

Q.1) Solution (d)**Explanation:**

Assumption 1 is incorrect. The passage notes that there has been a “surge of interest” in making happiness a target of policy consideration. However, it also adds that attention has shifted to “a broader focus on well-being”, which encompasses “not just happiness but also other welfare concerns of citizens.” Therefore, it is amply clear that in addition to happiness, other avenues of citizen welfare are also being covered. Hence, this assumption is not correct.

Assumption 2 is incorrect. The passage mentions that the idea of happiness policy “remains on the fringes in some locales, notably the United States.” Even in the United States it is on the margins. Clearly, the United States is not leading the global trend in implementing happiness policies. Hence, this assumption is not correct.

Q.2) Solution (c)**Explanation:**

Option (a) is incorrect. The passage mentions that almost all economic transactions involve information asymmetries. Just because this asymmetry is present in most of the economic transaction does not mean that economic transactions won't be possible if asymmetric information is not there. Deducing such inference would be incorrect, extreme and beyond the scope of the passage. Hence, this option is not correct.

Option (b) is incorrect. The passage does not make any mention of the impact of symmetric information on economic exchanges, especially in terms of their fairness. It restricts its ambit to information asymmetries. Hence, this option is beyond the scope of the passage and not correct.

Option (c) is correct. The passage notes that asymmetric information can be “viewed as the specialization and division of knowledge, as applied to any economic trade.” It is natural to think of asymmetry as an undesirable thing. However, in this particular context asymmetric information is not an undesirable outcome. Hence, this option is correct.

Option (d) is incorrect. The passage touches upon neither the need for regulation, nor the conditions needed for a country to develop. These cannot be inferred from the passage and so are beyond the scope of the passage. Hence, this option is not correct.

Q.3) Solution (d)**Explanation:**

Option (a) is incorrect. The passage states, "India, therefore, needs to look beyond its cities and take action at the sub-national level for effective air pollution control strategies..." As the emphasis is on the sub-national level efforts, a uniform national-level policy cannot be said to be the most rational action among the options provided. Hence, this option is not correct.

Option (b) is incorrect. The passage does mention that the secondary form of PM_{2.5} "crosses jurisdictional borders." However, this is in the context of jurisdiction within India as the passage focuses on action at the sub-national level rather than at the international level. Therefore, it does not best reflect the most rational action among the options provided as it is beyond the context of the passage. Hence, this option is not correct.

Option (c) is incorrect. The passage notes, "India, therefore, needs to look beyond its cities and take action at the sub-national level for effective air pollution control strategies..." It also states that "airsheds can extend over several hundred kilometres, well beyond the boundaries of cities." Thus, it does not follow from the passage that instituting city-level emission reduction measures could be the primary solution to air quality issues as the problem may extend across many cities. Hence, this option is not correct.

Option (d) is correct. The passage notes, "...this secondary form spreads farther and wider than primary PM 2.5 and travels across states, cities, and crosses jurisdictional borders." Therefore, since this major pollutant moves across states, collaborative efforts among neighbouring states to address air quality issues are needed. Also, the sub-national level action means that the action must be taken at the state level through inter-state cooperation. So, among the options provided, this is the most suitable choice.

Q.4) Solution (d)**Explanation:**

Assumption 1 is incorrect. The passage does not touch upon the sources of pollution in terms of their relative contribution. It only notes that it is a multi-sectorial issue. The most harmful pollutant is noted as PM 2.5, but no further assumption about the sources of air pollution can be made from the information given in the passage alone. Hence, this assumption is not correct.

Assumption 2 is incorrect. The passage does not discuss the relative merits of approaches in terms of the costs they entail. Also, the context of cost-effectiveness is not discussed in the

passage. While the statement may be otherwise correct, in the context of the information provided in the passage, this assumption is not valid.

Q.5) Solution (b)**Explanation:**

It is given that 512 small but identical cubes have been put together to form a large cube.

$$512 = 8^3$$

It's a cube with 8 cubes on each edge. Once we cover this cube, we will end up with even larger cube having 10 cubes on each edge.

So, number of extra cubes needed = $10^3 - 8^3 = 1000 - 512 = 488$ Hence, option (b) is correct.

Q.6) Solution (c)**Explanation:**

$\frac{3}{5}$ th decoration work is done by Seema in 7 days.

Complete decoration work can be done by Seema in $(7 \times \frac{5}{3}) = \frac{35}{3}$ days

So, 1 day work of Seema = $\frac{3}{35}$

Remaining part of work = $1 - \frac{3}{5} = \frac{2}{5}$

According to the question,

$\frac{2}{5}$ th work is done by Seema and Sarita together in 3 days.

Complete work can be done by Seema and Sarita in $(3 \times \frac{5}{2}) = \frac{15}{2}$ days 1 day work of Seema and Sarita = $\frac{2}{15}$

Hence, Sarita's 1 day work = $\{(\frac{2}{15}) - (\frac{3}{35})\} = \{(\frac{14 - 9}{105})\} = \frac{5}{105} = \frac{1}{21}$ Hence, Sarita alone can complete the decoration in 21 days. Hence, option (c) is the right answer.

Q.7) Solution (a)**Explanation:**

Let 1 boy's 1 day's work = x and 1 girl's 1 day's work = y .

Then, $5x = 9y$

$$x = (9/5)y \text{I}$$

Now, (3 boys' + 6 girls') 1 day's work = $3x + 6y$

$$= 3(9/5)y + 6y \quad (\text{from I}) = (57/5)y.$$

Now since, $W = MD$, where W = work; M = man (persons); D = days

$$\text{So, } 9 \times 57 = 57/5 \times D$$

$$(D = \text{Required number of days}) \quad D = 45 \text{ days}$$

Hence, option (a) is the correct answer.

Q.8) Solution (b)**Explanation:**

The ages of the people are 12 years, 12.5 years, 13 years and so on.

These form an arithmetic progression (AP) series as the difference between two consecutive numbers is the same (i.e. 6 months).

The sum of the terms of an arithmetic series can be calculated using the formula, $S_n = (n/2) \{2a + (n-1)d\}$

Here, a is the first term, n is the number of terms in the sequence, d is the common difference.

$$S_n = 450, a = 12, d = 1/2$$

$$\text{So, } 450 = (n/2) \{2 \times 12 + (n-1)(1/2)\}$$

$$\text{Or } 450 \times 2 = n\{24 + (n-1)/2\}$$

$$\text{Or } 450 \times 2 = n\{(48 + n - 1)/2\}$$

$$\text{Or } 450 \times 2 \times 2 = n(47 + n)$$

$$\text{Or } 1800 = n^2 + 47n$$

$$\text{Or } n^2 + 47n - 1800 = 0$$

$$\text{Or } n^2 + 72n - 25n - 1800 = 0$$

$$\text{Or } n(n + 72) - 25(n + 72) = 0$$

$$\text{Or } (n + 72)(n - 25) = 0$$

$$\text{Or } n = 25 \text{ people (} n \neq -72)$$

Hence, option (b) is the right answer.

Q.9) Solution (d)

Explanation:

The pattern being followed here is:

$$8, 43, 29 \rightarrow 8 \times 5 + 3 = 43 ; 8 \times 3 + 5 = 29$$

$$11, 58, 38 \rightarrow 11 \times 5 + 3 = 58 ; 11 \times 3 + 5 = 38$$

$$14, 73, 47 \rightarrow 14 \times 5 + 3 = 73 ; 14 \times 3 + 5 = 47 \quad 17, 72, 90 \rightarrow 17 \times 5 + 3 = 88 \neq 72 ; 17 \times 3 + 5 = 56 \neq 90$$

Hence, option (d) is the correct answer.

Q.10) Solution (c)

Explanation:

First three-digit number less than 200 which is divisible by 5 will be 100 and last such number will be 195.

$$\text{So total number of terms (n)} = [(195 - 100)/5] + 1 = 20$$

$$\text{Here, 1st term (a)} = 100$$

$$\text{Last term (l)} = 195$$

$$\text{Common difference (d)} = 5$$

$$\begin{aligned}\text{Sum of all the } n \text{ terms} &= \frac{n}{2}[a + l] \\ &= \frac{20}{2}[100 + 195] \\ &= 10 \times 295 \\ &= 2950\end{aligned}$$

Hence, sum of all the 20 terms = 2950

Hence, option (c) is correct.

Q.11) Solution (a)

Explanation:

Inference 1 is correct: Both groups involved in the test showed improvement. However, the group taking multivitamins showed slightly more improvement, implying that multivitamin intake did indeed have benefits. Further, the biggest gain was in the memory tests section, indicating potential benefits of specific nutrients in multivitamins for cognitive function. Hence, inference 1 is correct.

Inference 2 is not correct because the passage does not mention anything related to other age groups (i.e., below 60 years). The very first line of the passage sets the age restriction to 60 years and above.

Therefore, this inference is beyond the scope of the passage.

Q.12) Solution (b)

Explanation:

Option (a) is incorrect. The passage does acknowledge that moral judgments motivate us to act in accordance with them. However, the author says that we do not “always” behave as we think we ought to. So, there could be deviations from the course of action recommended by moral judgment. Hence, this option is not correct.

Option (b) is correct. The passage notes that these “judgments tend to have a marked hold on us” Also, it states that “typically” moral judgments motivate us to act in accordance with them. Thus, it follows that moral judgments have some impact on our behaviour. Hence, this option is correct. Option (c) is incorrect. The passage notes that we “deliberate” upon and form moral judgments. This means that society does not have a prominent role. Though social influence

could be present, the author accords primacy to individual deliberation. Furthermore, it would be extreme to say that moral judgements are always socially determined. Hence, this option is not correct.

Option (d) is incorrect because the passage does not state the grounds on which moral judgments are ignored. This context is not a part of the passage. The passage only states that we may not always act in accordance with them.

Q.13) Solution (c)

Explanation:

Option (a) is incorrect. The passage states that the demand for sand continues to rise and that the river floodplain is among the main sources of sand in India. The author does highlight the harms of indiscriminate sand mining. However, the tone of the passage is not all in favour of a complete ban on sand mining. A middle ground wherein sand mining is carried out in a regulated manner can be explored. In this context, a complete ban on river sand mining is not correct. Hence, this option is not correct. Option (b) is incorrect. The passage notes that sand and gravel have long been used for construction purpose. Towards the end of the passage, the author highlights the ill-effects of indiscriminate sand mining. This does not mean immediate pause on use of sand and gravel by the construction sector. It would be an extreme and impractical step. Hence, this option is not correct.

Option (c) is correct. The passage notes that excess removal of sand leads to environmental damage. It states that such removal can "significantly distort the natural equilibrium of a stream channel." Therefore, sand mining should be done sustainably. River sand mining also has a social impact as the passage states that it can damage private properties. Hence, sustainable mining practices should be implemented to mitigate such impacts. Hence, this option is correct.

Option (d) is incorrect. The passage has underscored the environmental problems associated with mining. Hence, it cannot be said to convey the message of prioritising economic development over environmental concerns. That would be diagonally opposite to the stance of the author. Also, the role of the government is not the central theme of the passage. Hence, this option is not correct.

Q.14) Solution (d)**Explanation:**

Assumption 1 is incorrect. The passage suggests that global warming, through its impact on agricultural productivity and poverty, may lead to a net increase or decrease in child labour based on the context present. It particularly notes, "climate-related droughts and soil depletion can reduce agricultural productivity, in turn encouraging families to lessen the time children spend in agricultural work since their labour on the farm becomes less valuable." So, the direct correlation with an increase in child labour is not always correct. Hence, this assumption is not correct.

Assumption 2 is incorrect. The passage does not state how specific groups among society are affected by global warming. The statement might be true, but it does not follow from the context of the passage. Hence, this assumption is not correct.

Q.15) Solution (c)**Explanation:**

Here we are just adding the numbers and then summing up the digits of the resultant number.

$$17 \oplus 19 \oplus 20 = 56 = 5 + 6 = 11$$

$$25 \oplus 15 \oplus 30 = 70 = 7 + 0 = 7$$

$11 \oplus 17 \oplus 21 = 49 = 4 + 9 = 13$ So, $33 \oplus 14 \oplus 15 = 62 = 6 + 2 = 8$ Hence, option (c) is the correct answer.

Q.16) Solution (d)**Explanation:**

Total number of persons in the row = 121

Let number of females and males be $4x$ and $7x$ respectively.

$$\text{So, } 4x + 7x = 121$$

$$\text{Or } 11x = 121$$

$$\text{Or } x = 11$$

$$\text{Females} = 4x = 4 \times 11 = 44$$

$$\text{Males} = 7x = 7 \times 11 = 77$$

Since, Sejal is 27th from the start, the total number of persons in front of her = 26 (both male as well as female)

Now, 7 females are in front of her. So, the number of males in front of Sejal = $26 - 7 = 19$
Therefore, the number of males behind Sejal = $77 - 19 = 58$ Hence, option (d) is the correct answer.

Q.17) Solution (c)

Explanation:

There are two couples, which means two males and two females. Kathak dancer is a spinster, which means she is a female. Bharatanatyam dancer's wife is a poet, which means he is a male. So, there are three female and three male dancers in the group.

So, the number of female dancers is equal to the number of male dancers.

Hence, option (c) is the right answer.

Q.18) Solution (b)

Explanation:

Let the number be N.

According to the question,

$$N = 72Q + 5 \text{ (where Q is Quotient)}$$

$$\text{So, } N^3 = (72Q + 5)^3 = (72^3 \times Q^3) + 125 + 3 \times 72Q \times 5(72Q + 5)$$

$$\text{Or } N^3 = 9 \{81 \times 83 \times Q^3 + 3 \times 8Q \times 5(72Q + 5)\} + 9 \times 13 + 8$$

So, when the cube of the number is divided by 9, the remainder will be 8.

Hence, option (b) is the right answer.

Q.19) Solution (d)**Explanation:**

For better comparison we can multiply the fractions with the LCM of denominators. LCM of 10, 25, 15 = 150

$$(7/10) \times (15/15) = 105/150$$

$$(2/25) \times (6/6) = 12/150$$

$(6/15) \times (10/10) = 60/150$ Marks in ascending order are: $12/150 < 60/150 < 105/150$ i.e. $2/25 < 6/15 < 7/10$

So, Rank in ascending order is:

$$B < C < A$$

Hence, option (d) is the right answer.

Q.20) Solution (d)**Explanation:**

Code on day 1 = 1

Code on day 2 = 2

Code on day 3 = $1 + 2 = 3$

Code on day 4 = $2 + 3 = 5$

Code on day 5 = $3 + 5 = 8$

Hence, option (d) is the correct answer.

Q.21) Solution (d)**Explanation:**

Assumption 1 is incorrect. The passage states, "...a country's soft power rests on its resources of culture, values, and policies." There could be a relation between a country's soft power and the

size of its economy. However, in the context of this passage, we cannot say that economy is the ultimate source of soft power of a country. Hence, this assumption is not correct.

Assumption 2 is incorrect. The passage states, "...a smart-power strategy combines hard and soft-power resources." The author does not accord primacy to one over the other. He advocates a smart mix of both hard power and soft power. Hence, this assumption is not correct.

Assumption 3 is incorrect. The passage states, "...as authoritarian states today use new cyber technologies and other means to disrupt political processes in democracies, questions arise about the boundaries of soft power..." This means that the role and scope of soft power is under examination, but not that its importance has necessarily reduced; it just needs to be reviewed accordingly. Hence, this assumption is not correct.

Q.22) Solution (c)

Explanation:

Option (a) is incorrect. The passage only mentions technology in the context of its use by authoritarian states to disrupt political processes in democracies. This is not the soft power which is the core theme of the passage. Hence, this option is not correct.

Option (b) is incorrect. The passage does not highlight the order of response to an international crisis. Hence, the identification of the first choice is not possible based on the passage alone. Also, the passage is not about international crisis and the role of trade diplomacy, but about the role of soft power. Hence, this option is not correct.

Option (c) is correct. The passage notes, "...smart public diplomacy requires an understanding of the roles of credibility, self-criticism, and civil society in generating soft power." This understanding of the different roles to generate, and therefore enhance soft power is a multi-faceted approach and can be seen as the essence of the passage. Hence, this option aptly captures the crux of the passage.

Option (d) is incorrect. The passage states, "...soft power is the ability to affect others to obtain the outcomes one wants through attraction and persuasion." The passage is about soft power and its role in diplomacy. However, this answer option talks about a component of soft power, which is merely a peripheral argument. It is not the crux of the passage. Hence, this option is not correct.

Q.23) Solution (b)**Explanation:**

Option (a) is incorrect. The author does not discuss the potentially negative consequences of spreading life through VNPs. Also, it is nowhere stated that other life forms are threatened. The main focus is on explaining the mechanics of this process, not speculating specific threats. Hence, this option is not correct.

Option (b) is correct because this statement accurately reflects the central inference drawn from the passage. The author describes the VNP technology, its capabilities, and how it could rapidly spread life across the galaxy based on established scientific principles as seen in the lines "The basic ingredients have been understood since the 1960s. What's needed is an automated spacecraft that can locate worlds on which to land, build infrastructure, and eventually make copies of itself. The copies are then sent forth to do likewise – in other words, they are von Neumann probes (VNPs)." This aligns with the main arguments made in the passage. Hence, this option is correct.

Option (c) is incorrect. This answer option says that life forms already exist on other stars, whereas the author suggests that this will happen in the future. It is reflected in the lines: "Sometime late this century, someone will push a button, unleashing a life force on the cosmos. Within 1,000 years, every star you can see at night will host intelligent life." Hence, this option is not correct.

Option (d) is incorrect. The author specifically details a technology capable of overcoming vast interstellar distances, and depicts it to be simple in terms of the existing science. It is evident from the lines: "This won't require exotic physics. The basic ingredients have been understood since the 1960s." Therefore, inferring that such travel is impossible goes against the presented information and the tone of the passage. Hence, this option is not correct.

Q.24) Solution (a)**Explanation:**

Since, A and B are mutually exclusive and exhaustive events, the non-occurrence of A is equal to the occurrence of B.

$$P(B) = P(\text{not } A)$$

$$\text{Here, } P(\text{not } A) = 3/4$$

So, $P(B) = 3/4$

Hence, option (a) is the right answer.

Q.25) Solution (b)

Explanation:

According to the question,

Aman's total investment throughout the year = $(18000 \times 3) + (12000 \times 9) = \text{Rs. } 162000$

Mohit's total investment throughout the year = $(12000 \times 3) + (16000 \times 9) = \text{Rs. } 180000$

After 6 months Minakshi joined. Therefore, Minakshi's total investment throughout the year = $21000 \times 6 =$

Rs. 126000

So, profit ratio of Aman, Mohit and Minakshi = $162000 : 180000 : 126000 = 162 : 180 : 126 = 9 : 10 : 7$

Since, total profit throughout the year is Rs. 39000.

So, $(9 + 10 + 7) \text{ units} = 39000$

Or $26 \text{ units} = 39000$

Or $1 \text{ unit} = 39000/26$

Or $1 \text{ unit} = \text{Rs. } 1500$

The share of Mohit exceeds that of Minakshi by $10 - 7 = 3 \text{ units}$

Now, $3 \text{ units} = 3 \times 1500 = \text{Rs. } 4500$

Hence, option (b) is the correct answer.

Q.26) Solution (b)**Explanation:**

Let the number be x .

She should have multiplied the number x by $4/5$. Hence, the correct result was $4x/5$.

Mistakenly she multiplied x by $2/5$. So, the result she obtained was $2x/5$

Then, error = $(4x/5) - (2x/5) = 2x/5$

Error % = $(\text{error}/\text{correct value}) \times 100\% = \{(2x/5)/(4x/5)\} \times 100\% = 50\%$

Hence, option (b) is the right answer.

Q.27) Solution (a)**Explanation:**

Let cost price of the house for Raman be Rs. X .

$X \times [(100 - 12)/100] \times [(100 + 10)/100] \times [(100 - 15)/100] = 822.80 \times 1000$

Or $X = 822.80 \times 1000 \times (100/88) \times (100/110) \times (100/85)$

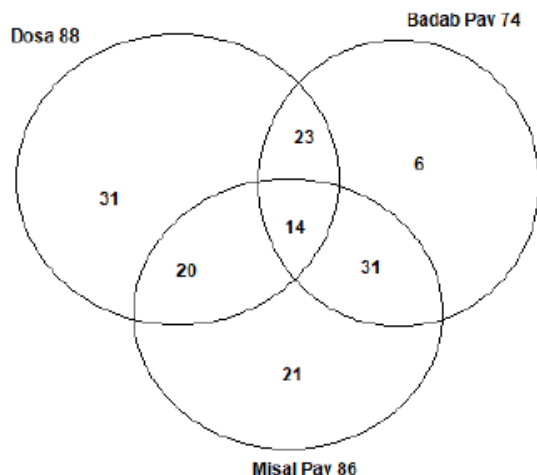
Or $X = \text{Rs. } 10 \text{ lakhs}$

Thus, the cost price of the house for Raman is Rs. 10 lakhs.

Hence, option (a) is the right answer.

Explanation for Questions 28 & 29:

Venn diagram:

**Q.28) Solution (a)****Explanation:**

Only Dosa and Bada-pav lovers = 23

Only Dosa lovers = $88 - (20 + 14 + 23) = 31$

Required difference = $31 - 23 = 8$

Hence, option (a) is the correct answer.

Q.29) Solution (c)**Explanation:**

Only Dosa lovers = $88 - (20 + 14 + 23) = 31$

Only Bada-pav lovers = $74 - (23 + 14 + 31) = 6$

Only Misal-pav lovers = $86 - (20 + 14 + 31) = 21$

The total number of only Dosa lovers, only Bada-pav lovers and only Misal-pav lovers = $31 + 6 + 21 = 58$

Hence, option (c) is the correct answer.

Q.30) Solution (b)**Explanation:**

New speed = $\frac{4}{5}$ of its usual speed

So, New time taken = $\frac{5}{4}$ of the usual time

[time = distance/speed, if distance is constant then time \propto 1/speed]

So, ($\frac{5}{4}$ of the usual time) – (usual time) = 20 min

$\Rightarrow (\frac{5}{4} - 1)$ of the usual time = 20 min

$\Rightarrow \frac{1}{4}$ of the usual time = 20 min

\Rightarrow usual time = (4×20) min = 80 min.

Hence, option (b) is the correct answer

Q.31) Solution (b)**Explanation:**

Assumption 1 is incorrect. The passage is specific to deep fake technology and does not discuss the pros and cons of other technology. Therefore, to assume and state that every technology has its pros and cons would not be correct as per the passage. Hence, this assumption is not correct.

Assumption 2 is correct. The passage states that “the scalability of allowing an actor to appear in commercials or on websites for e-commerce all over the world (without requiring trips to the studio, learning a new language, or improving accent work) could be empowering.” This will imply higher incomes for those actors who can take benefit of such scalability. Also, the passage notes that “the widespread adoption of deepfakes could allow for the supplanting of actors who are not celebrities, leading to job losses.” This implies income disparity could increase. Hence, this assumption is correct.

Q.32) Solution (c)**Explanation:**

Assumption 1 is correct. The passage states, "...the growing dependence of societies on space services, and the appearance of hostile behaviours make it necessary to analyse space security more broadly." Since it necessitates the analysis of space security, it follows that such dependency is a potential risk factor. Hence, this assumption is correct.

Assumption 2 is correct. The passage states, "...this legal framework must be complemented with concrete measures, such as greater transparency on space activities". Since this "must" be done, it follows that transparency is important. Open information sharing among nations indulging in space activities is an element of transparency. Hence, this assumption is valid.

Q.33) Solution (d)**Explanation:**

Assumption 1 is incorrect. The passage mentions "autonomous and remotely piloted vehicles".

However, no further information is provided that can lead to the assumption that this will lead to job losses and that the government needs to intervene to prevent that. Hence, this assumption is not correct.

Assumption 2 is incorrect. The passage mentions both artificial intelligence and the adoption of cleaner fuels as the upcoming changes in the transport sector. It does not posit that one can substitute the other.

Hence, this assumption is not correct.

Q.34) Solution (c)**Explanation:**

Option (a) is incorrect. The passage notes that the transport industry is set to undergo a radical transformation. The sector will witness the advent of disruptive technologies like Industry 4.0, artificial intelligence, electric mobility, and new sources of fuel like hydrogen and biofuel. However, it is nowhere indicated that transport sector is averse to adoption of new technology. Hence, this is not the most logical implication.

Option (b) is incorrect. The author only says that the radical transformations in transportation sector would enable India to fulfil its commitment to cutting greenhouse gas (GHG) emissions. There is no mention about the impact on blue collar workers. Therefore, this answer option is completely beyond the scope of the passage. Hence, this is not the most logical implication.

Option (c) is correct. Since the passage notes, "...the future of the Indian transport industry will be carved by radical transformations through major disruptive technologies," it follows that skilling in such emerging technologies will be very much needed to ensure a smooth transition in the transportation sector.

Hence, option(c) is the most logical implication from among the available choices.

Option (d) is incorrect as both options (a) and (b) are incorrect.

Q.35) Solution (a)

Explanation:

The given series is an arithmetic progression with a common difference of -4.

So, the next term = $44 - 4 = 40$

Hence, option (a) is the correct answer.

Q.36) Solution (a)

Explanation:

Average weight of 17 men = 74 kg

Total weight of 17 men = 17×74 kg

Similarly, Average weight of 51 women = 63 kg

Total weight of 51 women = 51×63 kg

Therefore, Average weight of all the men and women together = $[(17 \times 74) + (51 \times 63)] / (17 + 51)$
=

$[17(74 + 3 \times 63)] / 68 = 65.75$ kg

Hence, option (a) is the correct answer.

Q.37) Solution (d)**Explanation:**

Total number of people in the party = 5 guests + 2 hosts = 7 people.

Total number of handshakes = ${}^7C_2 = 21$

The host couple does not shake hands with each other.

So, total number of handshakes = $21 - 1 = 20$.

Hence, option (d) is the right answer.

Q.38) Solution (b)**Explanation:**

If a, b and c is divided by a number which leaves the same remainder in each case, then such greatest number should be HCF of $(a - b)$, $(b - c)$ and $(a - c)$, where $a > b > c$.

Now, here $a = 1135$, $b = 900$, $c = 618$

And $1135 - 900 = 235$

$1135 - 618 = 517$

$900 - 618 = 282$

HCF of 235, 517 and 282 will be the required answer.

$235 = 5 \times 47$

$517 = 11 \times 47$

$282 = 2 \times 3 \times 47$

Thus, HCF of 235, 517 and 282 is 47.

Hence, option (b) is the right answer.

Q.39) Solution (b)**Explanation:**

Total number of students in the class = 31

Rank of Mahesh from top = 7th

Number of students behind Mahesh = $31 - 7 = 24$

Rank of Mahesh from bottom = 25th

Rank of Suresh = 11th

Number of students behind Suresh = $31 - 11 = 20$

Rank of Suresh from the bottom = 21st

Sum of ranks of Mahesh and Suresh from the bottom = $25 + 21 = 46$

Hence, option (b) is the right answer.

Q.40) Solution (c)**Explanation:**

As given in the question

$V > P$ (1)

$P > Q$ (2)

Combining the two

$V > P > Q$ (3)

V is fifth. So, P is sixth and Q is seventh.

Either R scores the max and T scores the least or S scores the max and U or Q scores the least.

T has not scored the least.

So, S scored the max and Q scored the least.

Hence, option (c) is the right answer.

Q.41) Solution (d)**Explanation:**

Assumption 1 is incorrect. The passage notes, "Veblen goods seem to violate the law of demand." However, this does not lead to the generalized assumption that economic theories always have exceptions. The passage states only one economic theory - the law of demand. We cannot generalize it to all economic theories. Hence, this assumption is not correct.

Assumption 2 is incorrect. The passage restricts its domain to explaining the concept of Veblen goods. It does not specify the countries where such good are found. Also, it would be extreme and an exaggeration to say that Veblen goods exist only in developed countries. Hence, this assumption is not correct.

Q.42) Solution (d)**Explanation:**

Option (a) is incorrect. The passage notes, "Status symbols are the second main reason why people are attracted to Veblen goods." The author talks about status symbols, but does not list any particular category like cars or electronics. Hence, this option is not correct.

Option (b) is incorrect. The passage does mention that the demand unexpectedly increases as the price increases, but there is no hint towards the need for regulation of Veblen goods. This answer option is completely beyond the scope of the passage. Hence, this option is not correct.

Option (c) is incorrect. The passage has laid out reasons why consumers purchase Veblen goods. The perception that costlier goods would be of better quality is one of those reasons. This could be true. We cannot conclusively say that this indicates poor decision making ability. Hence, this option is not correct.

Option (d) is correct. The passage notes, "...status symbols are the second main reason why people are attracted to Veblen goods." As lifestyle can relate to social status, demand for such goods can be driven by their association with a particular lifestyle. Hence, this option is correct.

Q.43) Solution (c)**Explanation:**

Option (a) is incorrect. The passage does not touch upon the dimension of reversal of the ageing process. The focus is primarily on the subjective experiences of ageing, the impact of external factors and the framework of response to ageing. Hence, this option is not correct.

Option (b) is incorrect. The passage makes note of "a public health response." It does not make any comparative analysis of the different support systems available for the elderly. Therefore, it would be incorrect to adjudicate family as the best support system for the elderly. Hence, this option is not correct.

Option (c) is correct. The passage notes, "...a public health response must take stock of these current and projected trends and frame policies accordingly." This means that implementing comprehensive public health programs is a rational action. Also, the passage has duly acknowledged the diversity in old age and that "there is no typical older person." So, the tailoring of the programs to the diverse needs of older individuals is also rational. Hence, option (c) is the best choice among all options.

Q.44) Solution (d)**Explanation:**

Assumption 1 is invalid. The passage notes, "...some 80-year-olds have physical and mental capacities similar to many 30-year-olds. Other people experience significant declines in capacities at much younger ages." Even 80-year old people can have higher efficiency at work. This means that efficiency and age are not necessarily related – directly or inversely. Hence, this assumption is invalid.

Assumption 2 is incorrect. The passage notes that globalization influences "the lives of older people in direct and indirect ways." However, the nature of this influence is not clearly laid out. Hence, it cannot be assumed that a policy of protectionism would help deal with the challenges associated with ageing. Hence, this assumption is not correct.

Q.45) Solution (b)**Explanation:**

The person who applies first, gets the leave sanctioned. Probability of A getting leave sanctioned = $\frac{1}{5}$ Hence, option (b) is the right answer.

Q.46) Solution (b)**Explanation:**

Ram's speed = 2 metres/second

Shyam's speed = 4 metres/second

Distance covered by Ram in 2.5 minutes (150 seconds) = $150 \times 2 = 300$ metres.

Time taken by Shyam to complete one round = $400/4 = 100$ seconds

Distance covered by Ram in 100 seconds = $2 \times 100 = 200$ metres.

It means Ram has covered total distance of 500 metres (i.e. $200 + 300$), i.e. Ram completes one round and then goes further 100 metres ahead by the time Shyam completes one round.

Therefore, after completion of one round, Shyam will be 100 metres behind Ram. Hence, option (b) is the correct answer.

Q.47) Solution (b)**Explanation:**

On dividing 1095 days with 7, we get 3 as remainder.

Hence, Raj will open his shop 3 days after Monday, i.e. on Thursday. Hence, option (b) is the right answer.

Q.48) Solution (d)**Explanation:**

Expenditure = $10(\text{number of family members})^2$

So $E_1 = 10(x)^2$

And $E_2 = 10(x-1)^2$

Now, $E_1 - E_2 = 50$

Or $10(x^2 - (x-1)^2) = 50$

Or $x^2 - (x^2 + 1 - 2x) = 5$

Or $2x - 1 = 5$

Or $x = 3$

Hence, option (d) is the right answer.

Q.49) Solution (a)

Explanation:

Part of the tank filled by first tap in 1 min = $1/8.33 = 3/25$

Part of the tank filled by second tap in 1 min = $1/12.5 = 2/25$ Let the tank can be emptied by the third tap in x minutes.

According to the question,

$(1/x) - (3/25 + 2/25) = 1/4$ (since tank emptied in 4 min)

Or $1/x = 1/4 + 3/25 + 2/25$

Or $1/x = 45/100$

Or $1/x = 9/20$

Or $x = 20/9$

Hence, the tank can be emptied in $20/9$ minutes by the third tap alone. So, Capacity of tank = $(20/9) \times 162 = 20 \times 18 = 360$ litres Hence, option (a) is the right answer.

Q.50) Solution (d)

Explanation:

In order to figure out how much each piece of fabric costs, we need to multiply the price by the length of fabric needed.

Expenditure on black fabric = $950 \times 1 = \text{Rs.}950$

Expenditure on red fabric = $775 \times 1.5 = \text{Rs. } 1162.5$

Expenditure on white fabric = $700 \times 0.5 = \text{Rs. } 350$

Total bill of fabric = $\text{Rs. } (950 + 1162.50 + 350) = \text{Rs. } 2462.50$

Total bill of fabric including 5% GST on bill = $\text{Rs. } (2462.50 \times 105/100) = \text{Rs. } 2585.625$ Hence, option (d) is the correct answer.

Q.51) Solution (b)

Explanation:

Option (a) is incorrect because the passage does not even remotely touch upon the development and deployment of vaccines. Hence, this option is not correct.

Option (b) is correct. The passage notes, "...the response to a biological event, whether naturally occurring, accidental, or deliberate, relies on coordination across multiple sectors." This mention of coordination clearly implicates that structured prevention, preparedness, and response strategies are needed. Hence, this option is correct.

Option (c) is incorrect. Refer to the lines: "Access to knowledge and data is also increasingly available through the internet, and criminals use hidden and anonymous streams of communication, such as the Darknet..." Internet plays an enabling role in biological events; but we cannot say that it is the root cause behind the threats of bioterrorism. Hence, this option is not correct.

Q.52) Solution (b)

Explanation:

Option (a) is incorrect. The passage mentions both the negative and the positive impacts of social media, if used ethically, on adolescent mental health. This answer option, on the other hand, emphasises negative impact only. Also, cyber bullying and addiction are not specifically mentioned in the passage. Hence, this option is not correct.

Option (b) is correct. The passage notes, "...ethical social media use can increase opportunities for connection and communication, boosting one's self-esteem, promoting one's health, and accessing crucial medical information." This increase in opportunities is a potential upside. The passage further notes, "...the youth access social media in high numbers, which leads to chronic

sleep deprivation, having a detrimental impact on cognitive ability, school performance, and socio-emotional functioning." This represents a potential downside. Hence, the balanced view mentioned in option (b) about social media can be said to best capture the crux of the passage.

Option (c) is incorrect. The passage notes that ethical social media usage can have benefits. Also, it states, "...clinicians can collaborate with young people and their families to mitigate the potential risks associated with social media and smartphone use..." This implies that the author does not advocate for adolescents completely avoiding the use of social media, as the risks can be mitigated. Hence, this option is not correct.

Option (d) is incorrect. The passage highlights the different issues faced by adolescents like chronic sleep deprivation, detrimental impact on cognitive ability, school performance, and socio-emotional functioning. Therefore, it would be incorrect to say that the negative impacts on adolescents are overrated. Hence, this option is not correct.

Q.53) Solution (a)

Explanation:

Assumption 1 is correct. The passage notes, "...employment generation, and creation of opportunity for economic activities at village level" are benefits of tapping solar energy in India. This logically leads to the assumption that harnessing solar energy has led to improvement in the standard of living in Indian villages. Hence, this assumption is correct.

Assumption 2 is incorrect. The context of the Indian government's agenda on sustainable growth and how the solar energy sector supports it is not discussed in the passage. The passage mostly focusses on the impact of solar energy on the rural landscape. So, this assumption is beyond the scope of the passage. Hence, this assumption is not valid.

Q.54) Solution (c)

Explanation:

Given that, $W = XY + Z$

Or $XY + Z = W$

From Statement 1: When $X = 7$, $W = 41$

$7Y + Z = 41$ (i)

From Statement 2: When $X = 9$, $W = 49$

$$9Y + Z = 49 \dots\dots(ii)$$

From Statements 1 & 2:

By subtracting equation (i) from (ii), we get:

$$2Y = 8$$

$$\text{Or } Y = 4$$

Putting the value of Y in equation (i), we get:

$$7Y + Z = 41$$

$$\text{Or } 7 \times 4 + Z = 41$$

$$\text{Or } Z = 41 - 28$$

$$\text{Or } Z = 13$$

Therefore, $Y = 4$ and $Z = 13$.

Thus, both Statement 1 and Statement 2 together are sufficient to answer the question.

Hence, option (c) is the correct answer.

Q.55) Solution (b)

Explanation:

Let the sum be Rs. x .

We know that, Simple Interest = $\text{Principal} \times \text{Rate} \times \text{Time} / 100$

Amount = Simple Interest + Principal

If the money is invested at 4.6% per annum for 2 years, then:

$$\text{Amount} = x + (x \times 4.6 \times 2) / 100$$

If the money is invested at 3.2% per annum for 2 years, then:

$$\text{Amount} = x + (x \times 3.2 \times 2) / 100$$

According to the question,

$$[x + (x \times 4.6 \times 2)/100] - [x + (x \times 3.2 \times 2)/100] = 196$$

$$\text{Or } 9.2x - 6.4x = 19600$$

$$\text{Or } 2.8x = 19600$$

$$\text{Or } x = 7000$$

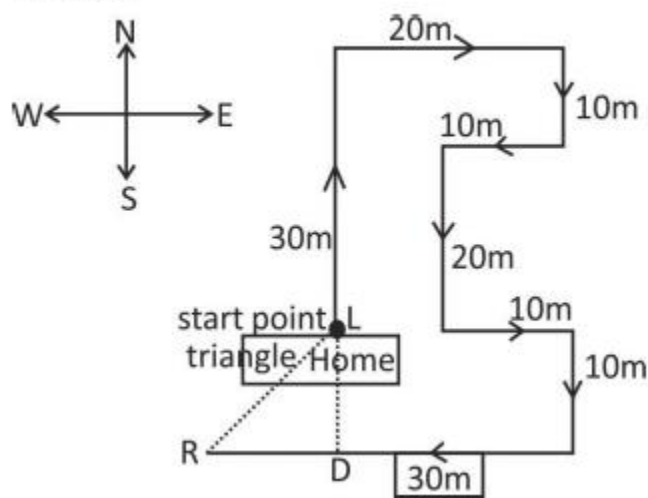
Thus, the sum was Rs. 7000.

Hence, option (b) is the right answer.

Q.56) Solution (a)

Explanation:

The path:



$$\text{In } \triangle LDR, (LR)^2 = (LD)^2 + (DR)^2$$

$$\text{Or } (LR)^2 = (10)^2 + (10)^2$$

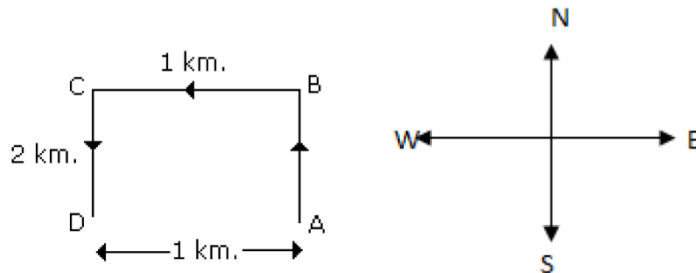
$$\text{Or } (LR)^2 = 100 + 100 = 200$$

$$\text{Or } LR = 10\sqrt{2} \text{ meters}$$

Hence, option (a) is the correct answer.

Q.57) Solution (b)**Explanation:**

Diagram given below shows the path traversed by Sachin.



Let A be the starting point. Clearly, the boy rode 2 km northward initially. Hence, option (b) is the right answer.

Q.58) Solution (b)**Explanation:**

Secretary sits on chair number 1.

So, one chair and one person can be seated in only 1 way.

The remaining 5 persons can sit on any of the 5 chairs.

Five people can be seated in 5 chairs in $5!$ ways = 120

ways Hence, option (c) is the right answer.

Q.59) Solution (b)**Explanation:**

If two trains starting at the same time from points A and B are coming towards each other and after crossing they take 'a' and 'b' hours in reaching B and A respectively then the ratio of their speeds, A's speed: B's speed = $\sqrt{b} : \sqrt{a}$ (Formula)

So, $(X's \text{ speed}) / (Y's \text{ speed}) = \sqrt{36/25}$

$$= 6/5$$

$$\Rightarrow 72 / (Y's \text{ speed}) = 6/5$$

$$\Rightarrow Y's \text{ speed} = 60 \text{ km/h.}$$

Hence, option (b) is the right answer.

Q.60) Solution (c)**Explanation:**

Option (a):

Statements 1, 2 and 3 alone are not sufficient, as we cannot find a link between S and P in these statements.

Option (b):

Statements 1, 3 and 4 alone are not sufficient, as we cannot find a link between S and P in these statements.

Using all the four statements, we get the following family tree:

Hence, option (c) is correct.

Q.61) Solution (a)**Explanation:**

Option (a) is correct: The passage conveys the above message in the following way.

It defines natural resources as elements crucial to ecosystems, including humans.

It highlights the dependence of environments and cultures on these resources.

It acknowledges the economic importance of resources.

It points out the strain caused by unsustainable resource use exceeding natural regeneration.

In simpler terms, the passage is saying that we need to use natural resources responsibly to ensure they're there for the future. Hence, option (a) is correct.

Option (b) is not correct: The passage says, "Natural resources make up a dense web of interdependence, forming ecosystems that also include humans." The author categorically says that human beings are an inalienable part of natural resources. City dwellers are also included therein. Hence, option (b) is not correct.

Option (c) is not correct: Refer to the last line of the passage: "In some cases, exploitation levels came to exceed resources' natural regeneration rates." Even if it is happening in fewer cases, it

does not mean that resource management is not quite required. It is always advisable to ensure responsible consumption before it is too late. Hence, option (c) is not correct.

Option (d) is not correct: This answer option assumes that this awareness is not currently present among people. Refer to the line: "People have formed different types of cultural, spiritual, and subsistencebased relationships with the natural environment..." This forging of bond with natural environment is not possible without having that sense of awareness. Hence, option (d) is not correct.

Q.62) Solution (a)

Explanation:

Inference 1 is correct: The passage clearly states that the end of the Cold War sparked a debate about security, implying that the Cold War era had a significant influence on how security was understood in IR. This debate between 'narrowers' and 'wideners' likely emerged due to the specific security concerns of that period. Hence, inference 1 is correct.

Inference 2 is not correct: While the passage mentions the Cold War sparking the debate, it doesn't say that the debate is over. It simply highlights the existence of two contrasting viewpoints on security framework, and the lack of a universally accepted definition. The passage doesn't suggest that one side necessarily won the debate or that there's a clear consensus in place. Hence, inference 2 is not correct.

Q.63) Solution (a)

Explanation:

Assumption 1 is correct: The passage suggests, "When household income is higher and there is more social protection, women can withdraw from the market to work in their households and care for children." This implies that childcare and housework are significant factors influencing women's participation in the workforce. Hence, assumption 1 is correct.

Assumption 2 is not correct: The passage focuses only on female labour force participation and the factors affecting it across different income levels. It doesn't provide any information or make assumptions about how male participation rates vary. While the gender gap is mentioned, it's used in the context of female participation, not assuming anything about the male side of the equation. Hence, assumption 2 is not correct.

Q.64) Solution (a)**Explanation:**

Smallest 2-digit number possible is 10.

$$10 = (9+1), (8+2), (7+3), (6+4), (5+5)$$

$$9 = 3^2 \text{ and } 4 = 2^2$$

So, Number at unit's place = 3 or 2

Number at hundred's place = 1 or 6

Possible numbers = 103, 113, 123, ..., 193 or 602, 612, 622, ..., 692. In both cases it's an arithmetic progression with a difference of 10. Hence, option (a) is the right answer.

Q.65) Solution (c)**Explanation:**

Clubs A, B and D meet on 2nd, 3rd and 6th day respectively.

$$\text{LCM}(2, 3, 6) = 6$$

So, the clubs A, B and D will meet on the 6th day.

Since, they met on the 1st of the month, they will all meet again after 6 days, i.e. on 7th of the month.

Hence, option (c) is the correct answer.

Q.66) Solution (a)**Explanation:**

Total income of Mr. Batra during first 4 months = $1200 \times 4 = \text{Rs } 4800$

Total income of Mr. Batra during next 3 months = $1500 \times 3 = \text{Rs } 4500$

Total income of Mr. Batra during next 5 months = $1800 \times 5 = \text{Rs } 9000$

Total income during whole year = $4800 + 4500 + 9000 = 18300$

Total expenditure during whole year = 15000 (given)

\therefore Total saving = $18300 - 15000 = \text{Rs } 3300$

Hence, option (a) is the correct answer.

Q.67) Solution (d)**Explanation:**

We can see that two numbers in options (a), (b), and (c) are prime numbers and rest are non-prime. However, in option (d) three numbers 31, 17, 53 are prime numbers. So, this group is different from the others.

Hence, option (d) is the right answer.

Q.68) Solution (b)**Explanation:**

The unit digit of the resultant number will depend only on the unit digits of the given numbers (321) and (216), i.e. 1 and 6.

We know that any power of a number whose unit digit is 1, 5, or 6, will result in a number having unit digit 1, 5, and 6 respectively.

So, Unit digit of $[(321)^{216} - (216)^{115}] = \text{Unit digit of } [(1)^{216} - (6)^{115}] = 1 - 6 = -5$
Unit digit can never be negative, so we should add 10.

Unit digit of the given expression $= -5 + 10 = 5$

Hence, option (b) is the right answer.

Explanation for Questions 69 & 70:

According to the given conditions, we get:

Weight of packet C is half as much as that of packet D.

$$C = (1/2) D$$

$$\text{Or } D = 2C \text{(i)}$$

Weight of packet D is half as much as that of packet E.

$$D = (1/2) E$$

$$\text{Or } E = 2D \text{(ii)}$$

Weight of packet B is four and a half times as much as that of packet C.

$$B = 4.5C$$

$$\text{Or } B = (9/2) C \text{(iii)}$$

Weight of packet A is twice as much as that of packet B

$$A = 2B \text{(iv)}$$

Weight of packet E is more than that of packet C but less than that of packet A.

So, $A > E > C$

On combining, we get:

$A > B > E > D > C$

Q.69) Solution (d)

Explanation:

$$D = E/2 = 120/2 = 60 \text{ kg}$$

$$C = D/2 = 60/2 = 30 \text{ kg}$$

$$B = (9/2)C = (9/2) \times 30 = 135 \text{ kg}$$

Q.70) Solution (c)

Q.71) Solution (b)

Explanation:

Option (a) is not correct: The passage does not mention anything related to grandparents. The core theme of the passage is the use of social media by teenagers, and its associated pros and cons. The context of grandparents is completely beyond the scope of the passage. **Hence, option (a) is not correct.**

Option (b) is correct: Social media helps teens stay connected and builds friendships, which are crucial for their overall development. Spending excessive time on social media is linked to increased risks of mental health concerns like depression and anxiety. Teens are more prone to "**stress posting**" leading to potential regret and negative online interactions. Therefore, the passage emphasizes the need for balanced and responsible social media use by teenagers. **Hence, option (b) is correct.**

Option (c) is not correct: While the passage suggests a link between three hours of daily use and high risks of mental health concerns, it doesn't imply complete immunity for those who don't use social media. **Hence, option (c) is not correct.**

Option (d) is not correct: The passage talks about a common issue among teenagers, not a universal one. While the passage highlights that the teenage brain is more prone to impulsive decisions, it does not claim that it is common among all teens. Universalising the issues talked about in the passage would be incorrect. **Hence, option (d) is not correct.**

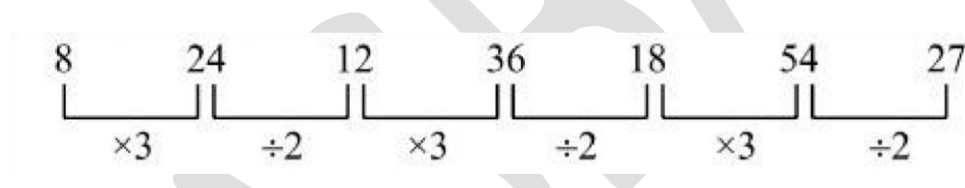
Q.72) Solution (c)**Explanation:**

Inference 1 is correct: The author clearly says that even those who are not directly dependent on forests for livelihood are heavily benefited by forests. The only difference is that those deriving livelihood are directly dependent, and others are indirectly dependent. The author is concerned that those benefiting indirectly might be unaware of these benefits. This might lead to a lack of appreciation and support for forest conservation. These arguments are aptly captured in statement 1.

Inference 2 is correct: The passage highlights the following key points:

Deforestation: British rule increased timber extraction, raising concerns about deforestation.

Alienation of locals: The creation of Reserved and Protected Forests restricted the access for local communities, causing resentment and a loss of stake in conservation. This top-down approach and disconnect with local communities led to negative consequences like degradation and fragmentation of forests across the country. Hence, inference 2 is correct.

Q.73) Solution (a)**Explanation:**

Hence, option (a) is the correct answer.

Q.74) Solution (a)**Explanation:**

Ramesh was ranked lower than Sanjay.

Ramesh < Sanjay(1)

Vijay was ranked higher than Deepak.

Vijay > Deepak(2)

Kamal is ranked higher than Vijay but lower than Ramesh.

Ramesh > Kamal > Vijay (3)

Comparing (3) and (1), we get:

Sanjay > Ramesh > Kamal > Vijay (4)

Combining (4) and (2), we get:

Sanjay > Ramesh > Kamal > Vijay > Deepak

Clearly, Sanjay is ranked first.

Hence, option (a) is the correct answer.

Q.75) Solution (c)

Explanation:

Given series: 1 **4** **5** **6** 3 2 **2** **5** **7** 3 2 **7** **2** **5** **9** 8 2 **3** **5** **4** 7 1 2 3

There are 4 combinations where 5 can be seen. In two of them 5 is followed by an odd number and preceded by a prime number.

Hence, option (c) is the correct answer.

Q.76) Solution (c)

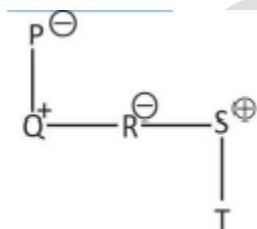
Explanation:

Taking option (a), we get:

$$P - Q \times R \div S + T$$

P is the mother of Q, Q is the brother of R, R is the sister of S, S is the father of T.

Family tree:



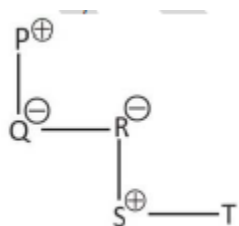
From the diagram we can say that 'P' is **not** the aunt of 'T'

Taking option (b), we get:

$$P + Q \div R - S \times T$$

P is the father of Q, Q is the sister of R, R is the mother of S, S is the brother of T.

Family tree:



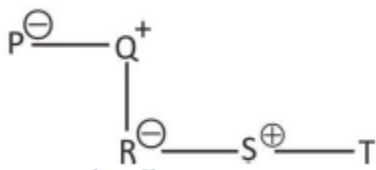
From the diagram we can say that 'P' is **not** the aunt of 'T'

Taking option (c), we get:

$$P \div Q + R \div S \times T$$

P is the sister of Q, Q is the father of R, R is the sister of S, S is the brother of T.

Family tree:



From the diagram, we can say that 'P' is the aunt of 'T'.

Hence, option (c) is the right answer.

Q.77) Solution(c)

Explanation:

The given code language is:

T----A

C----S

E----D

R----F

A----G

F----H

U----J

N----K

O----L

M----X

Therefore, the code for MANUFACTURE will be:

M	A	N	U	F	A	C	T	U	R	E
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
X	G	K	J	H	G	S	A	J	F	D

Hence, option (c) is the correct answer.

Q.78) Solution(d)

Explanation:

The given series:

1st letter: $F \xrightarrow{+2} H \xrightarrow{+2} J \xrightarrow{+2} L \xrightarrow{+2} N$

Middle number: $2 \xrightarrow{\times 1+1} 3 \xrightarrow{\times 2+2} 8 \xrightarrow{\times 3+3} 27 \xrightarrow{\times 4+4} 112$

3rd letter: $S \xrightarrow{-2} Q \xrightarrow{-3} N \xrightarrow{-4} J \xrightarrow{-5} E$

So, the missing term is L27J.

Hence, option (d) is the right answer.

Q.79) Solution (a)

Explanation:

7	10	15
9	12	17
12	15	20
10	?	18
8	?	16
18	21	26

Here, the pattern is: $C2 = C1 + 3$ and $C3 = C2 + 5$

In R1----> $7 + 3 = 10$ and $10 + 5 = 15$

In R2----> $9 + 3 = 12$ and $12 + 5 = 17$

In R3----> $12 + 3 = 15$ and $15 + 5 = 20$

In R4----> $10 + 3 = 13$ and $13 + 5 = 18$

In R5----> $8 + 3 = 11$ and $11 + 5 = 16$

In R6----> $18 + 3 = 21$ and $21 + 5 = 26$

Hence, option (a) is the correct answer.

Q.80) Solution (b)**Explanation:**

Every digit is replaced by the remainder that is obtained when the number is divided by 3.

1 gives remainder 1 when divided by 3. So, it is encoded as 1.

2 gives remainder 2 when divided by 3. So, it is encoded as 2

3 gives remainder 0 when divided by 3. So, it is encoded as 0.

4 gives remainder 1 when divided by 3. So, it is encoded as 1.

5 gives remainder 2 when divided by 3. So, it is encoded as 2.

6 gives remainder 0 when divided by 3. So, it is encoded as 0.

Hence, option (b) is the correct answer.