

CUET 2026 May 19 Shift-1 (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 shopkeeper marks an article 25% above the cost price and allows a discount of 10%. If the cost price of the article is 800, the selling price is:

- (a) 850
- (b) 900
- (c) 920
- (d) 950

Correct Answer: (b) 900

Solution:

Step 1: Understanding the Concept:

This problem deals with the concepts of Cost Price (CP), Marked Price (MP), Selling Price (SP), Markup Percentage, and Discount Percentage. The shopkeeper increases the price from the cost price to determine the marked price, and then applies a reduction (discount) on this marked price to find the final selling price.

Step 2: Key Formula or Approach:

$$1. \quad \text{Marked Price (MP)} = \text{Cost Price (CP)} \times \left(1 + \frac{\text{Markup \%}}{100}\right) \quad 2. \quad \text{Selling Price (SP)} = \text{Marked Price (MP)} \times \left(1 - \frac{\text{Discount \%}}{100}\right)$$

Step 3: Detailed Explanation:

Given values from the problem: Cost Price (CP) = 800 Markup Percentage = 25%
Discount Percentage = 10%

First, calculate the Marked Price (MP) by applying the 25% markup on the Cost Price:

$$MP = 800 + (25\% \text{ of } 800)$$

$$MP = 800 + \left(\frac{25}{100} \times 800 \right) = 800 + 200 = 1000$$

Next, calculate the Selling Price (SP) by offering a 10% discount on the calculated Marked Price:

$$\text{Discount Amount} = 10\% \text{ of } 1000 = \frac{10}{100} \times 1000 = 100$$

$$SP = MP - \text{Discount Amount}$$

$$SP = 1000 - 100 = 900$$

Step 4: Final Answer:

The selling price of the article is 900.

Quick Tip: You can use the net percentage change shortcut formula for successions! The net profit percentage is given by: $x - y - \frac{xy}{100}$, where x is markup and y is discount.

$$\text{Net Profit \%} = 25 - 10 - \frac{25 \times 10}{100} = 15 - 2.5 = 12.5\%$$

Now, simply find the Selling Price directly: $SP = 800 \times 112.5\% = 800 \times 1.125 = 900$.

2. The average of 8 consecutive even numbers is 35. The largest number is:

- (a) 40
- (b) 42
- (c) 44
- (d) 46

Correct Answer: (b) 42

Solution:

Step 1: Understanding the Concept:

For any arithmetic progression (such as consecutive even numbers), the average is always located exactly at the geometric midpoint of the sequence. If there is an even number of terms (like 8), the average will be the exact midpoint between the two middle numbers (the 4th and 5th numbers).

Step 2: Key Formula or Approach:

Let the 8 consecutive even numbers be represented algebraically as:

$$n, n + 2, n + 4, n + 6, n + 8, n + 10, n + 12, n + 14$$

$$\text{Average} = \frac{\text{Sum of all terms}}{\text{Total number of terms}}$$

Step 3: Detailed Explanation:

Let's find the sum of our algebraic representation:

$$\text{Sum} = n + (n + 2) + (n + 4) + (n + 6) + (n + 8) + (n + 10) + (n + 12) + (n + 14)$$

$$\text{Sum} = 8n + 56$$

Given that the average of these 8 numbers is 35:

$$\text{Average} = \frac{8n + 56}{8} = 35$$

$$n + 7 = 35$$

$$n = 35 - 7 = 28$$

The first (smallest) even number in this sequence is 28. Now, we calculate the largest number in the sequence, which is represented by $(n + 14)$:

$$\text{Largest Number} = n + 14 = 28 + 14 = 42$$

Step 4: Final Answer:

The largest consecutive even number in the series is 42.

Quick Tip: For an even count of consecutive elements, the average is the midpoint of the two central numbers. Here, 35 sits exactly between the 4th and 5th even numbers, which must be 34 and 36. From 36 (the 5th number), just count up by two three more times to get the 8th (largest) number: $36 \rightarrow 38 \rightarrow 40 \rightarrow 42$. No algebra needed!

3. If ($15 : x = 25 : 35$), then the value of (x) is:

- (a) 18
- (b) 20
- (c) 21
- (d) 24

Correct Answer: (c) 21

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

A proportion states that two ratios are completely equal to each other. When we are given a statement in the form $a : b = c : d$, it means that the fractional relationship between the first pair is structurally identical to the fractional relationship of the second pair.

Step 2: Key Formula or Approach:

The ratio expression $a : b = c : d$ can be rewritten as the fractional equation:

$$\frac{a}{b} = \frac{c}{d}$$

By applying cross-multiplication, we get:

$$a \times d = b \times c$$

Step 3: Detailed Explanation:

Given the proportion equation from the prompt:

$$15 : x = 25 : 35$$

Convert the ratios into their corresponding fraction format:

$$\frac{15}{x} = \frac{25}{35}$$

Before cross-multiplying, let's simplify the fraction on the right side by dividing both the numerator and denominator by their greatest common divisor, 5:

$$\frac{25}{35} = \frac{5}{7}$$

Now substitute the simplified fraction back into the equation:

$$\frac{15}{x} = \frac{5}{7}$$

Perform cross-multiplication to isolate the variable x :

$$5 \times x = 15 \times 7$$

$$5x = 105$$

$$x = \frac{105}{5} = 21$$

Step 4: Final Answer:

The value of x is 21.

Quick Tip: Look at the horizontal relationship between the numerators to solve this in seconds! After simplifying the right ratio to $\frac{5}{7}$, observe that the numerator 5 is multiplied by 3 to become 15. To keep the ratio balanced, simply multiply the denominator 7 by 3 as well: $7 \times 3 = 21$.

4. A train running at 72 km/h crosses a pole in 20 seconds. The length of the train is:

- (a) 320 m
- (b) 360 m
- (c) 400 m
- (d) 420 m

Correct Answer: (c) 400 m

Solution:

Step 1: Understanding the Concept:

When a train crosses a stationary pole or a point object of negligible width, the total distance traveled by the train while passing it is exactly equal to its own length. Because the time is given in seconds and the answer choices are in meters, we must first convert the train's speed from kilometers per hour (km/h) to meters per second (m/s).

Step 2: Key Formula or Approach:

1. To convert speed from km/h to m/s, multiply by $\frac{5}{18}$.
2. Distance = Speed $\times$ Time
3. Length of the train = Distance traveled

Step 3: Detailed Explanation:

Given parameters: Speed of the train = 72 km/h Time taken = 20 seconds

Convert the speed into m/s:

$$\text{Speed} = 72 \times \frac{5}{18} \text{ m/s}$$

Dividing 72 by 18 gives 4:

$$\text{Speed} = 4 \times 5 = 20 \text{ m/s}$$

Now, calculate the length of the train using the distance formula:

$$\text{Length of train} = \text{Speed (in m/s)} \times \text{Time (in seconds)}$$

$$\text{Length of train} = 20 \text{ m/s} \times 20 \text{ s} = 400 \text{ meters}$$

Step 4: Final Answer:

The length of the train is 400 m.

Quick Tip: Keep the basic multi-units of 18 memorized for quick conversions: $18 \text{ km/h} = 5 \text{ m/s}$, $36 \text{ km/h} = 10 \text{ m/s}$, $54 \text{ km/h} = 15 \text{ m/s}$, and $72 \text{ km/h} = 20 \text{ m/s}$. Recognizing these multiples saves valuable calculation time!

5. The probability of getting a prime number on rolling a fair die is:

- (a) $\frac{1}{6}$
- (b) $\frac{1}{3}$
- (c) $\frac{1}{2}$
- (d) $\frac{2}{3}$

Correct Answer: (c) $\frac{1}{2}$

Solution:

Step 1: Understanding the Concept:

Probability measures the likelihood of an event occurring and is calculated as the ratio of favorable outcomes to the total number of possible outcomes. For a standard fair die, we need to list all possible outcomes and isolate which numbers are prime. A prime number is an integer greater than 1 whose only positive divisors are 1 and itself.

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:

When a fair six-sided die is rolled, the total possible outcomes form the sample space S :

$$S = \{1, 2, 3, 4, 5, 6\} \implies \text{Total possible outcomes} = 6$$

Identify the prime numbers within this sample space: 1 is neither prime nor composite. 2

is a prime number. 3 is a prime number. 4 is composite (2×2). 5 is a prime number. 6 is composite (2×3).

The favorable outcomes (prime numbers) form the set $E = \{2, 3, 5\}$, which gives:

Number of favorable outcomes = 3

Calculate the probability:

$$P = \frac{3}{6} = \frac{1}{2}$$

Step 4: Final Answer:

The probability of getting a prime number is $\frac{1}{2}$.

Quick Tip: Watch out for the number 1! It is a common trap to mistake 1 for a prime number. The smallest prime number is 2, which is also the only even prime number.

6. Find the missing term: 3, 9, 27, 81, ____

- (a) 162
- (b) 189
- (c) 243
- (d) 324

Correct Answer: (c) 243

Solution:

Step 1: Understanding the Concept:

Number series puzzles require identifying a consistent mathematical rule or pattern that links each consecutive term. This series forms a classic geometric progression, where each subsequent term is calculated by multiplying the previous term by a fixed number (the common ratio).

Step 2: Key Formula or Approach:

Examine the factor relationship between adjacent numbers:

$$\text{Term}_2 = \text{Term}_1 \times r$$

$$\text{Term}_3 = \text{Term}_2 \times r$$

Once the common ratio (r) is found, apply it to the last given term to find the missing value.

Step 3: Detailed Explanation:

Let's check the ratio between each consecutive pair of numbers in the series: $3 \times 3 = 9$ $9 \times 3 = 27$
 $27 \times 3 = 81$

The pattern shows that each number is multiplied by a common ratio of 3 to produce the next term. This can also be written as sequential powers of 3: $3^1 = 3$ $3^2 = 9$ $3^3 = 27$ $3^4 = 81$

Following this logic, the missing term must be 3^5 , or simply the previous term multiplied by 3:

$$\text{Missing Term} = 81 \times 3 = 243$$

Step 4: Final Answer:

The missing term in the sequence is 243.

Quick Tip: Memorizing the perfect exponent values for small bases like 2, 3, and 5 up to the 5th power is a great way to save time on number series questions!

7. A and B together can complete a piece of work in 12 days. A alone can complete it in 20 days. In how many days can B alone complete the work?

- (a) 24 days
- (b) 28 days
- (c) 30 days
- (d) 36 days

Correct Answer: (c) 30 days

Solution:

Step 1: Understanding the Concept:

Time and work problems can be solved by calculating the rate of work done per day (one-day work efficiency). The total work is considered as 1 whole unit. If two people work together, their combined daily efficiency is the sum of their individual daily efficiencies.

Step 2: Key Formula or Approach:

1. One day's work = $\frac{1}{\text{Total number of days taken}}$ 2. Efficiency of B = Combined efficiency of (A + B) – Efficiency of A

Step 3: Detailed Explanation:

Let's find the daily work rates from the given information: Work rate of A and B together $(A + B) = \frac{1}{12}$ of the work per day. Work rate of A alone = $\frac{1}{20}$ of the work per day.

Now, subtract A's daily rate from the combined rate to find B's individual daily rate:

$$\text{Work rate of B alone} = \frac{1}{12} - \frac{1}{20}$$

Find a common denominator for 12 and 20, which is 60:

$$\text{Work rate of B alone} = \frac{5}{60} - \frac{3}{60} = \frac{2}{60} = \frac{1}{30}$$

Since B can complete $\frac{1}{30}$ of the total work in one single day, the total time required for B to finish the entire project alone is the reciprocal of this rate:

$$\text{Total days taken by B} = \frac{1}{\frac{1}{30}} = 30 \text{ days}$$

Step 4: Final Answer:

B alone can complete the work in 30 days.

Quick Tip: Try the Total Work (LCM) method to avoid fractions! Take the LCM of 12 and 20, which is 60 units (total work). Combined efficiency of A + B = $\frac{60}{12} = 5$ units/day. Efficiency of A alone = $\frac{60}{20} = 3$ units/day. Efficiency of B = $5 - 3 = 2$ units/day. Days taken by B = $\frac{60 \text{ total units}}{2 \text{ units/day}} = 30$ days!

8. The simple interest on a sum for 3 years at 8% per annum is 720. The principal amount is:

- (a) 2500
- (b) 3000
- (c) 3200
- (d) 3500

Correct Answer: (b) 3000

Solution:

Step 1: Understanding the Concept:

Simple interest calculation accumulates a fixed percentage of the initial borrowed or invested sum (the principal) over regular intervals. Since the interest rate is constant and only applies to the principal, the interest earned remains identical every year.

Step 2: Key Formula or Approach:

The standard simple interest formula is written as:

$$SI = \frac{P \times R \times T}{100}$$

Rearranging the formula to isolate the Principal (P):

$$P = \frac{SI \times 100}{R \times T}$$

Where: $SI = 720$ (Simple Interest) $T = 3$ years (Time period) $R = 8\%$ per annum (Rate of interest)

Step 3: Detailed Explanation:

Substitute the given values into the rearranged equation to find the Principal amount:

$$P = \frac{720 \times 100}{8 \times 3}$$

Simplify the denominator product:

$$8 \times 3 = 24$$

$$P = \frac{720 \times 100}{24}$$

Now divide 720 by 24 (since $24 \times 3 = 72$, then $720/24 = 30$):

$$P = 30 \times 100 = 3000$$

Step 4: Final Answer:

The initial principal amount is 3000.

Quick Tip: Think in terms of net percentage! If you earn 8% interest every year for 3 years, your total simple interest earned is $8\% \times 3 = 24\%$ of the principal. Given that $24\% = 720$, then $1\% = \frac{720}{24} = 30$. Since the full principal is always 100%, then $100\% = 30 \times 100 = 3000$.

9. If in a code language, "PAPER" is written as "QBQFS", then "MANGO" is written as:

- (a) NBOHP
- (b) NBNHP
- (c) NBOGP
- (d) NBPHO

Correct Answer: (a) NBOHP

Solution:

Step 1: Understanding the Concept:

Letter coding puzzles involve shifting letters according to a specific alphabet pattern. We can determine the rule used by matching each letter of the original word with the letter in the corresponding position of the coded word.

Step 2: Key Formula or Approach:

Examine the forward shifting pattern of the letters:

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

Find the value of the shifts (n) for each letter position, then apply this exact rule to decode the target word.

Step 3: Detailed Explanation:

Let's look at the relationship between the letters in the example $PAPER \rightarrow QBQFS$: $P \xrightarrow{+1} Q$
 $A \xrightarrow{+1} B$ $P \xrightarrow{+1} Q$ $E \xrightarrow{+1} F$ $R \xrightarrow{+1} S$

The pattern shows that every letter shifts forward by exactly 1 position in the alphabet (+1 shift). Now, apply this identical +1 rule to each letter of the word MANGO: $M \xrightarrow{+1} N$ $A \xrightarrow{+1} B$
 $N \xrightarrow{+1} O$ $G \xrightarrow{+1} H$ $O \xrightarrow{+1} P$

Putting the shifted letters together gives the coded word NBOHP, which matches option (a).

Step 4: Final Answer:

"MANGO" is written as NBOHP

Quick Tip: When a pattern is a simple +1 shift, you don't need to write out every step! Just look at the first and last letters of your word: M goes to N, and O goes to P. Looking at the options, only (a) starts with N and ends with P!

10. The volume of a cube with side 6 cm is:

- (a) 108 cm^3
- (b) 144 cm^3
- (c) 180 cm^3
- (d) 216 cm^3

Correct Answer: (d) 216 cm^3

Solution:

Step 1: Understanding the Concept:

A cube is a three-dimensional geometric shape with six faces that are all identical squares. Because all of its edges are equal in length, its volume (the total 3D space contained within its boundaries) is calculated by multiplying its side length three times.

Step 2: Key Formula or Approach:

The formula for the volume (V) of a cube with a side length of a is:

$$V = a^3 = a \times a \times a$$

Step 3: Detailed Explanation:

From the problem description, we are given: Side length of the cube (a) = 6 cm

Substitute this value into the volume formula:

$$V = 6^3$$

$$V = 6 \times 6 \times 6$$

Calculate the step-by-step products:

$$6 \times 6 = 36$$

$$V = 36 \times 6 = 216$$

Since the measurements are in centimeters, the final volume is expressed in cubic centimeters (cm^3). Thus, the volume is 216 cm^3 .

Step 4: Final Answer:

The volume of the cube is 216 cm^3 .

Quick Tip: Memorizing perfect cube integer values from 1^3 up to 10^3 is a great way to solve mensuration and geometry problems quickly during exams! Here, knowing $6^3 = 216$ gives you the answer instantly.