

TCS NQT Mock – 2

Verbal Ability

Topic – Reading Comprehension

(1-5) Directions: Read the following passage carefully and answer the questions.

“Boredom” first became a word in 1852, with the publication of Charles Dickens’ convoluted serial, Bleak House; as an emotional state, it obviously dates back a lot further. Roman philosopher Seneca talks about boredom as a kind of nausea. And the vast amount of ancient graffiti on Roman walls is a testament to the fact that teenagers in every era deface property when they have nothing else to do.

In Christian tradition, chronic boredom was “acedia”, a sin that’s sort of a proto-sloth. The “noonday demon”, as one of its early chroniclers called it, refers to a state of being simultaneously listless and restless and was often ascribed to monks and other people who led cloistered lives. In the 18th century, boredom became a punitive tool, although the Quakers who built the first “penitentiary” probably didn’t see it that way. In 1790, they constructed a prison in Philadelphia in which inmates were kept in isolation at all hours of the day. The idea was that the silence would help them to seek forgiveness from God. In reality, it just drove them insane.

It wasn’t until the 1930s that science took an interest in boredom. In 1938, psychologist Joseph Ephraim Barmack looked at how factory workers coped with the tedium of being factory workers. Stimulants – caffeine, amphetamines, and ephedrine – was the answer. Barmack was particularly concerned with what can be termed situational boredom, the kind of boredom that is perceived as a temporary state, such as being on a long car ride. This kind of boredom is relieved by change, or, as Barmack found, drugs.

But modern psychologists think boredom might be a lot more complicated than that. It's appropriate that Dickens coined the word boredom, as literature is littered with characters for whom boredom became dangerously existential (think Madame Bovary, Anna Karenina or Jack Torrance in *The Shining*). What countless novels of the 19th and 20th century showed was that boredom has a much darker side, that it can be something much more akin to depression. Recent scientific research agrees: A host of studies have found that people who are easily bored may also be at greater risk for depression, anxiety disorders, gambling addictions, eating disorders, aggression and other psychosocial issues. Boredom can also exacerbate existing mental illness. And, according to at least one 2010 study, people who are more easily bored are two-and-a-half times more likely to die of heart disease than people who are not.

There has to be a reason for boredom and why people suffer it; one theory is that boredom is the evolutionary cousin to disgust. In Toohey's *Boredom: A Living History*, the author notes that when writers as far back as Seneca talk about boredom, they often describe it as a kind of nausea or sickness. The title of famous 20th century existentialist writer Jean-Paul Sartre's novel about existential boredom was, after all, *Nausea*. Even now, if someone is bored of something, they're "sick of it" or "fed up". So if disgust is a mechanism by which humans avoid harmful things, then boredom is an evolutionary response to harmful social situations or even their own descent into depression. Boredom, therefore, can be a kind of early warning system.

And though getting out of boredom can lead to extreme measures to alleviate it, such as drug taking or an extramarital affair, it can also lead to positive change. Boredom has found champions in those who see it as a necessary element in creativity. But how humans respond to boredom may have changed dramatically in the last century. Humans have become used to doing less to get more, achieving intense stimulation at the click of a mouse or touch of a screen. We are very used to being passively entertained. We have changed our understanding of the human condition as one of a vessel that needs to be filled. And it's become something like a drug – where we need another hit to remain at the same level of satisfaction.

There is hope, however, and it's back at the Boring Conference. Rather than turning to a quick fix – YouTube videos of funny cats, Facebook – the Boring Conference wants people to use the mundane as an impetus to creative thinking and observation. "It's not the most amazing idea in the world, but I think it's a nice idea – to look around, notice things," says Ward, the conference organizer. "I guess that's the message: Look at stuff."

1) Which of the following can be understood from the example of the Quakers, who used boredom as a punitive tool?

- a) They believed that a bored person deserved to be punished.
- b) They believed that boredom would not be forgiven by God.
- c) They built a prison to carry out their belief, but it did not achieve the result they wanted.
- d) They built a prison for the purpose of mentally torturing criminals and wrongdoers.

Correct Choice: c

Solution

The passage tells us how the Quakers built a prison to keep inmates in isolation, believing that this would help them to seek forgiveness from God, but it just drove them insane in reality. Refer to the lines: *"In the 18th century, boredom became a punitive tool, although the Quakers who built the first "penitentiary" probably didn't see it that way. In 1790, they constructed a prison in Philadelphia in which inmates were kept in isolation at all hours of the day. The idea was that the silence would help them to seek forgiveness from God. In reality, it just drove them insane."* From this, we can conclude that the experiment did not work in the way the Quakers wanted. Thus, (c) is the right answer.

A and B are incorrect as the Quakers used boredom as a punishment for a crime, not as a reason to inflict punishment. D and E are incorrect as the passage tells us that the Quakers did so under the belief that it would help inmates to seek forgiveness from God.

2) Which of the following is/ are supported by the recent research done on people who are easily bored?

1. People who are easily bored are more likely to be abused physically or sexually.
2. People who are easily bored are at a greater risk for anxiety, depression and eating disorders.
3. People who are easily bored are at a higher risk of heart disease than those who are not.

- a) Only 2
- b) Only 1 and 2
- c) Only 1 and 3
- d) Only 2 and 3

Correct Choice: d

Solution

Both 2 and 3 are true as per the passage. Refer to the lines: *“Recent scientific research agrees: A host of studies have found that people who are easily bored may also be at greater risk for depression, anxiety disorders, gambling addictions, eating disorders, aggression and other psychosocial issues. Boredom can also exacerbate existing mental illness. And, according to at least one 2010 study, people who are more easily bored are two-and-a-half times more likely to die of heart disease than people who are not.”* Thus, (d) is the right answer.

1 is not mentioned or implied in the passage.

3) It can be understood from the passage that the author would agree with which of the following statements?

- a) People who are bored are more likely to bring about revolutions in science and technology.
- b) In today's world, people have got used to putting less effort to achieve maximum outcome, which will make people more likely to feel bored.
- c) People who are easily bored have greater brain activity than those who aren't.
- d) People who are bored are more likely to indulge in self-sabotaging behaviour like substance abuse or adultery.

Correct Choice: d

Solution

Refer to the lines: *“And though getting out of boredom can lead to extreme measures to alleviate it, such as drug taking or an extramarital affair, it can also lead to positive change.”* From these lines, we can understand that the author will agree with D. Thus, (D) is the right answer.

The information given in the passage is not sufficient to conclude whether the author will agree with A, C and B is incorrect as the author clearly believes the opposite. Refer to the lines: *“But how humans respond to boredom may have changed dramatically in the last century. Humans have become used to doing less to get more, achieving intense stimulation at the click of a mouse or touch of a screen.”* From this, we understand that people put less effort to maximise outcome out of boredom, so doing so is likely to make them feel less bored, not more.

4) As per a theory discussed in the passage, boredom can serve as a warning for which of the following?

- a) Harmful social situations
- b) Predators in the surroundings
- c) One's descent into depression
- d) Both (a) and (c)

Correct Choice: d

Solution

Refer to the lines: *“There has to be a reason for boredom and why people suffer it; one theory is that boredom is the evolutionary cousin to disgust...So if disgust is a mechanism by which humans avoid harmful things, then boredom is an evolutionary response to harmful social situations or even their own descent into depression. Boredom, therefore, can be a kind of early warning system.”* From these lines, we can understand that boredom can serve as an early warning system to protect us against dangerous social situations or against one's own descent into depression. Thus, (D) is the right answer.

5) Which of the following is opposite in meaning to the word 'mundane' as used in passage?

- a) Tedious
- b) Monotonous
- c) Intriguing
- d) placid

Correct Choice: c

Solution

MUNDANE means dull or uninteresting, and INTRIGUING (fascinating; interesting) is its antonym. Thus, (c) is the right answer.

Tedious - tiring. MONOTONOUS is a synonym to the given word. Placid - calm.

Topic – Jumbled Sentences

(6-7) In the question given below, rearrange the parts of the sentence in the correct order, and choose the correct option.

6) is credited to Joseph Fry, who in 1847 discovered (A)/ the creation of the first modern chocolate bar (B)/ that he could make a moldable chocolate paste (C)/ by adding melted cacao butter back into Dutch cocoa (D)

- a) CDAB
- b) CBAD
- c) BDAC
- d) BACD

Correct Choice:d

Solution

BACD is the final order. B begins the sentence by establishing the subject - the creation of the first modern chocolate bar. A follows by telling us who was the first person to create it - Joseph Fry. CD concludes as a pair, by telling us the process by which he created the first chocolate bar. Thus, (d) is the right answer.

(6-7) In the question given below, rearrange the parts of the sentence in the correct order, and choose the correct option.

7) though police officers stood in the centre (A)/ their arms, few drivers paid attention (B)/ blowing whistles and waving (C)/ of many of the most dangerous crossroads (D)

- a) ACBD
- b) ADCB
- c) DCBA
- d) DABC

Correct Choice: b

Solution

ADCB is the final order. AD begins the sentence as a pair, by telling us about the presence of police officers in the middle of the crossroads. C follows by telling us what the police officers were doing. B concludes by contradicting this, and telling us that despite the presence of the police officers, drivers were negligent. Thus, (b) is the right answer.

Topic – Phrase Replacement

(8-9) Which of the following phrases (1), (2), and (3) given below each sentence should replace the phrase printed in bold letters to make the sentence grammatically correct? Choose the best option among the five given alternatives that reflect the correct use of the phrase in the context of the grammatically correct sentence. If the sentence is correct as it is, mark 'No Improvement' as the answer.

8) In Algeria, public sector workers have mounted a general strike for higher wages and to improve working conditions.

1. Improved working conditions
2. an improvement in working conditions
3. Having improved working conditions

- a) No Improvement
- b) Only 1 and 2
- c) Only 1 and 3
- d) Only 2 and 3

Correct Choice: b

Solution

The sentence tells us how public sector workers in Algeria have begun a strike for higher wages and better working conditions. Both 1 and 2 can replace the highlighted phrase to convey the requisite meaning. Thus, (b) is the right answer.

3 is incorrect as the participle construction HAVING + VERB should have a dependent clause, which is not the case in this sentence. The highlighted

phrase is incorrect as the preposition FOR will take a noun phrase after it rather than an infinitive verb phrase. When the conjunction AND is used, both the clauses joined by it must have the same form. Since, HIGHER WAGES is a noun phrase, the clause following AND should also be a noun phrase.

(8-9) Which of the following phrases (1), (2), and (3) given below each sentence should replace the phrase printed in bold letters to make the sentence grammatically correct? Choose the best option among the five given alternatives that reflect the correct use of the phrase in the context of the grammatically correct sentence. If the sentence is correct as it is, mark 'No Improvement' as the answer.

9) It was the only general strike in British history, as union leaders such as Ernest Bevin, who had coordinated the strike, in consideration of a mistake.

1. Considered it a mistake
2. Believed it was mistaken
3. Believed it had been a mistake

- a) No Improvement
- b) Only 1 and 2
- c) Only 1 and 3
- d) Only 2 and 3

Correct Choice: c

Solution

The highlighted phrase is incorrect as the sentence tells us how Ernest Bevin, who has coordinated the strike believed that it was a mistake. Both 1 and 3 can replace the highlighted phrase to convey the requisite meaning. Thus, (c) is the right answer.

2 is incorrect as MISTAKEN means wrong in one's opinion or judgement; this phrase would convey the meaning that strike was wrong in its judgement, which is absurd. The highlighted phrase is incorrect as it does not fit grammatically in the sentence to lend meaning to its context.

Topic – Error Location

(10-11) Read the given sentence to find out whether there are any grammatical/ contextual errors in them. The errors, if any, will be in two of the phrases of the sentences and the combination of those parts will be the answer of that question. If no part in the sentence has an error then, mark 'no error' as your answer. Consider part (1) in bold as grammatically correct. (Ignore punctuation errors if any)

10) If the EU really wants (1)/ to help Africa, during the (A)/ pandemic and beyond, it (B)/ must urgently reformed its trade policies (C)/ to ensuring a level playing field and enhance food security. (D)

- a) AB
- b) BC
- c) BD
- d) CD

Correct Choice: d

Solution

(d) is the right answer. In C, we need to replace REFORMED with REFORM as we need a verb in its base form to follow the modal verb MUST. In D, we need to replace ENSURING with ENSURE as we need a verb in its base form to fit in the infinitive construction of TO+VERB.

(10-11) Read the given sentence to find out whether there are any grammatical/ contextual errors in them. The errors, if any, will be in two of the phrases of the sentences and the combination of those parts will be the answer of that question. If no part in the sentence has an error then, mark 'no error' as your answer. Consider part (1) in bold as grammatically correct. (Ignore punctuation errors if any)

11) The company blamed (1)/ heavier than anticipate usage (A)/ of the service for the temporary (B)/ suspension, after existing (C)/ customers was unable to login. (D)

- a) AB
- b) BC
- c) BD
- d) AD

Correct Choice: d

Solution

(d) is the right answer. In A, we need to replace ANTICIPATE with ANTICIPATED. We need an adjective here to modify the noun USAGE. ANTICIPATE is a verb. It cannot modify a noun. In D, we need to replace WAS with WERE to agree with the plural subject (CUSTOMERS).

Topic – Cloze Test

(12-16) Directions: In the following passage, some of the words have been highlighted in bold. First read the passage and try to understand what it is about. Then replace the highlighted words with the correct option in order to make grammatical and contextual sense. In case the highlighted word is correct as it is, mark 'No Improvement' as the right answer.

Identifying a mass extinction event is not the same as explaining it, however, and the catastrophe at the end of the Permian is perhaps the most puzzling mystery of all time. Scientists have (A) imposed a list of possible extinction triggers, including global cooling, bombardment by cosmic rays, the shifting of continents and asteroid impacts, but many paleontologists' prime (B) inspect now is the intense eruptions of the Siberian Traps, volcanoes that covered nearly 800,000 square miles of what is now Russia with lava. The earth was much warmer at the end of the Permian than it is today. The atmosphere was relatively rich in carbon dioxide, which (C) furnished a hothouse world in which there were almost no glaciers. The eruption of the Siberian Traps would have added vast amounts of greenhouse gases into the atmosphere, causing further global warming, increasing ocean acidity and lowering atmospheric oxygen levels. These (D) drastic changes to the atmosphere and resulting environmental effects would have caused many organisms to asphyxiate from the lack of oxygen, while others would have died from an excess of carbon dioxide in the blood or otherwise perished because they were physiologically unable to cope with these new conditions. Where rich, diverse communities of organisms once (E) thrived, the extinction left only "crisis" communities of a few species that proliferated in the vacant habitats.

12) (A)

- a) Provoked
- b) Deposed
- c) Disposed
- d) proposed

Correct Choice: d

Solution

We need a past participle form verb to fit in the present perfect tense construction HAVE + VERB. PROPOSED (suggested) will fit here as the sentence tells us how scientists have suggested several possible causes for the extinction event. Thus, (d) is the right answer.

Provoked - instigated. Deposed - remove from office suddenly and forcefully. Disposed - cast away; threw. Imposed - forced a decision on someone.

13) (B)

- a) prospect
- b) suspect
- c) suspend
- d) dissect

Correct Choice: b

Solution

We need a noun here to be modified by the adjective PRIME. SUSPECT (the factor thought to be responsible for something) will fit here as the sentence tells us how the culprits that paleontologists believe were responsible were volcanic eruptions. Thus, (b) is the right answer.

Prospect - possibility; likelihood. Suspend (verb) - terminate. Dissect (verb) - break into parts. Inspect (verb) - examine.

14) (C)

- a) fuelled
- b) festered
- c) impeded
- d) impended

Correct Choice: a

Solution

We need a verb here to link the subject ATMOSPHERE with the object A HOTHOUSE WORLD. FUELLED (gave rise to) will fit here as the sentence tells us how the carbon dioxide rich atmosphere gave rise to a hothouse world. Thus, (a) is the right answer.

Festered - decayed; rotted. Impeded - hindered. Impended - was about to happen. Furnished - decorated.

15) (D)

- a) driven
- b) dramatically
- c) disaster
- d) No Improvement

Correct Choice: d

Solution

We need an adjective to modify the noun CHANGES. DRASTIC (extreme) will fit here as the sentence tells us how the extreme changes to the atmosphere caused organisms to suffocate. Thus, (d) is the right answer.

Driven - committed. DRAMATICALLY (greatly) is an adverb. DISASTER (calamity) is a noun. Despotic - autocratic.

16) (E)

- a) Deprived
- b) Thrived
- c) Reputed
- d) derided

Correct Choice: b

Solution

We need a verb here to agree with the subject COMMUNITIES. THRIVED (flourished) will fit here as the sentence tells us how rich and diverse communities of organisms once flourished here. Thus, (b) is the right answer.

Deprived - to suffer a lack of something. Reputed (adj.) - respected; well-known. Derided - mocked. Strived - aspired.

Topic – Column1 & Column2 Connecting Sentences

17) In the following question, match the sentences beginning in Column 1 with their appropriate endings in Column 2.

Column 1	Column 2
A. Innovation in the private sector depends	D. the direction it takes must reflect social priorities.
B. If technological innovation is to serve society,	E. crucially on government funding of basic science and research labs.
C. Living standards are determined by productivity growth,	F. which in turn depends on the introduction of new technologies.

a) A and D

b) A and F

c) B and D

d) B and E

Correct Choice: c

Solution

(c) is the right answer. The correct pairs are: AE, BD and CF.

AE - Innovation in the private sector depends crucially on government funding of basic science and research labs. The sentence seeks to convey that innovation carried out by the private sector is dependent on the government funding of research labs.

BD - If technological innovation is to serve society, the direction it takes must reflect social priorities.

The sentence seeks to convey that if we want technological innovation to benefit the society then it must take into account the social priorities.

CF - Living standards are determined by productivity growth, which in turn depends on the introduction of new technologies. The sentence seeks to convey that the living standards of people are determined by productivity growth, which is dependent on new technologies.

Topic – Synonyms

18) In the following question, out of the four alternatives, choose the one which best expresses the meaning of the given word.

Disparage

- a) Diminish
- b) Criticize
- c) Evade
- d) Defy

Correct Choice: b

Solution

DISPARAGE means to criticise or speak unfavourably of something or someone. CRITICISE will be its synonym; Thus, (b) is the right answer.

DIMINISH means to reduce, EVADE means to avoid and DEFY means to oppose.

Topic – Phrasal Verbs / Idioms

(19-20) In the following question, a sentence is given with a phrase or idiom in brackets. Select the option given below that can replace the bracketed phrase.

19) The tenants were (kicked out) by the landlord once it came to light that they were harbouring a fugitive.

- a) kicked in
- b) kicked off
- c) kicked around
- d) No Improvement

Correct Choice: d

Solution

We need a phrasal verb here that means that the tenants were expelled by the landlord. KICKED OUT means expelled and will fit here. Thus, (d) is the right answer.

KICKED IN means to start having an effect, KICKED OFF refers to an event that started or began and KICKED AROUND means to mistreat or bully.

(19-20) In the following question, a sentence is given with a phrase or idiom in brackets. Select the option given below that can replace the bracketed phrase.

20) “Do not (pick at) your food; eat it all,” scolded the mother.

- a) pick up
- b) pick out
- c) pick with
- d) No Improvement

Correct Choice: d

Solution

We need a phrasal verb here that means to eat food in small quantities. PICK AT can be used to convey the requisite meaning. Thus, (d) is the right answer.

PICK UP means to hoist, PICK OUT means to select and PICK WITH is grammatically incorrect.

Topic – Direct Speech / Indirect Speech

(21-22) In the following question, a sentence has been given in Direct/ Indirect speech. Out of the four alternatives suggested, select the one which best expresses the same sentence in Direct/ Indirect speech.

21) "I have been to that place," he said.

- a) He said that I have been to that place.
- b) He said that I had been to that place.
- c) He said that he has been that place.
- d) He said that he had been that place

Correct Choice: d

Solution

Option (d) is the right answer. The sentence is in direct speech. To convert this sentence to the indirect speech, follow these rules: 1. Remove the comma and the inverted commas. 2. In the quoted part of the speech, change the first person subjective pronoun I to the third person subjective pronoun HE. 3. Begin the indirect speech sentence with the reporting speech clause HE SAID. 4. Put THAT between the reporting and reported speeches. 5. The present perfect tense HAVE BEEN will change to the past perfect HAD BEEN.

(21-22) In the following question, a sentence has been given in Direct/ Indirect speech. Out of the four alternatives suggested, select the one which best expresses the same sentence in Direct/ Indirect speech.

22) "Do your homework," she said to her children.

- a) She told her children to do her homework.
- b) She told her children to do their homework.
- c) She told her children to did their homework.
- d) She told her children to done their homework.

Correct Choice: b

Solution

Option (b) is the right answer. The sentence is in direct speech and in imperative mood (contains a command). To convert this sentence to the indirect speech, follow these rules: 1. Remove the comma and the inverted commas. 2. Change the reporting verb SAID to TOLD and begin the indirect speech sentence with the reporting speech clause SHE TOLD HER CHILDREN. The preposition TO will be redundant after TOLD, so it should be removed. 3. Change the second person possessive pronoun YOUR to the third person plural possessive pronoun THEIR (since the subject CHILDREN is plural). 4. In an imperative mood sentence, the verb clause will take an infinitive construction TO + VERB (to + eat) when converted to indirect speech. The infinitive construction always takes the base form of the verb (DO).

Topic – Active Voice / Passive Voice

(23-24) In the following question, a sentence has been given in Active/ Passive Voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active Voice.

23) The man had taken money from the banks.

- a) The money had been taken by the man from the banks.
- b) The money was taken by the man from the banks.
- c) The money is taken by the man from the banks.
- d) The money has been taken by the man from the banks.

Correct Choice: a

Solution

The sentence is in active voice and in past perfect tense (HAD TAKEN). Follow the rules below to convert a sentence in indicative mood to passive voice:

1. The subject clause will become the object clause. Here, the subject THE MAN will change to the object of the verb, and the object MONEY will change into the subject and begin the sentence.
2. Replace HAD TAKEN with HAD BEEN TAKEN. The passive voice construction for past perfect tense is "HAD + BEEN + past participle".
3. Add the conjunction BY before THE MAN to link the verb with its object.

Option (a) is the right answer.

(23-24) In the following question, a sentence has been given in Active/ Passive Voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active Voice.

24) You took this book from me.

- a) This book was taken from me by you.
- b) This book is learnt from me by you.
- c) This book will be learnt from me by you.
- d) This book was being learnt from me by you.

Correct Choice: a

Solution

The sentence is in active voice and in simple past tense (TAKEN). Follow the rules below to convert a sentence in indicative mood to passive voice:

1. The subject clause will become the object clause. Here, the subject pronoun YOU will change to the object form YOU, and the object THIS BOOK will change into the subject and begin the sentence.
2. Replace TAKEN with WAS TAKEN. The passive voice construction for simple past tense is "WAS/ WERE + past participle".
3. Add the conjunction BY before YOU to link the verb with its object.

Option (a) is the right answer.

Reasoning Ability

Topic – Stack Based Puzzle

(25-29) Directions: Answer the questions based on the information given below.

11 shelves are kept one above another such that bottommost shelf is numbered as 1 while the topmost as 11. Four of the shelves contains different items among shirt, T-shirt, belt and comb.

Shelf V is two shelves above shelf U and both are odd numbered shelves. There is one shelf between shelf R and shelf X, which contains Shirt. There are five shelves between shelf S and shelf Z, which is prime numbered shelf. There are two shelves between shelf Z and shelf R. Shelf S is above shelf Z and shelf P. Shelf containing T-shirt is two shelves above shelf S. Shelf containing comb is just above shelf containing belt and neither is in shelf 2. Shelf containing comb is below shelf R. Shelf V is not adjacent to shelf X. Shelf T is above shelf Q, which is above shelf Y. Shelf P is just above shelf W.

25) Which shelf is the topmost shelf?

- a) Shelf T
- b) Shelf containing Shirt
- c) Shelf P
- d) Shelf V

Correct Choice: d

Solution

Starting point: Here, we can start with the clues related to shelf S and shelf Z in order to make initial two cases.

Clues: There are five shelves between shelf S and shelf Z, which is prime numbered shelf. There are two shelves between shelf Z and shelf R. Shelf S is above shelf Z and shelf P. Shelf containing T-shirt is two shelves above shelf S. Shelf containing comb is just above shelf containing belt and neither is in shelf 2. Shelf containing comb is below shelf R. There is one shelf between shelf R and shelf X, which contains Shirt.

Inference: So, shelf S can be shelf 8 or shelf 9.

Case 1: When shelf S is shelf numbered 8.

Shelf numbers	Shelves	Items
11		
10		T-shirt
9		
8	S	
7	X	Shirt
6		
5	R	
4		Comb
3		Belt
2	Z	
1		

Case 2: When shelf S is shelf numbered 9.

	Case 2(a)		Case 2(b)	
Shelf numbers	Shelves	Items	Shelf numbers	Shelves
11		T-shirt		T-shirt
10				
9	S		S	
8	X	Shirt	X	Shirt
7				
6	R		R	
5		Comb		
4		Belt		Comb
3	Z		Z	Belt
2				
1				

Clues: Shelf V is two shelves above shelf U and both are odd numbered shelves. Shelf V is not adjacent to shelf X.

Inference: So, case 2(a) and 2(b) are rejected as shelf V cannot be placed.

	Case 1(a)		Case 1(b)	
Shelf numbers	Shelves	Items	Shelves	Items
11	V			
10		T-shirt		T-shirt
9	U			
8	S		S	
7	X	Shirt	X	Shirt
6				
5	R		R	
4		Comb		Comb
3		Belt	V	Belt
2	Z		Z	
1			U	

Clues: Shelf P is just above shelf W. Shelf T is above shelf Q, which is above shelf Y.

Inference: So, cases 1(b) would be rejected as shelf S is above shelf P.

Shelf numbers	Shelves	Items
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11	V	
10	T	T-shirt
9	U	
8	S	
7	X	Shirt
6	Q	
5	R	
4	P	Comb
3	W	Belt
2	Z	
1	Y	

Shelf V is the topmost shelf.

Hence, option d.

26) Shelf T contains _____.

- a) Comb
- b) Belt
- c) T-shirt
- d) Shirt

Correct Choice: c

Solution

Starting point: Here, we can start with the clues related to shelf S and shelf Z in order to make initial two cases.

Clues: There are five shelves between shelf S and shelf Z, which is prime numbered shelf. There are two shelves between shelf Z and shelf R. Shelf S is above shelf Z and shelf P. Shelf containing T-shirt is two shelves above shelf S. Shelf containing comb is just above shelf containing belt and neither is in shelf 2. Shelf containing comb is below shelf R. There is one shelf between shelf R and shelf X, which contains Shirt.

Inference: So, shelf S can be shelf 8 or shelf 9.

Case 1: When shelf S is shelf numbered 8.

Shelf numbers	Shelves	Items
11		
10		T-shirt
9		
8	S	

7	X	Shirt
6		
5	R	
4		Comb
3		Belt
2	Z	
1		

Case 2: When shelf S is shelf numbered 9.

	Case 2(a)		Case 2(b)	
Shelf numbers	Shelves	Items	Shelf numbers	Shelves
11		T-shirt		T-shirt
10				
9	S		S	
8	X	Shirt	X	Shirt
7				
6	R		R	
5		Comb		

4		Belt		Comb
3	Z		Z	Belt
2				
1				

Clues: Shelf V is two shelves above shelf U and both are odd numbered shelves. Shelf V is not adjacent to shelf X.

Inference: So, case 2(a) and 2(b) are rejected as shelf V cannot be placed.

	Case 1(a)		Case 1(b)	
Shelf numbers	Shelves	Items	Shelves	Items
11	V			
10		T-shirt		T-shirt
9	U			
8	S		S	
7	X	Shirt	X	Shirt
6				
5	R		R	
4		Comb		Comb
3		Belt	V	Belt
2	Z		Z	

1			U	
---	--	--	---	--

Clues: Shelf P is just above shelf W. Shelf T is above shelf Q, which is above shelf Y.

Inference: So, cases 1(b) would be rejected as shelf S is above shelf P.

Shelf numbers	Shelves	Items
11	V	
10	T	T-shirt
9	U	
8	S	
7	X	Shirt
6	Q	
5	R	
4	P	Comb
3	W	Belt
2	Z	
1	Y	

Shelf T contains T-shirt.

Hence, option c.

27) How many shelves are above shelf P?

- a) Six
- b) Seven
- c) Four
- d) Five

Correct Choice: b

Solution

Starting point: Here, we can start with the clues related to shelf S and shelf Z in order to make initial two cases.

Clues: There are five shelves between shelf S and shelf Z, which is prime numbered shelf. There are two shelves between shelf Z and shelf R. Shelf S is above shelf Z and shelf P. Shelf containing T-shirt is two shelves above shelf S. Shelf containing comb is just above shelf containing belt and neither is in shelf 2. Shelf containing comb is below shelf R. There is one shelf between shelf R and shelf X, which contains Shirt.

Inference: So, shelf S can be shelf 8 or shelf 9.

Case 1: When shelf S is shelf numbered 8.

Shelf numbers	Shelves	Items
---------------	---------	-------

11		
10		T-shirt
9		
8	S	
7	X	Shirt
6		
5	R	
4		Comb
3		Belt
2	Z	
1		

Case 2: When shelf S is shelf numbered 9.

	Case 2(a)		Case 2(b)	
Shelf numbers	Shelves	Items	Shelf numbers	Shelves
11		T-shirt		T-shirt
10				
9	S		S	

8	X	Shirt	X	Shirt
7				
6	R		R	
5		Comb		
4		Belt		Comb
3	Z		Z	Belt
2				
1				

Clues: Shelf V is two shelves above shelf U and both are odd numbered shelves. Shelf V is not adjacent to shelf X.

Inference: So, case 2(a) and 2(b) are rejected as shelf V cannot be placed.

	Case 1(a)		Case 1(b)	
Shelf numbers	Shelves	Items	Shelves	Items
11	V			
10		T-shirt		T-shirt
9	U			
8	S		S	
7	X	Shirt	X	Shirt
6				

5	R		R	
4		Comb		Comb
3		Belt	V	Belt
2	Z		Z	
1			U	

Clues: Shelf P is just above shelf W. Shelf T is above shelf Q, which is above shelf Y.

Inference: So, cases 1(b) would be rejected as shelf S is above shelf P.

Shelf numbers	Shelves	Items
11	V	
10	T	T-shirt
9	U	
8	S	
7	X	Shirt
6	Q	
5	R	
4	P	Comb
3	W	Belt
2	Z	

1	Y	
---	---	--

Seven shelves are above shelf P.

Hence, option b.

28) Which shelf is just below shelf Z?

- a) Shelf R
- b) Shelf Y
- c) Shelf T
- d) Shelf Q

Correct Choice: b

Solution

Starting point: Here, we can start with the clues related to shelf S and shelf Z in order to make initial two cases.

Clues: There are five shelves between shelf S and shelf Z, which is prime numbered shelf. There are two shelves between shelf Z and shelf R. Shelf S is above shelf Z and shelf P. Shelf containing T-shirt is two shelves above shelf S. Shelf containing comb is just above shelf containing belt and neither is in shelf 2. Shelf containing comb is below shelf R. There is one shelf between shelf R and shelf X, which contains Shirt.

Inference: So, shelf S can be shelf 8 or shelf 9.

Case 1: When shelf S is shelf numbered 8.

Shelf numbers	Shelves	Items
11		
10		T-shirt
9		

8	S	
7	X	Shirt
6		
5	R	
4		Comb
3		Belt
2	Z	
1		

Case 2: When shelf S is shelf numbered 9.

	Case 2(a)		Case 2(b)	
Shelf numbers	Shelves	Items	Shelf numbers	Shelves
11		T-shirt		T-shirt
10				
9	S		S	
8	X	Shirt	X	Shirt
7				
6	R		R	

5		Comb		
4		Belt		Comb
3	Z		Z	Belt
2				
1				

Clues: Shelf V is two shelves above shelf U and both are odd numbered shelves. Shelf V is not adjacent to shelf X.

Inference: So, case 2(a) and 2(b) are rejected as shelf V cannot be placed.

	Case 1(a)		Case 1(b)	
Shelf numbers	Shelves	Items	Shelves	Items
11	V			
10		T-shirt		T-shirt
9	U			
8	S		S	
7	X	Shirt	X	Shirt
6				
5	R		R	
4		Comb		Comb
3		Belt	V	Belt

2	Z		Z	
1			U	

Clues: Shelf P is just above shelf W. Shelf T is above shelf Q, which is above shelf Y.

Inference: So, cases 1(b) would be rejected as shelf S is above shelf P.

Shelf numbers	Shelves	Items
11	V	
10	T	T-shirt
9	U	
8	S	
7	X	Shirt
6	Q	
5	R	
4	P	Comb
3	W	Belt
2	Z	
1	Y	

Shelf Y is just below shelf Z.

Hence, option b.

29) How many shelves are between shelf T and shelf Q?

- a) Three
- b) One
- c) Two
- d) Four

Correct Choice: a

Solution

Starting point: Here, we can start with the clues related to shelf S and shelf Z in order to make initial two cases.

Clues: There are five shelves between shelf S and shelf Z, which is prime numbered shelf. There are two shelves between shelf Z and shelf R. Shelf S is above shelf Z and shelf P. Shelf containing T-shirt is two shelves above shelf S. Shelf containing comb is just above shelf containing belt and neither is in shelf 2. Shelf containing comb is below shelf R. There is one shelf between shelf R and shelf X, which contains Shirt.

Inference: So, shelf S can be shelf 8 or shelf 9.

Case 1: When shelf S is shelf numbered 8.

Shelf numbers	Shelves	Items
11		
10		T-shirt
9		
8	S	

7	X	Shirt
6		
5	R	
4		Comb
3		Belt
2	Z	
1		

Case 2: When shelf S is shelf numbered 9.

	Case 2(a)		Case 2(b)	
Shelf numbers	Shelves	Items	Shelf numbers	Shelves
11		T-shirt		T-shirt
10				
9	S		S	
8	X	Shirt	X	Shirt
7				
6	R		R	
5		Comb		

4		Belt		Comb
3	Z		Z	Belt
2				
1				

Clues: Shelf V is two shelves above shelf U and both are odd numbered shelves. Shelf V is not adjacent to shelf X.

Inference: So, case 2(a) and 2(b) are rejected as shelf V cannot be placed.

	Case 1(a)		Case 1(b)	
Shelf numbers	Shelves	Items	Shelves	Items
11	V			
10		T-shirt		T-shirt
9	U			
8	S		S	
7	X	Shirt	X	Shirt
6				
5	R		R	
4		Comb		Comb
3		Belt	V	Belt
2	Z		Z	

1			U	
---	--	--	---	--

Clues: Shelf P is just above shelf W. Shelf T is above shelf Q, which is above shelf Y.

Inference: So, cases 1(b) would be rejected as shelf S is above shelf P.

Shelf numbers	Shelves	Items
11	V	
10	T	T-shirt
9	U	
8	S	
7	X	Shirt
6	Q	
5	R	
4	P	Comb
3	W	Belt
2	Z	
1	Y	

Three shelves are between shelf T and shelf Q.

Hence, option a.

Topic – North - South Facing Sitting Arrangement

(30-34) Directions: Answer the questions based on the information given below.

Eight persons A, B, C, D, E, F, G and H are sitting in row facing either north or south. Number of persons facing north is more than number of persons facing south. Persons at the extreme ends face north. Not more than two adjacent persons face in same direction. C and D sit second to the left of each other. At least three persons sit between A and G, who faces south. B sits third to the right of C. A is not adjacent to F. E faces south and sits at least two places away from C. One person sits between D and F. E is not to the immediate left of B.

30) Find the odd one out.

- a) B
- b) H
- c) F
- d) G

Correct Choice: d

Solution

Starting point: Here, we can start directly by C and D such that either of them face south or north.

Clues: C and D sit second to the left of each other. B sits third to the right of C. One person sits between D and F.

Inference: So, B and F must be at the extreme end.

Case 1: When C faces south.

B(North)			C(South)		D(North)		F(North)
----------	--	--	----------	--	----------	--	----------

Case 2: When C faces north.

F(North)		D(South)		C(North)			B(North)
----------	--	----------	--	----------	--	--	----------

Clues: At least three persons sit between A and G, who faces south. A is not adjacent to F.

Case 1(a):

B(North)		A	C(South)		D(North)	G(South)	F(North)
----------	--	---	----------	--	----------	----------	----------

Case 1(b):

B(North)	A		C(South)		D(North)	G(South)	F(North)
----------	---	--	----------	--	----------	----------	----------

Case 2(a):

F(North)	G(South)	D(South)	(North)	C(North)	A(South)		B(North)
----------	----------	----------	---------	----------	----------	--	----------

Case 2(b):

F(North)	G(South)	D(South)	(North)	C(North)	(South)	A	B(North)
----------	----------	----------	---------	----------	---------	---	----------

Clues: E faces south and sits at least two places away from C. E is not immediate left of B.

Inference: So, case 1(b) and 2(b) would be rejected. Also, case 2(a) is rejected as E is not immediate left of B. As, number of persons facing north is more than that of persons facing south. So, H must face north.

B(North)	E(South)	A(North)	C(South)	H(North)	D(North)	G(South)	F(North)
----------	----------	----------	----------	----------	----------	----------	----------

All face north except G.

Hence, option d.

31) Who sits second to the right of C?

- a) A
- b) D
- c) E
- d) G

Correct Choice: c

Solution

Starting point: Here, we can start directly by C and D such that either of them face south or north.

Clues: C and D sit second to the left of each other. B sits third to the right of C. One person sits between D and F.

Inference: So, B and F must be at the extreme end.

Case 1: When C faces south.

B(North)			C(South)		D(North)		F(North)
----------	--	--	----------	--	----------	--	----------

Case 2: When C faces north.

F(North)		D(South)		C(North)			B(North)
----------	--	----------	--	----------	--	--	----------

Clues: At least three persons sit between A and G, who faces south. A is not adjacent to F.

Case 1(a):

B(North)		A	C(South)		D(North)	G(South)	F(North)
----------	--	---	----------	--	----------	----------	----------

Case 1(b):

B(North)	A		C(South)		D(North)	G(South)	F(North)
----------	---	--	----------	--	----------	----------	----------

Case 2(a):

F(North)	G(South)	D(South)	(North)	C(North)	A(South)		B(North)
----------	----------	----------	---------	----------	----------	--	----------

Case 2(b):

F(North)	G(South)	D(South)	(North)	C(North)	(South)	A	B(North)
----------	----------	----------	---------	----------	---------	---	----------

Clues: E faces south and sits at least two places away from C. E is not immediate left of B.

Inference: So, case 1(b) and 2(b) would be rejected. Also, case 2(a) is rejected as E is not immediate left of B. As, number of persons facing north is more than that of persons facing south. So, H must face north.

B(North)	E(South)	A(North)	C(South)	H(North)	D(North)	G(South)	F(North)
----------	----------	----------	----------	----------	----------	----------	----------

E sits second to the right of C.

Hence, option c.

32) How many persons sit between H and F?

- a) Three
- b) Four
- c) Two
- d) One

Correct Choice: c

Solution

Starting point: Here, we can start directly by C and D such that either of them face south or north.

Clues: C and D sit second to the left of each other. B sits third to the right of C. One person sits between D and F.

Inference: So, B and F must be at the extreme end.

Case 1: When C faces south.

B(North)			C(South)		D(North)		F(North)
----------	--	--	----------	--	----------	--	----------

Case 2: When C faces north.

F(North)		D(South)		C(North)			B(North)
----------	--	----------	--	----------	--	--	----------

Clues: At least three persons sit between A and G, who faces south. A is not adjacent to F.

Case 1(a):

B(North)		A	C(South)		D(North)	G(South)	F(North)
----------	--	---	----------	--	----------	----------	----------

Case 1(b):

B(North)	A		C(South)		D(North)	G(South)	F(North)
----------	---	--	----------	--	----------	----------	----------

Case 2(a):

F(North)	G(South)	D(South)	(North)	C(North)	A(South)		B(North)
----------	----------	----------	---------	----------	----------	--	----------

Case 2(b):

F(North)	G(South)	D(South)	(North)	C(North)	(South)	A	B(North)
----------	----------	----------	---------	----------	---------	---	----------

Clues: E faces south and sits at least two places away from C. E is not immediate left of B.

Inference: So, case 1(b) and 2(b) would be rejected. Also, case 2(a) is rejected as E is not immediate left of B. As, number of persons facing north is more than that of persons facing south. So, H must face north.

B(North)	E(South)	A(North)	C(South)	H(North)	D(North)	G(South)	F(North)
----------	----------	----------	----------	----------	----------	----------	----------

Two persons sit between H and F.

Hence, option c.

33) Who sits third to the right of B?

- a) A
- b) D
- c) G
- d) C

Correct Choice: d

Solution

Starting point: Here, we can start directly by C and D such that either of them face south or north.

Clues: C and D sit second to the left of each other. B sits third to the right of C. One person sits between D and F.

Inference: So, B and F must be at the extreme end.

Case 1: When C faces south.

B(North)			C(South)		D(North)		F(North)
----------	--	--	----------	--	----------	--	----------

Case 2: When C faces north.

F(North)		D(South)		C(North)			B(North)
----------	--	----------	--	----------	--	--	----------

Clues: At least three persons sit between A and G, who faces south. A is not adjacent to F.

Case 1(a):

B(North)		A	C(South)		D(North)	G(South)	F(North)
----------	--	---	----------	--	----------	----------	----------

Case 1(b):

B(North)	A		C(South)		D(North)	G(South)	F(North)
----------	---	--	----------	--	----------	----------	----------

Case 2(a):

F(North)	G(South)	D(South)	(North)	C(North)	A(South)		B(North)
----------	----------	----------	---------	----------	----------	--	----------

Case 2(b):

F(North)	G(South)	D(South)	(North)	C(North)	(South)	A	B(North)
----------	----------	----------	---------	----------	---------	---	----------

Clues: E faces south and sits at least two places away from C. E is not immediate left of B.

Inference: So, case 1(b) and 2(b) would be rejected. Also, case 2(a) is rejected as E is not immediate left of B. As, number of persons facing north is more than that of persons facing south. So, H must face north.

B(North)	E(South)	A(North)	C(South)	H(North)	D(North)	G(South)	F(North)
----------	----------	----------	----------	----------	----------	----------	----------

C sits third to the right of B.

Hence, option d.

34) Who sits exactly between E and D?

- a) G
- b) C
- c) F
- d) B

Correct Choice: b

Solution

Starting point: Here, we can start directly by C and D such that either of them face south or north.

Clues: C and D sit second to the left of each other. B sits third to the right of C. One person sits between D and F.

Inference: So, B and F must be at the extreme end.

Case 1: When C faces south.

B(North)			C(South)		D(North)		F(North)
----------	--	--	----------	--	----------	--	----------

Case 2: When C faces north.

F(North)		D(South)		C(North)			B(North)
----------	--	----------	--	----------	--	--	----------

Clues: At least three persons sit between A and G, who faces south. A is not adjacent to F.

Case 1(a):

B(North)		A	C(South)		D(North)	G(South)	F(North)
----------	--	---	----------	--	----------	----------	----------

Case 1(b):

B(North)	A		C(South)		D(North)	G(South)	F(North)
----------	---	--	----------	--	----------	----------	----------

Case 2(a):

F(Nort h)	G(Sout h)	D(Sout h)	(Nort h)	C(Nort h)	A(Sout h)		B(Nort h)
--------------	--------------	--------------	-------------	--------------	--------------	--	--------------

Case 2(b):

F(Nort h)	G(Sout h)	D(Sout h)	(Nort h)	C(Nort h)	(Sout h)	A	B(Nort h)
--------------	--------------	--------------	-------------	--------------	-------------	---	--------------

Clues: E faces south and sits at least two places away from C. E is not immediate left of B.

Inference: So, case 1(b) and 2(b) would be rejected. Also, case 2(a) is rejected as E is not immediate left of B. As, number of persons facing north is more than that of persons facing south. So, H must face north.

B(Nor th)	E(So uth)	A(Nor th)	C(Sou th)	H(Nor th)	D(Nor th)	G(Sou th)	F(Nor th)
--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------

C sits exactly between E and D.

Hence, option b.

Topic – Alphabet Test

35) Which of the following letter will be 10th letter from the left end if the letters at even positions are replaced by succeeding letter in the word “LIMITEDEDITION” such that from left end “L” is at odd position and “I” is at even position and so on?

- a) F
- b) T
- c) O
- d) J

Correct Choice: d

Solution

If we replace the even positioned letters with their respective succeeding letter then we would get the following word “LJMJTDFDJTJOO”.

So, the letter, which is 10th from the left end is ‘J’.

Hence, option d.

Topic – Uncertain Circular Sitting Arrangement

(36-40) Directions: Answer the questions based on the information given below.

Certain number of persons are sitting around the circular table. All of them are facing towards the center. Q sits third to the right of M. One person sits between R and M. Three persons sit between N and P. O sits adjacent to R. M sits exactly between N and Q. N sits second to the left of O. One person sits between P and Q. At least three persons sit between R and P.

36) Who sits second to the left of P?

- a) N
- b) O
- c) M
- d) Q

Correct Choice: d

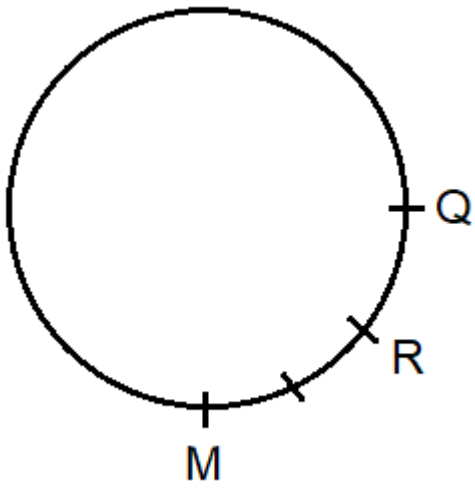
Solution

Starting point: Here, we can start with M in order to make initial two cases.

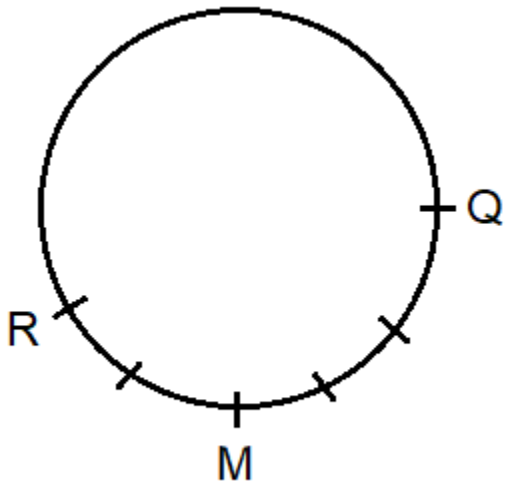
Clues: Q sits third to the right of M. One person sits between R and M.

Inference: So, R sits second to the right of M or second to the left of M.

Case 1:

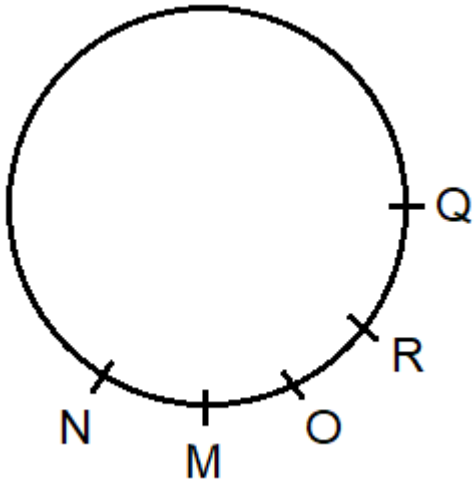


Case 2:

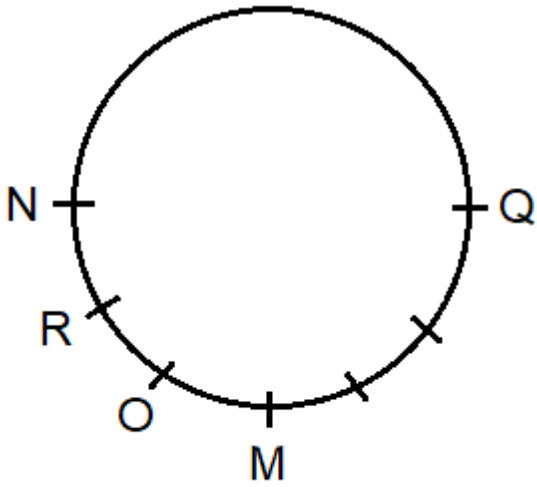


Clues: O sits adjacent to R. N sits second to the left of O.

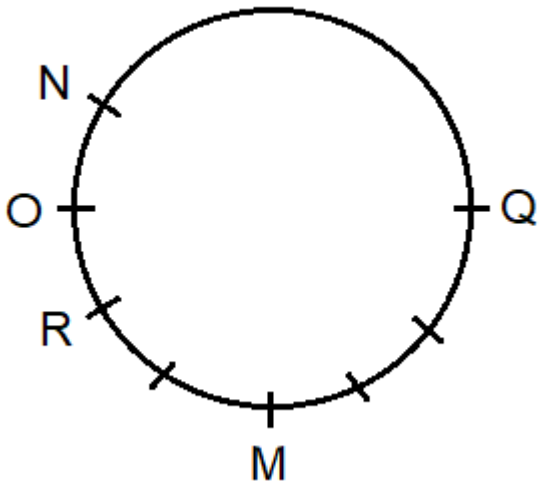
Case 1:



Case 2(a):

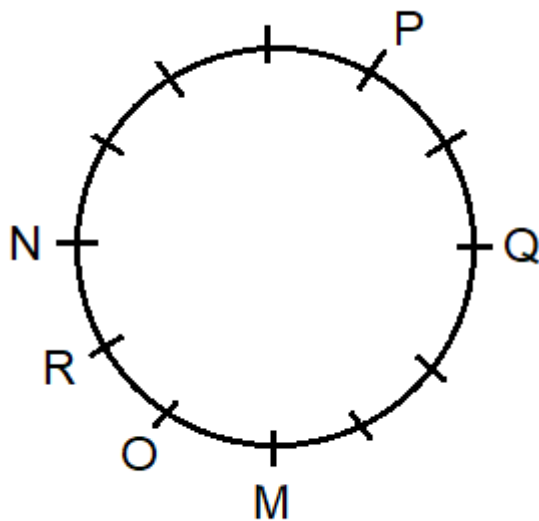


Case 2(b):



Clues: One person sits between P and Q. At least three persons sit between R and P. Three persons sit between N and P. M sits exactly between N and Q.

Inference: So, case 1 is rejected as number of persons between P and R are at least three. Case 2(b) are rejected as M sits exactly between N and Q.



Q sits second to the left of P.

Hence, option d.

37) How many persons sit in the circular arrangement?

- a) 13
- b) 12
- c) 10
- d) 11

Correct Choice: b

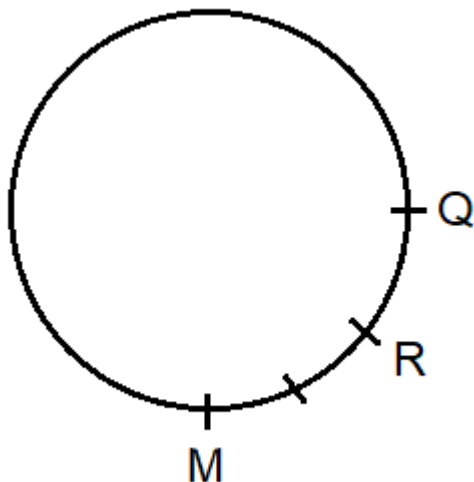
Solution

Starting point: Here, we can start with M in order to make initial two cases.

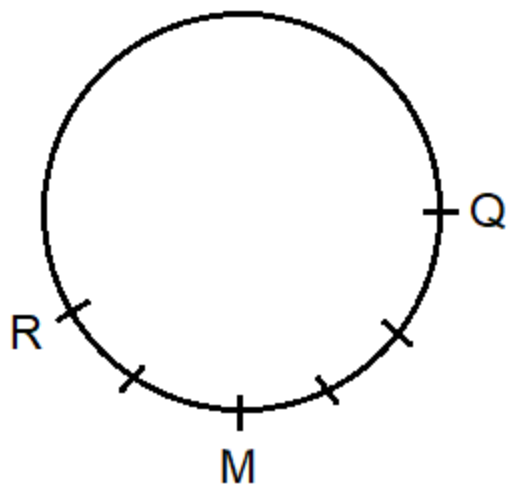
Clues: Q sits third to the right of M. One person sits between R and M.

Inference: So, R sits second to the right of M or second to the left of M.

Case 1:

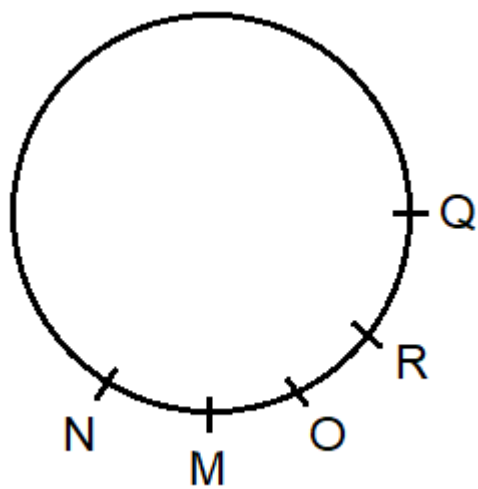


Case 2:

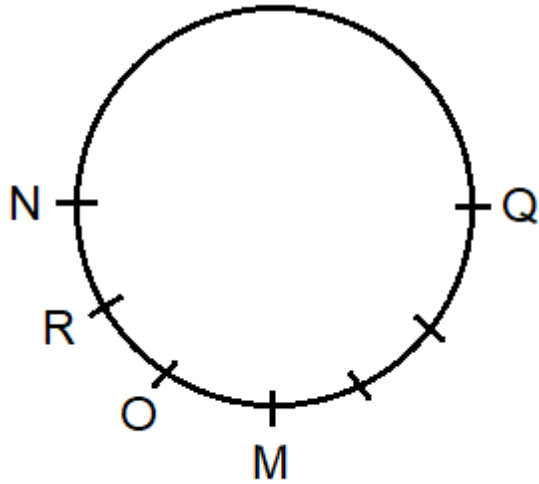


Clues: O sits adjacent to R. N sits second to the left of O.

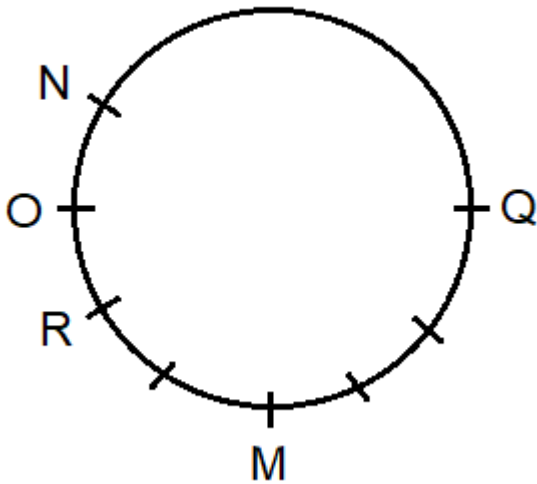
Case 1:



Case 2(a):

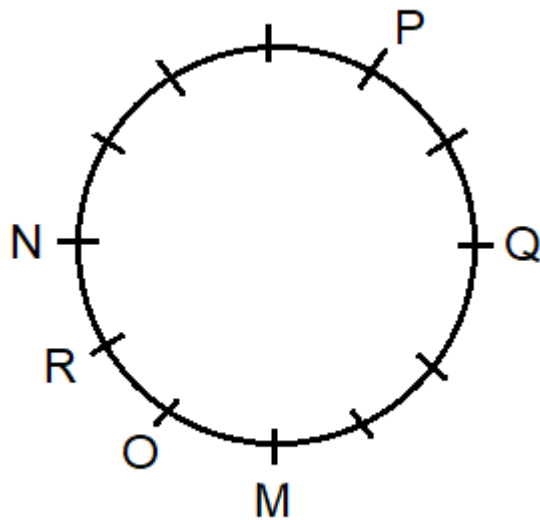


Case 2(b):



Clues: One person sits between P and Q. At least three persons sit between R and P. Three persons sit between N and P. M sits exactly between N and Q.

Inference: So, case 1 is rejected as number of persons between P and R are at least three. Case 2(b) are rejected as M sits exactly between N and Q.



12 persons sit in the circular arrangement.

Hence, option b

38) ___ sits immediate left of R.

- a) N
- b) O
- c) M
- d) Q

Correct Choice: a

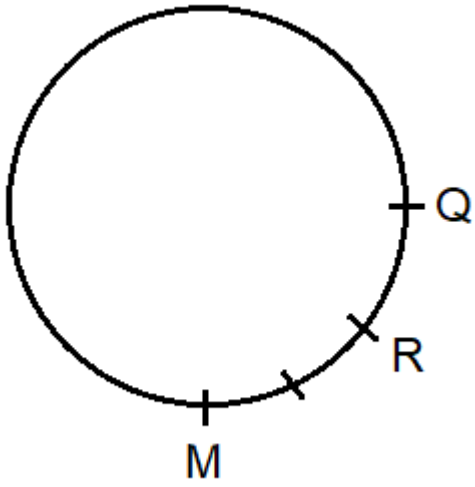
Solution

Starting point: Here, we can start with M in order to make initial two cases.

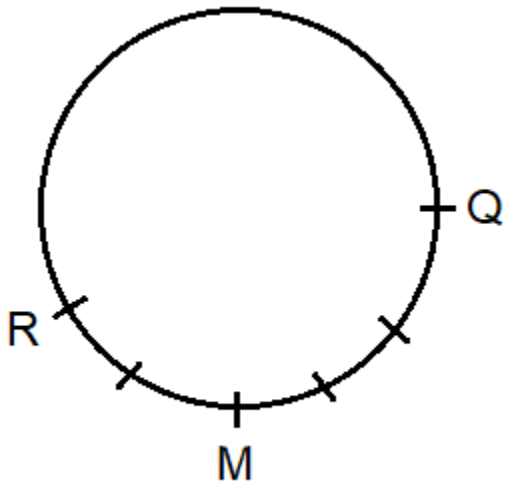
Clues: Q sits third to the right of M. One person sits between R and M.

Inference: So, R sits second to the right of M or second to the left of M.

Case 1:

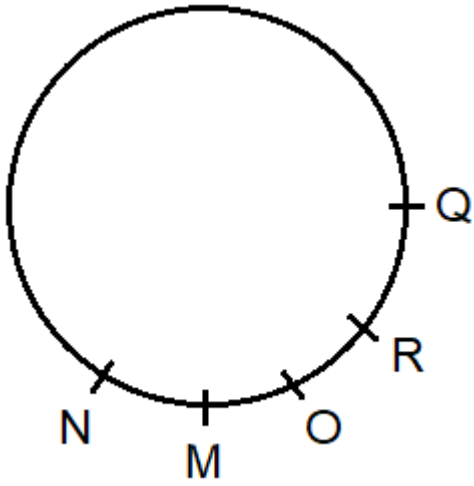


Case 2:

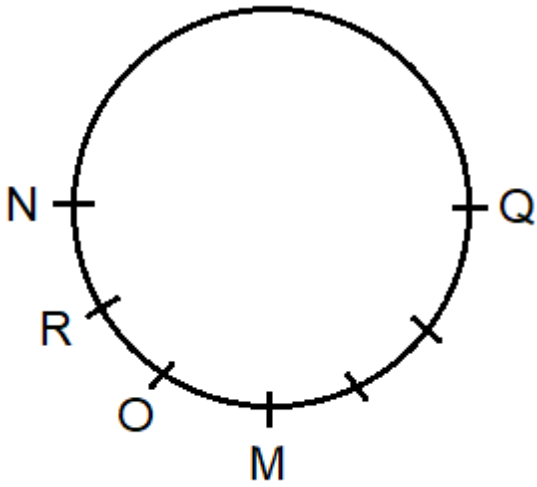


Clues: O sits adjacent to R. N sits second to the left of O.

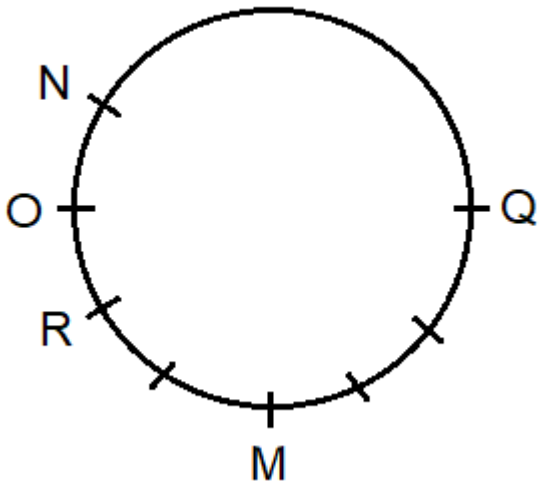
Case 1:



Case 2(a):

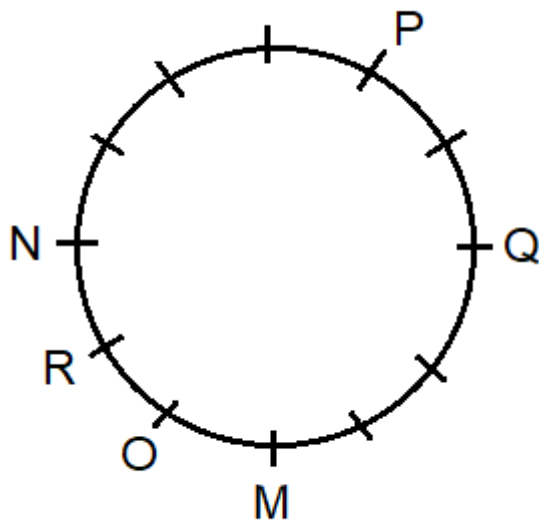


Case 2(b):



Clues: One person sits between P and Q. At least three persons sit between R and P. Three persons sit between N and P. M sits exactly between N and Q.

Inference: So, case 1 is rejected as number of persons between P and R are at least three. Case 2(b) are rejected as M sits exactly between N and Q.



N sits immediate left of R.

Hence, option a.

39) Who sits fourth to the left of N?

- a) O
- b) R
- c) M
- d) P

Correct Choice : d

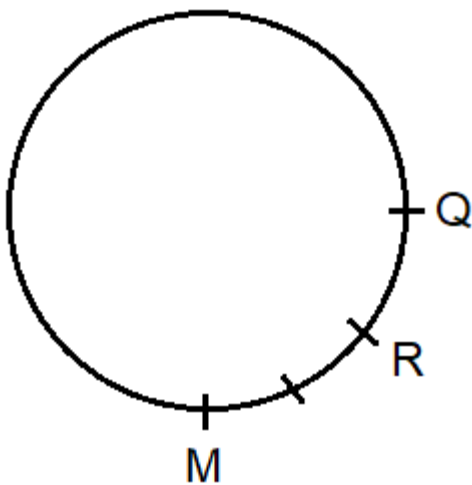
Solution

Starting point: Here, we can start with M in order to make initial two cases.

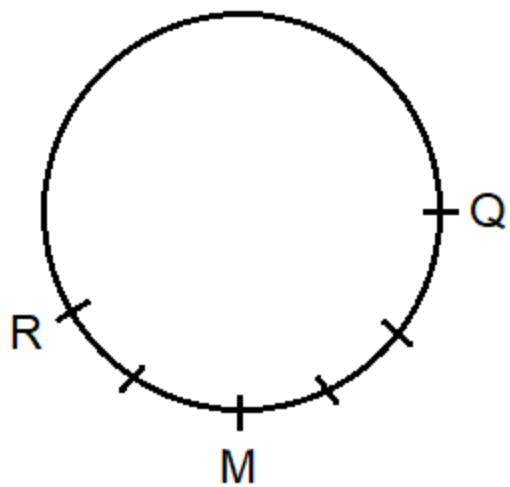
Clues: Q sits third to the right of M. One person sits between R and M.

Inference: So, R sits second to the right of M or second to the left of M.

Case 1:

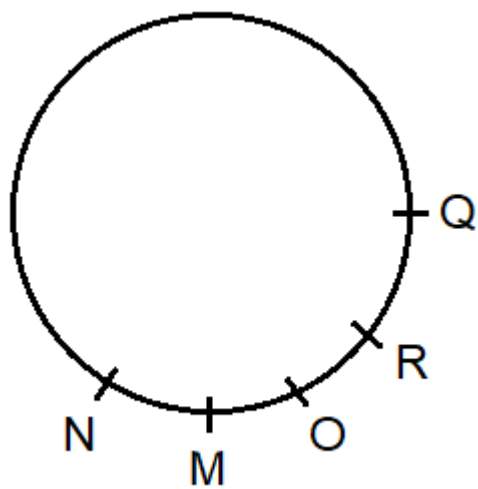


Case 2:

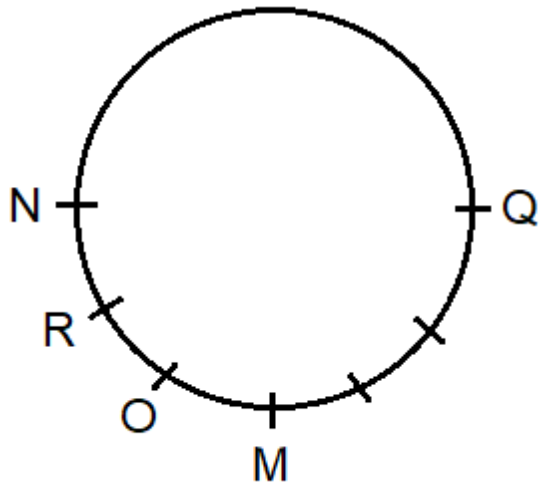


Clues: O sits adjacent to R. N sits second to the left of O.

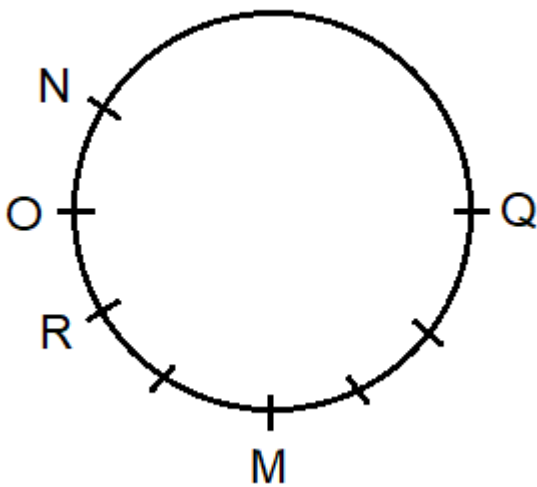
Case 1:



Case 2(a):

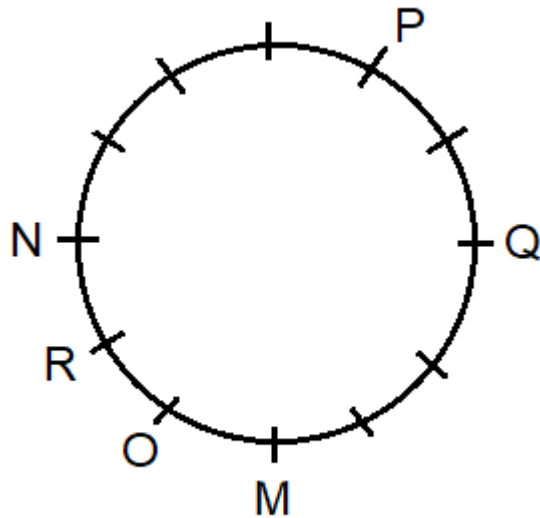


Case 2(b):



Clues: One person sits between P and Q. At least three persons sit between R and P. Three persons sit between N and P. M sits exactly between N and Q.

Inference: So, case 1 is rejected as number of persons between P and R are at least three. Case 2(b) are rejected as M sits exactly between N and Q.



P sits fourth to the left of N.

Hence, option d.

40) How many persons sit between O and Q when counted from the right of O?

- a) Three
- b) Four
- c) Two
- d) Five

Correct Choice : a

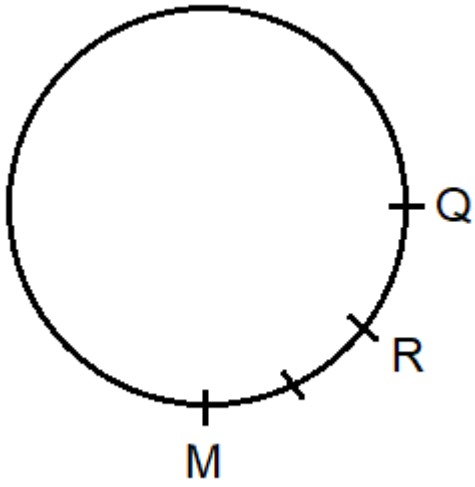
Solution

Starting point: Here, we can start with M in order to make initial two cases.

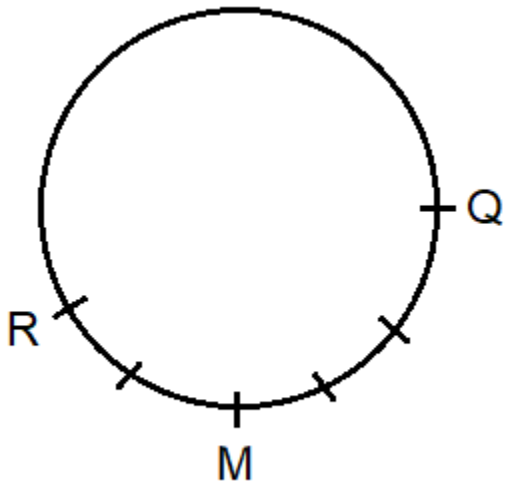
Clues: Q sits third to the right of M. One person sits between R and M.

Inference: So, R sits second to the right of M or second to the left of M.

Case 1:

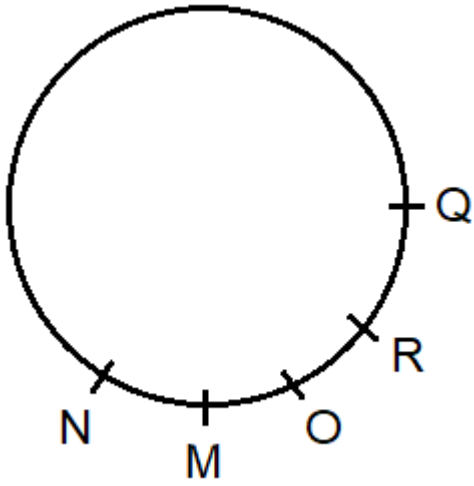


Case 2:

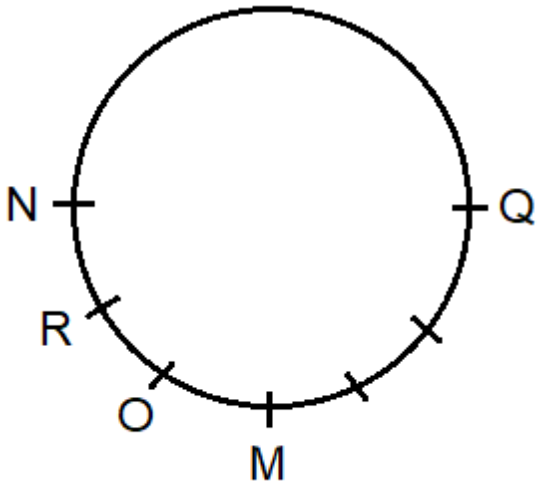


Clues: O sits adjacent to R. N sits second to the left of O.

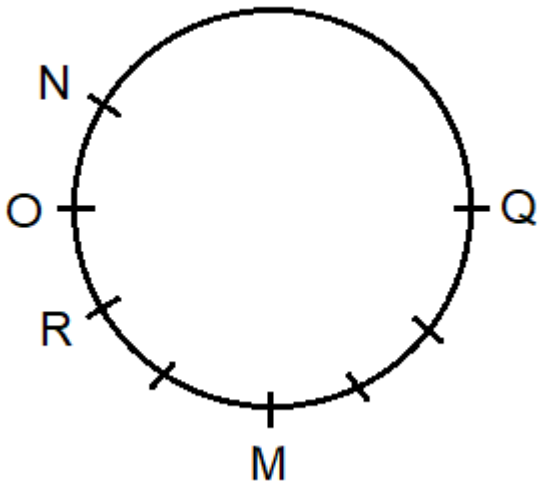
Case 1:



Case 2(a):

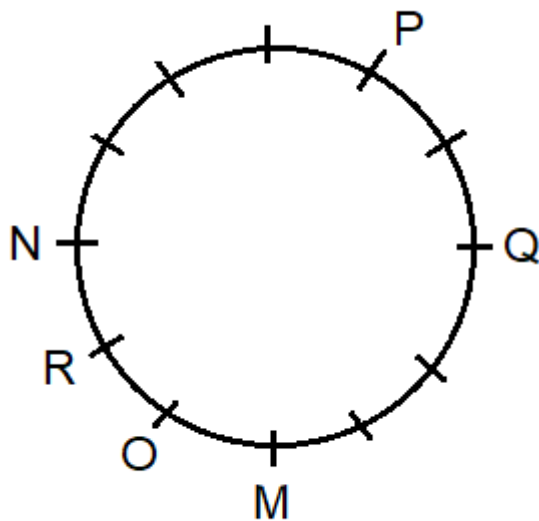


Case 2(b):



Clues: One person sits between P and Q. At least three persons sit between R and P. Three persons sit between N and P. M sits exactly between N and Q.

Inference: So, case 1 is rejected as number of persons between P and R are at least three. Case 2(b) are rejected as M sits exactly between N and Q.



Three persons sit between O and Q when counted from the right of O. Hence, option a.

Topic – Logical Inequalities

(41-42) In the question, assuming the given statements to be true, find which of the conclusion (s) among given three conclusions is /are definitely true and then give your answer accordingly.

41)

Statements: $O > W \leq K$; $W > S \geq R$; $F \leq E \leq R$

Conclusions:

- I. $O > F$
- II. $E < K$
- III. $F \leq W$

- a) Only conclusion II is true.
- b) Both conclusions I and II are true.
- c) Only conclusion I is true.
- d) Both conclusions I and III are true.

Correct Choice: b

Solution

Given statements: $O > W \leq K$; $W > S \geq R$; $F \leq E \leq R$

On combining, we get

$O > W > S \geq R \geq E \geq F$; $K \geq W > S \geq R \geq E \geq F$

Conclusions:

- I. $O > F$: True (As $O > W > S \geq R \geq E \geq F$, so, $O > F$)
- II. $E < K$: True (As $K \geq W > S \geq R \geq E$, so $K > E$)

III. $F \leq W$: False (As $W > S \geq R \geq E \geq F$, so, $W > F$)

Hence, option b.

(41-42) In the question, assuming the given statements to be true, find which of the conclusion (s) among given three conclusions is /are definitely true and then give your answer accordingly.

42) Statements: $Y \geq E > S \geq P \geq O$; $D \leq M < P$; $D \leq L = I$

Conclusions:

I. $Y > I$

II. $E \geq D$

III. $L > M$

- a) Only conclusion II is true.
- b) Only conclusion I is true.
- c) Only conclusion III is true.
- d) All conclusions I, II and III are false.

Correct Choice: d

Solution

Given statements: $Y \geq E > S \geq P \geq O$; $D \leq M < P$; $D \leq L = I$

On combining, we get

$Y \geq E > S \geq P > M \geq D \leq L = I$

Conclusions:

I. $Y > I$: False (As $Y \geq E > S \geq P > M \geq D \leq L = I$, the relation between Y and I cannot be determined)

II. $E \geq D$: False (As $E > S \geq P > M \geq D$, so $E > D$)

III. $L > M$: False (As $M \geq D \leq L$, the relation between L and M cannot be determined)

Hence, option d.

Topic – Ordering & Ranking

(43-44) Directions: Answer the questions based on the information given below.

Seven cars P, Q, R, S, T, U and V have different weights. Car Q is lighter than only V. Car T is heavier than car U and car S. Number of cars heavier and lighter than car R is equal. Car P is heavier than car U, which is not the lightest.

43) How many cars are heavier than car T?

- a) Three
- b) Two
- c) Four
- d) Cannot be determined

Correct Choice: d

Solution

Clues: Car Q is lighter than only V. Car T is heavier than car U and car S. Number of cars heavier and lighter than car R is equal. Car P is heavier than car U, which is not the lightest.

Inference: So, car V must be the heaviest. Also, car R must be the 4th heaviest as equal number of cars are heavier and lighter than car R. Since, car U is not the lightest. So, car S must be the lightest.

$V > Q > P/T > R > T/P > U > S$

Either two or four cars are heavier than car T.

Hence, option d.

44) Which of the following car is the lightest?

- a) Car U
- b) Car Q
- c) Car V
- d) Car S

Correct Choice: d

Solution

Clues: Car Q is lighter than only V. Car T is heavier than car U and car S. Number of cars heavier and lighter than car R is equal. Car P is heavier than car U, which is not the lightest.

Inference: So, car V must be the heaviest. Also, car R must be the 4th heaviest as equal number of cars are heavier and lighter than car R. Since, car U is not the lightest. So, car S must be the lightest.

$V > Q > P/T > R > T/P > U > S$

Car S is the lightest.

Hence, option d.

Topic – Conditions Based Puzzle

(45-46) Directions: Answer the questions based on the information given below.

Seven persons P, Q, R, S, T, U and V go for a trip to cities among Lucknow, Delhi, Mumbai, Pune, Patna and Chennai. Two persons go for a trip to same city. Each of them has different number of bags from 1 to 7.

Person, who goes to Delhi has 4 bags. T has one more bag than that of U. V goes to Patna and has 7 bags. Only S goes to Pune. P has 3 bags. Q has prime number of bags. Neither P nor Q goes to Chennai or Delhi. Persons, who go to the same city have even number of bags. R and T go to same city. No one goes to same city to which U goes. S does not have 4 bags. Person, who goes to Chennai, does not have 1 bag.

45) T goes to _____.

- a) Delhi
- b) Chennai
- c) Mumbai
- d) Pune

Correct Choice: a

Solution

Starting point: Here, we can start with the directly given information and then using the statement related to Q in order to make two cases.

Clues: V goes to Patna and has 7 bags. Only S goes to Pune. P has 3 bags. Q has prime number of bags. Neither P nor Q goes to Chennai or Delhi. Persons, who go to the same city have even number of bags. No one goes to same city to which U goes.

Inference: So, Q has either 2 or 5 bags.

Case 1:

Persons	Cities	Number of bags
P		3
Q		2
R		
S	Pune	
T		
U		
V	Patna	7

Case 2:

Persons	Cities	Number of bags
P		3
Q		5
R		
S	Pune	
T		
U		
V	Patna	7

Clues: T has one bag more than that of U. S does not have 4 bags.

Case 1:

Persons	Cities	Number of bags
P		3
Q		2
R		4
S	Pune	1
T		6
U		5
V	Patna	7

Case 2:

Persons	Cities	Number of bags
P		3
Q		5
R		4
S	Pune	6
T		2
U		1
V	Patna	7

Clues: Person, who goes to Delhi has 4 bags. Person, who goes to Chennai, does not have 1 bag.

Inference: So, case 2 is rejected as person, who goes to Chennai does not have 1 bag.

Persons	Cities	Number of bags
P	Lucknow/Mumbai	3
Q	Mumbai/Lucknow	2
R	Delhi	4
S	Pune	1
T	Delhi	6
U	Chennai	5
V	Patna	7

So, T goes to Delhi.

Hence, option a.

46) What is the sum of number of bags of R and P?

- a) 6
- b) 7
- c) 2
- d) 3

Correct Choice: b

Solution

Starting point: Here, we can start with the directly given information and then using the statement related to Q in order to make two cases.

Clues: V goes to Patna and has 7 bags. Only S goes to Pune. P has 3 bags. Q has prime number of bags. Neither P nor Q goes to Chennai or Delhi. Persons, who go to the same city have even number of bags. No one goes to same city to which U goes.

Inference: So, Q has either 2 or 5 bags.

Case 1:

Persons	Cities	Number of bags
P		3
Q		2
R		
S	Pune	
T		
U		
V	Patna	7

Case 2:

Persons	Cities	Number of bags
P		3
Q		5
R		
S	Pune	
T		

U		
V	Patna	7

Clues: T has one bag more than that of U. S does not have 4 bags.

Case 1:

Persons	Cities	Number of bags
P		3
Q		2
R		4
S	Pune	1
T		6
U		5
V	Patna	7

Case 2:

Persons	Cities	Number of bags
P		3
Q		5
R		4
S	Pune	6
T		2

U		1
V	Patna	7

Clues: Person, who goes to Delhi has 4 bags. Person, who goes to Chennai, does not have 1 bag.

Inference: So, case 2 is rejected as person, who goes to Chennai does not have 1 bag.

Persons	Cities	Number of bags
P	Lucknow/Mumbai	3
Q	Mumbai/Lucknow	2
R	Delhi	4
S	Pune	1
T	Delhi	6
U	Chennai	5
V	Patna	7

The sum of number of bags of R and P = $4 + 3 = 7$.

Hence, option b.

Topic – Counting the Number of Figures

47) How many triangles are there in the following figure?



- a) 2
- b) 3
- c) 4
- d) More than 4

Correct Choice : c

Solution

There are 4 triangles present in the figure.

Hence, option c.

Topic – Coding – Decoding (Direct Letter Coding)

48) In a code language, PRIVACY is written as IRPCAYV. How would FOUNDER be written in the same code?

- a) UOFEDRN
- b) UOFERDN
- c) UOEFDRN
- d) UOFEDNR

Correct Choice : a

Solution

First three letters of the word are written in reverse order followed by the second last letter of the word. Fifth letter (from the left end) is not unchanged. Last letter becomes the second last letter and fourth letter becomes the last letter, so FOUNDER is written as UOFEDRN.

Hence, option a.

Topic – Letter Series

49) A letter series is given below in which some letters are missing. Select the option that gives the letters that can fill these blanks in that order.

cd_efgg_cd_efg_h_dde_ggh

- a) Dhdgef
- b) Dhegcf
- c) Dhdgcf
- d) Dhdgce

Correct Choice : c

Solution

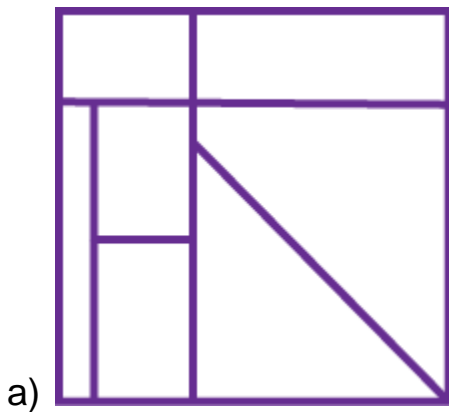
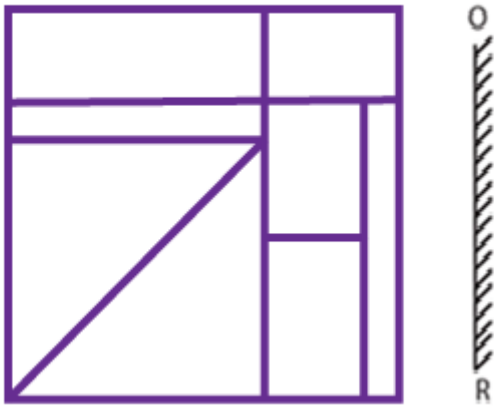
From option (c),

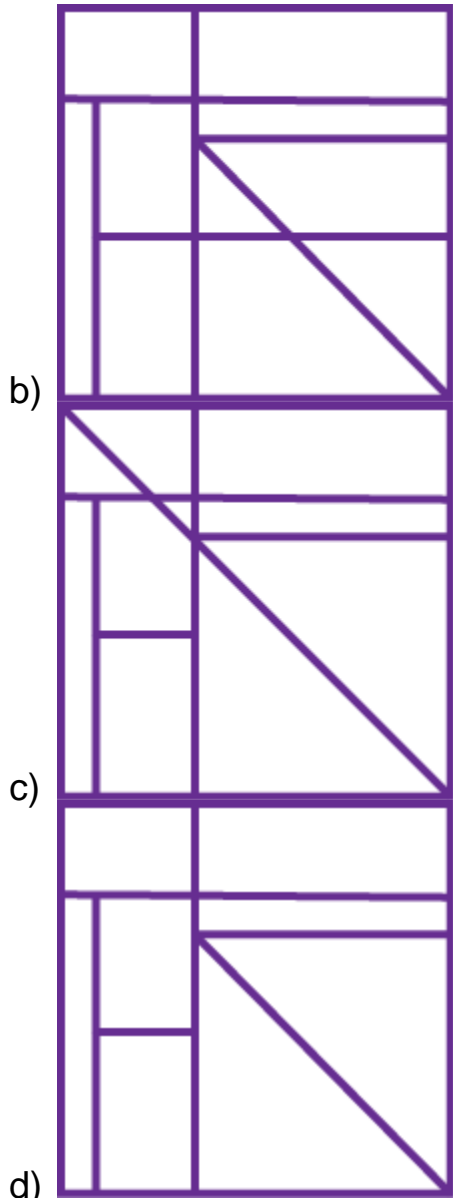
c d d e f g g h/c d d e f g g h/c d d e f g g h

Hence, option c.

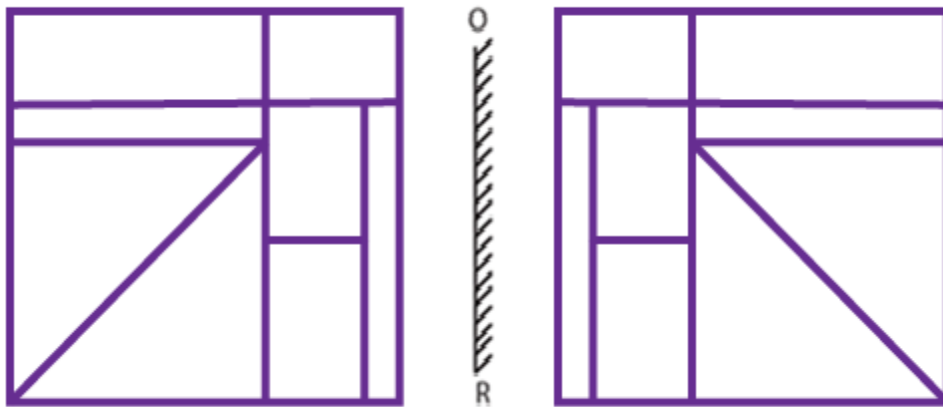
Topic – Mirror Image

50) If a mirror is placed on the line OR, then which of the answer figures is the right image of the given figure?





d)
Correct Choice: d
Solution



Hence, option d.

Topic – Matrix Coding - Decoding

51) In the question, a word is represented by only one set of number as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by 2 classes of alphabets as in two matrices given below. The columns and rows of matrix I are numbers from 0-4 and that of matrix II are numbers from 5-9. A letter from this matrix can be represented 1st by its row and next by its column. Ex- 'A' can be represented by 30 etc. and 'B' can be represented by 23, 43, 57 etc. Similarly, you have to identify the set of word 'POVERTY'.

Matrix - I

	0	1	2	3	4
0	U	J	G	D	E
1	M	C	H	J	K
2	T	O	P	B	X
3	A	N	V	X	Z
4	H	Y	R	B	C

Matrix - II

	5	6	7	8	9
5	U	K	B	C	D
6	K	P	C	X	W
7	M	B	H	F	R
8	S	Y	E	F	V
9	I	A	K	Y	R

- a) 22, 12, 23, 04, 79, 20, 41
- b) 66, 21, 32, 87, 24, 02, 98
- c) 66, 21, 32, 87, 42, 20, 98
- d) 66, 21, 32, 78, 42, 20, 98

Correct Choice: c

Solution

As the digits of the numbers represented by columns and rows respectively,

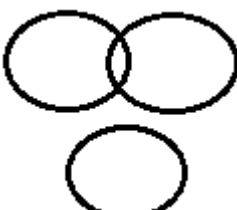

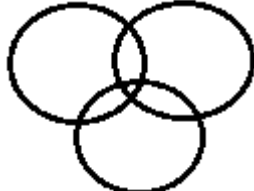

P	O	V	E	R	T	Y
22, 66	21	32, 89	04, 87	42, 79, 99	20	41, 98, 86

Hence, option c.

Topic – Logical Venn Diagram type -1

52) Select the Venn diagram that best illustrates the relationship between the following classes:

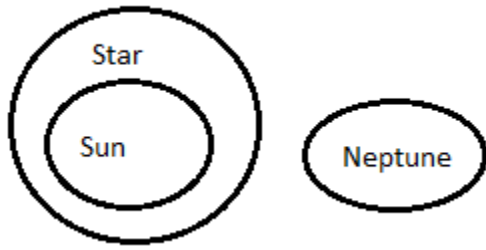
Neptune, Sun, Stars

- a) 
- b) 
- c) 
- d) 

Correct Choice: b

Solution

Following Venn diagram represents the relation between Neptune, Sun and Stars



Hence, option b.

Topic – Completing the Analogous pair

53) Select the option that is related fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term:

9643 : 11 :: 3278 : 10 :: 8976 : ?

- a) 17
- b) 14
- c) 15
- d) 13

Correct Choice: c

Solution

Second term is half the sum of all the digits of first term.

i.e. Second term = $\frac{1}{2} \times (9 + 6 + 4 + 3) = \frac{1}{2} \times 22 = 11$.

Fourth term is twice the sum of all the digits of third term.

i.e. Fourth term = $\frac{1}{2} \times (3 + 2 + 7 + 8) = \frac{1}{2} \times 20 = 10$.

Sixth term is twice the sum of all the digits of fifth term, so

Sixth term = $\frac{1}{2} \times (8 + 9 + 7 + 6) = \frac{1}{2} \times 30 = 15$.

Hence, option c.

Topic – Syllogisms

54) Three statements are given followed by three conclusions numbered I, II, and III assuming the statements to be true, even if they seem to be at variance with commonly known facts. Decide which of conclusion logically follow(s) from the statement.

Statements:

No planets are stars.

All stars are satellites.

No satellites are mars.

Conclusions:

I. No planets are satellites.

II. Some stars are mars.

III. Some mars being planets is a possibility.

a) Only conclusion I follows

b) Only conclusion III follows

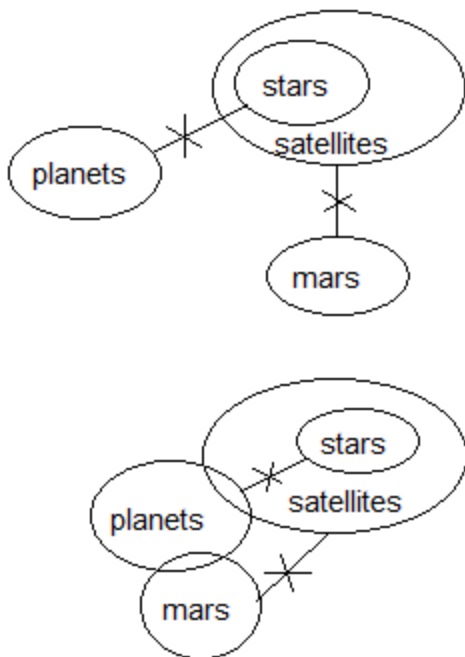
c) Conclusion I and conclusion III follow

d) Conclusion II and conclusion III follow

Correct Choice:b

Solution

Following figure can be formed from the statements:



Only conclusion III follows.

Hence, option b.

Numerical Ability

Topic – Caselet on Ratios & proportions

(55-59) Directions: Answer the questions based on the information given below.

In a restaurant, different numbers of orders are placed through Zomato and Swiggy. Average of number of orders placed through Zomato on Monday, Tuesday and Wednesday together is 375. Ratio of number of orders placed through Zomato on Monday and Tuesday is 9:7, respectively. Number of orders placed through Swiggy on Tuesday is 60% of total number orders placed on Tuesday. Number of orders placed through Swiggy on Tuesday is 525. Total number of orders placed on Wednesday is 20% less than the same on Tuesday. Ratio of number of orders placed through Swiggy on Monday and Wednesday is 6:5, respectively.

55) What is the ratio of number of orders placed through Zomato and Swiggy respectively on Wednesday?

- a) 13:25
- b) 11:15
- c) 13:15
- d) 13:11

Correct Choice: c

Solution

Total number of orders placed on Tuesday = $525/0.60 = 875$

Number of orders placed through Zomato = $875 - 525 = 350$

Number of orders placed through Zomato on Monday = $9/7 \times 350 = 450$

Total number of orders placed on Wednesday = $0.80 \times 875 = 700$

Number of orders placed through Zomato on Wednesday = $375 \times 3 - 350 - 450 = 325$

Number of orders placed through Swiggy on Wednesday = $700 - 325 = 375$

Number of orders placed through Swiggy on Monday = $6/5 \times 375 = 450$

Total number of orders placed on Monday = $450 + 450 = 900$

Days	Number of orders placed through Zomato	Number of orders placed through Swiggy	Total number of orders placed
Monday	450	450	900

Tuesday	350	525	875
Wednesday	325	375	700

Desired ratio = $325:375 = 13:15$

Hence, option c.

56) Total number of orders placed on Thursday is 12% more than the same on Monday and ratio of number of orders placed through Swiggy on Tuesday and Thursday is 7:8, respectively. Number of orders placed through Zomato on Thursday is:

- a) 408
- b) 398
- c) 418
- d) 428

Correct Choice:a

Solution

Total number of orders placed on Tuesday = $525/0.60 = 875$

Number of orders placed through Zomato = $875 - 525 = 350$

Number of orders placed through Zomato on Monday = $9/7 \times 350 = 450$

Total number of orders placed on Wednesday = $0.80 \times 875 = 700$

Number of orders placed through Zomato on Wednesday = $375 \times 3 - 350 - 450 = 325$

Number of orders placed through Swiggy on Wednesday = $700 - 325 = 375$

Number of orders placed through Swiggy on Monday = $6/5 \times 375 = 450$

Total number of orders placed on Monday = $450 + 450 = 900$

Days	Number of orders placed through Zomato	Number of orders placed through Swiggy	Total number of orders placed
------	--	--	-------------------------------

Monday	450	450	900
Tuesday	350	525	875
Wednesday	325	375	700

Total number of orders placed on Thursday = $1.12 \times 900 = 1008$

Number of orders placed through Swiggy on Thursday = $\frac{8}{7} \times 525 = 600$

Number of orders placed through Zomato on Thursday = $1008 - 600 = 408$

Hence, option a.

57) Number of orders placed through Swiggy on Tuesday is how much percent more/less than the same on Monday?

a) 26.67%

b) 16.67%

c) 13.33%

d) 15.55%

Correct Choice: b

Solution

Total number of orders placed on Tuesday = $\frac{525}{0.60} = 875$

Number of orders placed through Zomato = $875 - 525 = 350$

Number of orders placed through Zomato on Monday = $\frac{9}{7} \times 350 = 450$

Total number of orders placed on Wednesday = $0.80 \times 875 = 700$

Number of orders placed through Zomato on Wednesday = $375 \times 3 - 350 - 450 = 325$

Number of orders placed through Swiggy on Wednesday = $700 - 325 = 375$

Number of orders placed through Swiggy on Monday = $\frac{6}{5} \times 375 = 450$

Total number of orders placed on Monday = $450 + 450 = 900$

Days	Number of orders placed through Zomato	Number of orders placed through Swiggy	Total number of orders placed
Monday	450	450	900
Tuesday	350	525	875
Wednesday	325	375	700

Desired percentage = $[(525 - 450)/450] \times 100 = 16.67\%$

Hence, option b.

58) If the delivery agent from Zomato and Swiggy charged Rs. 12 per order and Rs. 16 per order, respectively then find total amount paid by the restaurant on Tuesday if all the orders are delivered through a delivery agent.

- a) Rs. 12800
- b) Rs. 12400
- c) Rs. 12600
- d) Rs. 12200

Correct Choice: c

Solution

Total number of orders placed on Tuesday = $525/0.60 = 875$

Number of orders placed through Zomato = $875 - 525 = 350$

Number of orders placed through Zomato on Monday = $9/7 \times 350 = 450$

Total number of orders placed on Wednesday = $0.80 \times 875 = 700$

Number of orders placed through Zomato on Wednesday = $375 \times 3 - 350 - 450 = 325$

Number of orders placed through Swiggy on Wednesday = $700 - 325 = 375$

Number of orders placed through Swiggy on Monday = $6/5 \times 375 = 450$

Total number of orders placed on Monday = $450 + 450 = 900$

Days	Number of orders placed through Zomato	Number of orders placed through Swiggy	Total number of orders placed
Monday	450	450	900
Tuesday	350	525	875
Wednesday	325	375	700

Desire Amount paid = $350 \times 12 + 525 \times 16 = \text{Rs. } 12600$

Hence, option c.

59) What is the number of orders placed through Zomato on Monday?

- a) 450
- b) 432
- c) 360
- d) 540

Correct Choice:a

Solution

Total number of orders placed on Tuesday = $525/0.60 = 875$

Number of orders placed through Zomato = $875 - 525 = 350$

Number of orders placed through Zomato on Monday = $9/7 \times 350 = 450$

Total number of orders placed on Wednesday = $0.80 \times 875 = 700$

Number of orders placed through Zomato on Wednesday = $375 \times 3 - 350 - 450 = 325$

Number of orders placed through Swiggy on Wednesday = $700 - 325 = 375$

Number of orders placed through Swiggy on Monday = $\frac{6}{5} \times 375 = 450$

Total number of orders placed on Monday = $450 + 450 = 900$

Days	Number of orders placed through Zomato	Number of orders placed through Swiggy	Total number of orders placed
Monday	450	450	900
Tuesday	350	525	875
Wednesday	325	375	700

Number of orders placed through Zomato on Monday = 450

Hence, option a.

Topic – Mixtures & Allegations

60) 448 ml of mixture A containing milk and water in the ratio of 9:5, respectively is mixed with 'x' ml of mixture B containing milk and water in the ratio of 11:10, respectively. If the ratio of milk to water in the final mixture is 3:2, then find the value of x.

- a) 252
- b) 210
- c) 336
- d) 294

Correct Choice: a

Solution

Quantity of milk in mixture A = $\frac{9}{14} \times 448 = 288$ ml

Quantity of water in mixture A = $448 - 288 = 160$ ml

Let amount of milk and water in mixture B is $11y$ and $10y$ respectively.

So, $(288 + 11y)/(160 + 10y) = \frac{3}{2}$

Or, $576 + 22y = 480 + 30y$

$$\text{Or, } 8y = 96$$

$$\text{Or, } y = 12$$

$$\text{So, } x = 21y = 21 \times 12 = 252$$

Hence, option a.

Topic – Time & work

61) A and B together can complete 75% of a work in 33 days while A, B and C together can complete the whole work in 26 days. If 'C' is 12.5% more efficient than B then find the time taken by A and C together to complete 70% of the work.

- a) 29.2 days
- b) 28.4 days
- c) 27.8 days
- d) None of these

Correct Choice: d

Solution

Total time taken by A and B together to complete the whole work = $33/0.75$
= 44 days

Let total amount of work = 572 units (LCM of 44 and 26)

Efficiency of (A + B) = $572/44 = 13$ units per day

Efficiency of (A + B + C) = $572/26 = 22$ units per day

Efficiency of C = $22 - 13 = 9$ units per day

Efficiency of B = $9/1.125 = 8$ units per day

Efficiency of A = $13 - 8 = 5$ units per day

Desired Time = $(0.70 \times 572)/14 = 28.6$ days

Hence, option d.

Topic – Compound Interest

62) A certain sum of money at a certain rate of compound interest compounded annually becomes Rs. 12500 after 2 years and Rs. 19531.25 after 4 years. Find the rate of compound interest.

- a) 20%
- b) 15%
- c) 17.5%
- d) 25%

Correct Choice: d

Solution

Let the principal amount is Rs. P and the rate of compound interest is R% p.a.

$$\text{So, } P(1 + R/100)^2 = 12500 \dots\dots\dots(1)$$

$$\text{And, } P(1 + R/100)^4 = 19531.25 \dots\dots\dots(2)$$

On dividing equation (2) by equation (1), we get

$$(1 + R/100)^2 = 19531.25/12500 = 1.5625$$

$$\text{Or, } (1 + R/100) = 1.25$$

$$\text{Or, } R/100 = 0.25$$

$$\text{Or, } R = 25\%$$

Hence, option d.

Topic – Boats & streams

63) Ratio of speed of a boat in still water to speed of stream is 9:2. The boat travels a distance of $(D + 40)$ km in downstream and D km in upstream. If the ratio of time taken by the boat to travel in upstream and in downstream is 4:3, respectively then find the value of D .

- a) 220
- b) 240
- c) 212
- d) 224

Correct Choice: d

Solution

Let speed of boat in still water and speed of stream is $9x$ km/h and $2x$ km/h respectively.

So, Upstream speed = $9x - 2x = 7x$ km/h

And, downstream speed = $9x + 2x = 11x$ km/h

According to question;

$$\{D/7x\}/\{(D + 40)/11x\} = 4/3$$

$$\text{Or, } 33D = 28D + 1120$$

$$\text{Or, } 5D = 1120$$

$$\text{Or, } D = 224$$

Hence, option d.

Topic – Partnership

64) A and B entered into a business with an initial investment of Rs. 1800 and Rs. 1500 respectively. After 7 months, A added Rs. 680 more while B withdrew Rs. 600 and C entered into the business investing Rs. 80x. At the end of year profit share of C, out of total profit of Rs. 7200 is Rs. 2400. Find the value of x.

- a) 60
- b) 50
- c) 40
- d) 80

Correct Choice: b

Solution

Ratio of profit share of A, B and C = $\{1800 \times 7 + 2480 \times 5\} : \{1500 \times 7 + 900 \times 5\} : \{80x \times 5\} = 25000 : 15000 : 400x = 125 : 75 : 2x$

According to question;

$$2x / (125 + 75 + 2x) = 2400 / 7200 = 1/3$$

$$\text{Or, } 6x = 200 + 2x$$

$$\text{Or, } 4x = 200$$

$$\text{Or, } x = 50$$

Hence, option b.

Topic – Discounts

65) Gunja marked an article 50% above the cost price and sold it after giving a discount of 20%. Had she bought the article for Rs. 150 less and sold it for Rs. 240 more then she would have made a profit of 60%. New selling price is how much percent more than original selling price.

- a) 20%
- b) 25%
- c) 15%
- d) None of these

Correct Choice: d

Solution

Let cost price of the article is Rs. x

Marked price of the article = $1.50 \times x = \text{Rs. } 1.5x$

Selling price of the article = $0.80 \times 1.5x = \text{Rs. } 1.2x$

According to question;

$$1.60 \times (x - 150) = 1.2x + 240$$

$$1.6x - 240 = 1.2x + 240$$

$$\text{Or, } 0.4x = 480$$

$$\text{Or, } x = 1200$$

$$\text{Original selling price} = 1.2 \times 1200 = \text{Rs. } 1440$$

$$\text{Desired percentage} = \frac{240}{1440} \times 100 = 16.67\%$$

Hence, option d.

Topic – Problems on Ages

66) Ratio of ages of A and B, 8 years ago was 5:4 respectively. If present average age of B and C is 38 years and age of C after 24 years will be 20% more than age of A after 2 years. Find the ratio of present age of B to present age of C.

- a) 9:10
- b) 10:9
- c) 9:8
- d) 8:9

Correct Choice: b

Solution

Let age of A and B, 8 years ago was $5x$ years and $4x$ years respectively.

Present age of C = 'y' years

$$\text{So, } 4x + 8 + y = 38 \times 2 = 76$$

$$\text{Or, } 4x + y = 68$$

$$\text{And, } y + 24 = 1.20 \times (5x + 8 + 2)$$

$$\text{Or, } y + 24 = 6x + 12$$

$$\text{Or, } 68 - 4x + 24 = 6x + 12$$

$$\text{Or, } 10x = 80$$

$$\text{Or, } x = 8$$

$$\text{So, present age of B} = 8 \times 4 + 8 = 40 \text{ years}$$

$$\text{Present age of C} = 68 - 4 \times 8 = 36 \text{ years}$$

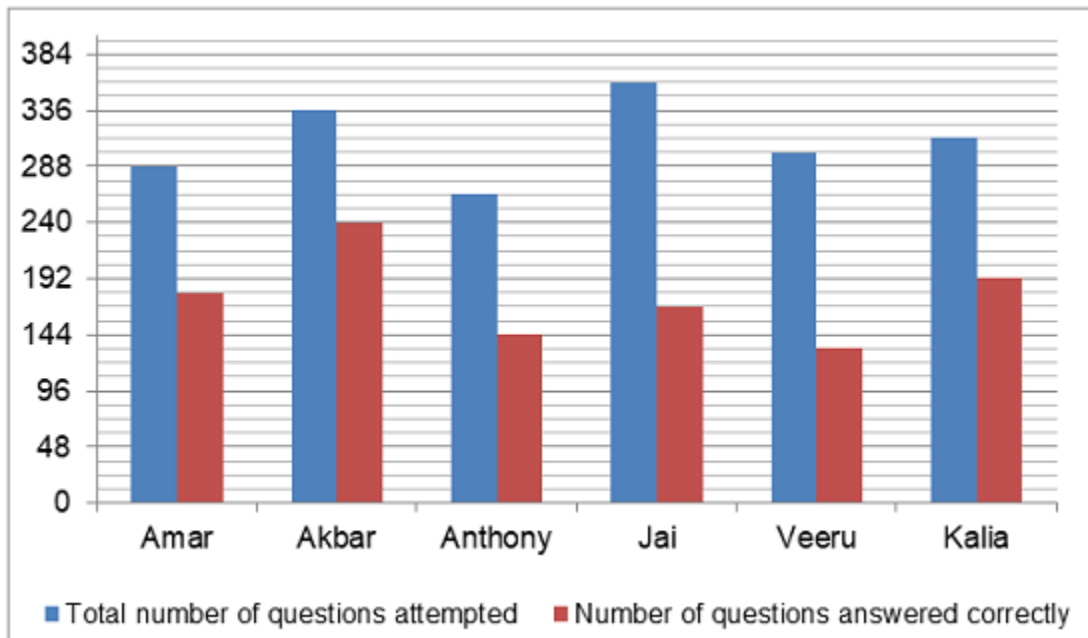
$$\text{Desired ratio} = 40:36 = 10:9$$

Hence, option b.

Topic – Data Interpretation (Bar Graphs on Absolute Values)

(67-68) Directions: Answer the questions based on the information given below.

The bar graph given below shows total number of questions attempted by five different students in an exam and the number of questions which are answered correctly by the respective student.



67) What is the ratio of total number of question answered correctly by Amar and Anthony together to total number of questions attempted by Jai?

- a) 11:10
- b) 9:10
- c) 7:10
- d) 9:11

Correct Choice: b

Solution

Students	Total number of questions attempted	Number of questions answered correctly	Number of wrongly answered questions
Amar	288	180	$288 - 180 = 108$
Akbar	336	240	$336 - 240 = 96$
Anthony	264	144	$264 - 144 = 120$
Jai	360	168	$360 - 168 = 192$
Veeru	300	132	$300 - 132 = 168$
Kalia	312	192	$312 - 192 = 120$

Desired ratio = $(180 + 144):360 = 324:360 = 9:10$

Hence, option b.

68) If number of questions attempted by Amar, Akbar, Anthony and Kalia is represented in a pie chart then central angle made by number of questions attempted by Anthony is:

- a) 79.2°
- b) 89.2°
- c) 86.4°
- d) 100.8°

Correct Choice: a

Solution

Students	Total number of questions attempted	Number of questions answered correctly	Number of wrongly answered questions
Amar	288	180	$288 - 180 = 108$
Akbar	336	240	$336 - 240 = 96$
Anthony	264	144	$264 - 144 = 120$
Jai	360	168	$360 - 168 = 192$
Veeru	300	132	$300 - 132 = 168$
Kalia	312	192	$312 - 192 = 120$

Total number questions attempted by Amar, Akbar, Anthony and Kalia =
 $288 + 336 + 264 + 312 = 1200$

Desired Central angle = $264/1200 \times 360 = 79.2^\circ$

Hence, option a.

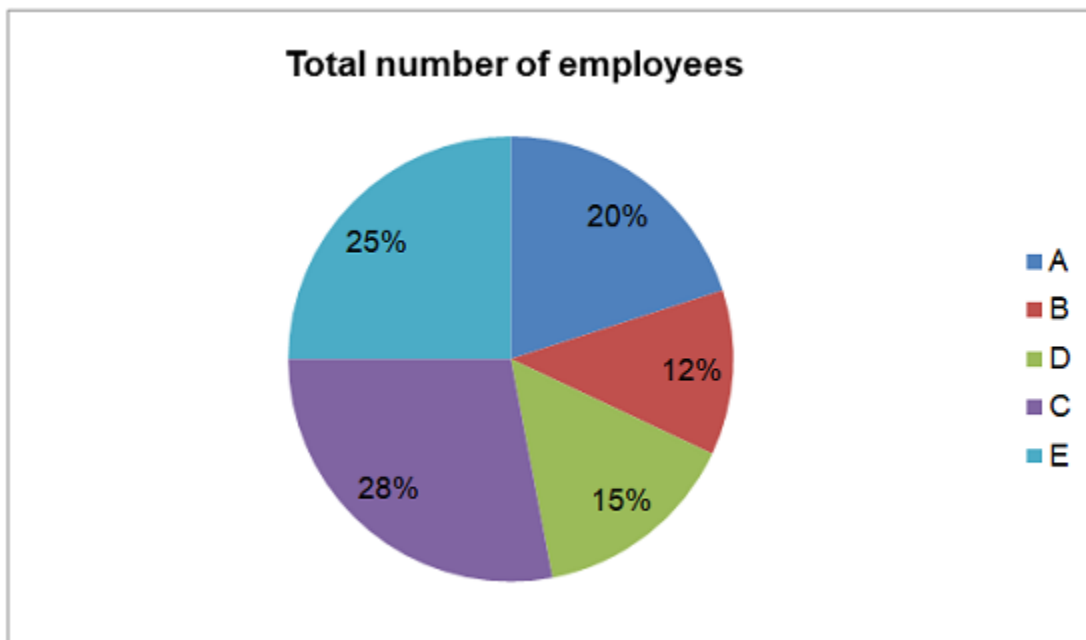
Topic – Data Interpretation (Dual Pie Chart on Percentages)

(69-70) Directions: Answer the questions based on the information given below.

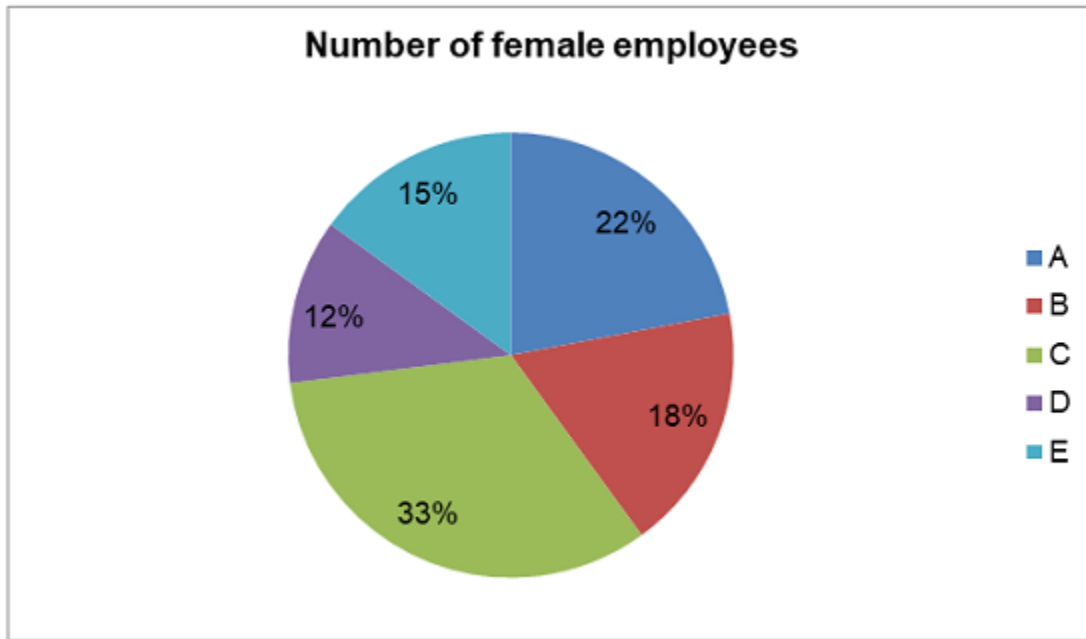
The pie chart given below shows the percentage distribution of total number employees in five companies.

Note:

1. Total number of employees in all five companies together = 3600
2. Total number of male employees in all five companies together = 2000



The pie chart given below shows the percentage distribution of number of female employees in all five companies.



69) Number of male employees in company D is 48% of total number of employees in company F. If the ratio of number of male to female employees in company F is 3:2, then find the number of male employees in company F.

- a) 475
- b) 415
- c) 435
- d) 425

Correct choice: c

Solution

Number of female employees in all five companies together = $3600 - 2000 = 1600$

Companies	Total number of employees	Number of female employees	Number of male employees
A	$0.20 \times 3600 = 720$	$0.22 \times 1600 = 352$	$720 - 352 = 368$
B	$0.12 \times 3600 = 432$	$0.18 \times 1600 = 288$	$432 - 288 = 144$
C	$0.28 \times 3600 = 1008$	$0.33 \times 1600 = 528$	$1008 - 528 = 480$
D	$0.15 \times 3600 = 540$	$0.12 \times 1600 = 192$	$540 - 192 = 348$
E	$0.25 \times 3600 = 900$	$0.15 \times 1600 = 240$	$900 - 240 = 660$

Total number of employees in company F = $348/0.48 = 725$

Number of male employees in company F = $3/5 \times 725 = 435$

Hence, option c.

70) Number of female employees in company C is how much percent more/less than number of male employees in same company?

- a) 12%
- b) 10%
- c) 15%
- d) 20%

Correct Choice: b

Solution

Number of female employees in all five companies together = $3600 - 2000 = 1600$

Companies	Total number of employees	Number of female employees	Number of male employees
A	$0.20 \times 3600 = 720$	$0.22 \times 1600 = 352$	$720 - 352 = 368$
B	$0.12 \times 3600 = 432$	$0.18 \times 1600 = 288$	$432 - 288 = 144$
C	$0.28 \times 3600 = 1008$	$0.33 \times 1600 = 528$	$1008 - 528 = 480$
D	$0.15 \times 3600 = 540$	$0.12 \times 1600 = 192$	$540 - 192 = 348$
E	$0.25 \times 3600 = 900$	$0.15 \times 1600 = 240$	$900 - 240 = 660$

Desired Percentage = $[(528 - 480)/480] \times 100 = 10\%$

Hence, option b.

Topic – Simplifications

71) If $x^2 + 16x - 5 = 0$, then find the value of $5x/(x^2 - 9x - 5)$.

- a) $1/7$
- b) $1/9$
- c) $-1/3$
- d) $-1/5$

Correct Choice: d

Solution

$$\begin{aligned}
 & 5x/(x^2 - 9x - 5) \\
 &= 5x/(x^2 + 16x - 5 - 25x) \\
 &= 5x/-25x = -1/5
 \end{aligned}$$

Hence, option d.

Topic – Averages

72)

The average of 50 observations is 42. Later it was found that 46 was misread as 64. Find the correct average.

- a) 41.64
- b) 40.58
- c) 39.88
- d) 40.36

Correct Choice: a

Solution

$$\text{Correct average} = \{(50 \times 42) - 64 + 46\}/50 = 41.64$$

Hence, option a.

Topic – Simplifications

73) Find the value of $\{(2744)^{1/3} \times 25\} \div 7$.

- a) 20
- b) 30
- c) 40
- d) 50

Correct Choice: d

Solution

$$\begin{aligned} & \{(2744)^{1/3} \times 25\} \div 7 \\ &= (14 \times 25) \div 7 = 50 \end{aligned}$$

Hence, option d.

Topic – Simple Interest – Compound Interest

74) Sourav invested Rs. 2500 on 30% p.a. compound interest, compounded annually for 2 years. He then gave 20% of the amount received at 40% p.a. simple interest for 3 years. Find the simple interest received.

- a) Rs. 1242
- b) Rs. 1014
- c) Rs. 972
- d) Rs. 1146

Correct Choice: b

Solution

Amount received at compound interest = $2500(1 + 30/100)^2 = \text{Rs. } 4225$

Interest received at simple interest = $(0.20 \times 4225 \times 40 \times 3)/100 = \text{Rs. } 1014$

Hence, option b.

Topic –

75) If $(p/q) + (q/p) = 2$, then find the value of $(p^3 + q^3)/pq$

- a) 0
- b) $(p + q)$
- c) -1
- d) $-(p + q)$

Correct Choice: b

Solution

$$(p/q) + (q/p) = 2$$

$$= (p^2 + q^2) = 2pq$$

$$\text{Or, } p^2 + q^2 - pq = pq$$

Therefore,

$$(p^3 + q^3)/pq = \{(p+q)(p^2 + q^2 - pq)\}/pq$$

$$\text{Or, } (p^3 + q^3)/pq = \{(p+q)pq\}/pq = (p + q)$$

Hence, option b.

Topic – Divisibility Rules

76) For what least value of x, the number 203x88 is divisible by 36

- a) 4
- b) 6
- c) 3
- d) 2

Correct Choice: b

Solution

Since the number is divisible by 36 therefore, it has to be divisible by 9 and 4 both

The number formed by the last two digits is 88, therefore, the whole number is divisible by 4

For the number to be divisible by 9, the sum of the numbers should be divisible by 9

$$(2 + 0 + 3 + x + 8 + 8) = (21 + x)$$

Therefore, least number which will make the number divisible by 9 is 6.

Hence, option b.

Topic – Areas

77) The ratio of the perimeters of a rectangular and squared field is 7:6. Each side of the squared field is equal to the breadth of the rectangle. Find the length of the rectangular field if the area of the rectangular field is 4800 m².

- a) 60 metres
- b) 80 metres
- c) 40 metres
- d) 120 metres

Correct Chocie: b

Solution

Let the perimeters of the rectangular and squared field be $7x$ metres and $6x$ metres respectively

Therefore, breadth of the rectangular field = $6x/4 = 1.5x$ metres

$$\text{Or, } 2(l + b) = 7x$$

$$\text{Or, } l = 3.5x - 1.5x = 2x \text{ metres}$$

According to the question,

$$2x \times 1.5x = 4800$$

$$\text{Or, } x^2 = 1600$$

$$\text{Or, } x = 40 \text{ metres}$$

Therefore, length of the rectangular field = $2x = 80$ metres

Hence, option b.

Topic – Ratios & Proportions

78) The ratio of the number of boys and girls in school 'A' is 6:5, respectively and that in school 'B' is 8:3, respectively. The number of boys and girls in school 'A' is 100 less and 100 more than that in 'B'. Find the total number of students in school 'A'.

- a) 450
- b) 600
- c) 550
- d) 720

Correct Choice: c

Solution

Let the number of boys and girls in school 'A' be $6x$ and $5x$ respectively

Therefore, number of boys and girls in school 'B' be $8y$ and $3y$ respectively

According to the question,

$$6x - 8y = -100 \dots (1)$$

$$5x - 3y = 100 \dots (2)$$

On solving equation (1) and (2), we get

$$x = 50$$

Therefore, total number of students in school 'A' = $6x + 5x = 11x = 550$

Hence, option c.

Topic – Trigonometry

79) The value $(\cos 37^\circ - \sin 53^\circ) + (\sec 41^\circ - \operatorname{cosec} 49^\circ) + (\tan 78^\circ - \cot 12^\circ) + (\tan^2 56^\circ - \sec^2 56^\circ)$ is

- a) 1
- b) 0
- c) -1
- d) 2

Correct Choice: c

Solution

$$(\cos 37^\circ - \sin 53^\circ) + (\sec 41^\circ - \operatorname{cosec} 49^\circ) + (\tan 78^\circ - \cot 12^\circ) + (\tan^2 56^\circ - \sec^2 56^\circ)$$

$$= \{\cos 37^\circ - \sin(90 - 37^\circ)\} + \{\sec 41^\circ - \operatorname{cosec}(90 - 41^\circ)\} + \{\tan 78^\circ - \cot(90 - 78^\circ)\} + (-1)$$

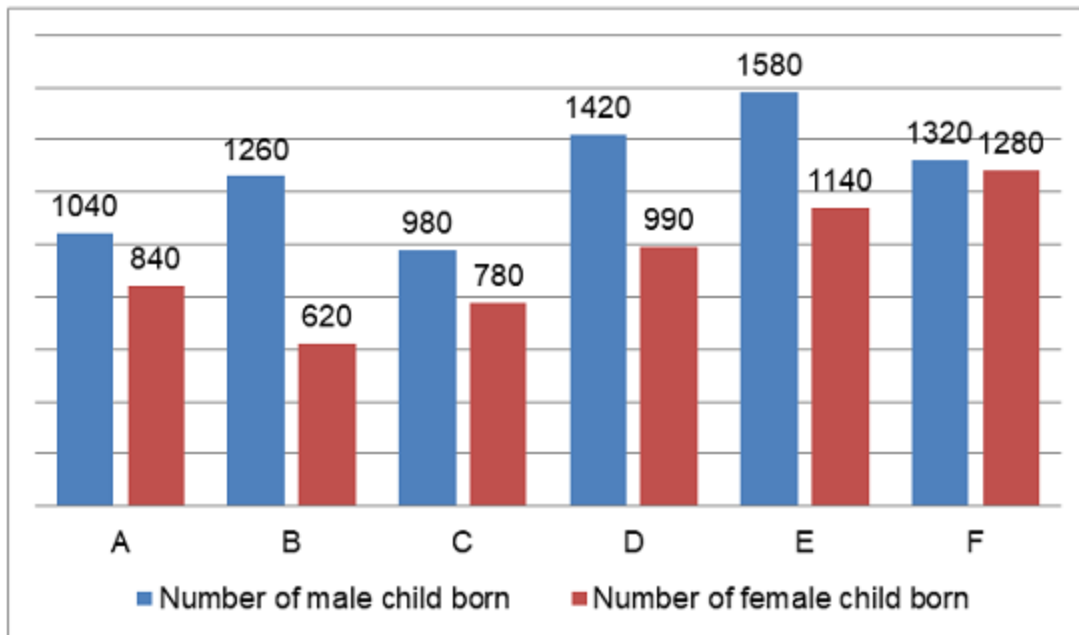
$$= (\cos 37^\circ - \cos 37^\circ) + (\sec 41^\circ - \sec 41^\circ) + (\tan 78^\circ - \tan 78^\circ) - 1$$

$$= -1$$

Hence, option c.

Topic – Data Interpretation (Bar Graphs on Absolute values)

80) The given bar graph shows the number of births of male and female child in six different cities in a month.



Find the difference between the total number of male child born in 'B' and 'C' together and total number of female child born in 'D' and 'E' together.

- a) 150
- b) 180
- c) 240
- d) 110

Correct Choice: d

Solution

$$\text{Required difference} = (1260 + 980) - (990 + 1140) = 110$$

Hence, option d.