Analytical - Exam No. 08

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A group of eight people is going camping in Van 1, Van 2, and Van 3. The group consists of two women V and S and six girls F, G, H, I, J, and T. Van assignments will be made as follows:

There will be no more than three persons in a Van.

V will be in Van I.

V will not be in a Van with her daughter I.

S will not be in a Van with her daughter J.

F, G, and H, who are close friends, will be in a Van together.

Solution:

Van 1 Van 2 Van 3

W = V, S G = F, G, H, I, J, T

R1: Persons/van ≤ 3

R2: V = Van 1

R3: V ≠ I

R4: $S \neq J$

R5: F = G = H

Questions:

- 1. Which of the following can be in Van 1?
 - (A) I
 - (B) G
 - (C) H
 - (D) I
 - (E) S

Solution:

R2 states that V will be in van 1, so we can place maximum two more persons in van 1. R5 states that F, G, and H will be in a van together, so they can't sit in van 1, so option A, option B and option C are wrong. R3 states that V cannot sit with I, so option D is also wrong. Hence, option E is correct.

2. If F is in Van 2, which of the following must be true?

Solution:

- (A) H is in Van 3.
- (B) I is in Van 3.
- (C) J is in Van 2.
- (D) T is in Van I.
- (E) S is in Van 3.

Solution:

Rules	Van 1	Van 2	Van 3
Q		F	
R5		F, G, H	
R2	v	F, G, H	
R3	v	F, G, H	I

So, option B is correct.

- 3. If the two women are together in a Van, which of the following is a pair of girls who must be together in a Van?
 - (A) F and J
 - (B) G and T
 - (C) H and I

- (D) I and J
- (E) J and T

Solution:

Rules	Van 1	Van 2	Van 3
Q	V, S		
R3	V, S		I
R5	V, S	F, G, H	I
R4	V, S	F, G, H	I, J

So, option D is correct.

- 4. If S is in Van 2, which of the following must be in the same Van as V?
 - (A) F
 - (B) G
 - (C) I
 - (D) J
 - (E) T

Solution:

Rules	Van 1	Van 2	Van 3
Q		S	
R2	v	S	
R5	v	S	F, G, H
R4	V, J	S	F, G, H

So, option D is correct.

- 5. If G is in Van 3 and the two women are not in the same Van as each other, the people in Van 2 can be?
 - (A) H and T only
 - (B) S and T only
 - (C) F, H, and I
 - (D) I, J, and S
 - (E) I, T, and S

Solution:

Rules		Van 1	Van 2	Van 3
Q				G
R5				F, G, H
R2		v		F, G, H
Q		v	S	F, G, H
R3		v	S, I	F, G, H
R4		V, J	S, I	F, G, H
Remaining	P1	V, J	S, I, T	F, G, H
Γ	P2	V, J, T	S, I	F, G, H

So, option E is correct.

- 6. If V and T are together in a Van, it is possible that:
 - (A) F and J are together in a Van
 - (B) I and T are together in a Van

- (C) I and S are the only people in Van 2
- (D) J and S are the only people in Van 3
- (E) T and V are the only people in Van 1

Solution:

Rules	Van 1	Van 2	Van 3
Q+R2	V, T		t:
R3	V, T	I	
R5	V, T	Ī	F, G, H
R4	V, T, J/S	I, J/S	F, G, H

So, option C is correct.