NEXT IAS

LOGICAL REASONING

(Analytical Ability & General Mental Ability)

Comprehensive Study Course

CIVIL SERVICES EXAMINATION 2025

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Logical Reasoning

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Contents

LOGICAL REASONING

(Analytical Ability & General Mental Ability)

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UPSC SYLLABUS FOR CSAT

Total Marks : 200 **Duration : Two hours**

- Comprehension;
- Interpersonal skills including communication skills;
- Logical reasoning and analytical ability;
- Decision making and problem solving;
- General mental ability;
- Basic numeracy (numbers and their relations, orders of magnitude, etc.) (Class X level), Data interpretation (charts, graphs, tables, data sufficiency etc. — Class X level);

Paper-II of the Civil Services (Preliminary) Examination will be a qualifying paper with minimum qualifying marks fixed at 33%. The questions will be of multiple choice, objective type.

02 Chapter

Puzzles

Logical Reasoning Puzzles require you to analyze the given piece of information, pick the information that is important.

Basic steps to solve Logical Puzzles:

Take a quick look at the question.

Develop a general idea regarding the theme of the problem.

Select the data that is giving you some concrete information out of total information given. Also, select the data which helps in ruling out certain possibilities

SOLVED EXAMPLES

Directions (Q.1-Q.4): Consider the given information and answer the 4 items that follow.

Five cities *P,Q,R,S* and *T* are connected by different modes of transport as follows:

- *P* and *Q* are connected by boat as well as rail.
- *S* and *R* are connected by bus and boat.
- *Q* and *T* are connected by air only.
- *P* and *R* are connected by boat only.
- *T* and *R* are connected by rail and bus.

Q.1 Which mode of transport would help one to reach *R* starting from *Q*, but without changing the mode of transport?

(a) Boat (b) Rail

(c) Bus (d) Air

Ans. (a)

Q.2 If a person visits each of the places starting from *P* and gets back to *P*, which of the following places must he visit twice?

(a) *Q* (b) *R*

(c) *S* (d) *T*

Ans. (b)

Q.3 Which one of the following pairs of cities is connected by any of the routes directly without going to any other city?

(a) *P* and *T* (b) *T* and *S*

(c) *Q* and *R* (d) None of these

Ans. (d)

Q.4 Between which two cities among the pairs of cities given below are there maximum travel options available?

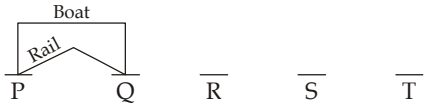
(a) *Q* and *S* (b) *P* and *R*

(c) *P* and *T* (d) *Q* and *R*

Ans. (a)

We will use the information given in the question to make a route map in the following way.

Information 1: *P* and *Q* are connected by boat as well as rail.



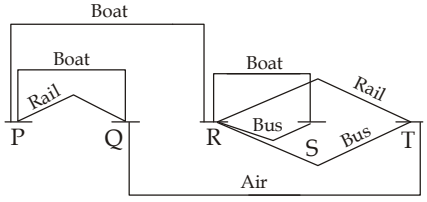
Information 2: *S* and *R* are connected by bus and boat.

Information 3: *Q* and *T* are connected by air only.

Information 4: *P* and *R* are connected by boat only.

Information 5: *T* and *R* are connected by rail and bus.

Similarly, using all the above information, we can make the following diagram.



From this diagram we can get the answers to all the questions.

The route for **Q.1** will be $Q \rightarrow P \rightarrow R$

For **Q.2**, the route will be $P \rightarrow R \rightarrow S \rightarrow R \rightarrow T \rightarrow Q \rightarrow P$

In **Q.3** it can be easily seen from the diagram that there is no direct route for the pair of cities given in the options.

Directions (Q.5-Q.6): In the following questions sample Input and Output is given. Based on this find the output of the another sequence mentioned in the question.

Q.5 Input: 4, 6, 3, 5
Output: 9, 16, 25, 36
What will be the output of the following input sequence?

Input: 2, 3, 8, 7

(a) 4, 9, 49, 64 (b) 4, 9, 64, 49
(c) 2, 3, 7, 8 (d) 9, 16, 4, 49

Ans. (a)

Output is square of every individual number from the input and at the same time output is arranged in the ascending order.

Q.6 **Input:** Next IAS is the best institute for civil services preparation.

Output: IAS Next the is institute best civil for preparation services.

What will be the output of the following input sequence?

Input: One has to prepare hard to clear civil services exam

(a) has one to prepare hard to clear civil exam services
(b) has one prepare to to hard civil clear exam services
(c) one has to prepare hard to civil clear exam services
(d) has one to prepare to hard civil clear exam services

Ans. (b)

The output can be obtained by interchanging successive words in pair. First word is interchanged by second, third by fourth and so on.

Q.7 Kanmani ranked sixteenth from the top and twenty ninth from the bottom among those who passed an examination. Six boys did not participate in the competition and five failed in it. How many boys were there in the class?

(a) 35 (b) 45
(c) 50 (d) 55

Ans. (d)

Number of boys who passed = (15 + 1 + 28) = 44

Total number of boys in the class = 44 + 6 +5 = 55.

Q.8 In a row of girls, Nithya and Suganya occupy ninth place from the right end and tenth place from the left end, respectively. If they interchange their places, then Nithya and Suganya occupy seventeenth place from the right and eighteenth place from the left respectively. How many girls are there in the row?

(a) 22 (b) 24
(c) 26 (d) 28

Ans. (c)

Since Nithya & Suganya exchange places, so Rita's new position is the same as Monika's earlier position. This position is 17th from the right and 10th from the left. Therefore Number of girls in the row = (16 + 1 + 9) = 26.

Q.9 If Ajay finds that he is twelth from the right in a line of boys and fourth from the left, how many boys should be added to the line such that there are 28 boys in the line?

(a) 13 (b) 14
(c) 16 (d) 20

Ans. (a)

Number of boys in the line = (11 + 1 + 3) = 15.

Therefore number of boys to be added = 28 – 15 = 13.

Previous Years Solved Questions

Directions (Q.1-Q.4): Read the following statements and answer the four items that follow:

Five cities *P, Q, R, S* and *T* are connected by different modes of transport as follows:

P and *Q* are connected by boat as well as rail.

S and *R* are connected by bus and boat.

Q and *T* are connected by air only.

P and R are connected by boat only.

T and *R* are connected by rail and bus.

Q.1 Which mode of transport would help one to reach *R* starting from *Q*, but without changing the mode of transport?

(a) Boat (b) Rail
(c) Bus (d) Air

[UPSC 2013]

Ans. (a)

The possible mode of transport

P-boat-*Q*

P-rail-*Q*

S-bus-*R*

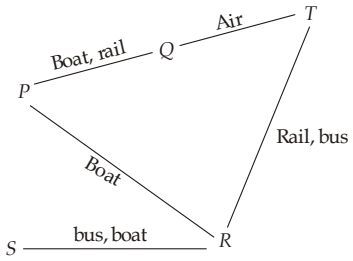
S-boat-*R*

Q-air-*T*

P-boat-*R*

T-rail-*R*

T-bus-*R*



So if one has to travel from *Q* to *R*

He can go first to *P* city or *T* city as both of them are connected by *Q* city. From *T* city he can go either by rail or bus to city *R*, But the mode of transport will change

So he will go to city *P* first and then to city *R*. *P* and R are connected by boat and so is *P* and *Q*.

Q.2 If a person visits each of the places starting from *P* and gets back to *P*, which of the following places must he visit twice?

(a) *Q* (b) *R*
(c) *S* (d) *T*

[UPSC 2013]

Ans. (b)

P-boat-*Q*

P-rail-Q

S-bus-*R*

S-boat-*R*

Q-air-*T*

P-boat-*R*

T-rail-*R*

T-bus-*R*

If a person starts from *P* to visit all city and then return back to *P*

P ->*Q* ->*T*->*R*->*S* and then

S ->*R*->*P* or

P->*R*->*S*->*R*->*T*->*Q*->*P*

In both cases he must visit *R* twice.

Q.3 Which one of the following pairs of cities is connected by any of the routes directly without going to any other city?

(a) P and T (b) T and S
(c) Q and R (d) None of these

[UPSC 2013]

Ans. (d)

Routes connected directly are -

P-boat-Q

P-rail-Q

S-bus-R

S-boat-R

Q-air-T

P-boat-R

T-rail-R

T-bus-R

Q.4 Between which two cities among the pairs of cities given below are there maximum travel options available?

(a) *Q* and *S* (b) *P* and *R*
(c) *P* and *T* (d) *Q* and *R*

[UPSC 2013]

Ans. (a)

It is clear from the figure that for the given option *Q* and *S* have maximum number of travel option available.

Directions (Q.5-Q.7): Read the following statements and answer the three items that follow:

A tennis coach is trying to put together a team of four players for the forthcoming tournament. For this 7 players are available: males *A*,*B* and *C*; and females *W*, *X*, *Y* and *Z*. All players have equal capability and at least two males will be there in the team. For a team of four, all players must be able to play with each other. But B cannot play with *W*, *C* cannot play with *Z* and *W* cannot play with *Y*.

Q.5 If *Y* is selected and *B* is rejected, the team will consist of which one of the following groups?

(a) *A*, *C*, *W* and *Y* (b) *A*, *C*, *X* and *Y*
(c) *A*, *C*, *Y* and *Z* (d) *A*, *W*, *Y* and *Z*

[UPSC 2013]

Ans. (b)

Males: *A*, *B* and *C*

Females: *W*, *X*, *Y* and *Z*

Condition: BW, *CZ* and *WY* cannot play together and minimum of two males for each team.

Now, since *Y* is selected and *W* cannot go with *Y*, choices *A* and *D* are incorrect (as they have *W* and *Y* together). Since B is rejected, *W* can go but as *W* and *Y* cannot go together, both *B* and *W* are not going.

There should be minimum 2 males and *B* is not going so 2 males are *A* and *C*. Now since, *C* cannot go with *Z*, the only female that can go is *X*. Therefore the team would include *A*, *C*, *X* and *Y*.

Q.6 If *B* is selected and *Y* is rejected, the team will consist of which one of the following groups?

(a) *A*, *B*, *C* and *W* (b) *A*, *B*, *C* and *Z*
(c) *A*, *B*, *C* and *X* (d) *A*, *W*, *Y* and *Z*

[UPSC 2013]

Ans. (c)

Males: *A*, *B* and *C*

Females: *W*, *X*, *Y* and *Z*

Condition: *BW*, *CZ* and *WY* cannot play together and minimum of two males for each team.

In option *D* there is no *B* so it is eliminated. Now, since *B* is selected and *W* cannot go with *B*, choice A is incorrect (as they have *W* and *B* together).

In option *B*, *C* and *Z* are playing together which goes against the initial condition so it is eliminated so we are left with option *C*.

Q.7 If all the three males are selected, then how many combinations of four member teams are possible?

(a) 1 (b) 2
(c) 3 (d) 4

[UPSC 2013]

Ans. (b)

Males: *A*, *B* and *C*

Females: *W*, *X*, *Y* and *Z*

Condition: *BW*, *CZ* and *WY* cannot play together and minimum of two males for each team.

ABC 3 males. Since *B* and *C* are present *W* and *Z* cannot play. So there are only 2 option left *X* and *Y* so the team could be *ABCX* and *ABCY*.

So there are 2 possibilities.

Directions (Q.8-Q.10): Examine carefully the following statements and answer the three items that follow:

Out of four friends *A*, *B*, *C* and *D*,

A and *B* play football and cricket,

B and *C* play cricket and hockey,

A and *D* play basketball and football,

C and *D* play hockey and basketball.

Q.8 Who does not play hockey?

(a) *D* (b) *C*
(c) *B* (d) *A*

[UPSC 2013]

Ans. (d)

Q.9 Who plays football, basketball and hockey?

(a) *D* (b) *C*
(c) *B* (d) *A*

[UPSC 2013]

Ans. (a)

Q.10 Which game do *B*, *C* and *D* play?

(a) Basketball (b) Hockey
(c) Cricket (d) Football

[UPSC 2013]

Ans. (b)

From the information given:

Information 1: *A* and *B* play football and cricket

Information 2: *B* and *C* play cricket and hockey

Name	Games
A	Football, Cricket
B	Football, Cricket, Hockey
C	Cricket, Hockey
D	

Information 3: *A* and *D* play basketball and football

Information 4: *C* and *D* play hockey and basketball.

Name	Games
A	Football, Cricket, Basketball
B	Football, Cricket, Hockey
C	Cricket, Hockey, Basketball
D	Basketball, Football, Hockey

So from the table we can see that *A* does not play hockey.

From the table we can see that *D* plays football, hockey, basketball.

From the table we can see that the common game that *B*, *C* and *D* play is hockey.

Q.11 Consider that:

- *A* is taller than *B*.
- *C* is taller than *A*.
- *D* is taller than *C*.
- *E* is the tallest of all.

If they are made to sit in the above order of their height, who will occupy the mid position?

(a) *A* (b) *B*
(c) *C* (d) *D* **[UPSC 2014]**

Ans. (c)

$A > B$ ...(1)

$C > A$ ...(2)

1 and 2 gives us - $C > A > B$

$D > C$ ...(3)

Now we have, $D > C > A > B$

As E is the tallest, so we can now make the order as $E > D > C > A > B$

Clearly *C* occupies middle position.

Q.12 Six books are labeled *A*, *B*, *C*, *D*, *E* and *F* and are placed side by side. Books *B*, *C*, *E* and *F* have green covers while others have yellow covers. Books *A*, *B* and *D* are new while the rest are old volumes. Books *A*, *B* and *C* are law reports while the rest are medical extracts. Which two books are old medical extracts and have green covers?

(a) *B* and *C* (b) *E* and *F*
(c) *C* and *E* (d) *C* and *F*

[UPSC 2014]

Ans. (b)

From the given above information, we can make the following table

A	Yellow, new, law
B	Green, new, law
C	Green, old, law
D	Yellow, new, medical
E	Green, old, medical
F	Green, old, medical

Now we can easily figure out that the correct answer is *E* and *F*.

Directions (Q.13-Q.15): Read the passage given below and answer the items that follow.

A, *B*, *C*, *D*, *E*, *F* are members of a family. They are engineer, stenographer, doctor, draughtsman, lawyer and judge (not in order). *A*, the engineer is married to the lady stenographer. The judge is married to the lawyer. *F*, the draughtsman is the son of *B* and brother of *E*. *C*, the lawyer is the daughter-in-law of *D*. *E* is the unmarried doctor. *D* is the grandmother of *F*. There are two married couples in the family.

Q.13 What is the profession of *B*?

(a) Judge (b) Lawyer
(c) Draughtsman (d) Cannot be determined

[UPSC 2014]

Ans. (a)

Q.14 Which of the following is/are a couple/couples?

(a) *AD* only (b) *BC* only
(c) Both *AD* and *BC* (d) Both *AC* and *BD*

[UPSC 2014]

Ans. (c)

Q.15 What is the profession of *D*?

(a) Judge (b) Stenographer
(c) Doctor
(d) Cannot be determined

[UPSC 2014]

Ans. (b)

C is lawyer, this means she is wife of the Judge. She is also daughter in law of *D*. *D* is grandmother of *F* who is son of *B*. This means that *D* is mother of *B*. Therefore *B* and *D* are married and B is judge.

If B is judge, then *D* is definitely Stenographer.

Judge and lawyer are married i.e *B* and *C* are married and also *A* is married to stenographer i.e *D*. Therefore there are two couples in the family - *BC* and *AD*

Q.16 Two men, Anil and David, and two women, Shabnam and Rekha are in a sales group. Only two speak Tamil. The other two speak Marathi. Only one man and one woman can drive a car. Shabnam speaks Marathi. Anil speaks Tamil. Both Rekha and David can drive.

Which of the following statements is true?

(a) Both the Tamil speakers can drive a car.
(b) Both the Marathi speakers can drive a car.
(c) Both of those who can drive a car speak Marathi.
(d) One of those who can drive a car speaks Tamil.

[UPSC 2015]

Ans. (d)

Rekha and David drive a car. As anil speaks tamil and Shabnam speaks Marathi, then one of rekha and david definitely speaks tamil.

Therefore option (d) is correct.

Q.17 A society consists of only two types of people fighters and cowards. Two cowards are always friends. A fighter and a coward are always enemies. Fighters are indifferent to one another. If *A* and *B* are enemies, *C* and *D* are friends, *E* and *F* are indifferent to each other, *A* and *E* are not enemies, while *B* and *F* are enemies.

Which of the following statements is correct?

(a) *B*, *C* and *F* are cowards.
(b) *A*, *E* and *F* are fighters.
(c) *B* and *E* are in the same category.
(d) *A* and *F* are in different categories

[UPSC 2015]

Ans. (b)

For solving these types of questions we need to deconstruct the whole information given in then question. Let's go sentence by sentence while making the figure or chart and subsequently update it along with next information.

S. NO	Information	Comment	Cowards	Fighters
1.	A and B are enemies.	So, one of them is a fighter while the other one is a coward.	Either A or B	Either A or B
2.	C and D are friends.	They must be cowards because only cowards are friends to each other.	Either A or B (C and D)	Either A or B
3.	E and F are indifferent to each other.	They must be fighters because fighters are indifferent to one another.	Either A or B (C and D)	Either A or B (E and F)
4.	A and B are not enemies.	Since E is a fighter, that means A cannot be a coward. So, A is a fighter which means B is a coward.	B (C and D)	A (E and F)
5.	B and F are enemies.	Confirms that B is coward.		

So, *A*, *E* and *F* are fighters.

Q.18 A question paper must have a question on one of the eight poets: *A*, *B*, *C*, *D*, *E*, *F*, *G* or *H*. The first four belong to the medieval period while the rest are considered modern poets. Generally, modern poets figure in the question paper in alternate years. Generally those who like H like *G* also; and those who like F like *E* also. The paper-setter does not like to ask about F as he has written a book on *F*, but he likes *F*. Last year, the paper contained a question on *A*. On the basis of the information given, this year's paper is most likely to contain a question on

(a) *C* (b) *E*
(c) *F* (d) *H*

[UPSC 2016]

Ans. (b)

Medieval poets - *A*, *B*, *C*, *D*

Modern poets - *E*, *F*, *G*, *H*

Last year, paper contained a question on *A* i.e. on medieval poets and as modern poets figure in the question paper in alternate years, this means that this year question will be asked on modern poets.

As the paper setter likes *F*, so he should also like *E*. He cannot make question on *F*, so he will definitely make question on *E*.

Q.19 A ate grapes and pineapple; *B* ate grapes and oranges; *C* ate oranges, pineapple and apple; *D* ate grapes, apple and pineapple. After taking fruits, *B* and *C* fell sick. In the light of the above facts, it can be said that the cause of sickness was:

(a) Apple (b) Pineapple
(c) Grapes (d) Oranges

[UPSC 2016]

Ans. (d)

The common fruit that B and C ate was oranges. Therefore the correct answer is oranges.

Q.20 Four friends *A*, *B*, *C* and *D* need to cross a bridge. A maximum of two persons can cross it at a time. It is night and they just have one lamp. Persons that cross the bridge must carry the lamp to find the way. A pair must walk together at the speed of slower person. After crossing the bridge, the person having faster speed in the pair will return with the lamp each time to accompany another person in the group. Finally, the lamp has to be returned at the original place and the person who returns the lamp has to cross the bridge again without lamp. To cross the bridge, the time taken by them is as follows : A: 1 minute, B: 2 minutes, *C*: 7 minutes and *D*: 10 minutes. What is the total minimum time required by all the friends to cross the bridge?

(a) 23 minutes (b) 22 minutes
(c) 21 minutes (d) 20 minutes

[UPSC 2016]

Ans. (a)

In this question, we have to minimize the time taken to cross the bridge by all the friends. So we will have to select the fastest person i.e. *A* as the one who shall be returning with the lamp after every trip across the bridge in order to save time. This means that A shall pair up with each friend and cross the bridge and then come back.

So, we can have the following type of construction:

Sr. No.	What's Going On?	Time Taken (depends on slower person)
1	*A* & *B* crosses bridge	2 min
2	*A* returns with lamp	1 min
3	*A* & *C* crosses bridge	7 min
4	*A* returns with lamp	1 min
5	*A* & *D* crosses bridge	10 min
6	*A* returns with lamp	1 min
7	*A* crosses bridge alone	1 min
Finally	Total Time Taken (for 1 to 7)	23 in

Q.21 There were 50 faculty member comprising 30 males and the rest females. No male faculty member knew music, but many of the female faculty members did. The head of the institution invited six faculty members to a tea party by draw of lots. At the party is was discovered that no members knew music. The conclusion is that:

(a) the party comprised male faculty members only

(b) the party comprised only those female faculty members who could not give renderings in music

(c) the party comprised both male and female faculty members

(d) nothing can be said about the gender composition of the party

[UPSC 2016]

Ans. (d)

There could be 3 possibilities for the 6 people who don't know music

1. All are men
2. All are female who don't know music
3. Some are men and some are women who don't know music

Since the 6 members are drawn at random we can not ascertain any of the 3 possibility. So nothing could be said about the gender composition.

Q.22 There are five hobby clubs in a college - photography, yachting, chess, electronics and gardening. The gardening group meets every second day, the electronics group meets every third day, the chess group meets every fourth day, the yachting group meets every fifth day and the photography group meets every sixth day. How many times do all the five groups meet on the same day within 180 days?

(a) 5 (b) 18

(c) 10 (d) 3

[UPSC 2016]

Ans. (d)

Least common factor of 2, 3, 4, 5, 6 = 60

So this means that in 60 days all the hobby clubs will meet on the same day. So within 180 days

$$\frac{180}{60} = 3$$

Q.23 If A runs less fast than *B*, and *B* runs as fast but not faster than C; then, as compared to *A*, *C* runs

(a) Slower than *A*

(b) Faster than *A*

(c) With same speed as *A*

(d) Given data isnot sufficient to determine

[UPSC 2017]

Ans. (b)

$A < B$

$B = C$

From this, it is clear that $C > A$

Q.24 In a group of six women there are four dancers, four vocal musicians, one actress and three violinists. Girija and Vanaja a re among the violinists while Jalaja and Shailaja do not know how to play on the violin. Shailaja and Tanuja are among the dancers. Jalaja, Vanaja, Shailaja and Tanuja are all vocal musicians and two of them are also violinists. If Pooja is an actress, who among the following is certainly a dancer and a violinist?

(a) Jalaja (b) Pooja

(c) Shailaja (d) Tanuja

[UPSC 2017]

Ans. (d)

We can draw the following table from the above given information

Girija	Violinists
Vanaja	Violinists, Vocal Musicians
Jalaja	Don't know violin, Vocal musicians
Shailaja	Don't know violin Dancer, Vocal musicians
Tanuja	Dancer, vocal musicians
Pooja	Actress

Out of Vanaja, Jalaja, Shailaja and Tanuja, two are violinist. As jalaja and shailaja cannot be violinist, so the other violinist must be Tanuja. As tanuja is also a dancer, so the correct answer is Tanuja.

Directions (Q.25-Q.27): Consider the given information and answer the three items that follow.

Eight railway stations *A, B, C, D, E, F, G* and *H* are connected either by two-way passages or one-way passages. One-way passages are from *C* to *A*, *E* to *G*, *B* to *F*, *D* to *H*, *G* to *C*, *E* to *C* and *H* to *G*. Two-way passages are between *A* and *E*, *G* and *B*, *F* and *D*, and *E* and *D*.

Q.25 While travelling from *C* to *H*, which one of the following stations must be passed through?

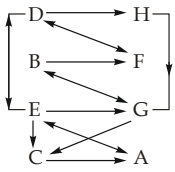
(a) *G* (b) *E*

(c) *B* (d) *F*

[UPSC 2017]

Ans. (b)

We will use the information given in the question to make a route map in the following way:



In the figure, the arrow '→' represents a one-way passage while the arrow '↔' represents a two-way passage. This shows that we can travel from Station *C* to Station *A* but not vice versa whereas we can travel from Station *C* to Station *G* and vice versa is also possible. The same applies for all other stations.

Now, we can move from Station *C* in the flowing manner:

$C \rightarrow A \rightarrow E$

After reaching Station *E*, we have two routes possible:

$E \rightarrow D \rightarrow H$ or $E \rightarrow G \rightarrow B \rightarrow F \rightarrow D \rightarrow H$

So, in either case, we have to pass through Station E and Station *D*.

Q.26 In how many different ways can a train travel from *F* to *A* without passing through any station more than once?

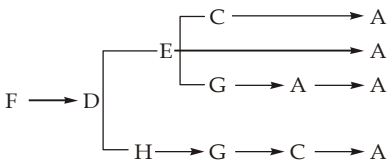
(a) 1 (b) 2

(c) 3 (d) 4

[UPSC 2017]

Ans. (d)

Now, we can travel from Station *F* only to Station *D* and from Station *D* we can travel either to Station *E* or Station *H*.



Q.27 If the route between *G* and *C* is closed, which one of the following stations need not be passed through while travelling from *H* to *C*?

(a) *E* (b) *D*

(c) *A* (d) *B*

[UPSC 2017]

Ans. (c)

We could have travelled easily from Station *H* to Station *C* via Station *G* but since passage between Stations *G* and *C* is closed, so we will have to plan a longer route. This can be done in the following manner:

$H \rightarrow G \rightarrow B \rightarrow F \rightarrow D \rightarrow E \rightarrow C$

So, we can see that only Station *A* is left out of the route.

Q.28 Six boys *A, B, C, D, E* and *F* play a game of cards. Each has a pack of 10 cards. *F* borrows 2 cards from *A* and gives away 5 to *C* who in turn gives 3 to *B* while *B* gives 6 to *D* who passes 1 to E. Then the number of cards possessed by *D* and E is equal to the number of cards possessed by

(a) *A, B* and *C* (b) *B, C* and *F*

(c) *A, B* and *F* (d) *A, C* and *F*

[UPSC 2017]

Ans. (b)

For solving these types of questions we need to deconstruct the whole information given in then question. Let's go sentence by sentence while making the figure or chart and subsequently update it along with next information.

Sr. No.	Information	*A*	*B*	*C*	*D*	*E*	*F*
1	Initially	10	10	10	10	10	10
2	F borrows 2 cards From A	–2					+2
3	F gives away 5 to C			+5			–5
4	C gives 3 to B		+3	–3			
5	B gives 6 to D		–6		+6		
6	D passes 1 to E				–1	+1	
7	Finally	8	7	12	15	11	7

Number of cards possessed by *D* and *E* = 26

This is same as the number of cards possessed by *B*, *C* and *F*.

Q.29 In a test, Randhir obtained more marks than the total marks obtained by Kunal and Debu. The total marks obtained by Kunal and Shankar are more than those of Randhir. Sonal obtained more marks than Shankar. Neha obtained more marks than Randhir. Who amongst them obtained highest marks?

(a) Randhir (b) Neha

(c) Sonal (d) Data are inadequate

[UPSC 2017]

Ans. (d)

Randhir > Kunal + Debu ————— 1

Kunal + Shankar > Randhir ————— 2

Sonal > Shankar ————— 3

Neha > Randhir ————— 4

From 1 and 2, it is clear that Shankar > Debu

As Sonal > Shankar, therefore we can say that Sonal > Shankar > Debu

From the information given above we cannot deduce who scored highest marks, therefore the answer is (d).

Q.30 A lift has the capacity of 18 adults or 30 children. How many children can board the lift with 12 adults?

(a) 6 (b) 10

(c) 12 (d) 15

[UPSC-2018]

Ans. (b)

$$18 \text{ adults} = 30 \text{ children}$$

$$1 \text{ adult} = \frac{30}{18} \text{ children}$$

So with 12 adults 6 more adults can board

i.e. $12 + \frac{30}{18}(6) \Rightarrow 22$ total people

So, out of 22 total people, 10 are children.

Q.31 A is 16th from the left end in a row of boys and V is 18th from the right end. G is 11th from A towards the right and 3rd from V towards the right end. How many boys are there in the row?

(a) 40 (b) 41

(c) 42

(d) Cannot be determined due to insufficient data.

[UPSC 2020]

Ans. (b)

A's position: 16th from left

V's position: 18th from right

G's position: 11th from A towards the right and 3rd from V towards the right.

Since G is 3rd from V towards the right, so position of G = 18 – 3 = 15th from right end.

Also, G is 11th from A towards the right, so position of G = 16 + 11 = 27th from left end.

Hence, total number of boys in the row = 27 + 15 – 1 = 41 (we subtract one because G has been counted twice)

Q.32 A Main Statement is followed by four Statements labelled P, Q, R and S. Choose the ordered pair of the Statements where the first Statement implies the second, and the two Statements are logically consistent with the Main Statement.

Main Statement:

Pradeep becomes either a Director or a Producer.

Statement P: Pradeep is a Director.

Statement Q: Pradeep is a Producer.

Statement R: Pradeep is not a Director.

Statement S: Pradeep is not a Producer.

Select the correct answer.

(a) SP only (b) RQ only

(c) Both SP and RQ (d) Neither SP nor RQ

[UPSC-2024]

Ans. (c)

Main statement: Pradeep becomes either a Director or a Producer.

It means Pradeep cannot be both. Also, he must be one of them.

SP:

Statement S: Pradeep is not a Producer.

It means he must be a Director, as given in statement P.

So, statement P follows from S and they are logically consistent with the main statement.

RQ:

Statement R: Pradeep is not a Director.

It means he must be a Producer, as given in statement Q.

So, statement Q follows from R and they are logically consistent with the main statement

PRACTICE SET : QUESTIONS

Directions (Q.1-Q.3): Read the following passage and answer the three items that follow:

A tennis coach is trying to put together a team of four players for the forthcoming tournament. For this 7 players are available: males *A*, *B* and *C*; and females *W*, *X*, *Y* and *Z*. All players have equal capability and at least 2 males will be there in the team. For a team of four, all players must be able to play with each other. But, *B* cannot play with *W*, *C* cannot play with *Z* and *W* cannot play with *Y*.

Q.1 If *Y* is selected and *B* is rejected, the team will consist of which one of the following groups?

(a) *A*, *C*, *W* and *Y* (b) *A*, *C*, *X* and *Y*

(c) *A*, *C*, *Y* and *Z* (d) *A*, *W*, *Y* and *Z*

Q.2 If *B* is selected and *Y* is rejected, the team will consist of which one of the following groups?

(a) *A*, *B*, *C* and *W* (b) *A*, *B*, *C* and *Z*

(c) *A*, *B*, *C* and *X* (d) *A*, *W*, *Y* and *Z*

Q.3 If all the three males are selected, then how many combinations of four member teams are possible?

(a) 1 (b) 2

(c) 3 (d) 4

Directions (Q.4-Q.6): Examine carefully the following statements and answer the four items that follow:

A, *B*, *C*, *D* and *E* are the members of the same family. There are two fathers, two sons, two wives, three males and two females. The teacher was the wife of a lawyer who was the son of a doctor. *E* is not a male, neither also a wife of a professional. *C* is the youngest person in the family and *D* is the eldest. B is a male.

Q.4 How is *D* related to *E*?

(a) Husband (b) Son

(c) Father (d) Wife

Q.5 Who are the females in the group?

(a) *C* and *E* (b) *C* and *D*

(c) *E* and *A* (d) *D* and *E*

Q.6 Whose wife is the teacher?

(a) *C* (b) *D*

(c) *A* (d) *B*

Directions (Q.7-Q.8): In the following questions sample Input and Output is given. Based on this find the output of the sequence mentioned in the question.

Q.7 **Input:** 11, 17, 89, 90, 12

Output: 2, 8, 17, 9, 3

What will be the output of the following input sequence?

Input: 13, 15, 21, 29, 51

(a) 2, 4, 1, 7, 4 (b) 4, 3, 6, 11, 6

(c) 4, 6, 3, 11, 6 (d) 2, 1, 4, 7, 4

Q.8 **Input:** The laws are not enforced strictly

Output: Strictly the enforced laws not are

What will be the output of the following input sequence?

Input: Prime minister will address the gathering

(a) Gathering Prime the minister address will

(b) Gathering the address will minister prime

(c) Gathering prime minister the address will

(d) Gathering prime the minister will address

Q.9 P, Q, R and S crossed a lake in a boat that can hold a maximum of two persons, with only one set of oars. The following additional facts are available

(i) The boat held two persons on each of the three forward trips across lake and one person on each of the two return trips.

(ii) P is unable to row when someone else is in the boat.

(iii) Q is unable to row with anyone else except R.

(iv) Each person rowed for at least one trip.

(v) Only one person can row during a trip.

Who rowed twice?

(a) P (b) Q

(c) R (d) S

Q.10 Hari (H), Gita (G), Irfan (I) and Saira (S) are siblings (i.e. brothers and sisters). All were born on 1st January. The age difference between any two successive siblings is less than 3 years. Given the following facts:

(1) Hari's age + Gita's age > Ifan's age + Saira's age.

(2) The age difference between Gita and Saira is 1 year. However, Gita is not the oldest and Saira is not the youngest.

(3) There are no twins.

In what order were they born (oldest first)?

(a) HSIG (b) SGHI

(c) IGSH (d) IHSG

Q.11 In a queue of children, Arun is fifth from the left and Suresh is sixth from the right. When they interchange their places among themselves, Arun becomes thirteenth from the left. Then, what will be Suresh's position from the right?

(a) 8th (b) 14th

(c) 15th (d) 16th

Q.12 N ranks fifth in a class. S is eighth from the last. If T is sixth after N and just in the middle of N and S, then how many students are there in the class?

(a) 21 (b) 23

(c) 24 (d) 25

Q.13 In a row of trees, one tree is fifth from either end of the row. How many trees are there in the row?

(a) 8 (b) 9

(c) 10 (d) 11

Answer key: Puzzles

1.	(b)	**2.**	(c)	**3.**	(b)	**4.**	(a)
5.	(c)	**6.**	(d)	**7.**	(c)	**8.**	(a)
9.	(c)	**10.**	(b)	**11.**	(b)	**12.**	(c)
13.	(b)						