S1. Ans.(b)
Sol. Among the given options, only statement (b) is correct with reference to the context of the given question. While the rest of the statements are incoherent based on the information provided. Refer to the last line of the first paragraph "Air pollutants released in one country may be transported in the atmosphere, contributing to or resulting in poor air quality elsewhere."

S2. Ans.(b)
Sol. Among the given options, only statement (b) is correct with reference to the context of the given question. Refer to the starting line of the first paragraph "Air pollution harms human health and the environment. In Europe, emissions of many air pollutants have decreased substantially over the past decades, resulting in improved air quality across the region."

S3. Ans.(e)
Sol. Among the given options, only (b) and (c) are correct based on the information provided with reference to the context of the given question. While statement (a) is incoherent. Refer to the starting lines of the second paragraph, "Particulate matter, nitrogen dioxide and ground-level ozone are now generally recognized as the three pollutants that most significantly affect human health. Long-term and peak exposures to these pollutants range in severity of impact, from impairing the respiratory system to premature death."

S4. Ans.(d)
Sol. The last lines of the third paragraph state that "The European Environment Agency (EEA) is the European Union's air pollution data center, and it assists in the execution of EU regulations concerning air emissions and quality. The EEA also assists in the evaluation of EU air pollution legislation as well as the formulation of long-term initiatives to improve Europe's air quality." Thus, we can infer that only (i) and (iii) statements are correct based on the information provided. While statement (ii) is inaccurate because the European Environment Agency (EEA) assists in the review of the European Union's air pollution policies, not the United Nations (UN).

S5. Ans.(d)
Sol. Among the given options, both statements (a) and (b) are correct with reference to th e context of the given question. While statement (c) is incoherent. Refer to the sixth line of the last paragraph "Targeted efforts to reduce emissions are therefore still required to further protect human health and the environment in Europe."

S6. Ans.(d)
Sol. Anthropogenic is an adjective that describes human-caused alterations in nature. As a result, anthropogenic emissions refer to human-caused emissions of greenhouse gases, constituents of greenhouse gases, and pollutants. Thus, among the given options, only statement (d) most accurately describes the meaning of the given phrase. While the rest of the given statements are incoherent.

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S7. Ans.(c)
Sol. Here, "persist" means continue to exist; be prolonged.
(a) forswear- to make a serious decision to stop doing something.
(b) renounce- refuse or resign a right or position, especially one as an heir or trustee.
(c) persevere- continue in a course of action even in the face of difficulty.
(d) abandon- cease to support or look after (someone); desert.
(e) evacuate- remove (someone) from a place of danger to a safer place.

S8. Ans.(e)
Sol. All of the given statements are correct with reference to the context of the given question. Refer to the fourth line of the first paragraph, "One of the benefits of reading is simply that it provides enjoyment and pleasure. It can provide an escape from boredom or stress. Plus, reading has been shown to help us better understand and interact with other people, keep our brains sharp, expand our world views and grow as individuals."

S9. Ans.(d)
Sol. Among the given options, only (a) and (b) are correct based on the information provided with reference to the context of the given question. While statement (c) is incoherent. Refer to the last line of the second paragraph, "Researchers at a University showed in an experiment that reading actually satisfies that need for human connection because it can mimic what we feel during real social interactions."

S10. Ans.(b)
Sol. Among the given options, only statement (b) is correct based on the information provided. While the rest of the statements are incorrect. Refer to the starting line of the second paragraph, "It's more likely to get lost in a book if you're reading a high-quality text, but "quality" in this case is subjective and something that gets determined by you."

S11. Ans.(e)
Sol. After reading the second paragraph thoroughly, we can infer that all of the given statements are correct based on the information provided in the given passage.

S12. Ans.(e)
Sol. Here, "critical" means having decisive or crucial importance in the success, failure, or existence of something.
(a) crucial- decisive or critical, especially in the success or failure of something.
(b) decisive- having or showing the ability to make decisions quickly and effectively.
(c) exigent- needing urgent attention, or demanding too much from other people.
(d) pivotal- of crucial importance in relation to the development or success of something else.
(e) trivial- of little value or importance.

S13. Ans.(b)
Sol. Here, the phrase "slogging through" means to concentrate on or proceed through something at a sluggish, difficult rate for an extended amount of time.
(a) let it all hang out- be very relaxed or uninhibited.
(b) hammer away at- work hard and persistently.
(c) be of the opinion that- to have a specified opinion or belief.
(d) push the boat out- be lavish in one's spending or celebrations.
(e) let one's hair down- behave in an uninhibited way.

S14. Ans.(c)
Sol. Here, "rejuvenate" means giving new energy or vigor to; revitalize.
(a) impair- weaken or damage (something, especially a faculty or function).
(b) impede- delay or prevent (someone or something) by obstructing them; hinder.
(c) uplift- something that makes a person feel more cheerful, positive, or optimistic.
(d) shrink- become or make smaller in size or amount.
(e) blunt- make or become less sharp.

S15. Ans.(e)
Sol. All of the given words are contextually meaningful and grammatically accurate to fill in the given blank.
(a) cushion- something providing support or protection against impact.
(b) protect- preserve or guarantee by means of formal or legal measures.
(c) insulate- protect (someone or something) from unpleasant influences or experiences.
(d) fortify- provide (a place) with defensive works as a protection against attack.

S16. Ans.(c)
Sol. Among the given options, "entitles" is the only contextually meaningful and grammatically accurate word to fill in the given blank.
(a) averts- prevent or ward off (an undesirable occurrence).
(b) prevents- stop (someone) from doing something.
(c) entitles- give (someone) a legal right or a just claim to receive or do something.
(d) obviates- avoid or prevent (something undesirable).
(e) hampers- hinder or impede the movement or progress of something.

S17. Ans.(d)
Sol. Among the given options, "decipher" is the only contextually meaningful and grammatically accurate word to fill in the given blank.
(a) preclude- prevent from happening; make impossible.
(b) restrain- deprive (someone) of freedom of movement or personal liberty.
(c) obturate- stubbornly refusing to change one's opinion or course of action.
(d) decipher- convert (a text written in code, or a coded signal) into normal language.

S18. Ans.(a)
Sol. Among the given options, "expedite" is the only contextually meaningful and grammatically accurate word to fill in the given blank.
(a) expedite- make (an action or process) happen sooner or be accomplished more quickly.
(b) trammel- restrictions or impediments to freedom of action.
(c) encumber- restrict or impede (someone or something) in such a way that free action is difficult.
(d) constrain- compel or force (someone) to follow a particular course of action.
(e) forestall- prevent or obstruct (an anticipated event or action) by taking advance action.

S19. Ans.(d)
Sol. Among the given options, "dictating" is the only contextually meaningful and grammatically accurate word to fill in the given blank.
(a) promising- assure someone that one will definitely do something or that something will happen.
(b) occupying- reside or have one's place of business in (a building).
(c) engaging- occupy or attract (someone's interest or attention).
(d) dictating- state or order authoritatively.

S20. Ans.(c)
Sol. Among the given options, "pursue" is the only contextually meaningful and grammatically accurate word to fill in the given blank.
(a) tenant- a person who occupies land or property rented from a landlord.
(b) sheath- a close-fitting cover for the blade of a knife or sword.
(c) pursue- continue to investigate or explore (an idea or argument).
(d) desert- abandon in a way considered disloyal or treacherous.
(e) strand- leave (someone) without the means to move from somewhere.

S21. Ans.(e)
Sol. All of the given words are contextually meaningful and grammatically accurate to fill in the given blank.
(a) directive- an official or authoritative instruction.
(b) injunction- an authoritative warning or order.
(c) mandate- an official order or commission to do something.
(d) ordinance- an authoritative order.

S22. Ans.(d)
Sol. Among the given alternatives, statement (C) best defines the theme of the paragraph by discussing the report shared by the World Bank. Now, statement (C) will be followed by statement (A) as it states the causes for slower growth in India over the current fiscal year. Now, statement (A) will be followed by statement (E) as it further highlights the impact of the war. Now, statement (E) will be followed by statement (B) which counters the previous statement by stating that the impact of Russia's war on Ukraine was indirect. Finally, statement (D) will be the concluding statement because it stresses the government's role in mitigating external shocks and protecting the underprivileged. Thus, we can infer that the correct sequence of the given statements will be CAEBD.

S23. Ans.(c)
Sol. Among the given statements, the error lies in statement (A). Here, "have" should be replaced with "has" as the concerned sentence emphasizes the term "war" which has been used in the singular sense.

S24. Ans.(a)
Sol. Among the given alternatives, only phrase (iii) could replace the highlighted one to make the statement grammatically and contextually correct. Since the sentence emphasizes the term "language", which is a singular noun, it must be followed by "has" along with the base form of the verb "use".

S25. Ans.(a)
Sol. Among the given alternatives, only phrases (i) and (iii) could replace the highlighted one to make the statement grammatically and contextually correct. Since the term "retail inflation" has been used in the singular sense in the given sentence, it will be followed by "has" along with the past participle form of the given verbs. Also, the term "significant" is an adjective and it should be replaced with the correct form of the adverb, that is "significantly" or "sharply".

S26. Ans.(e)
Sol. The highlighted phrase given in the concerned sentence is grammatically and contextually correct. Thus, no correction is required.

S27. Ans.(e)
Sol. The highlighted phrase given in the concerned sentence is grammatically and contextually correct. Thus, no correction is required.

S28. Ans.(c)
Sol. Among the given alternatives, only phrase (ii) could replace the highlighted one to make the statement grammatically and contextually correct. Since the concerned sentence takes into account the singular noun, it must be followed by "continues". Also, "largest" is a superlative adjective, thus, it should be preceded by the article "the". Additionally, "beneficial" is an adjective and it should be replaced with the term "beneficiary" which is a noun and fits with the context of the given sentence. Thus, we can infer that only phrase (ii) satisfies all the necessary conditions.

S29. Ans.(b)
Sol. Among the given options, only B-F can be combined together to form a grammatically and contextually correct sentence. The sentence thus formed would be "The Delhi government will issue new COVID-19 guidelines for schools in view of the slight rise in viral cases in the city."

S30. Ans.(e)
Sol. None of the given phrases can be combined together to form a grammatically and contextually correct sentence.

S31. Ans.(d)
Sol. Among the given options, only B-E can be combined together to form a grammatically and contextually correct sentence. The sentence thus formed would be "The authority has decided to launch an investigation and audit on getting complaints about a school increasing fees according to its wishes."

S32. Ans.(a)
Sol. Among the given alternatives, only (ii) can be used to fill in the given blanks. While (i) and (iii) are incoherent with reference to the context of the given sentences.
(i) neglect- fail to care for properly.
(ii) efficacy- the ability to produce a desired or intended result.
(iii) sinking- descend from a higher to a lower position; drop downwards.

S33. Ans.(d)
Sol. Among the given alternatives, only (ii) and (iii) can be used to fill in the given blanks. While (i) is incoherent with reference to the context of the given sentences.
(i) reckless- heedless of danger or the consequences of one's actions; rash or impetuous.
(ii) ultimate- being or happening at the end of a process; final.
(iii) eventual- occurring or existing at the end of or as a result of a process or period of time.

S34. Ans.(e)
Sol. Among the given alternatives, only (iii) can be used to fill in the given blanks. While (i) and (ii) are incoherent with reference to the context of the given sentences.
(i) pomposity- the quality of being pompous; self-importance.
(ii) affectation- a studied display of real or pretended feeling.
(iii) perception- the way in which something is regarded, understood or interpreted.

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S35. Ans.(d)

Sol. Among the given alternatives, only (i) and (ii) can be used to fill in the given blanks. While (iii) is incoherent with reference to the context of the given sentences.

(i) mortified- cause (someone) to feel very embarrassed or ashamed.

(ii) humiliated- make (someone) feel ashamed and foolish by injuring their dignity and pride.

(iii) appeased- pacify or placate (someone) by acceding to their demands.

S36. Ans.(b)

Sol. All of the given words have similar meanings and each of them can be used to fill in the given blanks.

(i) impaired- weakened or damaged.

(ii) blunted- weaken or reduce the force of (something).

(iii) vitiated- spoil or impair the quality or efficiency of something.

S37. Ans.(d)

Sol. Among the given alternatives, only sentence (d) is incoherent because it addresses transportation expansion, whereas the rest of the sentences discuss health care facilities and can be rearranged to produce a logical paragraph.

S38. Ans.(a)

Sol. Among the given options, only starter (ii) can be used to combine the given statements. The composition thus formed would be "Apart from training future leaders of India's public transportation system, Indian Railways officers will need to work together because they will be serving in the organization for decades."

(i) however- in whatever way; regardless of how.

(ii) apart from- in addition to; as well as.

(iii) anyhow- in a careless or haphazard way.

S39. Ans.(b)

Sol. Among the given options, only starter (i) and (iii) can be used to combine the given statements. The composition thus formed would be:

(i) In addition to merging services to adapt training for newly hired officers, early and mid-career training programs are also required since the focus should be on increasing the ability to manage.

(ii) Besides merging services to adapt training for newly hired officers, early and mid-career training programs are still required since the focus should be on increasing the ability to manage.

(i) in addition to- as an extra person or thing.

(ii) nevertheless- in spite of that; notwithstanding; all the same.

(iii) besides- in addition to; apart from.

S40. Ans.(e)
Sol. Among the given options, only starter (ii) can be used to combine the given statements. The composition thus formed would be "Even in a system based on social insurance, public service is crucial because, in the absence of public health institutions, patients are at risk of racing to expensive hospitals every other day, wasting resources and increasing costs."
(i) due to- because of; owing to.
(ii) even- used in comparisons for emphasis.
(iii) instead- as an alternative or substitute.

Solutions (41-45):
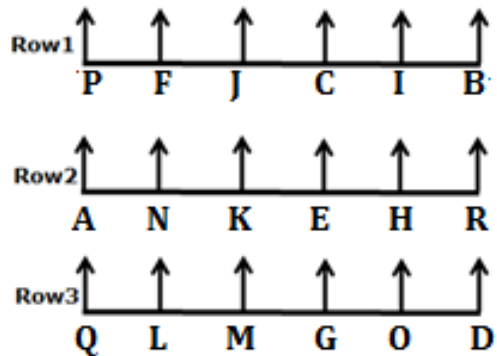
S41. Ans.(e)
Sol. Four persons sit between Q and the one who sits immediate right of O.

S42. Ans.(c)
Sol. Only I statement is true.

S43. Ans.(d)
Sol. First box is kept north-east of second box in all options except (d) where first box is kept north-west of second box.

S44. Ans.(a)
Sol. J sits third to the left of B who sits at extreme right end in row 1.

S45. Ans.(a)
Sol. Only O remains unchanged in its position after rearrangement.

Solutions (46-49):

Add 2 in the total number of letters

TRUST ⟹ 6 T U —— Immediate next letter of first letter of the word

Put the last letter of the word

S46. Ans.(d)

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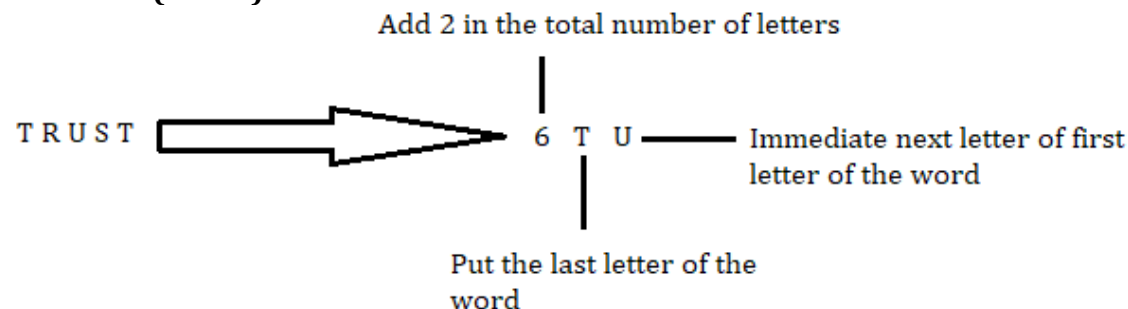
S47. Ans.(e)

S48. Ans.(c)

S49. Ans.(c)

S50. Ans.(c)
Sol. Inference is a Logical derivation. Option I can be only inferred as Restaurant owner has come up with contest name as "Bullet Thali" and prize is Bullet bike. The response from people is great. So, it is logically derived that Bullet bike has a huge craze and demand in Pune. Option II cannot be inferred, "only" words cancel its all possibilities. Option III can be assumed but it cannot be inferred.

Solutions (51-55):

Month	Date	Person	Vehicle
May	5	N	Bike
	7	P	Taxi
	20	M	Boat
August	5	O	Bus
	7	K	Jeep
	20	L	Car
November	5	T	Train
	7	Q	Chopper
	20	R	Airplane

S51. Ans.(e)
Sol. All the given combinations are correct.

S52. Ans.(e)
Sol. Six persons visit between Q and the one who goes by bike.

S53. Ans.(b)
Sol. L visits on 20th August.

S54. Ans.(a)
Sol. O goes by bus on 5th August.

S55. Ans.(b)
Sol. O is related to car.

Solutions (56-60):

Logic- In this input-output one number arrange in each step.

Step I: All Digits are arranged in increasing order within the number

Step II: All Digits are arranged in decreasing order within the number

Step III: Number are arranged in increasing order

Step IV: Eliminate first and last digit of the number

Step V: Difference between the digits with in the number

Input: 3472 6721 9733 7123 5361 8417

Step I: 2347 1267 3379 1237 1356 1478

Step II: 7432 7621 9733 7321 6531 8741

Step III: 6531 7321 7432 7621 8741 9733

Step IV: 53 32 43 62 74 73

Step V: 2 1 1 4 3 4

S56. Ans.(d)

S57. Ans.(d)

S58. Ans.(a)

S59. Ans.(e)

S60. Ans.(b)

S61. Ans.(c)

Sol. Option (a)-False-Reason: It support the motive behind the verdict by High Court. If there will be provision of penalty, there will be fear and awareness to wear masks.

Option (b)-False-Reason: It supports the motive behind verdict.

Option (c)-True-Reason: If police personnel will be allowed driving without mask, they also can be carrier of deadly virus and other people will also be motivated in wrong direction.

Option (d) False-It also supports the motive behind verdict by High Court as wearing mask in public transport which will prevent the spread of the deadly virus.

S62. Ans.(b)

Sol. Option (I)-True-Reason: High court is giving verdict about the people in Delhi, it means they are assuming that all will follow the rules.

Option (II)-True-Reason: High court is giving importance to mask; they are terming it as "Suraksha Kavach". Surely, people will get aware.

Option (III)-False-Reason: Appeal to wear mask has been done, but due to this car will not be less on the road. As there is not any lockdown or curfew.

Solutions (63-65):

Male	Female	Kids
Deepak	Pragya	Puja
Yash	Anjana	Anu
Rohan	Surbhi	Monty
Vikas	Poonam	Tina

S63. Ans.(c)
Sol. Puja is the child of Pragya.

S64. Ans.(d)
Sol. Pragya is the mother of Puja.

S65. Ans.(b)
Sol. Rohan is the husband of Surbhi.

S66. Ans.(b)
Sol. G attends seminar on Saturday.

Days	Persons
Monday	
Tuesday	
Wednesday	A
Thursday	F
Friday	
Saturday	G
Sunday	

S67. Ans.(a)
Sol. G goes first to the market.

Persons
G
C
A
F
H

S68. Ans.(b)
Sol. S sits second to the left of W.
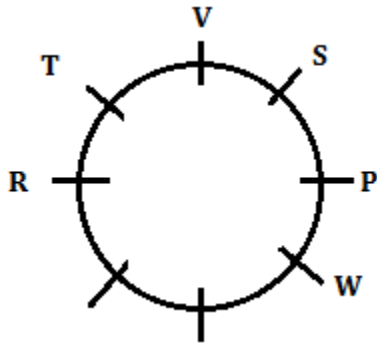
S69. Ans.(e)
Sol. Three male members are there in the family.
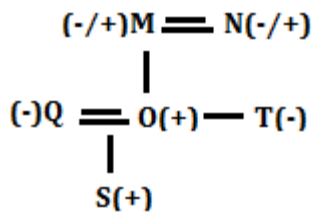
Solutions (70-74): From the given statements, the one who goes on Wednesday goes to Red fort. More than three persons goes before Piya. Piya goes just after Arya but not on the last day of the week. The number of persons who goes between Arya and Vikas is same as the number of persons who goes between Arya and kiran. Kiran goes to Lotus temple. Vikas goes to either Taj mahal or Golden temple but not on Monday. Vikas goes before Piya who doesn't goes to Robbers cave and Hawa mehal. So, we have two possible cases i.e., case1 and case2.

Days	Case 1		Case 2	
	Persons	**Places**	**Persons**	**Places**
Sunday	Vikas	Taj mahal/ Golden temple		
Monday				
Tuesday			Vikas	Taj mahal/ Golden temple
Wednesday	Arya	Red fort		Red fort
Thursday	Piya		Arya	
Friday			Piya	
Saturday	Kiran	Lotus temple	Kiran	Lotus temple

Only one person goes between Hema and Neema. So, case 1 gets eliminated here. Neema goes after Vikas. Shiv goes to Golden temple which means Vikas goes to Taj mahal. Arya doesn't go to Hawa mahal and Qutub minar and Piya also doesn't go to Robbers cave and Hawa mehal which means Hema goes to Hawa mehal, Piya goes to Qutub minar and Arya goes to Robbers cave. So, the final arrangement is.

Days	Persons	Places
Sunday	Shiv	Golden temple
Monday	Hema	Hawa mehal
Tuesday	Vikas	Taj mahal
Wednesday	Neema	Red fort
Thursday	Arya	Robbers cave
Friday	Piya	Qutub minar
Saturday	Kiran	Lotus temple

S70. Ans.(b)

S71. Ans.(d)

S72. Ans.(d)

S73. Ans.(c)

S74. Ans.(e)

S75. Ans.(b)
Sol. C is the father-in-law of R.

C(+) —— L

H(-) ═══ R(+)

B
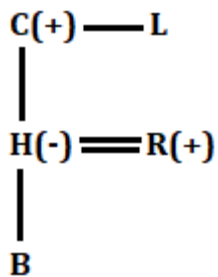
S76. Ans.(a)
Sol. N is the father of S.

V(-) ═══ N(+) —— G

S(-) —— K(+) —— T
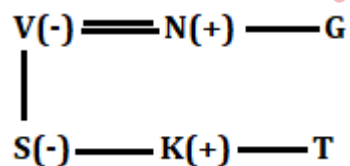
S77. Ans.(d)
Sol. K has two children, E and J.

U(-) ═══ K(+)

E(+) —— J(-) ═══ F(+)

H

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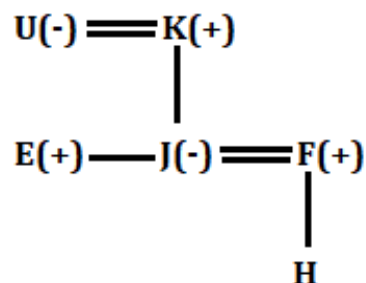
S78. Ans.(c)
Sol. Three females are there in the family- D, K, W
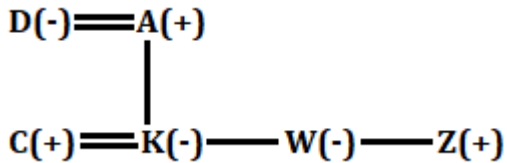
S79. Ans.(c)
Sol. Option (a) & (b) supports the importance of farm ponds. Only (c) weakens its significance. It is clearly mention farm pond is cost effective and can boost farmers' income.

S80. Ans.(c)
Sol. The problem of lower water level has attracted the attention of the country. Farm pond can help in water control. As it is cost effective and beneficial for rural livelihoods, so it can be a viable investment option. Only option (c) is false in context of the statement.

Solutions (81-84):
U 3 7 @ # 4 5 T & ! F U 9 M 6 3 © G 5 Ω 3 A Z 5 2 € 8 β L P 3
STEP I- U 7 @ # 4 5 T & ! F U M 3 © G Ω 3 A Z 2 € 8 β L **3 3 5 5 6 9** P
STEP II- U 7 @ # 4 5 T **! &** F U M **©** **3** G Ω 3 A Z 2 € **β 8** L 3 3 5 5 6 9 P
STEP III - U 7 @ # 4 5 T ! & U M © 3 G Ω 3 A Z 2 € β 8 L 3 3 5 5 6 9 P

S81. Ans.(e)
Sol. Six numbers arranged in step I.

S82. Ans.(b)
Sol. 7 @, 2 €

S83. Ans.(a)

S84. Ans.(c)
Sol. Number 6th from the right end in step I=3
Number 5th from the left end in step III=3
Sum=3+3=6

S85. Ans.(c)
Sol. Statement (I)-False-Reason: We can assume, some of the customers may shift to Restaurant A but in statement, it is said "All the Customer". So, this assumption is wrong.
Statement (II)-True-Reason: As price of Restaurant A has been slashed so, some of the customers may think as price is low, quality will be down.
Statement (III)-True-Reason: It can be assumed, to maintain the competition world Restaurant A has slashed their price but as infrastructure and kitchen is modern and spacious, so to maintain the cost Restaurant B has not decreased their price.

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Solutions (86-90): F sits second to right of the cricketer who is from South Africa. The cricketer who is from India is an immediate neighbour of the cricketer who is from South Africa. Two cricketers sit between the cricketer who is from India and B. There are three possibilities.
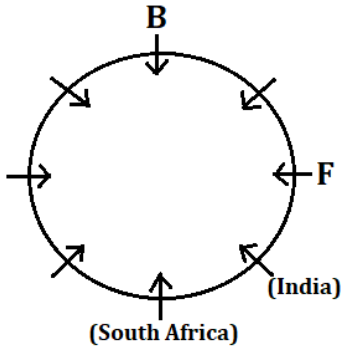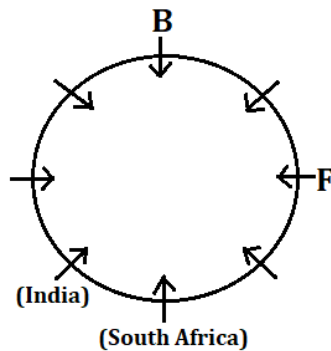
Case-1   Case-2   Case-3
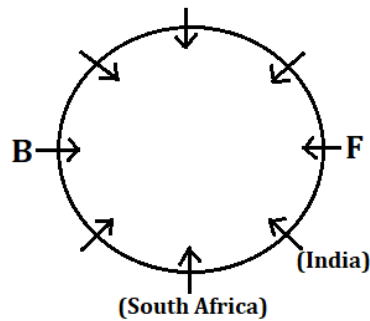
C and E are immediate neighbours of each other. Neither C nor E is an immediate neighbour of B and the cricketer who is from South Africa. From this condition case-1 and case-2 will be eliminated. Only one person sits between C and the cricketer who is from Sri Lanka and there is one more possibility in case-3, i.e case-3a.
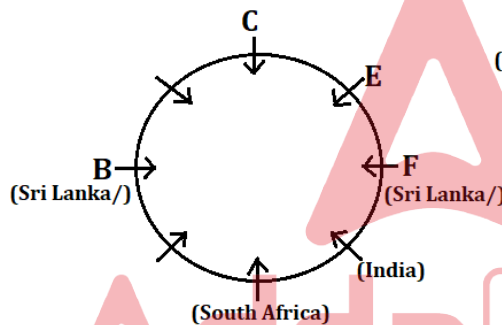
Case-3   Case-3(a)
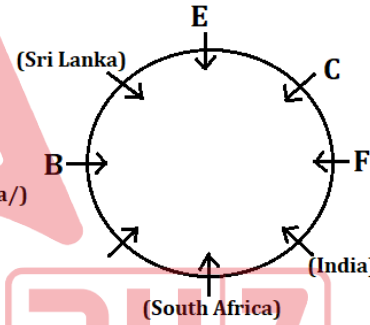
The cricketer who is from England sits second to right of D. D is neither the cricketer of South Africa nor India. B is not from West Indies. G and the cricketer who is from West Indies are immediate neighbours of each other. H sits third to left of the cricketer who is from New Zealand. The cricketer who is from Australia sits second to left of the cricketer who is from Zimbabwe. From this condition case-3 will be eliminated and the final arrangement is-
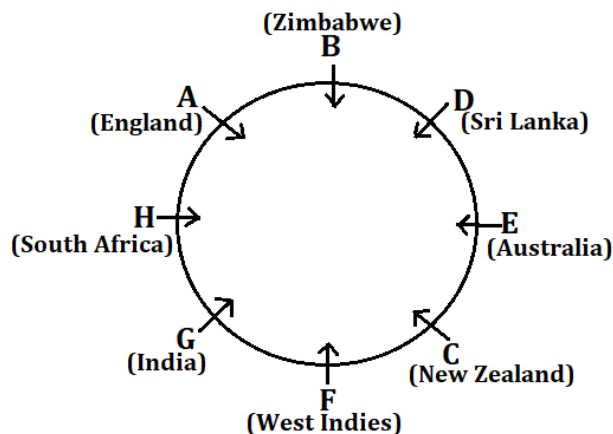
S86. Ans.(d)

S87. Ans.(c)

S88. Ans.(b)

S89. Ans.(c)

S90. Ans.(d)

Solutions (91-93): From equation (I)
$m + 3 = p$ and $3m = q$
From equation (II)
$m + 1 = p - 2$ and $m = q - 4$
From equations (I) and (II),
$3(q - 4) = q$
$3q - 12 = q$
$q = 6$
So, $m = \frac{6}{3} = 2$
$p = 2 + 1 + 2 = 5$

S91. Ans.(b)
Sol. $m = 2$

S92. Ans.(d)
Sol.
Required value $= 2 \times 5 + 6 = 16$

S93. Ans.(c)
Sol. Equation (III):
$a^2 - 7a + 10 = 0$
$a^2 - 5a - 2a + 10 = 0$
$a(a - 5) - 2(a - 5) = 0$
$(a - 5)(a - 2) = 0$
$a = 2, 5$
So, statement 2 and statement 3 satisfy.

S94. Ans.(a)
Sol. Required distance $= 24 \times 3 + 36 \times 2$
$= 144 \; km$

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S95. Ans.(c)

Sol. Let present age of A, B and C be a, b and c years respectively.

ATQ,

$a + b + c = 60$

$a + c = 39$

$\frac{(21-a)+(c-a)}{2} = 12$

$21 - a + c - a = 24$

$21 + c - 2a = 24$

$c - 2a = 3$

$39 - a - 2a = 3$

$a = \frac{36}{3} = 12$

$c = 27$

So, required age $= 27 + 6 = 33\ years$

S96. Ans.(c)

Sol. Distance covered by boat in upstream $= 6 \times 15 = 90$

Downstream speed of boat $= \frac{90}{3} = 30\ kmph$

So, required distance $= 30 \times 7 = 210\ km$

S97. Ans.(d)

Sol. Let cost price of article be Rs. 100x.

Marked price of article $= \frac{100x \times (100+P)}{100} = Rs.\,(100 + P)x$

ATQ,

$(100 + P)x \times \frac{75}{100} = 100x \times \frac{135}{100}$

$100 + P = 180$

$P = 80$

Marked price = 180x

New selling price $= 171x$

So, discount % $= \frac{180x-171x}{180x} \times 100$

=5%

S98. Ans.(a)

Sol. Let original number of $10x + y$.

ATQ

$10x + y - 10y - x = 18$

$9x - 9y = 18$

$x - y = 2$

Unit digit of 22^6 = y = 4

So, $x = 6$

Original number = 64

Required product $= 6 \times 4 = 24$

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Solutions (99-103): Number of students who study both Science and Mathematics but not Hindi = 0

Number of students who study all subjects = 4

Number of students who study both Science and Hindi but not Mathematics = $3 \times 4 = 12$

Number of students who study both Hindi and Mathematics but not Science = $12 \times \frac{2}{3} = 8$

Let number of students who study only Science be y.

ATQ,

$4 + 12 + 8 + y + 11 = 50$

$y = 15$

Number of students who study only Hindi = $\frac{40}{100} \times 15 = 6$

Number of students who study only Mathematics = $11 - 6 = 5$
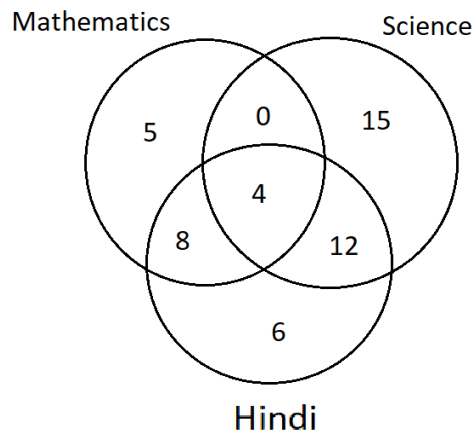
S99. Ans.(a)

Sol. Required number = $12 + 4 = 16$

S100. Ans.(c)

Sol. Required number = $8 + 12 + 0 = 20$

S101. Ans.(d)

Sol. Required percentage = $\frac{15-12}{12} \times 100 = 25\%$

S102. Ans.(e)

Sol. Number of students who do not study Mathematics = $50 - (5 + 4 + 8) = 33$

Number of students who do not study Hindi = $50 - (8 + 4 + 12 + 6) = 20$

So, required difference = $33 - 20 = 13$

S103. Ans.(d)

Sol. Required ratio = $\frac{8+12+4+6}{15} = 2:1$

Solutions (104-107): Let male population and female population of village A be aX and aY respectively. And male population and female population of village B be bY and bX respectively.

ATQ

$$\frac{a(X+Y)}{b(X+Y)} = \frac{3}{2}$$

$$\frac{a}{b} = \frac{3}{2}$$

Let a = 3p and b = 2p

So, $3pX - 2pX = 880$

$pX = 880$

Male population of village A and female population of village B is 2640 and 1760 respectively.

But we can't find the female population of village A and male population of village B. Also, we can't find the total population of both villages.

S104. Ans.(d)
Sol. Required number = 1760

S105. Ans.(c)
Sol. Required number = 2640

S106. Ans.(e)
Sol. As number of females in village A is not determined. So we can't find the percent difference.

S107. Ans.(a)
Sol. Female population of village A = $3py = 2640 + 120$

$3py = 2760$

Male population of village B = $2760 \times \frac{2}{3} = 1840$

So, total population of village B = $1840 + 1760 = 3600$

Solutions (108-110):
The pattern of the series I:

$5 \times 1 + 1 = 6$
$6 \times 2 + 1 = 13$
$13 \times 3 + 1 = 40$
$40 \times 4 + 1 = 161$
$161 \times 5 + 1 = 806$

So, series II will be:

$p = 2 \times 1 + 1 = 3$
$q = 3 \times 2 + 1 = 7$
$r = 7 \times 3 + 1 = 22$
$s = 22 \times 4 + 1 = 89$

S108. Ans.(c)
Sol. $s = 89$

S109. Ans.(d)
Sol. $2 \times 1 + 1 = 3$
$3 \times 2 + 1 = 7$
$7 \times 3 + 1 = 22$
$22 \times 4 + 1 = 89$
$89 \times 5 + 1 = 446$
$446 \times 6 + 1 = 2677$
So, n^{th} term = 7

S110. Ans.(e)
Sol. Required value = $22 - 3 \times 7 = 1$

Solutions (111-115): Let quantity of juice and water in vessel B be 3a and 2a respectively.
Quantity of milk in vessel B = $2a \times \frac{1}{2} = a$
So, $a + 3a + 2a = 150$
$a = 25$
So, quantity of Milk, water and juice in vessel B is 25, 50 and 75 liters respectively.
Quantity of juice in vessel C = $50 \times \frac{3}{5} = 30 \ liter$
Quantity of juice in vessel A = $\frac{80}{100} \times (75 + 30) = 84 \ liter$
Quantity of water in vessel C = $\frac{80}{100} \times 75 = 60 \ liter$
Quantity of water in vessel A = $84 \times \frac{5}{6} = 70 \ liter$
Quantity of milk in vessel C = $60 \times \frac{5}{4} = 75 \ liter$
Quantity of milk in vessel A = $\frac{98}{100} \times (25 + 75) = 98 \ liter$

Vessel	Quantity of Milk	Quantity of water	Quantity of Juice	Total
A	98	70	84	252
B	25	50	75	150
C	75	60	30	165
Total	198	180	189	567

S111. Ans.(a)
Sol. Required ratio = $(98 + 25) : (50 + 60)$
= $123 : 110$

S112. Ans.(c)
Sol. Ratio of quantity of milk, water and juice in vessel A
= $98 : 70 : 84$
= $7 : 5 : 6$
So, quantity of juice in vessel A = $84 - \frac{6}{18} \times 36$
= $72 \ liter$
So, required difference = $75 - 72 = 3 \ liter$

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S113. Ans.(b)
Sol. Required sum $= 252 + 150 = 402 \ liter$

S114. Ans.(b)
Sol. The mixture of remaining quantity in vessel B will remain same in all the steps.
Respective ratio of quantity of milk, water and juice in vessel B
$= 25 : 50 : 75$
$= 1 : 2 : 3$
So, remaining quantity of milk in vessel B
$$= 25 - \frac{1}{6} \times (9 + 18 + 27)$$
$= 16 \ liter$
Remaining quantity of juice in vessel B $= 75 - \frac{3}{6} \times (9 + 18 + 27)$
$= 48 \ liter$
So, required difference $= 48 - 16 = 32 \ liter$

S115. Ans.(c)
Sol. Required difference $= (70 - 84) \times \frac{20}{100} + (50 - 75) \times \frac{40}{100} + (60 - 30) \times \frac{55}{100}$
$= -2.8 - 10 + 16.5$
$= 3.7 \ liter$

S116. Ans.(c)
Sol. Let average weight of 5 students be 'x' kg and weight of teacher be 't' kg.
So, $x + t = 104$
Also given,
$5x + t = (x + 4) \times 6$
$5x + 104 - x = 6x + 24$
$2x = 80$
$x = 40$
So, weight of teacher $= 104 - 40 = 64 \ kg$

S117. Ans.(d)
Sol. $0.9X$ women can complete the whole work in $= 3(Y - 8)$ days
$0.8X$ women complete the same work in $= 36 \times 3 = 108$ days
So, $0.9X \times 3(Y - 8) = 0.8X \times 108$
$3Y - 24 = 96$
$3Y = 120$
$Y = 40$
If X men complete the work in 40 days, then 0.5X men complete $1/4^{th}$ work in $=$
$= 40 \times 2 \times \frac{1}{4} = 20 \ days$

S118. Ans.(a)
Sol. Let monthly salary be 100a.
Amount spend on Rent = 25a
Amount spend on Groceries = 32a
Amount spend on Mutual Fund = $43a \times \frac{11}{16}$
Amount spend on Fixed Deposit = $43a \times \frac{5}{16}$
ATQ,
$12 \times \frac{43a}{16} \times (11 - 5) = 77400$
$a = 400$
So, amount he spend each month on Groceries = $32a = Rs. 12800$

S119. Ans.(b)
Sol. Probability of picking one red ball = $\frac{8}{8+x+y} = \frac{1}{2}$
$x + y = 8$ ....(i)
Probability of picking one green ball = probability of picking one blue ball
$\frac{x}{8+x+y} = \frac{y}{8+x+y}$
$x = y$ ...(ii)
From equation (i) and (ii)
$x = y = 4$
So, number of blue ball = 4

S120. Ans.(a)
Sol. Amount received after first 8 years = $X + \frac{X \times 12 \times 8}{100} = 1.96X$
ATQ,
$\frac{1.96X \times 12 \times 8}{100} - X = 5730.4$
$88.16X = 573040$
$X = 6500$

S121. Ans.(e)
Sol. Amount after 2 years = $1500 \times \frac{44}{100} + 1500 = Rs. 2160$
Reaming amount = $2160 \times \frac{20}{100} = Rs. 432$
Penalty amount = $520 - 432 = Rs. 88$

S122. Ans.(a)
Sol. Time taken by pipe A to fill full tank = $6 \times 2 = 12 \ hours$
Let capacity of tank be 36 units (LCM of 12, 18 and 9)
So, efficiency of pipe A, pipe B and pipe C is 3, 2 and 4 units/hour respectively.
So, required time = $\frac{36 \times \frac{80}{100}}{(3+2-4)} = 28.8 \approx 29 \ hours$

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S123. Ans.(c)
Sol. Ratio of profit share of investment of A, B and C
$= 2 \times 12 : 3 \times X : 6 \times (X + 2)$
$= 8 : X : 2(X + 2)$
ATQ,
$\frac{2X+4}{3X+12} = \frac{5}{9}$
$18X + 36 = 15X + 60$
$X = 8$

S124. Ans.(d)
Sol. Let amount invested by B be 5a.
So, amount invested by A and C is 10a and 19a respectively.
So, profit share of A $= \frac{10a}{34a} \times 2109 \approx Rs.\,620$

S125. Ans.(a)
Sol. Cost price of article = Rs. X
Marked price of article = Rs. 5X
Selling price of article = Rs. 2X
So, discount percentage $= \frac{3X}{5X} \times 100 = 60\%$

S126. Ans.(e)
Sol. Quantity I:
$2x^2 - x = 3$
$2x^2 - x - 3 = 0$
$2x^2 + 2x - 3x - 3 = 0$
$2x(x + 1) - 3(x + 1) = 0$
$(x + 1)(2x - 3) = 0$
$x = -1, \frac{3}{2}$
Quantity II:
$y^{-2} = \sqrt{625}$
$\frac{1}{y^2} = 25$
$y = \frac{1}{5}, -\frac{1}{5}$
So, no relation can be established.

S127. Ans.(e)
Sol. Let present ages of A, B and C be a, b and c years respectively.
$a - x = b + x$
$a - b = 2x$ ....(i)
$c = 2b$ ...(ii)
$c - x = a + 2x$
$c - a = 3x$ ....(iii)
We have three equations and four variables. So, we cannot find the ages of A, B and C.

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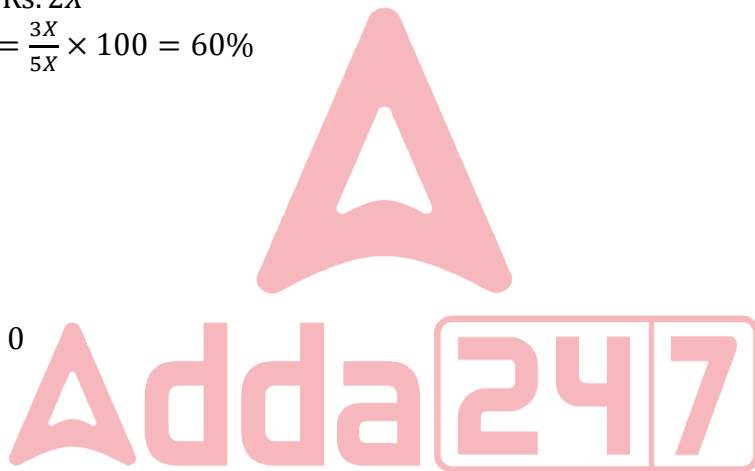
S128. Ans.(b)
Sol. Let cost price of article X and article Y be 100x and 100y respectively and discount percent be a%.

Marked price of article X = $140x$

Selling price of article X = $140x \times \frac{100-a}{100} = 280$

$\frac{100-a}{100} = \frac{2}{x}$ ....(i)

Marked price of article Y = $115y$

Selling price of article Y = $115y \times \frac{100-a}{100} = 276$

$\frac{100-a}{100} = \frac{12}{5y}$ ....(ii)

From equation (i) and (ii)

$\frac{2}{x} = \frac{12}{5y}$

$\frac{x}{y} = \frac{5}{6}$

Let value of x and y be 5b and 6b respectively.

Quantity I: cost price of article Y = $100y = 600b$

Quantity II: marked price of article X = $140x = 700b$

So, quantity II > quantity I

S129. Ans.(b)
Sol. Let length and breadth of rectangle be 'l' and 'b' respectively. Radius of circle be 'r'.

So, b = 2r and l = 58 – 2r

Ratio of area of circle and area of rectangle = $\frac{\pi \times r^2}{l \times b} = \frac{11}{15}$

$\frac{\frac{22}{7} \times r^2}{2r \times (58-2r)} = \frac{11}{15}$

$15r = 406 - 14r$

$r = 14$ cm

$l = 30\ cm, b = 28\ cm$

Quantity I: 600 cm²

Quantity II: area of rectangle = $30 \times 28 = 840\ cm^2$

So, Quantity I < Quantity II

S130. Ans.(b)
Sol. From 1 and 2,

$2^{3x+y} = 2^{2x+\frac{3y}{2}}$

$3x + y = 2x + \frac{3y}{2}$

$\frac{x}{y} = \frac{1}{2}$

From 1:

$2^{5x} = \sqrt{32} = 2^{\frac{5}{2}}$

$5x = \frac{5}{2}$

$x = 0.5, y = 1$

Quantity I: $x + y = 1.5$

Quantity II: 2

So, quantity II > quantity I

S131. Ans.(c)

Sol. Required average = $\frac{220 \times \frac{7}{22} + 240 \times \frac{13}{24} + 210 \times \frac{10}{21}}{3}$

$= \frac{300}{3} = 100$

S132. Ans.(d)

Sol. Given, In the year 2021, 20% male from R = $240 \times \frac{11}{24} \times \frac{20}{100} = 22$

Remaining male in society R = 110 – 22 = 88

Number of females in society R in 2021 = $88 \times \frac{5}{4} = 110$

Number of females left the society R in 2021 = $240 \times \frac{13}{24} - 110 = 20$

S133. Ans.(a)

Sol. Number of people in society X = $160 \times \frac{120}{100} = 192$

According to ques.

house x Each person = total people

10 x 4 = 40

10 x 6 = 60

5 x 8 = 40

Remaining people = 192 - (40+60+40) = 192 – 40 = 52

In remaining house there is only two people live in each house so,

26 x 2 = 52

Total number of houses in society X = 10+10+5+26 = 51

S134. Ans.(b)

Sol. Total number of females in society S = $200 \times \frac{2}{5} = 80$

Total number of females in society T = $210 \times \frac{10}{21} = 100$

So, required percentage = $\frac{(100-80)}{100} \times 100 = 20\%$

S135. Ans.(d)

Sol. Total number of people in society N = $210 \times \frac{24}{21} = 240$

Ratio of females to males in society N = 3:2

So, number of males in society N = $240 \times \frac{2}{5} = 96$

S136. Ans.(c)

Sol. Total number of males in 2021 in society P = $\frac{(220 \times \frac{15}{22} + 240 \times \frac{11}{24})}{2} = \frac{260}{2} = 130$

Total number of females in 2021 in society P = 130 −10=120

Total number of people in 2021 in society P = 130 + 120 = 250

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S137. Ans.(d)

Sol. $\frac{44}{4} \times \frac{7.5}{2.5} + 3 = \sqrt{?}$

$\sqrt{?} = 11 \times 3 + 3$

$36 = \sqrt{?}$

$? = 1296$

S138. Ans.(b)

Sol. $\sqrt{37.5\% \times 400 + 75\% \times 60} = ?$

$? = \sqrt{150 + 45}$

$? = \sqrt{196}$

$? = 14$

S139. Ans.(a)

Sol. $729 + 512 + 5 \times 18 = ?^3$

$1241 + 90 = ?^3$

$1331 = ?^3$

$? = 11$

S140. Ans.(b)

Sol. $\frac{62}{100} \times ? + 576 = 961 - 13$

$\frac{62}{100} \times ? = 948 - 576$

$\frac{62}{100} \times ? = 372$

$? = 600$