

CLASS: XI
APPLIED MATHEMATICS
PROBLEMS ON SEATING ARRANGEMENTS

Q1. Eight friends A, B, C, D, E, F, G and H are sitting in a circle at equal distances, but not necessarily in same order. Four of them are facing outside and four of them are facing the centre. E faces outside. Both the immediate neighbours of E face the centre. H sits second to the right of E and faces outside. B sits third to the left of E and A sits to the immediate right of E. G sits second to the left of A and faces centre. D faces centre. Both the immediate neighbours of D face outside. D is not an immediate neighbour of B. F is an immediate neighbour of D. C is an immediate neighbour of G and faces outside.

Based on the above information, answer the following:

- (i) Who sits opposite to A?
- (ii) Who sits immediate left of H?
- (iii) If B and F interchange their position, facing as before, then what is the position of G with respect to B?

Q2. A, B, C, D, E, F, G and H are eight members of a group. These eight members are sitting around a rectangular table in such a way that four of them sit at four corners of the table while remaining four sits in the middle of each of four sides. Those who sit at four corners face outside while those who sit in the middle of the sides face the centre of the table. G faces centre. D sits third to the right of G. H faces centre and is second to the left of G. E sits third to the left of C who is to the immediate left of G. Only one person sits between E and F. A is not an immediate neighbour of F.

Based on this information, answer the following:

- (i) Who sit to the right of F and between F and G?
- (ii) Which member sits between B and C?
- (iii) If A and B are made to face the opposite direction, who would sit to the immediate right of A & B?

Q3. Seven boxes S, P, L, Q, R, M and I are placed one above another in any particular order. Box number 1 is at bottom and box number 7 is at the top. Three boxes are placed between I and M. M is placed on a place just above S, which did not place on an odd numbered place. P is neither placed on odd number place nor on topmost place. I did not place on bottom place. Two boxes are placed between R and S. Q is placed neither on the bottom nor on the fourth place. Box M is not placed on top place.

Based on the above information, answer the following:

- (i) Which box is placed on just above M?
- (ii) How many boxes are there between L and P?
- (iii) Which of the above pair of boxes is placed on bottom most and the topmost place, respectively?
- (iv) Which of the above box is placed on the topmost place?

Q4. U, V, W, X, Y and Z live on different floors of the same building. The lowermost floor in the building is numbered 1, the floor above it is numbered 2, and so on till the topmost floor is numbered 6. Z lives on the floor immediately above Y. Only one person lives between U and V. W lives immediately above Z and immediately below V.

- (i) Who lives on the second floor?
- (ii) How many people are there between X and Y?
- (iii) Who lives immediately above X?