## 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.

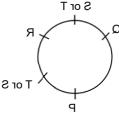
- If S sits in between Q and R, who sits to the immediate right of P? (D) R
  - Q (O) (B) S T (A)
- Which of the following cannot be the correct seating arrangement of the five persons in either the clockwise direction or the anti-clockwise direction? (B) P, S, R, T, Q (A) P, Q, R, S, T
  - (D) P, T, R, S, Q (C) P, Q, S, R, T
- If S is not sitting next to Q, who is sitting between Q 3. and S?
  - (B) P (D) Both (R) and (P) Я (А) T (O)
- 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
- 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.

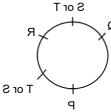


If S sits between Q and R, then the arrangement is as



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

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)

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

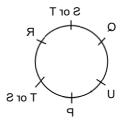


Now P is between Q and S.

Choice (B)

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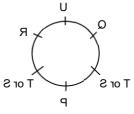
 On the basis of the diagram that we drew, we find that to accommodate U we have to create a new slot between P and Q.



Hence, choice (C) is the correct answer.

Choice (C)

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:



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

**Directions for questions 6 to 9:** These questions are based on the following information.

There are 10 persons at a round table conference, consisting of a Professor, a Lawyer, a Doctor, a Scientist, an Accountant, a Grocer, two Computer Specialists and two Marketing Executives. The Professor sits opposite to the Lawyer. The Scientist and the Doctor sit opposite each other. The two Marketing Executives sit opposite each other with one of them sitting to the immediate left of the scientist. The Professor sits to the immediate right of the Scientist.

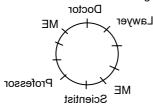
- 3. If the two Computer Specialists sit opposite each other but neither of them is immediately next to any Marketing Executive, who sits to the immediate right of the professor?
  - (A) Computer Specialist (B) Marketing Executive
    - (C) Grocer (D) Accountant
- 7. If the Grocer and Accountant do not sit opposite each other, then which of the following must be TRUE?
- (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.
- 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) 3 (B) 6 (C) 16 (D) 8

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) 5 (D) 6

#### Solutions for questions 6 to 9:

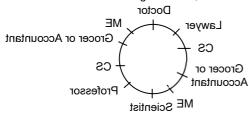
The Professor sits to the immediate right of the Scientist and opposite to the Lawyer. The Scientist sits opposite to the Doctor and one Marketing Executive is to the immediate left of the Scientist.

Choosing to place the Scientist in one of the 10 seats, we have the arrangement as follows.



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

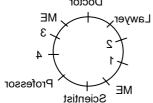
 The two Computer Specialists sit opposite each other. Neither of them is next to any Marketing Executive. So, the arrangement must be as follows



So, a Computer Specialist sits to the immediate right of the professor. Choice (A)

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

Doctor



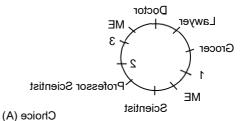
The Grocer and the Accountant can occupy the following pairs of seats: 3 & 4, 1 & 4, 1 & 2 or 2 & 3. Then, the two computer specialists may occupy one of the pairs of seats 1 & 2, 2 & 3, 3 & 4 or 4 & 1. We check for the choices given in the question, one

We area to the choices given in the question, one by one, and find that whichever combination is taken, there is a Computer Specialist in seat 1 or seat 3, both of, which are next to the Marketing Executives seats. So, choice (B), which states that one of the Computer Specialists is next to a Marketing Executive, is true.

Choice (B)

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

can ensure that there is a Computer Specialist next to a Marketing Executive. Hence, there are three possible seating arrangements.



Based on the seating arrangement that we discussed, the number of persons between the Scientist and a Marketing Executive can be 3 or 8 (counted clockwise) or 0 or 5 (counted anti-clockwise). Maximum number Choice (B) that can be counted is 8.

for question 10: Select the correct alternative from the given choices.

10. Six persons K, L, M, N, O and P are sitting around a table. K and L do not sit next to each other. O and P are opposite each other. M is sitting to the immediate right of P. If K is not between O and M, then N is not next to P. Which of the following is not

an arrangement (in clockwise direction) satisfying the conditions given above?

- (A) NKOLŇP (B) PKNOLM
- (C) LNOKMP (D) KMPNLO

### Solution for question 10:

10. O and P are opposite to each other. M is to the right of P. Then we have two possible arrangements. In one case, when K is between O and M, the other two slots can be occupied by N and L - we cannot uniquely determine the slots of L and N. In the second case, if K is not between O and M (then, L has to be between O and M), then N is not next to P. This means that K has to be next to P and the only slot left is for N which is to the right of O.



From the choices, we can clearly see that choice (A) is the correct answer because that arrangement is not Choice (A) possible.

### Exercise - 2(a)

Directions for question 1: Select the alternative from the given choices.

- 1. Eight boys A, B, C, D, E, F, G and H sit around a circular table, not necessarily in the same order. B and D sit neither adjacent to C nor opposite to C. A sits in between E and D, and F sits in between B and H. Which of the following is definitely true?
  - (A) H sits in between C and E.
  - (B) B sits in between A and G.
    - (C) C sits opposite G.
      - (D) None of these

Directions for questions 2 to 4: These questions are based on the following information.

Eight people A, B, C, D, E, F, G, and H are sitting around a rectangular table not necessarily in the same order. One person sits along the shorter side and three persons sit along the longer side.

A and G are sitting diagonally opposite to each other. D and E are sitting opposite to each other.

A is sitting to the immediate left of F, who is sitting at one of the shorter sides of the table.

- If C is sitting to the immediate right of H, then who is sitting opposite to F?
  - (D) D (C) H (B) C
- If C is sitting opposite to A, then who among the following must be sitting on the same side as C? (B) G and D (A) G and E

  - (D) H or B
- If H is not sitting at one of the shorter sides, then how many arrangements are possible?
  - (D) 16 (C) 4 (B) 8

Directions for questions 5 to 7: These questions are based on the following information.

Sameer, Sameep, Sandeep, Sangeet, Sanskar and Saarang are sitting around a hexagonal table in a library studying a book each. The cover of the book in their hands is of different colours from among - Red, Green, Blue, Orange, White and Yellow - not necessarily in that order. Further, it is known that Sameer sits opposite to Sameep, who sits to the immediate left of the person holding the Blue cover book, who sits two places away from the person holding the White cover book. Sangeet sits two places away from the person holding the Yellow cover book and sits opposite to the person holding the white cover book. Sandeep and Saarang sit next to each other.

- What must be the colour of the book with Sanskar? (A) Yellow (B) White (C) Blue (D) Red
- If the person holding the Orange cover book sits opposite to the person holding the Red cover Book, then which statement among the following cannot be true?
  - (A) Sanskar does not hold the White cover book.
  - (B) Sangeet is not holding a Green cover book.
    - (C) Saarang holds the Yellow cover book.
    - (D) Sandeep holds the Yellow cover book.
- If Sandeep sits opposite the person holding the .7 Green cover book then who is sitting opposite the person holding the Red cover book?
  - (B) Sameer (A) Sandeep
  - (C) Sanskar

(D) Cannot be determined

Directions for questions 8 to 10: These questions are based on the following information.

Eight persons - Arun, Pankaj, Rohan, Veda, Suman, Shanu, Dimple and Pinky are sitting around a circular table for a group discussion. Suman is not sitting opposite Pinky and Shanu is sitting three places away to the right of Pankaj.

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

- . Who is sitting opposite Dimple?
- (A) Piniky (B) Shanu
- (C) Rohan (D) Cannot be determined
  - 9. Who is sitting opposite Veda?
  - (A) Suman (B) Pinky
- (C) Shanu (D) Cannot be determined
- **10.** If Rohan is sitting to the left of Veda, then who is sitting opposite Shanu?
  - (A) Rohan (B) Dimple
- (C) Suman (D) Cannot be determined

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

Each of the six persons – John, Ted, Humpty, Dumpty, Jack and Jill is from one different country among India, Japan, China, Australia, America and England and are sitting around a circular table, may not be in the same order. John, who is from China is sitting adjacent to an American, who is not Humpty. Ted is not an Indian, and the Chinese is not sitting adjacent to the Indian. The person from England is sitting one place away to the left of the Australian. Humpty is sitting opposite to the Indian, who is adjacent to the Japanese. The Australian and Dumpty are sitting opposite each other. Jack is not from India and Ted is not from Japan and both are not adjacent to each other.

- 11. Who among them is from India?
- (A) Jill (B) Dumpty
- (C) Humpty (D) None of these
- **12.** If Jack is the Japanese, then who is sitting opposite the American?
  - (A) Jill (B) Ted
  - (C) Jack (D) Dumpty
  - 13. Which country does Humpty belong to?
  - (A) Japan (B) Australia
  - (C) America (D) England

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

Eight friends, A through H, are sitting around a circular table, playing a game of cards. They belong to two different teams X and Y. No two persons of the same team sit in adjacent seats.

- (i) A sits neither opposite to D nor to H but is sitting in between C and G.
- (ii) B sits neither opposite to A nor to G but is sitting in between F and D.
  - (iii) B and H belong to team X and D sits opposite to E.
- (iv) A scored two points more than D, who scored three points more than F, who scored four points more than E. B scored twice as that of G, who scored twice that of C, who scored twice that of H.
  - 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
- **15.** 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

- **16.** If team Y scores 92 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 that G.
    - (D) D scores one point more than G.

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

Six boys — Prasad, Prakash, Prashant, Pranay, Praveen and Prabhat — each wearing a T-shirt of a different colour among Indigo, Green, Blue, Orange, Violet and Yellow, are sitting around a table in six equi-spaced chairs. Prakash is opposite to the boy wearing the Orange T-Shirt. Prashart is to the boy wearing the Green T-Shirt. Prashant is to the right of the boy wearing the Indigo T-Shirt and opposite the boy wearing the Violet T-Shirt. Praveen is between the boys wearing Orange and Yellow T-Shirts and is not wearing the Violet T-Shirt. Pranay is opposite the boy wearing the Yellow T-Shirt.

- 17. Which of the following statements is true?
- I. The boys wearing Green and Orange T-Shirts are either next to each other or opposite to each other.
- II. The boys wearing Indigo and Orange T-Shirts are either next to each other or opposite to each other.
- III. The boys wearing Blue and Violet T-Shirts are always next to each other.
- IV. The boys wearing Blue and Indigo T-Shirts are either opposite to each other or are next to each other
  - (A) Only I and II (B) Only III
  - (C) Only III and IV (D) I, II, III and IV
- **18.** If Prabhat is wearing the Orange T-Shirt, then who is wearing the Green T-Shirt?
  - (A) Prasad (B) Prakash

(C) Praveen

(C) Prakash

- (D) Pranay
- **19.** If Prashant is wearing the Orange T-Shirt, then who is between Praveen and Pranay?
  - (A) Prashant (B) Prasad
  - (D) Prabhat

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

Eight persons – Ram, Ramesh, Mohan, Sohan, Seema, Saroj, Sakshi and Saloni are sitting around a circular table. Each of them is one among Doctor, Engineer, Dancer, Singer, Teacher, Lawyer, Accountant and Pilot, not necessarily in the given order. Further it is known that

- Pilot is sitting opposite Ramesh, who is adjacent to the Accountant.
- II. Dancer is sitting opposite the Lawyer and is not adjacent to Sakshi who is not sitting adjacent to the Lawyer.
- Saloni is sitting opposite the Engineer, Ramesh is not a Lawyer or Doctor or Engineer.
- IV. Sakshi, the Singer, is sitting one place away to the right of Saroj.
- V. Seema is sitting opposite the Lawyer and Ram is sitting opposite the Dancer.
- VI. Ramesh is sitting three places to the right of Singer. Mohan is neither the Accountant nor adjacent to the Dancer.
  - 20. Who among the following is the Doctor?
    - (A) Ramesh (B) Saloni
- (C) Saroj (D) Cannot be determined

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21. What is the profession of Mohan?

(B) Pilot (A) Accountant

(D) Cannot be determined (C) Engineer

22. Who is sitting opposite Ramesh?

(A) Seema (B) Sakshi

(D) None of these (C) Saroi

Directions for questions 23 to 26: These questions are based on the following information.

Eight persons - K, L, M, N, O, P, Q, and R - sit around a circular table not necessarily in the same order. Some of them are facing the centre and the remaining are facing away from the centre.

P sits to the immediate left of K.

M and R are sitting in the opposite places.

(iii) Either 'Q' or 'O' but not both sits next to L.

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

R is the neighbour of both N and Q.

(vi) L sits opposite K and faces away from the centre.

23. Who is sitting opposite N?

(D) P (C) Q (B) O M (A) 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?

(D) PO (C) NO (B) ML (A) KM

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

(A) P is facing away from the centre.

(B) M and N are opposite each other. (C) K sits to the immediate right of P.

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

26. If M and N interchange their places, then who among the following sits to the immediate left of M? (D) R O (A)

(B) P (C) L

Directions for questions 27 to 30: These questions are based on the following information.

Among seven persons – Tanuja, Divya and Vasudha are females and Srikanth, Ganesh, Sateesh and Appu are males and they are sitting around a circular table, but not necessarily in the same order. The following information is known about their seating.

No two females are adjacent to each other. Ganesh and Appu are not adjacent to each other. Srikanth is sitting to the immediate left of Vasudha, who is third to the left of Appu. Tanuja is not adjacent to Sateesh. Appu and Sateesh are adjacent to each other. All are facing the center.

27. Who is sitting second to the right of Appu? (A) Divya (B) Tanuja (C) Srikanth (D) Ganesh

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

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

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

(B) Vasudha, Ganesh (A) Appu, Divya

(D) Vasudha, Tanuja (C) Divya, Vasudha

# Exercise - 2(b)

Directions for questions 1 to 3: These questions are based on the following information.

There are six managers in a company. Akhil, Balwant, Chetan, Dhawan, Eshwar and Feroz. One morning, they sat around a circular table for an important discussion. They met one another again in the evening and sat at the same table. The following is known about their seating positions:

In the evening, each person changed his place and no one sat at the place adjacent to the one at which he sat in the morning.

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

Akhil was opposite to Chetan in the morning.

Eshwar never sat adjacent to Chetan.

Dhawan sat in the opposite place in the evening. Not all sat in the opposite places in the evening.

(vi) Akhil sat second to the left of Dhawan in the evening.

Who was sitting to the right of A in the evening? (B) C (A) E

(D) Cannot be determined

If B was sitting adjacent to E in the morning then who was sitting to the left of him in the evening?

O (O) (B) E (A) D

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

(A) F was sitting opposite to E in the morning.

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

Directions for questions 4 to 6: These questions are based on the following information.

Eight students A, B, C, D, E, F, G and H sit around a circular table in their college canteen. They are from different branches of study among CSE, ECE and IT. Each of them drinks a different cold drink among Cola, Dew, Limca, Mazza, Pepsi, Slice, Sprite and Thumbs Up, though not necessarily in the same order. Further it is known that,

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

No two students from the same branch sit adjacent (ii) to each other.

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

H is from IT and sits opposite to the person who (vi) drink Slice.

The student who drink Thumbs Up does not sit adjacent to a student from ECE.

A is from CSE and G drink Slice.

D and the person who sits opposite him are from the (iiv) same branch.

(viii) F is from ECE and sits to the left of E who is adjacent

(xi) C drinks Mazza, and sits opposite A.

A drinks Thumbs Up. E does not drink Limca.

The students who sit adjacent to D are (B) E and G (A) B and H

(D) Cannot be determined (C) H and G Which of the following is the correct combination of

the students, his branch of study and his drink? (A) E - ECE - Dew

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5.

- (B) H-IT-Pepsi
- (C) F ECE Limca
- (D) More than one of the above
- 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?
  - (B) Limca (A) Dew

(D) Data inconsistent (C) Slice

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

Eight persons - Anand, Brijesh, Chandak, Dweepesh, Sayan, 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.

- Jagat, who is sitting to the immediate right of Rupak, is sitting opposite Chandak who is sitting to the immediate right of Brijesh.
- Sayan is sitting opposite Dweepesh, who sits along the same side as Brijesh.
  - Palak is not sitting along the same side as Sayan.
    - Who is sitting along the same side as Chandak? (B) Palak (A) Anand
      - (D) Rupak (C) Sayan
      - .8 Who is sitting opposite Rupak? (B) Anand (A) Palak

(C) Brijesh (D) Data inadequate

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

Directions for questions 10 to 14: These questions are based on the following information.

Eight members of a family A through H are sitting around

The following information is known about them:

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

(C) D

(B) E A (A)

(D) None of the above

- 11. How is A's brother-in-law's nephew's grandmother related to B? (C) Niece (D) Aunt (A) Mother (B) Sister
- 12. What is the position of E's father with respect to C's daughter-in-law?
  - (A) Immediate left (B) Opposite each other (D) Second to the left (C) Second to the right

- 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. (D) B (C) F (B) G 3 (A)
- 14. How is F related to the person sitting third to the left of him?
  - (A) Son (B) Father
  - (D) Grandson (C) Brother

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.

- (i) I is sitting at one of the corners and is facing away from the centre.
  - Neither J nor M is a neighbour of I.
  - The neighbours of I face the same direction as I.
- L and M face the same direction and sit opposite each
- (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.
- M and K are facing different directions, and K is to the immediate right of N.
  - 15. How many persons are facing away from the centre? (A) Five (D) Three (C) Two (B) Four
- 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?
  - (D) MN (C) MK (B) NI HL (A)
    - 17. Who is sitting to the immediate right of H? (D) K I (O) (B) G M (A)
  - 18. Who is sitting in the opposite position of G? (C) K (B) M H (A)

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  $\mathsf{E}$ 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. E and F sit adjacent to each other. Also, M sits opposite P; Q sits to the right of R and R sits opposite O. N and P sit adjacent to O. On the table, any person can talk to another person, only as stated below. The only conversations that took place are as given below:

A spoke to B; B to R; R to C; R to Q; Q to P; P to O; O to N; N to M; C to D; D to E; F to A; M to R; and E to F.

The conversations are one-sided i.e., A spoke to B implies that A is the speaker and B is the listener and not vice-versa.

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) (A) 1

B) 6

(D) None of these

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

(C) 10

their interpretory skills, then which of the following must be true?

- (A) A can send a message to Q involving only 2 persons.
- (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.
- (C) The person sitting to the right of C, on the same table, can translate Russian into French.
- (D) The maximum number of persons involved in the longest message in this new arrangement is more than that in the previous arrangement.
- 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

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

Eight seats are arranged around a circular table and are numbered 1 through 8 in clock-wise direction. Eight persons – Parul, Madhu, Saugat, Krish, Lakshmi, Durga, Trishna and Nishi, are sitting in those seats not necessarily in that order.

Whether or not Krish and Durga exchange their positions, neither of them is adjacent to either Parul or Lakshmi. If the person sitting in seat number 1 and Saugat exchange their positions, then Saugat will be adjacent to Madhu. Even if Nishi and Trishna exchange their positions, Durga will be adjacent to Trishna. No person is adjacent to both Parul and Lakshmi. No person is adjacent to both Durga and Krish.

- 22. What is the maximum seat number in which Krish can sit?
  - (A) 8 (B) 7 (C) 6 (D
- 23. If Nishi is sitting in seat number 1, and Trishna is sitting to the immediate left of Parul, what is the seat number in which Saugat is sitting?

(A) 2 (B) 4

(C) 3 (D) Cannot be determined

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

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

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.

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

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

(A) E (B) H

(C) B's daughter (D) A's daughter

Directions for Questions 28 to 30: These questions are

**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 neighbours of P.
- 2. T, the only male director, sits opposite P, who is female.
  - 3. W sits between two directors.
  - 4. There is a male sitting to the immediate right of T.
- Q is neighbour of both the persons, a female producer and S.
  - 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.
  - 29. S sits opposite \_\_\_\_\_\_

U (A)

(B) V

(c) R

(D) Cannot be uniquely determined

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) VU (B) TS (C) WQ (D) QP

Key

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

Triumphant Institute of Management Education Pvt. Ltd. (T.I.M.E.) HO: 95B, 2<sup>nd</sup> Floor, Siddamsetty Complex, Secunderabad – 500 003. Tel: 040–40088400 Fax: 040–27847334 email: info@time4education.com website: www.time4education.com SM1002105/14