**1.4 COMPLEX ARRANGEMENT**

**Introduction to the Topic**

The questions of this type aim to measure a candidate’s ability to understand, visualize and draw conclusions from a system of complex relationships. These questions stress on use of analytical and lateral thinking for finding the answers.

The most important point in complex arrangement is to understand the given data/statements and draw a table illustrating all the given points.

**Relevance in CAT**

The questions of this particular topic are again commonly asked questions in CAT examination. The difference here comes in level of difficulty as many of these are not only difficult but extremely difficult as well. Sometimes these questions requires a lot of time to get solved.

These questions if seem to be extremely difficult or require a considerable time in the actual examination, a better choice will be to leave the set and move ahead instead of spending time on 1 particular set.

**Different Approaches of Complex Arrangements**

Now we will discuss the various methods to draw a matrix/table. Let us take an example with help of which we will draw the matrix.

There are 6 friends with each of them having a different hobby out of – Clay Molding, Art, Photography, Stamp Collection, Gardening and Craft. They have own cars of white, green, black, red and brown colours with 2 of the friends having a car of white colour. The friends stay on 6 different floor of the same building viz. – 2nd, 3rd, 4th, 5th, 6th and 7th.

Following information is also known:

I. The friend who has hobby as Art has a white coloured car and doesn’t live on either 4th or 5th floor.

II. The friend with green car and the friend with Craft as the hobby don’t stay on 7th and 6th floors respectively.

III. The friend having photography as the hobby doesn’t own a car of either green or black or brown colour.

IV. One of the friends who own a white car lives on the 5th floor.

V. The Photographer, the Stamp Collector and the Clay Molder stay on 4th, 7th and 3rd floors respectively.

VI. The friend who stays on 6th floor owns a brown car.

The above example is a problem where three different attributes are given. We can fix one of the attributes and then match the other 2 attributes on basis of the information given.

Here we are required to match correctly the hobbies with the colour of cars and the floor on which they reside.

For e.g., Our parameters here are:

**Hobby** –– **Colour of Car** –– **Floor**

**Method I: The Matrix Method**

We will start by analyzing the number of attributes of each type. In this particular problem there are 6 values in each of the attributes. We will now put the attributes in a matrix. The row's of the matrix will contain the attribute which we have fixed. The coloumn's will contain the other 2 attributes.

Generally, the attributes with the most information is fixed. In this case we will fix 'Hobby' as it has the most information available.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Colour of Car** | | | | | | **Floor** | | | | | |
| **Hobby** | White | White | Green | Black | Red | Brown | 2nd | 3rd | 4th | 5th | 6th | 7th |
| Clay |  |  |  |  |  |  |  |  |  |  |  |  |
| Art |  |  |  |  |  |  |  |  |  |  |  |  |
| Photography |  |  |  |  |  |  |  |  |  |  |  |  |
| Stamp |  |  |  |  |  |  |  |  |  |  |  |  |
| Gardening |  |  |  |  |  |  |  |  |  |  |  |  |
| Craft |  |  |  |  |  |  |  |  |  |  |  |  |

Using the given information, we put a cross or right in the respective blocks. Using condition (I) and (II), since the Artist owns a white car, the corresponding box is ticked and all other boxes in the corresponding row and column are crossed. Also the corresponding blocks of 4th and 5th floors are crossed.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Colour of Car** | | | | | | **Floor** | | | | | |
| **Hobby** | White | White | Green | Black | Red | Brown | 2nd | 3rd | 4th | 5th | 6th | 7th |
| Clay | × |  |  |  |  |  |  |  |  |  |  |  |
| Art | ✓ | × | × | × | × | × |  |  | × | × |  |  |
| Photography | × |  |  |  |  |  |  |  |  |  |  |  |
| Stamp | × |  |  |  |  |  |  |  |  |  |  |  |
| Gardening | × |  |  |  |  |  |  |  |  |  |  |  |
| Craft | × |  |  |  |  |  |  |  |  |  | × |  |

Using condition (III) we get,

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Colour of Car** | | | | | | **Floor** | | | | | |
| **Hobby** | White | White | Green | Black | Red | Brown | 2nd | 3rd | 4th | 5th | 6th | 7th |
| Clay | × |  |  |  |  |  |  |  |  |  |  |  |
| Art | ✓ | × | × | × | × | × |  |  | × | × |  |  |
| Photography | × |  | × | × |  | × |  |  |  |  |  |  |
| Stamp | × |  |  |  |  |  |  |  |  |  |  |  |
| Gardening | × |  |  |  |  |  |  |  |  |  |  |  |
| Craft | × |  |  |  |  |  |  |  |  |  | × |  |

Using condition (V) we get,

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Colour of Car** | | | | | | **Floor** | | | | | |
| **Hobby** | White | White | Green | Black | Red | Brown | 2nd | 3rd | 4th | 5th | 6th | 7th |
| Clay | × |  |  |  |  |  | × | ✓ | × | × | × | × |
| Art | ✓ | × | × | × | × | × |  | × | × | × |  | × |
| Photography | × |  | × | × |  | × | × | × | ✓ | × | × | × |
| Stamp | × |  |  |  |  |  | × | × | × | × | × | ✓ |
| Gardening | × |  |  |  |  |  |  | × | × |  |  | × |
| Craft | × |  |  |  |  |  |  | × | × |  | × | × |

Now, using condition (II) and (V), the owner of green car cannot live on the 7th floor but stamp collector lives there, so the stamp collector doesn’t own a green car. The 2nd friend with white car live on the 5th floor thus he cannot be the clay molder, artist, photographer or stamp collector as they don’t live on the 5th floor. The owner of brown car lives on the 6th floor so the artist and photographer doesn’t own a brown car as they don’t live on the 6th floor.

After striking out the corresponding blocks, we are only left with the option of the Gardener who stays on the 6th floor hence the brown car is owned by the gardener and the owner of the second white car is craftsman. This will leave the only option for owner of the green car to be the clay molder.

Now from the remaining options, black car is owned by the stamp collector and photographer will own the red car. Hence, we get the complete matrix with help of which questions can be answered.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Colour of Car** | | | | | | **Floor** | | | | | |
| **Hobby** | White | White | Green | Black | Red | Brown | 2nd | 3rd | 4th | 5th | 6th | 7th |
| Clay | × | × | ✓ | × | × | × | × | ✓ | × | × | × | × |
| Art | ✓ | × | × | × | × | × | ✓ | × | × | × | × | × |
| Photography | × | × | × | × | ✓ | × | × | × | ✓ | × | × | × |
| Stamp | × | × | × | ✓ | × | × | × | × | × | × | × | ✓ |
| Gardening | × | × | × | × | × | ✓ | × | × | × | × | ✓ | × |
| Craft | × | ✓ | × | × | × | × | × | × | × | ✓ | × | × |

**Some Important Points About Matrix**

● Fix a particular attributes.

● Attribute with most information is fixed.

● Fixed attribute in rows.

● Other attribute in columns.

● Tick and Cross on basis of information.

**Method II: The Table Method**

This method requires less space and is simpler as compared to the matrix method. The method involves drawing a table and putting the attributes in top row. In this case the top row is occupied with Hobby, Colour of Car and Floor.

The other rows are filled with the values of these attributes by using the information given the table will be:

|  |  |  |
| --- | --- | --- |
| **Hobby** | **Colour of Car** | **Floor** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

In this method also we will fix one of the attributes and it will be the one with most information. So, we fix the 'Hobby' and put all the values of hobby in the table. Now, by using the information given we will fill the other cells of the table.

Using condition (I), (II), (III) and (V) we get,

|  |  |  |  |
| --- | --- | --- | --- |
| **Hobby** | **Colour of Car** | **Floors** | **Values that cannot be** |
| Art | White |  | 4th, 5th |
| Clay Molding |  | 3rd |  |
| Photography |  | 4th | Green, black, brown |
| Stamp Collection |  | 7th | Green |
| Gardening |  |  |  |
| Craft |  |  | 6th |

On the right hand side of the matrix, there is a column saying “Values that cannot be”, in this column we will put the particular vaules that cannot be associated with the fixed attribute.

Using condition (IV) and (VI), only possibility for placing the brown car + 6th floor and white car + 5th floor is with the Gardener or the Craftsman. But the Craftsman does not live on 6th floor thus it should be associated with the owner of white car who lives on 5th floor and the Gardener is associated with brown car.

Hence we get,

|  |  |  |  |
| --- | --- | --- | --- |
| **Hobby** | **Colour of Car** | **Floors** | **Values that cannot be** |
| Art | White |  | 4th, 5th |
| Clay Molding |  | 3rd |  |
| Photography |  | 4th | Green, black, brown |
| Stamp Collection |  | 7th | Green |
| Gardening | Brown | 6th |  |
| Craft | White | 5th | 6th |

Now, the Photographer and Stamp collector cannot own a green car. Thus the only option left for green car is to be owned by the clay molder. Also the Photographer cannot own the black car hence stamp collector will own the black car and the photographer will own the red car. So, we get the final matrix as,

|  |  |  |
| --- | --- | --- |
| **Hobby** | **Colour of Car** | **Floors** |
| Art | White | 2nd |
| Clay Molding | Green | 3rd |
| Photography | Red | 4th |
| Stamp Collection | Black | 7th |
| Gardening | Brown | 6th |
| Craft | White | 5th |

**Some Important Points About Table**

● Draw a table with attributes in top row.

● Fix and fill the attribute with the most information.

● Fill in the other cells with help of the information.

● 'Values that cannot be' can help in filling the table easily.

Let us see some examples on basis of the above learnt fundamental.

**Directions:** Answer the questions based on the following information.

**Example 1:** A multinational company has recently started its operation in India. They have opened a new office and the top floor has been allotted to top 8 employees of the company. There are eight rooms number R1 to R8 on the floor. The rooms are in two columns with 4 rooms in one column. The rooms are allotted to Manager, CEO, MD, Director, CFO, COO, VP and the President. R1 and R2 are in the first row from left to right respectively while R7 and R8 are in the last row from left to right respectively. R3 and R4 are in the second row from the start from right to left respectively. R5 and R6 are in the second from end from right to left respectively. Manager has been allotted R1 while VP has been allotted R8. CFO’s room is just before to room of CEO whose room is just before to the room of MD (all in are column), whereas Presidents room is at the end of the row.

I. Which of the following cannot be the correct combination of employee and room number?

a. CEO – R3 b. President – R7

c. COO – R4 d. Manager – R6

II. If COO’s room is not beside CEO’s room, then whose room is just next before the room of President?

a. COO b. Director c. MD d. CEO

III. Which of these pairs cannot have rooms that are diagonally placed?

a. Manager – CEO b. Director – MD

c. COO – MD d. Either (b) or (c)

IV. Which of the following have odd numbered rooms?

a. CEO, MD, President, Manager

b. MD, VP, President

c. CFO, MD, CEO

d. Director, MD, President

V. If COO’s room is in the same row as that of MD, and Director exchanges his room with VP, then who is the new

neighbour of VP in the same row?

a. Manager b. CEO c. MD d. COO

**Solutions:**

Let us first try to locate the rooms as per the condition given and then the arrangement of employees will be done. Then, we will do the allotment to the persons.

Lockers 1 and 2 are in the top row and lockers 7 and 8 are in the bottommost row. In these two rows, the lockers are numbered from left to right. In the other two rows, the lockers are numbered from right to left.

|  |  |  |
| --- | --- | --- |
| **L** | **R** |  |
| R1 | R2 | Start |
| R4 | R3 |  |
| R6 | R5 |  |
| R7 | R8 | End |

Now let us look at the conditions given for the allotment of the lockers. Manager has R1 and VP has R8.

|  |  |
| --- | --- |
| Manger – R1 | R2 |
| R4 | R3 |
| R6 | R5 |
| R7 | VP – R8 |

Room of President is at the end of the row; hence his room must be R7.

|  |  |
| --- | --- |
| Manger – R1 | 2 |
| 4 | 3 |
| 6 | 5 |
| President – R7 | VP – R8 |

CFO’s room is just before CEO’s room, which is just before the room of MD. So, the rooms of CFO, CEO and MD are R2, R3 and R5 respectively as there is no other group of rooms to place them.

|  |  |
| --- | --- |
| Manger – R1 | CFO – R2 |
| 4 | CEO – R3 |
| 6 | MD – R5 |
| President – R7 | VP – R8 |

Director and COO have room R4 and R6 left but who is in which room cannot be specified as of now. So, the final arrangement is:

|  |  |
| --- | --- |
| Manger – R1 | CFO – R2 |
| Director / COO – R4 | CEO – R3 |
| Director / COO – R6 | MD – R5 |
| President – R7 | VP – R8 |

Now we can answer the questions easily on the basis of the above.

I. (d)

By looking at the final arrangement of rooms above, we

find that choice (d) does not represent the correct combination of employee and the room.

II. (a)

If COO’s room is not beside CEO’s room, then COO’s room must be R6. So, it will be COO whose room will be just before the room of President.

III. (d)

MD’s room is in the same as that of either Director or COO and diagonally place to the other one. Hence, (d) is the answer.

IV. (a)

The odd-numbered rooms belong to Manager, CEO, MD

and President.

V. (b)

COO’s room is in the same row that off MD which means

that COO’s has room R6. So, R4 belongs to the Director.

If VP and Director exchange their rooms, then the new neighbor of VP is CEO.

**Practice Exercise – Easy**

**Directions (Q. Nos. 1 – 3):** *Answer the questions based on the following information.*

Five compounds C1, C2, C3, C4 and C5 are classified according to their level of being alkaline. The levels are classified as: A1, A2, A3, A4 and A5 with no two compounds having the same level. Each of the compounds has a different major component out of: Carbon, Sodium, Hydrogen, Oxygen and Cadmium.

I. The compound with Carbon as its major product has a level A1 and its neither C5 nor C1.

II. C4 has Cadmium as the major component.

III. C3 has a level A3.

IV. C5 has a level A5 and has Sodium as its major component.

V. The compound with level A4 has Oxygen as its major component.

1. Which is the correct combination of the Level – Compound – Component?

a. A3 – C3 – Hydrogen b. A1 – C4 – Carbon

c. A5 – C5 – Cadmium d. A1 – C4 – Oxygen

2. Which component is present in the compound with level A2?

a. Carbon b. Cadmium

c. Hydrogen d. Data inadequate

3. Which compound has Hydrogen as the major component?

a. C2 b. C3 c. C1 d. C5

**Directions (Q. Nos. 4 – 5):** *Answer the questions based on the following information.*

Chancellor of a University is allocating Guides to 6 newly enrolled P.H.D. students. There are 5 guides viz. G1, G2, G3, G4 and G5. Niveditha does not want any guide if Jaya gets one of the five. Monika will do her P.H.D. either under G1 or G5 or she will not continue with it. If Jaya is provided with guide G2 or G4 then Supriya must get the other or she will opt out of the course. Asha will do the P.H.D. if Shwetha continues with it.

To continue running the course the Chancellor has to assign a candidate each to 5 of the guides.

4. Which of the following is a valid Guide – Student combination?

a. Shwetha - G1, Supriya - G2, Monika G3, Jaya - G4, Asha - G5

b. Monika - G1, Jaya - G2, Shwetha - G3, Supriya - G4, Asha - G5

c. Shwetha - G1, Supriya - G2, Asha - G3, Jaya - G4, Niveditha - G5

d. Supriya - G1, Niveditha - G2, Asha - G3, Monika - G4,

Shwetha - G5

5. If Shwetha gets G1 and Monika gets G5, then which of the following is not a correct Guide – Student combination?

a. Jaya - G3, Supriya - G4

b. Niveditha - G3, Supriya - G4

c. Supriya - G3, Asha - G4

d. Supriya - G3, Jaya - G4

**Directions (Q. Nos. 6 – 8):** *Answer the questions based on the following information.*

4 friends are playing four different continuous running games on their mobiles. The friends have a high score of 120000, 240000, 360000 and 480000 points in their respective games. High score in Temple Run is 120000. The high score in Temple Run 2 is 120000 more than the high score of Nakul’s game. Vamsi’s high score was 240000 more than the high score of the game being played on the Note4 mobile, but the game on Note4 did not have the least high score among the 4 friends. The high score in Subway Surfer is 360000. Gold Rush is not being played on Nexus7 mobile phone. Rahul’s high score is 240000. Temple Run 2 was not played on Zenfone 2 mobile phone. Siddharth played his game on Alpha 5 mobile phone but he didn’t play Temple Run.

6. Nakul played which game?

a. Temple Run b. Temple Run 2

c. Subway Surfer d. Gold Rush

7. In which game is the least high score registered:

a. Temple Run b. Temple Run 2

c. Subway Surfer d. Gold Rush

8. On which mobile is the game with highest high score being played?

a. Note 4 b. Nexus 7

c. Zenfone 2 d. Aplha 5

**Directions (Q. Nos. 9 – 10):** *Answer the questions based on the following information.*

There are 3 contestants in the final of Master Chef India viz. Ankit, Rekha and Kamna. There are 5 major ingredients which they can use to make their dish in the finals. The ingredients are ginger, garlic, peas, walnut and almonds. Each contestant should use atleast 2 but should not use more than 3 ingredients.

The use of ingredients is restricted as per the following conditions:

I. If a contestant is using almonds then he should use garlic as well.

II. The ingredients of Rekha and Ankit are same.

III. Only one of the participants is using peas but that participant does not use ginger.

9. Which of the following is a correct list of ingredients being used by each of the participants?

a. Ankit: garlic, peas, almonds; Rekha: garlic, almonds; Kamna: ginger, walnut, almonds

b. Ankit: ginger, garlic, walnut; Rekha: ginger, garlic, walnut; Kamna: garlic, peas, almonds

c. Ankit: ginger, garlic, almonds; Rekha: ginger, garlic, walnut; Kamna: walnut, almonds

d. Ankit: ginger, peas, walnut; Rekha: ginger, walnut; Kamna: garlic, almonds

10. Who can use peas as one of the ingredients in his/her dish?

a. Ankit only b. Kamna only

c. Ankit and Rekha d. Ankit and Kamna

**Directions (Q. Nos. 11 – 15):** *Answer the questions based on the following information.*

There are six friends Raj, Mannan, Karan, Pratap, Seth and Punnet. Each of the friends has booked 2 flats each in different housing societies. They plan to live in one and rent out the other flat. Pratap has booked a flat in Tulip which he will rent out while 3 other friends will live in their Tulip flat. Seth and Puneet have a flat each in Amara and Ajnara while their preferences are opposite. Punnet plans to live in his flat in Ajnara. Raj has booked the flats in Tulip and RG, Pratap has falts in the same locations but his preference of living is opposite to that of Raj. Only one of the friends has booked a home in RP and he plans to rent it out. Karan will rent out his flat in Ajnara. There is only one friend who is a businessman and he plans to live in his flat in RG.

11. Where is Karan planning to live?

a. Tulip b. Ajnara c. Amara d. R.G.

12. Who is the businessman among the friends?

a. Pratap b. Karan

c. Seth d. Cannot be determined

13. Which friend has booked the flat to rent out in the same complex in which Puneet is planning to live?

a. Pratap b. Punnet

c. Seth d. Cannot be determined

14. Which friend has booked his 2 flats in the same locations when compared with Puneet?

a. Pratap b. Punnet c. Raj d. Seth

15. Which of the friends are planning to live in their flats in Tulip?

a. Raj, Karan, Pratap b. Karan, Mannan, Pratap

c. Raj, Karan, Mannan d. None of the above

**Directions (Q. Nos. 16 – 20):** *Answer the questions based on the following information.*

Six players of Team England viz. Root , Taylor, Morgan, Finn, Butler and Ali have been classified with different skills viz. Opener, Batsman, Bowler, All-rounder, Wicket-keeper and Floater. Each of these players have scored differ run in a warm up game against Zimbabwe. The runs score are 14, 21, 18, 42, 10 and 51 not necessarily in the same order.

I. The opener scored 21 runs.

II. Ali doesn't have skills as bowler or wicket-keeper and didn't score 42 or 10 runs.

III. Root scored 18 runs and is a batsman.

IV. Finn is not a wicket-keeper and person scoring 10 runs is not a bowler.

V. Butler is a floater and neither Taylor nor Finn is an allrounder.

VI. Wicket-keeper doesn't scored 10 or 42 runs and Morgan is an opener.

VII. Wicket-keeper scored the highest runs.

16. How many runs are scored by Bowler?

a. 42 b. 14

c. 18 d. Cannot be determined

17. Which pair is correctly matched?

a. 15 – Blower– Root

b. 51– Wicket-keeper – Taylor

c. 21 – Blower– Morgan

d. None of these

18. Which of the following is true?

a. Floater scores 21 run.

b. Finn’s skill is Wicket-keeper.

c. Butler scored 51 runs.

d. 51 run are scored by Wicket-keeper.

19. What is the sequence of skills of Root, Taylor, Morgan, Finn, Butler, and Ali?

a. Batsman, Opener, Wicket-keeper, Blower, Floater, All Rounder

b. Batsman, Wicket-keeper, opener, Blower, Floater, All Rounder

c. Batsman, Opener, Wicket-keeper, All Rounder, Floater, Blower

d. None of these

20. The runs scored by Bowler and All Rounder are noted in correctly by the coach, then who are two players whose runs have been noted down incorrectly?

a. Finn & Ali b. Root & Morgan

c. Finn & Butler d. Taylor & Finn

**Directions (Q. Nos. 21 – 23):** *Answer the questions based on the following information.*

Five actors Ajith, Arya, Vijay, Jiva, and Surya have acted five different films – Mudhalvan, Nandha, K O, Kaka Kaka, and Ghahjini. These movies are directed by 5 different directors’ viz. Shankar, Bala, K V Anand, Gautham and Murgadoss. Each actor has acted only in 1 movie. Shankar is the director of Mudhalvan and neither Surya no Ajith acted in this movie. Jiva acted in the movie directed by Murgadoss. Vijay acted in the movie K O. Surya acted in the movie Ghahjini and is not directed by Bala. Kaaka Kaaka has been directed by Gautham.

21. Which of the following is the correct combination of Movie – Actor – Director?

a. K O – Vijay – K V Anand

b. Mudhalvan – Jiva – Shankar

c. Ghahjini – Surya – Bala

d. Kaaka Kaaka – Ajith – Gautham

22. Who directed the movie Nandha?

a. Shankar b. Murgadoss

c. K V Anand d. Data Inadequte

23. Who acted in the movie directed by K V Anand?

a. Arya b. Surya c. Ajith d. Jiva

**Directions (Q. Nos. 24 – 26):** *Answer the questions based on the following information.*

In a Pool B match (8th match of the World Cup) of 2015 cricket world cup, Zimbabwe locked horns with a spirited U.A.E side. UAE bated first and scored 285 for 7 wickets in the scheduled 50 overs. Zimbabwe scampered through a win with a score of 286 for 5 wickets in 49.5 overs.

The 5 wickets lost by Zimbabwe were of Raza, Chakabva, Masakadza, Taylor and Williams. 5 U.A.E bowlers took a wicket each and they were Naveed, Javed, Aziz, Tauqir and Chandran. Out of these only Chandran is a part timer while all others are medium fast bowlers. Raza and Chakabva were caught behind the wicket on bowling of medium fast bowlers. Williams fell on the wickets and was hit wicket on the ball of a medium fast bowler. Chandran did not pick up the wicket of Masakadza, while Naveed got a batsmen caught behind and the batsmen were not Masakadza and Chakabva. Masakadza was caught and bowled by a medium fast bowler while Aziz was the only other bowler who got a batsman caught behind.

24. Who got the wicket of Raza?

a. Naveed b. Javed

c. Aziz d. Data insufficient

25. Who got the wicket of Chakabva?

a. Naveed b. Chandran

c. Aziz d. Data insufficient

26. Who got the wicket of Masakadza?

a. Chandran b. Javed

c. Aziz d. Data Insufficient

**Directions (Q. Nos. 27 – 29):** *Answer the questions based on the following information.*

Four friends have got admission to 4 different universities viz. Oxford, Stanford, Kellogg and MIT. They have enrolled for 4 different courses viz. Economics, Engineering, Management and Statistics. They will be going through 4 different airlines viz. Lufthansa, Emirates, Air India and KLB. The flights are schedule to depart at different times out of 2:30 am, 1 am, 3:45 am and 5 am.

I. Neither the person enrolled at Kellog nor the person who is going through Air India has a flight at 2:30 am.

II. Neither the one enrolled for the Statistics course not the one that is going through Air India has a flight at 5 am.

III. The one who is enrolled at Oxford is travelling through Air India and has his flight at 1 am.

IV. The one enrolled for the Management course will travel by Lufthansa.

V. The person enrolled for Economics has a flight at 5 am and he is not enrolled at Stanford.

VI. The person enrolled for Economics knows that the friend who is enrolled at MIT is travelling by KLB.

27. The friend going to Oxford is enrolled for which course?

a. Engineering b. Management

c. Statistics d. Economics

28. The person enrolled for Management will take the flight at what time?

a. 1 am b. 2:30 am

c. 5 am d. 3:45 am

29. In which college does the person doing statistics course enrolled himself?

a. Oxford b. Stanford

c. Kellogg d. MIT

**Directions (Q. Nos. 30 – 34):** *Answer the questions based on the following information.*

Three wines are produced in 3 different countries. The wines are Sula, Riveria and Bollinger. There countries are France, Belgium and Australia.

I. Australia is the only country having a wine with bubbly taste.

II. The wine first produced in 1873 is white.

III. Sula is not the white wine.

IV. The wine with bubbly taste is not red.

V. The wine from France is not white.

VI. The only wine which is not red was first produced in 1851.

VII. Australian wine was not manufactured in 1873.

VIII. Riveria is white wine.

IX. The wine first produced in 1779 is Bollinger.

30. Which country is producing white wine?

a. France b. Belgium

c. Australia d. Cannot be determined

31. Which country is producing the oldest wine?

a. France b. Belgium

c. Australia d. Either (a) or (b)

32. Which wine is produced in Australia?

a. Sula b. Riveria

c. Bollinger d. Either (b) or (c)

33. Which belongs to the one produced in 1873?

a. Sula b. France

c. Riveria d. Australia

34. Which of the following wine and country are the ones related to 1851?

a. Sula and Australia b. Riveria and Belgium

c. Bollinger and France d. Sula and Belgium

**Directions (Q. Nos. 35 – 40):** *Answer the questions based on the following information.*

Four persons Rajan, Kamal, Asif and Devy live in four countries UAE, Afghanistan, Pakistan and Scotland, not necessarily in that order. The countries are located on four different directions North, South, East and West (not necessarily in that order) which are in four different continents Asia, Europe, Africa and Oceiana (not necessarily in that order).

I. Kamal lives in East direction.

II. Scotland is in South, which in Europe.

III. The person living in North is a native of Oceiana.

IV. Devy lives in Afghanistan.

V. Rajan lives in Africa.

35. Where is Kamal living?

a. UAE b. Asia

c. West d. Afghanistan

36. North is where

a. Afghanistan is located

b. Rajan is living

c. Africa is located

d. Pakistan is located

37. On the basis of the information given, it is possible to deduce that

I. Rajan does not live in Scotland.

II. Asif live in Oceiana.

III. Devy does not live in UAE.

a. I only b. II only

c. III only d. I and III only

38. Africa is

I. Located in West direction.

II. The continent containing Afghanistan.

a. I only b. II only

c. I and II both d. I or II but not both

39. Which of the following is true about West?

a. Asif is living there b. Devy is living there

c. Asia in West d. Rajan is living there

40. Which of the following cannot be determined on the basis of the information given?

a. Scotland contains which direction?

b. Who is living at UAE?

c. Which country is in Oceiana?

d. Who is living in Europe?

**Practice Exercise – Medium**

**Directions (Q. Nos. 1 – 3):** *Answer the questions based on the following information.*

Four people of different nationalities live on the same side of a street in four houses each of different color. Each person has a different favourite drink. The following additional information is also known:

I. The Englishman lives in the red house.

II. The Italian drinks tea.

III. The Norwegian lives in the first house on the left.

IV. In the second house from the right they drink milk.

V. The Norwegian lives adjacent to the blue house.

VI. The Spaniard drinks fruit juice.

VII. Tea is drunk in the blue house.

VIII. The white house is to the right of the red house.

IX. Cocoa is drunk in the yellow house

1. The color of the Norwegian’s house is

a. Yellow b. White c. Blue d. Red

2. Milk is drunk by

a. Norwegian b. English

c. Italian d. None of the above

3. The Norwegian drinks

a. Milk b. Cocoa c. Tea d. Fruit juice.

**Directions (Q. Nos. 4 – 7):** *Answer the questions based on the following information.*

Mr. Bankatlal acted as a judge for the beauty contest. There were four participants, viz. Ms. Andhra Pradesh, Ms. Uttar Pradesh, Ms. West Bengal and Ms. Maharashtra. Mrs. Bankatlal, who was very anxious about the result, asked him about it as soon as he was way back home. Mr. Bankatlal just told that the one who was wearing the yellow saree won the contest. When Mrs. Bankatlal pressed for further details, he elaborated as follows:

I. All of them were sitting in a row.

II. All of them wore sarees of different colours, viz. green, yellow, white, red.

III. There was only one runner-up and she was sitting beside

Ms. Maharashtra.

IV. The runner-up was wearing the green saree.

V. Ms. West Bengal was not sitting at the ends and was not the runner up.

VI. The winner and the runner-up are not sitting adjacent to each other.

VII. Ms. Maharashtra was wearing white saree.

VIII. Ms. Andhra Pradesh was not wearing the green saree.

IX. Participants wearing yellow saree and white saree were at the ends.

4. Who wore the red saree?

a. Ms. Andhra Pradesh b. Ms. West Bengal

c. Ms. Uttar Pradesh d. Ms. Maharashtra

5. Ms. West Bengal was sitting adjacent to

a. Ms. Andhra Pradesh and Ms. Maharashtra

b. Ms. Uttar Pradesh and Ms. Maharashtra

c. Ms. Andhra Pradesh and Ms. Uttar Pradesh

d. Ms. Uttar Pradesh

6. Which saree was worn by Ms. Andhra Pradesh?

a. Yellow b. Red c. Green d. White

7. Who was the runner-up?

a. Ms. Andhra Pradesh b. Ms. West Bengal

c. Ms. Uttar Pradesh d. Ms. Maharashtra

**Directions (Q. Nos. 8 – 9):** *Answer the questions based on the following information.*

A, B, C, D, E and F are a group of friends from a club. There are two housewives, one lecturer, one architect, one accountant and one lawyer in the group. There are two married couples in the group. The lawyer is married to D who is a housewife. No lady in the group is either an architect or an accountant. C, the accountant, is married to F who is a lecturer. A is married to D and E is not a housewife.

8. What is the profession of E?

a. Lawyer b. Architect

c. Lecturer d. Accountant

9. How many members of the group are male?

a. 2 b. 3 c. 4 d. None of these

10. The Bannerjees, the Sharmas, and the Pattabhiramans each have a tradition of eating Sunday lunch as a family. Each family serves a special meal at a certain time of day. Each family has a particular set of chinaware used for this meal. Use the clues below to answer the following question:

I. The Sharma family eats at noon.

II. The family that serves fried brinjal uses blue china-

ware.

III. The Bannerjee family eats at 2 o’clock.

IV. The family that serves sambar does not use red chinaware.

V. The Pattabhiraman family does not use white china-

ware.

VI. The family that eats last likes makkai-ki-roti.

VII. The family that eats at 10' clock serves fried Brinjal.

Which one of the following statements is true? **[CAT 2001]**

a. The Bannerjees eat makkai-ki-roti at 2 o’clock, the Sharmas eat fried brinjal at 12 o’clock and the Patta- bhiramans eat sambar from red chinaware

b. The Sharmas eat sambar served in white chinaware, the Pattabhiramans eat fried brinjal at 1 o’clock, and the Bannerjees eat makkai-ki-roti served in blue chinaware

c. The Sharmas eat sambar at noon, the Pattabhiramans eat fried brinjal served in blue chinaware, and the Bannerjees eat makkai-ki-roti served in red chinaware

d. The Bannerjees eat makkai-ki-roti served in white chinaware, the Sharmas eat fried brinjal at 12 o’clock and the Pattabhiramans eat sambar from red chinaware

11. In a ‘keep-fit’ gymnasium class there are 15 females enrolled in a weight-loss program. They all have been grouped in any one of the five weight-groups W1, W2, W3, W4, or W5. One instructor is assigned to one weightgroup only. Sonali, Shalini, Shubhra and Shahira belong to the same weight group. Sonali and Rupa are in one weight-group, Rupali and Renuka are also in one weight-group. Rupa, Radha, Renuka, Ruchika, and Ritu belong to different weight-groups. Somya cannot be with Ritu, and Tara cannot be with Radha. Komal cannot be with Radha, Somya, or Ritu. Shahira is in W1 and Somya is in W4 with Ruchika. Sweta and Jyotika cannot be with Rupali, but are in a weight group with total membership of four. No weight-group can have more than five or less than one member. Amita, Babita, Chandrika, Deepika and Elina are instructors of weight-groups with membership sizes 5, 4, 3, 2 and 1 respectively. Who is the instructor of Radha? **[CAT 2001]**

a. Babita b. Elina

c. Chandrika d. Deepika

**Directions (Q. Nos. 12 – 15):** *Answer the questions based on the following information.*

A college has scheduled Aptitude Classes of 4 different teachers on 4 different days of the week. The classes are scheduled to start at 8:30 am on each of the designated days. However due to traffic jam on the road leading to the college these teachers were late to reach the college. College has a policy of allowing any teacher who is late a cushion period of 20 minutes. Akhil was not scheduled to go to the college on Monday. The teacher who taught the topic of Number System started the class at 8:50 am. Nitin went to the college on Tuesday but he did not taught the topic of Permutation & Combination. The teacher who has classes scheduled on Wednesday started the class at 8:30 am but he was not Akhil. Aakansha didn’t teach the topic of Cubes & Dice. Prachi didn’t teach the topic of vocabulary and she started the classes after 5 minutes as compared to the teacher who took the class on Permutation and Combination. The teacher, who took the class on Thursday, taught the topic of vocabulary. The teacher who started the class at 8:40 am didn’t take the class on Tuesday. On no two days the classes started at same time.

12. On Tuesday which subject was taught and the class started on what time?

a. 8:40 – Number Systems

b. 8:50 – Number Systems

c. 8:35 – Cubes & Dice

d. 8:40 – Permutation & Combination

13. Which of the following is a correct combination of the topic and the teacher?

a. Akhil – Cubes & Dice

b. Nitin – Number Systems

c. Aakansha – Vocab

d. Prachi – Permutation & Combination

14. Who taught the subject of Permutation and Combination and on which day?

a. Aakansha – Wednesday

b. Akhil – Thursday

c. Nitin – Monday

d. Prachi – Tuesday

15. Which of the following combination about the day and time are correct?

a. 8:40 – Tuesday b. 8:50 – Monday

c. 8:30 – Wednesday d. 8:35 – Thursday

**Directions (Q. Nos. 16 – 18):** *Answer the questions based on the following information.*

Five friends Karim, Aslam, Saba, Atif, and Ali appeared for the CAT examination and each of the friend scored highest score out the LR, DI, DS, QA and VA sections (not in any order). Each of the friends has joined a different coaching institute for their preparations – PL, CT, KMS, Hime and NG in any order. Further it is known that:

I. Saba scored the high score in DS and he has neither joined

PL nor KMS.

II. Ali has joined NG but doesn’t get the high score in VA.

III. Karim has neither scored the high score in VA nor in LR and Aslam have neither joined KMS nor Hime.

IV. The LR high scores joined KMS and the high scorer in DI joined CT.

16. Who has joined KMS?

a. Karim b. Aslam c. Ali d. Atif

17. Which institute has been joined by Saba?

a. CT b. PL c. Hime d. KMS

18. The high scorer of VA section has joined which institute?

a. CT b. PL c. Hime d. KMS

**Directions (Q. Nos. 19 – 23):** *Answer the questions based on the following information.*

Six airplane manufacturing companies Boeing, Airbus, Bombardier, Antonov, Fokker and Dassault launched a new air craft during year 1962, 1969, 1972, 1975, 1981 and 1984 (not in any order). The companies are based out of Denmark, UK, USA, Finland, Germany and France (not in any order). The aircrafts being manufacture by these firms are viz. 787, A 340, DA – 413, F28 – 4000, AN – 38 and DHC – 4 (not in any order). The following are some facts about the aircrafts:

I. Bombardier belongs to USA and it didn’t launch either 787 or DHC – 4.

II. Boeing belongs to Denmark and Fokker belongs to Finland; however neither of them launched a A 340 or F28 – 4000.

III. The manufacturer based out of France launched its plane in 1962.

IV. DA – 413 was launched in 1969 but it doesn’t belong to the manufacturer based out of Denmark.

V. 787 and An – 38 got launched 1962 and 1981 and belongs to manufacturers based in USA and France, but not following the above order.

VI. Anotnov is not based either in UK or France and it launched its aircraft in 1984.

VII. Dassault launched A340 in 1975.

19. DA – 413 is the aircraft of which company?

a. Boeing b. Airbus c. Fokker d. Antonov

20. The company manufacturing Air bus belongs to which country?

a. UK b. Germany c. France d. Finland

21. The manufacturer based out of Germany launched its aircraft in which year?

a. 1969 b. 1975 c. 1981 d. 1984

22. Dassault is based out of which country?

a. UK b. USA c. France d. Finland

23. The manufacturer of An – 38 is based out of?

a. Denmark b. UK

c. Germany d. USA

**Directions (Q. Nos. 24 – 28):** *Answer the questions based on the following information.*

6 actors Ajith, Rajni, Surya, Kamal, Vijay and Prakash work with 6 different directors Sethu, Shankar, Sivam, Nasser, Visu and Mouli not necessarily in the same order. They are working in 6 different films viz. Lingaa, Anegam, Isai, Kaththi, Kayal and Anjaan with 6 different actresse’s viz. Sneha, Trisha, Shruti, Tabu, Meena and Shriya.

I. Rajni worked in a film directed by Visu, but not opposite Shriya or Tabu.

II. Kamal and Ajith don’t work with either of Trisha and Shruti but work with only Sethu and Mouli respectively.

III. Anjaan and Isai featured Shriya and Trisha, and were directed by Visu and Nasser not necessarily in the same order.

IV. Vijay worked in Kayal and Surya in Anegam.

V. Vijay did not work with Shankar.

24. Parkash worked in a movie directed by:

a. Shankar b. Sivam

c. Nasser d. Mouli

25. Sivam directed:

a. Kayal b. Anegam

c. Anjaan d. Lingaa

26. Trisha worked in a film directed by:

a. Shankar b. Sivam c. Sethu d. Visu

27. The hero of Anegam was:

a. Kamal b. Surya c. Ajit d. Vijay

28. If Meena worked opposite Kamal, Tabu could have worked opposite:

a. Surya b. Sethu c. Rajni d. Visu

**Directions (Q. Nos. 29 – 33):** *Answer the questions based on the following information.*

6 families F1, F2, F3, F4, F5 and F6 plan go to 6 different hill stations, H1, H2, H3, H4, H5 and H6. They wish to go in 6 different months: M1, M2, M4, M5 and M6. Two of them want to travel by bus and two by rail and other by car or air. Following information is given:

I. F1 goes to H1 but not by air or bus.

II. F1 prefer by journey but doesn’t travel in M2 or M5.

III. Neither F6 nor F2 families go to H5 or H3.

IV. H4 was visited in M4.

V. Families going to H2 and H5 go by bus and car respectively.

VI. F3 goes to H6 in M3 by air and F6 does not travel in M4.

29. Who of the following visit H5?

a. F2 b. F1 c. F6 d. F4

30. H4 was visited by:

a. F1 b. F6 c. F2 d. F4

31. F6 visited:

a. H5 b. H2 c. H1 d. H4

32. If F5 travelled in M6, F1 must have travelled in:

a. M1 b. M4 c. M5 d. M2

33. F1 visited:

a. H6 b. H3 c. H2 d. H3

**Directions (Q. Nos. 34 – 39):** *Answer the questions based on the following information.*

P1, P2, P3 and P4 are travelling by the Indian Rail to Dehradun on 4 adjacent seats not necessarily in the given order. The ticket numbers are S4, S1, S2 and S3 again not necessarily in the given order. One of these is a Bowler, one is a Batsman, one is an All – Rounder, and one is a Wicket keeper.

I. The Batsman is seated between those holding ticket numbers S4 and S1.

II. The Wicket keeper holds the ticket number S2 and has two other between himself and the All – Rounder.

III. The only neighbour of P3 is P1 who is not a Bowler.

IV. P4 and the Bowler sit on adjacent seats; neither holds ticket numbers S1 and S3.

34. P1 hold ticket number:

a. S1 b. S2 c. S3 d. S4

35. P2 holds ticket number:

a. S1 b. S2 c. S3 d. S4

36. P3 hold ticket number:

a. S1 b. S2 c. S3 d. S4

37. P4 is a/an:

a. Bowler b. Batsmen

c. All – Rounder d. Wicket keeper.

38. P2 is a/an:

a. Bowler b. Batsmen

c. All – Rounder d. Wicket keeper

39. P3 is a/an:

a. Bowler b. Batsmen

c. All – Rounder d. Wicket keeper

**Directions (Q. Nos. 40 – 43):** *Answer the questions based on the following information.*

An International Fruit Expo has been organized. There are 5 fruits on display viz. Guava, Orange, Banana, Apple and Grapes. During the show a contest was organized in which the 5 fruits were kept in 5 boxes such that each box contains 2 different fruits and each fruit has been kept in exactly two boxes. Different people were asked to choose more than one box at random with a condition that if there is a common fruit in the boxes it will be cancelled out. The boxes were named as Winter Fruits, Summer Fruits, Spring Fruits, Rainy Fruits and Autumn Fruits.

Some information about the boxes is as follows:

Additional information is as follows:

I. Banana was not in the Winter Fruit box.

II. Guava was not in the Spring Fruit box.

III. Orange is not in the Rainy Fruit box.

IV. If one chooses Winter and Spring boxes then the contestant will get Guava and Grapes.

V. If one chooses Winter and Summer boxes then the contestant will get Guava, Banana, Orange and Apple.

VI. If one chooses Winter and Rainy boxes then the contestant will get Orange and Apple.

40. What can be the maximum number of boxes a contestant can select and still have 2 fruits with him?

a. 1 b. 2 c. 3 d. 4

41. Which of the following number of fruits is impossible with any two boxes?

a. 1 b. 2 c. 3 d. None of these

42. Apple is available in which 2 boxes?

a. Summer & Spring b. Winter and Spring

c. Summer and Rainy d. Spring and Autumn

43. Orange is available which 2 boxes?

a. Winter and Spring b. Spring and Rainy

c. Summer and Spring d. Winter and Rainy

**Directions (Q. Nos. 44 – 46):** *Answer the questions based on the following information.*

In the after party of Nobel Prizes in the year 1886, 5 scientists were talking to each other viz. Newton, Einstein, Volta, Fleming and Pascal. Each scientist has some are of interest. The following are the observations about their area of interest.

I. One scientist had interest in all the 5 areas, one had interest in 4, one in 3, one in 2 and one had interest in only

1 of the area.

II. Pressure was the area in which most number of scientists was interested.

III. Einstein and Volta discussed Thermodynamics at length, but when Fleming joined them, they started discussing Pressure which was the only common area of interest among them.

IV. Three scientists have Medicine as their area of interest.

V. The only common area of interest among Newton, Einstein and Pascal is Electricity.

VI. The only common area of interest between Volta and Pascal was Gravity.

44. Which scientist has interest in all the 5 areas?

a. Newton b. Einstein

c. Volta d. Cannot be determined

45. Which areas has least number of scientist interested in it?

a. Gravity b. Medicine

c. Thermodynamics d. Cannot be determined

46. Newton and Volta have common interests in?

a. Electricity and Medicine

b. Pressure and Medicine

c. Electricity, Gravity and Medicine

d. Electricity and Pressure

**Directions (Q. Nos. 47 – 50):** *Answer the questions based on the following information.*

I. Five farmers have bought their wheat production for procurement at the government center. The farmers are from Punjab, MP, UP, Maharashtra and Orissa. the amount of wheat bought by them was 50 kgs, 100 kgs, 150 kgs, 200 kgs and 250 kgs (not in any order). thet bought their produce in Truck, Tempo, Auto, Bullock- Cart and Tractor not necessarily in that order.

II. The farmer with badge A5 bought wheat weighing 100 kgs.

III. The wheat bought on bullock cart had wheat bags before and after it.

IV. Wheat bought on tractor weighs 150 kgs.

V. Farmer with badge A2 bought the wheat from MP and he has only 50 kgs wheat.

VI. Wheat having the weight 200 kgs was bought on truck and has badge A3.

VII. Wheat from Orissa was not transporated on auto and it weighs less than all but more than one of the other wheats.

VIII. The wheat having badge Al is the heaviest and is from Punjab.

47. Which of the following can be derived from statement I, III and VI?

a. The bullock cart bought the wheat with badge A1 or A2.

b. The bullock cart bought the wheat with badge A1 or A4.

c. The bullock cart bought the wheat with badge A1 or A3.

d. The bullock cart bought the wheat with badge A3 or A4.

48. Which of the following is false?

a. The weight of wheat on tractor is lighter than the auto's.

b. The combined weight of the 50 kgs of wheat and wheat bought by truck is equal to the weight of the wheat bought by auto.

c. Wheat bought by tractor weighs more than the wheat bought by bullock cart.

d. None of these

49. Which of the following is true?

a. The first badge of wheat is bought by the bullock cart.

b. The 100 kgs wheat is bought by the tempo.

c. Wheat from Punjab is bought by the tractor.

d. Wheat from MP is bought by the auto.

50. Which of the following additional pieces of information would, if true, facilitate the identification of the badges of wheat that weight 150 and 200 kgs. respectively?

I. Wheat bought from UP weighs more than Maharashtra.

II. Wheat bought from UP is twice as heavy as the Orissa.

III. The combined weight of the wheat boughtfrom MP and Orissa equals the weight of the wheat bought from Maharashtra.

a. I only b. I and II only

c. I and III only d. All of them indiviudally only

**Practice Exercise – Difficult**

1. Four students — Ashish, Dhanraj, Felix and Sameer sat for the Common Entrance Exam for Management (CEEM). One student got admission offers from three NIMs (National Institutes of Management), another from two NIMs, the third from one NIM, while the fourth got none. Below are some of the facts about who got admission offers from how many NIMs and what is their educational background.

I. The one who is an engineer didn’t get as many admissions as Ashish.

II. The one who got offer for admissions in two NIMs isn’t Dhanraj nor is he a chartered accountant.

III. Sameer is an economist.

IV. Dhanraj isn’t an engineer and received more admission offers than Ashish.

V. The doctor got the most number of admission offers.

Which one of the following statements is necessarily true? **[CAT 2002]**

a. Ashish is a chartered accountant and got offer for admission in three NIMs.

b. Dhanraj is a doctor and got admission offer in one NIM.

c. Sameer is an economist who got admission offers in two NIMs.

d. Felix who is not an engineer did not get any offer for admission.

2. Three children won the prizes in the Bournvita Quiz contest. They are from the schools: Loyola, Convent and Little Flowers, which are located at different cities. Below are some of the facts about the schools, the children and the city they are from.

I. One of the children is Bipin.

II. Loyola School’s contestant did not come first.

III. Little Flower’s contestant was named Riaz.

IV. Convent School is not in Hyderabad.

V. The contestant from Pune is not from Loyola School.

VI. The contestant from Bangalore did not come first.

VII. Convent School’s contestant’s name is not Balbir.

Which of the following statements is true? **[CAT 2002]**

a. 1st prize: Riaz (Little Flowers), 2nd prize: Bipin (Convent), 3rd prize: Balbir (Loyola)

b. 1st prize: Bipin (Convent), 2nd prize: Riaz (Little Flowers), 3rd prize: Balbir (Loyola)

c. 1st prize: Riaz (Little Flowers), 2nd prize: Balbir (Loyola), 3rd prize: Bipin (Convent)

d. 1st prize: Bipin (Convent), 2nd prize: Balbir (Loyola), 3rd prize: Riaz (Litttle Flowers)

**Directions (Q. Nos. 3 – 6):** *Answer the questions based on the following information.*

Four families decided to attend the marriage ceremony of one of their colleagues. One family has no kids, while the others have at least one kid each. Each family with kids has at least one kid attending the marriage. Given below is some information about the families, and who reached when to attend the marriage. **[CAT 2003 – Retest]**

I. The family with two kids came just before the family with no kids.

II. Shanthi who does not have any kids reached just before Sridevi’s family.

III. Sunil and his wife reached last with their only kid.

IV. Anil is not the husband of Joya.

V. Anil and Raj are fathers.

VI. Sridevi’s and Anita’s daughters go to the same school.

VII. Joya came before Shanthi and met Anita when she reached the venue

VIII. Raman stays the farthest from the venue.

IX. Raj said his son could not come because of his exams.

3. Who among the following arrived third?

a. Shanthi b. Sridevi c. Anita d. Joya

4. Name the correct pair of husband and wife.

a. Raj and Shanthi b. Sunil and Sridevi

c. Anil and Sridevi d. Raj and Anita

5. Of the following pairs, whose daughters go to the same school?

a. Anil and Raman b. Sunil and Raman

c. Sunil and Anil d. Raj and Anil

6. Whose family is known to have more than one kid for certain?

a. Raman’s b. Raj’s c. Anil’s d. Sunil’s

**Directions (Q. Nos. 7 – 10):** *Answer the questions based on the following information.*

Twenty one participants from four continents (Africa, America, Australia, and Europe) attended a United Nations conference. Each participant was an expert in one of four fields, labour, health, population studies, and refugee relocation. The following five facts about the participants are given.

I. The number of labour experts in the camp was exactly half the number of experts in each of the other three categories.

II. Africa did not send any labour expert. Otherwise, every continent, including Africa, sent at least one expert for each category.

III. None of the continents sent more than three experts in any category.

IV. If there had been one less Australian expert, then the Americas would have had twice as many experts as each of the other continents.

V. Mike and Alfanso are leading experts of population studies who attended the conference. They are from Australia. **[CAT 2004]**

7. Which of the following combinations is NOT possible?

a. 2 experts in population studies from the Americas and 2 health experts from Africa attended the conference.

b. 2 experts in population studies from the Americas and 1 health expert from Africa attended the conference.

c. 3 experts in refugee relocation from the Americas and 1 health expert from Africa attended the conference.

d. Africa and America each had 1 expert in population studies attending the conference.

8. If Ramos is the lone American expert in population studies, which of the following is NOT true about the numbers of experts in the conference from the four continents?

a. There is one expert in health from Africa.

b. There is one expert in refugee relocation from Africa.

c. There are two experts in health from the Americas.

d. There are three experts in refugee relocation from the Americas.

9. Alex, an American expert in refugee relocation, was the first keynote speaker in the conference. What can be inferred about the number of American experts in refugee relocation in the conference, excluding Alex?

I. At least one

II. At most two

a. Only I and not II b. Only II and not I

c. Both I and II d. Neither I nor II

10. Which of the following numbers cannot be determined from the information given?

a. Number of labour experts from the Americas.

b. Number of health experts from Europe.

c. Number of health experts from Australia.

d. Number of experts in refugee relocation from Africa.

**Directions (Q. Nos. 11 – 15):** *Answer the questions based on the following information.*

Mathematicians are assigned a number called Erdös number (named after the famous mathematician, Paul Erdös). Only Paul Erdös himself has an Erdös number of zero. Any mathematician who has written a research paper with Erdös has an Erdös number of 1. For other mathematicians, the calculation of his/her Erdös number is illustrated below:

Suppose that a mathematician X has co-authored papers with several other mathematicians. From among them, mathematician Y has the smallest Erdös number. Let the Erdös number of Y be y. Then X has an Erdös number of y+1 . Hence any mathematician with no co-authorship chain connected to Erdös has an Erdös number of infinity.

In a seven day long mini-conference organized in memory of Paul Erdös, a close group of eight mathematicians, call them A, B, C, D, E, F, G and H, discussed some research problems. At the beginning of the conference, A was the only participant who had an infinite Erdös number. Nobody had an Erdös number less than that of F.

I. On the third day of the conference F co-authored a paper jointly with A and C. This reduced the average Erdös number of the group of eight mathematicians to 3. The Erdös numbers of B, D, E, G and H remained unchanged with the writing of this paper. Further, no other co-authorship among any three members would have reduced the average Erdös number of the group of eight to as low as 3.

II. At the end of the third day, five members of this group had identical Erdös numbers while the other three had Erdös numbers distinct from each other.

III. On the fifth day, E co-authored a paper with F which reduced the group's average Erdös number by 0.5. The Erdös numbers of the remaining six were unchanged with the writing of this paper.

IV. No other paper was written during the conference.

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11. How many participants in the conference did not change their Erdös number during the conference?

a. 3 b. 4

c. 5 d. Cannot be determined

12. The person having the largest Erdös number at the end of the conference must have had Erdös number (at that time):

a. 5 b. 7 c. 9 d. 14

13. How many participants had the same Erdös number at the beginning of the conference?

a. 2 b. 3

c. 4 d. Cannot be determined

14. The Erdös number of C at the end of the conference was:

a. 1 b. 2 c. 3 d. 4

15. The Erdös number of E at the beginning of the conference was:

a. 2 b. 5 c. 6 d. 8

**Directions (Q. Nos. 16 – 19):** *Answer the questions based on the following information.*

A vending machine has five switches which, when operated, give Ice Tea, Coffee, Cardamom Tea, Cold Coffee and Tea depending upon which switch is turned on. The machine is such that each switch supplies two different drinks and each drink is supplied by two different switches. If two or more switches are tuned on the common drink, if any nullifies each other and will not come out at all. To get the drink that one wants, one has to turn on the right combination of switches. Some additional information about the machine is given below:

Turning on switches:

I. 1 and 3, gives Coffee and Cardamom Tea

II. 2, 4 and 5 we get Coffee and Cardamom Tea

III. 1 and 2, we get Ice Tea and Tea

IV. 1 and 4 we get Cold Coffee, Ice Tea, Cardamom Tea and Tea

V. 3, 4 and 5 we get Coca–Cola and Tea.

VI. 2, 3 and 5 we get Cold Coffee, Coca–Cola, Cardamom Tea and Tea.

VII. 1, 2, 3, 4 and 5 do not supply Coffee, Cold Coffee, Ice Tea, Cardamom Tea and Tea respectively.

16. One of the drinks which will be supplied by turning on switch 1 is:

a. Cold Coffee b. Ice Tea

c. Cardamom Tea d. Coffee

17. Coffee is one of the drinks that will be supplied by turning

on switch no:

a. 1 b. 2

c. 3 d. Cannot be determined

18. One of the drinks which will be supplied by turning on switch 2 is:

a. Coffee b. Cardamom Tea

c. Cold Coffee d. Coca-Cola

19. What drinks are supplied by turning on switches 2 and 3?

a. Cardamom Tea, Cold Coffee and Coffee

b. Tea, Cold Coffee and Coffee

c. Ice Tea and Cardamom Tea

d. Ice Tea, Cardamom Tea, Tea and Coffee

**Directions (Q. Nos. 20 – 24):** *Answer the questions based on the following information.*

Four couples decided to design a Rangoli outside their house on the occasion of play Pongal. Each couple used three different patterns to form the Rangoli. No two couples used the same combination of patterns. Agnes, Clarina, Delvina, and Rose are females whereas Emanuel, Samuel, Joseph and Martin are males. They choose 3 patterns of out the Chowk, Dotted, Alpana and Sanskar.

I. Delvina, who is not the wife of Martin, used Chowk as one of the patterns.

II. Emanuel’s wife used Alpana and Sanskar patterns but Samuel’s wife used only one of these patterns.

III. Agnes is not the wife of Emanuel or Martin.

IV. Clarina and Martin’s wife both used Chowk and Alpana Patterns.

20. Who among the following is Agnes’s husband?

a. Emanuel b. Samuel

c. Joseph d. Data inadequate

21. Who is Samuel Wife?

a. Agnes b. Delvina

c. Rose d. Data inadequate

22. Which of the following is not correctly paired?

a. Samuel – Dotted, Alpana, Chowk

b. Emanuel – Chowk, Alpana, Sanskar

c. Joseph – Dotted, Alpana, Sanskar

d. All of the above

23. Which of the following couples are incorrectly matched?

I. Agnes and Joseph

II. Clarina and Eramual

III. Rose and Samuel

IV. Delvina and Martin

a. (I) & (II) b. (I), (II) & (III)

c. (III) & (IV) d. (II), (III) & (IV)

24. Which of the following is correctly matched?

a. Agnes – Chowk, Alpana, Snaskar

b. Clarina – Dotted, Alpana and Snaskar

c. Delvina – Chowk, Dotted, Sanskar

d. Rose – Alpana, Chowk, Sanskar

**Directions (Q. Nos. 25 – 29):** *Answer the questions based on the following information.*

There are eight vehicles, five trucks - Tata, Ashok, Force, Mahindra and Ace and three cars - Maruti, Honda and Mitsubishi. Each vehicle belongs to one of the four categories - LMV, HMV, LGV and HGV. They have been checked on 5 parameters by the Road Safety Department - Safety, Pollution, Engine, Mileage and Overall quality.

I. Tata and Mitsubishi both passed in Safety and Overall quality.

II. Ace and Mahindra both failed in Pollution and Mileage.

III. Tata and Mitsubishi are both LMV's.

IV. A LMV truck failed in Pollution test.

V. Two LGV trucks failed in Pollution, Mileage and Engine.

VI. Maruti is HMV and failed only in Overall quality.

VII. Mahindra is HGV and passed in three parameters.

VIII. Only two trucks failed in Safety.

IX. Ashok passed in only two parameters.

X. Honda and Ace both failed in Overall quality.

XI. All LMV's passed in both Mileage and Engine.

XII. Honda is from Maruti's category and it failed in Engine.

XIII. Force is HMV and passed in three parameters and failed in Engine.

XIV. Honda passed in three parameters.

XV. All cars passed the Pollution test.

25. Who among the following failed in all parameters?

a. Maruti b. Honda

c. Force d. Ace

26. How many vehicles failed in Overall quality?

a. 1 b. 2 c. 3 d. 4

27. Who among the following passed in all parameters?

a. Mitsubishi b. Maruti

c. Honda d. Tata

28. Who among the following failed in both Pollution and Mileage?

a. Ashok, Force and Tata

b. Ace, Tata and Mahindra

c. Ashok, Mahindra and Ace

d. Mahindra, Tata and Honda

29. How many vehicles are from HMV?

a. 2 b. 3 c. 4 d. 6

**Directions (Q. Nos. 30 – 37):** *Answer the questions based on the following information.*

6 delegates from 6 different African viz. Ethiopia, Ghana, Zaire, Zimbabwe, Sudan and Nigeria (not in the same order) are visiting India to attend a conference on Education. They are staying in the Hotel Hilton in room nos. 1001, 1002, 1003, 1004, 1005 and 1006 not in any order. Each of the country to which they belong has a different birth rate and a different death rate as well. Some more information about the birth rates, death rates, countries and rooms is given below:

(All birth rates and death rates are given per 1000 people i.e. birth rate of 8 means that 8 people are born per 1000 people in that particular country in a year.)

I. The delegate in room 1002 belongs to a country which has a birth rate that of twice of the country where the death rate is 8.

II. The delegate from Ethiopia and the delegate in room 1006 have a combined birth rate of their countries as 40.

III. There is a delegate from Ghana and the birth rate in Ghana is 8 less than Zaire but the death rate in Ghana is 10 more than the death rate in Zaire.

IV. 4 times the birth rate of the country of the delegate staying in room 1004 is less than the death rate of that country.

V. The delegate in room 1003 belongs to a country where birth rate and date rates are 12 and 8 respectively.

VI. There is a country with birth rate of 16 and death rate of 24.

VII. The delegate in room 1005 belongs to a country with 8 births per 1000 and the death rate in his country is 2 less than Zimbabwe.

VIII. The delegate from Sudan is staying two rooms after the delegate of Zaire who is staying two rooms after the Zimbabwe delegate.

30. The delegate from Sudan stay in room no:

a. Room 1002 b. Room 1003

c. Room 1004 d. Room 1005

31. What is the death rate in Ghana?

a. 8 b. 16 c. 18 d. 24

32. What is the birth rate in Zaire?

a. 8 b. 12 c. 16 d. 20

33. In room 1006 the delegate from which country is staying?

a. Ghana b. Zaire

c. Nigeria d. Zimbabwe

34. Which country has a death rate of 24?

a. Ghana b. Ethiopia c. Zaire d. Nigeria

35. Which country has the highest birth rate?

a. Ghana b. Ethiopia

c. Zaire d. Cannot be determined

**Directions (Q. Nos. 36 – 40):** *Answer the questions based on the following information.*

Audi has recently launched new models of it A8 and three other cars. The company has reduced the size of the engine of each cars some amount to make it compact but have increase the power output. Each of these cars is classified under different segments with one of them being a Sedan. Each car had a different cost with 3 cars having an even number of amount in lakhs, also all the cars had a cost in the range of 60’s. (Cost is in lakhs). Before the launch of new models one of the cars had an engine size of 1500 cc.

I. The costliest car is not the car in luxury segment and is 3 Lakh costlier than the car which initially had an 1800 cc engine and which is not A9.

II. One of the cars is priced at 62 lakhs and it’s not the cheapest car among the 4 cars.

III. The engine of A9 has been reduced by 140 cc, while the engine of SUV which is not A10 has been reduced 120 cc. Another cars engine has been reduced by 160 cc.

IV. After the modification the engine of hatchback was 10 cc less than the engine of A11, the car with the most reduc- tion in its engine size of 10%.

V. The cheapest car whose engine was 1700 cc before the medication is 7 lakhs cheaper than the car who engine was reduced by 50 cc.

36. Which car is the cheapest?

a. A11 b. A10 c. A8 d. A9

37. Which cars engine was reduced by maximum number of cc?

a. A11 b. A10 c. A8 d. A9

38. A11 is classified under which segment?

a. SUV b. Luxury

c. Sedan d. Hatchback

39. Which car is the costliest?

a. A11 b. A10 c. A8 d. A9

40. Which of the following statements is true?

a. A11 is a Sedan and it engine was reduced by 10 cc.

b. A8 is a Hatchback and it has the maximum decrease in the size of its engine.

c. A9 is a Luxury car and its engine was decrease by 140 cc.

d. A10 costs 60 Lakhs.

**Directions (Q. Nos. 41 – 45):** *Answer the questions based on the following information.*

Seven Professors viz. Samy, Maren, Stephen, Donald, John, Eric and Jo teach at Stanperd College. Each professor teaches during exactly one out of the three semester’s viz. the 2nd semester, the 3rd semester and the 4th semester.

Further it is known that:

I. Maren teaches during the 4th semester.

II. Stephan and Donald teach during the same semester.

III. Jo teaches during either the 2nd semester or the 3rd semester.

IV. The number of professor who teaches during the 4th semester is twice of the number of professors who teach during the 2nd semester.

V. John and Jo teach during different semesters.

VI. Samy and Eric teach during different semesters.

41. Which of the following could be an accurate matching of the professors to the semesters during which they teach?

a. Donald: 2nd semester; Eric: 3rd semester; Jo: 2nd semester

b. Samy: 4th semester; Stephen: 4th semester; Eric: 4th semester

c. Stephen: 2nd semester; John: 3rd semester; Eric: 4th semester

d. Samy: 2nd semester; Donald: 4th semester; John: 3rd semester

42. Which of the following cannot be true?

a. Stephen teaches during the 2nd semester

b. Donald teaches during the 3rd semester

c. Donald teaches during the 4th semester

d. John teaches during the 4th semester

**Additional information for question 43 and 44:**

Exactly one professor teaches during the spring semester.

43. Which one of the following MUST be true?

a. Samy teaches during the 4th semester

b. Stephen teaches during the 2nd semester

c. Donald teaches during the 4th semester

d. Eric teaches during the 4th semester

44. If Samy teaches during the 4th semester, then during which

semester does Donald teacher?

a. 2nd b. 3rd c. 4th d. Either(a)or(b)

45. Each of the following contains a list of professors who can all teach during the same semester EXCEPT:

a. Samy, Maren and Donald

b. Samy, Stephen and Donald

c. Maren, Stephen and Eric

d. Maren, Eric and Jo

**Directions (Q. Nos. 46 – 50):** *Answer the questions based on the following information.*

six friends namely Agnes, Brian, Christopher, Danny, Freedie and Gavin are one or the other of Metallergist, Artist, Banker, firefighter, Caterer and Dentist (not in the same order) by professtion and stay in one or the other of six cities namely Fairfield, Campa Bay, Dallas, Geneva, Kansas and Boston (not in the same order). Also each of six friends owns exactly on or the other of six different companies, namely Creative Inc., Micro Inc., Steyn Inc. Sam Inc. Doggers Inc. and Broom Inc. The location of the companies owned by the six friends is one or the other of the six cities namely Boston, Whitefield, Bestow, Yosmite, Gardenia and Riveira not necessarily in the same order.

I. Agnes stays in Fairfield and owns Sam Inc.

II. One of the friends has every attribute starting with the first alphabet of his name.

III. One of the friends has no attribute starting with the first alphabet of his name.

IV. Except for the above two people every one has exactly one attribute starting with the first alphabet of their name and this attribute is different for all of them.

V. Person having Creative Inc. in Bestow stays in Geneva.

VI. Artist has Micro Inc. and he stays in Dallas.

VII. Doggers Inc. is situated in Yosmite and Steyn Inc. is owned by the Dentist but is not situated in Gardenia.

VIII. One of the companies is Broom Inc.

46. Which of the attributes of Christopher starts with the first alphabet of his name?

a. Creative Inc. b. Campa Bay

c. Caterer d. Both (a) and (b)

47. Which profession is the person staying in Kansas engaged

in?

a. Dentist b. Metallergist

c. Firefighter d. Cannot be determined

48. Who owns the company Steyn Inc?

a. Christopher b. Gavin

c. Freedie d. Danny

49. If the Caterer does not own a company in Riveira, then who owns the company in Riveira?

a. Agnes b. Dentist

c. Metallergist d. Cannot be determined

50. If Metallergist owns a company in Whitefield, then the Caterer is:

a. Christopher b. Gavin

c. Agnes d. Danny