4:00 PM**.

*Note: The sports administrator might have recorded the wrong timings for **at most four** players.*

Additional Information (All statements are true):

- I. **V** doesn't arrive at **4:00 PM**, and the **Hockey** player wears **blue** sports shoes.
 - II. **T** did not arrive at **9:00 PM**, and **P** did not wear **yellow** shoes.
 - III. **U** plays **Tennis**, his details are correctly recorded, and he wears **orange** shoes.
 - IV. **R**, who plays **Volleyball**, arrives at **7:00 PM**, and **V** wears **green** shoes.
 - V. **T**, who plays **Badminton**, wears **red** shoes. One person wears **black** shoes.
 - VI. The details of **P** are correctly recorded, and **V** does **Sprinting**.
 - VII. **U** didn't wear **white** shoes, and **S** plays **Football**.
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Question 6.

How many people's details were correctly recorded by the administrator?

- A. 3
 - B. 4
 - C. 3 or 4
 - D. 5
-

Question 7.

Who plays Kabaddi?

- A. Q
- B. P
- C. P or Q
- D. V

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Question 8.

How many valid arrangements of people, sports, times, and shoe colours are possible?

Question 9.

If the person who plays **Hockey** reaches the ground at **4:00 PM**, how many arrangements are possible?

- A. 3
- B. 4
- C. 5
- D. 6

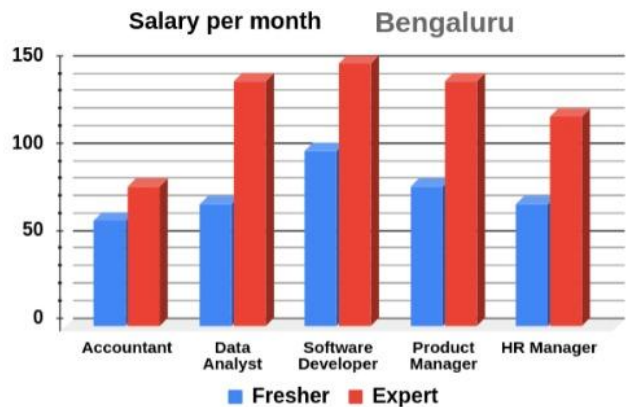
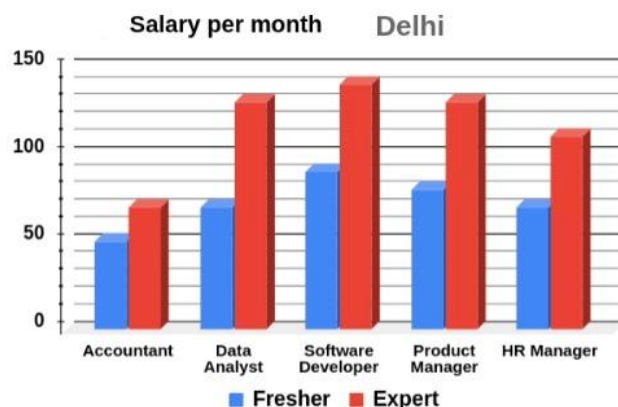
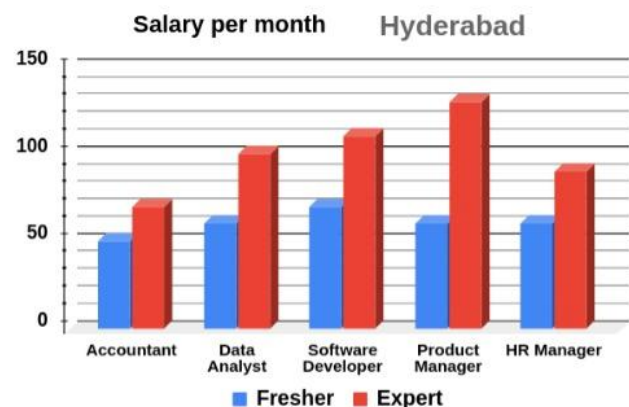
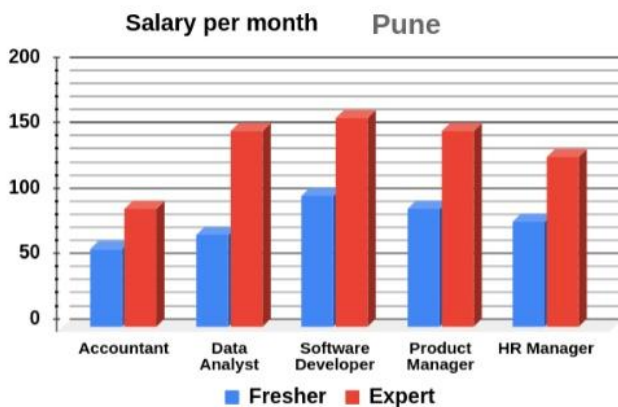
Question 10.

If the person who plays **Kabaddi** wears **white** sports shoes, how many arrangements are possible?

Set 3: Data Interpretation – Salary Survey

A survey is conducted across multiple cities to gather data on salaries for various job profiles. The collected information is represented in the charts below, displaying the monthly salaries in thousands for different job profiles such as Accountant, Data Analyst, Software Developer, Product Manager, and HR Manager.

Charts include data from four cities: Hyderabad, Bengaluru, Pune, and Delhi. It distinguishes between two types of salaries: one for freshers and another for experienced professionals.



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Question 11:

What is the ratio of the average salary of expert software developers to the average salary of fresher-level data analysts across all cities?

- A) 29:59
 - B) 59:29
 - C) 56:27
 - D) 27:56
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Question 12:

For which of the following cities is the percentage increase in salary after experience the lowest for the software developer role?

- A) Pune
 - B) Bengaluru
 - C) Hyderabad
 - D) Delhi
-

Question 13:

For how many job profiles is the percentage increase in salary after experience more than 60% but less than 70% in both Pune and Delhi?

- A) 0
 - B) 1
 - C) 2
 - D) 3
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Question 14:

Which of the following is true for experts when compared with freshers?

- A) The percentage increase in the salary of software developer experts in Delhi is lesser than that of Bengaluru.
 - B) The percentage increase in the salary of data analyst experts in Hyderabad is greater than that of Pune.
 - C) The percentage increase in the salary of product manager experts in Pune is greater than that of Delhi.
 - D) The percentage increase in the salary of HR Manager experts in Pune is same as that of Delhi.
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Set 4: Logical Reasoning – IPL Supporters Puzzle

Eight cricket enthusiast individuals, each supporting a different IPL team: Kolkata Knight Riders (KKR), Sunrisers Hyderabad (SRH), Chennai Super Kings (CSK), Mumbai Indians (MI), Rajasthan Royals (RR), Delhi Capitals (DC), Royal Challengers Bangalore (RCB), and Gujarat Titans (GT), are seated around a circular table to discuss their favourite teams and ongoing IPL matches.

Each person hails from a different place: Kolkata, Rajasthan, Chennai, Bengaluru, Mumbai, Hyderabad, Delhi, and Gujarat. They are seated clockwise in the ranking order 1 to 8, facing each other. Each individual supports a team that is not from his place.

The seating follows these rules:

1. The supporter of DC is seated opposite the person from Gujarat.

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2. The supporter of RCB is sitting next to a person from Mumbai.
 3. The supporter of RR is from Kolkata and the person seated to his immediate left is from Hyderabad.
 4. The supporters of KKR and RCB are seated at odd-numbered positions.
 5. The supporter of MI is sitting between the supporters of CSK and SRH.
 6. There are two people seated between the supporter of GT and the supporter from Chennai.
 7. The supporter of SRH is seated to the immediate left of the person from Delhi and fourth to the right of the person from Kolkata.
 8. People from Rajasthan and Bengaluru are seated opposite each other.
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Question 15:

What is the sum of all possible positions of the supporter of CSK in the given circular arrangement?

- A) 16
 - B) 18
 - C) 20
 - D) 22
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Question 16:

Which of the following statements is true?

- A) The supporter of SRH is from Gujarat.
 - B) The person from Hyderabad is supporting MI.
 - C) The supporter of KKR is sitting third to the right of the supporter of GT.
 - D) The person from Mumbai is sitting opposite the supporter from Hyderabad.
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Question 17:

Who is sitting at position 7 if it is given that the supporter of KKR is positioned at 3?

- A) The person from Delhi
 - B) The person from Mumbai
 - C) The person from Rajasthan
 - D) The supporter of GT
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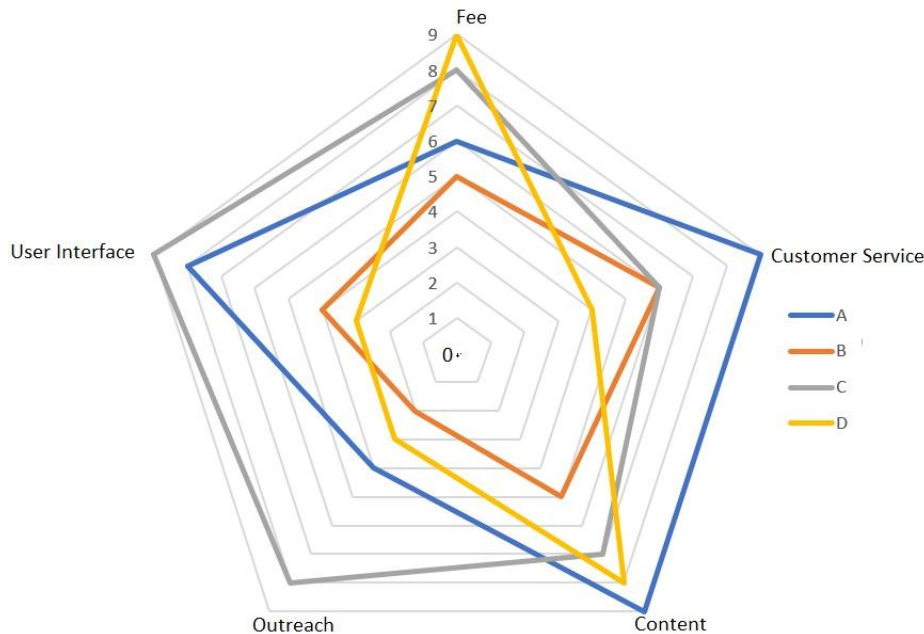
Question 18:

How many total arrangements are possible for the given set?

- A) 4
 - B) 6
 - C) 8
 - D) 10
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Four prominent Ed-tech companies are rated on the basis of 5 parameters: Fee, Customer Service, Content, Outreach and User Interface. The information about the corresponding ratings of the companies is intentionally missing.



It is further known that:

1. The sum of ratings of Myru and Haruku in Fee is 14.
2. The sum of ratings of Rakantu is the lowest.
3. In Content, the rating of Myru is greater than that of Xombee.

Question 19:

The average score of the top 3 companies in the respective parameters is highest for which of the following parameters?

- A) Fee
- B) Customer Service
- C) Content
- D) User Interface

Question 20:

Which company has the highest total rating for all the parameters?

- A) Myru
- B) Haruku
- C) Rakantu
- D) Xombee

Question 21:

Pick the correct order of ratings in User Interface.

- A) Haruku > Myru > Rakantu > Xombee
- B) Myru > Rakantu > Xombee > Haruku

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- C) Haruku > Rakantu > Myru > Xombee
D) Xombee > Haruku > Rakantu > Myru
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Question 22:

What is the sum of ratings of Rakantu?

- A) 20
B) 21
C) 22
D) 23
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My College Route

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Answer Key

1. 15
2. 9
3. (d) -1
4. 50
5. 100
6. (a) 3
7. (b) P
8. 9
9. (a) 3
10. 6
11. (b) 59:29
12. (d) Delhi
13. (b) 1
14. (a) The percentage increase in the salary of software developer experts in Delhi is lesser than that of Bengaluru.
15. (c) 20
16. (c) The supporter of KKR is sitting third to the right of the supporter of GT.
17. (b) The person from Mumbai
18. (c) 8
19. (c) Content
20. (a) Myru
21. (c) Haruku > Rakantu > Myru > Xombee
22. (b) 21