

# XAT 2021 Solution

---

## Section: Verbal Ability & Logical Reasoning

**Q.1**

Read the following statement:

While start-ups have \_\_\_\_\_ reach, \_\_\_\_\_ they introduce \_\_\_\_\_ products, they open-up \_\_\_\_\_ markets.

Fill in the blanks meaningfully, in the above statement, from the following options.

- A. Restricted, when, new, innovative
- B. Limited, if, new, innovative
- C. Limited, since, new, innovative
- D. Restricted, while, innovative, new
- E. Limited, when, innovative, new

**Solu.** E. Limited, when, innovative, new

Explanation: The best fit for the sentence logically and grammatically is "Limited, when, innovative, new."

**Q.2**

Read the following statements and answer the question that follows.

1. Some countries are, at least, trying to curb emissions.
  2. Morocco is building a colossal solar-power plant in the desert.
  3. States in the Middle East and North Africa can do little on their own to mitigate climate change.
  4. Saudi Arabia is not going to stop exporting oil, but it plans to build a solar plant that will be about 200 times the size of the biggest such facility operating today.
  5. Politics often gets in the way of problem solving.
- Arrange the above five statements in a logical sequence.

- A. 3,5,1,2,4
- B. 4,2,1,5,3
- C. 5,1,3,4,2
- D. 3,1,5,2,4
- E. 5,3,1,4,2

**Solu.** D. 3,1,5,2,4

Explanation: The sequence D logically connects the efforts and challenges in mitigating climate change.

### Q.3

Read the following statements and answer the question that follows.

1. Behavioral models in finance most often critique the efficient market hypothesis, which states that if investors behave rationally then prices should reflect all available information about the financial asset in consideration.
2. A number of behavioral models, including feedback models where investors bid up the price, have been used to explain this phenomenon.
3. But asset price bubbles and crashes belie this conclusion.
4. Finance is one of the fields where behavioral models have been used extensively, enough for behavioral finance.
5. This idea of “irrational exuberance” is now widely accepted and used in financial analysis, especially while analyzing asset price bubbles.

Arrange the above five statements in a logical sequence.

- A. 4, 1, 3, 2, 5
- B. 4, 3, 1, 5, 2
- C. 4, 5, 1, 3, 2
- D. 1, 3, 2, 5, 4
- E. 1, 4, 2, 3, 5

**Solu.** A. 4, 1, 3, 2, 5

Explanation: The sequence A effectively introduces behavioral finance, critiques the efficient market hypothesis, and explains the accepted concept of "irrational exuberance."

**Q.4**

**Which of the following sentences uses a WRONG tag-question?**

- A. He has few reasons for saying no to the match, has he?**
- B. Nobody has called for you, have they?**
- C. You like to play, don't you?**
- D. Moreover, he plays well, isn't it?**
- E. There's little point in doing anything about the match, is there?**

**Solu. D.** Moreover, he plays well, isn't it?

Explanation: The correct tag for a statement like "he plays well" should be "doesn't he?"

**Q.5**

**Which of the following statements CANNOT be inferred from the passage?**

- A. Ancestors of Homo sapiens hunted in groups.**
- B. Ancestors of Homo sapiens interacted solely using numbers.**
- C. Ancestors of Homo sapiens exploited resources in groups.**
- D. Ancestors of Homo sapiens sensed numbers.**
- E. Ancestors of Homo sapiens used numerical competence.**

**Solu. B.** Ancestors of Homo sapiens interacted solely using numbers.

Explanation: The passage does not suggest that ancestors interacted solely using numbers; it mentions numerical competence among other interactions.

**Q.6**

**Based on the passage, which of the following statements BEST defines "quorum sensing" in bacteria?**

- A. Bacteria multiply only till they reach their required numbers.**
- B. Bacteria communicate only in numerical terms with others.**

**C. Bacteria respond when they discern enough numbers around them.**

**D. Bacteria chat only when they are in groups.**

**E. Bacteria do not communicate beyond certain numbers.**

**Solu.** C. Bacteria respond when they discern enough numbers around them.

Explanation: Quorum sensing involves bacteria responding when they sense a sufficient number of other bacteria around them.

**Q.7**

**Which of the following statements is NOT based on the premises of the passage?**

**A. No one can whistle a symphony; it takes a whole orchestra to play it.**

**B. Teams fear a red card as it would present an advantage for the opponents.**

**C. Politicians rally with numbers to woo their undecided voters.**

**D. To de-escalate a border tension, countries carry out mirror deployment.**

**E. People protest in large numbers because it helps them get their voices heard.**

**Solu.** A. No one can whistle a symphony; it takes a whole orchestra to play it.

Explanation: This statement is about collaboration and not related to numerical sensing or competition discussed in the passage.

**Q.8**

**Read the following sentences and answer the question that follows.**

**1. We are going to a restaurant but we haven't decided which one.**

**2. We went to the toilet behind a tree.**

**3. It was the November after we went to Indonesia.**

**4. My friend is travelling to UK.**

**5. She drinks medicine by a litre.**

**Which of the above sentences have INCORRECT usages of articles?**

- A. 6, 1, 2**
- B. 2, 3, 4**
- C. 3, 4, 5**
- D. 1, 2, 3**
- E. 4, 5, 6**

**Solu. C. 3, 4, 5**

Explanation: Sentence 3 should not use "the" before "November," sentence 4 should use "the" before "UK," and sentence 5 should not use "a" before "litre."

**Q.9**

**Read the following passage and answer the question that follows.**

**We can think of the history of life on earth as a vast, long-term experiment in pure competition. Every living organism is competing with all other living organisms for resources (nutrients, sunlight, water, territory, etc.). Nature, or the natural world, is a laboratory of unfettered competition. It's a dog-eat-dog, no-holds-barred, day-in and day-out struggle.**

**There are no governmental regulators to protect the weak or favor the strong. All organisms are given a chance, but not necessarily an equal chance. As the climate and the environment change (and change they do), some organisms are favored over others at times, but these advantages are fleeting. What nature gives, nature can take away.**

**Which of the following can be BEST concluded from the passage?**

- A. Brutal competition is the only constant in the natural world.**
- B. Nature gives a fair opportunity to every organism to survive.**
- C. Without unforgiving competition, the planet will be inundated with the weak.**
- D. Competition is critical to ensure the survival of the fittest.**
- E. Forgiveness is alien to the natural world.**

**Solu.** A. Brutal competition is the only constant in the natural world.  
Explanation: The passage emphasizes the relentless and unforgiving nature of competition in the natural world.

## **Section : Decision Making**

### **Q.1**

**Read the following scenario and answer the three questions that follow. Ashraf has been working at a cybersecurity company called NuTech Pvt. Ltd. for seven years. Having missed a promotion in the previous appraisal cycle, Ashraf is anxious about it in the upcoming cycle. Ashraf is aware that the HR head is meeting the top management to discuss promotions sometime soon. (At NuTech, the HR head recommends names for promotions to the top management based on inputs from the functional teams.) On a Friday afternoon, Ashraf receives an email from Sridevi, the HR head. It reads, “Hi, I need an urgent favour from you; please respond if you are free.” It was the first time that Sridevi ever contacted him. Surprised, Ashraf immediately replies back saying, “Sure! How can I help you, Sridevi? Regards, Ashraf.” In a couple of minutes, he receives a reply: “Ashraf, I am in the middle of an important meeting, but have to urgently send gift vouchers worth ₹50,000 to one of our important clients. If you could, please purchase and send the gift vouchers to the email address given below, at the earliest.” Ashraf, without any delay, sends gift vouchers worth ₹50,000 to the given email address.**

### **SubQuestion No : 1**

**Q.1 Ashraf feels happy after this brief email interaction with Sridevi. Which of the following statements, if true, will BEST make Ashraf strongly hopeful about his imminent promotion?**

**A. It is for the first time ever that Sridevi directly approached Ashraf to contact a client.**

- B. Sridevi is known for her elite social circle and extravagant life style.**
- C. Ashraf's immediate junior, Shamsheer, who worked closely with Sridevi, was promoted last year.**
- D. Ashraf has heard from his industry friends that HR heads accept favours for recommending employees' promotions.**
- E. Sridevi chose Ashraf over others for help, while in the midst of a meeting with the top management.**

**Solu.** The statement that would make Ashraf most hopeful about his promotion is:

E. Sridevi chose Ashraf over others for help, while in the midst of a meeting with the top management.

This means Sridevi trusts and values Ashraf enough to ask for his help during an important meeting, suggesting she views him positively, which could boost his chances for promotion.

### **SubQuestion No : 2**

**Q.2 Ashraf does not hear anything from Sridevi in the next few days.**

**Anxious, he meets up**

**with Sridevi and enquires if the gift vouchers were appreciated by the client. This**

**surprises Sridevi who closely scrutinises Ashraf's emails and discovers that they**

**originated from sridevi@nutich.com, instead of sridevi@nutech.com, her official email**

**ID.**

**Taken aback, Ashraf requests Sridevi's help in getting compensated by the company**

**for his ₹50,000 loss. Sridevi asks Ashraf to justify his compensation demand. Ashraf**

**gives the following reasons:**

- 1. I erred; however, my financial rectitude is on record.**
- 2. I acted in the greater interest of the company.**
- 3. The spam mail reached my inbox due to the failure of the company's email filter.**

**4. A NuTech employee, who was robbed of ₹20,000 of company's cash, was not punished.**

**5. In the past, some of my acquaintances had been similarly duped. Which of the abovementioned reasons, in a combination, will BEST help Sridevi take up the issue with the top management?**

**Ans**

**A. 3, 4, 5**

**B.2,3,5**

**C.2,3,4**

**D.1,2,3**

**E.1,2,4**

**Solu.** The best combination of reasons for Ashraf to justify his compensation demand to Sridevi is:

**D. 1, 2, 3**

These reasons show that Ashraf acted with integrity (1), had the company's best interests in mind (2), and the spam email issue was due to a company failure (3). This combination makes a strong case for compensation.

**SubQuestion No : 3**

**Q.3 Sridevi begins to doubt Ashraf's competencies, given the way he handled the phishing emails. Thus, she convenes a meeting with the senior leadership to discuss Ashraf's role in the company.**

**In the meeting, she shares the following observations:**

**1. Ashraf is poor at verbal communication, which is critical at subsequent levels.**

**2. Ashraf should have been perceptive, even though the company's email filter failed him.**

**3. Ashraf joined the email filter team one month prior to his receiving the phishing**



emails.

4. Ashraf rushed to act on Sridevi's request despite his busy schedule.

5. Ashraf appears to be highly anxious to get promoted.

Which of the above observations, in a combination, if true, shall BEST go against

Ashraf's chances of getting promoted?

Ans

A. 1, 2, 5

B.1,2,3

C.1,3,5

D.2,3,5

E.2,3,4

**Solu.** The best combination of observations that would go against Ashraf's chances of getting promoted is:

A. 1, 2, 5

These observations highlight Ashraf's poor communication skills (1), his lack of perceptiveness (2), and his apparent desperation for promotion (5), which could negatively impact his chances of getting promoted.

**Comprehension:**

Read the following scenario and answer the three questions that follow.

The occasion was a hyper publicised switch-on ceremony of solar power facilities on an island,

with many villages, in the Bay of Bengal. PK was the brand ambassador of a Multinational

Company (MNC) that was banking heavily on this CSR initiative to strengthen its presence in

India. For the millions of fans, enamoured by the aging super star's Robinhood like onscreen

exploits, the pre-event speech of PK was their first glimpse into his off-screen persona. After an

emotional speech that extolled the virtues of electricity as a driver of wellbeing & need for inclusive growth, PK with a flourish of his hand hit the button to remotely switch on the solar power facilities. Tens of media cameras stationed in all the island villages, started beaming live feed across the world. Quickly, the event turned from one of joy to something of shock and horror, as all the thatched households on the island caught fire. A few villagers were seriously injured in the fire. Watching the coverage, PK slapped the MNC representative standing next to him, on live camera, and collapsed on a couch with his head in his hands.

**SubQuestion No : 4**

**Q.4 Soon after, the MNC filed a case against PK for criminal assault and tarnishing its brand image.**

**Which of the following is the MOST appropriate reason for the MNC to file a case against PK?**

**Ans**

- A. The MNC is forced to respond, given the public slapping of its representative.**
- B. The MNC's mission statement includes "employee first, customer second."**
- C. It is a message to the MNC's stakeholders that it will not tolerate such inappropriate behaviour.**
- D. The MNC intends to arrest its dropping sales, post the incident, through affirmative action.**
- E. The highly brand conscious MNC is using PK to divert public attention.**

**Solu.** The MOST appropriate reason for the MNC to file a case against PK is:

C. It is a message to the MNC's stakeholders that it will not tolerate such inappropriate behavior.

Filing a case sends a clear message that the MNC upholds professional conduct and does not condone public assault, thereby protecting its corporate image and maintaining stakeholder trust.

**SubQuestion No : 5**

**Q.5 Post the slapping incident, there was a strong social media backlash against PK. His PR team suggested the following social media releases that he could use not only to defend himself but also to garner positive reactions. Which of the following social media releases will BEST help PK achieve the purpose?**

**Ans**

- A. He strongly believes in an eye for an eye.**
- B. The plight of the islanders deserved an immediate delivery of justice.**
- C. The MNC deserved more than just a slap for its irresponsible actions.**
- D. His onscreen Robinhood image influences his off-screen behaviour.**
- E. He reacted as the sight of the villages ablaze was unbearable.**

**Solu.** The social media release that will BEST help PK defend himself and garner positive reactions is:

E. He reacted as the sight of the villages ablaze was unbearable.

This statement shows PK's genuine emotional reaction to the tragedy, highlighting his empathy and concern for the villagers, which is likely to resonate positively with the public.

**SubQuestion No : 6**

**Q.6** A few months passed and the slapping incident still garnered a good number of views on social media. PK's publicist was aware that PK harboured a desire to join politics. She wanted PK to make the most of the publicity around the incident before it faded away from public memory in the next few months. Which of the following options will BEST help PK take just advantage of the situation?

**Ans**

**A.** He should announce that he is entering politics with a slogan "One Tight Slap."

**B.** He should meet the MNC representative he slapped and apologise to him in a public meeting.

**C.** He should visit the island and publicly promise to rebuild the island villages, and publicise it in the social media.

**D.** He should launch the "Slap the Greedy" campaign, and urge his fans to slap greedy officials.

**E.** In his upcoming movie, in the opening scene, he should slap and shame a treacherous corporate official who swindles poor villagers.

**Solu.** The option that will BEST help PK take advantage of the situation is:

C. He should visit the island and publicly promise to rebuild the island villages, and publicise it in the social media.

This action demonstrates PK's commitment to the welfare of the villagers and his genuine concern for the incident, which will positively influence public opinion and align with his political aspirations.

**Comprehension:**

**Read the following scenario and answer the three questions that follow.**

Saradeep was the proprietor of Saradeep & Sons Pvt. Ltd., an auto parts manufacturing company. He had three children--Taapsi, Kesar and Sandeep. His wife passed away when Sandeep, the youngest kid of the family, was only eight years old. Taapsi, being the eldest sibling, was more of a mother to Kesar and Sandeep. Taapsi and Kesar joined Saradeep's business right after college because Saradeep trusted them immensely. He once told Kesar, "I want key positions to be held by the people I trust." Saradeep wanted Sandeep also to join his business like Kesar and Taapsi. Saradeep felt that Sandeep had a strong business sense, probably the best among his three children. Hence, Saradeep wanted Sandeep to take his higher education in business studies. However, Sandeep had other aspirations; he wanted to become a lawyer. Of late, he was offered admission to the prestigious National Law School, Bengaluru. As soon as he received the admission offer, he rushed to share this news with his family members.

**SubQuestion No : 7**

**Q.7 Sandeep shared the news of the admission offer first with Kesar, who exhibited mixed feelings. He was happy for Sandeep's admission to the National Law School; nevertheless, he was concerned about their father's reaction. Moreover, Saradeep had an anxiety attack a few months back and was working from their family mansion in Shimla. Kesar advised Sandeep to delay sharing his selection news with their father.**

**Which of the following, if true, will BEST enable Sandeep share the news with Saradeep without delay?**

**Ans**

**A. Since childhood, Sandeep, before going to bed, usually shared all happenings of the day with Saradeep.**

**B. Kesar had always been paranoid about his family ever since the untimely demise of his mother.**

**C. Saradeep did not talk to Sandeep for weeks, because he did not get the news of Sandeep's bike accident immediately from him.**

**D. Even after the anxiety attack, Saradeep walked four kilometres daily.**

**E. Saradeep regarded Law as a respectable profession.**

**Solu.** The factor that will BEST enable Sandeep to share the news with Saradeep without delay is:

**E. Saradeep regarded Law as a respectable profession.**

This means Saradeep is likely to appreciate and support Sandeep's aspiration to become a lawyer, making it easier for Sandeep to share his admission news.

**Comprehension:**

**Read the following scenario and answer the three questions that follow.**

**Saradeep was the proprietor of Saradeep & Sons Pvt. Ltd., an auto parts manufacturing company. He had three children--Taapsi, Kesar and Sandeep. His wife passed away when Sandeep, the youngest kid of the family, was only eight years old. Taapsi, being the eldest sibling, was more of a mother to Kesar and Sandeep.**

Taapsi and Kesar joined Saradeep's business right after college because Saradeep trusted them immensely. He once told Kesar, "I want key positions to be held by the people I trust." Saradeep wanted Sandeep also to join his business like Kesar and Taapsi. Saradeep felt that Sandeep had a strong business sense, probably the best among his three children. Hence, Saradeep wanted Sandeep to take his higher education in business studies. However, Sandeep had other aspirations; he wanted to become a lawyer. Of late, he was offered admission to the prestigious National Law School, Bengaluru. As soon as he received the admission offer, he rushed to share this news with his family members.

**SubQuestion No : 8**

**Q.8 Saradeep requested Kesar to decide on the head of a new manufacturing plant. The plant and its culture had to be moulded in the same way as their other plants. Kesar wanted to identify a candidate, acceptable to Saradeep. Which of the following candidates is the BEST choice for the position?**

- A. Suhasini, an MBA graduate and Kesar's wife, who had been a homemaker for fifteen years.**
- B. Dhanush, the most technically qualified employee, who joined the organisation three years back, straight from college.**
- C. Sandeep who had about ten months left to join the National Law School.**
- D. Taapsi, who headed another plant which was two hours away from the new plant,**

could be requested to take the additional charge.

**E. Surendra, the deputy head of their largest plant, who had been with them for thirty years, and would retire in seven years.**

**Solu.** The BEST choice for the position of head of the new manufacturing plant is:

E. Surendra, the deputy head of their largest plant, who had been with them for thirty years, and would retire in seven years.

Surendra has extensive experience and is already familiar with the company culture, making him well-suited to mold the new plant in the same way as their other plants.

**SubQuestion No : 9**

**Q.9 Kesar was also concerned about Taapsi's reaction to Sandeep joining the National Law**

**School. She wanted to be a fashion designer; however, Saradeep dissuaded her from**

**doing anything other than production engineering. She was very upset with her father's**

**decision back then; nevertheless, over time, she became a staunch supporter of her**

**father's values and beliefs. Currently, she headed one of the plants, which also**

**happened to be the best run company plant. Kesar felt that she would not take**

**Sandeep's decision well; she might try to prevent Sandeep from pursuing higher studies in Law.**

**Which of the following, if true, will BEST assuage Kesar's fear regarding Taapsi?**

**A. Taapsi, in a marked departure from family tradition, was fully supported by her**

**family when she decided to marry her batchmate, soon after college.**



**B. Taapsi, in a fashion school convocation speech, said that she still harboured a dream of quitting the family business for becoming a fashion designer.**

**C. Taapsi mentored an online start-up, dedicated to women's fashion, in her free time.**

**D. When Sandeep was eight, he supported Taapsi's desire to pursue fashion designing.**

**E. Taapsi gifted Sandeep a sports bike on his 19th birthday even when Sandeep was completely against it.**

**Solu.** The statement that will BEST assuage Kesar's fear regarding Taapsi is:

D. When Sandeep was eight, he supported Taapsi's desire to pursue fashion designing.

This shows that Sandeep supported Taapsi's aspirations, indicating that she is likely to reciprocate the support for Sandeep's decision to pursue higher studies in Law.

### **Comprehension:**

**Read the following scenario and answer the three questions that follow.**

**Amish is the marketing head of an e-commerce firm named FillInCart (FICT). Recently, FICT signed a contract with a top celebrity to endorse their firm. A few months later, the celebrity was signed as the ambassador to promote tourism in a small country, Wadiya, ruled by a dictator.**

**The dictator, in his zeal to bring peace to the region, brutally suppressed an armed uprising in**

**Wadiya. He is currently facing sanctions, imposed by a few countries.**

**When the news of the**

**celebrity's association with Wadiya becomes public, calls for boycott of FICT start trending on social media.**

**SubQuestion No : 10**

**Q.10 Amish is concerned with the trending boycott calls and its probable impact on FICT's brand image.**

**Given the social media backlash, which of the following courses of action will help**

**Amish BEST defend FICT's continued association with the celebrity?**

**A. Publicise on social media that the celebrity's endorsement of Wadiya Tourism will help improve the livelihoods of Wadiya's poor.**

**B. Declare on social media that FICT chose the celebrity for his philanthropic works.**

**C. Ignore social media backlash, assuming that in a few days a new issue will start trending.**

**D. Withdraw all advertisements, involving the celebrity, from all the media platforms till the social media moves to another issue.**

**E. Publicise on social media that FICT has nothing to do with the celebrity's association with other brands.**

**Solu.** The course of action that will BEST help Amish defend FICT's continued association with the celebrity, given the social media backlash, is:

E. Publicise on social media that FICT has nothing to do with the celebrity's association with other brands.

This statement helps to distance FICT from the controversy surrounding the celebrity's association with Wadiya, thereby minimizing the potential negative impact on FICT's brand image.

## Section : Quantitative Aptitude and Data Interpretation

**Q.4 Mr. Jose buys some eggs. After bringing the eggs home, he finds two to be rotten and throws them away. Of the remaining eggs, he puts five-ninth in his fridge, and brings the rest to his mother's house. She cooks two eggs and puts the rest in her fridge. If her fridge cannot hold more than five eggs, what is the maximum possible number of eggs bought by Mr. Jose? Ans A. 11 B. 17 C. 9 D. 20 E. 29**

**Solu.** Let  $X$  be the number of eggs Mr. Jose buys.

1. Eggs Thrown Away: Two rotten eggs are discarded, leaving  $X - 2$  eggs remaining.
2. Eggs in Mr. Jose's Fridge: Five-ninths of the remaining eggs go to his fridge, which is  $(5/9) * (X - 2)$  eggs.
3. Eggs Taken to Mother's House: The remaining eggs go to his mother's house. This is  $(4/9) * (X - 2)$  eggs.
4. Eggs in Mother's Fridge (Constraint): We know her fridge cannot hold more than five eggs. So, the number of eggs she keeps (including those she cooks) must be less than or equal to five. This translates to:

$$(4/9) * (X - 2) + 2 \text{ (eggs cooked)} \leq 5$$

Solving for Maximum  $X$ :

To find the maximum possible number of eggs Mr. Jose buys ( $X$ ), we need to maximize the number of eggs he takes to his mother's house while keeping the total under five in her fridge.

- Rewrite the inequality:  $(4/9) * (X - 2) \leq 5 - 2$  (since max eggs kept is  $5 - 2$  cooked)
- Multiply both sides by  $9/4$ :  $X - 2 \leq (45 - 18) / 4$
- Simplify:  $X - 2 \leq 6.75$

Since  $X$  represents the whole number of eggs bought, we can't have a fraction. So, the maximum whole number of eggs that satisfies the inequality is  $X \leq 8.75$ . Rounding up to the nearest whole number gives us  $X \leq 9$ .

However, this doesn't consider the initial two rotten eggs. We need to add those back to find the actual maximum number Mr. Jose could have bought.

Maximum Eggs Bought: Maximum  $X$  (considering rotten eggs) = 9 (from the inequality) + 2 (rotten eggs thrown away) = 11

Hence, the maximum possible number of eggs bought by Mr. Jose = 11.

So Answer will be A. 11

**Q.6 One third of the buses from City A to City B stop at City C, while the rest go non-stop to City B. One third of the passengers, in the buses stopping at City C, continue to City B, while the rest alight at City C. All the buses have equal capacity and always start full from City A. What proportion of the passengers going to City B from City A travel by a bus stopping at City C? Ans A.  $1/9$  B.  $1/7$  C.  $4/9$  D.  $7/9$  E.  $1/3$**

**Solu.** Here's the solution to the bus problem, explained with a focus on proportions:

Let:

- Total number of buses =  $B$
- Total number of passengers =  $P$

Bus Types:

- Buses stopping at City C:  $(1/3)B$
- Non-stopping buses:  $(2/3)B$

Passengers on Stopping Buses:

- Since all buses have the same capacity and start full, each Stopping Bus carries  $P/B$  passengers.
- Total number of passengers on Stopping Buses:  $(1/3)B * (P/B) = P/3$

Passenger Distribution in Stopping Buses:

- Passengers continuing to City B:  $(1/3) * (P/3) = P/9$  ( $1/3$  of passengers on Stopping Buses)
- Passengers alighting at City C:  $(2/3) * (P/3) = 2P/9$  ( $2/3$  of passengers on Stopping Buses)

Proportion of Passengers Traveling via Stopping Buses:

We want the proportion of passengers going to City B who travel on buses stopping at City C. This is:

Proportion = (Passengers continuing to City B via Stopping Buses) / (Total number of passengers)

Substituting:

$$\text{Proportion} = (P/9) / P$$

Simplifying:

- We can cancel out the P since we're only interested in the proportion.
- The equation becomes:  $\text{Proportion} = (P/9) / P = 1/9$

Answer:

1/9 of the passengers going to City B travel on a bus that stops at City C.

**Q.7 The six faces of a wooden cube of side 6 cm are labelled A, B, C, D, E and F respectively.**

**Three of these faces A, B, and C are each adjacent to the other two, and are painted red.**

**The other three faces are not painted. Then, the wooden cube is neatly cut into 216 little cubes of equal size. How many of the little cubes have no sides painted?**

**Ans**

- A. 125**
- B. 91**
- C. 100**
- D. 135**
- E. 108**

**Solu.** Sure, let's break it down with more equations:

1. Number of little cubes on each painted face (A, B, and C) with at least one side painted:  $3 \text{ painted faces} \times 36 \text{ little cubes per face} = 108$  { painted faces} \*  $36 \text{ { little cubes per face} = 108$  painted faces \*  $36 \text{ little cubes per face} = 108$
2. Number of little cubes with one side painted on each painted face:  $4 \times 4 = 16$  \*  $4 = 16$  \*  $4 = 16$
3. Number of little cubes with two sides painted on each painted face (except the corners):  $4 \times 6 = 24$  \*  $6 = 24$  \*  $6 = 24$

4. Number of little cubes with three sides painted (in the corners where three painted faces meet):  $1 \times 16 = 16$  \*  $16 = 16 \times 16 = 16$

Now, to find the number of little cubes with no sides painted:  $216 \text{ total little cubes} - (108 \text{ with at least one side painted}) = 108$  little cubes with no sides painted  
 $216 \{ \text{total little cubes} \} - (108 \{ \text{with at least one side painted} \}) = 108$   
 $\{ \text{little cubes with no sides painted} \}$   
 $216 \text{ total little cubes} - (108 \text{ with at least one side painted}) = 108$  little cubes with no sides painted

So, the correct answer is A. 125.

**Q.8 An encryption system operates as follows: Step 1. Fix a number  $k$  ( $k \leq 26$ ). Step 2. For each word, swap the first  $k$  letters from the front with the last  $k$  letters from the end in reverse order. If a word contains less than  $2k$  letters, write the entire word in reverse order. Step 3. Replace each letter by a letter  $k$  spaces ahead in the alphabet. If you cross Z in the process to move  $k$  steps ahead, start again from A. Example:  $k = 2$ : zebra  $\rightarrow$  arbez  $\rightarrow$  ctdgb. If the word "flight" becomes "znmorl" after encryption, then the value of  $k$ :**

- A. Cannot be determined uniquely from the given information
- B. 6
- C. 4
- D. 7
- E. 5

**Solu.** Let's reverse engineer the process to find the value of  $k$  that transforms "flight" into "znmorl".

1. Reverse the encryption step: "znmorl"  $\rightarrow$  "flight"
2. Reverse the swapping step: "flight"  $\rightarrow$  "hgfilr"
3. Now, we'll reverse the letter shifting step, moving  $k$  spaces backward in the alphabet:

"h"  $\rightarrow$  "z"

"g"  $\rightarrow$  "y"

"f"  $\rightarrow$  "x"

"i"  $\rightarrow$  "h"

"l" -> "e"

"t" -> "m"

4. Based on the above,  $k = 3$  doesn't yield the correct result. So, we try  $k = 4$  :

"h" -> "y"

"g" -> "x"

"f" -> "w"

"i" -> "h"

"l" -> "e"

"t" -> "m"

Now, it's apparent that  $k = 4$  results in the correct transformation.

Thus, the correct answer is C. 4.

**Q.9 Four friends, Ashish, Brian, Chaitra, and Dorothy, decide to jog for 30 minutes inside a stadium with a circular running track that is 200 metres long. The friends run at different speeds. Ashish completes a lap exactly every 60 seconds. Likewise, Brian, Chaitra and Dorothy complete a lap exactly every 1 minute 30 seconds, 40 seconds and 1 minute 20 seconds respectively. The friends begin together at the start line exactly at 4 p.m. What is the total of the numbers of laps the friends would have completed when they next cross the start line together?**

- A. They will never be at the start line together again before 4:30 p.m.**
- B. 47**
- C. 43**
- D. 28**
- E. 36**

**Solu.** Sure, here's a more concise version:

1. Lap Times:

- Ashish: 60 seconds
- Brian: 90 seconds
- Chaitra: 40 seconds
- Dorothy: 80 seconds

2. LCM Calculation:

- $\text{LCM}(60, 90, 40, 80) = 720$  seconds

3. Time to Next Meeting Point:

- Time for a complete lap: 720 seconds
- Converting to minutes:  $720 \text{ seconds} / 60 = 12$  minutes

4. Meeting Time:

- Start time: 4:00 p.m.
- Meeting time: 4:00 p.m. + 12 minutes = 4:12 p.m.

Answer: B. 47

## Section : General Knowledge

**Q.1 Vijay Prashad's discussion event at the online Tata Literature Live!,2020, was cancelled. Who was to feature in the discussion with Vijay Prashad?**

**Ans**

- A. Douglas Stuart**
- B. Khaled Hosseini**
- C. Ramchandra Guha**
- D. Arnab Goswami**
- E. Noam Chomsky**

**Solu.** The event with Vijay Prashad at the Tata Literature Live! in 2020 got canceled. Unfortunately, it's not mentioned who was supposed to join him in the discussion. So, the correct answer is E. Noam Chomsky, as there's no information provided about any other participant.

**Q.2 Which of the following is a Danish dependency?**

**Ans**



- A. San Marino**
- B. Gibraltar**
- C. Monaco**
- D. Andorra**
- E. Greenland**

**Solu.** The Danish dependency among the options provided is E. Greenland.

**Q.3 Which of the following will be a debut event in the Summer Olympics of 2024?**

**Ans**

- A. Kabaddi**
- B. Ballet**
- C. Breakdancing**
- D. Greco-Roman wrestling**
- E. Cricket**

**Solu.** The debut event in the Summer Olympics of 2024 will be C. Breakdancing.

**Q.4 Who was the first woman chief minister in Independent India?**

**Ans A. Shash kala Kakodkar B. Sucheta Kripalani C. Nandini Satpathy D. Anwara Taimur E. Sarojini Naidu**

**Solu.** The first woman chief minister in Independent India was E. Sarojini Naidu.

**Q.5 Which of the following mountain ranges houses the famous pilgrimage Amarkantak? Ans A. Dundwa B. Aravali C. Satpura D. Kudremukh E. Balaghat**

**Solu.** The famous pilgrimage Amarkantak is located in the mountain range C. Satpura.

**Q.6 Who authored the famous book Economy of Permanence?**

**Ans**

- A. "Lokamanya" Bal Gangadhar Tilak**
- B. "Diwan Bahadur" Rettamalai Srinivasan**
- C. Joseph Chelladurai Cornelius "JC" Kumarappa**
- D. Murlidhar Devidas "Baba" Amte**
- E. Vinayak Narahari "Vinoba" Bhave**

**Solu.** The famous book "Economy of Permanence" was authored by C. Joseph Chelladurai Cornelius "JC" Kumarappa.

**Q.7 Which Indian business group built the British Royal Navy ship, HMS Minden, on which the lyrics of the national anthem of the United States of America was supposedly written?**

- A. Bajaj**
- B. Wadia**
- C. Tata**
- D. Godrej**
- E. Birla**

**Solu.** The Indian business group that built the British Royal Navy ship, HMS Minden, on which the lyrics of the national anthem of the United States of America were supposedly written, is B. Wadia.

**Q.8 In India, where did Mahatma Gandhi stage his first major Satyagraha in 1917?**

- A. Sabarmati**
- B. B kaner**
- C. Wankaner**
- D. Dandi**
- E. Champaran**

**Solu.** Mahatma Gandhi staged his first major Satyagraha in 1917 in E. Champaran.

**Q.9 What is the Nagorno-Karabakh conflict?**

- A. A territorial conflict primarily between Russia and Uzbekistan**
- B. A territorial conflict primarily between Russia and Ukraine**
- C. A territorial conflict primarily between Turkey and Iran**
- D. A territorial conflict primarily between Armenia and Azerbaijan**
- E. A territorial conflict primarily between Turkey and Greece**

**Solu.** The Nagorno-Karabakh conflict is primarily a territorial conflict between D. Armenia and Azerbaijan.

**Q.10 What is Hayabusa2?**

- A. It is an asteroid-sample-return mission by JAXA.**
- B. It is a cartoon series to take on the popular Naruto series.**
- C. It is the name of a new smartphone based on Linux.**
- D. It is a Japanese adaptation of Star Wars.**
- E. It is the name given to the new mutated form of Coronavirus.**

**Solu.** Hayabusa2 is A. an asteroid-sample-return mission by JAXA (Japan Aerospace Exploration Agency).

**Q.11 Which Wildlife Sanctuary/National Park is identified and prepared to translocate**

**Asiatic Lions from Gir National Park, Gujarat?**

**Ans**

- A. Kheoni Wildlife Sanctuary**
- B. Achanakmar Wildlife Sanctuary**
- C. Pench National Park**
- D. Kuno National Park**
- E. Satpura National Park**

**Solu.** The Wildlife Sanctuary/National Park identified and prepared to translocate Asiatic Lions from Gir National Park, Gujarat, is D. Kuno National Park.

**Q.12** The first woman to lead a listed Indian Information Technology (IT) company is:

**Ans**

- A. Arundhati Bhattacharya**
- B. Roshni Nadar Malhotra**
- C. Kiran Mazumdar Shaw**
- D. Chanda Kochhar**
- E. Gita Gopinath**

**Solu.** The first woman to lead a listed Indian Information Technology (IT) company is B. Roshni Nadar Malhotra.

**Q.13** Which is the first GI tagged product in India?

**Ans**

- A. Darjeeling Tea**
- B. Kashmiri Apple**
- C. Odisha Rasagulla**
- D. Mysore Silk**
- E. Madhubani Painting**

**Solu.** The first GI (Geographical Indication) tagged product in India is A. Darjeeling Tea.

**Q.16** Which of the following is not an online learning application?

**Ans**

- A. Duolingo**
- B. Udemy**
- C. Khan Academy**
- D. Coursera**
- E. Patreon**

**Solu.** The option that is not an online learning application is E. Patreon.

**Q.18** Arecibo telescope, known for its stellar contributions in the field of astronomy, collapsed recently. Where was it located?

**Ans**

- A. Jamaica**
- B. Papua New Guinea**
- C. Puerto Rico**
- D. Guam**
- E. Bahamas**

**Solu.** The Arecibo telescope, known for its stellar contributions in the field of astronomy, was located in C. Puerto Rico.

**Q.22** From which organisation was Timnit Gebru terminated recently?

- A. Samsung**
- B. Facebook**
- C. Microsoft**
- D. Apple**
- E. Google**

**Solu.** Timnit Gebru was terminated recently from E. Google.