Analytical – Exam No. 09

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A camp counselor is organizing a game among nine adults. Three of the adults I, L, and N are females; the other six adults Q, R, T, U, V, and W are males. Two teams group 1 and group 2 will be organized. Group 1 will have four adults; group 2 will have five adults. In assigning adults to teams, the counselor observes the following restrictions:

Group 1 must have exactly two of the female adults.

R must be on the same group as U.

I and Q cannot be on either of the teams together.

T and V cannot be on either of the teams together.

If R is on same group as V, then N must be on group that does not include R and V.

Solution:

$F = I, L, N$ $M = Q, R, T, U, V, W$

$G1 = 4,$ $G2 = 5$

R1: $G1 = 2F$

R2: $R = U$

R3: $I \neq Q$

R4: $T \neq V$

R5: $(R = V) \neq N$

Arrangement:

G1				G2				

Questions:

1. Which of the following is a possible assignment of adults to the two teams?

	Group 1	Group 2
(A)	I, L, R, U	N, Q, T, V, W
(B)	I, L, T, W	N, Q, R, U, V
(C)	I, N, Q, T	L, R, U, V, W
(D)	I, N, T, W	L, Q, R, U, V
(E)	I, R, V, W	L, N, Q, T, U

Solution:

Apply excluding rule:

R1 Option E is wrong.

R2 All okay.

R3 Option C is wrong.

R4 Option A is wrong.

R5 Option B is wrong.

So, option D is correct.

2. If W and U are on group 2, the adults assigned to group 1 could be

(A) I, N, R, T

(B) L, N, Q, V

(C) L, N, R, T

(D) L, Q, T, V

Solution:

Rules	**G1**				**G2**				
Q					W	U			
R2					W	U	R		

The members of G1 are asked. As we have placed R in G2, so R cannot be in G1, hence option A and option C are wrong. Option D is wrong as R4. So, option B is correct.

3. If N and R are on group 2, which of the following is a pair of adults who must be on group 1?

(A) I and T

(B) I and U

(C) I and V

(D) Q and V

(E) T and W

Solution:

Rules	**G1**				**G2**				
Q					N	R			
R1	I	L			N	R			
R5	I	L	V		N	R			

So, option C is correct.

4. If I, T, and W are on group 1, which of the following must be true?

(A) L is on group 2

(B) N is on group 2

(C) R is on group 1

(D) U is on group 1

(E) V is on group 1

Solution:

Rules	G1				G2				
Q	I	T	W						
R4	I	T	W		V				
R2	I	T	W		V	R	U		
R5	I	T	W	N	V	R	U		
R1+R3	I	T	W	N	V	R	U	L	Q

So, option A is correct.

5. If L is on the same group as N, which of the following must be true?

(A) L is on the same group as Q

(B) T is on the same group as W

(C) V is on the same group as W

(D) I is not on the same group as T

(E) Q is not on the same group as V

Solution:

It is stated in question statement that L is on the same group as N. Now we have to decide that whether they will go in G1 or G2. This can be done by using R1, which states that R1 must have exactly two of the female adults, and both L and N are females, so they will go to G1.

Rules	G1				G2				
Q+R1	L	N							
R1	L	N			I				

R3	L	N	Q		I				
R2	L	N	Q		I	R	U		
R4	L	N	Q	T/V	I	R	U	T/V	
Remaining	L	N	Q	T/V	I	R	U	T/V	W

Option (A) Must be true.

Option (B) Can be true.

Option (C) Can be true.

Option (D) Can be true.

Option (E) Can be true.

So, option (A) is correct.