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## ANSWERS & EXPLANATIONS

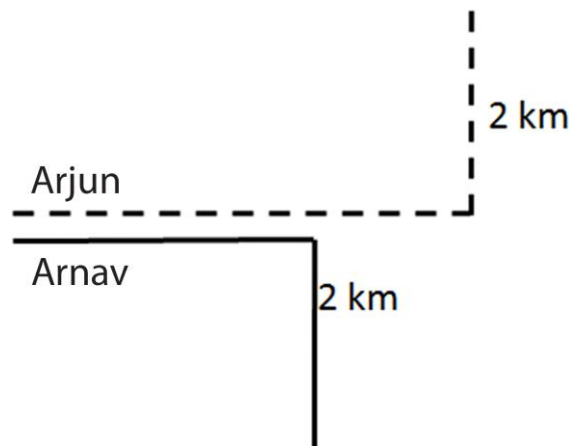
### GENERAL STUDIES (P) TEST – 4290 (2024)

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1 (c)

The speed at which Arjun and Arnav travel is not mentioned in the question. Hence, it must be wrong to assume that they travel at the same speed.

The following picture represents the possible course of motion of Arjun and Arnav.



The exact distance between the destination of Arjun and Arnav cannot be known without knowing their respective speeds.

Hence, option (c) is the correct answer.

2 (a)

**Assumption 1 is incorrect:** It would not be correct to state that democracy is the worst form of government. The line “*Why does Plato not consider democracy the best form of government?*” only shows that Plato believed that democracy is not the best form of government, but it does not mean that it is the worst form of government. Hence, this assumption is not correct.

**Assumption 2 is correct:** The given assumption is based on the following lines - “*Secondly, equality (inherent in democracy), ... motivated by personal gain rather than the public good. Democracy is thus highly corruptible. It opens gates to demagogues, and potential dictators, and can thus lead to tyranny.*” These lines show that as a result of democracy, people with personal interests can become leaders, making democracy prone to tyranny or authoritarianism. Hence, this assumption is correct as per the passage.

**Assumption 3 is correct:** The lines “*In the Republic, he criticizes the direct and unchecked democracy of his time precisely because of its leading features. Firstly, although freedom is for Plato a true value, democracy involves the danger of excessive freedom ... Secondly, equality, ... motivated by personal gain rather than the public good*” show that freedom and equality are leading features of democracy. Hence, this assumption is correct.

3 (b)

**Option (a) is incorrect:** Fulfilling energy demands from fossil fuels is possible (doable) in the short term as seen in the lines “*Whether it meets those needs with fossil fuels or green alternatives has the potential to shift the trajectory of its greenhouse gas emissions for many more years to come. ... but with current policies total GHG emissions would nonetheless increase (possibly via fossil fuels) by more than 40 per cent by 2030.*” However, in the long term, it is unsustainable as seen in the line “*more rapid scaling up of*”

current policies could help lower emissions considerably over the medium term and **bring India closer to a path to net zero (not possible with fossil fuels) by 2070.**” So, the given statement is not correct as per the passage.

**Option (b) is correct:** The given option is based on the following lines from the passage “*India has made significant progress towards meeting its emissions reductions targets under the Paris Agreement, but with current policies total GHG emissions would nonetheless increase by more than 40 per cent by 2030. While a modest increase in short-term emissions may be necessary to meet poverty reduction and energy security goals ...*” These lines show that if poverty reduction and energy security are to be achieved then it would lead to increased GHG emissions. Hence, achieving the triple goals of poverty reduction and GHG reduction in tandem with boosting energy security is not possible in the short term.

**Option (c) is incorrect:** The given statement is contradictory to the lines “*India has made significant progress towards meeting its emissions reduction targets under the Paris Agreement, but with current policies total GHG emissions would nonetheless increase by more than 40 per cent by 2030.*” This shows that instead of reducing GHG emissions for meeting international obligations, these might increase due to domestic reasons. Hence, it would not be correct to say that current policies are sufficient to fulfil the international commitments.

**Option (d) is incorrect:** The given statement is not correct because of the following lines “*It’s also poised to be one of the fastest-growing economies in coming years, which will in turn sharply boost energy demand. Whether it meets those needs with fossil fuels or green alternatives has the potential to shift the trajectory of its greenhouse gas emissions for many more years to come.*” These lines show that it is not clear whether green energy or fossil fuels will be used to meet the energy demands of the fast-growing economy. Hence, it would not be correct to say that energy from green sources is crucial for becoming the fastest-growing economy, as such a relationship is not mentioned in the passage.

4 (a)

**Assumption 1 is correct:** The given assumption is correct as it is based on the following lines “*Over-the-counter access to antibiotics, without prescription, and direct marketing of drugs to farmers are common.*” These lines show that the availability of drugs to farmers is not regulated which results in inappropriate and unregulated use of drugs leading to cases of AMR.

**Assumption 2 is incorrect:** The context of AMR in birds is not discussed in the passage. The passage only mentions how animals in general are impacted by AMR. Hence, this assumption is beyond the scope of the passage.

5 (c)

**Option (a) is incorrect:** The context of increasing farmer's income and its relationship with the treatment of AMR in animals is not covered in the passage. The passage mainly focuses on the reasons for the development of AMR in animals.

**Option (b) is incorrect:** The given option could be a rational inference. However, it is not the best implication of the passage, because the central theme of the passage is the diverse reasons for rising cases of AMR among animals and what can be done about it, not its repercussions related to livestock productivity.

**Option (c) is correct:** The given option is correct as highlighted in the lines “*Awareness of antimicrobial resistance (AMR) is low and antimicrobial stewardship in livestock is yet to be developed*”.

**Option (d) is incorrect:** The context of adequate administrative laws and viral diseases has not been covered in the passage.

6 (b)

$$P = 100 + 30 - 70 = 60$$

$$Q = 100 + 70 - 100 = 70$$

$$M = 100 - 30 + 75 = 145$$

$$N = 100 + 115 - 75 = 140$$

$$O = 100 + 100 - 115 = 85$$

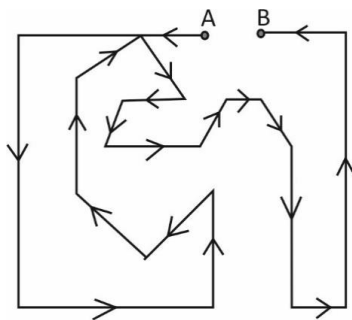
$$\text{Total of } M + N + O = 145 + 140 + 85 = \text{Rs } 370$$

$$\text{Since } M, N \text{ and } O \text{ together spent Rs } 270, \text{ therefore amount left with } M, N \text{ \& } O = 370 - 270 = \text{Rs } 100$$

Hence, option (b) is the right answer.

7 (a)

Given figure:



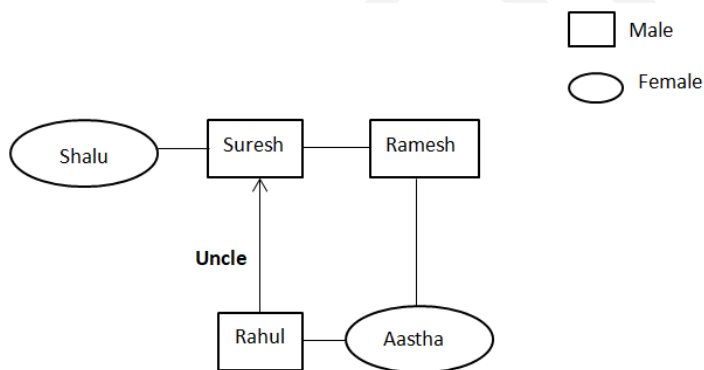
In the given figure, the person has travelled in all the four basic directions and all the four sub-directions. So that person has walked in 8 directions. Hence, option (a) is the right answer.

8 (a)

Person 5 owns black shoes and pair 3 is black. So, Person 5 → Pair 3  
 Pair 2 must belong to person 3. So, Person 3 → Pair 2  
 Pair 1 does not belong to either person 1 or person 2. So, Person 4 → Pair 1  
 Thus, it is known that  
 Person 1 → ?  
 Person 2 → ?  
 Person 3 → Pair 2  
 Person 4 → Pair 1  
 Person 5 → Pair 3  
 So, option (a) is the right answer.

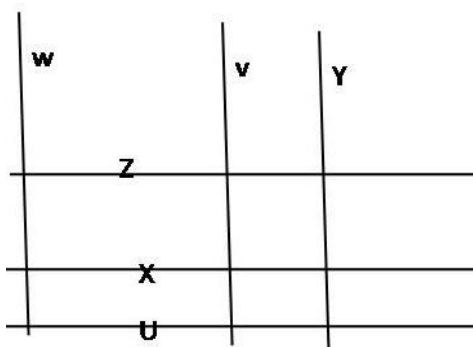
9 (b)

Based on the given information, the following diagram can be drawn:



Hence, Suresh is the uncle of Rahul. So, option (b) is correct.

10 (d)



Now, we can examine all the options:

Option (a): Z and U are parallel but W is perpendicular. Not correct.

Option (b): X and V are not parallel. Not correct.

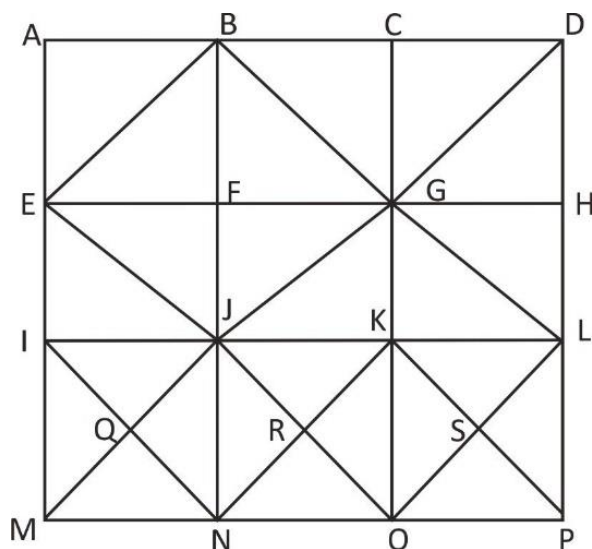
Option (c): Z and V are not parallel. Not correct.

Option (d): Y, V and W are parallel. Correct.

So, option (d) is correct.

**11 (a)**

Given figure:

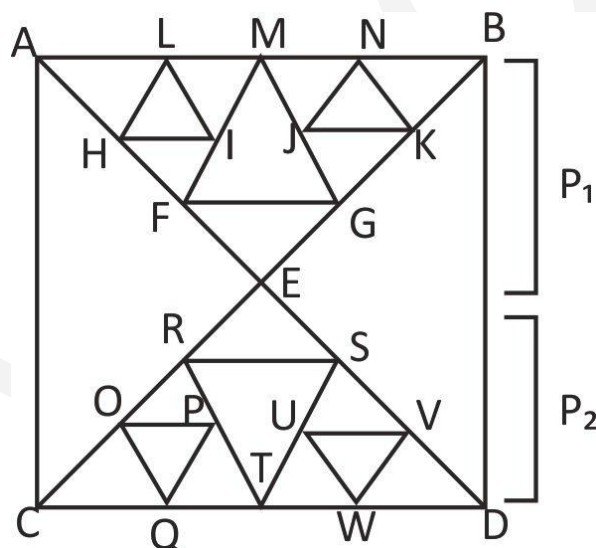


The squares are: ABEF, BFCG, CGDH, EFIJ, FJGK, GKHL, IMJN, JKNO, KOLP, EBJG, JGOL, QJRN, KROS, ACKI, BDLJ, EGOM, FHPN, ADPM.

So, there are a total of 18 squares.

Hence, option (a) is the right answer.

**12 (c)**



First, let's consider the overall figure:

AEB, CED, AEC, BED, BCD, ACB, ADB, ACD

Number of triangles = 8

Now, let's consider part  $P_1$  :

AHL, HLI, LIM, HFI, AFM, FMG, FEG, MJN, JNK, NKB, JGK, MGB

Number of triangles = 12

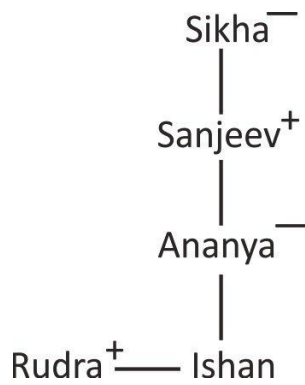
Part  $P_1$  and  $P_2$  have same structure. So, the number of triangles in part  $P_2$  will also be 12.

$\therefore$  Total number of triangles =  $8 + 12 + 12 = 32$

Hence, option (c) is the right answer.

13 (c)

We can draw the following family tree diagram based on the given information:



Hence, Rudra is the great grandson of Shikha.

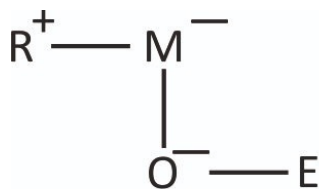
Hence, option (c) is the right answer.

14 (c)

Let's check each option one by one.

Option (a):  $R \emptyset M * O @ E$

Family tree:

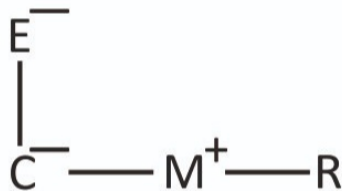


So, R is the maternal uncle of E. This is exactly opposite of what we wanted.

Hence, it is not the correct option.

Option (b):  $E * C @ M \emptyset R$

Family tree:

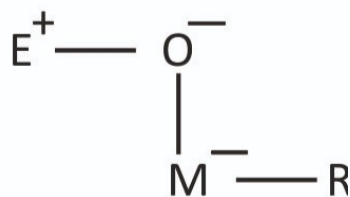


Thus, E is the mother of R.

Hence, it is not the correct option.

Option (c):  $E \emptyset O * M @ R$

Family tree:

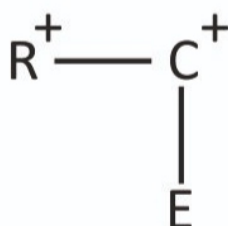


Hence, E is the maternal uncle of R.

Hence, option (c) is **correct**.

Option (d):  $R \emptyset C \# E$

Family tree:



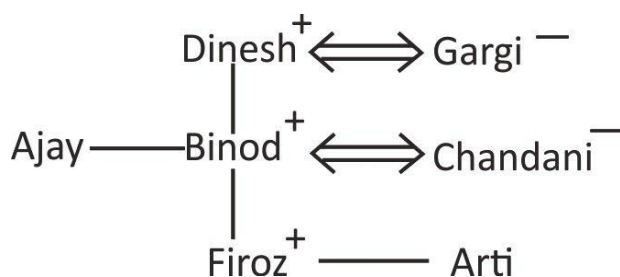
Thus, R is the uncle of E.

Hence, option (d) is also not correct.

So, option (c) is the right answer.

15 (a)

We can draw the following blood relation graph with the help of the given information.

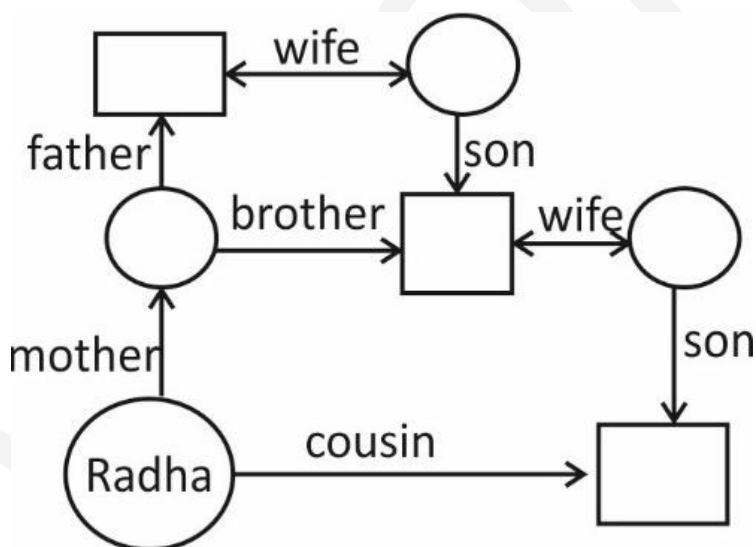


Hence, Firoz is the son of Chandani.

Hence, option (a) is the correct answer.

16 (a)

Based on the given information, the following relation map can be drawn.



From above, it is clear that the concerned man is the cousin of Radha.

So, option (a) is the right answer.

17 (c)

He can arrange 961 coins into a  $31 \times 31$  grid and have 39 coins still left with him.

Option (a): He can have 31 rows. → Not correct.

Option (b): He will be short of coins if he arranges in grid with 33 coins. → Not Correct.

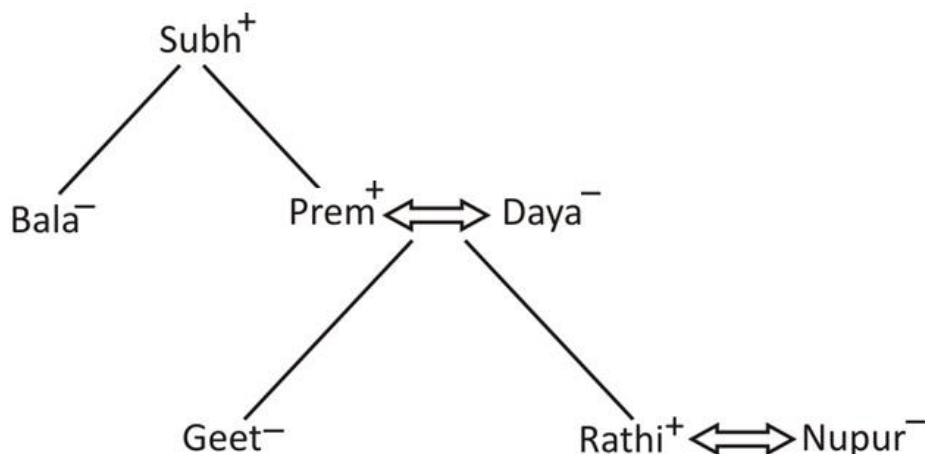
Option (c): He will be left with some coins if he arranges them in a grid of 31 rows. It's the maximum possible number of coins he can place in a row. → Correct.

Option (d): Same as option (b) → Not correct.

So, option (c) is the right answer.

18 (d)

Family tree diagram has been shown below:



By looking at the above family tree diagram, we can conclude that Geet is the niece of Bala. Hence, option (d) is the correct answer.

19 (b)

**Assumption 1 is incorrect:** The passage nowhere compares the contribution of cities and rural areas to economic growth. The line, “While cities contribute to global economic growth, they are also drivers of environmental degradation” indicate that cities do contribute to economic growth, but how much do they contribute or whether it is more than rural areas cannot be assumed. So, this assumption is not correct as per the passage.

**Assumption 2 is correct:** The lines “Cities consume 80% of global energy, are responsible for 70% of greenhouse gas emissions, generate huge amounts of waste and pollution, and are rapidly encroaching into natural habitats. Urban sprawl is leading to poor living conditions, making cities highly vulnerable to climate change, and threatening the biodiversity of surrounding cities.” from the passage show that urban areas consume way more energy, emit a lot of GHGs, etc. Therefore, as per the passage, it would be correct to assume that urban areas present a **less** (if not the least) sustainable model of living.

20 (d)

**Option (a) is incorrect:** The given statement could be a rational inference, but it is not the crux. The crux is about how stressful it is for young adults to move out of home and what ways can be adopted to cope with it. Also, by using the term, “informed decision”, the option reflects that moving out is not for everyone and people who can adjust to stress should move out which is not the crux. So, this is not the best crux of the passage.

**Option (b) is incorrect:** This option reflects a rational inference of the passage. The stress arising from moving out has been described in the lines “Not only that but, academic failure and problems with fitting in the newer crowd can be a major stressor and induce panic, in severe cases, it could also put a student in a depressive state”. However, this statement is very general in nature and cannot be the crux of the passage.

**Option (c) is incorrect:** The given statement is not the best crux of the passage. The lines “On top of that, having to look after oneself and accepting responsibility can also be very distressing”, show that there are challenges related to moving out of home. The transition from the comfort zone of home to the world outside home is a cause of stress. The passage is focused more on how to cope with this stress than on inducing a sense of responsibility in youth.

**Option (d) is correct:** The given statement best reflects the crux as it encompasses the central idea of the passage. The lines “Not only that but, academic failure and problems with fitting in the newer crowd can be a major stressor and induce panic, in severe cases, it could also put a student in a depressive state. ... Taking care of your mental and physical health, eating well, and expressing yourself well for clarity of thought also helps you to keep in check with your emotions”, show that moving out is stressful, but young adults can be more aware about their emotions and handle them by consciously focusing on health, food, etc. So, this option is the best crux of the passage.



21 (c)

**Option (a) is incorrect:** The passage revolves around the complex psychological processes involved in deception or lying- How easy lying seems is not covered in the passage. Only the complex processes are discussed, as seen in lines “lying requires far more cognitive resources. First, we must become aware of the truth; *then we must invent a plausible scenario that is consistent and does not contradict the observable facts.* At the same time, we must suppress the truth so that we do not spill the beans that is, we must engage in response inhibition.”

**Option (b) is incorrect:** The context of other arts is not covered in the passage. Also, lying has not been described as a beautiful process or been compared to a thing of beauty. Hence this option is not the crux of the passage.

**Option (c) is correct:** The given option correctly captures the essence of the passage. It reflects the meaning covered in the lines - “First, we must become aware of the truth; *then we must invent a plausible scenario that is consistent and does not contradict the observable facts.* At the same time, we must suppress the truth so that we do not spill the beans that is, *we must engage in response inhibition.* What is more, we must be able to *assess accurately the reactions of the listener* so that, if necessary, we can *deftly produce adaptations to our original storyline.*” All these lines show how complex the psychological process of lying is. Hence, this is the best crux of the passage.

**Option (d) is incorrect:** The given option is not correct because the context of morality associated with lying has not been delved into in the passage, though mentioned as a sliding remark, “*And there is the ethical dimension, whereby we must make a conscious decision to transgress a social norm.*” Hence, this option does not reflect the crux of the passage. The main theme of the passage deals with how lying is a complex psychological process.

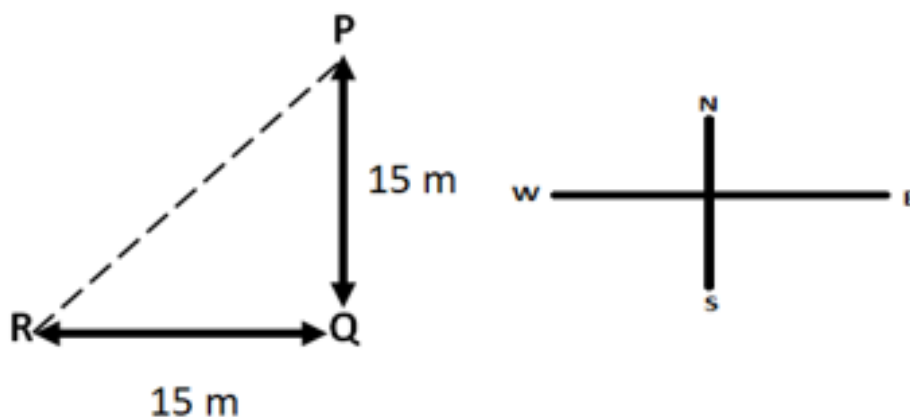
22 (b)

**Assumption 1 is incorrect:** The given assumption is not correct because the lines “For economies of the past, having land to farm, workers, and basic technology was *sufficient to meet society's expectations*” reflect the opposite. Therefore, it would not be correct to assume that past economies were stagnant and did not grow as per society's needs.

**Assumption 2 is correct:** The following lines from the passage “For modern economic growth, people need to be *willing to change their behaviour, be progressive with their ideologies, and invest in new technology.* If people are stuck in the past and unwilling to change course, they are hampering growth”, show that the people's approach is significant in economic growth. If people do not move forward with their thought process, then it becomes difficult to grow. So, the given assumption is correct.

23 (d)

We can represent the given expression,  $P @ Q * R$ , in the form of a diagram:



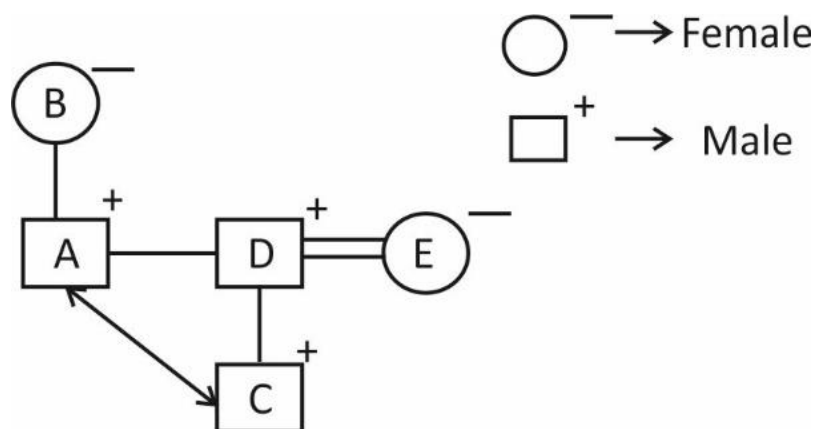
Hence, R is in South-West of P.

Hence, option (d) is the right answer.



24 (c)

We can draw the following relation graph with the help of the given information.



From the above figure, it is clear that C is the nephew of A.  
 Hence, option (c) is the right answer.

### Explanation for Questions 25 and 26:

S goes on Monday but does not go to Board-office. P goes to MP-Nagar on Saturday. The one who goes on Tuesday, goes to Paharganj. F goes on Sunday. A does not go to Paharganj. The one who goes on Thursday goes to Barkheda.

Days	Girls	Places
Monday	S	<del>Board-office</del>
Tuesday	A	Paharganj
Wednesday		
Thursday		Barkheda
Friday		
Saturday	P	MP-Nagar
Sunday	F	

N goes to JK-Road but not on Friday. M goes to Piplani. So, we get:

Days	Girls	Places
Monday	S	<del>Board-office</del>
Tuesday	A	Paharganj
Wednesday	N	JK-Road
Thursday		Barkheda
Friday	M	Piplani
Saturday	P	MP-Nagar
Sunday	F	

The final arrangement will be:

Days	Girls	Places
Monday	S	New-Market
Tuesday	R	Paharganj
Wednesday	N	JK-Road
Thursday	A	Barkheda
Friday	M	Piplani
Saturday	P	MP-Nagar
Sunday	F	Board-office

25 (b)

A goes on Thursday.

26 (a)

F goes to the Board-office.

27 (c)

Mixed doubles means one male and one female player will be on the same side.

Since, siblings are not on the same side it means son and daughter are on the opposite side. Son must have teamed up with mother and daughter with father.

Since neither daughter nor mother is diagonally across the net from father. Hence, son is diagonally across the net from father.

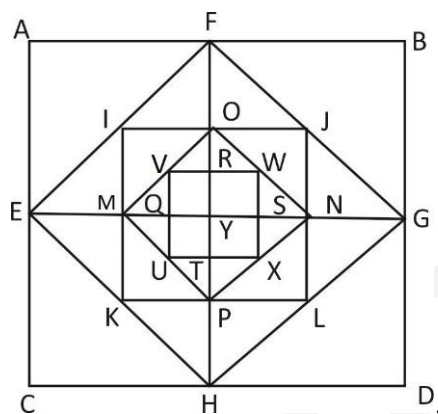
Thus, arrangement will be as follows –

Son	Mother
Daughter	Father

Hence, option (c) is the right answer.

28 (d)

Given figure:



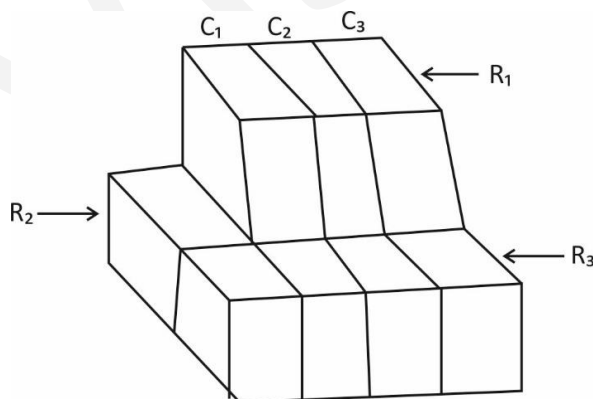
Squares: ABCD, AFYE, FYGB, ECHY, YHGD, IJKL, IMYO, OJYN, MYKP, YNPL, VWUX, VQRY, RYWS, QYUT, YSTX, EFGH, MONP.

Number of squares = 17

Hence, option (d) is the right answer.

29 (c)

Given figure:



The number of cuboidal boxes in each row is:

$R_1 = 3, R_2 = 4, R_3 = 4$

So, the total number of cuboidal boxes =  $3 + 4 + 4 = 11$

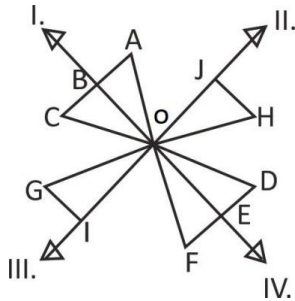
Hence, option (c) is the right answer.

30 (c)

Three boys selected means P, Z, and C are selected.  
Now, R and M cannot be selected due to the selection of Z and C.  
Hence, possible teams are P, Z, C, T and P, Z, C, K  
So, among the given options, option (c) is the right answer.

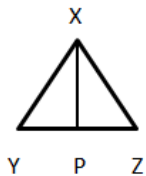
31 (b)

Given figure:



Let's consider the triangles at the tips.

Part I:



Triangles are XYP, XPZ, XYZ.

Similarly, considering all parts (II, III, IV), there are a total of 12 triangles.

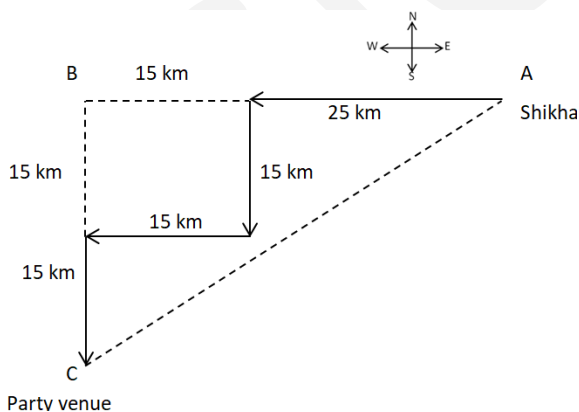
In the central part, the triangles are OBC, OBA, AOC, OED, OEF, OFD, OGI, and OJH.

So, there are a total of 20 triangles in the given figure.

So, option (b) is correct.

32 (c)

We can draw the following path diagram based on the question:



In the above figure,

$$BC = 15 + 15 = 30 \text{ km}$$

$$AB = 25 + 15 = 40 \text{ km}$$

Using Pythagoras theorem,

$$(AC)^2 = (AB)^2 + (BC)^2$$

$$\text{Or } (AC)^2 = (40)^2 + (30)^2$$

$$\text{Or } (AC)^2 = 1600 + 900 = 2500$$

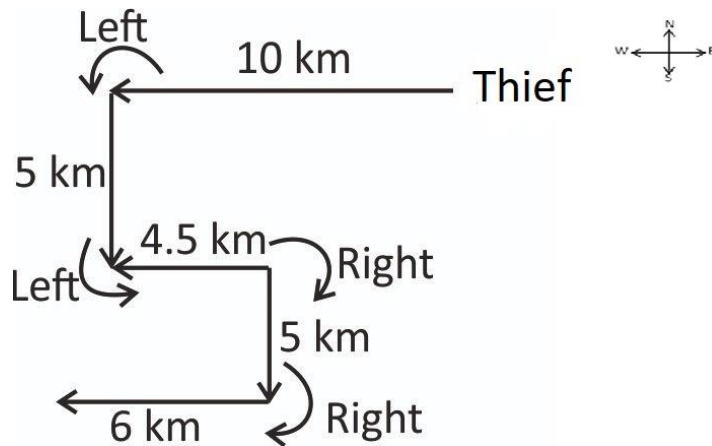
$$\text{Or } AC = 50 \text{ km}$$

Thus, the shortest distance to the party venue from her office is 50 km.

So, option (c) is correct.

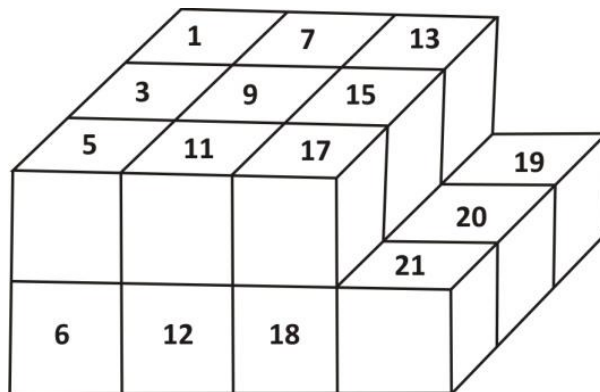
33 (d)

Based on the given information, the following diagram can be drawn:



From above figure, it is clear that he was running in the west direction.  
So, option (d) is correct.

34 (a)



Cubes having the maximum number of faces touching other cubes are those cubes touching five other cubes. These cubes are cube number 9 and cube number 10, i.e. there are two such cubes.  
So, option (a) is correct.

35 (c)

**Option (a) is incorrect:** The given option is not correct because what people should do for better regulation of circadian rhythm is not the main theme of the passage. This could be a rational inference but not the crux, because the passage focuses on light and its importance for sleep and circadian rhythm as seen in the lines “**Light plays a central role in regulating circadian rhythm, the body’s internal clock that signals when to be alert and when to rest.**”.

**Option (b) is incorrect:** The line “*Light also affects the production of melatonin, an essential sleep-promoting hormone*”, shows that melatonin helps in sleep. The connection of melatonin with circadian rhythm is not a part of the passage. Moreover, the passage focuses more on light and its importance for sleep and circadian rhythm. Hence, this is not the best crux of the passage.

**Option (c) is correct:** The given option best captures the essence as it mentions the central theme of the passage which is the importance of light. The lines “**Light plays a central role in regulating circadian rhythm, the body’s internal clock that signals when to be alert and when to rest. Light also affects the production of melatonin, an essential sleep-promoting hormone. .... Learning about the complex links between light and sleep allows you to set up your bedroom to be more conducive to consistent, high-quality sleep.**”, show that light regulates sleep and circadian rhythm. Hence, this is the best crux of the passage.

**Option (d) is incorrect:** The context of nightlife culture and dark light is not a part of the passage. The main theme of the passage is how light affects sleep and circadian rhythm. Therefore, this option is beyond the scope of the passage and is not the correct crux.

36 (d)

**Option (a) is incorrect:** As per the passage, “Interactive systems are more than just functional.” So, we need to keep in mind some other things too, not just the functional requirements. It does not mean that functional requirements can be ignored. So, the given option is not the correct crux of the passage.

**Option (b) is incorrect:** The statement, though true, covers only a minor aspect of the topic that the passage is discussing. So, this is not the best crux of the passage.

**Option (c) is incorrect:** The context of multi-tasking is used in a limited context in the passage in describing the various types of users. Hence, this is not the best crux of the passage.

**Option (d) is correct:** The lines from the passage “*To create successful user experiences, we need to know how humans think and feel. But there is more to thought than just rational, conscious deliberation*” and “*As designers, it will also help to understand human error and how emotion affects our interactions*”, support the given statement. So, this option best captures the essence of the passage and is the best crux.

37 (a)

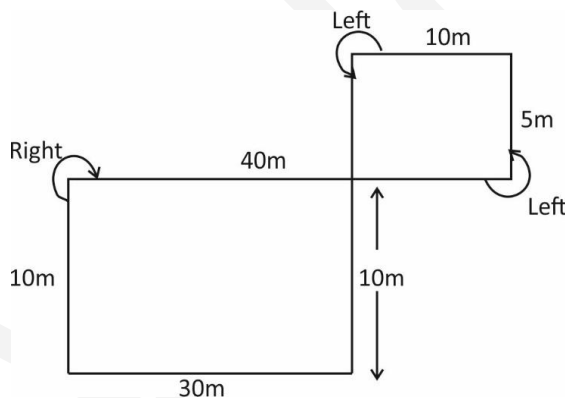
**Assumption 1 is incorrect:** The given assumption is not correct as per the lines “Yet, important hygiene behaviours are difficult to practise without the right knowledge and skills, *adequate community support and the belief that one’s behaviour can make a difference.*” These lines show that one’s behaviour can make a difference which is negated in the assumption. Hence, this assumption is not correct.

**Assumption 2 is correct:** The passage mentions that hygiene “can also secure a family’s social status” and talks about children missing school (which can have economic implications in the long run). This supports the assumption that poor hygiene has both social and economic implications. Therefore, this assumption is valid based on the passage

**Assumption 3 is incorrect:** The given assumption is not correct because it is not well established in the passage. The line “Many children around the world live in conditions that make it difficult to maintain good hygiene”, shows that the living conditions for children are poor but the cause for the same cannot necessarily be a lack of investment in rural infrastructure. The reasons could be varied ranging from poor culture of cleanliness, poor accountability, etc. Also, this issue need not necessarily be a rural one. Even many urban areas may suffer from this issue. Therefore, this assumption is not correct as per the passage.

38 (b)

We can draw the following movement map based on the information provided:

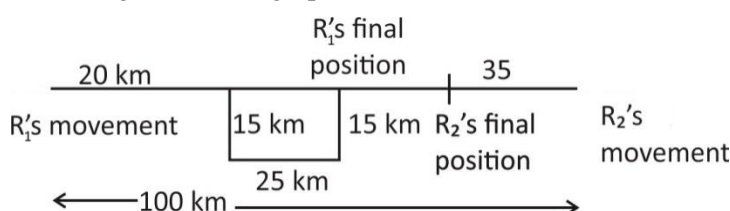


From above figure, it is clear that he is in east direction and 30 meters away from his initial position. Hence, option (b) is the right answer.

39 (a)

Let the two riders be  $R_1$  and  $R_2$ .

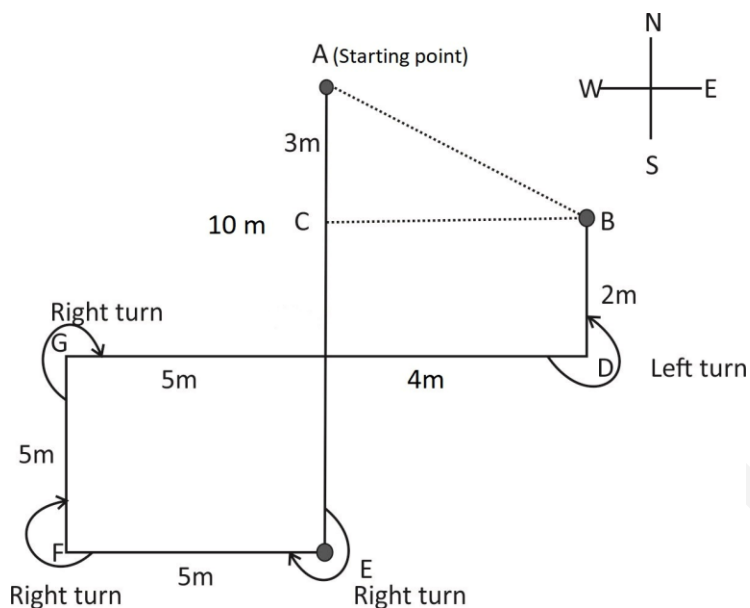
Following movement graph can be made based on the information provided:



From the above figure it is clear that  $R_1$  moved 45 km along the main road, while  $R_2$  moved only 35 km along the same road. So, the distance between the two riders at this time would be 20 km. Hence, option (a) is the right answer.

40 (b)

As per the information given in the question, following movement map can be made:



Let's consider triangle ACB.

Here,  $AC = 3$  m,  $BC = 4$  m (from figure)

$$(AB)^2 = (AC)^2 + (BC)^2$$

$$\text{Or } (AB)^2 = (3)^2 + (4)^2 = 9 + 16 = 25$$

$$\text{Or } AB = 5 \text{ m}$$

So, option (b) is the right answer.

41 (c)

Clearly, the letters at 4<sup>th</sup>, 8<sup>th</sup>, 12<sup>th</sup>, 16<sup>th</sup>, 20<sup>th</sup> and 24<sup>th</sup> are replaced by \$ and letters at 7<sup>th</sup>, 14<sup>th</sup> and 21<sup>st</sup> positions are replaced by #. Therefore, we get following arrangement:

a, b, c, \$, e, f, #, \$, i, j, k, \$, m, #, o, \$, q, r, s, \$, #, v, w, \$, y, z

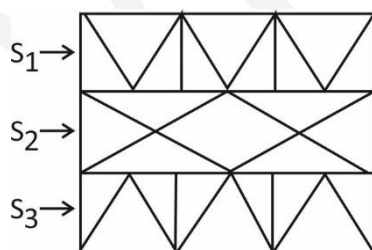
The position of fourteenth letter to the right of seventh letter from left end = 21<sup>st</sup> letter from left = #

Hence, option (c) is correct.

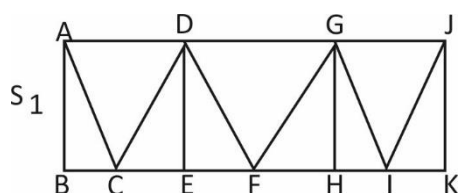
42 (c)

Given figure:

Let's, divide the figure in 3 segments.



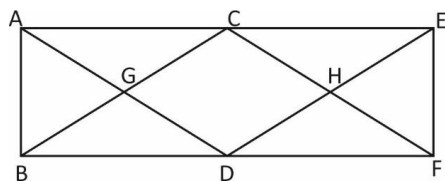
Let's consider  $S_1$ .



The triangles are: ABC, ACD, CDE, DEF, DFG, FGH, GHI, GIJ, JIK, DCF, FGI

Number of triangles = 11

Let's consider  $S_2$ .



The triangles are: BCF, ADE, ABD, ABC, DEF, CFE, ABG, BGD, AGC, CHE, DHF, EHF

Number of triangles = 12

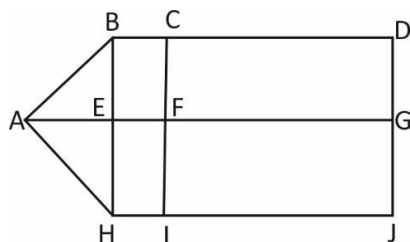
Segment 1 and 3 are similar.

So, total number of triangles =  $11 + 12 + 11 = 34$

Hence, option (c) is the right answer.

43 (a)

Given figure:



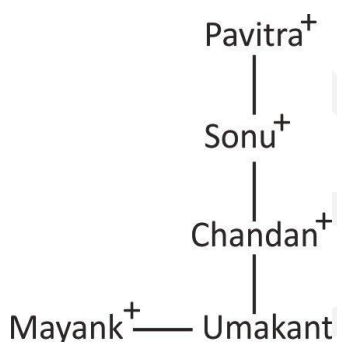
The rectangles are: BECF, CFGD, BEDG, EFHI, FIGJ, EHGJ, BCHI, CIDJ, BDHJ

So, there are 9 rectangles in the given figure.

So, option (a) is the right answer.

44 (d)

We can draw the following relation graph with the help of the given information.

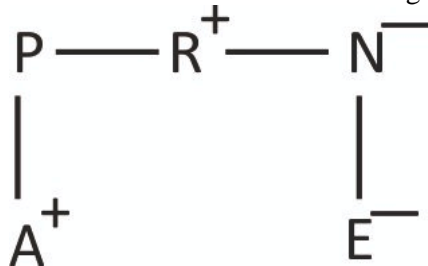


So, Pavitra is the great grand-father of Mayank.

Hence, option (d) is the right answer.

45 (c)

We can draw the following relation graph with the help of the given information.



From the above figure, it is clear that A is cousin of E.

Hence, option (c) is the right answer.



### Explanation for Questions 46 and 47:

Pratapgarh will present its work just before Gorakhpur. There is a gap of 2 days between Gazipur's and Pratapgarh's presentation. Gazipur will present its art before Pratapgarh.

Districts
Gazipur
Pratapgarh
Gorakhpur

Aligarh and Gazipur are allotted Tuesday and Thursday, not necessarily in that order, with the rest day falling between their presentations.

Days	Districts
Monday	
Tuesday	Gazipur
Wednesday	Rest day
Thursday	Aligarh
Friday	Pratapgarh
Saturday	Gorakhpur

So, the final arrangement will be:

Days	Districts
Monday	Mirzapur
Tuesday	Gazipur
Wednesday	Rest day
Thursday	Aligarh
Friday	Pratapgarh
Saturday	Gorakhpur

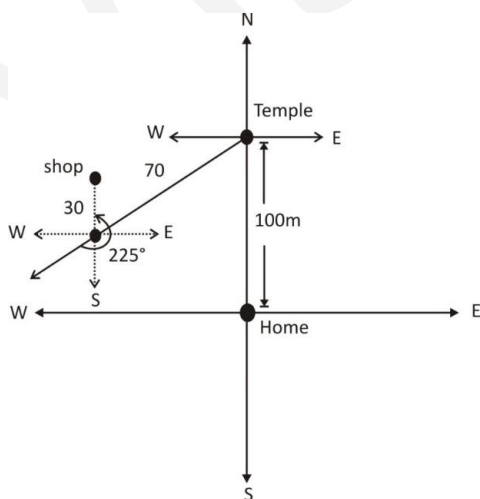
46 (b)

Aligarh will present its work on Thursday.

47 (a)

Wednesday is the rest day.

48 (a)



From the above diagram, we can say that temple is towards North-East from his shop. Hence, option (a) is correct.

49 (b)

**Inference 1 is incorrect:** The given inference is not correct because the passage does not mention that achieving SDGs would be difficult on account of lack of investment. Context of SDGs is covered in lines *“The fundamental connection **between people and the planet, with sustainable agriculture and food systems, is at the heart of the 2030 Agenda for Sustainable Development, which stresses the urgent need to take concerted action and pursue policies directed at transformational change.**”* So, this inference is not based on the passage.

**Inference 2 is correct:** The passage revolves around the importance of holistic and integrated approaches. When the passage speaks about not looking at food, livelihoods, health, and natural resource management separately, it is essentially emphasising breaking the isolated or 'siloes' ways of thinking. The term "silo" in the context of organizations or policy-making generally refers to a system, process, or department that operates in isolation from others. The passage's emphasis on the need for holistic and integrated approaches suggests that current methods might be siloed and that there is indeed a need for breaking these silos to bring about transformational change. This option is supported by the passage.

50 (b)

**Assumption 1 is correct:** The lines in the passage *“**To bring order to societal chaos, Hobbes created his “leviathan,” the model for a strong, centralised power that based on the support of the people, could create a society in which peace could flourish**”*, mention that Thomas Hobbes wanted to create a society based on peace and bring order in place of social chaos. So, it is correct to assume that the motivation behind “Leviathan” is peace and stability.

**Assumption 2 is incorrect:** The given assumption is probably based on the lines *“The notions of civil society and the rule of law are relatively new. **In previous eras, farmers armed themselves to protect their lands; robbery seemed a logical solution to the misery of poverty.**”* However, based on these lines we cannot assume that the concepts of police, justice, government and law were “completely” missing in the seventeenth century. Probably what was missing was *“a strong, centralized power based on the support of the people”*. Moreover, this is a very general and extreme statement.

51 (b)

**Option (a) is incorrect:** The given statement is not a rational inference because “leviathan,” the model for a strong, centralized power was created for peace in society within the state. The context of nations being kept away from fighting each other has not been covered in the passage. Moreover, the best type of government is still being debated as indicated in the line - *“Hobbes’s ideas then revolutionized political philosophy and are today still quite relevant, as we continue **to debate which type of government can best guide nations away from a permanent state of war.**”* So, this statement is not correct.

**Option (b) is correct:** The main idea in the passage is how Hobbes's idea of “Leviathan” changed the social order towards peace and stability via transforming the political governance landscape. Have a look at these lines - *“**To bring order to societal chaos, Hobbes created his “leviathan,” the model for a strong, centralised power that is based on the support of the people, could create a society in which peace could flourish. Hobbes’s ideas then revolutionised political philosophy and are today still quite relevant ....**”*

**Option (c) is incorrect:** The given statement is generic and not specific to the information contained in the passage. The passage is about Hobbes's “Leviathan” and how it was important in bringing change in society. Hence, this statement is not the most rational inference.

**Option (d) is incorrect:** The passage does not mention anything about the concept of democracy or its theoretical foundations. Hence this statement is beyond the scope of the passage and is not the most rational inference.

52 (a)

**Statement 1 is correct:** According to the passage, tanks were developed as a response to the situations that developed during World War I. The passage says that *“**The now mythic Western Front was one of the main theatres of the Great War. It was the stalemate of the Western Front that led to the development of tanks. It was a weapon designed for one simple task: crossing the killing zone between trench lines and breaking into enemy [defenses].**”*

**Statement 2 is not correct:** The passage only mentions the situation that led to the development of tanks as weapons. The passage does not specify the country that built tanks first.

**Statement 3 is not correct:** From the lines, “It was the stalemate of the Western Front that led to the development of tanks — **vehicles which could provide mobile protection and firepower for troops in order to take down trenches**” and “**It was a weapon designed for one simple task: crossing the killing zone between trench lines and breaking into enemy [defenses]**”, it can be inferred that tanks not only provided protection to troops against enemies but also provided firepower that could break enemy defenses.

53 (d)

$a \in b \beta c \in d \beta e \nexists f$  can be read as ‘a’ is sister of ‘b’, ‘b’ is brother of ‘c’, ‘c’ is sister of ‘d’, ‘d’ is brother of ‘e’ and ‘e’ is daughter of ‘f’.

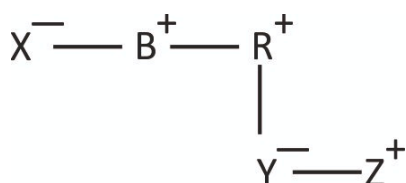
Thus, a, c, e are females, while b and d are males. We do not know about f’s sex.

Hence, we cannot be sure about the number of females in this relationship string.

Hence, option (d) is the right answer.

54 (b)

Based on the given information, following relation map can be drawn:



Hence, B is the uncle of Z.

So, option (b) is the right answer.

### Explanation for Questions 55 to 57:

Electronics Engineering department is at third floor. Dr. Mishra is the head of the department which is at the first floor. Hence, we get:

Floor	Department	Professor
5		
4		
3	Electronics Engineering	
2		
1		Dr. Mishra

Electrical Engineering department is neither just above nor just below the department of Electronics Engineering. Dr. Batra is the head of Electrical Engineering department. Hence, Electrical Engineering department cannot be at second or fourth floor. Hence, Electrical Engineering department can be either at first floor or fifth floor. But, first floor is headed by Dr. Mishra. Hence, Electrical Engineering department cannot be at first floor. Therefore, Electrical Engineering department is at fifth floor and it is headed by Dr. Batra.

Floor	Department	Professor
5	Electrical Engineering	Dr. Batra
4		
3	Electronics Engineering	
2		
1		Dr. Mishra

The department of Computer Science is at an even-numbered floor. Hence, Computer Science can be either at fourth floor or second floor. Now, we also know that there are 2 floors between Computer Science and Civil Engineering department.

Case 1: If Computer Science is at fourth floor, then Civil Engineering department will be at first floor. Therefore, Mechanical Engineering department will be at second floor.

Floor	Department	Professor
5	Electrical Engineering	Dr. Batra
4	Computer Science	
3	Electronics Engineering	
2	Mechanical Engineering	
1	Civil Engineering	Dr. Mishra

Case 2: If Computer Science is at second floor.

Floor	Department	Professor
5	Electrical Engineering	Dr. Batra
4		
3	Electronics Engineering	
2	Computer Science	
1		Dr. Mishra

Case 2 is not possible because 2 floors between Computer Science and Civil Engineering department are not possible here. Hence, case 2 can be neglected.

Dr. Tiwari is neither the head of Electronics Engineering nor the head of Computer Science department. Hence, Dr. Tiwari must be the head of Mechanical Engineering.

Dr. Mehra is not heading Electrical Engineering, Mechanical Engineering or Civil Engineering department. Hence, Dr. Mehra is heading either Computer Science or Electronics Engineering. Hence, the final arrangement will be as follows:

Floor	Department	Professor
5	Electrical Engineering	Dr. Batra
4	Computer Science	Dr. Mehra / Dr. Sharma
3	Electronics Engineering	Dr. Mehra / Dr. Sharma
2	Mechanical Engineering	Dr. Tiwari
1	Civil Engineering	Dr. Mishra

**55 (d)**

We can see that the department of Mechanical Engineering is at second floor. Hence, option (d) is the correct answer.

**56 (c)**

The department of Electronics Engineering is headed by either Dr. Mehra or Dr. Sharma. Hence, option (c) is the correct answer.

**57 (d)**

Mechanical Engineering – Dr. Tiwari – Second floor is the correct combination. Hence, option (d) is the correct answer.

**58 (d)**

Checking the statements one by one:

(1)  $Y \times Z - X$ : means Y is the mother of Z; and Z is the son of X.

(2)  $Y - X \div Z$ : means Y is the son of X; and X is the daughter of Z.

(3)  $Y * Z \times X$ : means Y is the sister of Z; and Z is the mother of X.

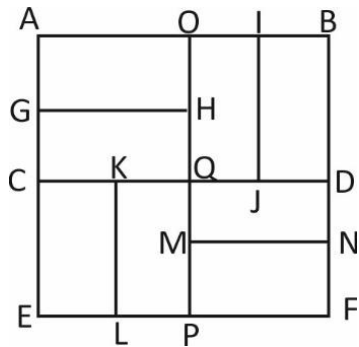
(4)  $Y \div X \times Z$ : means Y is the daughter of X; and X is the mother of Z. Therefore, X is the mother of Y and Z.

Only from statement (4) we can deduce that X is the mother of Y and Z.

Hence, option (d) is the correct answer.

59 (d)

Given figure:



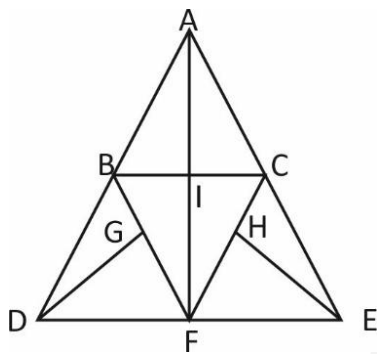
The rectangles are: AGOH, GCHQ, AOCQ, OIQJ, IJBD, OBQD, CEKL, KLQP, CQEP, QMDN, MNPF, QDPF, ABCD, CDEF, AOEP, OBPJ, OBMN, GHEP, KLDF, ACIJ, ABEF

Hence, there are 21 rectangles in the given figure.

So, option (d) is the right answer.

60 (a)

Given figure:



The triangles are: ABI, AIC, BFI, CIF, ABC, BCF, ABF, ACF, DGF, DGB, DBF, FEH, HCE, CFE, ADF, AFE, ADE

Hence, there are 17 triangles in the given figure.

So, option (a) is the right answer.

### Explanation for Questions 61 to 63:

C and F went on holiday in the same month having 31 days, i.e. either in October or in December, and C did not go on an odd-numbered date. It means C went on an even-numbered date, i.e. on 10<sup>th</sup>. Therefore, C went before F. G went on holiday just before C. So there will be two possibilities:

	Case 1	Case 2
September 10	+	+
September 15	+	+
October 10	+	+
October 15	+	+
November 10	+	+
November 15	+	+
December 10	+	+
December 15	+	+

Now, A went on holiday in November. Therefore, A may go either on 10<sup>th</sup> or 15<sup>th</sup> November.

Two employees went on holiday in the time-gap between holidays of A and B. Therefore, in both the above cases only one place is suitable, i.e. A went on 10<sup>th</sup> November.

	Case 1	Case 2
September 10		
September 15	G	B
October 10	C	
October 15	F	
November 10	A	A
November 15		G
December 10		C
December 15	B	F

Number of employees who went on holiday in the time-gap between holidays of F & D is same as the number of employees who went on holidays in the time-gap between A & B. Therefore, 2 employees went on holiday in the time-gap between holidays of F & D. It is not possible in Case 2. Hence, it can be eliminated.

D went on holiday just after H. Therefore, D goes on 10<sup>th</sup> December and H on 15<sup>th</sup> November. Hence, the remaining unoccupied place will be filled by E on 10<sup>th</sup> September.

Hence the final arrangement will be as follows:

	Case 1
September 10	E
September 15	G
October 10	C
October 15	F
November 10	A
November 15	H
December 10	D
December 15	B

61 (c)

It can be seen from above that four employees went on holidays in the time-gap between holidays of E and H.

62 (a)

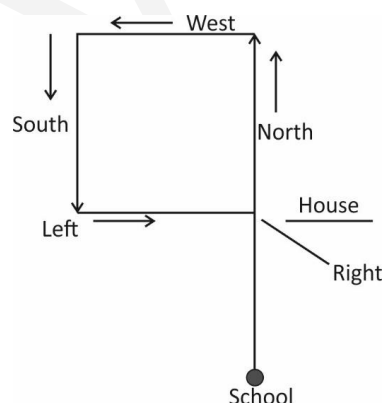
D went on holidays on 10<sup>th</sup> December.

63 (b)

E went immediately before G.

64 (c)

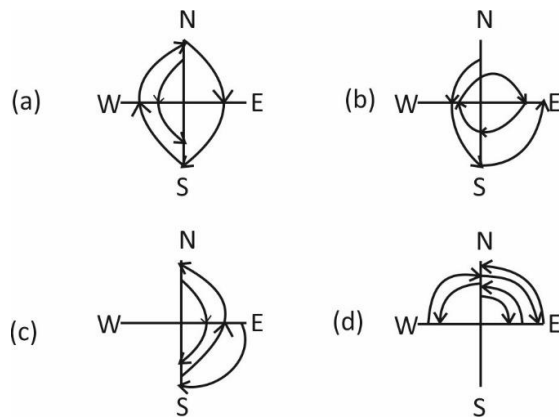
Following figure can be drawn with the help of the information provided in the question:



From above figure it is clear that the house is in the north direction from his school. So, option (c) is the right answer.

**65 (a)**

Checking all the options:



Hence, option (a) is the right answer.

### Explanation for Questions 66 to 68:

The persons who live in room A and H, have the maximum difference in daily earnings. P lives in room D. V's earning is \$177 and he lives in room G.

Room	Person	Earning
A		\$164 / \$182
B		
C		
D	P	
E		
F		
G	V	\$177
H		\$164 / \$182

Only one person lives between S and the one who earns the minimum. One person lives between S and the one who earns \$179. One person lives between S and R. R's earning is not \$179. So, two cases are possible:

Case 1:

Room	Person	Earning
A	R	\$164
B		
C	S	
D	P	
E		\$179
F		
G	V	\$177
H		\$182

Case 2:

Room	Person	Earning
A		\$182
B		
C		
D	P	\$179
E		
F	S	
G	V	\$177
H	R	\$164



One person lives between T and P. T doesn't earn \$167 and does not live in room B. So, we can eliminate Case 2.

Room	Person	Earning
A	R	\$164
B		
C	S	
D	P	
E		\$179
F	T	<del>\$167</del>
G	V	\$177
H		\$182

One person lives between U and the one who earns \$169. U does not earn \$182. So, we get:

Room	Person	Earning
A	R	\$164
B	Q/W	
C	S	\$169
D	P	
E	U	\$179
F	T	<del>\$167</del>
G	V	\$177
H	Q/W	\$182

S earns more than P. So, P must be earning \$167.

Room	Person	Earning
A	R	\$164
B	Q/W	
C	S	\$169
D	P	\$167
E	U	\$179
F	T	
G	V	\$177
H	Q/W	\$182

Not more than two persons earn more than Q. So, Q must be earning \$182.

Room	Person	Earning
A	R	\$164
B	W	
C	S	\$169
D	P	\$167
E	U	\$179
F	T	
G	V	\$177
H	Q	\$182

Not more than three persons earn less than T. So, T must be earning \$172.

Room	Person	Earning
A	R	\$164
B	W	\$174
C	S	\$169
D	P	\$167
E	U	\$179
F	T	\$172
G	V	\$177
H	Q	\$182

66 (d)

None of the combinations is incorrect.

67 (c)

Q earns the most.

68 (a)

U earns \$179.

69 (d)

As per the information of Amit

$10 < \text{Distance of Aligarh} < 15$

As per the information of Sunita

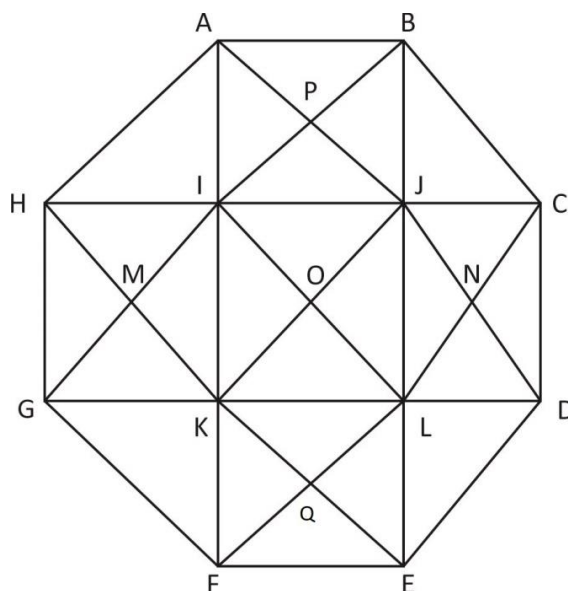
$13 < \text{Distance of Aligarh} < 16$

So, definitely 14 km is the distance of Aligarh.

Hence, option (d) is correct.

70 (c)

Given figure:



The squares are: ABIJ, HIGK, JCLD, KLFE, IJKL, HAKJ, KJED, MKOI, IOJP, KOLQ, OJNL, BCIL, GFIL, MQNP

There are 14 or more squares.

Hence, option (c) is the right answer.

71 (d)

**Statement 1 is not correct:** Both countries are in the process of negotiating an agreement called Early Progress Trade Agreement (EPTA). Once the two countries sign such an agreement, they can lower their customs duties. However, custom duties are lowered only when the agreement is signed. The passage says that In March last year, the two countries re-launched negotiations for an interim agreement, officially dubbed as Early Progress Trade Agreement (EPTA). It further says that “**In such agreements, two countries significantly reduce or eliminate customs duties on the maximum number of goods traded between them**”. This implies that lowering the customs duty is a part of EPTA, which is yet to be signed. **Hence, option 1 is not correct.**

**Statement 2 is not correct:** The passage mentions that India’s resentment towards the political development in Canada has temporarily paused the negotiations of EPTA. However, it is not mentioned in the passage that it will have any effect on the bilateral relations between the two countries. Moreover, as of now the suspension of EPTA negotiations is more of an outcome of adverse bilateral relations than vice-versa. **Hence, option 2 is not correct.**

72 (b)

**Statement 1 is not correct:** The acquisition of C-295 aircraft will help IAF in multiple areas. The passage says that “C295 is a versatile tactical transport that can perform a variety of missions, such as carrying troops and cargo, maritime patrol, airborne warning, surveillance and reconnaissance, armed close air support, medical evacuation, VIP transport, and airborne firefighting”. The advantages of acquiring C-295 aircraft are not mentioned in the context of China.

**Statement 2 is correct:** This statement is clearly supported by the line, “So far, the state-owned Hindustan Aeronautics Limited (HAL) has had a monopoly over the manufacture of military aircraft in India”.

73 (b)

**Option (a) is not correct:** Employment will be generated as a result of local manufacturing of aircraft in India. It implies that local manufacturing is the most significant aspect and employment generation is merely a by-product of local manufacturing. **Hence, option (a) is not correct.**

**Option (b) is correct:** The lines “– there will be a transfer of manufacturing technology to Tata Advanced Systems Limited (TASL) by Airbus” and “The acquisition sets into motion India’s first-ever ‘Make in India’ Aerospace program in the private sector,” highlight the role of private sector and a boost to the aerospace industry in our country. **Hence, option (b) is correct.**

**Option (c) is not correct:** It is true that C-295 will replace the existing fleet of aircraft and significantly boost the operational capabilities of IAF. But, as mentioned above, the most important aspect of this deal is that it will involve private players and boost local manufacturing. Moreover, usage of the term “Indian Armed forces” instead of “Indian Air Force” makes this statement more general in nature. **Hence, option (c) is not correct.**

**Option (d) is not correct:** Breaking the monopoly is one aspect of the mentioned deal. Now the military aircraft manufacturing sector will be open to private players too and will no longer be a monopoly of the government. However, to say that it will “break the monopoly of PSU manufacturing in India” will be a very broad statement and rather extreme. **Hence, it is not a correct statement.**

74 (c)

**Statement 1 is correct:** The passage says, “Metals and critical minerals are crucial for the green transition as they are used to manufacture solar panels, windmills, and electric car batteries”. This line implies that if more of the above-mentioned equipment is made, more will be the reduction in greenhouse gas emissions.

**Statement 2 is correct:** The EU depends on China for 99% of its requirement of rare earth metals. This extreme dependency on a single country is considered a threat. The passage says that “German MEP Nicola Beer, the driving force behind the law, said in the parliament that the EU was 99 percent dependent on China for rare earth metals. **We cannot allow that to be the case. Such dependencies create a high risk of supply disruptions and increase the Union’s vulnerability and security risks”.**

75 (b)

**Option (a) is not correct:** According to the passage metals and critical minerals are crucial for the green transition as they are used in the manufacturing of electric batteries and solar panels. However, there is no discussion on mineral companies.

**Option (b) is correct:** Too much dependency on a single source for procurement of raw material is a security threat. The EU passed legislation that mandates diversifying of sources of procurement of critical minerals. The passage says that “**The European Union, the world’s largest trading bloc, aims to reduce its dependence on China and increase its domestic capacity for critical minerals through this legislation**”. It is further mentioned in the passage - “**Such dependencies create a high risk of supply disruptions and increase the Union’s vulnerability and security risks**”. Additionally, the passage says, “**The regulation aims to “diversify the Union’s imports of strategic raw materials**”. From these lines, it can be assumed that this option statement best reflects the crucial message conveyed by the author.

**Option (c) is not correct:** The passage mentions the legislation of the EU which is related to the transition towards green energy. However, it is not mentioned that the EU is leading the world in this transition.

**Option (d) is not correct:** This option states one of the means by which dependence on a single source can be avoided. The legislation mentioned mandates to diversify the rare earth metals and critical mineral sources which in turn address a security threat. It is different from “means of energy generation”.

### Explanation for Questions 76 to 78:

4 balls are placed between Green and Black balls. 2 balls are placed between Blue and Black colored balls. Also, Yellow ball is placed just above Black ball. Red ball is placed just above Yellow ball. So, there are 2 possible cases:

#### Case 1:

Green
Blue
Red
Yellow
Black

#### Case 2:

Red
Yellow
Black
Blue
Green

2 balls are placed between Red and Pink colored balls.

#### Case 1:

Green
Blue
Red
Yellow
Black
Pink

#### Case 2:

Red
Yellow
Black
Pink
Blue
Green

Number of balls between Red and Black colored balls is the same as that between Pink and Blue colored balls. So, we can eliminate Case 1.

Red
Yellow
Black
Pink
Blue
Green

White ball is above the Blue colored ball. So, the final arrangement will be:

Red
Yellow
Black
Pink
White
Blue
Orange
Green

76 (c)

There is 1 ball between Red ball and Black ball.

77 (d)

There are 6 balls above the Orange ball.

78 (c)

White colored ball is placed 4<sup>th</sup> from the bottom.

### Explanation for Questions 79 and 80:

The arrangement of cities is as follows:

P	Q	R	S	T	U
---	---	---	---	---	---

79 (c)

If Durgesh visited city T, then Chandan must have visited city S, because he visited the city immediately to the left of Durgesh's city.  
Hence, option (c) is correct.

80 (d)

It can't be determined since data is not sufficient.

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