CHAPTER – 4
SELECTIONS

In this category of questions, a small group of items or persons has to be selected from a larger group satisfying the given conditions. The conditions will specify as to when a particular item or person can be included or cannot be included in the subgroup. For example, the condition may specify that two particular persons should always be together or that two particular persons should not be together.

Sometimes, the conditions given for selection or non-selection of items or persons may be based on logical connectives like if-then, either-or, unless, etc. You should be careful in interpreting the logical connectives used in the conditions.

Directions for questions 1 to 5: These questions are based on the following information.

Amit, Bittu, Chintu, Dumpy, Falgun, Hitesh, Ronit, Purav and Saurav are nine players from among whom three teams consisting respectively of 4 members, 3 members and 2 members must be formed subject to the following conditions.
Chintu must have three more players with him while Dumpy must have only two more with him.
Chintu and Saurav cannot be in the same team.
Purav and Bittu cannot be in the same team.
Ronit and Hitesh must be in the same team.

1. If Dumpy, Falgun, Purav form the team of 3 members, then which of the following must be TRUE?
(A) Hitesh must be in a team with Bittu.
(B) Saurav must form a two-member team with Amit or Chintu.
(C) Saurav must form a two-member team with Bittu or Amit.
(D) Chintu should form a team of 4 members with Hitesh, Ronit and Amit.

2. If Dumpy takes Amit as a part of his three-member team, which of the following must go into Chintu's team?
(A) Bittu and Hitesh
(B) Hitesh and Ronit
(C) Purav and Ronit
(D) Purav and Falgun

3. If Chintu and Falgun are together and Saurav is in the team of two members, then how many sets of different teams are possible?
(A) 4 (B) 3 (C) 2 (D) 1

4. If Chintu does not have Purav in his team and the two member team consists of Saurav and Amit, then Chintu should take
(A) Hitesh, Bittu and Ronit.
(B) Bittu but not Ronit.
(C) Bittu and Falgun.
(D) Hitesh and Ronit.

5. If Purav is in the same team as Chintu and Falgun, then Saurav must be in the same team as
(A) Bittu
(B) Bittu and Amit.
(C) Amit
(D) Bittu and Dumpy.

Solutions for questions 1 to 5:

It is given that:
Chintu must form a team of 4 members only.
Dumpy must form a team of 3 members only.

Since Chintu and Dumpy are in two different teams, let us, for convenience, denote the two teams as the respective teams of these two persons. Let us call the team with four members as the first team and the team with three members as the second team. The third team should have two persons.

Number of members		
4	3	2
Chintu	Dumpy	Saurav
	Saurav	

Now let us take the other conditions and fill them up in the table above.
Chintu and Saurav cannot be in the same team.
➔ Saurav will be in the second or the third team.

Purav and Bittu cannot be in the same team.
Hitesh and Ronit must be in the same team.
We cannot represent these two conditions right now in the table above but we will use them as we go along.

1. If Dumpy, Falgun, Purav form the team of 3 members, then Saurav should be in the third team. Since Hitesh and Ronit must be in the same team, they have to be in the first team. That leaves only Amit or Bittu to be with Saurav in the third team.
Choice (C)
(Also, note that we can eliminate choice (B) easily.)

2. Dumpy takes Amit as a member of his team.
If we take Hitesh and Ronit as the two members of the third team, then Saurav has to be in the second team, in which case we will have both Purav and Bittu coming into the same team – the first team – which is not possible.

Since Saurav cannot be in Chintu's team and Purav and Bittu cannot be in the same team, the three people required for Chintu's team will have to be Hitesh and Ronit, Falgun or Purav or Bittu.
Choice (B)

3. Let us analyse the conditions. It is given that Chintu and Falgun are together, whereas Saurav is in the team of two members. Let us fill up these details in the box that we made above and then see in how many ways we can fill up the remaining cells in the box.

Chintu	Dumpy	Saurav
Falgun		

First let us look at Hitesh and Ronit who must be in the same team.
They can go into the first team or the second team. Let us consider these two cases.

Case 1 : Hitesh and Ronit go into the first team.

Then, one out of Bittu and Purav will to go into the third team and the other into the second team. This gives rise to two ways of forming the teams – one with Bittu in the second team and the other with Bittu in the third team.

Case 2 : Hitesh and Ronit go into the second team.
In this case too, one out of Bittu and Purav will go into the third team and the other into the second team. Hence, this will also gives rise to two ways of forming the teams.
Hence, there are total four ways of forming the teams. Choice (A)

4. Let us use the table that we built in the initial analysis and fill up the details that we have in this problem.

Since the two member team is already formed and Chintu does not take Purav, hence Purav will have to go into the second team.

Chintu	Dumpy	Saurav
	Purav	
		Amit

Since Ronit and Hitesh have to be in the same team, they should go into the first team. Since Bittu cannot go with Purav, he should also be in the first team. This leaves Falgun for the second team. Thus, we can fill up the table as follows:

Chintu	Dumpy	Saurav
Ronit	Purav	
Hitesh	Falgun	Amit
Bittu		

Choice (A)

5. If Purav is with Chintu and Falgun, then Bittu cannot be with them. Since Ronit and Hitesh should be together, the only other person left is Amit. These four members form the first team.
If Hitesh and Ronit together form the two member team, then Bittu and Saurav will be part of the three member team.
Instead, if Hitesh and Ronit are in the three-member team, then Saurav and Bittu will form the two-member team.
In either case, Saurav and Bittu are together in one team. Choice (A)

Directions for questions 6 to 9: These questions are based on the following information.

A, B, C, D, E, F and G are seven players. They form two teams of two players each and one team of three players. A and B cannot be in the same team. B and C cannot be in the same team whereas E and F must be in the same team. G and D cannot be in the same team.

6. If C, D and A form a team of three players, which of the following can be the members of one of the other teams?
(A) A and E
(B) G and B
(C) E and F
(D) Both (B) and (C)

7. If E, F and G form a team of three members, then in how many ways can the remaining two teams of two players each be formed?
(A) 2 (B) 4 (C) 3 (D) 1

8. If D and A are not in the same team, then altogether in how many ways can the teams of two members be formed?
(A) 4 (B) 7 (C) 8 (D) 5

9. If B, E and F form a team of three members, which of the following cannot be the two teams of two members each?
(A) AC, GD
(B) AD, CG
(C) AG, CD
(D) Both (A) and (B)

Solutions for questions 6 to 9:

Let Team I be of 3 players, Team II be of 2 players and Team III be of 2 players.
It is given that A and B cannot be together.
We will represent it as A **x** B.
Similarly, we have B **x** C and G **x** D.
E and F must be in the same team. So E and F can form a team of 2 members on their own or can form a team of 3 members with another person.
Let us now take up the questions and work them out.

6. Given that C, D, A form a team of 3 members, one of the other teams has to have E and F together. Hence, B and G should form one team.
Choice (D)

7. Given that E, F, G form a team of 3 players. Since A and B or B and C cannot be in the same team, we must necessarily have A and C together in one team and B and D in the other team. So the teams can be formed only in one way.
Choice (D)

8. Given that A and D are not in the same team.
Hence A **x** B, B **x** C, G **x** D and A **x** D.
We already know that E and F must be in the same team. They may form a team of 3 members or they themselves be a team of 2 members. Let us consider the above two possibilities and then fill up the other teams. They can be formed as follows:

	Team I	Team II	Team III
1.	A E F	B D	C G
2.	A E F	C D	B G
3.	B E F	A G	C D
4.	C E F	A G	B D
5.	D E F	A C	B G
6.	G E F	A C	B D
7.	A C G	B D	E F

Thus the teams can be formed in 7 ways.
Choice (B)

9. If B, E, F form a team of 3 members, then the two members teams must be formed from A, C, D, G. The teams can be AD & CG or AG & CD. As D and G cannot form a team, AC & GD cannot be formed. Choice (A). {Please note that we can answer this question from the answer choices – from choice (A), we find that G and D are together in one team which is not possible. Thus, choice (A) is the answer. Choice (A)

Directions for question 10: Select the correct alternative from the given choices.

10. At least two boys out of A, B, C and D and at least two girls out of P, Q, R and S have to be chosen to form a group of 5 members.
Neither A nor C can go with Q.
Neither P nor S can go with B.
Q and R cannot be together.
Which of the following is an acceptable team?
(A) ARCQP (B) ASQPD
(C) ASQRP (D) PSRAD

Solution for question 10:

10. The required group of 5 members must be formed with at least two boys from A, B, C, D and at least 2 girls from P, Q, R, S.
Answers (A), (B) and (C) can be ruled out as A and Q cannot be together.
In choice (D), P, S, R, A, D can be together without violating any of the given conditions. Choice (D)

Exercise – 4(a)

Directions for questions 1 to 5: Select the correct alternative from the given choices.

1. Eight boys J, K, L, M, N, O, P and Q go on a picnic in two batches of four each. J and L never go together. M and O do not go together. K and Q have to go together. If K and L go in one batch, then which of the following can be in the other batch?
(A) J, M, O and P (B) J, M, Q and P
(C) J, M, N and P (D) J, L, N and P

2. Three Students – Jim, Black and Sekhar – have to select three subjects each out of he six subjects – Physics, Psychology, Chemistry, Sociology, History and Law. If Law is selected, then Physics cannot be selected. If Sekhar selects Chemistry, then Jim does not select Law. If Black selects Psychology, then Sekhar cannot select Chemistry and if Jim selects Physics, then Sekhar selects History and Law. If Sekhar selects Law and Black selects Psychology, then Sekhar cannot select
(A) Physics and Chemistry.
(B) Psychology and Chemistry.
(C) Chemistry and Sociology.
(D) Physics and History.

3. Puja, Kareem, Ronak, Shalu, Tinku and Umesh are six players out of whom three players have to be selected and sent out for a match. Kareem and Shalu do not go together. Puja and Kareem do not go together. If Tinku is selected, then Puja must be selected, but Umesh cannot be selected. If Kareem is selected, then who must be selected?
(A) Tinku and Umesh
(B) Puja and Umesh
(C) Ronak and Umesh
(D) Either (A) or (B)

4. M, N, O, P, Q, R, S, T and U are nine employees in a company, who go to the chambers of their two directors A and B to talk to them about their grievances. Each director has time for only three employees. P has a priority and must be given preference by A or B. R and N do not wish to go to the same director. S goes to A only and T goes to B only. O comes back saying that neither of the two directors has time to see him. M does not go with R and U does not go with Q. N and U do not go together. If Q, R and S go together and are seen by one of the directors, then which director sees whom, assuming that M has opted out of the talks?
(A) B – P, U, T or P, N, T
(B) B – P, M, T or P, N, T
(C) A – M, U, T or N, U, T
(D) A – P, U, T or M, U, T

5. Four out of seven students A, B, C, D, E, F and G are to be selected in a football team in such a way that if A is selected, then B cannot be in that team and if B is selected, then E cannot be in that team. If one of D and F is selected, then the other must be chosen. Which of the following statements must be true?
(A) If B is selected, then D must be chosen.
(B) If A is selected, then C must be selected.
(C) If B is selected, then G must be chosen.
(D) C must be selected.

Directions for questions 6 to 10: These questions are based on the data given below.

A coach has 10 players – A, B, C, D, E, F, G, H, I and J – to form four teams for practice purposes. No team can have more than four players. No two teams can have the same number of players. C and G must be in the same team. A and F must be in the same team. I should be alone and is in one team. B and E cannot be in the same team. F and E must be in different teams.

6. Which of the following can be a complete selection of a team?
(A) A, F, C, G (B) B, D, E, H
(C) B, F, A, G (D) A, C, F, H

7. If A, D, F and J form a team, then the other two teams can be
(A) C, G and B, E, H (B) C, H and B, E, G
(C) E, H and B, C, G (D) None of these

8. If A and F are the only two members in a team, then which of the following can be the other two teams?
(A) B, D, E and C, G, H, J
(B) B, C, D and E, G, H, J
(C) C, G, H and B, D, E, J
(D) C, E, G and B, D, H, J

9. If B, D and J form a team of three members, then which of the following is an acceptable team of four members?
(A) A, E, G and H
(B) C, G, H and I
(C) A, C, E and G
(D) None of these

10. Which of the following combination of teams cannot be selected for the practice purpose?
(A) A, F, B, D; E, H, J; C, G; I
(B) B, D, H, J; C, G, E; A, F; I
(C) C, G, E, J; A, F, H; B, D; I
(D) A, E, H, B; D, F, J; C, G; I

Directions for questions 11 to 15: These questions are based on the following data.

A team consisting of five members has to be formed from among five boys P, Q, R, S, T and three girls U, V, W as per the following restrictions.

The team should have at least three boys and at least one girl.
If P is selected, R cannot be selected.
If S is selected, V cannot be selected.

11. If Q, R and V are the three members of the team, then which of the following can be the other two members?
(A) U and W (B) T and W
(C) T and U (D) Both (B) and (C)

12. If P and Q are the two boys selected to form the team, and V is not selected for the team, then which of the following can be the possible team?
(A) P Q S V W (B) P Q T U W
(C) P Q S R W (D) P Q R V W

13. If P and S are the two boys selected, then in how many ways can the team be formed?
(A) 1 (B) 2 (C) 3 (D) 4

14. If four boys are selected for the team, then which of the following girls can never join the team?
(A) U (B) V
(C) W (D) Both (A) and (B)

15. Which of the following can never be a team consisting of the boys and the girls?
(A) P Q S U W (B) P Q T V W
(C) P Q S T U (D) P Q R V W

Directions for questions 16 to 20: These questions are based on the following data.

A and B are two boys and C and D are two girls. There are four adults, out of which P and Q are two men and R and S are two women. There are two cars - a Black and a White one - each of which can accommodate four persons only. Two children and two adults must be in one car. A and Q cannot go in one car. P and D cannot go in one car. R and S cannot go in one car. There must be two males and two females in each car.

16. If P and A go in one car, then who can be the other two members in the car?
(A) Q and B (B) S and C
(C) Q and R (D) S and R

17. If Q and R go in one car, then who can be the other two members in that car?
(A) A and D (B) C and D
(C) B and D (D) A and B

18. The car carrying D cannot carry which of the other members in it?
(A) A, C and P
(B) B, R and Q
(C) S, Q and B
(D) A, Q and B

19. Which of the following statements is definitely TRUE?
(A) P, S, A and C is not a correct combination.
(B) Q, R, B and D is not a correct combination.
(C) P, Q, A and C can go in one car.
(D) P, S, A and C can go in one car.

20. Which of the following can be acceptable combinations of the people in White and Black cars respectively?
(A) P, Q, B, D and S, C, A, R
(B) P, S, A, C and Q, R, B, D
(C) S, R, A, C and P, Q, B, D
(D) P, S, A, B and Q, R, C, D

Directions for questions 21 to 26: These questions are based on the data given below.

Amitabh and Binod are two marketing heads. Each of the two marketing heads has to take marketing executives with him from among Jetendra, Tapan, Shahrukh, Irfan, Rafeek and Zayeed in such a way that if one selects two executives, then the other selects four. Neither Jetendra and Tapan together nor Shahrukh and Irfan together can go with the same marketing head.

21. If Amitabh selects four executives, then Binod cannot select
(A) Tapan and Shahrukh
(B) Jetendra and Shahrukh.
(C) Tapan and Irfan.
(D) Rafeek and Zayeed.

22. If Binod selects Tapan while Amitabh selects only two executives, then who may not be selected by Binod?
(A) Rafeek
(B) Irfan
(C) Shahrukh
(D) Either (B) or (C)

23. In how many ways can Amitabh and Binod select their groups?
(A) Two (B) Four
(C) Six (D) Eight

24. If Irfan goes with Binod as one of his two executives, then in how many ways can Amitabh choose his four executives?
(A) Two (B) One
(C) Four (D) Six

25. If Jetendra goes with Amitabh and Shahrukh goes with Binod, then in how many ways can they choose their representatives?
(A) Two
(B) One
(C) Three
(D) Four

26. Which of the following can be a possible combination of persons selected by Amitabh or Binod?
(A) Jetendra, Shahrukh, Zayeed, Tapan
(B) Shahrukh, Tapan, Rafeek, Irfan
(C) Tapan, Irfan, Zayeed, Rafeek
(D) Either (A) or (B)

Directions for questions 27 to 30: Read the given data carefully and answer the questions that follow.

Eight buses P, Q, R, S, T, U, V and W are checked by three inspectors A, B and C. Each of them is inspecting at least two of the buses. It is found that B inspects neither P nor Q and A inspects U, whereas C inspects Q and S.

27. If A inspects R, but V and Q do not get inspected by the same inspector, then which of the following can be inspected by B?
(A) U and P or Q
(B) P, S and W
(C) P, Q and T
(D) T, W and V

28. If A and C inspect only three buses each, then which of the following pairs of buses will be inspected by B?
(A) R and T
(B) T and V
(C) V and W
(D) Any pair formed from R, T, V and W

29. If B inspects only buses T, V and W, wherein C inspects only two buses, then which of the following buses does A inspect?
(A) P, Q and R (B) U, R and P
(C) U, R and Q (D) P, Q and S

30. Which of the following statements is definitely TRUE?
(A) C inspects Q, and two more buses.
(B) B inspects R, T and V.
(C) A inspects U and P.
(D) Only two of them can inspect three buses each.

Exercise – 4(b)

Directions for questions 1 to 4: These questions are based on the following information.

Ten candidates appear for an interview and six of them are selected. There are two M.As, two M.B.As, two M.C.As and four B.Techs among the candidates. If at least one M.B.A candidate is selected, then exactly two B.Tech candidates must be selected, and vice versa. Of the six selected candidates, exactly one must be an M.A. candidate.

1. Which of the following statements is definitely TRUE, if two B.Tech candidates are selected?
(A) Two M.C.As and two M.As are selected.
(B) Only two M.B.As and only one M.C.A are selected.
(C) One M.B.A and two M.As are selected.
(D) Two MBAs are selected.

2. If two M.C.A candidates are selected, then which of the following statements can be TRUE?
(A) One M.B.A and one B.Tech candidate are selected.
(B) Three B.Tech candidates are selected.
(C) Only one M.B.A and two B.Tech candidates are selected.
(D) One M.A and three B.Tech candidates are selected.

3. Which of the following statements is definitely FALSE?
(A) If four B.Tech candidates are selected, then two M.B.A candidates must be selected.
(B) One M.A candidate, one M.B.A candidate and two M.C.A candidates can be selected.
(C) One M.A, one M.B.A, two M.C.As and two B.Techs is a possible combination of selection.
(D) More than one of the above

4. Which of the following statements, if TRUE, will make the selection of six candidates impossible?
(A) Two M.B.As are selected.
(B) Two M.C.As are selected.
(C) Two B.Techs are selected.
(D) No M.C.A is selected.

Directions for questions 5 to 9: Read the given data carefully and answer the questions that follow.

Any student in a class has to select five subjects from Philosophy, Sociology, History, Economics, Anthropology, French, German, Russian and Ecology, subject to the following conditions.

Only one language out of French, German and Russian must be chosen.

Only one out of Philosophy and Sociology must be chosen.

If Economics is chosen, then Ecology must be chosen.
Sociology and Anthropology cannot be chosen together.

5. If a student selects Sociology and French as two of his subjects, then which of the following must be the other three subjects that he chooses?
(A) Philosophy, Economics and History
(B) Economics, History and Anthropology
(C) Economics, Ecology and History
(D) Cannot be determined

6. A student who chooses Ecology, Russian and Anthropology can choose the remaining subjects as
(A) Economics and French.
(B) Philosophy and Sociology.
(C) History and Sociology.
(D) Philosophy and History.

7. Which of the following must be TRUE?
(A) If Russian and Philosophy are chosen, Anthropology must be chosen.
(B) If Philosophy, Russian and French are not chosen, then Anthropology cannot be chosen but German must be chosen.
(C) If Russian and Sociology are chosen, then Economics is not chosen.
(D) None of these

8. If Sociology, History and Economics are the three subjects chosen by a student, then which of the following must be chosen by him as one of the other two subjects?
(A) Russian (B) Ecology
(C) Philosophy (D) Anthropology

9. Which of the following is not an acceptable combination of five subjects?
(A) Philosophy, Economics, German, Sociology and History.
(B) History, Economics, Ecology, German and Sociology.
(C) Philosophy, Anthropology, History, Ecology and Russian.
(D) Russian, Economics, Ecology, Philosophy and History.

Directions for questions 10 to 14: Read the information given below and answer the questions that follow.

Ajay, Bony and Chetan are three persons who go to buy six items – P, Q, R, S, T and U. Each one of them buys two different items in such a way that if Ajay buys R, then Bony buys neither P nor S. If Bony buys Q, then Chetan buys neither U nor T.

10. If Ajay buys R and T, then Bony buys
(A) P and S. (B) Q and U.
(C) P and Q . (D) S and U.

11. If Bony buys Q and S, then Ajay must buy
(A) P and R. (B) T and U.
(C) P and T. (D) R and U.

12. If Chetan has to buy P and S, then which of the following must be true?
(A) Ajay bought R.
(B) Bony bought Q.
(C) Ajay bought T.
(D) None of these

13. If Ajay buys P and Bony buys Q, then which of the following is true?
(A) Chetan buys R and S.
(B) Chetan can buy any two of P, R and S.
(C) Chetan can buy any three of P, R, S and T.
(D) Chetan can buy any two of P, R, S, T and U.

14. Which of the following is definitely TRUE?
(A) Ajay buys R and Bony buys Q.
(B) If Chetan buys T or U, then Bony buys Q and S.
(C) If Ajay buys R, then Bony buys T.
(D) If Ajay buys R and Bony buys Q, then Chetan has to buy P and S.

Directions for questions 15 and 16: These questions are based on the following information.

Out of seven people – A, B, C, D, E, F and G, four are to be selected.

1. At least one of E or B must be selected and at most one between A or D can be selected.
2. Either C or D must be selected.
3. A, F and G cannot be selected together.

15. If A is selected then who must be selected?
(A) D (B) F (C) G (D) C

16. If neither A nor D is selected, then in how many different ways can the four persons be selected?
(A) Three (B) Four
(C) Five (D) Two

Directions for questions 17 to 20: These questions are based on the following information.

Six students Jagan, Karan, Madan, Pavan, Rajan and Savan are to be divided into three teams of two students each for quiz competitions in Physics, Chemistry and History under the following constraints.

(1) Pavan does not want to be in the same team as Rajan.
(2) Savan does not want to be in Physics team.
(3) If Jagan is selected for Chemistry, then Madan must be selected for History.
(4) Karan and Madan must be selected in the same team.

17. If Rajan is selected for History team, then who must be the team mate of Pavan?
(A) Jagan (B) Savan
(C) Madan (D) Either (A) or (B)

18. If Rajan is selected for Chemistry, who must be his team mate?
(A) Jagan (B) Savan
(C) Pavan (D) Madan

19. If Rajan wants to be in Physics, then in how many ways can the teams be selected?
(A) 5 (B) 4 (C) 3 (D) 2

20. If Savan wants to be in Chemistry, then in how many ways can the teams be selected?
(A) 5 (B) 4 (C) 3 (D) 2

Directions for questions 21 to 23: Answer these questions based on the data given below.

A team is to be selected from seven members A through G. In that team at least one among B, D and F must be selected. If B is selected then neither C nor G can be selected. A and F cannot be selected together. If D is selected then E must be selected and if C is selected then A must be selected.

21. If a team of four members is to be selected, then in how many ways can the team be selected?
(A) 3 (B) 4 (C) 5 (D) 2

22. If a team of five members is to be selected then who among the following cannot be selected?
(A) C (B) A (C) G (D) B

23. If a team of three members is to be selected, then in how many ways can the team be selected?
(A) 7 (B) 6 (C) 5 (D) 4

Directions for questions 24 to 26: These questions are based on the following information.

Rahul has to select five books from nine books. Among those nine books, five books are printed in different years-2004, 2005, 2006, 2007 and 2008 and the remaining books are written by different authors A, B, C and D. Rahul has to select at least two books which were printed in the above given years. Further, it is known that,

(i) If the book which was printed in either 2004 or 2008 is selected, then the book which was written by A must not be selected.
(ii) The book which was printed in 2006 cannot be selected with the books which were printed in the previous years of 2006.
(iii) The book which was written by D cannot be selected with the books which were printed in the previous years of 2007.
(iv) The books which were printed in 2005 and 2007 should not be selected together.
(v) If the book which was written by C is selected, then only two books are to be selected which were printed in the consecutive years.

24. Which among the following books cannot be selected?
(A) the book written by D.
(B) the book printed in 2005.
(C) the book printed in 2008.
(D) the book written by A.

25. Which among the following books must be selected, if the book written by A is selected?
(A) the book written by D.
(B) the book printed in 2005.
(C) the book printed in 2006.
(D) None of the above

26. Which among the following books must not be selected, if the book written by D is selected?
(A) the book written by A.
(B) the book written by B.
(C) the book printed in 2007.
(D) the book printed in 2008.

Directions for questions 27 to 30: These questions are based on the following information.

A, B, C, D, E, F, G, H, I, J and K are football players. Each of them can play in at least one of the positions defense, mid-field, forward and goal keeping. Among them A, B, C and K are defenders. C, D, E and F are mid-fielders. F, G, H and I are forwards. J and K are goal keepers.

A team of six players is to be selected for an exhibition match with the following restrictions. The team should consist of one goal keeper, two defenders, one mid-fielder and two forwards. The following is known about selecting the players.

(i) Only one among J and K is selected.
(ii) If D is selected, then neither C nor K is selected.
(iii) If B is selected, then neither F nor I is selected.
(iv) If F or C is selected, then J is not selected.
(v) Among D, F and C, only one is selected.

27. If J is selected, then who will be selected as forwards?
(A) F along with G or I
(B) Only G and H
(C) G along with H or I
(D) Only F and H

28. If F is selected as the mid-fielder, in how many ways can the team be selected?
(A) Eight
(B) Nine
(C) Seven
(D) No such team is possible

29. If D is selected as the mid-fielder, then in how many ways can the team be selected?
(A) One (B) Three
(C) six (D) Five

30. Who among the following cannot be selected as forward?
(A) F (B) G (C) H (D) I

Key

Exercise – 4(a)

1. C	6. A	11. D	16. B	21. D	26. C
2. A	7. C	12. B	17. C	22. D	27. D
3. C	8. D	13. D	18. A	23. D	28. D
4. A	9. D	14. B	19. D	24. A	29. B
5. A	10. D	15. D	20. B	25. A	30. D

Exercise – 4(b)

1. D	6. D	11. B	16. B	21. C	26. A
2. C	7. B	12. D	17. D	22. D	27. B
3. A	8. B	13. A	18. B	23. A	28. D
4. D	9. A	14. D	19. D	24. B	29. A
5. C	10. B	15. D	20. B	25. C	30. A