Directions (1-5): Study the following information carefully and answer the given questions.

Pranav is working in the Maharashtra state electricity distribution co ltd. as an assistant engineer. He is the incharge of the Lohegaon area. He is going to the inspection of the towers in those areas. Signals among eight towers- P, Q, R, S, T, U, V and W are transmitted in the following manner. P, Q, R, S, T, U, V and W are arranged in a straight line facing north but not necessarily in the same order. Q is placed third to the left of T. V is placed fifth to the right of Q but neither placed at any of the extreme ends. Two way transmissions is possible between P and Q, Q and S, S and U, R and P, T and R, T and V. U does not arrange at an extreme end. One way transmission is possible from R to Q, S to T and V to U. R and S towers are immediate neighbours of each other but neither of them is an immediate neighbor of tower V. Only one tower is placed between R and P, who is not an immediate neighbor of T.

Q1. For which of the following pairs of towers, signals can be transmitted between them, in both way i.e, from the first tower to the second tower and from the second tower to the first tower. Such that in each case the signal passes through all other towers exactly once?
(a) V, P
(b) P, Q
(c) V, U
(d) U, P
(e) All of the above

Q2. In how many different routes can the signal be transmitted from S to R and R to S passing through others tower exactly only once?
(a) 6
(b) 7
(c) 5
(d) 4
(e) None of these

Q3. Which of the following routes for transmission of signal is not possible, without passing through any tower more than once?
(a) R to V through P
(b) V to S without passing through U
(c) Q to S through V
(d) More than one of the above
(e) R to S through V

Q4. Four of the following five are alike in a certain way based on their seating arrangement and so form a group. Which is the one that does not belong to that group?
(a) PS
(b) RU
(c) TW
(d) VS

(e) QT

Q5. Which of the following pairs of towers has maximum number of routes of transmission which can be possible (without passing through any tower more than once)?
(a) R to S
(b) S to R
(c) R to T
(d) P to V
(e) Both (a) and (c)

Q6. Eight newly extracted Gold coins were weighed by a gold mine worker. In his report card he pointed out that gold coin A is lighter than at least four gold coins. Gold coin C is lighter than gold coin D, who is heavier than only four gold coins. Gold coin B is lighter than gold coin D but heavier than at most two gold coins. Gold coin E is lighter than gold coin A and C. B is not the third lightest coin. How many gold coins is the heaviest than gold coin A?
(a) Five
(b) Four
(c) None of these
(d) Six
(e) Either (a) and (d)

Direction (7): Read the following instructions carefully and answer the given questions.

From point A, Aniket walks 15 meter towards north-east directions reached point B. And another person 'Aman' is already standing in point B, who is facing north-east direction and he takes 135° right turn. Aniket takes 90° right turn and walks 30 meter and reached point C, then Aniket turns to the east direction and walks 10 meter. After reaching point Z, he saw his friend 'Rahul', who is north-east direction of point C.

Q7. If point F is the midpoint of line BC and Aman cross a line AF whose length is 15m and he crosses point M which is in line AF. The perimeter of BCZ is $10(4+\sqrt{10})$m. Then what is the total distance between the line AM and midpoint of shortest distance of line BZ?
(a) $7.5 + 5\sqrt{10}$ meter
(b) $15 + 5\sqrt{5}$ meter
(c) $10 + 5\sqrt{10}$ meter
(d) None of these
(e) $7.5 + 5\sqrt{5}$ meter

Directions (8-12): Study the following information carefully and answer the given questions.

M, N, O and P are four friends. They participate in the sports competition which is happening in their school. They played one game each against the other three in each of the three events- Tennis, Badminton and Boxing. No game ended in a draw. The following information is known about the result-
i. M won in Tennis only against O and P and he won three games in all.
ii. Each of O and P won twice against M.
iii. O and P won against N in Tennis. P won against N in boxing.

iv. N lost only two games to P, who won seven games.

v. M lost all games in only one event, but it is not the event in which P won all the games.

vi. N won only one game in boxing against the person to whom he lost in Badminton.

Q8. How many games did O win in boxing?

   (a) 0

   (b) 1

   (c) 2

   (d) 3

   (e) None of these

Q9. Which of the following combination is correct?

   (a) M won only two matches in badminton.

   (b) P won two matches against M

   (c) O won no match against N

   (d) None of the given option is correct

   (e) M lost to O in Tennis.

Q10. Who among the following won 3 matches in any game?

   (a) M

   (b) N

   (c) P

   (d) O

   (e) Both P and M

Q11. Who among the following lost at least two matches against P?

   (a) M

   (b) O

   (c) N

   (d) All of these

   (e) Both M and O

Q12. Which of the following combination is correct?

   (a) M won against P in Boxing.

   (b) P won 2 matches in tennis and 1 in badminton.

   (c) N won all matches in boxing.

   (d) O lost to P in badminton.

   (e)None of these

Direction (13): This question consists of one conclusion followed by five statements. Consider the given conclusion to be true even if they seem to be at variance with commonly known facts. Read the conclusions and then decide which of the following statement is true for that conclusion.

Q13. **Conclusions:**

   All judges being lawyers is a possibility.

   No lawyer is a culprit.

Statements:
(a) Some lawyers are polices. No police is a judge. All judges are culprits.
(b) Some judge are not polices. All lawyers are polices. No police is a culprit.
(c) All polices are judge. Some lawyers are not polices. No culprit is a lawyer.
(d) Some polices are culprits. All lawyers are polices. No culprit is judge.
(e) None of these

Directions (14-18): Study the following information carefully and answer the given questions.

There are seven persons P, Q, R, S, T, U and V of the family. They all are going to the different cities i.e. Delhi, Patna, Bangalore, Ranchi, Goa, Mumbai and Chennai, but not necessarily in the same order also all of them have different profession viz; Engineer, Doctor, Teacher, Physician, Lawyer, Professor and Architect, but not necessarily in the same order. All of them sit in a given manner and each having different age. There is three generation in the family. In any generation no two person's age is same.

The difference of age between S's father and V's grandmother is 11 year. There are two person sitting between the person who is Lawyer and the one who is immediate above the one, who is going to Chennai. S's aunt is not going in Bangalore and Chennai. Each parent is at least 11 years elder than his/ her child. U is married to that person, who is going to Bangalore. Neither V nor T is going to Chennai and Patna. The person who is Doctor is going to Goa. Professor is above Physician (but not immediate above). No one is less than 23 years old. Only One person sits between Engineer and Lawyer, who is going to Delhi. Each husband is at least one year elder than his wife. V's grandfather is 2 times of his granddaughter. There are three person sit between the one who is going to Goa and V. The person, who is going to Patna, has only one niece. The one, who is Teacher, is maternal uncle of V. The person who is Teacher is going to Patna and sits immediate above Lawyer. V is one year elder than the one, who is Architect. U is Professor and she is not going to Bangalore and Ranchi. V is going to Ranchi and she is not an Engineer. Person going to Delhi is grandmother of V. Two persons sit between U and T. T is not going to Goa. Four persons sit between R and S, who is 24 year old. Q sits below R and two places above U. R's brother-in-law is 12 year older than his child.

Q14. Which of the following city is S's uncle is going?
(a) Delhi
(b) Ranchi
(c) Bangalore
(d) None of these
(e) Mumbai

Q15. What is the age of that person, who is Lawyer?
(a) 38yr
(b) 50yr
(c) None of these
(d) 49yr
(e) 25yr

Q16. How is S related to the one, who is going in Goa?
(a) Grandson
(b) Son
(c) None of these
(d) Can't be determined
(e) Granddaughter

Q17. Which of the following profession is occupied by U's mother-in-law?
(a) None of these
(b) Lawyer
(c) Engineer
(d) Physician
(e) Doctor

Q18. If in a certain way 'P' is related to 'Mumbai' and 'Q' is related to 'Bangalore' then which of the following is 'R' is related to?
(a) Ranchi
(b) None of these
(c) Chennai
(d) Delhi
(e) Mumbai

Direction (19): In this question, a set of six statements is given, followed by five answer choices. Each of the answer choices has a combination of three statements from the given set of six statements. You are required to identify the answer choice in which the statements are logically related.

Q19. A. All cotton is rajai.
B. All bedsheet is pillow.
C. Some rajai is sawl.
D. Some rajai is not sawl.
E. No cotton is bedsheet.
F. Some sawl is not rajai.
(a) ABF
(b) ACB
(c) CDF
(d) ABE
(e) ABD

Directions (20-24): Study the following information carefully and answer the questions which follow–
In a family, there are seven members A, B, C, D, E, F and G of different age groups.
A is grandfather of B, who is the elder sister of E. C is the wife of D's son and her age is 26 years. G is grandmother of E and her age is 3 times the age of B. F is the son of G and father-in-law of C. every husband is elder to his wife. There are three generations in the family. The age of one daughter-in-law is double the age of another daughter-in-law. The age of one father-in-law is 3/2 times the age of another father-in-law. The difference between the ages of E's parents is 8 years. The average age of the family is 53 years. (All ages values are an integer)

Q20. What is the age of E?
(a) 28 years
(b) 27 years
(c) 29 years
(d) 30 years
(e) Cannot be determined

Q21. If after 4 years of marriage of F, he got a baby (B), then find the age of D, when she got a baby (E).
   (a) 25 years
   (b) 32 years
   (c) 29 years
   (d) 31 years
   (e) None of these

Q22. Which of the following is true with respect to the given information?
   (a) The difference between the ages of A and B is 54 years
   (b) The difference between the ages of the youngest and he eldest person is 67 years
   (c) The age of grandfather of E is 87 years
   (d) The sister-in-law of C is 3 years elder than her
   (e) None of the above is true

Q23. What is the difference between the ages of the wife of F and the grandfather of E?
   (a) 38 years
   (b) Less than 38 years
   (c) Can't be determined
   (d) More than 38 years
   (e) None of these

Q24. If at the age of 21, E got married and after 5 years of his marriage he got a child, then find the difference between the present age of D and the child of E?
   (a) 49
   (b) 54
   (c) 55
   (d) 59
   (e) None of these

Q25. If a person 'Rakesh' walks 15 meter towards south directions from point A to point B, then turn towards east, walks 7 meter and reached point C again turn towards north direction, walks 5 meter and reached point D. Another person 'Sanjeev', who stand on point E, which is 15 meter west of point D. Point Q is north of point E. If Point P, Q, E are in a straight line and Point P is south-west of point B. And shortest distance between point E and point P is 11 meter. Then what is the shortest distance between point B to point P?
   (a) $2\sqrt{5}$ meter
   (b) None of these
   (c) 20 meter
   (d) Can't be determined
   (e) 10 meter

Directions (26-29): Study the following information carefully and answer the questions given below:
In a certain code language
'Mills get highest bidding' written as   [22$E 17%I 23%I 2@I]

'IPL auctions will be interesting' is written as [12*I 24$P 16&U 17#E 24>N]
'Interest expected in English players' is written as [5%L 20%N 24#N 20&X 24&N]
'Ben stokes headlines that list' is written as [8<T 9*H 1*I 17$E 23/E]

Q26. According to the following pattern, what is the code for the word 'Tendulkar'?
    (a) 9%E
    (b) 10>R
    (c) 9/E
    (d) 12/E
    (e) None of these

Q27. The code '20&X' belongs to which of the following word?
    (a) Interest
    (b) Expected
    (c) English
    (d) Players
    (e) in

Q28. What is the code for the word 'highest'?
    (a) 22$E
    (b) 23%I
    (c) 2@I
    (d) 17%I
    (e) None of these

Q29. According to the given code, what is the code for 'J'?
    (a) 21
    (b) 10
    (c) 12
    (d) 26
    (e) 25

Directions (30-34): These questions are based on the data given below.
    BCCI has given chance to four Indian players Kohli, Raina, Dhoni, Yuvraj to prove their performances. Four players played four One-Day matches, Match-1, Match-2, Match-3 and Match-4.
    Each of them scored some runs in three matches and gone for duck in remaining one match. No two players got out at duck for the same match. Each of them scored 10, 20, 30 or 40 runs in each match they appeared for but not necessarily in the same order. No two players scored equally in any match. No player scored equally in any two matches. And no two players scored equal total runs in all matches.
(i) Kohli's total score for all the matches he appeared for is eighty and he scored the least in match-4.
(ii) Raina got out at duck in match-2 and his total score is more than other players and it is the same as the sum of the scores obtained in match-3 by those who appeared for match-3.
(iii) No one scored 20 marks in match-4 and the scores obtained by Dhoni in match-1, by Raina in match-4 and by Kohli in match-3 are equal.
(iv) Yuvraj scored the highest in match-4 and no one scored 40 runs in match-1.

Q30. Which of the following players got out at duck in match-3?

(a) Dhoni

(b) Kohli

(c) Yuvraj

(d) Either Kohli or Yuvraj

(e) None of these

Q31. How many runs scored by Dhoni in match-2?

(a) 10

(b) 20

(c) 30

(d) 40

(e)None of these

Q32. If the sum of the scores obtained in all matches is equal for any two players, then how many runs did Yuvraj scored in match-2?

(a) 10

(b) 20

(c) 30

(d) Cannot be determined

(e) None of these

Q33. Based on the performance in match which of the following can be concluded?

I. Yuvraj was in extreme pressure among all the players during matches.

II. Raina is a better player than at least one of the three.

(a) Only I

(b) Only II

(c) Both I and II

(d) Neither I nor II

(e) None of these

Q34. What was the score obtained by Raina in match 4?

(a) 30

(b) 40

(c) 20

(d) 10

(e) None of these

Directions (35): From the below statement, which of the following statement can be concluded if it is not considered in statement. That statement will be your answer.
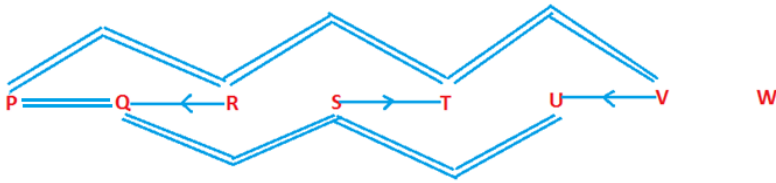
Q35. (a) Some watches are rings.

(b) Some belts are not rings.

(c) All watches are belts.

(d) No rings are wallet.

(e) All wallets are watches.

S1. Ans.(e)
Sol.

S2. Ans.(c)
Sol.
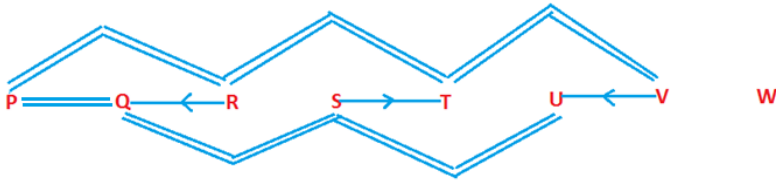
S3. Ans.(a)
Sol.
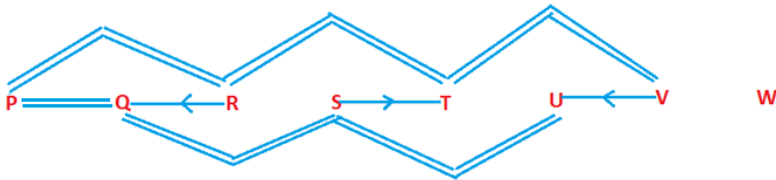
S4. Ans.(d)
Sol.
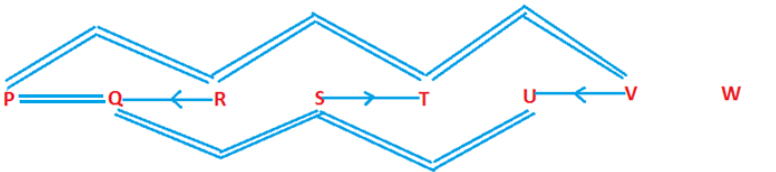
S5. Ans.(e)
Sol.
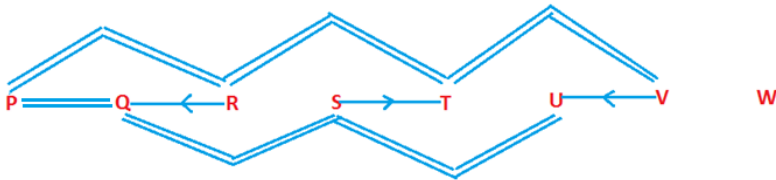
S6. Ans.(e)
Sol.
        _ > _> _ > D> A/C > C/A >B/E > E/B

S7. Ans.(a)
Sol.
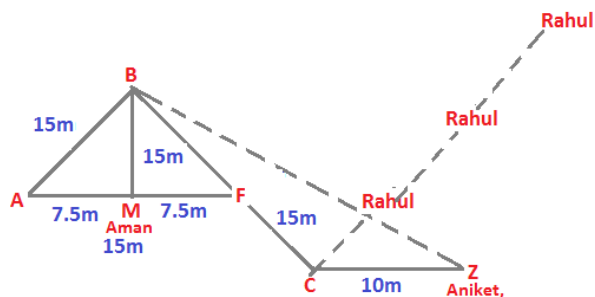
S8. Ans.(b)
Sol.

Players	Tennis	Badminton	Boxing
M	N × O ✓ P✓	N × O × P ×	N ✓ O × P ×
N	M ✓ O × P×	M ✓ O × P ✓	M × O ✓ P ×
O	M × N✓ P×	M ✓ N P ×	M ✓ N × P ×
P	M × N✓ O✓	M ✓ N × O✓	M ✓ N ✓ O✓

S9. Ans.(b)
Sol.

Players	Tennis	Badminton	Boxing
M	N × O ✓ P✓	N × O × P ×	N ✓ O × P ×
N	M ✓ O × P×	M ✓ O × P ✓	M × O ✓ P ×
O	M × N✓ P×	M ✓ N P ×	M ✓ N × P ×
P	M × N✓ O✓	M ✓ N × O✓	M ✓ N ✓ O✓

S10. Ans.(c)
Sol.

Players	Tennis	Badminton	Boxing
M	N × O ✓ P✓	N × O × P ×	N ✓ O × P ×
N	M ✓ O × P×	M ✓ O × P ✓	M × O ✓ P ×
O	M × N✓ P×	M ✓ N ✓ P ×	M ✓ N × P ×
P	M × N✓ O✓	M ✓ N × O✓	M ✓ N ✓ O✓

S11. Ans.(d)
Sol.

Players	Tennis	Badminton	Boxing
M	N × O ✓ P✓	N × O × P ×	N ✓ O × P ×
N	M ✓ O × P×	M ✓ O × P ✓	M × O ✓ P ×
O	M × N✓ P×	M ✓ N ✓ P ×	M ✓ N × P ×
P	M × N✓ O✓	M ✓ N × O✓	M ✓ N ✓ O✓

S12. Ans.(d)
Sol.

Players	Tennis	Badminton	Boxing
M	N × O ✓ P✓	N × O × P ×	N ✓ O × P ×
N	M ✓ O × P×	M ✓ O × P ✓	M × O ✓ P ×
O	M × N✓ P×	M ✓ N ✓ P ×	M ✓ N × P ×

Sol.	P	M ✗ N ✓ O ✓	M ✓ N ✗ O ✓	M ✓ N ✓ O ✓

S13. Ans.(c)
Sol.
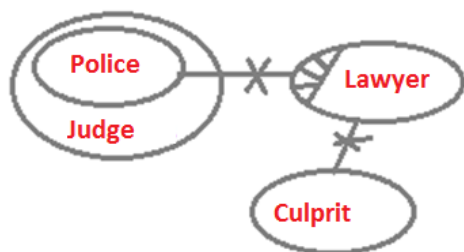
S14. Ans.(c)
Sol.

Person	Profession	City
R	Teacher	Patna
T	Lawyer	Delhi
Q	Doctor	Goa
P	Engineer	Bangalore
U	Professor	Mumbai
S	Architect	Chennai
V	Physician	Ranchi
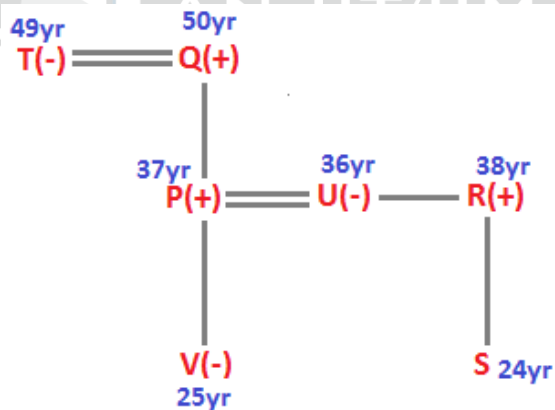
S15. Ans.(d)
Sol.

Person	Profession	City
R	Teacher	Patna
T	Lawyer	Delhi
Q	Doctor	Goa
P	Engineer	Bangalore
U	Professor	Mumbai
S	Architect	Chennai
V	Physician	Ranchi
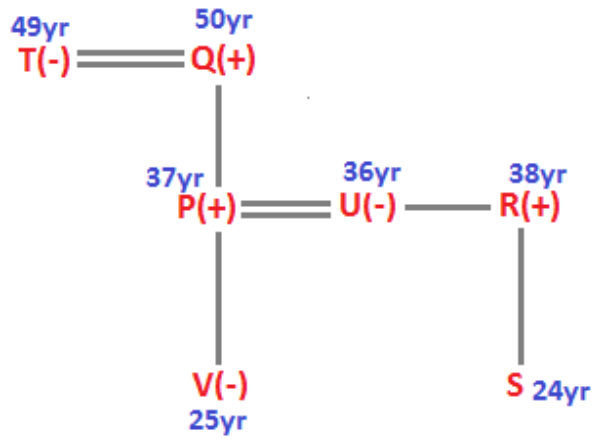
S16. Ans.(d)
Sol.

Person	Profession	City
R	Teacher	Patna
T	Lawyer	Delhi
Q	Doctor	Goa
P	Engineer	Bangalore
U	Professor	Mumbai
S	Architect	Chennai
V	Physician	Ranchi
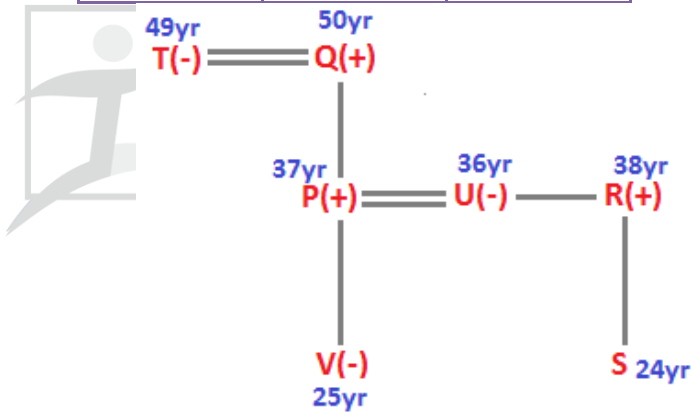
S17. Ans.(b)
Sol.

Person	Profession	City
R	Teacher	Patna
T	Lawyer	Delhi
Q	Doctor	Goa
P	Engineer	Bangalore
U	Professor	Mumbai
S	Architect	Chennai
V	Physician	Ranchi

S18. Ans.(d)
Sol.

Person	Profession	City
R	Teacher	Patna
T	Lawyer	Delhi
Q	Doctor	Goa
P	Engineer	Bangalore
U	Professor	Mumbai
S	Architect	Chennai
V	Physician	Ranchi

S19. Ans.(d)
Sol.

S20. Ans.(b)
Sol.

(90) A═══G(87)
  (+) ↓ (−)

   (60)F═══D(52)
    (+) ↓ (−)

    (29)B———E (27)═══C (26)
     (−)   (+)   (−)

S21. Ans.(a)
Sol.

(90) A═══G(87)
  (+) ↓ (−)

   (60)F═══D(52)
    (+) ↓ (−)

    (29)B———E (27)═══C (26)
     (−)   (+)   (−)

S22. Ans.(d)
Sol.

(90) A═══G(87)
  (+) ↓ (−)

   (60)F═══D(52)
    (+) ↓ (−)

    (29)B———E (27)═══C (26)
     (−)   (+)   (−)

S23. Ans.(a)
Sol.

(90) A═══G(87)
  (+) ↓ (−)

   (60)F═══D(52)
    (+) ↓ (−)

    (29)B———E (27)═══C (26)
     (−)   (+)   (−)

S24. Ans.(e)
Sol.

```
(90) A══════G(87)
     (+)  │   (−)
          ▼
     (60)F══════D(52)
         (+) │   (−)
             ▼
     (29)B──────E (27)══════C (26)
         (−)     (+)           (−)
```
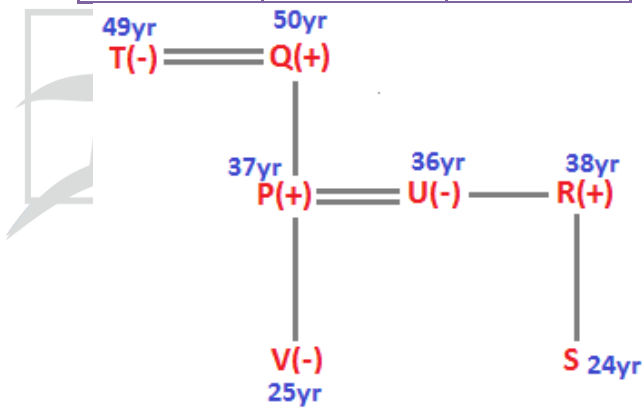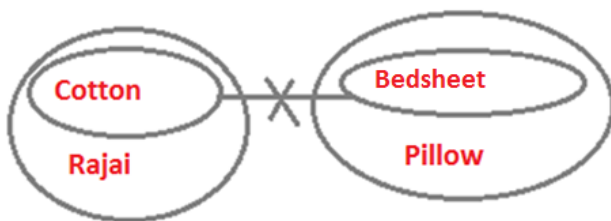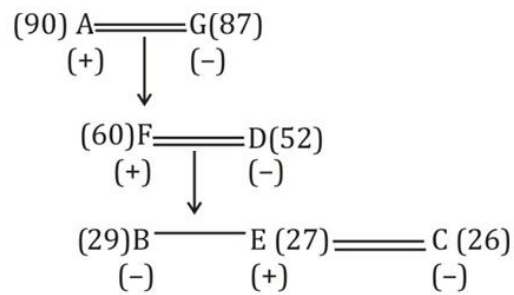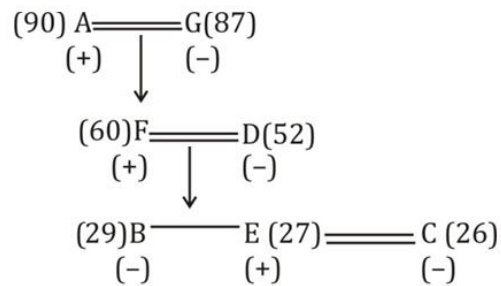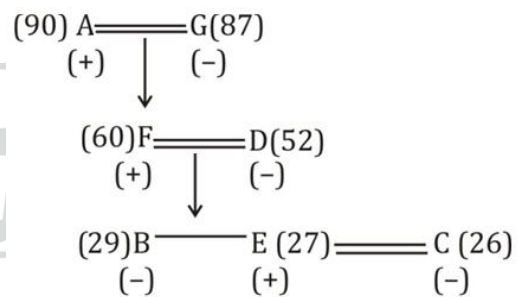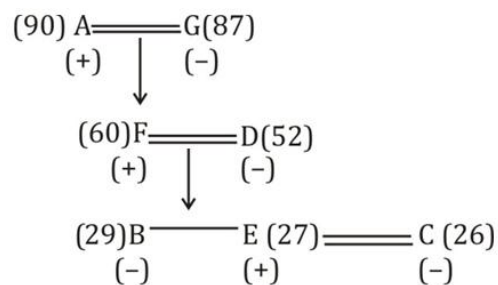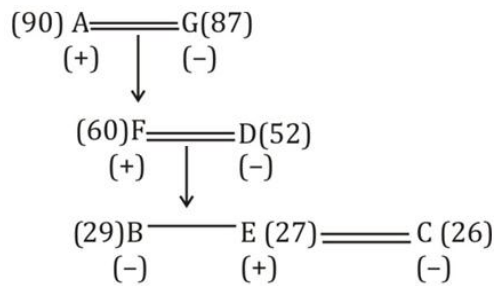
S25. Ans.(e)
Sol.
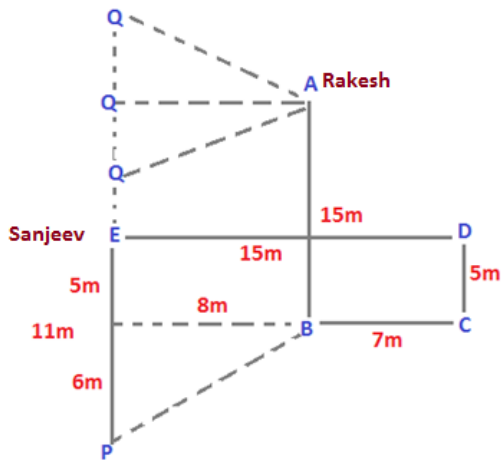
S26. Ans.(c)
Sol.

      i. The first number of the code follows according to this pattern-

        A-16,B-17,C-18……….L-1,M-2…..U-10

      ii. The special code used in the code according to this pattern. Number of letters in a word-Special code.

        5-@, 3-$,7-%, 8-&, 4-*,2- #, 6-<, 11->, 9- /

      iii. The last letter of the code is the second letter of the word.

        Sachin- 8<A

S27. Ans.(b)
Sol.

      i. The first number of the code follows according to this pattern-

        A-16,B-17,C-18……….L-1,M-2…..U-10

      ii. The special code used in the code according to this pattern. Number of letters in a word-Special code.

        5-@, 3-$,7-%, 8-&, 4-*,2- #, 6-<, 11->,9- /

      iii. The last letter of the code is the second letter of the word.

        Sachin- 8<A

S28. Ans.(b)
Sol.

      i. The first number of the code follows according to this pattern-

        A-16,B-17,C-18……….L-1,M-2…..U-10

      ii. The special code used in the code according to this pattern. Number of letters in a word-Special code.

        5-@, 3-$,7-%, 8-&, 4-*,2- #, 6-<, 11->, 9- /

iii. The last letter of the code is the second letter of the word.
   Sachin - 8<A

S29. Ans.(e)
Sol.

i. The first number of the code follows according to this pattern-
   A-16,B-17,C-18..........L-1,M-2.....U-10
ii. The special code used in the code according to this pattern. Number of letters in a word-Special code.
   5-@, 3-$,7-%, 8-&, 4-*,2- #, 6-<, 11->, 9- /
iii. The last letter of the code is the second letter of the word.
   Sachin- 8<A

S30. Ans.(c)
Sol.

Players	Match 1	Match 2	Match 3	Match 4
Kohli	Duck	40	30	10
Raina	20	Duck	40	30
Dhoni	30	10	20	Duck
Yuvraj	10	20	Duck	40

S31. Ans.(a)
Sol.

Players	Match 1	Match 2	Match 3	Match 4
Kohli	Duck	40	30	10
Raina	20	Duck	40	30
Dhoni	30	10	20	Duck
Yuvraj	10	20	Duck	40

S32. Ans.(c)
Sol.

Players	Match 1	Match 2	Match 3	Match 4
Kohli	Duck	40	30	10
Raina	20	Duck	40	30
Dhoni	30	10	20	Duck
Yuvraj	10	20	Duck	40

S33. Ans.(c)
Sol.

Players	Match 1	Match 2	Match 3	Match 4
Kohli	Duck	40	30	10
Raina	20	Duck	40	30
Dhoni	30	10	20	Duck
Yuvraj	10	20	Duck	40

S34. Ans.(a)
Sol.

Players	Match 1	Match 2	Match 3	Match 4
Kohli	Duck	40	30	10
Raina	20	Duck	40	30

Dhoni	30	10	20	Duck
Yuvraj	10	20	Duck	40

S35. Ans.(b)
Sol.