

CHAPTER - 2 CIRCULAR ARRANGEMENT

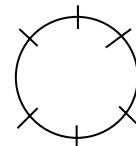
Questions on circular arrangement involve seating of people around a table or arrangement of things in a circular manner (for example, different coloured beads strung to form a necklace).

In case of people sitting around a table, the table could be of any shape – rectangular, square, circular or any other.

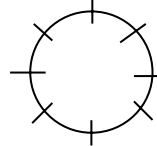
The data given in such sets of questions specify the positions of some or all of the individuals (or things) in the arrangement. The positions are specified through conditions involving specified persons sitting (or not sitting) opposite each other or a particular person sitting to the right or left of another person, etc.

Once you read the data, first draw the shape specified in the data and then draw the slots in the seating arrangement.

Six people
around a circular table



Eight people
around a circular table



Statements like "A and B are sitting farthest from each other" or "A and B sit across the table" imply that A and B sit opposite each other.

On the other hand, you should remember that, unlike in straight-line arrangement, the words "immediately" and "directly" do not play any role in circular arrangement. In general, there is no left side or right side (unless we are talking of 'immediate right' or 'immediate left').

So if it is given that C sits to right of B, then it is clear that C must be to the immediate right of B. Go "anti-clockwise" if anybody's right has to be located, and go "clockwise" if somebody's left has to be located.

Let us take some examples.

Directions for questions 1 to 5: These questions are based on the following information.

P, Q, R, S and T sit around a table.
 P sits two seats to the left of R and Q sits two seats to the right of R.

1. If S sits in between Q and R, who sits to the immediate right of P?
 (A) T (B) S (C) Q (D) R

2. Which of the following cannot be the correct seating arrangement of the five persons in either the clockwise direction or the anti-clockwise direction?
 (A) P, Q, R, S, T (B) P, S, R, T, Q
 (C) P, Q, S, R, T (D) P, T, R, S, Q

3. If S is not sitting next to Q, who is sitting between Q and S?
 (A) R (B) P
 (C) T (D) Both (R) and (P)

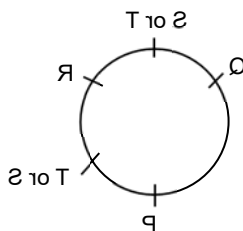
4. If a new person U joins the group such that the initial conditions for the seating arrangement should be observed and also a new condition that U does not sit next to R be satisfied, then which of the following

statements is true?
 (A) U sits to the immediate right of S.
 (B) U sits to the immediate left of T.
 (C) U sits to the immediate left of P.
 (D) Either (A) or (B) above

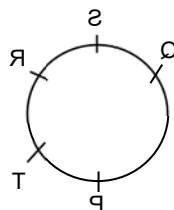
5. If a new person U joins the group such that the initial conditions for the seating arrangement should be observed and also a new condition that U does not sit next to P, S or T be satisfied, then who will be the neighbours of P (one on either side)?
 (A) S and T (B) S and Q (C) T and R (D) R and Q

Solutions for questions 1 to 5:

P sits two seats to the left of R, and Q sits two seats to the right of R. We can represent this information in the diagram below.

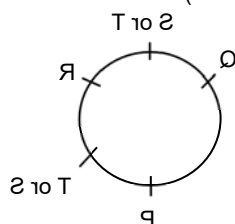


1. If S sits between Q and R, then the arrangement is as follows.



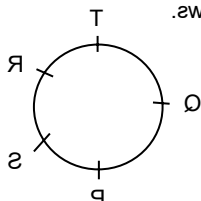
As can be seen from the diagram, T is to the immediate right of P. Choice (A)

2. We will take each choice and see whether it fits in the arrangement that we represented through a diagram in the analysis of the data (the same diagram is reproduced below).



We can see that the arrangement given in choice (A) is not possible and hence the answer choice is (A). Choice (A)

3. If S is not next to Q, then the seating arrangement is fixed as follows.



Now P is between Q and S. Choice (B)

- (A) 3 (B) 6 (C) 16 (D) 8

8. If a Computer Specialist is the immediate neighbour of a Marketing Executive and the Grocer is the immediate neighbour of the Lawyer, how many different kinds of seating arrangements are possible? (Assume that the two Computer Specialists are indistinguishable from each other and the two Marketing Executives are indistinguishable from each other.)

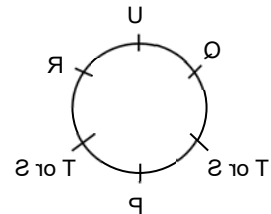
- (A) The Computer Specialist cannot sit beside the Lawyer.
 (B) One of the Computer Specialists is next to a Marketing Executive.
 (C) The Professor cannot have the Scientist and a Computer Specialist on his either side.
 (D) The Computer Specialists must sit next to one another.

6. If the two Computer Specialists sit opposite each other but neither of them is immediately next to any Marketing Executive, who sits to the immediate right of the professor?
 (A) Computer Specialist (B) Marketing Executive
 (C) Grocer (D) Accountant

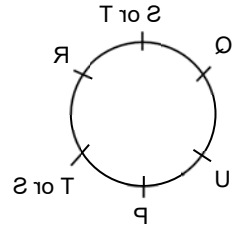
Scientist. The Professor sits to the immediate right of the other with one of them sitting to the immediate left of the other. The two Marketing Executives sit opposite each other. The Scientist and the Doctor sit opposite each other. The two Computer Specialists sit opposite each other. Neither of them is next to any Marketing Executive. So, the arrangement must be as follows

- (A) Choice (A) As we can see from the diagram, the neighbours of P will be T and S.

5. We create a new slot for the sixth person. But since U will not sit next to P, S or T, he will have to sit between R and Q. The arrangement will then look as follows:



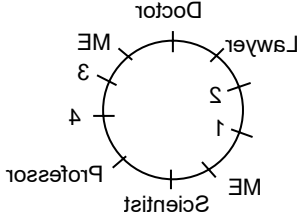
- (C) Choice (C) Hence, choice (C) is the correct answer.



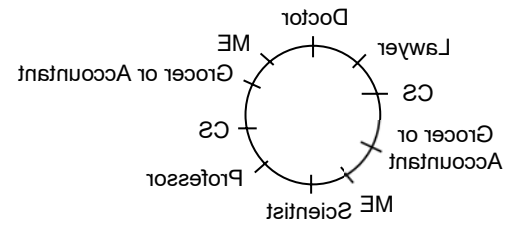
4. On the basis of the diagram that we drew, we find that to accommodate U we have to create a new slot between P and Q.

8. Given that the Grocer is the immediate neighbour of the Lawyer, we have the three slots numbered 1, 2 and 3 (in the following diagram) free for the two Computer Specialists and the Accountant. Since a Computer Specialist has to be next to a Marketing Executive, he should be in slot 1 or 3. By fixing the Accountant in any one of the three slots 1, 2 or 3, we

Specialists is next to a Marketing Executive, is true. So, choice (B), which states that one of the Computer Specialists are next to the Marketing Executives seats, of which are next to the Marketing Executives seats, there is a Computer Specialist in seat 1 or seat 3, both by one, and find that whichever combination is taken, We check for the choices given in the question, one of the pairs of seats 1 & 2, 2 & 3, 3 & 4 or 4 & 1. Then, the two computer specialists may occupy one following pairs of seats: 3 & 4, 1 & 4, 1 & 2 or 2 & 3. The Grocer and the Accountant can occupy the

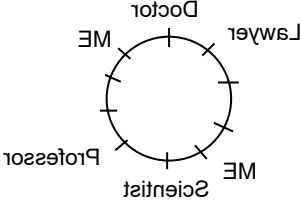


7. The Grocer and the Accountant do not sit opposite each other. Then the arrangements can be as follows:



6. The two Computer Specialists sit opposite each other. Neither of them is next to any Marketing Executive. So, the arrangement must be as follows

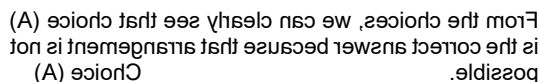
The vacant seats are one each for the two Computer Specialists, one for the Grocer and one for the Accountant.



Choosing to place the Scientist in one of the 10 seats, we have the arrangement as follows.
 The Professor sits to the immediate right of the Scientist and opposite to the Lawyer. The Scientist sits opposite to the Doctor and one Marketing Executive is to the immediate left of the Scientist.
 The Professor sits to the immediate right of the Scientist

Solutions for questions 6 to 9:

9. The maximum number of persons you can count if you start counting with the Scientist and end with a Marketing Executive (excluding both) is
 (A) 0 (B) 8 (C) 2 (D) 6



12. If E and H scored one point each, then which team wins the game, given that the team with the minimum points wins the game?
- (A) Team X
(B) Team Y
(C) Both teams scored the same points
(D) Cannot be determined

14. Who are the members of team X?
- (A) A, D, F and E
(B) B, H, C and E
(C) B, D, H and G
(D) B, H, C and G

Directions for questions 14 to 16: These questions are based on the following information.

13. Which country does Humpty belong to?
(A) Japan
(B) Australia
(C) America
(D) England

12. If Jack is the Japanese, then who is sitting opposite the American?
- (A) Jill
(B) Ted
(C) Jack
(D) Dumpty

11. Who among them is from India?
- (A) Jill
(B) Dumpty
(C) Humpty
(D) None of these

Directions for questions 11 to 13: These questions are based on the following information.

8. Who is sitting opposite Dimple?
(A) Pinky
(B) Sharn
(C) Rohan
(D) Cannot be determined
9. Who is sitting opposite Veda?
(A) Shuman
(B) Pinky
(C) Sharn
(D) Cannot be determined
10. If Rohan is sitting to the left of Veda, then who is sitting opposite Sharn?
(A) Rohan
(B) Dimple
(C) Shuman
(D) Cannot be determined

sitting adjacent to Pankaj who is sitting opposite Arun.
Dimple is sitting in between Pankaj and Suman. Rohan is

Directions for questions 20 to 22: These questions are based on the following information.

10. If P is a knight and Q is a knave, which of the following is true?
 (A) P is a knight and Q is a knight
 (B) P is a knight and Q is a knave
 (C) P is a knave and Q is a knight
 (D) P is a knave and Q is a knave

17. Which of the following statements is true?
- The boys wearing Green and Orange T-Shirts are either next to each other or opposite to each other.
 - The boys wearing Indigo and Orange T-Shirts are either next to each other or opposite to each other.
 - The boys wearing Blue and Violet T-Shirts are always next to each other.
 - The boys wearing Blue and Indigo T-Shirts are either opposite to each other or are next to each other.

Directions for questions 17 to 19: These questions are based on the following information.

16. If team Y scores 95 points and team X scores 90 points, then which among the following is definitely true?
- (A) H and D scores equal points.
 (B) B scores twice as many points as F.
 (C) A scores three points less than G.
 (D) D scores one point more than G.

3. If F's position in the evening was not opposite to his position in the morning then which of the following is correct?

(A) F was sitting opposite to E in the morning.
 (B) B was sitting between C and F in the evening.
 (C) B was adjacent to D in the evening.
 (D) More than one of the above

5. If B was sitting adjacent to E in the morning then who was sitting to the left of him in the evening?
(A) D (B) E (C) C (D) F

1. Who was sitting to the right of A in the evening?

(A) E
(B) C
(C) D
(D) Cannot be determined

(iii) Akhli was opposite to Chetan in the morning.
(vi) Eswar never sat adjacent to Chetan.
(v) Dhawan sat in the opposite place in the evening. Not
(iv) Akhli sat second to the left of Dhawan in the evening.
all sat in the opposite places in the evening.

(ii) No one sat opposite the same person in the evening.

(i) In the evening each person changed his place and sat at the following positions:

Chetan, Dhawan, Eshwar and Feroz. One morning, they

Directions for questions 1 to 3: These questions are

(D) L sits to the immediate right of O.

25. Which among the following is 'definitely true'?

24. Three of the following four are alike in a certain way and so form a group. Which is the one that does not belong to that group?

23. Who is sitting opposite N?
(A) M (B) O (C) Q (D) P

(iv) No two persons sitting next to each other face the same direction.

(ii) M and R are sitting in the opposite places.
(i) P sits to the immediate left of K.

Eight persons – K, L, M, N, O, P, Q, and R – sit around a circular table not necessarily in the same order. Some

Directions for questions 23 to 26: These questions are

22. Who is sitting opposite Ramesh?

(A) Accountant
(B) Pilot
(C) Engineer
(D) Cannot be determined

21. What is the profession of Mohan?

2. Which of the following is the correct combination of the students, his branch of study and his drink?
(A) E – ECE – Dew

4. The students who sit adjacent to D are

(A) B and H
(B) E and G
(C) H and G
(D) Cannot be determined

(x) A drinks Thumps Up. E does not drink Limca.
(xi) C drinks Mazza, and sits opposite A.
to A.

(iii) E is not sitting at the same branch.

(v) The student who drink Thumbs Up does not sit adjacent to a student from ECE

(iii) The students who drink Pepsi, Cola, and Sprite sit in adjacent positions in some order.

(i) Among the students, three are from CSE, two are from TI and the rest are from ECE.

different branches of study among CSE, ECE and IT. Each of them drinks a different cold drink among Cola, Dew, Limca, Mazza, Pepsi, Sprite and Thumps Up through

Eight students (A, B, C, D, E, F, G and H) sit around a table on the following information.

Exercise 2(b)

(A) Aqba, Divya
(B) Vasudha, Ganesh
(C) Divya, Vasudha
(D) Vasudha, Tanuja

30. Three out of the following four follow a particular pattern and so form a group. Find the one which does not belong to the group.

29. In a certain way, Vasudha is related to Divya. Sateesh is related to whom in the same way?

(A) Srikanth (B) Ganesh (C) Tanuja (D) Appu

28. Who among the following is sitting adjacent to Vasudha
(A) Satish (B) Apur (C) Divya (D) Ganesh

27. Who is sitting second to the right of Apur?

No two females are adjacent to each other. Ganesh and

is known about their seating. The following information is necessary in the same order. The following information is necessary in the same order.

American never reported – Tansil, David V and Associates
based on information.

Directions for questions 27 to 30: These questions are

26. If M and N interchange their places, then who among

20. If the order of conveying messages is reversed at both the tables (i.e., "A speaks to B" now becomes "B speaks to A", and so on) and also B and C exchange

- (A) 1 (B) 6 (C) 10 (D) None of these

19. If C wants to send a message to M, then how many persons must the message pass through? (excluding the first and the last)

The conversations are one-sided i.e., A spoke to B implies N to M; C to D; D to E; E to F; and E to F. A spoke to B; B to R; R to C; C to P; P to O; O to N; and none of them does the vice-versa, unless so stated. is the only person who can translate French to Russian, C is the only person who can translate Russian to French; A and D are sitting opposite to each other. B and E are sitting opposite to each other. C sits to the right of D. B is the only person who can translate Russian to French; C sits to the right of D. B is the only person who can translate French to Russian, and none of them does the vice-versa, unless so stated.

Directions for questions 19 to 21: These questions are based on the following information.

There are two circular tables in a room. Six Russians – A, B, C, D, E and F – are sitting at one table and six Frenchmen – M, N, O, P, Q and R – are sitting at the other table. A and D are sitting opposite to each other. B and E are sitting opposite each other. C sits to the right of D. B is the only person who can translate Russian to French; C is the only person who can translate French to Russian, and none of them does the vice-versa, unless so stated. is the only person who can translate Russian to French; C sits to the right of D. B is the only person who can translate French to Russian, and none of them does the vice-versa, unless so stated.

18. Who is sitting in the opposite position of G?
(A) H (B) M (C) K (D) J

17. Who is sitting to the immediate right of H?
(A) M (B) G (C) I (D) K

- (A) JH (B) NI (C) MK (D) MN

16. Three of the four are alike in a certain way and so form a group. Which is the one that does not belong to that group?

- (A) Five (B) Four (C) Two (D) Three

15. How many persons are facing away from the centre?

- (i) L is sitting at one of the corners and is facing away from the centre.
(ii) Neither J nor M is a neighbour of I.
(iii) The neighbours of I face the same direction as I.
(iv) L and M face the same direction and sit opposite each other.
(v) H is to the immediate right of M, and G is to the immediate left of I.
(vi) J and K are neighbours of N, and face different directions.
(ix) N sits opposite I and faces the centre.
(x) M and K are facing different directions, and K is to the immediate right of N.

Directions for questions 15 to 18: The following questions are based on the information given below:
Eight persons G, H, I, J, K, L, M, and N are sitting around a square table. Some of them are facing the centre and others are facing away from the centre.

- (A) Brother (B) Father (C) Grandson (D) Grandson

14. How is F related to the person sitting third to the left of him?

13. Based on information given three of the following four are similar in a certain way and, hence, form a group. Find the one that does not belong to the group.
(A) E (B) G (C) F (D) B

- (A) Immediate left (B) Opposite each other (C) Second to the right (D) Second to the left

12. What is the position of E's father with respect to C's daughter-in-law?
(A) Mother (B) Sister (C) Niece (D) Aunt

11. How is A's brother-in-law's nephew's grandmother related to B?
(A) A (B) E (C) D (D) None of the above

10. Who is C's son?
(A) A (B) E (C) D (D) None of the above

The following information is known about them:
(i) There are three married couples in the family.
(ii) One of A's sons is sitting opposite him while the other is adjacent to him.
(iii) H's sister-in-law is B, who is sitting to the immediate right of H's father-in-law.
(iv) The number of females the family is less than the number of males in the family.
(v) Two of the married couples have two children each.
(vi) C, who is the eldest male in the family, is sitting third to the left to his wife.
(vii) F, the youngest, is not G's son and is sitting adjacent to the left to his wife.
(viii) H is wife of E's uncle. E is sitting three places away from G.

Eight members of a family A through H are sitting around a circular table.

9. Who is sitting to the immediate right of Sajan?
(A) Anand (B) Rupak (C) Chandak (D) Data inadequate

8. Who is sitting opposite Rupak?
(A) Palak (B) Anand (C) Brijesh (D) Data inadequate

7. Who is sitting along the same side as Chandak?
(A) Anand (B) Palak (C) Sajan (D) Rupak

- (i) Sajan is sitting opposite Dweepesh, who sits along the same side as Brijesh.
(ii) Palak is not sitting along the same side as Sajan.
(iii) Sajan is sitting opposite Chandak who is sitting to the immediate right of Brijesh.
(iv) Sajan, who is sitting to the immediate right of Rupak, is sitting opposite Chandak who is sitting to the immediate right of Brijesh.

Eight persons – Anand, Brijesh, Chandak, Dweepesh, Sajan, Jagat, Rupak and Palak – are sitting around a square table such that two persons are sitting along each side. The following information is known about them.

Directions for questions 7 to 9: These questions are based on the following information.

- (A) Dew (B) Limca (C) Slice (D) Data inconsistent

6. If the student from ECE drinks Pepsi and the student adjacent to the person from CSE drinks Cola then the student sitting opposite the one drinking Sprite has which drink?

- (A) Dew (B) Limca (C) Slice (D) Data inconsistent

More than one of the above
(C) F – ECE – Limca
(B) H – IT – Pepsi

1. C	6. B	11. B	16. D	21. C	26. C
2. C	7. D	12. A	17. D	22. C	27. A
3. C	8. D	13. B	18. B	23. D	28. D
4. B	9. A	14. D	19. A	24. D	29. C
5. C	10. B	15. A	20. B	25. D	30. B

1. A	6. A	11. A	16. D	21. B	26. B
2. D	7. B	12. C	17. A	22. B	27. B
3. C	8. A	13. D	18. C	23. B	28. D
4. A	9. B	14. C	19. C	24. A	29. D
5. C	10. D	15. B	20. B	25. B	30. C

Key

Exercise – 2(a)

30. Three of the following four are alike in a certain way and hence form a group. Find the one that does not belong to the group.
 (A) UV (B) TS (C) WQ (D) QP

(D) Cannot be uniquely determined

29. S sits opposite _____
 (A) U
 (B) V
 (C) R
 (D) Cannot be uniquely determined

28. Which of the following statements is true?
 (A) Two directors of the same gender sit together.
 (B) The number of males in each of the professions mentioned is more than the number of females.
 (C) U, the producer, is neighbor of both P and Q.
 (D) The persons sitting opposite each other are not of the same gender.

27. Who is B's niece?
 (A) E
 (B) H
 (C) B's daughter
 (D) A's daughter
26. How many males are there in the family?
 (A) Three (B) Five (C) Two (D) Four
25. Who sits second to the right of B's husband?
 (A) A's son
 (B) B's father
 (C) C
 (D) C

Directions for Questions 28 to 30: These questions are based on the following information.

Eight persons P, Q, R, S, T, U, V and W sit around a circular table facing the center. P and Q are actors; R, S and T are directors; U and V are producers; W is a cinematographer. Also, there is an equal distribution of males and females among actors and producers. Further, the following information is known:

- The two producers are neighbors of P.
- T, the only male director, sits opposite P, who is female.
- W sits between two directors.
- There is a male sitting to the immediate right of T.
- Q is neighbor of both the persons, a female producer and S.

A family of eight persons – A, B, C, D, E, F, G and H – are sitting around a circular table, facing towards the centre, but not necessarily in the same order. The following information is known about their seating arrangement.

Directions for questions 25 to 27: These questions are based on the following information.

24. If Durga is sitting in seat number 2, then who is sitting to the right of Madhu?
 (A) Krish (B) Sandat (C) Parul (D) Lakshmi

23. If Nishi is sitting in seat number 1, and Tishna is sitting to the immediate left of Parul, what is the seat number in which Sandat is sitting?
 (A) 2
 (B) 4
 (C) Cannot be determined
 (D) Cannot be determined

22. What is the maximum seat number in which Krish can sit?
 (A) 8
 (B) 7
 (C) 6
 (D) 4

Lakshmi. No person is adjacent to both Durga and Krish. adjacent to Tishna. No person is adjacent to both Parul and Tishna and Tishna exchange their positions, Durga will be adjacent to Madhu. Even if the person sitting in seat number 1 and Sandat exchange their positions, then Sandat will be adjacent to Madhu. Neither of them is adjacent to either Parul or Lakshmi. Whether or not Krish and Durga exchange their positions, Nishi, are sitting in those seats not necessarily in that order. numbered 1 through 8 in clock-wise direction. Eight persons – Parul, Madhu, Sandat, Krish, Lakshmi, Durga, Tishna and Nishi, are sitting in those seats not necessarily in that order.

Directions for questions 22 to 24: These questions are based on the following information.

21. If the person sitting to the right of B wants to send a message to the person sitting two places to the left of D, then what is the maximum number of people involved between them? (excluding the two people)
 (A) 11
 (B) 10
 (C) 4
 (D) None of these

20. The maximum number of persons involved in the longest message in this new arrangement is more than that in the previous arrangement.
 (D) The person sitting to the right of C, on the same table, can translate Russian into French.
 (C) The person sitting to the right of C, on the same table, can translate Russian into French.
 (B) The person sitting to the right of F can send a message to the person sitting to the left of N, by involving only five persons.
 (A) A can send a message to Q involving only 2 persons.
 their interpretory skills, then which of the following must be true?

the right of D's mother and he is sitting opposite his wife. - in - law is C whose only son is D. G's father F sits third to opposite any female, but sits adjacent to her son. F's mother daughter is H who is the cousin of E. D's mother is not A's son. D's father sits opposite A's son. C's only grand daughter is not adjacent to any female and sits adjacent to sitting between D's daughter and A's daughter. D's only daughter is three places away from E. Two persons are F's son E, sits second to the left of B's son G. A's only