

LOGICAL REASONING

MODULE 6 – DATA ARRANGEMENT

1. Four people A, B, C and D went to four different places - Gujarat, Delhi, Goa and Kerala by different modes of transport - Train, Car, Aeroplane and Bus. The person who travelled to Delhi did not travel by Bus. C travelled by Aeroplane and went to Goa. A went to Kerala by Car and D travelled by Bus.

Who among the following travelled to Gujarat?

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

Solution:

Person	Place	Transport
A	Kerala	Car
B	Delhi	Train
C	Goa	Aeroplane
D	Gujarat	Bus

2. There are five friends Anand, Balu, Chandru, Deepak and Eswar all working in different shops viz. stationery shop, book store, grocery shop, hardware shop and sports goods shop. They like to play different games such as hockey, kabbadi, basketball, tennis and football. Anand does not like hockey. Balu has a book store and likes to play football. Chandru and Deepak do not like tennis. Chandru has a grocery shop whereas Deepak has a hardware shop. Eswar likes kabbadi and does not work in a stationery shop. The person who likes hockey does not work in the hardware shop.

Who has a stationery shop?

- (a) Anand (b) Chandru (c) Deepak (d) Balu

Solution:

The given statements can be summarized in a tabulated form as follows.

Names	Occupations	Favourite Sports
Anand	Stationery	Tennis
Balu	Book Store	Football
Chandru	Grocery	Hockey
Deepak	Hardware	Basketball
Eswar	Sports Goods	Kabaddi

3. First 12 even numbers are written from top to bottom. The letters of the word “SACRED” are written in alphabetical order against each multiple of 4 (one letter against one number). There are two letters between N and S. There are as many letters between E and N as between P and D. P is not against number 14. There are 5 letters between U and T. U is above T. I is written against number 6. (no letter is repeated against any number)

Which is the letter against the number 14?

(a) T

(b) D

(c) I

(d) N

Solution:

2	U
4	A
6	I
8	C
10	P
12	D
14	T
16	E
18	N
20	R
22	
24	S

(Directions 4-6): Read the following information carefully and answer the questions.

P, Q, R, S, T, U, V and W are sitting around a square table in such a way that four of them who sit at the corner are facing towards the centre and other four who sit in the middle of the table are facing outside the centre. Each person has a different lucky number viz. 1, 2, 3, 4, 5, 6, 7 and 8, but not necessarily in the same order.

The lucky number of S's daughter is 1. Only one person is sitting between P and U. W's brother S, sits on the immediate left of his mother whose lucky number is 6. P is the father of V and only one person sits between W's mother and T. T sits on the immediate right of the person whose lucky number is 2. No female is an immediate neighbour of Q, who sits at the corner of the table. S's daughter sits second to the right of U and on the immediate left of that person whose lucky number is 3. Q sits second to the left of W's husband whose lucky number is neither 4 nor 7. U, who is sister of V, her lucky number is 7 and is not an immediate neighbour of W's husband. Only one person sits between W and V. V sits second to the right of the person whose lucky number is 8. V is the father of R and is not an immediate neighbour of T. P is married to W.

4. How is Q related to U?

- (a) Mother (b) Sister (c) Daughter (d) **Grand Mother**

5. What is W's lucky number?






- (a) **8** (b) 7 (c) 4 (d) 2

6. Which of the following statement is true?

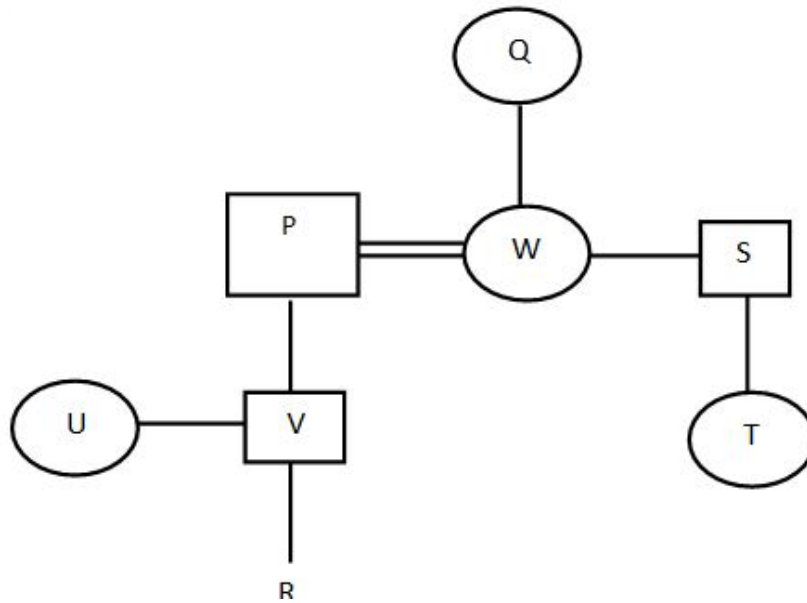
- (a) V's lucky number is 5 (b) **P and T are sitting opposite to each other**
(c) P sits to the immediate left of T. (d) R is facing towards the centre.

Solution:

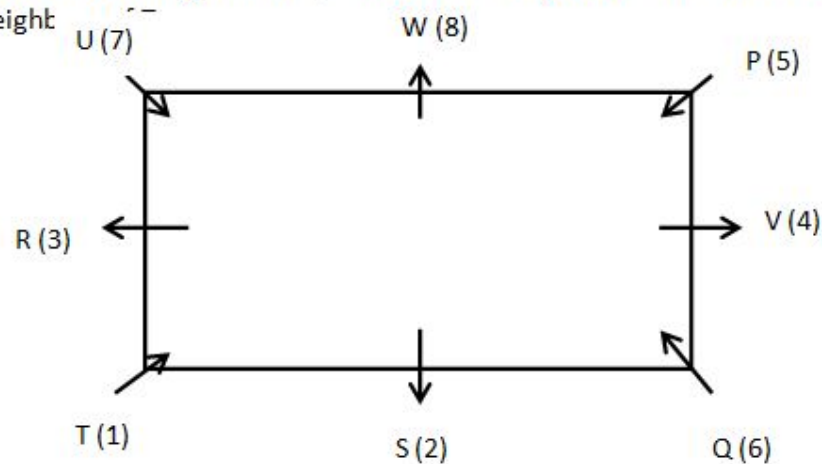
From the given information,

Symbol in Diagram	Meaning
	Female
	Male
	Married Couple
	Siblings
	Difference of a generation

1. W's brother S_x sits on the immediate left of his mother whose lucky number is 6. P is the father of V and only one person sits between W's mother and T. U, who is sister of V, her lucky number is 7 and is not an immediate neighbour of W's husband. V is father of R and is not an immediate neighbour of T. P is married to W.



2. S's daughter lucky number is 1. Only one person is sitting between P and U. W's brother S, sits on the immediate left of his mother whose lucky number is 6. P is the father of V and only one person sits between W's mother and T. T sits on the immediate right of the person whose lucky number is 2. No female is an immediate neighbour of Q, who sits at the corner of the table. S's daughter sits second to the right of U and on the immediate left of that person whose lucky number is 3. Q sits second to the left of W's husband whose lucky number is neither 4 nor 7. U, who is sister of V, her lucky number is 7 and is not an immediate neighbour of W's husband. Only one person sits between W and V. V sits second to the right of the person whose lucky number is 8. V is father of R and is not an immediate neighbour of T.



(Directions 7-9): Read the following information carefully and answer the questions.

In Bangalore University there are nine students - A, B, C, D, E, F, G, H and I who live in a hostel which has a nine storey-building. They live on different floors. Lowermost floor of the building is numbered as 1, one above that is numbered as 2 and the top most floor is numbered as 9. They all have different branded mobile phones viz. Nokia, Samsung, Gionee, Oppo, Vivo, Sony, Lenovo, Asus and Apple.

There are five floors between G and the one who has Asus. D does not live on the top floor. The one who has Nokia lives immediately below the one who has Lenovo. The one who has Lenovo lives on one of the even numbered floors. The one who has Gionee lives on an odd numbered floor but below the 6th floor. B lives on 6th floor and has Samsung. The one who has Sony lives on the top floor. The one who has Vivo lives below from the one who has Gionee. The one who has Apple lives on 2nd floor. I lives above H. A lives immediately below the one who has Sony. F lives immediately above the floor from the one who has Asus. The one who lives on odd numbered floor, has Vivo. There are 2 floors between D and B. The number of persons who live above E's floor is the same as that of the number of persons who live below. C lives on an even numbered floor and has Oppo.

7. Who among the following has Vivo?

- (a) I (b) D (c) H (d) B

8. The one who has Lenovo, lives on which floor?

- (a) 1st (b) 5th (c) 7th (d) 8th

9. Who lives on the 2nd Floor?

- (a) F (b) C (c) D (d) E

Solution:

Floors	Students	Mobile Phones
9	I	Sony
8	A	Lenovo
7	G	Nokia
6	B	Samsung
5	E	Gionee
4	C	Oppo
3	D	Vivo
2	F	Apple
1	H	Asus

(Directions 10 & 11): Read the following information carefully and answer the questions.

Four heaters A, B, C and D are used in the R & D department of Tata chemicals Ltd. Only one heater can be used on any day. If heater A is used on any day, neither A nor C can be used the next day. If heater C is used on any day, neither C nor D can be used on the next day. If heater C is used on any day, then A has to be used the next day. If heater D is used on any day, then B has to be used the next day.

10. If heater D is used on the third day and different heaters are used on first and fourth day, which heater is used on the first day?

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

Solution:

If heater D is used on the third day, heater B has to be used on the fourth day and A has to be used on the second day. But if A is used on second day, then either B or C has to be used on the first day. But if heater B is used on the first day, then according to the question, the requirement of having different heaters on the first day and fourth days would not be fulfilled. Hence the heater that would be used on the first day is C.

11. In how many ways can a person use all the four heaters in a four-day period?

- (a) 16 (b) 4 (c) 8 (d) 20

Solution:

Only ways in which a person can use all the four heaters in a four day period is by the order ADBC. Hence, in total there are four possible permutations of the same.

12. A committee has nine members A, B, C, D, E, F, G, H and I and they are divided into three groups, viz. Play group, Entertainment group and Food group — with three members in each group. There are certain conditions for the formation of the groups. One person cannot be selected for more than one group. A is in the Play group. H is in the Entertainment group. C and D are in the same group but not in the group of I. A and B are not in the same group. E is not in the same group as I but is in the Food group. F is in the group in which either H or B or both of them are present. I and H are not in the same group. F is neither with E nor with I.

Find the odd man out:

- (a) AC (b) GF (c) AB (d) DE

Solution:

Play Group: A G I

Food Group: C D E

Entertainment Group: B F H

13. Among five boys, Vineet is taller than Manick, but not as tall as Ravi. Jacob is taller than Dilip but shorter than Manick. Who is the tallest in their group?

- (a) Ravi (b) Manick (c) Vineet (d) Cannot be determined

In terms of height, we have.: Manick < Vineet, Vineet < Ravi, Dilip < Jacob, Jacob < Manick. So, the sequence becomes:

Dillip < Jacob < Manick < Vineet < Ravi. Clearly, Ravi is the tallest.

14. Five boys participated in a competition. Rohit was ranked lower than Sanjay. Vikas was ranked higher than Dinesh. Kamal's rank was between Rohit and Vikas. Who was ranked highest?

- (a) Sanjay (b) Vikas (c) Dinesh (d) Kamal

In terms of rank, we have: Rohit < Sanjay, Dinesh < Vikas. Since Kamal's rank is between Rohit and Vikas, the sequence becomes:

Dinesh < Vikas < Kamal < Rohit < Sanjay. Clearly, Sanjay was ranked highest.

15. Pune is bigger than Jhansi, Sitapur is bigger than Chittor. Raigarh is not as big as Jhansi, but is bigger than Sitapur. Which is the smallest?

- (a) Pune (b) Jhansi (c) Sitapur (d) Chittor

In terms of size, we have:

Jhansi < Pune, Chittor < Sitapur, Raigarh < Jhansi, Sitapur < Raigarh.

So, the sequence becomes:

Chittor < Sitapur < Raigarh < Jhansi < Pune.

Clearly, Chittor is the smallest.

HOME WORK

(Directions 16 – 18): Read the following information carefully and answer the questions.

Seven Lecturers – A, B, C, D, E, F and G go to Seven different Universities namely Indian Institute of Science, University of Delhi, Banaras Hindu University, Osmania university, IIT Madras, Shivaji University and University of Mumbai but not necessarily in the same order to give guest lectures. They take lectures on the subjects like Economics, History, Electronics, Computer, Agriculture, Bio Technology and Chemistry but not necessarily in the same order. They deliver lectures on Monday to Sunday (of the same week) but not necessarily in the same order. A gives guest lecture in Indian Institute of Science either in Economics or Bio Technology. The person who gives guest lecture on the seventh day of the week went to University of Mumbai and he is an expert in Chemistry. C does not

give lecture in Bio Technology. B takes the lecture on Wednesday and is not an expert in Computer and Economics. The lecturer who takes guest lecture in agriculture went on Thursday but neither in University of Delhi nor in Shivaji University. D delivers lecture on Electronics in Osmania University except on Monday and Tuesday. C delivers a guest lecture at Banaras Hindu University and takes lecture one day before D. G does not deliver on Thursday. On the second day of the week F gives the guest lecture in Shivaji University. The lecturer who delivers lecture on Friday is not an expert in Computer, Bio Technology and Economics.

16. Which of the following subject is handled by A?

- (a) Computer (b) Electronics (c) History **(d) Economics**

17. Which of the following combinations of “University – Day” is True with respect to the given arrangement?

- (a) Osmania University - Friday (b) University of Mumbai - Saturday
(c) **IIT Madras - Thursday** (d) University of Mumbai - Friday

18. Who among the following went to Banaras Hindu University?

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

Solution:

Lecturers	Subjects	Universities	Days
A	Economics	Indian Institute of Science	Monday
F	Computer	Shivaji University	Tuesday
B	Bio-Technology	University of Delhi	Wednesday
E	Agriculture	IIT Madras	Thursday
C	History	Banaras Hindu University	Friday
D	Electronics	Osmania University	Saturday
G	Chemistry	University of Mumbai	Sunday

(Directions 19 & 20): Read the following information carefully and answer the questions.

M, T, D, F, H, R and W are seven students studying in three different colleges - X, Y and Z with at least two in each college. Each of them has a favourite subject viz. English, History, Geography, Mathematics, Physics, Chemistry and Biology, not necessarily in the same order. D's favourite subject is physics and studies in college Y with only M. H does not study in college X and he likes English. F studies in college Z and does not like mathematics. Those who like Geography and Chemistry study in the same college. W likes Biology and does not study in college X. R does not study with H. R does not like Chemistry. M does not like History.

19. Which of the following group of student's study in College X?

- (a) TR (b) HR (c) HT (d) HF

20. What is R's favourite subject?

- (a) English **(b) Geography** (c) Mathematics (d) Physics

Solution:

Person	Subject	College
D	Physics	Y
M	Maths	Y
H	English	Z
W	Biology	Z
F	History	Z
R	Geography	X
T	Chemistry	X