VARC

Solution 1: This is an overall easy passage to read. This question is a sort of factual question, the answer of which can be indirectly seen in this passage, but since the question is based on 'the author least likely to agree', the choice that is not there in the passage or the choice that is against the author's contention is likely to be the right choice. The question asks us to find the least likely reason for 'the increase in screen-time". The ones that are stated or implied in the passage are not the right choices, but the one that is not stated or implied will become the right choice.

The evidence for choice 1 can be seen in the fourth paragraph of the passage: "Tech companies worked hard to get public schools to buy into programs that required schools to have one laptop per student, arguing that it would better prepare children for their screen based future"

The evidence for choice 2 can be seen in the last paragraph of the [passage: "There is a small movement to pass a "right to disconnect" bill, which would allow workers to turn their phones off, but for now a worker can be punished for going offline and not being available".

The evidence for choice 4 can be seen in the last sentence of the passage: "There is also the reality that in our culture of increasing isolation, in which so many of the traditional gathering places and social structures have disappeared, screens are filling a crucial void"

In the passage, we don't have any evidence for choice 3. Thus 3 is the best choice.

[Option: 3]

 Solution 2: Since the question asks us a specific detail about Silicon Valley tech, we can go to the part of the passage where we have the noun 'Silicon Valley'. The second last and the third last para are likely to have the answers. Two things about Silicon Valley are mentioned, one in the third last para and one in the second last para.

The third last para says "…Tech companies worked hard to get public schools to buy into programs that required schools to have one laptop per student, arguing that it would better prepare children for their screen-based future. But this idea isn't how the people who actually build the screen-based future raise their own children". From this we can derive Solutions option 1 as the right choice because this is precisely how Silicon Valley tech companies have confused the public.

Some of us may feel like marking choice 3 as the right answer, but what is given in choice 3 is a complete distortion of what is given in the passage. The passage says "There are fleets of psychologists and neuroscientists on staff at big tech companies working to hook eyes and minds to the screen as fast as possible and for as long as possible."

The above sentence tells us that neuroscientists and the psychologists are working to do something, not to hide something. Nowhere does the sentence imply that they are deliberately trying to conceal findings of something. In fact, they are trying to find ways to hook our mind and attention to the screen.

Thus option 3 is not the right choice.

Options 2 and 4 in no way can be connected to Silicon Valley tech companies.

[Option: 1]

Solution 3: To answer this question correctly there is no need to read the passage. The options have enough evidence using which we can mark the right answer. The statement in the question seems to be making a comparison between "the richer, and the not so richer". In other words, option 3 which mentions the phrase 'new class marker' is the right match for the statement given in the question. Moreover, "…comfortable with human engagement", and "the more you spend to be off-screen" are closely connected because "time spent off screen=time spend in human engagement", as per the passage. The other choices are nowhere so closely connected with the statement given in the question as option 3 is.

[Option: 3]

Solution 4: This question is one of the easiest question of the paper. You can mark option 3 even without looking at the other choices. The author is in favour of real-time human contact, not virtual human contact. So if choice 3 speaks positively about on-screen time, the author will definitely not agree with it.

Psychologists and neuroscientists are working to make on-time engagement addictive. The passage does not say that directly but this is definitely implied from the second last para of the passage. The evidence for option 4 and 2 can be seen in the passage. Thus 3 is the best choice.

[Option: 3]

Solution 5: This question asks us to choose an option that best captures the main argument of the last paragraph of the passage. There are two strong contenders for the right choice, option 2 and option 4. The point is to decide whether the last para focuses on "the presence or the absence of the financial crisis" or "setting aside the ideology of individualism".

The best choice is 4. The author clearly states that "after decades in which the ideology of the western world was personally and economically individualistic, we have been hit by a crisis...in which we are all together". This is the reason why option 4 clearly matches what is given in the last paragraph. The point is how to disprove choice 2. If you carefully read choice 2, you will realise that it is the opposite of what is given in the paragraph. Choice 2 says "you will be crazy to think that there is no crisis", whereas the paragraph in the passage says "...there are large parts of it that you would be crazy to like". So if you like you would be crazy, and the option says you would be crazy to think that there is no crisis. This option is a distortion of what is given in the passage.

Option 1 is the opposite of what the author wants to say. The author says that economic individualism has taken a hit, whereas the option says "the ideology of individualism will

strengthen". Option 3 says "in decades to come other ideologies will emerge". Nothing of this sort has been mentioned in the passage.

[Option: 4]

Solution 6: This question asks to draw an inference from the first sentence of the passage. This is definitely a far less-time-consuming question. The first sentence says "I have been following the economic crisis for more than two years now".

Option 1 says "the author has witnessed many economic crisis". Well, we have the phrase "this economic crisis". From this we can't infer that he has witnessed many economic crises. Option 1 goes out.

Option 2 says "the author's preoccupation with the crisis is not less than two years old." This seems to be correct. If he says that I have been following for two years, it means that his preoccupation is certainly not less than two years. Too simple to be true, right! But this is how inferences are. You derive something on the basis of a given fact.

Option 3 absurdly suggests that the author is being followed, but here the author is following the crisis.

Option 4 says that the crisis outlasted the author's preoccupation with it. We know that the author is following the crisis, but the crisis and the author's preoccupation with it are happening in two different time periods. The crisis has already happened and passed, whereas the author is learning about it and following it as a historian. The aftermath of the crisis will definitely be seen for years to come, but about the crisis itself there is no such evidence.

Option 1 is the best choice.

[Option: 2]

Solution 7: This looks like a difficult question because of the way it is worded, but is not a difficult question at all. The choices have to be inversed and then have to be checked whether they support the author. If yes, then that choice is the right choice.

Choice 1 can be the right choice because the choice, when falsified, says "the crisis was failure of collective action to rectify economic problems". It was indeed a failure of collective action because the author in the passage says "the sluggishness of the world's governments in not preparing for the crisis was stupefying. The author here suggests that the crisis could have been prevented by world's governments.

Choice 2 is correct the way it is. If it is falsified, it would be exactly opposite of what the author wants to say.

Choice3, too, is correct the way it is, but when falsified, it becomes opposite of what the author wants to say.

Choice 4 does not relate to the author's claims. He says that he has followed the crisis for two years, but there is no evidence for how long the crisis lasted.

[Option: 1]

Solution 8: For this question, we have to pick the choice that does not support the author's argument. Option 1 is exactly opposite of what the author argues. In the last paragraph he writes "the ideology of the western world was personally and economically individualistic. But the crisis shows that we are all in it together". Thus the author implies that the failure of economic system is the failure of their ideologies. Option 1 is the exact opposite of this and is thus not supporting the author in any way. Option 1 is the right answer.

All the other choices find support in the passage. For instance, the author towards the end of the first paragraph says that the finance industry is a kind of priesthood administering its own mysteries, something that supports choice 3.

[Option: 1]

Solution 9: This is one of the easiest questions of the paper, the author right across the passage argues that we all need financial literacy. So if an education curriculum promotes financial literacy in the masses, the author would be very delighted at the prospect. As far as choice 3 is concerned, the author is not so much in favour of economic research as he is in favour of basic economic education for the layman

[Option: 1]

Solution 10: This is a slightly challenging question. To find the right answer, we have to read the entire second paragraph. The author towards the end says "Said's work became a model for demonstrating cultural forms of imperialism in travel texts... legitimating discourses such as those articulated through travel writing" ...to legitimise something means to give approval to something or justify something. Thus choice 2 is the right option, without a shade of doubt. Option 4 goes out because colonial domination and cultural imperialism seem to be one and the same thing. For the other choices we don't see any significant evidence.

[Option: 2]

Solution 11: This question is specifically about how Victorian women experienced self-development through their travels. The answer to this question can be found in the last few sentences of the last paragraph. The second last sentence of the last paragraph says that "...many studies demonstrated the ways in which women's gendered identities were negotiated differently "at home" than they were "away", thereby showing women's self-development through travel. Thus without the slightest doubt we can mark 1 as the right choice

[Option: 1]

Solution 12: This is a slightly tricky question. There are a few close choices, but by elimination we can arrive at the right choice. We have to answer for American literature of the 1920s. Option 1 goes out because it did not develop the desire for male protagonist's desire for independence. Instead it expressed their sense of independence they experienced through travel. Thus instead of developing the desire, it celebrated the freedom that travel gives, making choice 3 the right answer. There is no reference for discovering a sense of identity different from others. Option 4 goes out because though there was emphasis on value of rural folk traditions, it doesn't mean that they participated in it. They could have appreciated the value of rural folk traditions simply by observing those traditions from a distance or by indirectly studying about them. Choice 4 is not as directly stated as option 3 is

[Option: 3]

Solution 13: This is a challenging question and demands careful reading of the last paragraph. The question wants us to pick a choice that would not have influenced feminist scholars' understanding of the experiences of Victorian women. Choice 1 goes out because what is given in the choice did influence. The passage says "from a liberal feminist perspective...", suggesting that there was a liberal perspective brought in by the feminists. Remember we have to mark for the choice that did not influence the feminists. Option 3 goes out because gender issues can be derived from the fact that there were ideological constructs that posited men as explorers and women tied to home. So there were gender issues. Thus 3 can be ruled out. The fact that "poststructural turn in studies of Victorian travel writing has focussed attention on women's diverse and fragmented identities", suggests that feminists were aware of the ways in which identity was formed. Without being aware of that they would not be able to understand the gendered identities of Victorian women. For option 2 we have the least amount of evidence. The Victorian women were indeed tied to their class, but that doesn't mean that the feminists had knowledge of class tensions in Victorian society

[Option: 2]

 Solution 14: This is the easiest of all questions. The question wants us to answer for travel writing in general. Travel writing, from what is discussed in the passage, is very close to autobiographical writing. There is sense of independence, sense of self development through travel, sense of new identity...all these point towards personal experiences. Thus 4 is the best choice.

Solution 15: This is a slightly difficult passage to read. Bregman contrasts preagriculutral societies with agricultural societies. In answering the first question, we have to find the opinion of Bregman, who clearly supports Rousseau, clearly demonstrated in the third paragraph. Rousseau believes that "for the better part of 300,000 years, Homo sapiens lived a fulfilling life in harmony with nature . . . Then we discovered agriculture and for the next 10,000 years it was all property, war, greed and injustice." From this we see that there is ample support for choice 1. The rest can go out. Bregman is not an environmentalist; he is more of a social scientist. This eliminates 2. Again, choice 3 takes the

focus away from bringing out the difference between pre-agricultural society and post -agricultural society. Bregman's focus in not on population but on "human nature and human conditions". 1 is the best choice.

[Option: 1]

Solution 16: This question asks us to pick the option that finds mention in the passage. We have to simply look for the choices in the passage. Choice 1 goes out because nowhere is it given that both Hobbes and Rousseau believed in the need for a strong state. Option 2 goes out because Bregman does not agree with Hobbes; he instead sides with Rousseau. At the end of the passage, the author makes it very clear that the veneer theory is attributed to the Dutch biologist. Towards the end he says that human nature encompasses both Hobbes and Rousseau. Thus 3 also goes out. We are left with 4 as the only plausible choice, and we have enough evidence for it in the first paragraph, where the author says "we see other people as selfish...this was how Hobbes conceived our natural state to be...". By using the pronoun 'we', the author suggests that Hobbes views reflect the views of most people.

[Option: 4]

Solution 17: This is a slightly tricky question, but the answer is implied in the second last para of the passage. There the author says "in traditional history, the collapse of civilization is seen as 'dark ages', but Bregman says it was the other way round in most of human experience. In other words, Bregman wants to say that "collapse of civilization means time of change". The author goes on to say that the truth is somewhere in between. We have to answer for Bregman, not for the author. Thus B is the best choice.

[Option: 2]

Solution 18: In this question, for option 1, as far as the author is concerned, he agrees with Bregman. We have evidence for that in the fourth paragraph. The author says "this may be true". One might feel that 2 is correct, but the author has not stated any opinion contrary to Bregman's. In fact, there is no evidence for either agreement or disagreement. We have evidence only for choice 4 in the second last para of the passage where the author says "the truth is probably somewhere between...". which truth is the he talking about? Bregman believes that collapse of civilization brings changes and has not much to do with peace and progress, as much of conventional history depicts. The author by partially disagreeing with this takes an opposite stand. Thus 4 is the best choice.

[Option: 4]

Solution 19: We should start this arrangement by fixing the pronoun "each one" in sentence 1. It says "each one personified a different aspect of good fortune". This statement refers to sentence 3 because it is in 3 that we find the "seven popular deities... Considered to bring good luck and happiness". Thus the ideas of 3 and 1 are similar, with 3 acting as introduction and 1 taking the idea

ahead. 4 and 2 form the other unit because in 4 we have the phrase "only two of them were indigenous Japanese gods", while 2 says "the others were...". The contrast between the two indigenous gods and the other Buddhist gods connects 4 with 2. Thus 3142 forms a logical sequence.

[Answer: 3142]

Solution 20: This is a slightly difficult question. The theme of the paragraph seems to be "femininity and woman" 4 is the opening sentence because it introduces the idea of feminine beauty. This idea of feminine beauty is further elaborated in 4. 2 and 1 add to the story of feminine beauty by talking about the importance of feminine beauty and how appearances project feminine beauty. The sequence 4521 form a logical sequence, and 3 becomes the odd one out. 3 and 4 seem to embody the idea of race and class but no other sentence takes ahead the idea of race and class. Thus either 4 or 3 must be the odd one. But since 4 introduces the idea of feminine beauty, it goes well with the other three sentences, but 3 does not. Thus 3 is the right choice.

[Answer: 3]

Solution 21: For summary questions we must learn to pick the broader keywords and connect them together to form the summary. In this paragraph the author uses two broad keywords "genetic theory and metabolic theory. The genetic theory was successful because of the diversity of genetic models, and the same might happen for metabolic theory, which would provide a conceptual foundation for much of ecology." The contrast in choice 2 makes the choice an incorrect one because the author stresses on similarity, not contrasts. Option 1 says "metabolic theory must have the wide range of theoretical models". The word "must" makes this choice an incorrect one. The author talks about a possibility, not a necessity. Option 4 goes out it because it misses discussing the keyword "metabolic theory" and how it is compared with genetic theory. 3 is the right choice.

[Option: 3]

Solution 22: Sentence 1 says "it advocated a conservative approach". The pronoun "it" refers to the "consumer welfare standard" mentioned in 4. Thus 41 forms a pair. Though subtle, the connection between 1 and 2 can be easily established. Many industries gained market share because of conservative approach to antitrust enforcement (you can check the meaning of antitrust enforcement laws). Thus 1 is the cause and 2 is an effect. 3 is an example of that wherein we have the examples of technology companies such as Google, Facebook and Amazon which have benefitted immensely from dearth of enforcement actions. Thus 4123 is the right sequence.

[Answer: 4123]

Solution 23: This is a very simple summary question. There are two views pertaining to the evolution of language. One view believes in sharing of factual information as the reason, whereas the other

view believes in social bonding as the reason. The former being the dominant view, while the latter being the less dominant. Choice 1 does not being out this distinction. Choice 2 also misses on this comparison. Option 4 incorrectly mentions that the views were challenged by one group. There is no such thing in the passage

[Option: 3]

Solution 24: This question has two possible right sequences. Though the right answer is 2431, the sequence 2341 is also a logical sequence. 2 will definitely open the paragraph. Now the point is should we have 3 or 4 next in sequence. 4 introduces the idea of "Russian Doll" and elaborates on that further in 4. This makes 34 a logical pair. The idea of CNS connects 4 with 1. Thus 2341 seems perfectly logical. However, when we take the official answer, which is 2431, the sequence 31 is also logical because 3 mentions "hierarchy of complex structure smaller structures contained within larger ones" ...1 says that a similar hierarchy might be there in CNS as well. We believe that this question has two possible sequences.

[Answer: 2431]

Solution 25: This is one of the most difficult questions of this paper. There are three keywords in this paragraph: aesthetic political representation, disinterestedness and indifference. The author seems to prefer disinterestedness for aesthetic political representation. Option 1 is wrong because it inaccurately states that "aesthetic political representation constitutes of disinterestedness". But the passage says that aesthetic political representation should be seen from the angle of disinterestedness. 3 is too short a summary and misses on the crucial word "aesthetic". 2 and 4 are very close choices, with only a slight difference. 2 says "manifested through indifference", while 4 says "drawing from indifference". Now what is the difference between the two? When X is manifested through y, it is y that dominates. God is manifested through human beings, means that God is hidden within the human being and the human being dominates the outward appearance. Whereas drawing from something means, aesthetic political representation should have a tinge of disinterestedness. There is little to choose between 2 and 4, but the right choice is 4 because disinterestedness is just an outward shade which must be cultivated, but not necessarily allowed to dominate.

[Option: 4]

Solution 26: 5 says 'for instance'. We must find the sentence that logically connects with 5. Also, we must connect the pronoun 'it' in sentence 4 with some noun. The pronoun cannot refer to the plural "models" in 1 or the plural 'algorithms' in 5. It can refer to the singular noun "hate speech detection" in 2. Thus 24 form a pair. Similarly, 1 and 5 form a pair because the example of 'human-like biases' in 1 can be found in 5. Also, both the sentences speak about algorithms. Thus 2415 form a logical pair, and 3 is the odd one out. [Answer: 3]

From the given information, we can see that the points scored by the players in a round has the following possibilities:

HHHH: (-1, -1, -1, -1)

HHHL: (1, 1, 1, -3)

HHLL: (2, 2, -2, -2)

HLLL: (3, -1, -1, -1)

LLLL: (1, 1, 1, 1)

Also, the total points scored by the four players in a round can only be -4 or 0 or 4. From (1), the total points scored by the four players combined in the first three rounds is 6 + 2 - 2 - 2 = 4. Hence, in the first three rounds, the total points scored by the four players must be either (- 4, 4, 4) OR (0, 0, 4), in any order.

Also, from (1), in the first three rounds, Arun scored 6 points. And from (2), Arun scored 7 points at the end of round 6. Hence, in the 4th , 5th and 6th rounds, he must have scored 1 point.

From (4), Arun scored 3 points in exactly 2 rounds.

These two rounds cannot both be among 4th , 5th and 6th rounds because he scored a net of only 1 point in these three rounds combined.

Hence, Arun must have scored 3 points in one round among 1st , 2nd and 3 rd rounds. If Arun scored 3 points in the first three rounds, then in that round, the total points scored by the four players combined must be 0 (in the case of HLLL).

Hence, the total points scored by the four players in the first three rounds must be (0, 0, 4). Among the first three rounds, in one round, the three players must have scored (3, -1, -1, - 1), with Arun scoring 3 points. Since in another round, the four players scored a total of 4 points, they must have bid LLLL (as it is the only case in which they can score 4 points in total).

They must have scored (1, 1, 1, 1). Since Arun scored a total of 6 points in the first three rounds, and he scored 3 points and 1 point in two of these rounds, he must have score 2 points in the other round.

This is possible only if the players bid HHLL and the scores of the four players must be (2, 2, - 2, - 2). In the round that the players scored (3, - 1, - 1, - 1), Dipak must have scored - 1 points (since Arun scored 3 points). In the round that the players scored (1, 1, 1, 1), Dipak must have scored 1 point. In the round that the players scored (2, 2, - 2, - 2), Dipak must have scored 2 points (since the total points that Dipak scored in the first three rounds is 2). From (3), Dipak must have scored 2 points in the first round, - 1 points in the second round and 1 point in the third round. From this, we can fill the points for the first three rounds, as shown below

Player	Round 1	Round 2	Round 3
Arun	2 (H)	3 (H)	1 (L)
Bankim	-2 (L)	-1 (L)	1 (L)
Charu	-2 (L)	-1 (L)	1 (L)
Dipak	2 (H)	-1 (L)	1 (L)
TOTAL	0	0	4

(Note that with this information, the first question of the set can be answered)

In the next three rounds, from (1) and (2), Arun must have scored 1 point, Bankim must have scored 1 point, Charu must have scored - 3 points and Dipak must have scored - 3 points.

The total points scored by the four players are - 4. This is possible if the total points scored by the four players in the three rounds are (0, 0, - 4) OR (4, - 4, - 4) in any order.

However, we know that Arun must have scored 3 points in one of these three rounds (from (4)).

Hence, the total points scored by the players in this round must be 0. Hence, the four players must have scored (0, 0, - 4) points in these three rounds. In one round the points scored by the players must be (3, - 1, - 1, - 1), with Arun scoring 3 points.

In the round in which the total points scored by the four players is 4, they must have scored (- 1, - 1, - 1, - 1).

Since Bankim scored a total of 1 point in these three rounds, and he scored - 1 point and - 1 point in the two rounds mentioned above, he must have scored 3 points in the other third.

Hence, in the remaining round, the four players must have scored (3, - 1, - 1, - 1), with Bankim scoring 3 points.

However, with the given information, we cannot deduce the round number corresponding to the above rounds. Hence, we get the following table

Player	Round 1	Round 2	Round 3	Round 4/5/6	Round 4/5/6	Round 4/5/6	TOTAL
Arun	2 (H)	3 (H)	1 (L)	3 (H)	-1 (H)	-1 (L)	7
Bankim	-2 (L)	-1 (L)	1 (L)	-1 (L)	-1 (H)	3 (H)	-1
Charu	-2 (L)	-1 (L)	1 (L)	-1 (L)	-1 (H)	-1 (L)	-5
Dipak	2 (H)	-1 (L)	1 (L)	-1 (L)	-1 (H)	-1 (L)	-1
TOTAL	0	0	4	0	-4	0	

Solution 27: The bids by Arun, Bankim, Charu, Dipak in the first round were Hi, Lo, Lo, Hi. Option: 4

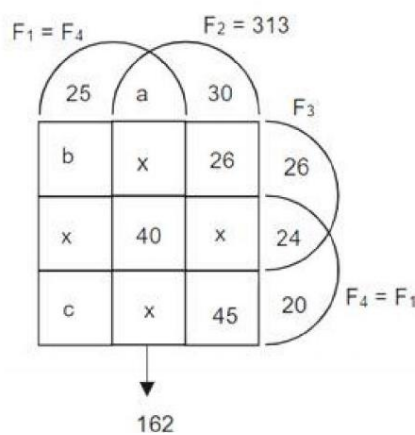Solution 28: Arun bid Hi in 4 rounds Answer: 4

Solution 29: Bankim bid Lo in 4 rounds Answer: 4

Solution 30: All four players made identical bids in 2 rounds Answer: 2 Solution 31: Dipak gained exactly 1 point in 1 round

Answer: 1

Solution 32: In the second round, Arun was the only player to bid Hi.

Option: 4 The given information can be represented in the following Venn diagram.

Solution 33: Given

$$F_2 = (a + x + 40 + x) + (30 + 26 + x + 45) = 313.$$

It is also given that F_1 and $F_2 = a + x + 40 + x = 162$.

Hence, $30 + 26 + x + 45 = 313 - 162 = 151$

Hence, $x = 151 - (30 + 26 + 45) = 50$

The number of schools that have exactly three facilities $= 4x = 200$

Option: 1

Solution 34:

The number of schools having facilities F_2 and $F_4 = 40 + x + 45 + x = 185$

Option: 1

Solution 35:

Only F_1 and $F_3 = b$

Given $F_1 = F_4$

$25 + b + x + c + a + x + 40 + x$

$= 24 + 20 + x + 45 + 40 + x + x + c$

Hence, $a + b = 64$

It is given that $a + x + 40 + x = 162$.

As $x = 50, a = 22$

Hence, only F_1 and $F_3 = b = 64 - 22 = 42$.

Answer: 42

Only F_1 and $F_4 = c$

Exactly $1 +$ Exactly $2 +$ Exactly $3 +$ Exactly $4 = 600 - 80 = 520$

$(25 + 30 + 26 + 20) +$ Exactly $2 + 200 + 40 = 520$

Hence, Exactly $2 = 179 = a + 24 + b + c + 26 + 45$

As $a = 22$ and $b = 42, c =$ only F_1 and $F_4 = 20$.

Answer: 20

The vials	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A									✓	✓	✓	✓	✓	✓	✓	✓
B	✓	✓	✓	✓	✓	✓	✓	✓								
C					✓	✓	✓	✓					✓	✓	✓	✓
D	✓	✓	✓	✓					✓	✓	✓	✓				
E			✓	✓			✓	✓			✓	✓			✓	✓
F	✓	✓			✓	✓			✓	✓			✓	✓		
G		✓		✓		✓		✓		✓		✓		✓		✓
H	✓		✓		✓		✓		✓		✓		✓		✓	

This table helps to figure out that vials A & B, viable C & D, Vials E & F, Vials G & H cannot be negative simultaneously. As each group consists exclusive set of patients

Solution 37:

If vial C tests positive vials A , E and H test negative .

If vial C tests positive following patients can have disease. Patient No. 5, 6, 7, 8, 13, 14, 15 & 16 If vials A, E & H test negative $\Rightarrow$ following patients can't have disease Patients who can't have disease are : Patient No. 5, 7, 8, 13, 14, 15 & 16 $\Rightarrow$ Patient 6 must have disease

Option: 3

Solution 38: If vial a tests positive, then following patients can have disease.

Patient No. 9,10,11,12,13,14,15,16

Vials D \& G test negative

$\Rightarrow$ Following patients, can't have disease

patients No : $-\rightarrow$ 1,2,3,4,6,8,9,10,11,12,14, 16

 we can say that patient No .13 or patient No. 15 can have disease. Now we have eliminate or find out who among patient 13 or patient 15 has disease. So we should test vials E or F Option: 1

Solution 39: If vials C & D test negative, that means none of the patients through 16 have diseases.

But its given in the questions, that exactly one of the patients has disease. This is not possible

Option: 4

Solution 40

i) Let's assume one of the patients, patient 1 or patient 16 has disease and that patients blood is mixed with other them all 8 vials will test positive. $\Rightarrow$ 8 has to be one of the answers.

ii) If patient 2 and patients 16's blood is mixed of one of them has disease then 7 of the 8 vials will test positive. So 7 has to be there in the option.

iii) Let's assume patient 1 has disease, if his blood is not mixed, then 4 vials will definitely show positive. So 4 also has to be there in answer. So the answer must definitely contain 4, 7 and 8

Option: 3

n^th day	Booked			Delivered	Lost	
	Cumulative	n^th day		Delivered [n − 1, n − 2]	Cumulative	n^th day
11	174					
12	188	14				
13	219	31		11 [7, 4]	91	
14	249	30		27 [21, 6]	92	1
15	277	28		23 [15, 8]	94	2
16	302	25		11 [8, 3]	106	12
17	327	25		21 [13, 8]	118	12
18	332	5		13 [3, 10]	120	2
19	337	5		14 [1, 13]	129	9

Days	Booked	Next day	Day after	Delivered	Lost
12	14				
13	31	7	4	11	
14	30	21	6	27	1
15	28	15	8	23	2
16	25	8	3	11	12
17	25	13	8	21	12
18	5	3	10	13	2
19	5	1	13	14	9

Solution 41:

14th day $\Rightarrow$ 30 Booked $\Rightarrow$ 12 loss $\Rightarrow$ 12/30

13th day $\Rightarrow$ 31 Booked $\Rightarrow$ 2 loss $\Rightarrow$ 2/31

16th day $\Rightarrow$ 25 Booked $\Rightarrow$ 2 loss $\Rightarrow \dfrac{2}{25}$

15th day $\Rightarrow$ 28 Booked $\Rightarrow$ 12 loss $\Rightarrow \dfrac{12}{28}$

The highest value is $\dfrac{12}{28}$, on the 15th day.

	Booked		Delivered		Lost	
nth day	Cumulative	nth day	Delivered [n – 1, n – 2]	Cumulative	nth day	
11	174					
12	188	14				
13	219	31	11 [7, 4]	91		
14	249	30	27 [21, 6]	92	1	
15	277	28	23 [15, 8]	94	2	
16	302	25	11 [8, 3]	106	12	
17	327	25	21 [13, 8]	118	12	
18	332	5	13 [3, 10]	120	2	
19	337	5	14 [1, 13]	129	9	

Option: 1

Solution:43

$$\text{Delivery ratio} = \frac{\text{Next day}}{\text{day after}}$$

a. 13th day $\Rightarrow \dfrac{21}{8}$

b. 15th day $\Rightarrow \dfrac{8}{8}$

c. 14th day $\Rightarrow \dfrac{15}{3}$

d. 16th day $\Rightarrow \dfrac{13}{10}$

The highest ratio is 15/3 on 14th day

Option: 3

Solution 42:

Next day = x	Day after = y
Avg time $= \dfrac{(x+2y)}{x+y}$	
16th day $\Rightarrow \dfrac{x}{13}$	$\dfrac{y}{10} \Rightarrow \dfrac{13+20}{23} \Rightarrow \dfrac{33}{23} = 1.43$
15th day $\Rightarrow 8$	$8 = \dfrac{24}{16} \Rightarrow = 1.5$
14th day $\Rightarrow 15$	$3 = \dfrac{21}{18} \Rightarrow 1.16$
13th day $\Rightarrow 21$	$8 \Rightarrow \dfrac{37}{29} = 1.27$

The least is on the th 14 day. Option: 1 Let each plot in the grid be represented by its row label and column label. For example, (X, 2) represents the plot in row X and column 2. From (8), Chitra and Dipti did not get plots which were adjacent to each other.

From the figure, we can see that Chitra has the plot (X, 1).

Hence, Dipti cannot have the plots (X, 2) and (Y, 2). Also, Chitra ha s the plot (Z, 2). Hence, Dipti cannot have the plots (Z, 3) and (Y, 3). From (6), Dipti has two adjoining plots in the same row. Hence, the only possibility for Dipti to have such plots is if she has the plots (X, 3) and (X, 4).

It is given that each daughter got an even number of plots. Also, from (4), Abha and Bina had a higher number of plots than Dipti. Since Dipti already has 2 plots, Abha and Bina must have at least 4 plots each. Chitra already has 2 plots. Hence, Abha and Bina cannot have a higher n umber of plots. Hence, the number of plots that Abha, Bina, Chitra and Dipti must be 4, 4, 2 and 2, respectively. We already know the positions of all the plots of Chitra and Dipti.

Hence, the remaining plots must belong to Abha or Bina. From (5), the corner plot, (Z, 4) must belong to Bina. From (7), Bina got a plot in each row. In the first row, Chitra got (X, 1) and Dipti got (X, 3) and (X, 4). Hence, Bina must have gotten (X, 2). Bina has a total of 4 plots and we know the positions of three plots. For Bina to have a plot in each row and each column, she must still have plot(s) in row Y and column 3. Since she can have only one more plot, she must have a plot at the intersection of this row and column.

Hence, Bina must have gotten the plot (Y, 3). A should have the remaining two plots, i.e., (Y, 2) and (Z, 3). Let the number of trees in (Y, 2) be a. From (3), the number of trees in (Y, 3) must be 2a and the number of trees in (Y, 4) must be 4a. From (2), 4a cannot be more than 32 and since (Y, 4) is owned by Abha, it cannot be 32. Hence, a can be at most 7. Also, a should be a multiple of 3 or 4. Hence, the possible values for a are 3, 4 and 6. However, a cannot be 3, since 4a will be 12 and (X, 1) has 12 trees (each plot has distinct number of trees). Also, a cannot be 6, since 2a will be 12. Hence,

a must be 4. The number of trees in (Y, 2), (Y, 3) and (Y, 4) must be 4, 8 and 16. The total number of trees in row Y is 21 + 4 + 8 + 16 = 49.

The number of trees in row Z = 205 - 49 - 98 = 58. The total number of trees in the plots that Abha got is 21 + 4 + 16 + 9 = 50 (adding the trees in (Y, 1), (Y, 2), (Y, 4) and (Z, 3).

From (1), Chitra must have 30 trees and Dipti must have 56 trees. Since Chitra has 30 trees, and Chitra has 12 trees in (X, 1), there must be 18 trees in (Z, 2) (the only other plot that Chitra got). The number of trees in (Z, 2), (Z, 3) and (Z, 4) are 18, 9 and 28 respectively. Since there must be 58 trees in row Z, the number of trees in (Z, 1) must be 3. The number of trees with Bina must be 205 - 50 - 56 - 30 = 69. Bina has 3 trees in (Z, 1), 8 trees in (Y, 3) and 28 trees in (Z, 4). In the last plot that Bina owns, i.e., in (X, 2), there must be 69 - 3 - 8 - 28 = 30 trees.

In row X, in the plots that Dipti owns, (X, 3) and (X, 4), there must be a total of 56 trees. Since the maximum possible number of trees in only 32, the maximum possible number of trees in these two plots can be if they have 32 trees in one plot and 24 trees in the other plot (since 30 and 28 trees are already present in other plots). Hence, the plots (X, 3) and (X, 4) must have 32 and 24 trees in any order. The following table provides the distribution of plots and trees

Solution 45: The total number of mango trees are 98 Option: 2

Solution 46: The correct sequence of trees received by Abha, Bina, Chitra and Dipti are 50, 69, 30, 56. Option: 1

Solution 47: The number of pine trees received by Chitra = 18 Option: 3

Solution 48

Bina got the plot with the smallest number of trees, which had 3 trees Option: 4 Solution 49: Bina did not 32 pine trees. She got 31 pine trees Option: 2

Solution 50: Column 4 has the highest number of trees Option: 4

Solution 51: $\log_a 5 + \log_a 3 + \log_a 2 = A$

$\log_a 5 + \log_a 3 = A - 3$

$\log_3 a = \dfrac{2}{A + B - 3}$

[Option: 3]

Solution 52: Let the age of Tom be t. Ages of Dick and Harry are 3t and 6t respectively.

$$\text{Given, } 3t = \frac{t + 3t + 6t}{3} - 1 \Rightarrow 9t = 10t - 3 \Rightarrow t = 3$$

Age of Harry = × = 6 3 18

[Answer: 18]

Solution 53

The distance travelled by A before B starts his journey $= 40 \times 1.5 = 60$

The time taken by them to meet each other $= \dfrac{90 - 60}{40 + 20} = \dfrac{30}{60} = 0.5$ hours

Required answer =10: 30 a.m. +30 min =11: 00 a.m.

[Option: 4]

Solution 54:

Simultaneous equation have a unique solution only if $\dfrac{a_1}{a_2} \neq \dfrac{b_1}{b_2}$

From the given equations, a unique solution would exist only if $\dfrac{k}{2} \neq \dfrac{2}{k}$

Option: 1

$$x_m + 1 = x_m - (m+1)$$

$$x_2 = x_1 - 2 = -1 - 2 = -3$$

$$x_3 = x_2 - 3 = -1 - 2 - 3 = -6$$

Similarly,

$$x_n = -(1+2+3+\ldots+n) = -\frac{n(n+1)}{2}$$

Hence $x_{100} = -\frac{100(101)}{2} = -5050$

[Option: 4]

Solution 56:

Let the original time taken by Vimla be t minutes $40t/60 = 35 \times (t+6)/60$

$$\Rightarrow t = 35 \times \frac{6}{5} = 42 min$$

The distance to office =28 km

Required answer $= \dfrac{28 \times \dfrac{1}{3}}{42 \times \dfrac{2}{3} - 8} \times 60 = 28 kmph$

[Option: 3]

Solution 57:

Let the CP and MP of each kg of sugar be 10x and 12x respectively.

Total cost price $= 35 \times 10x = 350x$

Total selling price $= 35 \times 10 \times \times 1.15 = 402.5x$

Selling price already realized $= 5 \times 12x + 15 \times 12x \times 0.9 + 3 \times 0 + 12 \times 12x \times (1 + p/100) = 402.5x$

$60 + 162 + 0 + 144(1 + p/100) = 402.5$

$p = 25.34\% \approx 25\%$

[Option: 4]

Solution 58:

Given $f(x+y) = f(x)f(y)$

$\Rightarrow f(x) = a^x$ (where a is a constant) Given, $f(5) = 4 \Rightarrow a^5 = 4 \Rightarrow a = 2^{2/5}$

$f(10) - f(-10) = a^{10} - a^{-10} = \left(2^{\frac{2}{5}}\right)^{10} - \left(2^{\frac{2}{5}}\right)^{-10}$

$= 2^4 - 2^{-4} = 16 - \dfrac{1}{16} = 15.9375$

[Option: 2]

Solution 59:

Let $14^a = 36^b = 84^c = k$

$\Rightarrow a = \log_{14} k \Rightarrow \dfrac{1}{a} = \log_k 14$

Similarly, $\dfrac{1}{c} = \log_k 84$ and $b = \log_{36} k$

Required answer, $6b\left(\dfrac{1}{c} - \dfrac{1}{a}\right) = 6\left(\log_{36} k\right) \times \left(\log_k 84 - \log_k 14\right)$

$= 6 \times \dfrac{\log k}{\log 36} \times \dfrac{\log 6}{\log k} = 3$

Answer: 3

Solution 60:

	Men	Tunnel	Days
Initial	140	1.5 km	60
Remaining	X	4.5 km	140

$$X = 140 \times \frac{4.5}{1.5} \times \frac{60}{140} = 180$$

Additional men required $= 180 - 140 = 40$

[Answer: 40]

Solution 61:

Since the roots are real $m^2 - 8n \geq 0$ and $(2n)^2 - 4m \geq 0 \Rightarrow n^2 - m \geq 0$

$$\Rightarrow n^4 \geq m^2 \geq 8n$$

$\Rightarrow \geq n\ 2$ and $m \geq 4$ Hence the least value of m + n = 2+4 = 6 [Option: 4]

Solution 62:

Let the sum be P.

Given, $P \times \left(1 + \dfrac{10}{200}\right)^3 = 18522$

$$\Rightarrow P = 18522 \times \left(\frac{20}{21}\right)^3 = 16000$$

[Answer: 16000]

Solution 63:

Time taken by Anil and Sunil meet at the starting point $= LCM\left(\dfrac{3}{15},\dfrac{3}{10}\right) = 3/5$

Distance run by Ravi in $3/5$ hours $= (3/5)\times 8 = 24/5 = 4.8$ km

[Option: 3]

Solution 64:

The line $y = |x-2| + 4$ intersects the y-axis at (0,6) and intersects $x = 2$ at (2,4) The other vertices are (0,0) and (2,0) The figure formed is a trapezium of parallel sides 6 and 4 and the distance between the parallel sides is 2.

Required answer $\dfrac{1}{2}\times 2 \times (6+4) = 10$

[Option: 3]

Solution 65:

$a = 4, b = \sqrt{90}; c = \sqrt{82}$

Area of the triangle $= \dfrac{1}{2}\times 4 \times 9 = 18$

The circumradius of the triangle $(R) = \dfrac{abc}{4\Delta}$

Area of the circle $= \pi R^2 = \pi\left(\dfrac{abc}{4\Delta}\right)^2 = \dfrac{\pi(4\cdot\sqrt{90}\cdot\sqrt{82})^2}{(4\cdot 18)^2}$

$= \pi \times \dfrac{16\times 90\times 82}{16\times 18\times 18} = \dfrac{205}{9}\pi$

[Option: 4]

Solution 66: The given set is a set of all three-digit numbers and the number of numbers in the set $=900$. The number of three-digit numbers having no digits repeating $= 9\times 9\times 8 = 648$

Required answer $=900-648=252$

[Answer: 252]

Solution 67:

Given, $2 < x < 10$ and $14 < y < 23 \Rightarrow 17 < (x + y) < 32$ i.e. $17 < N < 32$

can take 6 distinct values. But $N > 25$ hence $25 < N < 32$

[Answer: 6]

Solution 68:

The given line also passes through the point of intersection of the diagonals of the parallelogram, which is the mid-point of (2,1) and (-3,-4)

The mid-point of the given two points is (-1/2, -3/2).

Substituting the point in the given equation $-\dfrac{1}{2} + 9 \times \dfrac{-3}{2} + c = 0 \Rightarrow c = 14$

[Option: 2]

Solution 69:

Given, $a \cdot b = 4^{2017} = 2^{4034}$

Since $a \cdot b = 4^{2017}$, is a perfect square the number of factors of 2^{4034} is odd.

Required answer, the number of values of $A = \dfrac{4034 + 1 + 1}{2} = 2018$

Option 4

Solution 70:

Dropping a perpendicular DE onto AB, the figure is divided into two parts - a rectangle of dimensions 4×5 and an isosceles triangle AED.

Required answer = Area of rectangle + Area of triangle $= 4 \times 5 + \dfrac{1}{2}(4 \times 4) = 28 cm^2$

[Answer: 28]

Solution 71:

The required answer $= 120 \times \left(1 - \dfrac{1}{2}\right) \times \left(1 - \dfrac{1}{5}\right) \times \left(1 - \dfrac{1}{7}\right) = 41.14$

Required answer is the integral part of $41.14 = 41$

[Option: 4]

Solution 72:

Let the quantity of solutions A and B mixed initially be p and 3p respectively.

After an additional 4p of solution A is added 60% of $(1p + 4p) + x\%$ of $3p = 7$
$(1p + 4p + 3p) \Rightarrow x = 92$

[Option: 2]

Solution 73:

$\log_2 4 = 2; \log_4 8 = \dfrac{3}{2}; \log_8 16 = \dfrac{4}{3}$

$$\dfrac{2 \times 4 \times 8 \times 16}{\left(\log_2 4\right)^2 \times \left(\log_4 8\right)^3 \times \left(\log_8 16\right)^4} = \dfrac{2 \times 4 \times 8 \times 16}{(2)^2 \times (3/2)^3 \times (4/3)^4} = 24$$

[Answer: 24]

Solution 74:

Total score in $(n + 2)$ innings $= 29 \times (n + 2)$

The total score in n innings $= 29(n + 2) - 38 - 15$

$= 29n + 5 = 30n \Rightarrow n = 5$

Total score in 5 innings $= 30 \times 5 = 150 = 37 \times 4 + 2$

Option : 1

Solution 75:

Let the total marks be T and scores of Bishnu, Asha and Ramesh be a, b and c respectively.

Given, $a = 52\%$ of $T = c - 23$ and $b = 64\%$ of $T = c + 34$

Hence, $(64 - 52)\%$ of $T = (c + 34) - (c - 23) = 57$

i.e. 12% of $T = 57$

Hence, score of Geeta $= 84\%$ of $T = 7 \times 57 = 399$

[Option: 2]

Solution 76:

Given $0.2 < \dfrac{m}{20} < 0.5 \Rightarrow 4 < m < 10$

$0.2 < \dfrac{n}{11} < 0.5 \Rightarrow 2.2 < n < 5.5 \Rightarrow n = 4$

since $0.2 < \dfrac{n}{m} < 0.5$ and $n = 4, m = 9$

$m - 2n = 9 - 2 \times 4 = 1$

[Option: 3]