CUET 2026 GAT June 6 Shift 1

Question Paper (Memory-Based) with Solutions

Conducted by National Testing Agency (NTA)

General Instructions

(i) The examination will be conducted in Computer-Based Test (CBT) mode.

(ii) Each question carries +5 marks for correct answer and -1 mark for wrong answer.

(iii) The total number of questions are 50.

(iv) Duration of the exam is 1 hour (60 minutes).

1. Which one of the following countries is not a member of the "Quadrilateral Security Dialogue", also known as "QUAD"?

(A) China

(B) Japan

(C) India

(D) Australia

Correct Answer: (A) China

Solution:

Step 1: Understanding the Question:

This question asks us to identify which of the listed countries is not a member of the Quadrilateral Security Dialogue, widely referred to as the QUAD alliance.

The QUAD is an informal strategic forum consisting of democratic nations that share maritime and strategic interests in the Indo-Pacific region.

Step 2: Detailed Explanation:

1. The Quadrilateral Security Dialogue, or QUAD, is a strategic cooperative forum composed of four major democratic countries: the United States of America, India, Japan, and Australia.
2. The concept was first proposed in 2007 by the then-Prime Minister of Japan, Shinzo Abe, with support from the other three partner nations.
3. Although it became inactive for a period, the alliance was rejuvenated in 2017 to promote a free, open, prosperous, and inclusive Indo-Pacific region.
4. The group holds regular summits, coordinates on global issues such as climate change and technology, and conducts joint maritime exercises like the Malabar Exercise.
5. China is not a member of the QUAD; rather, the group is widely interpreted as a strategic counterbalance to China's growing military, economic, and geopolitical influence in the region.
6. Comparing the options, Japan, India, and Australia are active members, whereas China is not.

Step 3: Final Answer:

China is the country that is not a member of the QUAD.

Quick Tip: To easily remember the four QUAD members, associate them with the participants of the Malabar naval exercise: India, USA, Japan, and Australia.

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2. Find the smallest number which should be added to the smallest number divisible by 6, 9 and 15 to make it a perfect square.

(A) 10
(B) 9
(C) 19
(D) 21

Correct Answer: (A) 10

Solution:

Step 1: Understanding the Question:

The problem requires finding the smallest positive integer that must be added to a base number.

The base number is the smallest positive integer that is completely divisible by 6, 9, and 15, which is their Least Common Multiple (LCM).

After finding this LCM, we identify the next immediate perfect square and calculate the difference to find the number to be added.

Step 2: Key Formula or Approach:

We use the prime factorization method to find the LCM of the given numbers:

$$6 = 2 \times 3$$

$$9 = 3^2$$

$$15 = 3 \times 5$$

The LCM is the product of the highest power of each prime factor involved:

$$\text{LCM} = 2^1 \times 3^2 \times 5^1$$

Step 3: Detailed Explanation:

1. First, we compute the Least Common Multiple (LCM) of 6, 9, and 15 to find the smallest number divisible by all three:

$$\text{LCM} = 2 \times 9 \times 5 = 90$$

So, the smallest number divisible by 6, 9, and 15 is 90.

2. Now, we need to find the smallest number that should be added to 90 to make it a perfect square.

3. Let us list the perfect squares that lie close to 90:

$$9^2 = 81$$

$$10^2 = 100$$

$$11^2 = 121$$

4. Since we must add a positive number to 90, the target perfect square must be greater than 90.
5. The smallest perfect square greater than 90 is 100.
6. Let the number to be added be x.
7. We set up the relation: $90 + x = 100$.
8. Solving for x:

$$x = 100 - 90 = 10$$

9. Note that the circled option in the question image is 9, which is incorrect because $90 + 9 = 99$, which is not a perfect square. The correct value is 10, which corresponds to option (A).

Step 4: Final Answer:

The smallest number that should be added is 10.

Quick Tip: Always calculate the LCM first. Once you have the base number, look up the nearest perfect square that is greater than the base number and take the difference.

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3. A household appliances company offers two successive discounts of 20% and 35% on the

sale of a food processor. What is the final sale price (in Rs, to the nearest rupee) of a food processor costing Rs. 4580?

(A) 2519

(B) 2977

(C) 2382

(D) 3664

Correct Answer: (C) 2382

Solution:

Step 1: Understanding the Question:

The question asks for the final sale price of an appliance after two successive discounts are applied to its marked price of Rs. 4580.

The discounts of 20% and 35% are applied consecutively, meaning the second discount is calculated on the price remaining after the first discount has been deducted.

Step 2: Key Formula or Approach:

We can solve this using either the step-by-step reduction method or by finding the single equivalent discount using the percentage formula:

$$\text{Effective Discount } \% = d_1 + d_2 - \frac{d_1 \times d_2}{100}$$

Using sequential multiplication:

$$\text{Final Sale Price} = \text{Original Price} \times \left(1 - \frac{d_1}{100}\right) \times \left(1 - \frac{d_2}{100}\right)$$

Step 3: Detailed Explanation:

1. Let us find the single equivalent discount percentage first.
2. Given successive discounts are $d_1 = 20\%$ and $d_2 = 35\%$.
3. Applying the formula for the single equivalent discount:

$$\text{Equivalent Discount \%} = 20 + 35 - \frac{20 \times 35}{100}$$

$$\text{Equivalent Discount \%} = 55 - \frac{700}{100} = 55 - 7 = 48\%$$

4. Therefore, the total discount on the marked price is 48%.
5. The final sale price is the remaining percentage of the original price, which is:

$$100\% - 48\% = 52\%$$

6. Now, we calculate 52% of the original cost price of Rs. 4580:

$$\text{Final Sale Price} = \frac{52}{100} \times 4580$$

$$\text{Final Sale Price} = 0.52 \times 4580 = 2381.60 \text{ Rs.}$$

7. Rounding Rs. 2381.60 to the nearest rupee gives Rs. 2382.
8. Alternatively, applying the discounts one after the other:

Price after the first 20% discount:

$$4580 - (0.20 \times 4580) = 4580 - 916 = 3664 \text{ Rs.}$$

Price after the second 35% discount applied to Rs. 3664:

$$3664 - (0.35 \times 3664) = 3664 - 1282.4 = 2381.6 \text{ Rs.}$$

Rounding Rs. 2381.6 to the nearest integer gives Rs. 2382.

Step 4: Final Answer:

The final sale price of the food processor is Rs. 2382.

Quick Tip: Using the formula $d_1 + d_2 - \frac{d_1 d_2}{100}$ helps you quickly find the overall discount percentage, simplifying the final multiplication step.

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4. In triangle ABC, the bisector of angle BAC meets BC at point D in such a way that AB = 10 cm, AC = 15 cm and BD = 6 cm. Find the length of BC (in cm).

(A) 17

(B) 11

(C) 15

(D) 9

Correct Answer: (C) 15

Solution:

Step 1: Understanding the Question:

The problem describes a triangle ABC where the angle bisector of angle A meets side BC at a point D.

We are given the lengths of sides AB, AC, and segment BD, and we need to determine the total length of the base side BC.

Step 2: Key Formula or Approach:

This problem is solved using the Angle Bisector Theorem.

The Angle Bisector Theorem states that the angle bisector of an interior angle of a triangle divides the opposite side into two segments that are proportional to the adjacent sides of the triangle.

The formula is:

$$\frac{AB}{AC} = \frac{BD}{CD}$$

Step 3: Detailed Explanation:

1. We are given the following values:

$AB = 10$ cm

$AC = 15$ cm

$BD = 6$ cm

2. Let the length of segment CD be denoted as x cm.

3. According to the Angle Bisector Theorem, the ratio of the side lengths adjacent to the bisected angle is equal to the ratio of the segments created on the opposite side:

$$\frac{AB}{AC} = \frac{BD}{CD}$$

4. Substituting the given values into the ratio:

$$\frac{10}{15} = \frac{6}{x}$$

5. Simplify the fraction on the left side:

$$\frac{2}{3} = \frac{6}{x}$$

6. Cross-multiply to solve for x:

$$2x = 3 \times 6$$

$$2x = 18$$

$$x = 9 \text{ cm}$$

7. This gives us the length of the segment $CD = 9$ cm.

8. The total length of the side BC is the sum of the segments BD and CD because point D lies on the line segment BC:

$$BC = BD + CD$$

9. Substituting the segment values:

$$BC = 6 + 9 = 15 \text{ cm}$$

Step 4: Final Answer:

The length of BC is 15 cm.

Quick Tip: Always remember the property $\frac{\text{Left Side}}{\text{Right Side}} = \frac{\text{Left Segment}}{\text{Right Segment}}$ for internal angle bisectors in any triangle.

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5. Three positive numbers are in the ratio 2 : 3 : 4. The sum of their squares is 2349. The average of the first two numbers is:

(A) 36

(B) 27.5

(C) 18

(D) 22.5

Correct Answer: (D) 22.5

Solution:

Step 1: Understanding the Question:

We are given three positive numbers represented by a specific ratio, along with the sum of their squares.

We need to find the common multiplier to determine the exact values of the numbers, and then calculate the average (arithmetic mean) of the first two numbers.

Step 2: Key Formula or Approach:

Let the three numbers be $2x$, $3x$, and $4x$, where $x > 0$ is a common constant multiplier.

According to the problem, the equation is:

$$(2x)^2 + (3x)^2 + (4x)^2 = 2349$$

Step 3: Detailed Explanation:

1. Expand the square terms of the ratio variables:

$$(2x)^2 = 4x^2$$

$$(3x)^2 = 9x^2$$

$$(4x)^2 = 16x^2$$

2. Sum these squared terms together:

$$4x^2 + 9x^2 + 16x^2 = 2349$$

$$29x^2 = 2349$$

3. Solve for x^2 by dividing both sides by 29:

$$x^2 = \frac{2349}{29}$$

4. Let us compute the division:

$$29 \times 80 = 2320$$

$$2349 - 2320 = 29$$

$$29 \times 81 = 2349$$

So, $x^2 = 81$.

5. Since the numbers are positive, we take the positive square root of 81:

$$x = \sqrt{81} = 9$$

6. Now, calculate the actual values of the first two numbers:

First number $= 2x = 2 \times 9 = 18$

Second number $= 3x = 3 \times 9 = 27$

7. Find the average of the first two numbers:

$$\text{Average} = \frac{\text{First Number} + \text{Second Number}}{2}$$

$$\text{Average} = \frac{18 + 27}{2} = \frac{45}{2} = 22.5$$

Step 4: Final Answer:

The average of the first two numbers is 22.5.

Quick Tip: You can also calculate the average in terms of x first: average of $2x$ and $3x$ is $2.5x$. Since $x = 9$, the average is simply $2.5 \times 9 = 22.5$, saving calculation steps.

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6. Who is the father of "Indian Archaeology"?

(A) James Burgess

(B) Sir John Marshall

(C) Sir Alexander Cunningham

(D) Carl Ortwin Sauer

Correct Answer: (C) Sir Alexander Cunningham

Solution:

Step 1: Understanding the Question:

This question asks for the identity of the individual recognized as the "father of Indian Archaeology" due to their foundational contributions to archaeological studies in India.

Step 2: Detailed Explanation:

1. Sir Alexander Cunningham was a British Army engineer with the Bengal Engineer Group who developed a deep interest in Indian history, geography, and antiquities.
2. In 1861, the Government of India established the position of Archaeological Surveyor to the Government of India, and appointed Cunningham to the post.
3. He went on to found and organize the Archaeological Survey of India (ASI) and served as its first Director-General.
4. Cunningham carried out extensive surveys and excavations across Northern India, systematically mapping and documenting ancient historic sites, monuments, and inscriptions.
5. He is highly credited with locating and excavating major Buddhist sites, including Sarnath, Sanchi, and Taxila, which played a vital role in rediscovering India's ancient history.
6. Analyzing other options:

Sir John Marshall was a later Director-General of the ASI who oversaw the discovery and excavation of the Harappan Civilization (Indus Valley Civilization).

James Burgess succeeded Cunningham as the Director-General of the ASI but is not termed the father of Indian Archaeology.

Carl Ortwin Sauer was an influential American geographer associated with cultural geography, with no connection to Indian archaeology.

Step 3: Final Answer:

Sir Alexander Cunningham is recognized as the father of Indian Archaeology.

Quick Tip: Associate Alexander Cunningham with the formal establishment of the Archaeological Survey of India (ASI) in 1861 to remember his status as the "father" of the field.

7. Which are the correct examples of Newton's 3rd law motion?

(A) Recoil of a gun

(B) Running horse stops suddenly, the rider bends forward

(C) Motion of rocket

(D) It gives the definition of force

(E) Swimming

Choose the correct answer from the options given below:

(A) (A), (B) and (C) only

(B) (A), (C) and (E) only

(C) (B), (C) and (D) only

(D) (C), (D) and (E) only

Correct Answer: (B) (A), (C) and (E) only

Solution:

Step 1: Understanding the Question:

The question asks us to identify the statements and examples that correctly demonstrate Newton's Third Law of Motion.

Newton's Third Law states that "for every action, there is an equal and opposite reaction."

Step 2: Detailed Explanation:

1. Newton's Third Law of Motion states that forces always exist in matched action-reaction pairs. If body A exerts a force on body B, body B simultaneously exerts an equal and opposite force on body A.
2. Let us analyze each of the given options:
3. (A) Recoil of a gun: When a bullet is fired from a gun, the gunpowder explosion exerts a forward force on the bullet (action). The bullet exerts an equal and opposite backward force on the gun (reaction), causing it to recoil. This is a correct example.
4. (B) Running horse stops suddenly, the rider bends forward: This is an example of inertia of motion, which is governed by Newton's First Law of Motion (Law of Inertia), not the Third Law.

5. (C) Motion of rocket: A rocket engine burns fuel and expels hot exhaust gases downwards (action). These gases exert an equal and opposite upward thrust force on the rocket (reaction), propelling it upwards. This is a correct example.
6. (D) It gives the definition of force: Newton's First Law defines force qualitatively, and the Second Law defines it quantitatively ($F = ma$). The Third Law does not define what a force is, so this statement is incorrect.
7. (E) Swimming: A swimmer pushes the water backward with their hands and legs (action). The water simultaneously exerts an equal and opposite forward force on the swimmer (reaction), propelling them forward. This is a correct example.
8. Therefore, options (A), (C), and (E) are correct examples of Newton's Third Law. This corresponds to option (B).

Step 3: Final Answer: The correct statements representing Newton's Third Law are (A), (C), and (E) only.

Quick Tip: Identify action-reaction pairs to confirm Newton's Third Law. If a scenario involves two different bodies exerting forces on each other, it is likely the Third Law.

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8. Who was the founder of Arya Samaj?

(A) Raja Ram Mohan Roy
(B) Swami Vivekananda
(C) Swami Dayanand Saraswati
(D) Keshab Chandra Sen

Correct Answer: (C) Swami Dayanand Saraswati

Solution:

Step 1: Understanding the Question:

The question asks for the founder of the "Arya Samaj," which was a highly influential socio-religious reform movement in modern Indian history.

Step 2: Detailed Explanation:

1. The Arya Samaj was founded on 7 April 1875 in Bombay (now Mumbai) by Swami Dayanand Saraswati.
2. Swami Dayanand Saraswati (1824–1883) was a renowned Sanskrit scholar, ascetic, and social reformer who advocated for a return to the pure Vedic tradition.
3. He rejected modern corruptions of Hinduism such as idol worship, child marriage, animal sacrifice, and the hereditary caste system, promoting monotheism and female education instead.
4. He coined the famous slogan "Go back to the Vedas" (Vedo ki aur lauto) and authored the book "Satyarth Prakash" (The Light of Truth) to spread his philosophy.
5. Looking at the other options:

Raja Ram Mohan Roy founded the Brahmo Samaj in 1828 to reform Hindu society and challenge practices like Sati.

Swami Vivekananda was a disciple of Ramakrishna Paramahansa who founded the Ramakrishna Mission in 1897 to promote humanitarian and social work.

Keshab Chandra Sen was a prominent reformer associated with the Brahmo Samaj, who later established the Brahmo Samaj of India in 1866.

6. Thus, Swami Dayanand Saraswati is the correct founder of the Arya Samaj.

Step 3: Final Answer:

Swami Dayanand Saraswati was the founder of the Arya Samaj.

Quick Tip: Remember the pairing: "Brahmo Samaj" with Raja Ram Mohan Roy, and "Arya Samaj" with Swami Dayanand Saraswati.

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9. The Vice-Chancellor of a State University is appointed by which authority?

(A) President

(B) Prime Minister

(C) Governor

(D) Home Minister

Correct Answer: (C) Governor

Solution:

Step 1: Understanding the Question:

This question tests knowledge of the administrative hierarchy of state universities in India, specifically concerning the authority responsible for appointing their Vice-Chancellors (VCs).

Step 2: Detailed Explanation:

1. In India, higher education administration is divided between central and state jurisdictions.
2. For state universities established under state legislation, the Governor of that particular state serves as the ex-officio Chancellor of these universities.
3. In their capacity as the Chancellor, the Governor is vested with the power to appoint the Vice-Chancellor (VC) of the state university.
4. The appointment is usually selected from a panel of eligible candidates recommended by a search-cum-selection committee.
5. Reviewing the other choices:

The President of India acts as the Visitor to Central Universities and appoints their Vice-Chancellors, but does not appoint VCs of State Universities.

The Prime Minister is the head of the Union Cabinet and does not have administrative powers over state university appointments.

The Home Minister handles internal security and domestic policy and has no direct role in the administration of state universities.

6. Therefore, the Governor is the correct appointing authority for State Universities.

Step 3: Final Answer:

The Governor of the respective state appoints the Vice-Chancellor of a State University.

Quick Tip: Remember that the Governor acts as the Chancellor of State Universities, while the President acts as the Visitor of Central Universities.

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10. What is the pH range of milk?

(A) 7.2 - 7.5
(B) 9.2 - 9.5
(C) 6.7 - 6.9
(D) 3.4 - 3.9

Correct Answer: (C) 6.7 - 6.9

Solution:

Step 1: Understanding the Question:
The question asks for the standard pH range of milk to determine its acidic or basic nature.

Step 2: Detailed Explanation:
1. The pH scale ranges from 0 to 14, where 7 is neutral. Values below 7 indicate acidity, while values above 7 indicate alkalinity (basicity).
2. Fresh cow's milk is slightly acidic, generally falling within the range of 6.5 to 6.7 (broadly classified between 6.4 and 6.8).
3. Over time, as milk sits, lactose (milk sugar) is converted into lactic acid by bacteria, which increases the acidity and lowers the pH further, leading to souring.
4. Let us evaluate the options provided:
(A) 7.2 - 7.5: This range is slightly basic, which does not represent fresh milk.
(B) 9.2 - 9.5: This range is highly basic.
(C) 6.7 - 6.9: This range is slightly acidic to nearly neutral, which is the closest and most appropriate range for fresh milk among the options.
(D) 3.4 - 3.9: This range is highly acidic, typical of citrus juice or vinegar, and is far too low for consumable fresh milk.
5. Therefore, the pH range of 6.7 - 6.9 is the most accurate choice.

Step 3: Final Answer:

The pH range of milk is 6.7 - 6.9.

Quick Tip: Fresh milk is slightly acidic (just below the neutral mark of 7). Remembering this fact helps you easily eliminate basic options (above 7) and highly acidic options (under 5).
