

CUET 2026 May 19 Shift-2 (GAT)

Question Paper (Memory-Based) With Solutions PDF

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. A sum of money becomes 9600 in 2 years and 11520 in 3 years at compound interest. The rate of interest per annum is:

- (a) 10%
- (b) 15%
- (c) 20%
- (d) 25%

Correct Answer: (c) 20%

Solution:

Step 1: Understanding the Concept:

In compound interest, the total accumulated amount at the end of any given year automatically acts as the starting principal for the subsequent year. Therefore, the difference between the amount at the end of the 3rd year and the amount at the end of the 2nd year is purely the interest earned on the 2nd year's amount during that one-year interval.

Step 2: Key Formula or Approach:

1. Interest for the 3rd year = Amount after 3 years (A_3) – Amount after 2 years (A_2) 2.

$$\text{Rate of Interest (R)} = \left(\frac{\text{Interest for the 3rd year}}{\text{Amount after 2 years (A}_2\text{)}} \right) \times 100$$

Step 3: Detailed Explanation:

From the given data: Amount after 2 years (A_2) = 9600 Amount after 3 years (A_3) = 11520
Calculate the interest accumulated specifically during the third year:

$$\text{Interest for the 3rd year} = 11520 - 9600 = 1920$$

Since this interest of 1920 was yielded entirely by the principal amount of 9600 over a single year, we can calculate the annual rate of interest (R) as follows:

$$R = \frac{1920}{9600} \times 100$$

$$R = \frac{192}{960} \times 100 = \frac{1}{5} \times 100 = 20\%$$

Step 4: Final Answer:

The rate of interest per annum is 20%.

Quick Tip: Whenever you are given the compound interest amounts for two consecutive years, you can treat it like a simple interest problem for that single year gap! Just find the percentage increase from the first amount to the second: $\frac{\text{Increase}}{\text{Original Amount}} \times 100$.

2. If (45%) of a number is 180, then the number is:

- (a) 360
- (b) 400
- (c) 420
- (d) 450

Correct Answer: (b) 400

Solution:**Step 1: Understanding the Concept:**

A percentage calculation defines a fractional part of an unknown whole value relative to 100. If a specific percentage share of a value is given, we can establish an algebraic equation to find the original full value (100%).

Step 2: Key Formula or Approach:

Let the unknown number be represented as x .

$$\frac{\text{Percentage}}{100} \times x = \text{Given Value}$$

Step 3: Detailed Explanation:

According to the problem statement:

$$45\% \text{ of } x = 180$$

Convert the percentage into its equivalent fractional format:

$$\frac{45}{100} \times x = 180$$

Isolate the variable x by multiplying both sides by $\frac{100}{45}$:

$$x = \frac{180 \times 100}{45}$$

We know that $45 \times 2 = 90$, which means $45 \times 4 = 180$. Simplifying the division gives:

$$x = 4 \times 100 = 400$$

Step 4: Final Answer:

The required number is 400.

Quick Tip: Use unitary breakdown to solve this mentally! If $45\% = 180$, then dividing both sides by 9 gives $5\% = 20$. Now, simply multiply by 20 to scale it up to the full amount: $5\% \times 20 = 100\%$, so $20 \times 20 = 400$.

3. Find the missing number in the series: 5, 11, 23, 47, ____

- (a) 91
- (b) 93
- (c) 95
- (d) 97

Correct Answer: (c) 95

Solution:

Step 1: Understanding the Concept:

Number series puzzles require analyzing the operational relationships between adjacent numbers to discover a consistent mathematical progression. This specific sequence can be interpreted using a recursive rule involving multiplication and addition, or by examining the expanding differences between the terms.

Step 2: Key Formula or Approach:

Let's analyze the relationship pattern from term to term:

$$\text{Term}_{n+1} = (\text{Term}_n \times 2) + 1$$

Alternatively, the difference sequence follows a power-of-two growth pattern:

$$\text{Difference} = 6, 12, 24, 48, \dots$$

Step 3: Detailed Explanation:

Let's verify the $(\text{Previous Term} \times 2) + 1$ rule across the provided series elements: First to second term: $(5 \times 2) + 1 = 10 + 1 = 11$ Second to third term: $(11 \times 2) + 1 = 22 + 1 = 23$ Third to fourth term: $(23 \times 2) + 1 = 46 + 1 = 47$

Since the rule works perfectly for all terms, we apply this identical pattern to the final given number to find the missing value:

$$\text{Missing Term} = (47 \times 2) + 1$$

$$\text{Missing Term} = 94 + 1 = 95$$

Step 4: Final Answer:

The missing number in the series is 95.

Quick Tip: You can also find the answer by tracking the differences between consecutive terms! The difference values are: +6, +12, and +24. Notice that the differences double each time. The next difference must be $24 \times 2 = +48$. Adding this to the last term gives: $47 + 48 = 95$.

4. A train 240 m long crosses a platform 360 m long in 30 seconds. The speed of the train is:

- (a) 48 km/h
- (b) 60 km/h
- (c) 72 km/h
- (d) 84 km/h

Correct Answer: (c) 72 km/h

Solution:

Step 1: Understanding the Concept:

When a train passes an object that has its own significant physical length (like a platform, bridge, or another train), the total distance traveled by the train while completely clearing that object is equal to the sum of the train's length and the object's length. Since the measurements are provided in meters and seconds, the initial calculated speed will be in meters per second (m/s). We must convert this value into kilometers per hour (km/h) to match the options.

Step 2: Key Formula or Approach:

1. Total Distance = Length of Train + Length of Platform 2. Speed (in m/s) = $\frac{\text{Total Distance}}{\text{Total Time Taken}}$ 3. To convert speed from m/s to km/h, multiply the value by $\frac{18}{5}$.

Step 3: Detailed Explanation:

Given values from the problem statement: Length of the train = 240 m

Length of the platform = 360 m Time taken to cross = 30 seconds

First, calculate the total distance covered by the train:

$$\text{Total Distance} = 240 + 360 = 600 \text{ meters}$$

Now, calculate the speed of the train in meters per second (m/s):

$$\text{Speed} = \frac{600 \text{ m}}{30 \text{ s}} = 20 \text{ m/s}$$

Convert this speed into kilometers per hour (km/h) by scaling it with the standard factor of $\frac{18}{5}$:

$$\text{Speed} = 20 \times \frac{18}{5} \text{ km/h}$$

Dividing 20 by 5 gives 4:

$$\text{Speed} = 4 \times 18 = 72 \text{ km/h}$$

Step 4: Final Answer:

The speed of the train is 72 km/h.

Quick Tip: Remember the inverse unit-conversion multiplier rules to save time! km/h $\rightarrow$ m/s : Multiply by $\frac{5}{18}$ m/s $\rightarrow$ km/h : Multiply by $\frac{18}{5}$ Since 20 m/s is a standard multiple of 5 (5×4), its corresponding km/h value will be the same multiple of 18 ($18 \times 4 = 72$).

5. The average age of 5 students is 18 years. If the teacher's age is included, the average becomes 22 years. The teacher's age is:

(a) 38 years

- (b) 40 years
- (c) 42 years
- (d) 46 years

Correct Answer: (c) 42 years

Solution:

Step 1: Understanding the Concept:

The average value represents a total quantity distributed equally among all individual constituents. When a new person enters a group and raises the group's collective average, it implies that the incoming person's value is higher than the original average. The change can be calculated by looking at the difference between the total sum of ages before and after adding the teacher.

Step 2: Key Formula or Approach:

$$1. \quad \text{Sum of values} = \text{Average} \times \text{Total number of individuals} \quad 2. \quad \text{Teacher's Age} = \text{New Sum of Ages} - \text{Original Sum of Ages}$$

Step 3: Detailed Explanation:

Let's find the total cumulative age values step-by-step:

Initial State: There are 5 students with an average age of 18 years.

$$\text{Sum of 5 students' ages} = 5 \times 18 = 90 \text{ years}$$

New State: The teacher joins the group, making the total number of individuals 6 (5 students + 1 teacher). This inclusion shifts the collective group average up to 22 years.

$$\text{New sum of ages (with teacher)} = 6 \times 22 = 132 \text{ years}$$

Now, isolate the teacher's individual age by finding the difference between these two sum totals:

$$\text{Teacher's Age} = 132 - 90 = 42 \text{ years}$$

Step 4: Final Answer:

The age of the teacher is 42 years.

Quick Tip: Try the Deviation Method to solve this mentally! The teacher brings enough years to match the new average (22) AND increases the age of all 5 initial students by 4 years ($22 - 18 = 4$).

$$\text{Teacher's Age} = \text{New Average} + (\text{Initial People} \times \text{Increase in Average})$$

$$\text{Teacher's Age} = 22 + (5 \times 4) = 22 + 20 = 42 \text{ years!}$$

6. If 'PENCIL' is coded as 'QFODJM', then 'MARKER' will be coded as:

- (a) NBSLFS
- (b) NBSJFS
- (c) NSBLFS
- (d) NBTLFS

Correct Answer: (a) NBSLFS

Solution:

Step 1: Understanding the Concept:

Letter coding questions rely on systematic transformations along the alphabetical index. To establish the code layout, we match every character of the given example word to its encrypted counterpart in the same position and measure the distance shifted.

Step 2: Key Formula or Approach:

Analyze the alphabetic stepping rule of each character element:

$$\text{Letter}_{\text{Code}} = \text{Letter}_{\text{Original}} + n$$

Determine the index shift step value (n), then map out the target word using the identical shift rule.

Step 3: Detailed Explanation:

Let's inspect the letter shifts inside the reference pattern PENCIL $\rightarrow$ QFODJM: $P \xrightarrow{+1} Q$ $E \xrightarrow{+1} F$

$N \xrightarrow{+1} O \quad C \xrightarrow{+1} D \quad I \xrightarrow{+1} J \quad L \xrightarrow{+1} M$

The coding pattern shifts every letter forward by exactly one position (+1 linear progression).

Now, execute this identical +1 shift rule across all letters of the word MARKER: $M \xrightarrow{+1} N \quad A \xrightarrow{+1} B$
 $R \xrightarrow{+1} S \quad K \xrightarrow{+1} L \quad E \xrightarrow{+1} F \quad R \xrightarrow{+1} S$

Combining the resulting sequence of characters yields the coded word NBSLFS. This matches the text given in option (a).

Step 4: Final Answer:

The code for "MARKER" is NBSLFS.

Quick Tip: To verify your choice quickly under exam pressure, test just the first few and the very last letters of the word: $M \rightarrow N$, $A \rightarrow B$, and $R \rightarrow S$. This means the word must start with "NB..." and end with "...S". This immediately eliminates option (d)!

7. A can complete a work in 15 days and B can complete the same work in 10 days. In how many days will they complete the work together?

- (a) 5 days
- (b) 6 days
- (c) 7.5 days
- (d) 8 days

Correct Answer: (b) 6 days

Solution:

Step 1: Understanding the Concept:

Time and work problems determine how individual efficiencies combine when people work together. The daily rate of work done by an individual is the reciprocal of the total days they require to complete the job on their own. When working simultaneously, their individual daily efficiencies are added together to find their combined daily work rate.

Step 2: Key Formula or Approach:

If A can complete a job in x days and B in y days, the time taken (T) by both working together

can be evaluated directly using the product-over-sum formula:

$$T = \frac{x \times y}{x + y}$$

Step 3: Detailed Explanation:

Given rates from the question statement: Time taken by A (x) = 15 days Time taken by B (y) = 10 days

Substitute these values into the combined time formula:

$$T = \frac{15 \times 10}{15 + 10}$$

$$T = \frac{150}{25}$$

Dividing 150 by 25 yields:

$$T = 6 \text{ days}$$

Step 4: Final Answer:

They will complete the work together in 6 days.

Quick Tip: You can also use the LCM method to avoid working with fractional steps! Assume the total work is the LCM of 15 and 10, which is 30 units. Efficiency of A = $\frac{30}{15} = 2$ units/day. Efficiency of B = $\frac{30}{10} = 3$ units/day. Combined efficiency of A + B = $2 + 3 = 5$ units/day. Total days needed = $\frac{30 \text{ total units}}{5 \text{ units/day}} = 6$ days.

8. The ratio of boys to girls in a class is 7 : 5. If there are 48 students in total, the number of girls is:

- (a) 18
- (b) 20
- (c) 22

(d) 24

Correct Answer: (b) 20

Solution:

Step 1: Understanding the Concept:

A ratio provides a comparative distribution between parts of a whole group. To determine the absolute value of a specific component, we can divide the total group size by the sum of all ratio parts to find the size of a single relative share, and then scale it up by the required component's factor.

Step 2: Key Formula or Approach:

Let the number of boys be $7x$ and the number of girls be $5x$.

$$\text{Total Students} = \text{Boys} + \text{Girls}$$

$$\text{Number of Girls} = \left(\frac{\text{Ratio of Girls}}{\text{Sum of Ratios}} \right) \times \text{Total Students}$$

Step 3: Detailed Explanation:

From the problem parameters: Ratio of boys to girls = $7 : 5$ Total students = 48

Calculate the sum of the ratio elements:

$$\text{Total parts} = 7 + 5 = 12 \text{ parts}$$

This implies that the 48 students are divided into 12 equal relative components. Let's find the value of 1 relative part (x):

$$12x = 48 \implies x = \frac{48}{12} = 4$$

Now, multiply the size of a single part by the relative ratio value for girls (5 parts) to find the absolute headcount:

$$\text{Number of girls} = 5 \times 4 = 20$$

Step 4: Final Answer:

The number of girls in the class is 20.

Quick Tip: Since the number of girls must correspond to 5 relative parts, the correct option must be a clean multiple of 5! Looking at the choices: 18, 20, 22, and 24, only 20 can be divided evenly by 5. You can pick option (b) instantly without calculating!

9. A bag contains 4 red, 5 blue and 3 green balls. One ball is drawn at random. The probability of getting a blue ball is:

- (a) $\frac{1}{4}$
- (b) $\frac{1}{3}$
- (c) $\frac{5}{12}$
- (d) $\frac{1}{2}$

Correct Answer: (c) $\frac{5}{12}$

Solution:

Step 1: Understanding the Concept:

Probability calculates the likelihood of picking a target outcome from an entire set of mixed items. It is defined mathematically as the ratio of the number of favorable elements (the specific items you want to pick) to the total number of all available elements present in the sample pool.

Step 2: Key Formula or Approach:

$$\text{Probability (P)} = \frac{\text{Number of favorable outcomes}}{\text{Total number of possible outcomes}}$$

Step 3: Detailed Explanation:

First, count all the separate colored items in the bag to find the total sample space size:

Red balls = 4 Blue balls = 5 Green balls = 3

$$\text{Total number of balls} = 4 + 5 + 3 = 12$$

Next, identify the number of favorable outcomes. Since we are calculating the probability of drawing a blue ball, the count of blue balls represents our favorable outcomes:

$$\text{Number of favorable outcomes} = 5$$

Apply these values to the probability formula:

$$P(\text{Blue}) = \frac{5}{12}$$

This fraction cannot be simplified further, matching option (c).

Step 4: Final Answer:

The probability of getting a blue ball is $\frac{5}{12}$.

Quick Tip: Always calculate the total sample pool size first. Once you know the denominator is 12, check if your target item count (5) can be simplified with it. Since 5 is a prime number, the fraction must remain exactly as $\frac{5}{12}$.

10. The perimeter of a rectangle is 72 cm. If its length is 22 cm, then its breadth is:

- (a) 12 cm
- (b) 14 cm
- (c) 16 cm
- (d) 18 cm

Correct Answer: (b) 14 cm

Solution:

Step 1: Understanding the Concept:

The perimeter of a two-dimensional geometric rectangle represents the total boundary length enclosing its surface. Because a rectangle features two parallel lengths that are equal and two parallel breadths that are equal, its perimeter is equal to twice the sum of its length and breadth.

Step 2: Key Formula or Approach:

The standard geometric formula for the perimeter (P) of a rectangle is:

$$P = 2 \times (l + b)$$

Where: l = length of the rectangle b = breadth of the rectangle

Step 3: Detailed Explanation:

Substitute the given values from the problem description into our formula: Perimeter (P) = 72 cm Length (l) = 22 cm

$$72 = 2 \times (22 + b)$$

Divide both sides of the equation by 2 to isolate the linear sum:

$$\frac{72}{2} = 22 + b$$

$$36 = 22 + b$$

Now, isolate the breadth variable (b) by subtracting 22 from 36:

$$b = 36 - 22$$

$$b = 14 \text{ cm}$$

Step 4: Final Answer:

The breadth of the rectangle is 14 cm.

Quick Tip: To solve perimeter problems mentally, use the semi-perimeter concept! The semi-perimeter (length + breadth) is always exactly half of the total perimeter.

$$\text{Half of } 72 = 36 \text{ cm}$$

$$\text{Breadth} = 36 - \text{Length} = 36 - 22 = 14 \text{ cm!}$$