**Grouping and Team Formation**

**SET 1:-** 9 people in a family have to go out for Dinner. There are 2 available cars – Car 1 and Car 2 – each of which can accommodate 5 persons. But there are certain conditions that need to be followed.

1. Vats will always go in Car 1 and does not want Aks in the same car.
2. Exactly 2 out of the 3 children – Meh, Rey and Dan – will be in one car.
3. Chat and Nag will always be together in one car.
4. If Ana and Aks are in the same car, then Vij will also be in the same car.
5. Any car cannot have more than 5 persons.

Q1. If Meh and Rey are in Car 1, how many different combinations are possible?

1. 6 (c) 3
2. 5 (d) 4

Q2. If Ana and Aks are not in the same car, then which among the following cannot be the complete list of the occupants of Car 1?

1. Vats, Ana, Chat, Nag, Rey
2. Vats, Ana, Vij, Rey, Meh
3. Vats, Nag, Chat, Ana
4. Vats, Ana, Rey, Dan

Q3. If Ana is in Car 2 which has 4 persons, then which of the following is definitely true?

1. Nag is in Car 2
2. Car 1 has exactly 1 child
3. Vij is in Car 1
4. Car 2 has exactly 1 child

Q4. If Chat is in Car 2, then who among the following is definitely in Car 1?

1. Rey (c) Ana
2. Vij (d) Dan

**Set 2:-** Big B, the political wizard was selecting his team for the forthcoming elections. His team was to have 2 speechwriters, 2 spokesmen and 2 media coordinators. The available speechwriters were A, B, C and D. Similarly, the available spokesmen were E, F and G and the available media coordinators were H, I, J and K. Further conditions are as follows:

1. If A is selected, neither F nor J can be selected.
2. If C is selected, then J is definitely selected.
3. H and K will always be selected together.
4. I and K will never be selected together.

Q5. Which 2 people cannot be a part of the same team?

1. I and J (c) B and D
2. A and D (d) A and C

Q6. Which among the following is an acceptable combination?

1. A, B, E, F, H, I (c) C, D, E, G, F, I
2. A, B, E, G, I, K (d) None of these

Q7. If C is selected, who among the following will definitely not get selected?

1. B (c) E
2. K (d) J

Q8. If A is selected, in how many ways can the team be selected?

1. 2 (c) 3
2. 1 (d) 4

**SET 3:-** A team is to be selected out of the 4 boys- Prashant, Amit, Sood and Gupta – and the 4 girls – Ruchi, Neha, Deepti and Sriya – such that the team should have atleast 2 boys and 2 girls. Further conditions are as follows:

1. If Ruchi is selected, neither Amit nor Sood can be selected.
2. If Prashant is selected, Gupta is also selected.
3. Sriya will be in the team only if Sood is also in the team.
4. Amit, if selected, would not like to have Neha in the team.

Q9. What could be the maximum strength of a team formed?

1. 4 (c) 5
2. 6 (d) 7

Q10. If Ruchi is a part of the team, then who among the following will definitely not be a part of the team?

1. Prashant (c) Sriya
2. Deepti (d) Gupta

Q11. If Sriya and Deepti are part of a team of 4, then who will definitely be part of the team?

1. Amit (c) Prashant
2. Gupta (d) Cannot be determined

**SET 4:-** The curator of the pitch at Ferozshah Kotla Ground in Delhi was in a dilemma. He was to re-lay the pitch within the next 6 days starting Monday before the test match. There are 3 activities in preparing a pitch : Filling, Rolling and Watering. Further conditions are as follows:

1. He would like each of these activities to be done twice during the next 6 days. Each activity will require 1 expert to be involved.
2. Pitch filling has to be the 1st activity and will be definitely done on Monday.
3. Except for filling, no other activity can be done for 2 consecutive days.
4. Rolling cannot be done unless both the filling activities are completed.
5. An expert cannot work on consecutive days.

There are 4 people – P,Q,R and S – to do these tasks, who are experts in certain areas only. While P is an expert in both filling and rolling, Q is an expert in watering and rolling. Of the remaining 2 people, R is an expert in watering only and S is an expert in filling only.

Q12. Identify the earliest day on which the 1st rolling can happen.

1. Tuesday (c) Thursday
2. Wednesday (d) Friday

Q13. If R works on Tuesday, which expert will work on Thursday?

1. P (c) S
2. Q (d) Cannot be determined

Q14. If P works on 2nd day and R works on Thursday, which activity is done on Wednesday?

1. Watering (c) Rolling
2. Filling (d) Cannot be determined

Q15. If each activity is scheduled for exactly 2 days of the week, in how many ways can the activities be scheduled?

1. 4 (c) 2
2. 3 (d) 1

**SET 5:-** Tiger Woods, the champion golfer, was preparing his return to full time competitive golfing. His trainer had arranged for him to practice 6 aspects of his game, to be practiced 2 on each day for 3 consecutive days – Wednesday, Thursday and Friday – during the week. The aspects were Swing, Stance, Putt, Plan, Push and Drive. Further conditions are as follows:

1. There will be 2 activities practiced each day, one in the morning and the other in the afternoon.
2. If Swing is practiced in the morning on a day, then Putt cannot be practiced on the following day.
3. Plan has to be practiced in the afternoon but not on Thursday.
4. Stance has to be practiced in the afternoon and Drive on Friday morning.

Q16. If Swing is practiced on Wednesday and Putt on Thursday, then the 3 aspects practiced in the morning are?

1. Push, Stance, Drive (c) Swing, Putt, Drive
2. Push, Putt, Drive (d) Swing, Stance, Drive

Q17. If Swing is practiced on Wednesday morning, then the aspect practiced on Thursday morning is?

1. Push (c) Putt
2. Plan (d) Cannot be determined

Q18. If Stance is practiced on Friday, then the aspect practiced on Wednesday morning is?

1. Putt (c) Plan
2. Push (d) Cannot be determined

Q19. If Putt is practiced on Friday, in how many ways can the practice aspects be scheduled?

1. 1 (c) 3
2. 2 (d) 4

**SET 6:-** A group of 4 nations has to be selected out of 8 members of the Security Council consisting of the United States, France, Japan, India, China, Germany, the United Kingdom and Sri Lanka. While India, China, Japan and Sri Lanka are from Asia, the other countries are from rest of the world. Further conditions are as follows:

1. Out of the 4 countries, at least 1 country each must be from Asia and rest of the World. Further, the group must include at least 1 from India and the United States.
2. If Sri Lanka is chosen, neither France nor Germany can be chosen.
3. If China is chosen, exactly 1 from the United States or the United Kingdom has to be chosen.
4. If Japan is chosen, India cannot be the chosen country.

Q20. Which among the following cannot be an acceptable combination?

1. Japan, Sri Lanka, the United States, the United Kingdom
2. India, China, the United States, France
3. India, Sri Lanka, Germany, the United Kingdom
4. Japan, China, the United States, France

Q21. If India is one of the 2 countries chosen from Asia, how many possible combinations exist?

1. 4 (c) 6
2. 7 (d) 5

Q22. If there are 2 countries chosen from Rest of the World, which of the following combinations is not possible for the countries chosen from Asia?

1. India, China (c) China, Sri Lanka
2. India, Sri Lanka (d) Japan, China

Q23. If the United Kingdom is the only country chosen from Rest of the World, which country is definitely not chosen from Asia?

1. India (c) China
2. Sri Lanka (d) Japan

**SET 7:-**  A team of teachers has to be chosen out of the 8 available teachers to represent the university at the Syllabus Council meet. The 8 teachers are Rawat, Abhishek, Vinod, Tarun, Kapil, Shalini, Vatsala and Prateek. The selection must follow additional conditions:

1. The team must have a minimum of 4 members.
2. If Rawat is selected, then Vatsala has to be definitely selected.
3. Exactly one from Prateek or Tarun has to be selected.
4. Shalini and Rawat cannot be selected together.
5. Kapil and Shalini have to be selected together.

Q24. If Rawat is a member of a team of 4 members, in how many ways can the team be selected?

1. 2 (c) 4
2. 3 (d) 5

Q25. If Shalini is selected, what can be the maximum number of members in the team?

1. 5 (c) 4
2. 6 (d) 7

Q26. Who cannot be a member of a team of 6 members?

1. Kapil (c) Abhishek
2. Tarun (d) Rawat

Q27. Who among the following cannot be members of the same team?

1. Rawat, Vinod (c) Kapil, Rawat
2. Kapil, Abhishek (d) Vatsala, Vinod

Q28. Which among the following is not an acceptable combination?

1. Rawat, Vinod, Abhishek, Tarun, Vatsala
2. Vinod, Abhishek, Prateek, Vatsala, Shalini
3. Shalini, Kapil, Vatsala, Tarun
4. Tarun, Vatsala, Shalini, Kapil, Vinod, Abhishek