

CUET 2026 May 21 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. The area of a circle is 154 cm^2 . What is the circumference of the circle? (Use $\pi = 22/7$)

- (A) 22 cm
- (B) 44 cm
- (C) 66 cm
- (D) 88 cm

Correct Answer: (B) 44 cm

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

The area of a circle measures the two-dimensional space enclosed within its perimeter, whereas the circumference represents the total linear distance around the outside boundary. Both properties depend entirely on the radius of the circle. To find the circumference when given only the area, we must first solve for the unknown radius and then substitute that radius into the circumference formula.

Step 2: Key Formula or Approach:

1. Area of a Circle (A) = πr^2
2. Circumference of a Circle (C) = $2\pi r$

where r is the radius of the circle and $\pi = \frac{22}{7}$.

Step 3: Detailed Explanation:

Given that the total area of the circle is 154 cm^2 :

$$\pi r^2 = 154$$

Substitute the given value of $\pi = \frac{22}{7}$ into the equation:

$$\frac{22}{7} \times r^2 = 154$$

Isolate the r^2 term by multiplying both sides by the reciprocal fraction $\frac{7}{22}$:

$$r^2 = 154 \times \frac{7}{22}$$

$$r^2 = 7 \times 7$$

$$r^2 = 49$$

Take the square root of both sides to find the radius r :

$$r = \sqrt{49} = 7 \text{ cm}$$

Now, substitute the calculated radius $r = 7 \text{ cm}$ into the circumference formula:

$$C = 2 \times \frac{22}{7} \times 7$$

$$C = 2 \times 22 = 44 \text{ cm}$$

Step 4: Final Answer:

The circumference of the circle is 44 cm .

Quick Tip: In competitive exams, circles with standard measurements appear very frequently. Memorizing this foundational radius pair will save you valuable calculation time: - If Radius (r) = 7 cm $\implies$ Area = 154 cm^2 and Circumference = 44 cm. Recognizing the area 154 cm^2 instantly tells you that $r = 7$, allowing you to determine the circumference as 44 cm within a few seconds without doing any scratch work!

2. The volume of a cube is 512 cm^3 . What is the total surface area of the cube?

- (A) 96 cm^2
- (B) 192 cm^2
- (C) 288 cm^2
- (D) 384 cm^2

Correct Answer: (D) 384 cm^2

Solution:

Step 1: Understanding the Concept:

A cube is a three-dimensional geometric solid comprising six identical square faces. The volume of a cube represents the total space enclosed inside it, which scales exponentially based on the side length. The Total Surface Area (TSA) represents the combined flat area of all six outer square faces. To solve this problem, we first extract the single side length from the volume and then utilize it to find the surface area.

Step 2: Key Formula or Approach:

1. Volume of a Cube (V) = a^3

2. Total Surface Area (TSA) = $6a^2$

where a represents the side length of the cube.

Step 3: Detailed Explanation:

Given that the volume of the cube is 512 cm^3 :

$$a^3 = 512$$

To find the side length a , calculate the cube root of both sides:

$$a = \sqrt[3]{512}$$

Since $8 \times 8 \times 8 = 512$, the side length is:

$$a = 8 \text{ cm}$$

Now, substitute the side value $a = 8 \text{ cm}$ into the formula for total surface area:

$$TSA = 6 \times (8)^2$$

$$TSA = 6 \times 64$$

$$TSA = 384 \text{ cm}^2$$

Step 4: Final Answer:

The total surface area of the cube is 384 cm^2 .

Quick Tip: Familiarizing yourself with the perfect cubes from 1^3 up to 10^3 helps accelerate spatial measurement solutions: - $1^3 = 1$, $2^3 = 8$, $3^3 = 27$, $4^3 = 64$, $5^3 = 125$, $6^3 = 216$, $7^3 = 343$, $8^3 = 512$, $9^3 = 729$, $10^3 = 1000$. Recognizing that $\sqrt[3]{512} = 8$ allows you to jump directly to evaluating $6 \times 64 = 384 \text{ cm}^2$ without hesitation!

3. A bag contains 5 red, 4 blue, and 3 green balls. If one ball is drawn at random, what is the probability that it is neither red nor blue?

- (A) $1/4$
- (B) $1/3$
- (C) $3/12$
- (D) $5/12$

Correct Answer: (A) $1/4$

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

Probability represents the numerical likelihood of a specific outcome taking place, calculated as the ratio of favorable outcomes to the total pool of possible outcomes. Here, the condition "neither red nor blue" means that the selected ball must belong to an alternative color family. In this bag, that leaves only the green balls as our valid favorable outcomes.

Step 2: Key Formula or Approach:

$$\text{Probability of an Event } P(E) = \frac{\text{Number of Favorable Outcomes}}{\text{Total Number of Possible Outcomes}}$$

Step 3: Detailed Explanation:

First, find the total number of balls present inside the bag to establish the total number of possible outcomes:

$$\text{Total Outcomes} = 5 \text{ (Red)} + 4 \text{ (Blue)} + 3 \text{ (Green)} = 12 \text{ balls}$$

Next, determine the number of favorable outcomes. Because the ball cannot be red and cannot be blue, it must be green:

$$\text{Favorable Outcomes (Green Balls)} = 3$$

Now, substitute these parameters into our main probability equation:

$$P(\text{Neither Red nor Blue}) = \frac{3}{12}$$

To simplify the fraction, divide both the numerator and the denominator by their greatest common divisor, which is 3:

$$\frac{3 \div 3}{12 \div 3} = \frac{1}{4}$$

While both $\frac{1}{4}$ (Option A) and $\frac{3}{12}$ (Option C) represent the exact same mathematical value, standard competitive exams typically favor the lowest reduced fraction, making Option (A) the formal correct answer choice.

Step 4: Final Answer:

The probability that the drawn ball is neither red nor blue is $\frac{1}{4}$.

Quick Tip: To tackle "neither/nor" probability statements rapidly, subtract the combined probability of the unwanted items from the whole number 1: - $P(\text{Neither A nor B}) = 1 - [P(A) + P(B)]$ - Probability of Red or Blue = $\frac{5+4}{12} = \frac{9}{12}$ - Probability of Neither = $1 - \frac{9}{12} = \frac{3}{12} = \frac{1}{4}$ This complementary technique prevents calculation errors when working with large quantities of items!

4. Find the compound interest on 10,000 at 10% per annum for 2 years, compounded annually.

- (A) 2,000
- (B) 2,100
- (C) 2,200
- (D) 2,310

Correct Answer: (B) 2,100

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

Compound interest is the interest calculated on the initial principal value plus all accumulated interest from previous periods. Unlike simple interest, which remains constant each year, compound interest grows exponentially because the earner makes "interest on interest."

Step 2: Key Formula or Approach:

1. Amount $(A) = P \left(1 + \frac{R}{100}\right)^n$

2. Compound Interest $(CI) = A - P$

where P is the principal amount, R is the annual rate of interest, and n is the time duration in years.

Step 3: Detailed Explanation:

Given the parameters: Principal $(P) = 10,000$

Rate $(R) = 10\%$ per annum

Time $(n) = 2$ years

Substitute these values into the total maturity amount formula:

$$A = 10000 \left(1 + \frac{10}{100} \right)^2$$

$$A = 10000 \left(1 + \frac{1}{10} \right)^2$$

$$A = 10000 \left(\frac{11}{10} \right)^2$$

$$A = 10000 \left(\frac{121}{100} \right)$$

Cancel out the two zeros from both the numerator and the denominator:

$$A = 100 \times 121 = 12,100$$

Now, calculate the absolute net compound interest accumulated over the 2-year period:

$$CI = A - P$$

$$CI = 12100 - 10000 = 2,100$$

Step 4: Final Answer:

The compound interest is 2,100.

Quick Tip: For a 2-year compounding timeline, you can bypass fractional equations entirely by using the net effective percentage formula:

$$\text{Net Effective Rate} = R + R + \frac{R \times R}{100}$$

With a given interest rate of 10%:

$$\text{Effective Rate} = 10 + 10 + \frac{10 \times 10}{100} = 20 + 1 = 21\%$$

Simply find 21% of the principal to get your answer directly:

$$21\% \text{ of } 10000 = 21 \times 100 = 2,100$$

5. A and B can complete a work in 12 days and 15 days respectively. They work together for 5 days and then A leaves. In how many more days will B complete the remaining work?

- (A) 3.75 days
- (B) 6 days
- (C) 7.5 days
- (D) 8 days

Correct Answer: (A) 3.75 days

Solution:

Step 1: Understanding the Concept:

Time and work problems are best managed by determining individual operational output rates per day. By finding a common multiple for the raw timelines, we can calculate the total work units required and evaluate how many units are finished when both individuals cooperate versus when one person operates solo.

Step 2: Key Formula or Approach:

1. Assume Total Work = LCM of individual days
2. Efficiency (Units/Day) = $\frac{\text{Total Work Units}}{\text{Total Days Required}}$
3. Remaining Work = Total Work – Completed Work
4. Days taken by B = $\frac{\text{Remaining Work Units}}{\text{B's Efficiency}}$

Step 3: Detailed Explanation:

Let's find the Least Common Multiple (LCM) of A's time (12 days) and B's time (15 days):

$$\text{Total Work} = \text{LCM}(12, 15) = 60 \text{ units}$$

Now determine their individual daily work efficiencies:

$$\text{Efficiency of A} = \frac{60}{12} = 5 \text{ units/day}$$

$$\text{Efficiency of B} = \frac{60}{15} = 4 \text{ units/day}$$

Calculate their joint daily productivity when working together:

$$\text{Combined Efficiency (A + B)} = 5 + 4 = 9 \text{ units/day}$$

They cooperate for exactly 5 days before A leaves. Calculate the volume of work finished during this initial phase:

$$\text{Work Completed in 5 Days} = 9 \text{ units/day} \times 5 \text{ days} = 45 \text{ units}$$

Determine the volume of remaining work that B must finish alone:

$$\text{Remaining Work} = 60 - 45 = 15 \text{ units}$$

Calculate the additional time required for B to finish these remaining 15 units at his solo rate of 4 units per day:

$$\text{Additional Days for B} = \frac{\text{Remaining Work}}{\text{Efficiency of B}}$$

$$\text{Additional Days for B} = \frac{15}{4} = 3.75 \text{ days}$$

Step 4: Final Answer:

The remaining work will be completed by B in 3.75 days.

Quick Tip: Using unit-based mapping avoids messy fractions: - Total units = 60 - A gives 5, B gives 4. - In 5 days, they complete: $5 \times 9 = 45$. - Remaining units = 15. - Always verify your arithmetic layout quickly to spot options that rely on unsimplified fractions or common examiner approximations!

6. At what time between 4 and 5 o'clock will the hands of a clock be at right angles? (Approximately)

- (A) 4 : 05
- (B) 4 : 38
- (C) 4 : 55
- (D) 4 : 45

Correct Answer: (B) 4:38

Solution:

Step 1: Understanding the Concept:

The hands of a clock move at different angular speeds. The minute hand moves at a rate of 6° per minute, while the hour hand travels at 0.5° per minute. This creates a relative separation speed of 5.5° per minute. A right angle configuration means the structural separation between the hour hand and minute hand is exactly 90° (equivalent to a space of 15 minute spaces).

Step 2: Key Formula or Approach:

To find the exact time location where a specific angle is created, use the standard clock relative velocity formula:

$$T = \frac{2}{11} (30H \pm \theta)$$

where H is the starting hour base (which is 4 in this problem), and θ is the targeted angle (which is 90°).

Step 3: Detailed Explanation:

Let's substitute our parameters into the formula. Since the hands create a right angle twice every hour, we evaluate the addition configuration (+) to look for the later time position that aligns with our options:

$$H = 4, \quad \theta = 90^\circ$$

$$T = \frac{2}{11} (30(4) + 90)$$

$$T = \frac{2}{11} (120 + 90)$$

$$T = \frac{2}{11} \times 210$$

$$T = \frac{420}{11}$$

Now divide 420 by 11 to extract the mixed fraction values:

$$T = 38\frac{2}{11} \text{ minutes}$$

This value simplifies approximately to 38 minutes past the hour. Therefore, the clock hands form a right angle at approximately 4:38, which corresponds to option (B).

Step 4: Final Answer:

The hands of the clock will be at right angles at approximately 4:38.

Quick Tip: You can use visual logic to eliminate wrong choices immediately! At 4 o'clock, the hour hand is at 4 and the minute hand is at 12. - At 4:05, they are very close together (acute angle). - At 4:45, the minute hand is at 9, which forms a broad obtuse angle. - At 4:38, the minute hand is near the 7.5 mark, which creates an exact perpendicular 90° configuration with the hour hand (which has moved past 4)!

7. If 'APPLE' is coded as 'BQQMF', how is 'ORANGE' coded in the same way?

- (A) PSBOHF
- (B) PQBOHF
- (C) PSANHF
- (D) PSBOHG

Correct Answer: (A) PSBOHF

Solution:

Step 1: Understanding the Concept:

Letter coding puzzles depend on mapping structural alterations across the standard English alphabet tracking index. By decoding how the letters of an example keyword transform into its ciphertext pair, we identify a uniform offset value (+1, -1, +2, etc.) to apply directly to our target word.

Step 2: Key Formula or Approach:

Examine the letter shifts inside the reference pattern:

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

Find the step value n , then apply that precise letter shift rule across the target characters.

Step 3: Detailed Explanation:

Let's examine the shift spacing inside the reference word pair **APPLE** → **BQQMF**: $A \xrightarrow{+1} B$
 $P \xrightarrow{+1} Q$ $P \xrightarrow{+1} Q$ $L \xrightarrow{+1} M$ $E \xrightarrow{+1} F$

The logical pattern shifts every single character forward by exactly one position in alphabetical order (+1 progression). Now, apply this identical +1 shift rule to every character in the target word **ORANGE**: $O \xrightarrow{+1} P$ $R \xrightarrow{+1} S$ $A \xrightarrow{+1} B$ $N \xrightarrow{+1} O$ $G \xrightarrow{+1} H$ $E \xrightarrow{+1} F$

Combining these transformed letters gives the coded word **PSBOHF**. This matches option (A) perfectly.

Step 4: Final Answer:

ORANGE will be written as PSBOHF in that code language.

Quick Tip: To save time during competitive exams, solve using elimination! Look at the first letter: $O + 1 = P$. This immediately eliminates choice (B). Now look at the second letter: $R + 1 = S$. Look at the final letter: $E + 1 = F$. This instantly eliminates choice (D), which ends in G. Checking the middle transitions seals (A) as the definitive answer!

8. Pointing to a man, a woman said, "His mother is the only daughter of my mother." How is the woman related to the man?

- (A) Mother
- (B) Aunt
- (C) Sister
- (D) Grandmother

Correct Answer: (A) Mother

Solution:

Step 1: Understanding the Concept:

Blood relation problems require breaking down spoken statements by tracing generations backwards or starting from the speaker's perspective. By identifying key descriptive phrases like "only daughter," we can simplify the family tree layout and identify the target relationship.

Step 2: Detailed Explanation:

Let's decode the statement made by the woman piece by piece, starting from the last part of her sentence: 1. "My mother": Refers to the speaker's (the woman's) mother. 2. "The only daughter of my mother": Consider who the only daughter of a woman's mother can be. Since the speaker is a woman herself, her mother's only daughter must be the woman herself. 3. Now, substitute this simplified finding back into the first half of the woman's statement: "His mother is [the only daughter of my mother]" becomes "His mother is myself (the woman)". Since the woman is the mother of the man, the relationship of the woman to the man is that of a Mother.

Step 3: Final Answer:

The woman is the Mother of the man.

Quick Tip: Whenever you see the phrase "**the only daughter of my mother**" spoken by a female speaker, or "**the only son of my father**" spoken by a male speaker, it **always refers to the speaker themselves!** Substituting the word "Me/Myself" immediately solves the puzzle.

9. Which of the following is the longest river in India?

- (A) Godavari

- (B) Yamuna
- (C) Brahmaputra
- (D) Ganga

Correct Answer: (D) Ganga

Solution:

Step 1: Understanding the Concept:

This is a geography-based general knowledge question tracking hydrological data within the Indian subcontinent. The status of the "longest river in India" is determined specifically by the total linear length of the river path contained strictly inside the geographical boundaries of India.

Step 2: Detailed Explanation:

Let's analyze the total length of each listed river within Indian territory: Ganga (Correct): The Ganga is the longest river flowing entirely through India, originating from the Gangotri Glacier and running for a total length of approximately 2,525 km before entering Bangladesh and emptying into the Bay of Bengal. Godavari: Known as the Dakshina Ganga, it is the second-longest river in India with a length of approximately 1,465 km. Brahmaputra: Although its total length from Tibet to its mouth is massive (2,900 km), a significant portion flows through Tibet (China) and Bangladesh. Its path inside India is only about 916 km, making it shorter within India than the Ganga. Yamuna: A major tributary of the Ganga, it measures approximately 1,376 km in length.

Therefore, the Ganga is the longest river inside India.

Step 3: Final Answer:

The longest river in India is the Ganga.

Quick Tip: Don't fall into the common trap with the Brahmaputra or Indus rivers! While they are longer than the Ganga when measured from their starting sources in Tibet to the sea, the Ganga holds the record for covering the longest distance inside the borders of India (2,525 km).

10. Who was appointed as the Chief Justice of India in 2025 (or the most recent as per latest updates)?

- (A) Justice D.Y. Chandrachud
- (B) Justice Sanjiv Khanna
- (C) Justice U.U. Lalit
- (D) Justice N.V. Ramana

Correct Answer: (B) Justice Sanjiv Khanna

Solution:

Step 1: Understanding the Concept:

This question checks current constitutional appointments under the Government of India. The Chief Justice of India (CJI) is the highest-ranking judicial officer of the Supreme Court of India and is formally appointed by the President of India under Article 124(2) of the Constitution, typically based on the established principle of judicial seniority.

Step 2: Detailed Explanation:

Let's look at the timeline of appointments to trace how these names align: Justice D.Y. Chandrachud: Served as the 50th Chief Justice of India from November 2022 until his retirement on November 10, 2024. Justice Sanjiv Khanna (Correct option choice): Was appointed and took oath as the 51st Chief Justice of India on November 11, 2024, serving his tenure into early 2025. Recent Updates: Following Justice Khanna, Justice B.R. Gavai took over as the 52nd CJI. On November 24, 2025, Justice Surya Kant took the oath of office to serve as the 53rd and current incumbent Chief Justice of India.

Since Justice Surya Kant is the latest updated official but is not featured among the historical multiple-choice options provided, Justice Sanjiv Khanna is select-mapped as the intended answer from the choices for this 2025 transition timeline.

Step 3: Final Answer:

Based on the options provided, the correct choice is Justice Sanjiv Khanna (Option B).

Quick Tip: To remember the current succession pipeline of the Supreme Court, keep this recent sequence of Chief Justices in your tracking notes:

Justice Sanjiv Khanna (51st) → Justice B.R. Gavai (52nd) → Justice Surya Kant (53rd, Current Incumbent)