FRESHERS NOW

TCS NQT PAPER -10

Verbal ability

Reading comprehension

(1-4) Directions: Read the following passage carefully and answer the questions.

The term herd immunity comes from the observation of how a herd of buffaloes forms a circle, with the strong on the outside protecting the weaker and more vulnerable on the inside. This is similar to how herd immunity works in preventing the spread of infectious diseases. Those who are strong enough to get vaccinated directly protect themselves from infection. They also indirectly shield vulnerable people who cannot be vaccinated.

There are various reasons a person may not be able to be successfully vaccinated. People undergoing cancer treatment, and whose immune systems are compromised, for instance, are impaired in their ability to develop protective immunity from all vaccines. Often, people who can't be vaccinated are susceptible to the most serious consequences from being infected. Another vulnerable group are babies. Infants under six months of age are susceptible to serious complications from influenza. Yet they can't be given the flu vaccine as their immune systems are not strong enough.

For a contagious disease to spread, an infectious agent needs to find susceptible (non-immune) people to infect. If it can't, the chain of infection is interrupted and the amount of disease in the population reduces. Another way of thinking about it is that the disease needs susceptible victims to survive in the population. Without these, it effectively starves and dies out.

How many people need to be vaccinated to achieve herd immunity varies from disease to disease. Measles can be transmitted through coughing and sneezing and the virus causing measles can survive outside the body for up to two hours. So it's possible to catch measles just by being in the same room as someone who

is ill if you touch a surface they've coughed or sneezed on. In contrast, Ebola can only be spread by direct contact with infected secretions (blood, faeces or vomit) and therefore requires close contact with an ill person. This makes it much less spreadable.

Measles is one of the most infectious diseases to affect humans. To achieve herd immunity to measles in a population we need 92-95% of the population to be vaccinated. Current data indicates full vaccine coverage for five year olds in Australia is sitting at around the 95% level. However, vaccination rates in some communities have fallen below ideal levels, making them susceptible to measles outbreaks. The overwhelming success of measles vaccinations means many people have no memory of what this disease looks like, and this has resulted in its effects being underestimated. Measles can cause blindness and acute encephalitis (inflammation of the brain), which can result in permanent brain damage.

Herd immunity, or community immunity, as it's sometimes called, is a powerful public health tool. By ensuring those who can be vaccinated do get vaccinated we can achieve herd immunity and prevent the illness and suffering that comes from the spread of infectious diseases.

1.As per the passage, which of the following groups of people may not be able to be successfully vaccinated?

1. People who are undergoing cancer treatment

2. People who are undergoing surgery

3. People whose immune systems are weak

A-Only 1
B-Only 1 and 2
3-Only 1 and 3
D-Only 2 and 3

Solution

In the second para, the author tells us why certain groups of people may not be successfully vaccinated. Both 1 and 3 are mentioned. Refer to the lines: *"There are various reasons a person may not be able to be successfully vaccinated. People*

undergoing cancer treatment, and whose immune systems are compromised, for instance, are impaired in their ability to develop protective immunity from all vaccines." **Thus, (c) is the right answer.**

2 is incorrect as it is not mentioned or implied in the passage.

2. **The passage provides sufficient information to answer which of the following questions?**

1. For which disease has herd immunity been achieved in India?

2. From where did the term herd immunity come from?

3. Until what age can infants not be given the flu vaccine?

A -Only 2
B -Only 1 and 2
C -Only 1 and 3
D -Only 2 and 3

Solution

2 is answered by the information in the first para. Refer to the lines: *"The term herd immunity comes from the observation of how a herd of buffaloes forms a circle, with the strong on the outside protecting the weaker and more vulnerable on the inside."*

3 is answered by the information in the second para. Refer to the lines: *"Infants under six months of age are susceptible to serious complications from influenza. Yet they can't be given the flu vaccine as their immune systems are not strong enough."*

1 is not answered by the passage.

Thus, (d) is the right answer.

3. Which of the following statement(s) is/ are true as per the passage?

1. Ebola is transmitted only through direct contact with infected bodily secretions.

2. Measles can result in permanent brain damage.

3. To achieve herd immunity to measles we need 92-95% of that population to be vaccinated.

A -Only 3
B -Only 1 and 2
C -Only 1 and 3
D -All 1, 2 and 3

Solution

All 1, 2 and 3 are mentioned in the passage. Refer to the lines: *"In contrast, Ebola can only be spread by direct contact with infected secretions (blood, faeces or vomit) and therefore requires close contact with an ill person...To achieve herd immunity to measles in a population we need 92-95% of the population to be vaccinated...Measles can cause blindness and acute encephalitis (inflammation of the brain), which can result in permanent brain damage."* **Thus, (d) is the right answer.**

4. Which of the following best explains herd immunity?

A -Herd immunity means that every single member of the population is vaccinated to a disease.
B -Herd immunity protects a vulnerable section of the population through the stronger immune majority.
C -Herd immunity is achieved only through vaccination in the infancy stage.
D -Herd immunity is achieved only when successive generations of a population are found immune to a disease.

Solution

In the first para of the passage, the author explains the concept of herd immunity. The author tells us how a strong population which is immune to a disease help in

protecting a smaller vulnerable section. Refer to the lines: *"This is similar to how herd immunity works in preventing the spread of infectious diseases. Those who are strong enough to get vaccinated directly protect themselves from infection. They also indirectly shield vulnerable people who cannot be vaccinated."* **Thus, (b) is the right answer**.

None of the other options is mentioned or implied in the passage.

Error location

5. In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If the sentence is free from error, select 'No Error'.

A -Why do you insist on paying
B -for your school expenses yourself,
C -when your parents are willing
D -to given you financial support?

Solution

In D, replace the past participle form verb GIVEN with GIVE as the infinitive construction TO + VERB will take the base form of the verb. **Thus, (d) is the right answer.**

Error location

6. **In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If the sentence is free from error, select 'No Error'.**

A -The new terminal will permitted
B -the airport to handle 35 million
C -passengers a year, more than
D -California's entire population.

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Solution

In A, replace the second form verb PERMITTED with PERMIT as the modal verb WILL will take the base form of the main verb that follows it. **Thus, (a) is the right answer.**

Phrase replacement

7. 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 phrase in the context of the grammatically correct sentence. If the sentence is correct as it is, mark 'No Improvement' as the answer.

Had war broken out, the Polish navy was prepared to invade the Danish isles.

1. If war had broke out

2. Having broken out war

3. War had broken out

A -Only 1 and 2
B -No Improvement
C -Only 1 and 3
D -Only 2 and 3

Solution

The sentence talks about how the Polish navy was prepared to invade the Danish isles if war broke out. The highlighted phrase is correct, which makes (b) the right answer.

1 is incorrect as the past perfect tense construction HAD + VERB will take the past participle BROKEN and not the second form verb BROKE. 2 is incorrect as it changes the subject to WAR, while the subject of the sentence is the POLISH NAVY. 3 is incorrect as it fails to link itself to the rest of the sentence.

Phrase replacement

8. 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 phrase in the context of the grammatically correct sentence. If the sentence is correct as it is, mark 'No Improvement' as the answer.

The disease is caused by the chikungunya virus, which is inhibited mainly by mosquitoes in the Aedes family.

1. Is transmitted mainly

2. Is primarily spread

3. Is transported chiefly

A -No Improvement
B -Only 1 and 2
C- Only 1 and 3
D -Only 2 and 3

Solution

The sentence tells us about the chikungunya virus and the vector that carries it. Both 1 and 2 can replace the highlighted phrase to convey the requisite meaning. **Thus, (b) is the right answer**.

3 is incorrect as TRANSPORTED cannot be used with respect to a disease. The highlighted phrase is incorrect as INHIBITED means restricted, which does not lend meaning to the context.

Para-jumbled sentences

9. Directions: In the question given below, a set of sentences is given, which when properly sequenced, form a coherent paragraph. Arrange the sentences in the correct sequence, and answer the questions.

P. Controlling the spread of flu means dealing with this ongoing evolution.

Q. Every few years, new variants of flu emerge and cause epidemics around the world.

R. Evolution is usually very slow, a process of change that takes thousands or millions of years to see.

S. But for influenza, evolution is fast – and deadly.

T. Moreover, flu viruses change rapidly to escape the body's defenses.

Which of the following statements would be the FIRST after rearrangement?

A -R
B -P
C -S
D –T

Solution

RSQTP is the final order. R begins the sentence by telling us how evolution is a slow process. S follows by giving an exception to this - the influenza virus. QT follow as a pair - Q tells us that new variants of flu emerge every few years, thus confirming the fact mentioned in S. T follows by telling us how flu viruses keep changing rapidly to evolve to the body's defenses. P concludes by telling us how we need to deal with this fast evolution if we are to control the spread of flu. **Thus, (b) is the right answer**.

Cloze test

(11-15) Directions: In the following passage, some of the words have been left out and replaced by a blank represented by a letter. First, read the passage and try to understand what it is about. Then fill in the blanks as per the questions given.

Low-interest rates have traditionally been ___(A)____ as positive for economic growth. But the recent research suggests that this may not be the case. Instead, extremely low-interest rates may ___(B)____ to slower growth by increasing market concentration. It ____(C)___ that reducing interest rates further will not save the global economy from stagnation. The traditional view _____D____ that

when long-term rates fall, the net present value of future cash flows increases, making it more attractive for firms to ___(E)___ in productivity-enhancing technologies. Low-interest rates, therefore, have an expansionary effect on the economy through stronger productivity growth.

11.(A)

A -Allured
B -Accrued
C -Viewed
D –Shrewd

Solution

We need the third form of a verb to fit in the present perfect construction HAVE + BEEN + VERB. VIEWED means 'regarded'. It fits contextually as the sentence talks about the traditional view of low-interest rates. **Thus, (c) is the correct answer.**

Allured — Attracted. Accrued — Accumulated. Shrewd — cunning. Feud — Conflict.

12. (B)

A -Plead
B -Lead
C -Spread
D -Aforesaid

Solution

We need a verb in the base form here to follow the modal verb MAY. LEAD TO means to result in, and it fits contextually as the sentence talks about how extremely low interest rates can influence the growth rate of the economy. **Thus, (b) is the correct answer.**

Plead — implore. Spread — Extend. Aforesaid — Preceding.

13. (C)

A -Implies
B -Defies
C -rectify
D –Suffices

Solution

We need a singular verb to agree with the singular pronoun IT. IMPLIES means 'Indicates'. It fits contextually as the sentence talks about the traditional view and what it suggests. **Thus, (a) is the correct answer.**

Defies — Disobeys. Rectify— Amend. This verb is in the plural form.

Suffices — to be enough. Apprise — notify. This verb is in the plural form.

14. (D)

A -Aggravates
B -Holds
C -Opines
D -Both (b) and (c)

Solution

We need a verb in the singular form to agree with the singular subject VIEW. HOLDS and OPINES means 'to support'. It fits contextually as the sentence talks about the premise on which traditional view is based on. **Thus, (d) is the correct answer.**

Aggravates — making the problem worse. Abrogates — Repeals.

15. (E)

A -Manifest
B -Inquire

C -Divest
D –Invest

Solution

We need a verb in its base form to fit in the infinitive construction TO + VERB. INVEST means 'spend'. It fits contextually as the sentence talks about the net present value of future cash flows and how it enables firms to invest in productivity-enhancing technologies. **Thus, (d) is the correct answer**.

Manifest — Apparent. Inquire — ask. Divest — Deprive. Behest — Request.

Phrasal verbs/idioms

16. 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.

The man did not (let me in) the room since a meeting was going on inside.

A -let me off
B -let me out
C -let me down
D -No Improvement

Solution

We need a phrasal verb here that means to allow someone to enter inside a room. LET ME IN will fit here. **Thus, (d) is the right answer.**

LET OFF means to not punish someone for a wrongdoing. LET OUT means to allow one to leave a place. LET DOWN means fail to meet expectations.

Active/passive voice

17. 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.

I was watching a movie last night.

A -I watched a movie last night.
B -A movie was watched by me last night.
C -A movie was being watched by me last night.
D -A movie had been watched by me last night.

Solution

The sentence is in active voice and past continuous tense. Follow these rules to convert it into passive voice:

1. The subject clause will become the object clause. Here, the subject pronoun 'I' will change to the object of the verb and assume the object form 'me'.

2. The object 'A MOVIE' will become the subject and begin the sentence.

3. To form the passive voice construct, change 'WAS WATCHING' to 'WAS BEING WATCHED'.

4. Add the conjunction 'BY' before 'ME' to link the verb with its object.

Thus, (c) is the correct answer.

antonyms

18. In the following question, choose the word opposite in meaning to the given word.

Undaunted

A –hazy

B –timid

C –livid

D –dense

Solution

(a) is the right answer. The idiom ROOT AND BRANCH means in an extensive and comprehensive manner.

Phrasal verbs/idioms

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.

The plane (took out) from Miami two hours ago.

A -took off
B -took on
C -took after
D -No Improvement

Solution

We need a phrasal verb here that means to depart from a place. TOOK OFF will convey the requisite meaning here. **Thus, (a) is the right answer.**

TOOK OUT means to remove or extract. TOOK ON means to hire or engage staff. TOOK AFTER means to inherit traits from someone.

One word substitution

21. In the following question, out of the four alternatives, choose the one which can be substituted for the given words/sentence.

A feel of discomfort whose cause is hard to identify

A -menace
B -malaise
C -debacle
D –magnate

Solution

(b) is the right answer.

Menace – something that causes annoyance.

Debacle – collapse of something.

Magnate - a wealthy and influential businessman.

idioms

22. In the question below, an idiom is given, followed by four options. Select the option that gives the correct meaning of the idiom.

After his father died, he was left to paddle his own canoe and take charge of the family business.

A -to have freedom to do as one wishes
B -to have no one to comfort one
C -to take responsibility at a very young age
D -to act independently and do something oneself

Solution

(d) is the right answer. The idiom PADDLE ONE'S OWN CANOE means to take independent decisions and do a task oneself.

Phrasal verbs/idioms

23. 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.

I (wore off) my shoes while running.

A -wore on
B -wore out
C -wore over
D -No Improvement

Solution

We need a phrasal verb that means to become unusable. WORE OUT will fit here. **Thus, (b) is the right answer.**

WORE ON and WORE OVER are grammatically incorrect. WORE OFF refers to the effect of a drug that is no longer effective.

Active/passive voice

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.

Have you finished your meal?

A -Has your meal been finished by you?
B -Have you finished the meal?
C -Have the homework been completed by you?
D -Passive form is not possible.

Solution

The sentence is in interrogative mood, active voice and present perfect tense. Follow the rules below to convert a sentence in interrogative mood to passive voice:

1. The subject clause will become the object clause. Here, the subject pronoun 'YOU' will change to the object of the verb and assume the object form 'YOU'.

2. The object 'YOUR MEAL' will become the subject and will come at the beginning of the sentence.

3. The helping verb 'HAVE' will change to 'HAS' in accordance with its subject 'YOUR MEAL' and will begin the interrogative sentence.

4. To form the passive voice construct, change 'FINISHED' to 'BEEN FINISHED'.

5. Add the conjunction 'BY' before 'YOU' to link the verb with its object.

Thus, (a) is the correct answer.

Reasoning ability

Alphabet series

25. Select the combination of letters that when sequentially placed in the gaps of the given letter series will complete the series.

p _ q r r _ t t u _ p q r r s _ t u p p _ r r s t _ u

A -psptqu
B -psqtut
C -qspsqu
D –psptqt

Solution

From option (d),

p p q r r s t t u / p p q r r s t t u / p p q r r s t t u

Hence, option d.

Counting the no.of figures

26. How many triangles are there in the following figure?

A -4
B -3
C -5
D -6

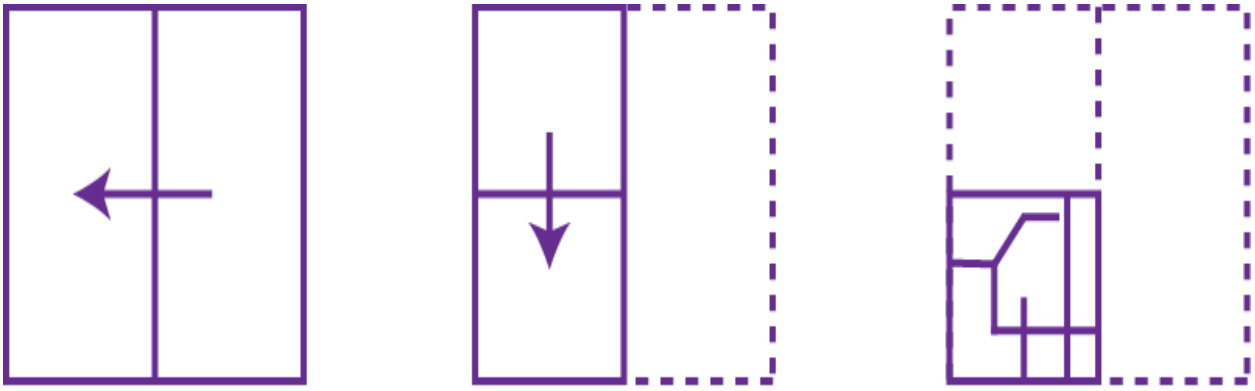
Solution

There are total 5 triangles present in the figure.

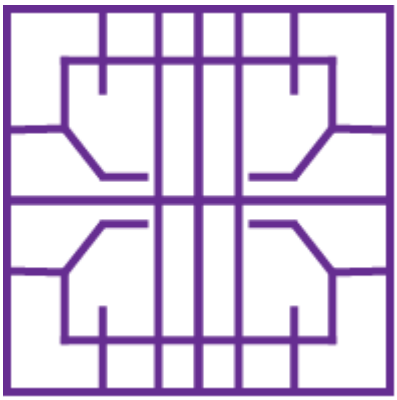
Hence, option c.

Paper folding

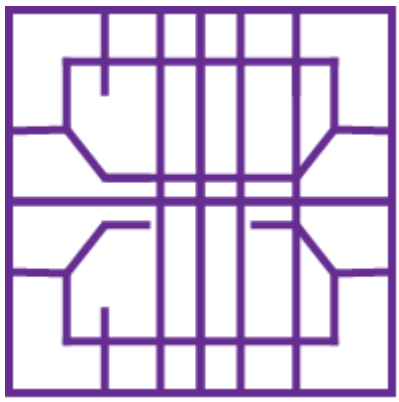
27. A square paper is folded and cut as shown below. How will it appear when unfolded?



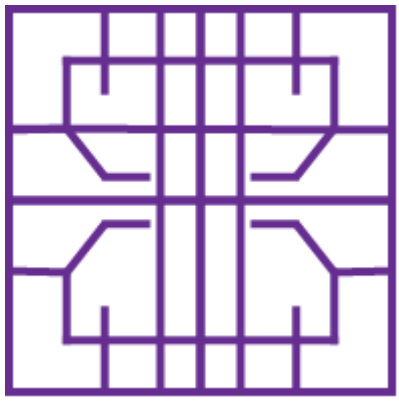
A -



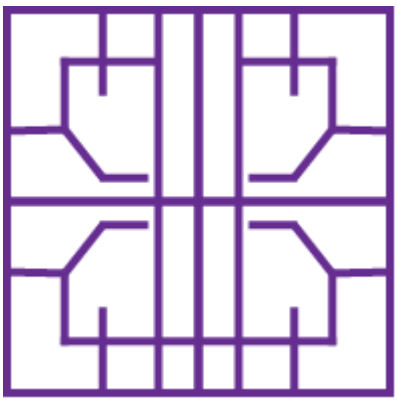
B -



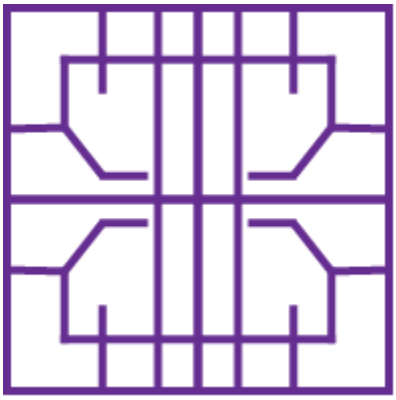
C -



D -



Solution



Hence, option a.

Mathematical operations(interchange of signs&numbers)

28. Which of the following “signs” are placed in place of “symbols” given in equation to make the equation true?

8 @ 3 # 2 – 7 × 4 ÷ 21 $ 2 ÷ 3 = 10

A -×, -, +
B -÷, +, ×
C -×, ÷, -
D -÷, ×, +

Solution

Given equation:

8 @ 3 # 2 – 7 × 4 ÷ 21 $ 2 ÷ 3 = 10

So, if place ×, ÷ and -, we get,

8 × 3 ÷ 2 – 7 × 4 ÷ 21 - 2 ÷ 3 = 10

Hence, option c.

Coding-decoding(matrix coding)

29. 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 20, 42 etc. and 'B' can be represented by 22, 43, 76 etc. Similarly, you have to identify the set of word 'VOLCANIC'.

Matrix - I

	0	1	2	3	4
0	P	N	R	C	O
1	W	P	V	S	L
2	A	H	B	C	U
3	Z	I	T	E	M
4	M	R	A	B	W

Matrix - II

	5	6	7	8	9
5	J	P	J	T	S
6	I	J	E	Y	P
7	L	B	C	N	V
8	F	Y	M	P	D
9	M	R	U	V	K

A -98, 04, 14, 32, 42, 01, 65, 77
B -12, 40, 14, 23, 42, 01, 65, 77
C -98, 04, 14, 23, 24, 10, 65, 77
D -98, 04, 14, 23, 42, 01, 65, 77

Solution

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

V	O	L	C	A	N	I	C
12, 98, 78	04	14, 75	03, 23, 77	20, 42	01, 78	31, 65	03, 23, 77

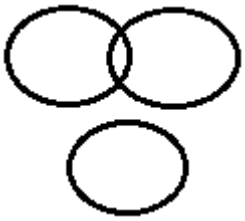
Hence, option d.

Logical venn diagrams type-1

30. Select the Venn diagram that best illustrates the relationship between the following classes:

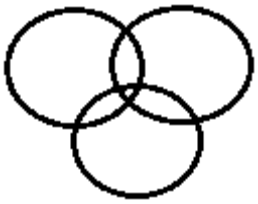
Worker, Boy, Employee

A -



B -

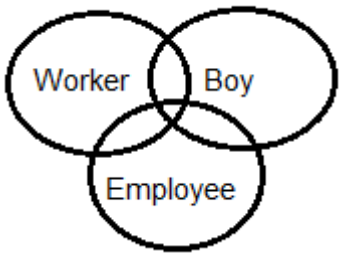
C -



D -

Solution

Following Venn diagram represents the relation between Worker, Boy, Employee



Hence, option c.

Missing no. series

31. Complete the given series.

7.1 ? 11 14.95 20.5

A -8.01
B -8.54
C -7.45
D -8.45

Solution

Given series:

7.1 8.45 11 14.95 20.5

1.35 2.55 3.95 5.55

1.2 1.4 1.6

0.2 0.2

Hence, option d.

Blood relations

32. If brother of L's mother's mother is the father of D's father. How is father-in-law of father of L related to D's mother's father in law?

A -Brother-in-law
B -Son-in-law
C -Brother
D –Uncle

Solution

Father-in-law of father of F is the brother-in-law of D's mother's father-in-law.

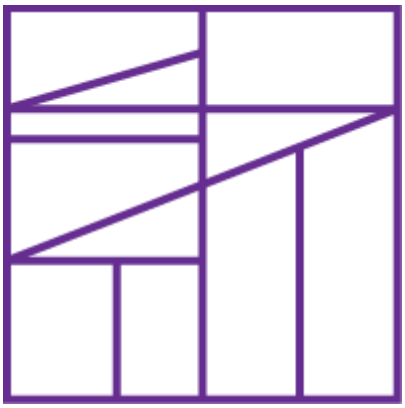
Hence, option a.

Mirror image

33. Identify the mirror image of the following figure when the mirror is placed to the right of the figure.

A -

B -

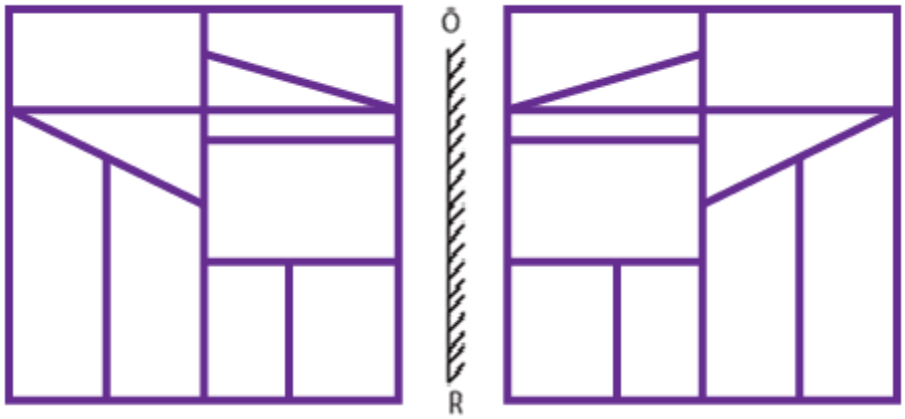


C -

D -

Solution

If mirror is placed to the right of the figure.



Hence, option d.

syllogisms

34. 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:

A few suns are earths.

No earths are mars.

All suns are moons.

Conclusions:

I. No mars are moons.

II. Mostly suns are not mars.

III. All earths are suns.

A -Only conclusion I follows

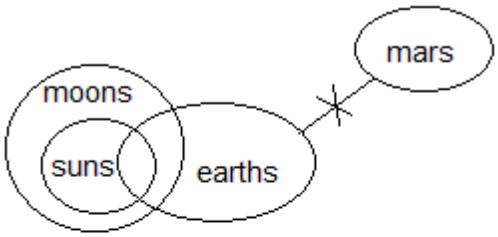
B -Only conclusion II follows

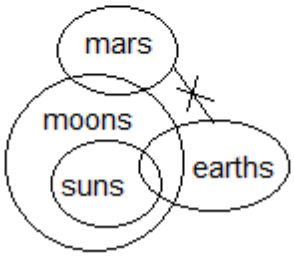
C -Conclusion II and conclusion III follow

D -Conclusion I and conclusion III follow

Solution

Following figure can be formed from the statements.



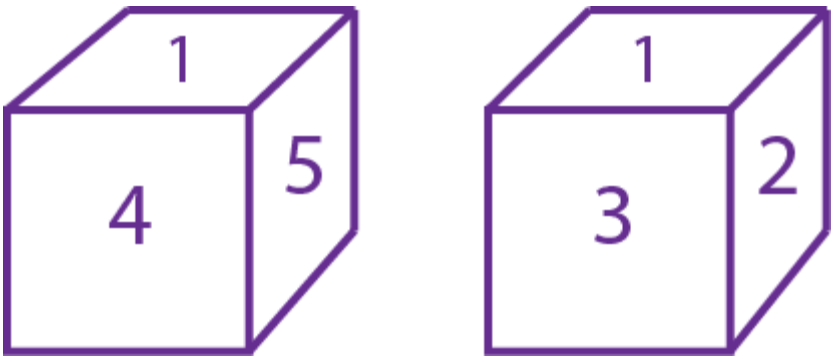


Only conclusion II follows.

Hence, option b.

Cubes&dices

35. Two positions of the same dice are given, which of the following number will be opposite to 1?



A -6
B -5
C -1
D -3

Solution

The number opposite to 1 would be '6'.

Hence, option a.

Classification (choose the odd numeral)

36. Three of the following four numbers are alike in a certain way and one is different. Pick the odd one out.

A -86
B -96
C -39
D -37

Solution

Among the given numbers, only 37 is a prime number.

Hence, option d.

Analogy(complete the analogous pair)

37. Select the option that is related to the third number in the same way as the second number is related to the first number.

290 : 17 :: ? : 19

A -360
B -359
C -326
D -362

Solution

$(290 – 1) = 17^2$

Similarly, $(362 – 1) = 19^2$

Hence, option d.

Coding-decoding(number/symbol coding)

38. 'DRAIN' will be coded as ____, if 'D' is coded as 4 and 'DIG' is coded as 20.

A -47
B -46
C -45
D -42

Solution

If 'D' is coded as 4, 'DIG' is coded as D(4) + I(9) + G(7) = 20, it means the letter are numbered as the alphabetical order, so 'DRAIN' is coded as D(4) + R(18) + A(1) + I(9) + N(14) = 46.

Hence, option b.

Coding-decoding(direct letter coding)

39. If 'KGLEJC' is coded as 'MINGLE' and 'BMLICW' is coded as 'DONKEY', then 'FLIGHTS' will be coded as ___?

A -HNIKJVU
B -HNJIKUV
C -HOKIKVU
D –HNKIJVU

Solution

If 'KGLEJC' is coded as 'MINGLE' and 'BMLICW' is coded as 'DONKEY', which means all the letters of the words are replaced by their second succeeding letters in the alphabetical series, so 'FLIGHTS' will be coded as 'HNKIJVU'.

Hence, option d.

Alphabet test(word formation using letters of a given word)

40. Which of the following word can't be formed from the letters of the word 'MULTIBRANCHED' from the given alternatives by using each letter only once?

A -DRAIN
B -LAMENT
C -MENTION
D –BRUTAL

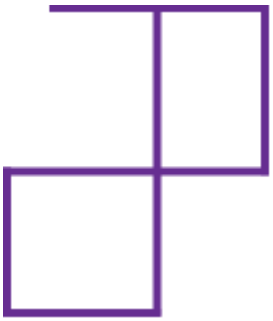
Solution

The word 'MENTION' can't be formed from the word 'MULTIBRANCHED' because there is no 'O' in the given word.

Hence, option c.

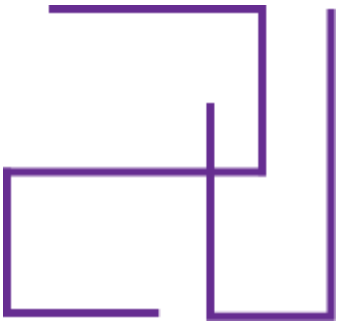
Spotting out the embedded figure

41. Select the figure in which the given figure is embedded.

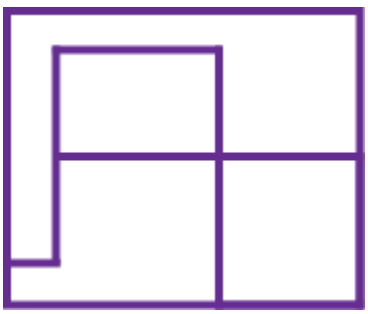


A -

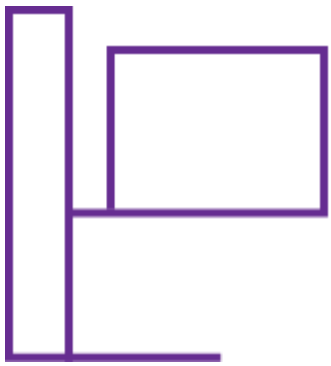
B -



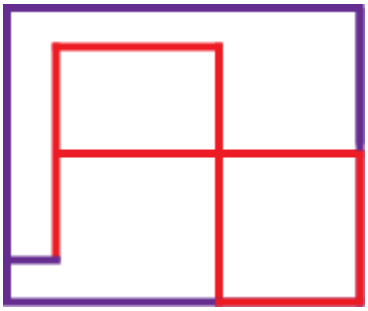
C -



D -



Solution



Hence, option c.

Alphabet test(alphabetical order of words)

42. Arrange the following words in the dictionary order:

1. College
2. Column
3. Cool
4. Character
5. Charm
6. Chair

7. Come

A -6, 4, 5, 1, 2, 7, 3
B -6, 4, 5, 2, 1, 7, 3
C -4, 6, 5, 1, 2, 7, 3
D -6, 4, 5, 1, 2, 3, 7

Solution

In the dictionary order:

6. Chair, 4. Character, 5. Charm, 1. College, 2. Column, 7. Come, 3. Cool

Hence, option a.

Floors based puzzle

(43-47) Directions: Answer the following questions based on the information given below:

Eleven persons A, B, C, D, E, F, G, H, I, J and K live on different floors of a building. Each of them like different colors among red, orange, purple, pink, yellow, magenta, green, white, grey, blue and black. Only one person lives on each floor. The bottommost floor is considered as 1st floor and the floor above it as 2nd floor and so on.

B lives three floors above the one, who likes yellow color.

H lives on bottommost floor and likes red color.

J lives on 8th floor and does not like purple or magenta color.

The one, who lives on 5th floor, likes pink color.

The one, who likes yellow color lives above the one, who likes pink color.

Equal number of persons live above and below C's floor.

F, who likes orange color, lives three floors below C's floor.

G lives just above E's floor but neither of them lives adjacent to B's floor.

K lives above I's floor but not on the topmost floor.

D likes black color but does not live adjacent to A's floor.

A likes green color and lives on an odd numbered floor.

The one, who likes blue color lives just below one, who likes black color but just above one, who likes white color.

43.Who among the following likes Purple color?

A -I
B -E
C -C
D -Cannot be determined

Solution

Now, B lives three floors above one, who likes yellow color. H lives on bottommost floor and likes red color. J lives on 8^{th} floor and does not like purple or magenta color. The one, who lives on 5^{th} floor, likes pink color. The one, who likes yellow color lives above the one, who likes pink color. Equal number of persons live above and below C's floor. F, who likes orange color, lives three floors below C's floor. So, there are three cases,

Floors	Case 1		Case 2		Case 3	
11^{th}	B					
10^{th}			B			
9^{th}					B	
8^{th}	J	Yellow	J	×purple, ×magenta	J	×purple, ×magenta
7^{th}				Yellow		

6th	C		C		C	Yellow
5th		Pink		Pink		Pink
4th						
3rd	F	Orange	F	Orange	F	Orange
2nd						
1st	H	Red	H	Red	H	Red

Now, G lives just above E's floor but neither live adjacent to B's floor. K lives above I's floor but not at the topmost floor. D likes black color but does not live adjacent to A's floor. The one, who likes blue color lives just below one, who likes black color but just above one, who likes white color. So, case 1 is rejected as B and D together can't live on the 11th floor. In case 2 and case 3, the persons, who like Black, Blue and White, live in 11th, 10th and 9th floor respectively. A likes green color and live on an odd numbered floor. So, case 2 is rejected as A cannot live on any floor.

So, the final table is shown below,

Floors	Persons	Colors
11th	D	Black
10th	K	Blue
9th	B	White
8th	J	Grey
7th	A	Green

6th	C	Yellow
5th	G	Pink
4th	E	Purple/Magenta
3rd	F	Orange
2nd	I	Magenta/Purple
1st	H	Red

Either I or E likes purple color.

Hence, option d.

44. Which color does J like?

A -Green
B -Grey
C -Pink
D –Yellow

Solution

Now, B lives three floors above one, who likes yellow color. H lives on bottommost floor and likes red color. J lives on 8th floor and does not like purple or magenta color. The one, who lives on 5th floor, likes pink color. The one, who likes yellow color lives above the one, who likes pink color. Equal number of persons live above and below C's floor. F, who likes orange color, lives three floors below C's floor. So, there are three cases,

Floors	Case 1	Case 2	Case 3

11th	B					
10th			B			
9th					B	
8th	J	Yellow	J	×purple, ×magenta	J	×purple, ×magenta
7th				Yellow		
6th	C		C		C	Yellow
5th		Pink		Pink		Pink
4th						
3rd	F	Orange	F	Orange	F	Orange
2nd						
1st	H	Red	H	Red	H	Red

Now, G lives just above E's floor but neither live adjacent to B's floor. K lives above I's floor but not at the topmost floor. D likes black color but does not live adjacent to A's floor. The one, who likes blue color lives just below one, who likes black color but just above one, who likes white color. So, case 1 is rejected as B and D together can't live on the 11th floor. In case 2 and case 3, the persons, who like Black, Blue and White, live in 11th, 10th and 9th floor respectively. A likes green color and live on an odd numbered floor. So, case 2 is rejected as A cannot live on any floor.

So, the final table is shown below,

Floors	Persons	Colors
11th	D	Black
10th	K	Blue
9th	B	White
8th	J	Grey
7th	A	Green
6th	C	Yellow
5th	G	Pink
4th	E	Purple/Magenta
3rd	F	Orange
2nd	I	Magenta/Purple
1st	H	Red

J likes Grey color.

Hence, option b.

45. How many persons live between the floors of F and A?

A -Ten
B -Three
C -Two
D –Four

Solution

Now, B lives three floors above one, who likes yellow color. H lives on bottommost floor and likes red color. J lives on 8th floor and does not like purple or magenta color. The one, who lives on 5th floor, likes pink color. The one, who likes yellow color lives above the one, who likes pink color. Equal number of persons live above and below C's floor. F, who likes orange color, lives three floors below C's floor. So, there are three cases,

Floors	Case 1		Case 2		Case 3	
11th	B					
10th			B			
9th					B	
8th	J	Yellow	J	×purple, ×magenta	J	×purple, ×magenta
7th				Yellow		
6th	C		C		C	Yellow
5th		Pink		Pink		Pink
4th						
3rd	F	Orange	F	Orange	F	Orange
2nd						
1st	H	Red	H	Red	H	Red

Now, G lives just above E's floor but neither live adjacent to B's floor. K lives above I's floor but not at the topmost floor. D likes black color but does not live adjacent to A's floor. The one, who likes blue color lives just below one, who likes black color but just above one, who likes white color. So, case 1 is rejected as B and D together can't live on the 11th floor. In case 2 and case 3, the persons, who like Black, Blue and White, live in 11th, 10th and 9th floor respectively. A likes green color and live on an odd numbered floor. So, case 2 is rejected as A cannot live on any floor.

So, the final table is shown below,

Floors	Persons	Colors
11th	D	Black
10th	K	Blue
9th	B	White
8th	J	Grey
7th	A	Green
6th	C	Yellow
5th	G	Pink
4th	E	Purple/Magenta
3rd	F	Orange
2nd	I	Magenta/Purple
1st	H	Red

Three persons live between the floors of F and A.

Hence, option b.

46. How many persons live above J's floor?

A -Three
B -Two
C -One
D –Four

Solution

Now, B lives three floors above one, who likes yellow color. H lives on bottommost floor and likes red color. J lives on 8th floor and does not like purple or magenta color. The one, who lives on 5th floor, likes pink color. The one, who likes yellow color lives above the one, who likes pink color. Equal number of persons live above and below C's floor. F, who likes orange color, lives three floors below C's floor. So, there are three cases,

Floors	Case 1		Case 2		Case 3	
11th	B					
10th			B			
9th					B	
8th	J	Yellow	J	×purple, ×magenta	J	×purple, ×magenta
7th				Yellow		
6th	C		C		C	Yellow

5th		Pink		Pink		Pink
4th						
3rd	F	Orange	F	Orange	F	Orange
2nd						
1st	H	Red	H	Red	H	Red

Now, G lives just above E's floor but neither live adjacent to B's floor. K lives above I's floor but not at the topmost floor. D likes black color but does not live adjacent to A's floor. The one, who likes blue color lives just below one, who likes black color but just above one, who likes white color. So, case 1 is rejected as B and D together can't live on the 11th floor. In case 2 and case 3, the persons, who like Black, Blue and White, live in 11th, 10th and 9th floor respectively. A likes green color and live on an odd numbered floor. So, case 2 is rejected as A cannot live on any floor.

So, the final table is shown below,

Floors	Persons	Colors
11th	D	Black
10th	K	Blue
9th	B	White
8th	J	Grey
7th	A	Green
6th	C	Yellow

5th	G	Pink
4th	E	Purple/Magenta
3rd	F	Orange
2nd	I	Magenta/Purple
1st	H	Red

Three persons live above J's floor.

Hence, option a.

47. Who lives just below D's floor?

A -K
B -B
C -G
D –E

Solution

Now, B lives three floors above one, who likes yellow color. H lives on bottommost floor and likes red color. J lives on 8th floor and does not like purple or magenta color. The one, who lives on 5th floor, likes pink color. The one, who likes yellow color lives above the one, who likes pink color. Equal number of persons live above and below C's floor. F, who likes orange color, lives three floors below C's floor. So, there are three cases,

Floors	Case 1		Case 2		Case 3	
11th	B					

10th			B			
9th					B	
8th	J	Yellow	J	×purple, ×magenta	J	×purple, ×magenta
7th				Yellow		
6th	C		C		C	Yellow
5th		Pink		Pink		Pink
4th						
3rd	F	Orange	F	Orange	F	Orange
2nd						
1st	H	Red	H	Red	H	Red

Now, G lives just above E's floor but neither live adjacent to B's floor. K lives above I's floor but not at the topmost floor. D likes black color but does not live adjacent to A's floor. The one, who likes blue color lives just below one, who likes black color but just above one, who likes white color. So, case 1 is rejected as B and D together can't live on the 11th floor. In case 2 and case 3, the persons, who like Black, Blue and White, live in 11th, 10th and 9th floor respectively. A likes green color and live on an odd numbered floor. So, case 2 is rejected as A cannot live on any floor.

So, the final table is shown below,

Floors	Persons	Colors

11th	D	Black
10th	K	Blue
9th	B	White
8th	J	Grey
7th	A	Green
6th	C	Yellow
5th	G	Pink
4th	E	Purple/Magenta
3rd	F	Orange
2nd	I	Magenta/Purple
1st	H	Red

K lives just below D's floor.

Hence, option a.

Pentagon based sitting arrangement

(48-51) Directions: Answer the questions based on the information given below:

Ten persons namely, P, Q, R, S, T, U, V, W, X and Y are sitting around the pentagon table. Two persons sit on each edge. Equal number of persons is facing towards the center and away from the centre. Not more than two adjacent persons face in same direction.

T sits third to the right of S.

W sits to the immediate right of P on the same edge.

V does not face away from the centre.

Two persons sit between S and R.

X sits to the immediate left of R but not on the same edge.

T and P face in same direction.

Y sits to the immediate right of U and both face in same direction.

Y is not adjacent to X or R.

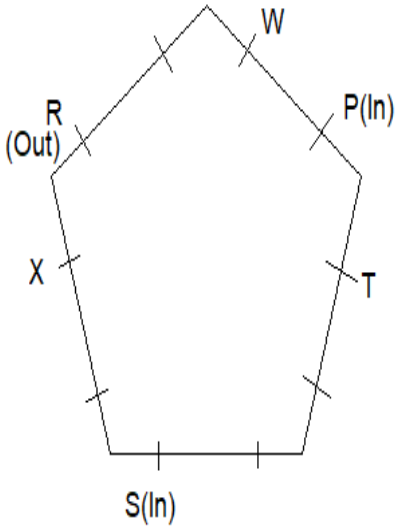
Q is not adjacent to S, who faces in same direction as V.

48.Who among the following sits to the immediate left of P?

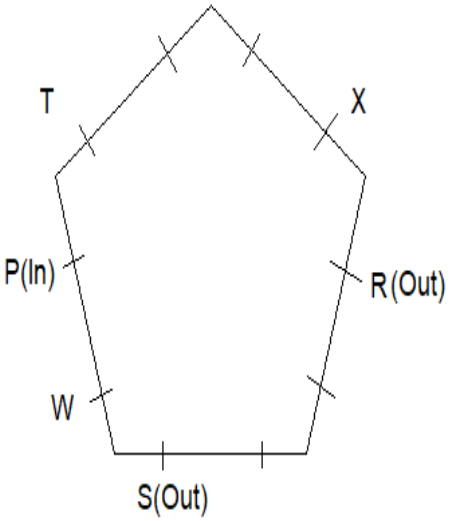
A -U
B -T
C -X
D –V

Solution

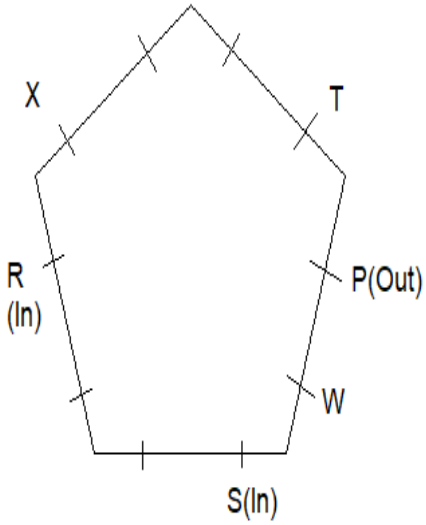
Now, T sits third to the right of S. W sits to the immediate right of P on the same edge. V does not face away from the centre. Two persons sit between S and R. X sits to the immediate left of R but not on the same edge. So, there are four cases,



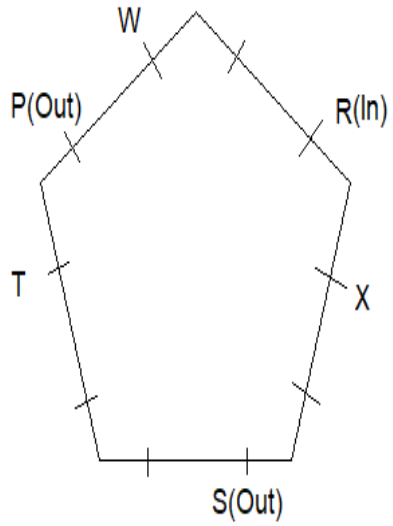
Case 1(a)



Case 1(b)



Case 2(a)

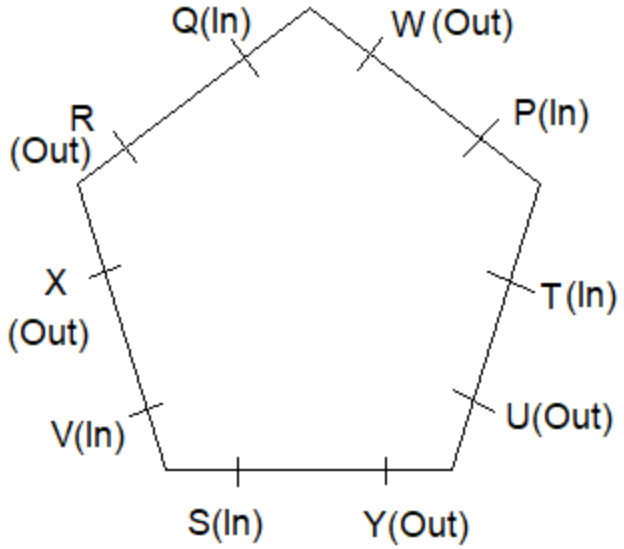


Case 2(b)

--

Now, T and P face in same direction. Y sits immediate right of U and both face in same direction. Y is not adjacent to X or R. So, case 1(b) and 2(a) are rejected. Q is not adjacent to S, who face in same direction as V. So, case 2(b) is rejected.

The final table is shown below,



T sits to the immediate left of V.

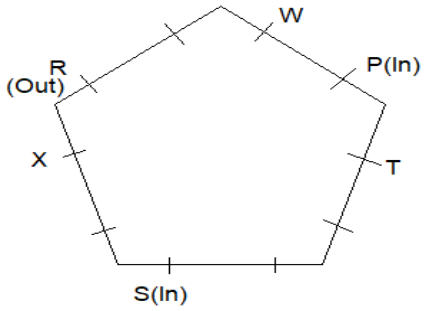
Hence, option b.

49. Who sits third to the left of R?

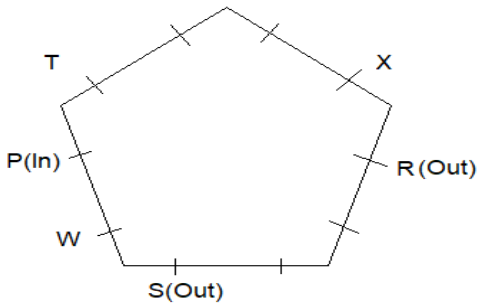
A -Y
B -U
C -S
D –P

Solution

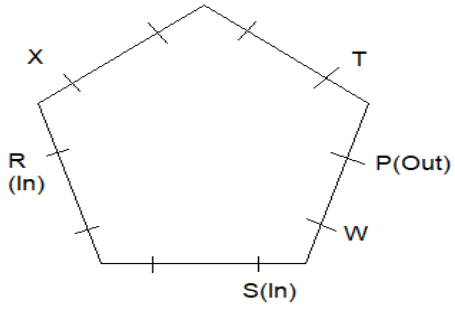
Now, T sits third to the right of S. W sits to the immediate right of P on the same edge. V does not face away from the centre. Two persons sit between S and R. X sits to the immediate left of R but not on the same edge. So, there are four cases,



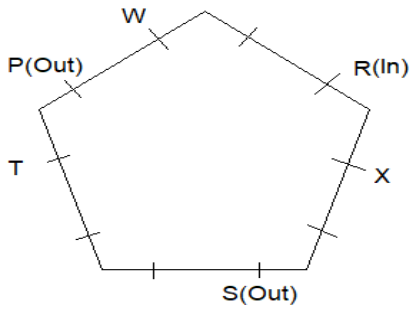
Case 1(a)



Case 1(b)



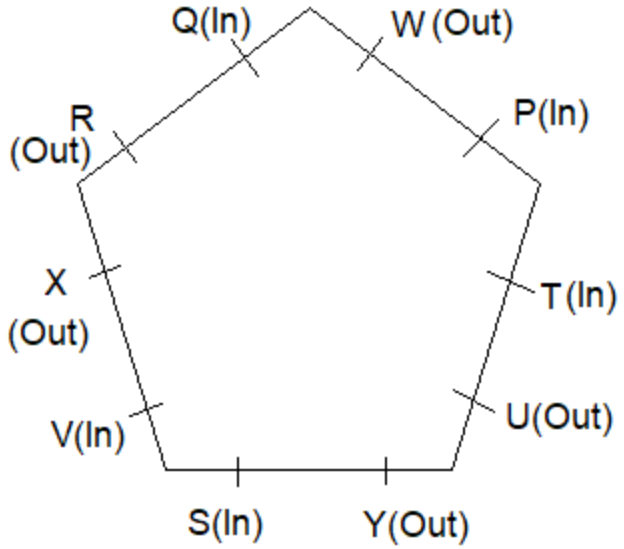
Case 2(a)



Case 2(b)

Now, T and P face in same direction. Y sits immediate right of U and both face in same direction. Y is not adjacent to X or R. So, case 1(b) and 2(a) are rejected. Q is not adjacent to S, who face in same direction as V. So, case 2(b) is rejected.

The final table is shown below,



S sits third to the left of R.

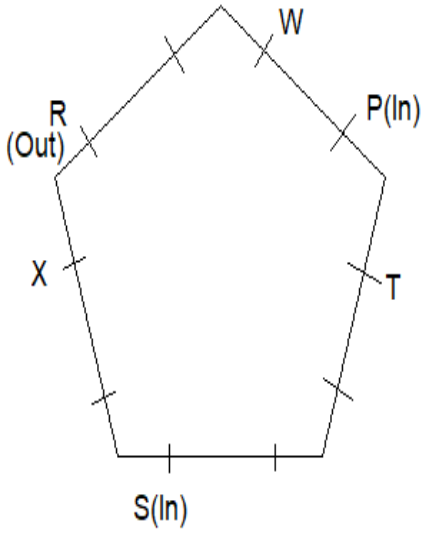
Hence, option c.

50. Find the odd one out.

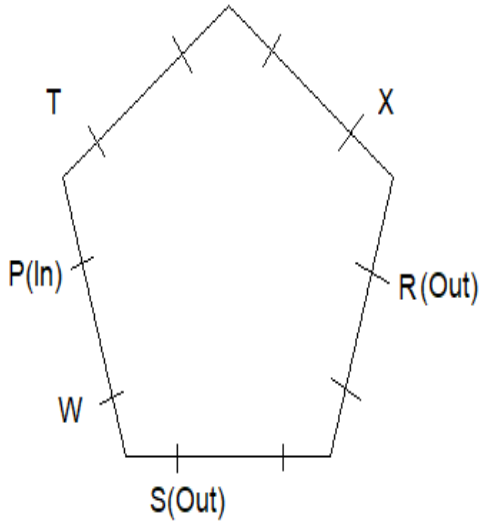
A -U, T
B -R, Q
C -X, V
D -R, P

Solution

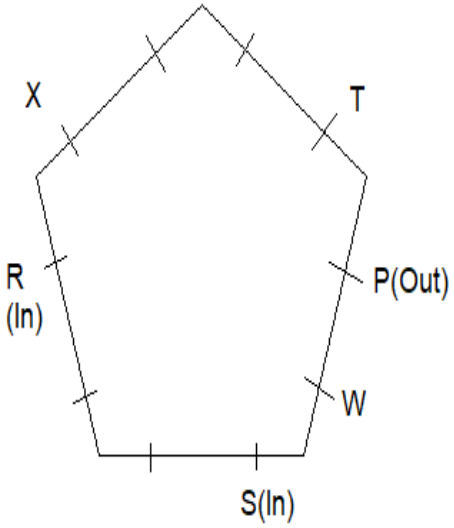
Now, T sits third to the right of S. W sits to the immediate right of P on the same edge. V does not face away from the centre. Two persons sit between S and R. X sits to the immediate left of R but not on the same edge. So, there are four cases,



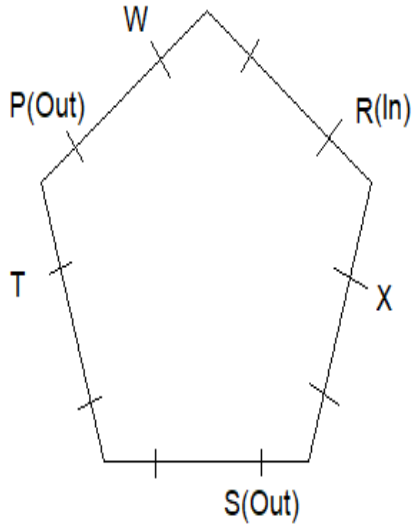
Case 1(a)



Case 1(b)



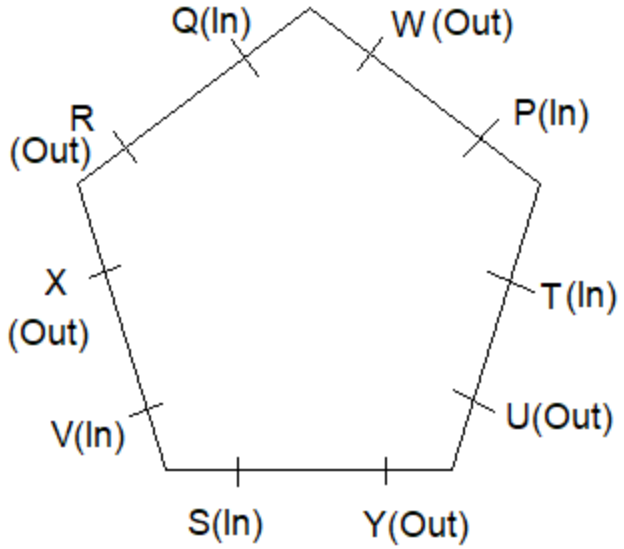
Case 2(a)



Case 2(b)

Now, T and P face in same direction. Y sits immediate right of U and both face in same direction. Y is not adjacent to X or R. So, case 1(b) and 2(a) are rejected. Q is not adjacent to S, who face in same direction as V. So, case 2(b) is rejected.

The final table is shown below,



All pairs sit on the same edge except (R, P).

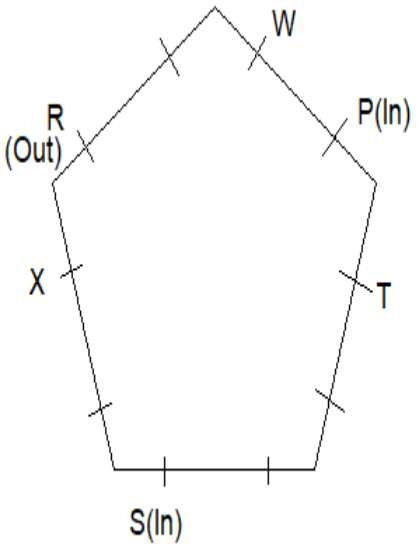
Hence, option d.

51. Who sits to the immediate right of Y?

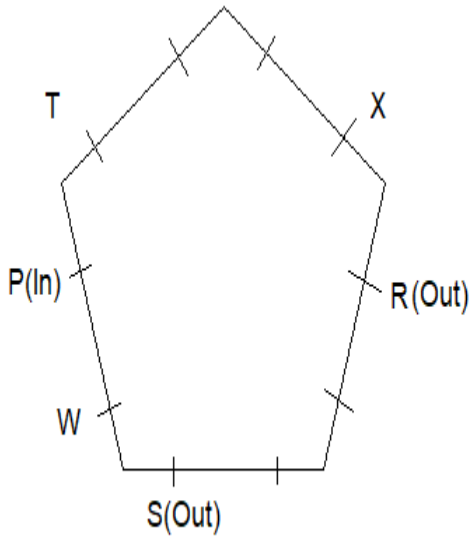
A -V
B -P
C -X
D –S

Solution

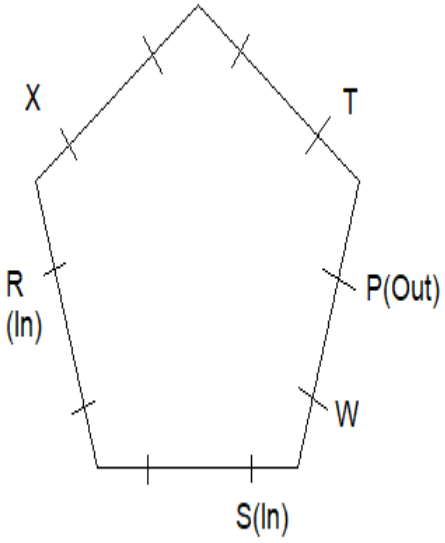
Now, T sits third to the right of S. W sits to the immediate right of P on the same edge. V does not face away from the centre. Two persons sit between S and R. X sits to the immediate left of R but not on the same edge. So, there are four cases,



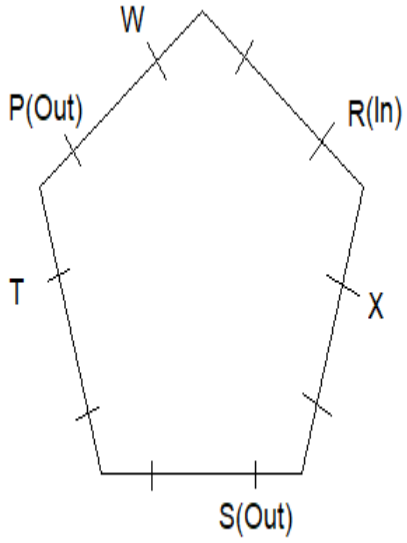
Case 1(a)



Case 1(b)



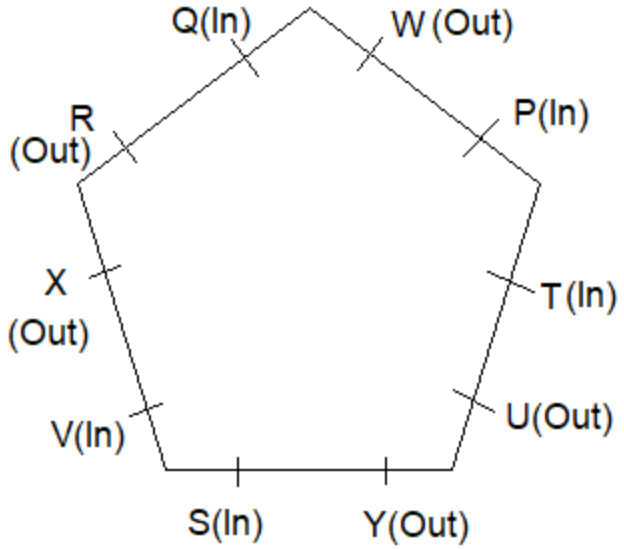
Case 2(a)



Case 2(b)

Now, T and P face in same direction. Y sits immediate right of U and both face in same direction. Y is not adjacent to X or R. So, case 1(b) and 2(a) are rejected. Q is not adjacent to S, who face in same direction as V. So, case 2(b) is rejected.

The final table is shown below,



S sits to the immediate right of Y.

Hence, option d.

Sequential order of things based puzzle

(52-54) Directions: Answer the questions based on the information given below:

Six persons P, Q, R, S, T and U goes from Delhi to Mumbai on a trip on different dates among 4th, 6th, 9th, 19th, 24th and 29th October. Each of them uses different modes among bus, bike, airplane, scooter, train and cycle.

S goes by scooter but not on 4th October.

U goes on 29th October but not by cycle or airplane.

R goes 5 days after the one, who goes by train.

Neither P nor T goes by train.

One person goes on a trip by bus on 6th October.

T does not go by bus.

S goes before T.

52.Who among the following goes by Train?

A -R
B -S
C -Q
D –U

Solution

Now, S goes only by scooter but not on 4th October. U goes on 29th October but not by cycle or airplane. R goes 5 days after the one, who goes by train. Neither P nor T goes by train. So, there are two cases,

Persons	Case 1		Case 2	
P				
Q	Train	19th	Train	4th
R		24th		9th
S	Scooter	× 4th	Scooter	× 4th
T				
U	× cycle, airplane	29th	× cycle, airplane	29th

Now, one person goes on a trip by bus on 6th October. T does not go by bus. S goes before T. So, case 1 is rejected as S does not go on 4th October.

The final table is shown below,

Persons	Modes	Dates
P	Bus	6th
Q	Train	4th
R	Cycle/Airplane	9th
S	Scooter	19th
T	Cycle/Airplane	24th
U	Bike	29th

Q goes by train.

Hence, option c.

53. How many persons go on a trip after S?

A -Three
B -One
C -Two
D –Four

Solution

Now, S goes only by scooter but not on 4th October. U goes on 29th October but not by cycle or airplane. R goes 5 days after the one, who goes by train. Neither P nor T goes by train. So, there are two cases,

Persons	Case 1		Case 2	
P				

Q	Train	19th	Train	4th
R		24th		9th
S	Scooter	× 4th	Scooter	× 4th
T				
U	× cycle, airplane	29th	× cycle, airplane	29th

Now, one person goes on a trip by bus on 6th October. T does not go by bus. S goes before T. So, case 1 is rejected as S does not go on 4th October.

The final table is shown below,

Persons	Modes	Dates
P	Bus	6th
Q	Train	4th
R	Cycle/Airplane	9th
S	Scooter	19th
T	Cycle/Airplane	24th
U	Bike	29th

Two persons go on a trip after S.

Hence, option c.

54. One which date does Q go on a trip?

A -9th
B -24th
C -6th
D -4th

Solution

Now, S goes only by scooter but not on 4th October. U goes on 29th October but not by cycle or airplane. R goes 5 days after the one, who goes by train. Neither P nor T goes by train. So, there are two cases,

Persons	Case 1		Case 2	
P				
Q	Train	19th	Train	4th
R		24th		9th
S	Scooter	× 4th	Scooter	× 4th
T				
U	× cycle, airplane	29th	× cycle, airplane	29th

Now, one person goes on a trip by bus on 6th October. T does not go by bus. S goes before T. So, case 1 is rejected as S does not go on 4th October.

The final table is shown below,

Persons	Modes	Dates
P	Bus	6th
Q	Train	4th

R	Cycle/Airplane	9th
S	Scooter	19th
T	Cycle/Airplane	24th
U	Bike	29th

Q goes on a trip on 4th October.

Hence, option d.

Numerical ability

Caselet on percentages,ratios&proportions

(55-58) Directions: Answer the questions based on the information given below.

Four jewellers namely Mahesh, Suresh, Ramesh and Mukesh sold different number of gold rings and silver rings. Total number of rings (gold and silver) sold by Mahesh is 250 which is (200/3)% more than total number of rings sold by Mukesh. Ratio of number of gold rings to silver rings sold by Mahesh is 2:3. Number of gold rings and silver rings sold by Ramesh is 80% more and 20% less than the same sold by Mahesh. Ratio of the number of gold rings sold by Suresh and Ramesh is 25:36, respectively and the ratio of number of gold and silver rings sold by Suresh is 5:3, respectively. Number of gold rings sold by Mukesh is 15 more than the number of silver rings sold by Suresh.

55.What is the total number of rings sold by all the four jewellers together?

A -800
B -900
C -880
D -920

Solution

Total number of rings sold by Mukesh = 250/(1 + 2/3) = 150

Number of gold rings sold by Mahesh = 2/5 × 250 = 100

Number of Silver rings sold by Mahesh = 250 – 100 = 150

Number of gold rings sold by Ramesh = 1.8 × 100 = 180

Number of silver rings sold by Ramesh = 0.8 × 150 = 120

Number of gold rings sold by Suresh = 25/36 × 180 = 125

Number of Silver rings sold by Suresh = 3/5 × 125 = 75

Number of gold rings sold by Mukesh = 15 + 75 = 90

Number of silver rings sold by Mukesh = 150 – 90 = 60

Jewellers	Number of gold rings sold	Number of silver rings sold	Total number of rings sold
Mahesh	100	150	250
Suresh	125	75	200
Ramesh	180	120	300
Mukesh	90	60	150
Total	495	405	900

Total number of rings sold by all the four jewellers together = 900

Hence, option b.

56. Number of gold rings sold by Mukesh is what percent of total number of rings sold by all four together?

A -10%
B -12%
C -15%
D -20%

Solution

Total number of rings sold by Mukesh = 250/(1 + 2/3) = 150

Number of gold rings sold by Mahesh = 2/5 × 250 = 100

Number of Silver rings sold by Mahesh = 250 – 100 = 150

Number of gold rings sold by Ramesh = 1.8 × 100 = 180

Number of silver rings sold by Ramesh = 0.8 × 150 = 120

Number of gold rings sold by Suresh = 25/36 × 180 = 125

Number of Silver rings sold by Suresh = 3/5 × 125 = 75

Number of gold rings sold by Mukesh = 15 + 75 = 90

Number of silver rings sold by Mukesh = 150 – 90 = 60

Jewellers	Number of gold rings sold	Number of silver rings sold	Total number of rings sold
Mahesh	100	150	250
Suresh	125	75	200
Ramesh	180	120	300
Mukesh	90	60	150
Total	495	405	900

Desired Percentage = 90/900 × 100 = 10%

Hence, option a.

57. What is the total number of rings sold by Suresh?

A -300
B -225
C -250
D -200

Solution

Total number of rings sold by Mukesh = 250/(1 + 2/3) = 150

Number of gold rings sold by Mahesh = 2/5 × 250 = 100

Number of Silver rings sold by Mahesh = 250 – 100 = 150

Number of gold rings sold by Ramesh = 1.8 × 100 = 180

Number of silver rings sold by Ramesh = 0.8 × 150 = 120

Number of gold rings sold by Suresh = 25/36 × 180 = 125

Number of Silver rings sold by Suresh = 3/5 × 125 = 75

Number of gold rings sold by Mukesh = 15 + 75 = 90

Number of silver rings sold by Mukesh = 150 – 90 = 60

Jewellers	Number of gold rings sold	Number of silver rings sold	Total number of rings sold
Mahesh	100	150	250
Suresh	125	75	200
Ramesh	180	120	300

Mukesh	90	60	150
Total	495	405	900

Total number of rings sold by Suresh = 200

Hence, option d.

58. What is the average number of gold rings sold by Mahesh and Ramesh together?

A -150
B -120
C -140
D -130

Solution

Total number of rings sold by Mukesh = 250/(1 + 2/3) = 150

Number of gold rings sold by Mahesh = 2/5 × 250 = 100

Number of Silver rings sold by Mahesh = 250 – 100 = 150

Number of gold rings sold by Ramesh = 1.8 × 100 = 180

Number of silver rings sold by Ramesh = 0.8 × 150 = 120

Number of gold rings sold by Suresh = 25/36 × 180 = 125

Number of Silver rings sold by Suresh = 3/5 × 125 = 75

Number of gold rings sold by Mukesh = 15 + 75 = 90

Number of silver rings sold by Mukesh = 150 – 90 = 60

Jewellers	Number of gold rings sold	Number of silver rings sold	Total number of rings sold

Mahesh	100	150	250
Suresh	125	75	200
Ramesh	180	120	300
Mukesh	90	60	150
Total	495	405	900

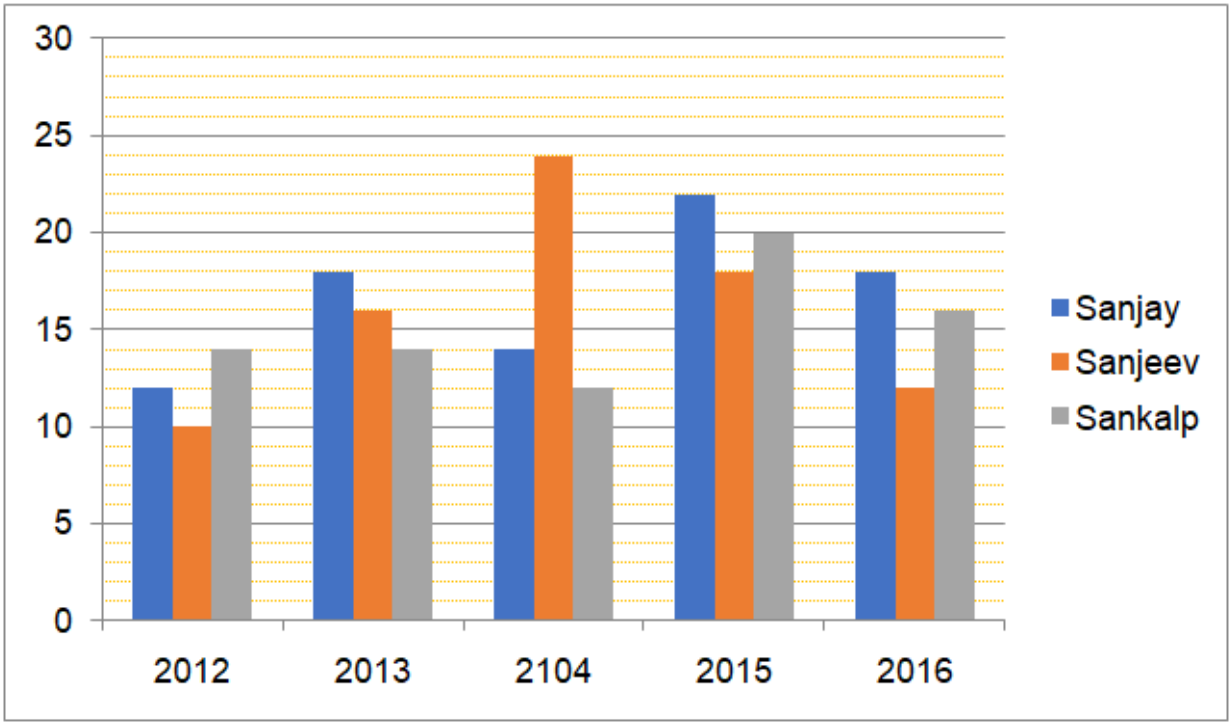
Desires average = (100 + 180)/2 = 140

Hence, option c.

Data interpretation(Bar graphs on absolute values)

(59-60) Directions: Answer the questions based on the information given below.

The bar graph given below shows the monthly income of 3 different persons (in thousands) over five different years.



59.In 2012 and 2013 together, what is the average monthly income of Sanjay, Sanjeev and Sankalp?

A -Rs. 28000
B -Rs. 24000
C -Rs. 26000
D -Rs. 29000

Solution

Average monthly income of Sanjay, Sanjeev and Sankalp in 2012 and 2013 together = (12 + 18 + 10 + 16 + 14 + 14)/3 = 84/3 = 28 × 1000 = RS. 28000

Hence, option a.

60. **Sanjeev saved 23% and 28% of his monthly income in 2014 and 2015, respectively. Find his total savings over these two years?**

A -Rs. 11400
B -Rs. 10200

C -Rs. 10560
D -Rs. 12800

Solution

Total savings of Sanjeev over these two years = 0.23 × 24000 + 0.28 × 18000= 5520 + 5040 = Rs. 10560

Hence, option c.

Time&work

61. 'A' takes 4 days less than 'B' who can complete 1/6th of the work in 4 days. Both of them started the work together and worked for 6 days. What fraction of work is left?

A -6/25
B -7/15
C -9/20
D -2/15

Solution

Time taken by 'B' to complete the work = 4 × 6 = 24 days

Therefore, time taken by 'A' to complete the work = 24 – 4 = 20 days

Let the total work = 120 units

Efficiency of 'A' = 120/20 = 6 units/day

Efficiency of 'B' = 120/24 = 5 units/day

Amount of work completed by them in 6 days = 6 × (5 + 6) = 66 units

Therefore, fraction of work left = 1 – (66/120) = 9/20

Hence, option c.

Ratios&proportions

62. In an interview, the ratio of the number of qualified to disqualified candidates is 12:5. If 40 less candidates had applied and 10 more qualified, then the ratio of qualified to disqualified candidates would have been 5:1. Find the number of candidates who were interviewed.

A -510
B -300
C -340
D -420

Solution

Let the number of candidates qualified and disqualified be 12x and 5x, respectively.

Therefore, total number of candidates interviewed = (12x + 5x) = 17x

According to the question,

Total number of candidates interviewed = (17x – 40)

Number of qualified candidates = (12x + 10)

Number of disqualified candidates = 17x – 40 – 12x – 10 = (5x – 50)

According to the question,

(12x + 10)/(5x – 50) = 5/1

Or, 12x + 10 = 25x – 250

Or, x = 260/13 = 20

Therefore, total number of candidates interviewed = 17x = 340

Hence, option c.

Profit&loss

63. An electric shop owner purchased a fan and a cooler. He sold the cooler at 15% loss and fan at 25% profit. If the shop owner had purchased the fan for Rs. 512 less than the cooler, and the selling price of fan and cooler is same, then find the selling price of the fan.

A -Rs. 1360
B -Rs. 1520
C -Rs. 1640
D -Rs. 1460

Solution

Let the cost price of the cooler be Rs. x

Therefore, selling price of the cooler = Rs. 0.85x

Cost price of the fan = 0.85x/1.25 = Rs. 0.68x

According to the question,

(x – 0.68x) = 512

Or, x = 512/0.32 = Rs. 1600

Therefore, selling price of the fan = 0.85x = Rs. 1360

Hence, option a.

Problems on numbers

64. **Two numbers 'a' and 'b' are 10% and 20% less than the third number 'c'. By how much percent 'b' should be increased to make it equal to 'a'.**

A -20%
B -12.5%
C -15%
D -10%

Solution

Let ‘c’ = ‘x’

Therefore, a = 0.9x

And, b = 0.8x

Required percentage = {(0.9x – 0.8x)/0.8x} × 100 = 12.5%

Hence, option b.

Time&distance

65. Two cars ‘A’ and ‘B’ are travelling from one city to another. The speed of car ‘A’ and ‘B’ is 40 km/hr and 75 km/hr respectively. If car ‘A’ takes 1 hour and 45 minutes more than ‘B’ to reach the destination, then find the distance between the two cities.

A -240 km
B -150 km
C -120 km
D -180 km

Solution

1 hours 45 minutes = 1.75 hours

Let the distance between the two cities be ‘D’ km

According to the question,

(D/40) – (D/75) = 1.75

Or, (15D – 8D) = 1.75 × 600

Or, D = 1050/7 = 150 km

Hence, option b.

Compound interest

66. At what rate of compound interest will be a sum of Rs. 16150 will amounts to Rs. 31654 in 2 years.

A -20% p.a.
B -30% p.a.
C -25% p.a.
D -40% p.a.

Solution

Let the rate of interest be r% p.a.

According to the question,

$16150(1 + r/100)^2 = 31654$

Or, $(1 + r/100)^2 = 49/25$

Or, $1 + r/100 = 7/5$

Or, r = 40% p.a.

Hence, option d.

averages

67. If the average cost of 8 shirts is Rs. 625, then find the new average cost if a shirt whose cost is Rs. 1300 is also purchased.

A -Rs. 690
B -Rs. 630
C -Rs. 720
D -Rs. 700

Solution

Required average cost = {(8 × 625) + 1300}/9 = Rs. 700

Hence, option d.

Time&work

68. ‘A’ can complete a piece of work in 30 days while ‘A’ and ‘B’ together can complete a work in 20 days. In how many days ‘B’ alone can complete the work?

A -60 days
B -40 days
C -45 days
D -50 days

Solution

Let the total work = 120 units

Efficiency of (A + B) = 120/20 = 6 units/day

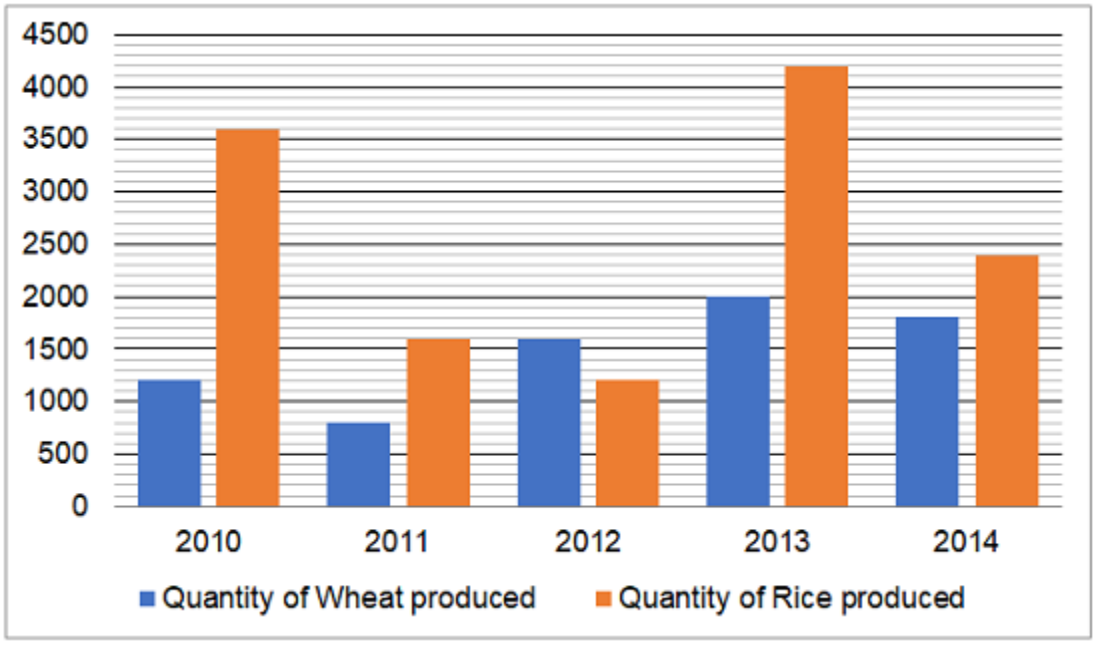
Efficiency of ‘A’ = 120/30 = 4 units/day

Therefore, number of days taken by ‘B’ alone = 120/(6 – 4) = 60 days

Hence, option a.

Bar graphs on absolute values

69. The given bar shows the quantity of wheat and rice produced (in metric tonnes) in five different years.



Find the average quantity of wheat (in metric tonnes) produced in all the five years.

A -1320 metric tonnes
B -1480 metric tonnes
C -1140 metric tonnes
D -1560 metric tonnes

Solution

Required average = (1200 + 800 + 1600 + 2000 + 1800)/5 = 1480 metric tonnes

Hence, option b.

Trigonometry

70. Find the simplified value of √{(1 – sinA)/(1 + sinA)}.

A -cotA - cosA
B -secA - tanA
C -1
D -sinA – tanA

Solution

Given, √(1 – sinA)/(1 + sinA)

= √{(1 – sinA)(1 – sinA)/(1 + sinA)((1 – sinA)

Or, (1 – sinA)/cosA = secA – tanA

Hence, option b.

Problems on numbers

71. 40% of a number when increased by 50, the resultant becomes 20% less than the original number. Find the original number.

A -125
B -140
C -175
D -180

Solution

Let the number be ‘x’

According to the question,

0.40x + 50 = 0.8x

Or, x = 50/0.4

Or, x = 125

Hence, option a.

Mixtures&allegations

72. 25% of a mixture of acetone and water contains 12 litres of water. The quantity of acetone is 12 litres less than that of water in the total mixture. Find the total quantity of the mixture.

A -72 litres
B -84 litres
C -65 litres
D -96 litres

Solution

Quantity of water in the total mixture = 12/0.25 = 48 litres

Quantity of acetone in the total mixture = 48 – 12 = 36 litres

Total quantity of the mixture = 48 + 36 = 84 litres

Hence, option b.

Discounts

73. An article is sold at Rs. 756 after giving two successive discounts of 16% and 25% respectively. If the article is marked up by Rs. 200 above its cost price, then find the cost price of the article.

A -Rs. 1200
B -Rs. 1500
C -Rs. 1000
D -Rs. 800

Solution

Marked price of the article = 756/(0.84 × 0.75) = Rs. 1200

Therefore, cost price of the article = 1200 – 200 = Rs. 1000

Hence, option c.

Problems on ages

74. The ratio of the present ages of Ram and Shyam is 9:5, respectively. The ratio of the age of Ram 3 years ago to the age of Shyam 3 years hence is 3:2. Find the present age of Ram.

A -45 years
B -30 years
C -24 years
D -36 years

Solution

Let the present age of Ram and Shyam be 9x years and 5x years respectively

According to the question,

$(9x – 3)/(5x + 3) = 3/2$

Or, $18x – 6 = 15x + 9$

Or, $x = 15/3 = 5$ years

Therefore, present age of Ram = $9x = 45$ years

Hence, option a.

Simple interest-compound interest

75. A certain sum when invested at 30% p.a. simple interest for 5 years the interest received is Rs. 2100. Find the interest received when the same sum is invested at same rate at compound interest, compounded annually for 2 years.

A -Rs. 966
B -Rs. 814
C -Rs. 720
D -Rs. 680

Solution

Let the sum invested at simple interest be Rs. x

Therefore, (x × 30 × 5)/100 = 2100

Or, x = Rs. 1400

Therefore, interest received at compound interest = $1400(1 + 30/100)^2 – 1400$ = Rs. 966

Hence, option a.

Problems on numbers

76. When a two-digit number is increased by 27, the digits get reversed. The sum of the digits is 9. Find the original number.

A -28
B -42
C -36
D -45

Solution

Let the unit and ten's digit be 'x' and 'y' respectively

Two-digit number = (10y + x)

According to the question,

10y + x – 10x – y = -27

Or, y – x = -3…… (1)

And, x + y = 9……. (2)

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

x = 6 and y = 3

Therefore, required number = 10y + x = 36

Hence, option c.

Problems on numbers

77. 45% of a number is 3 more than 50% of another number. The sum of the two numbers is 260. Find the larger number.

A -180
B -120
C -140
D -160

Solution

Let the numbers be ‘a’ and ‘b’ respectively

According to the question,

0.45a – 0.5b = 3….. (1)

And, a + b = 260…… (2)

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

a = 140 and b = 120

So, larger number = 140

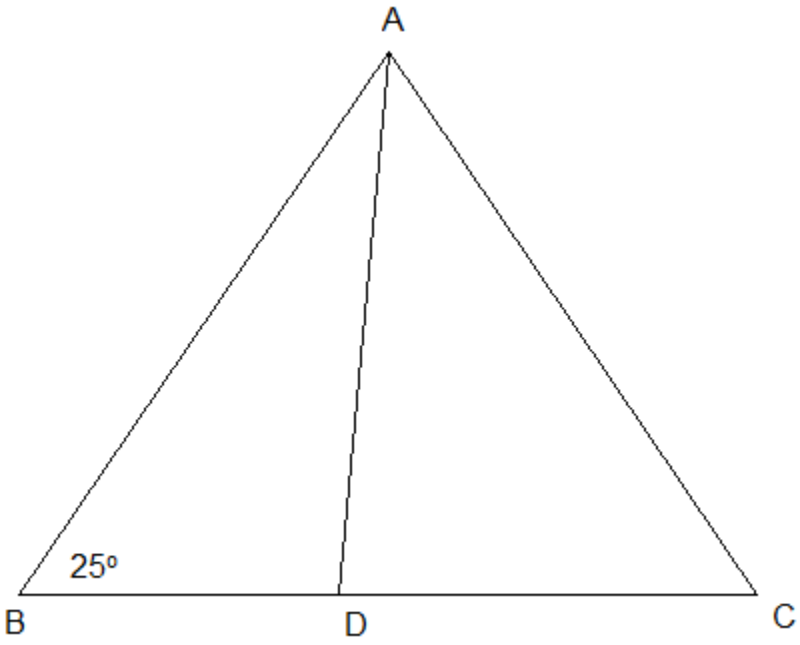
Hence, option c.

Geometry(Triangles)

78. In a ΔABC, D is a point on BC. If ∠ABD = 25° and AD = BD, then find the value of ∠ADB.

A -120°
B -150°
C -130°
D -100°

Solution



In ΔABD,

AD = BD

∠ABD = ∠DAB = 25°

Therefore, ∠ADB = 180° – (25° + 25°) = 130°

Hence, option c.

HCF&LCM of numbers

79. If $(15x^3 + 28x^2 + 24x + k)$ is divisible $(3x + 2)$, then find the value of k.

A -6
B -8
C -10
D -5

Solution

Since, $(15x^3 + 28x^2 + 24x + k)$ is divisible by $(3x + 2)$

Therefore, at $x = (-2/3)$, the value of the given expression will be 0.

Or, $(-2/3)\{15 \times (4/9) + 28 \times (-2/3) + 24\} + k = 0$

Or, $-8 + k = 0$

Or, $k = 8$

Hence, option b.

Trigonometry

80. If sinx = 45/53, then find the value of secx + tanx.

A -7/2
B -5/2
C -8/5
D -None of these

Solution

Given, $\sin x = 45/53 = p/h$

Therefore, $b = \sqrt{(53^2 - 45^2)} = 28$

Or, $\sec x + \tan x = 53/28 + 45/28 = 7/2$

Hence, option a.

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