

**Set 1 :** For the main exam of SAI, a student has to choose exactly 5 subjects to appear. The subjects have been divided into 2 Groups containing 5 subjects each and the student has to select at least 2 subjects from each group.

Group 1 : Physics, Chemistry, Maths, English and Social.

Group 2 : Psychology, Sociology, Political Science, Public Administration and Accounts.

Further conditions are as follows :

1. Physics and Public Administration cannot be chosen together.
2. If Maths is chosen, Sociology should be definitely chosen.
3. If 3 subjects are chosen from Group 1, Social should be definitely chosen.
4. If Chemistry is chosen, Physics should not be chosen.
5. At least 1 subject from Psychology and English must be chosen.

Q1 : If 3 Subjects are chosen from Group 1 including Physics and Maths, then which of the following subjects must definitely be selected?

- a. Political Science      b. Psychology      c. Accounts      d. Public Administration

Q2 : Which of the following combination is not possible?

- a. Physics, Maths, Sociology, Psychology, Accounts.
- b. Chemistry, Maths, Public Administration, Accounts, English
- c. English, Maths, Sociology, Social, Psychology
- d. Psychology, Political Science, Accounts, Physics, Social

Q3 : If Physics is chosen while English and Sociology are not chosen, then how many combinations are possible?

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

Q4 : If Physics and English are the only subjects chosen from Group 1, then which among the following is definitely selected?

- a. Sociology                      b. Public Administration                      c. Accounts                      d. Cannot be Determined

**Set 2 :** A team of teachers has to be chosen out of 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 the 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.

Q1 : If Rawat is a member of a team of 4 members, in how many ways can the team be selected?

- a. 2                              b. 3                              c. 4                              d. 5

Q2 : If Shalini is selected, what can be the maximum number of members in the team?

- a. 5                              b. 6                              c. 4                              d. 7

Q3 : Who cannot be a member of a team of 6 members?

- a. Kapil                      b. Tarun                      c. Abhishek                      d. Rawat

Q4 : Who among the following cannot be members of the same team?

- a. Rawat, Vinod      b. Kapil, Abhishek                      c. Kapil, Rawat                      d. Vatsala, Vinod

**Set 3 :** MSD, the Indian captain had to select the team of 11 players for the next match. He had an option to play 6 batsmen and select any 5 bowlers from Bhaj, Sree, Patel, Khan, Ravi, Chawla, Ashish or play 7

Batsmen in the form of an additional Batsman from either Suresh or Yusuf and select any 4 bowlers from the 7 bowlers available for selection. Out of the 7 bowlers Bhaj, Ashish, Ravi and Sree are fast bowlers while Chawla, Patel and Khan are spinners. Even though the game has allrounders, none of the Batsmen can be counted as bowlers or the bowlers considered as Batsmen. Further conditions are as under:

1. For every 2 fast bowlers selected, a spinner has to be definitely selected in the team.
2. If Suresh is selected, neither Ravi nor Khan can be selected.
3. Bhaj will play only if Chawla is also selected.

Q1. Which of the following cannot be the combination of the team?

- a. 6 Batsmen, Yusuf, Bhaj, Sree, Chawla, Khan
- b. 6 Batsmen, Ashish, Chawla, Patel, Bhaj, Sree
- c. 6 Batsmen, Bhaj, Sree, Chawla, Ashish, Ravi
- d. 6 Batsmen, Suresh, Sree, Patel, Ashish, Chawla

Q2. If Suresh is selected as the 7th Batsman, in how many different ways can the team be formed?

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

Q3. If MSD decides to play with 6 Batsmen and Sree gets injured and therefore not eligible for selection, who is definite to get selected?

- a. Chawla
- b. Bhaj
- c. Patel
- d. Ravi

**Set 4 :** 3 Friends Aman, Bala and Chander go out for having food. Each friend will order exactly one of the items from Pizza, Burger and Sandwich subject to the following conditions:

1. If Aman orders Burger, Bala will order the same item as ordered by Chander.
2. If Bala does not order Pizza, Chander will order the same item as ordered by Aman.
3. If Chander orders Sandwich, all three of them will order different items.

Q1 : If Aman orders Burger, then the item ordered by Bala will be?

- a. Burger
- b. Pizza
- c. Sandwich
- d. Cannot be Determined.

Q2 : If Bala orders Burger, how many Items can Chander possibly order from?

- a. One
- b. Two
- c. Three
- d. Cannot be Determined.

Q3 : If Bala orders Sandwich while Chander orders Pizza, then the item ordered by Aman will be?

- a. Pizza
- b. Burger
- c. Sandwich
- d. Any one of the three items.

Q4 : If Chander orders Sandwich, then in how many different combinations can the 3 friends order their items?

- a. 3
- b. 0
- c. 2
- d. 1

**Set 5 :** Little Kunju was in a dilemma. His Dog Bruno had recently delivered 6 puppies. They had been named as Rocket, Tuffy, Gypsy, Chilli, Steffi and Daffy. The Puppies had to be placed in 2 cages with each cage having exactly 3 puppies.

1. If Daffy is in cage 1, Gypsy and Chilli will not be together.
2. If Rocket is in cage 2, Chilli will be in cage 1.
3. Steffi cannot be in the same cage as Tuffy.
4. If Rocket is in cage 1, Tuffy will also be in cage 1.

Q1 : If Rocket is in cage 1, which of the following is definitely false?

- a. Steffi is in cage 2.
- b. Gypsy is in cage 1.
- c. Daffy is in cage 2.
- d. Daffy is in cage 1.

Q2 : If Daffy is in cage 1, how many different arrangements are possible?

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

**Q3 :** If Chilli is in cage 2, which of the following is definitely true?

- a. Gypsy is in cage 2.
- b. Daffy is in cage 1.
- c. Tuffy is in cage 2.
- d. Daffy is in cage 2.

**Q4 :** If all conditions are followed, how many possible arrangements exist?

- a. 4
- b. 5
- c. 6
- d. 7