

CUET 2026 GAT May 30 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. 5 women can complete a work in 8 days, while 8 children take 10 days to complete the same work. How many days will 2 women and 4 children take to complete the work?

- (A) 10
- (B) 12
- (C) 40
- (D) 8

Correct Answer: (A) 10

Solution:

Step 1: Understanding the Question:

1. In this problem, we need to find the number of days required by a combined group of 2 women and 4 children to complete a specific task.
2. We are given the separate rates of completion for a group of 5 women and a group of 8 children.
3. To solve this, we must first calculate the individual work efficiency of a single woman and a single child per day.

4. Once the individual daily work rates are established, we can sum their rates for the new group composition and find the reciprocal of this combined daily work rate to get the final number of days.

Step 2: Key Formula or Approach:

1. Let W be the work rate (efficiency) of one woman per day, and C be the work rate of one child per day.
2. If N workers of the same efficiency complete a job in D days, then their combined rate is given by:

$$N \times \text{Rate} \times D = 1 \text{ (complete work)}$$

3. The individual rate is therefore:

$$\text{Rate} = \frac{1}{N \times D}$$

4. The combined rate of a new group is:

$$\text{Combined Rate} = N_1 \cdot W + N_2 \cdot C$$

5. The total days required by the new group is:

$$\text{Total Days} = \frac{1}{\text{Combined Rate}}$$

Step 3: Detailed Explanation:

1. Firstly, let us determine the daily work rate of one woman.
2. We know that 5 women can complete the work in 8 days.
3. This implies that the total work required can be represented in terms of woman-days as:

$$5 \text{ women} \times 8 \text{ days} = 40 \text{ woman-days}$$

4. Therefore, the efficiency or daily work done by a single woman is:

$$W = \frac{1}{40} \text{ of the total work per day}$$

5. Secondly, let us find the daily work rate of one child.

6. We are told that 8 children can complete the same work in 10 days.

7. This gives the total work required in child-days as:

$$8 \text{ children} \times 10 \text{ days} = 80 \text{ child-days}$$

8. Therefore, the daily work done by a single child is:

$$C = \frac{1}{80} \text{ of the total work per day}$$

9. Thirdly, we need to find the joint rate of 2 women and 4 children working together for one day.

10. The combined rate of 2 women and 4 children is:

$$\text{Combined daily work} = 2W + 4C$$

11. Substituting the values of W and C into this equation:

$$2W + 4C = 2\left(\frac{1}{40}\right) + 4\left(\frac{1}{80}\right)$$

12. Simplifying each fraction individually gives:

$$\frac{2}{40} = \frac{1}{20}$$

$$\frac{4}{80} = \frac{1}{20}$$

13. Now, summing these two simplified rates together:

$$\text{Combined daily work} = \frac{1}{20} + \frac{1}{20} = \frac{2}{20} = \frac{1}{10}$$

14. This means that 2 women and 4 children together can complete $\frac{1}{10}$ of the entire work in a single day.

15. Fourthly, the total number of days required to finish the complete work is the reciprocal of their daily rate:

$$\text{Number of days} = \frac{1}{\text{Combined daily work}} = \frac{1}{\frac{1}{10}} = 10 \text{ days}$$

Step 4: Final Answer:

1. The combined group consisting of 2 women and 4 children will take exactly 10 days to complete the given task.
2. Thus, the correct option matching this calculated result is Option (A).

Quick Tip: 1. In time and work problems, always convert days into daily rates (fractions of work per day) to make addition straightforward.

2. Always verify the units: 1 woman-day rate is the reciprocal of the total days multiplied by the number of women.

3. Working with simplified fractions early on helps prevent calculation errors in the final steps.

2. A cone of radius 9 cm and height 15 cm is melted and made into a cylinder of height 45 cm. The diameter of the cylinder is:

- (A) 3 cm
- (B) 5 cm
- (C) 10 cm
- (D) 6 cm

Correct Answer: (D) 6 cm

Solution:

Step 1: Understanding the Question:

1. This question deals with the conservation of volume during the process of melting and reshaping a solid.
2. We are given the dimensions of a solid cone (radius and height) and the height of the newly formed cylinder.
3. The objective is to find the diameter of this resulting cylinder.
4. Since the cone is melted and completely reshaped into a cylinder with no loss of material, the volume of the cone must equal the volume of the cylinder.

Step 2: Key Formula or Approach:

1. The formula for the volume of a right circular cone is:

$$V_{\text{cone}} = \frac{1}{3} \pi r^2 h$$

where r is the radius of the cone's base and h is its vertical height.

2. The formula for the volume of a cylinder is:

$$V_{\text{cylinder}} = \pi R^2 H$$

where R is the radius of the cylinder's base and H is its height.

3. Since the volumes are equal:

$$V_{\text{cone}} = V_{\text{cylinder}}$$

4. Once the radius R is found, the diameter D is calculated as:

$$D = 2R$$

Step 3: Detailed Explanation:

1. Firstly, let us record the given dimensions of the cone:

- Radius of the cone, $r = 9$ cm
- Height of the cone, $h = 15$ cm

2. Secondly, we substitute these dimensions into the cone volume formula:

$$V_{\text{cone}} = \frac{1}{3} \pi (9)^2 (15)$$

$$V_{\text{cone}} = \frac{1}{3} \pi (81)(15)$$

3. Simplifying the expression:

$$V_{\text{cone}} = \pi(81)(5) = 405\pi \text{ cm}^3$$

4. Thirdly, let us denote the unknown radius of the cylinder as R .

5. The given height of the cylinder is $H = 45$ cm.

6. The volume of this cylinder is:

$$V_{\text{cylinder}} = \pi R^2 (45) = 45\pi R^2 \text{ cm}^3$$

7. Fourthly, since the cone is converted into the cylinder, we equate their volumes:

$$45\pi R^2 = 405\pi$$

8. We can divide both sides by π :

$$45R^2 = 405$$

9. Now, solving for R^2 by dividing both sides by 45:

$$R^2 = \frac{405}{45} = 9$$

10. Taking the square root of both sides to find the radius R :

$$R = \sqrt{9} = 3 \text{ cm}$$

11. Fifthly, the question asks for the diameter of the cylinder, not the radius.

12. The diameter D of a cylinder is twice its radius:

$$D = 2R = 2(3) = 6 \text{ cm}$$

Step 4: Final Answer:

1. The diameter of the resulting cylinder is determined to be 6 cm.
2. Therefore, this matches Option (D).

Quick Tip: 1. When equating volumes of shapes, keep the constant π as it is because it will cancel out on both sides, saving time and preventing calculation mistakes.

2. Always read the final question carefully: many candidates make the mistake of choosing the radius (3 cm) instead of the diameter (6 cm).

3. Knowing basic factors (like $45 \times 9 = 405$) makes mental division extremely fast.

3. The population of a town is increasing at 5% per annum. What will be the population of the town after 2 years, if the present population is 16000?

- (A) 17960
(B) 16560
(C) 16960

(D) 17640

Correct Answer: (D) 17640

Solution:

Step 1: Understanding the Question:

1. This problem involves calculating the future population of a town under constant annual growth.
2. The population increases by a constant rate of 5% every year, meaning the growth is compounded annually.
3. We are given the initial population, the growth rate, and the duration (2 years).
4. We need to compute the final population after this period.

Step 2: Key Formula or Approach:

1. The compound growth formula for population is given by:

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

where:

- A is the population after n years.
- P is the initial (present) population.
- R is the annual growth rate (percentage).
- n is the number of years.

Step 3: Detailed Explanation:

1. Firstly, let us identify the given parameters from the problem:

- Present population, $P = 16000$
- Annual growth rate, $R = 5\%$
- Number of years, $n = 2$

2. Secondly, substitute these values into the compound growth formula:

$$A = 16000 \left(1 + \frac{5}{100} \right)^2$$

3. Simplify the fraction inside the parentheses:

$$1 + \frac{5}{100} = 1 + 0.05 = 1.05$$

4. Now, raise this value to the power of 2:

$$(1.05)^2 = 1.1025$$

5. Multiply this result by the initial population:

$$A = 16000 \times 1.1025$$

6. Performing the multiplication step-by-step:

$$A = 16 \times 1102.5 = 17640$$

7. Alternatively, we can calculate the growth year-by-year:

- Year 1 Increase: $5\% \text{ of } 16000 = \frac{5}{100} \times 16000 = 800$

- Population after Year 1: $16000 + 800 = 16800$

- Year 2 Increase: $5\% \text{ of } 16800 = \frac{5}{100} \times 16800 = 840$

- Population after Year 2: $16800 + 840 = 17640$

Step 4: Final Answer:

1. The population of the town after 2 years will be exactly 17640.
2. This corresponds directly to Option (D).

Quick Tip: 1. For small values of n (like 2 years), doing successive simple interest calculations (year-by-year) is often faster and less prone to decimal multiplication errors than squaring decimals.
2. $(1.05)^2$ is easily remembered as 1.1025 using the algebraic square expansion $(1 + x)^2 \approx 1 + 2x + x^2$.

4. The ratio of the mean and median of a set of observations is 4 : 3 and the mode of this data is 63. What is the mean of this set of observations?

- (A) 126
- (B) 252
- (C) 64
- (D) 378

Correct Answer: (B) 252

Solution:

Step 1: Understanding the Question:

1. This question tests our understanding of the empirical relationship between the three measures of central tendency: Mean, Median, and Mode.
2. We are given the ratio of Mean to Median as 4 : 3 and the exact value of the Mode as 63.
3. Our task is to find the absolute value of the Mean of this set of observations.

Step 2: Key Formula or Approach:

1. Karl Pearson's empirical relationship between Mean, Median, and Mode for moderately skewed distributions is:

$$\text{Mode} = 3 \times \text{Median} - 2 \times \text{Mean}$$

2. Let the common multiplier for the ratio be x , such that:

- Mean = $4x$

- Median = $3x$

3. Substitute these expressions into the empirical formula to solve for x , and then compute the Mean.

Step 3: Detailed Explanation:

1. Firstly, let the Mean be $4x$ and the Median be $3x$, where x is a positive constant representing

the common ratio factor.

2. We are given that the Mode is equal to 63.

3. Secondly, we write down the empirical formula:

$$\text{Mode} = 3 \times \text{Median} - 2 \times \text{Mean}$$

4. Substitute the algebraic terms of Mean, Median, and the given Mode into the equation:

$$63 = 3(3x) - 2(4x)$$

5. Multiply the coefficients inside the terms:

$$63 = 9x - 8x$$

6. Simplify the right side of the equation:

$$63 = x$$

7. Thirdly, now that we have found the value of the common multiplier $x = 63$, we can find the value of the Mean.

8. The Mean is defined as $4x$:

$$\text{Mean} = 4 \times 63$$

9. Performing the multiplication:

$$\text{Mean} = 252$$

10. For completeness, let us also compute the Median:

$$\text{Median} = 3 \times 63 = 189$$

11. Let us verify if these values satisfy the empirical relation:

$$\text{Mode} = 3(189) - 2(252) = 567 - 504 = 63$$

The relation is perfectly satisfied, validating our calculations.

Step 4: Final Answer:

1. The mean of the set of observations is 252.
2. This matches Option (B).

Quick Tip: 1. Always remember the empirical formula as: "Mode is 3 Medians minus 2 Means". A useful mnemonic is that "Median" has more letters (6 letters) and is multiplied by the larger number (3), whereas "Mean" has fewer letters (4 letters) and is multiplied by the smaller number (2).
2. Be careful not to confuse the ratio order (Mean : Median is given as 4 : 3).

5. Which type of rainfall occurs due to rising warm air?

- (A) Cyclonic
- (B) Orographic
- (C) Frontal
- (D) Convectional

Correct Answer: (D) Convectional

Solution:

Step 1: Understanding the Question:

1. This geography question asks us to identify the specific type of precipitation that is triggered directly by the ascent of warm, heated air from the Earth's surface.
2. Different types of rainfall (cyclonic, orographic, frontal, and convectional) are categorized

based on the mechanism that causes the moist air to rise and cool.

Step 2: Detailed Explanation:

1. Firstly, let us understand how Convictional Rainfall occurs.
2. When the Earth's surface is intensely heated by solar radiation, the air in direct contact with the ground warms up, expands, and becomes less dense.
3. This warm, buoyant air begins to rise rapidly in the form of convection currents.
4. As the warm air ascends to higher altitudes in the atmosphere, it experiences lower atmospheric pressure, causing it to expand and cool adiabatically.
5. This cooling causes the relative humidity of the air to reach 100%, leading to the condensation of water vapor into water droplets.
6. Consequently, massive, towering clouds called cumulonimbus clouds are formed, resulting in heavy, torrential downpours, often accompanied by thunder and lightning.
7. This process is highly common in hot, tropical, and equatorial regions, particularly in the afternoon.
8. Secondly, let us briefly contrast this with other types of rainfall:
 - Orographic rainfall occurs when moisture-laden winds are physically obstructed by a mountainous barrier, forcing the air to rise up the slope.
 - Cyclonic or Frontal rainfall occurs when two different air masses (one warm and one cold) converge, and the lighter warm air is pushed up over the denser cold air.

Step 3: Final Answer:

1. Convictional rainfall is the type of precipitation that occurs due to the rising of warm air.
2. Therefore, the correct option is Option (D).

- Quick Tip:**
1. Remember that "convection" in physics always refers to the upward movement of warmer, less dense fluid or air. Therefore, rainfall linked directly to rising warm air is always convictional.
 2. Convictional rainfall is typically localized, of short duration, and very intense.

6. Money Bill can be introduced only in:

- (A) Rajya Sabha
- (B) Lok Sabha
- (C) Joint Sitting
- (D) State Legislative Assembly

Correct Answer: (B) Lok Sabha

Solution:

Step 1: Understanding the Question:

1. This Indian Polity question concerns the legislative procedure for passing a Money Bill in the Indian Parliament.
2. It asks which house of Parliament holds the exclusive power to introduce a Money Bill.

Step 2: Detailed Explanation:

1. Firstly, a Money Bill is defined under Article 110 of the Constitution of India. It deals with taxation, government spending, borrowing, and audits of public funds.
2. Secondly, according to the constitutional provisions (Article 109), a Money Bill can only be introduced in the Lok Sabha (the lower house of Parliament, also known as the House of the People).
3. It cannot be introduced in the Rajya Sabha (the upper house, Council of States).
4. Thirdly, a Money Bill can only be introduced on the prior recommendation of the President of India.
5. Fourthly, after the Lok Sabha passes the Money Bill, it is sent to the Rajya Sabha. The Rajya Sabha has extremely limited powers in this regard:
 - It cannot reject or amend the Money Bill.
 - It can only make recommendations and must return the bill to the Lok Sabha within a strict time limit of 14 days.
 - If the Rajya Sabha fails to return the bill within 14 days, it is deemed to have been passed by both houses in the form passed by the Lok Sabha.
6. The Lok Sabha has the absolute discretion to either accept or reject any of the recommendations made by the Rajya Sabha.

Step 3: Final Answer:

1. Consequently, a Money Bill can be introduced exclusively in the Lok Sabha.
2. This matches Option (B).

Quick Tip: 1. A key distinction in Indian Polity: Ordinary Bills can be introduced in either house, but Money Bills can only originate in the Lok Sabha.

2. The Speaker of the Lok Sabha has the final authority to decide whether a bill is a Money Bill or not, and this decision cannot be questioned in court.

7. The Election Commission of India is:

- (A) Single-member body
- (B) Two-member body
- (C) Multi-member body
- (D) Temporary body

Correct Answer: (C) Multi-member body

Solution:

Step 1: Understanding the Question:

1. This question asks about the constitutional structure and composition of the Election Commission of India (ECI).
2. We need to identify whether it is operated by a single commissioner, multiple commissioners, or if it is a temporary setup.

Step 2: Detailed Explanation:

1. Firstly, the Election Commission of India is a permanent, independent, and autonomous constitutional body established under Article 324 of the Constitution of India to conduct free and fair elections.
2. Secondly, let us examine the history of its composition:
 - From its inception in 1950 until October 15, 1989, the Election Commission functioned as a

single-member body, consisting solely of the Chief Election Commissioner (CEC).

- On October 16, 1989, the President appointed two additional Election Commissioners to cope with the increased work due to the lowering of the voting age from 21 to 18 years.

- After a brief period of returning to a single-member body, the multi-member system was permanently restored in October 1993.

3. Thirdly, in its current state, the Election Commission of India consists of:

- One Chief Election Commissioner (CEC)

- Two other Election Commissioners (ECs)

4. All three members share equal power, salary, and decision-making status. Decisions within the commission are made by a majority vote among the three members.

5. Since it consists of more than one commissioner, it is classified as a multi-member body.

Step 3: Final Answer:

1. The Election Commission of India is a permanent multi-member body.

2. This corresponds directly to Option (C).

Quick Tip: 1. Remember that the current setup of the ECI is a 3-member body (1 Chief + 2 Commissioners), making it a multi-member body.

2. All commissioners have equal status, and the CEC cannot override the decisions of the other two commissioners; disagreements are resolved by majority vote.

8. Which Indus site is considered a major port city?

(A) Harappa

(B) Lothal

(C) Dholavira

(D) Chanhudaro

Correct Answer: (B) Lothal

Solution:

Step 1: Understanding the Question:

1. This history question asks us to identify the major ancient harbor or port city of the Indus Valley Civilization (IVC) from the provided options.
2. The IVC was highly advanced in maritime trade, and certain archaeological sites contain clear evidence of docks and overseas trade connections.

Step 2: Detailed Explanation:

1. Firstly, let us analyze the correct answer, Lothal.
2. Lothal is located in the Saragwala village in the Dholka Taluka of Ahmedabad district, Gujarat, India.
3. Archaeologists have discovered a massive rectangular basin at Lothal, measuring about 218 meters in length and 37 meters in width, which has been identified as a tidal dockyard.
4. This dockyard was connected to an old course of the Sabarmati River, allowing ships and merchant vessels from the Arabian Sea to sail in and unload goods.
5. Lothal served as an important trading center, exporting items like semi-precious stones, beads, shells, and ivory to Mesopotamia, Persia, and Egypt.
6. Secondly, let us examine the other options:
 - Harappa is located inland along the Ravi River (now in Punjab, Pakistan) and was a major administrative and agricultural hub, not a coastal port.
 - Dholavira, located in the Rann of Kutch (Gujarat), is highly famous for its sophisticated water harvesting systems, reservoirs, and unique city planning, but it was not primarily known as a major tidal port city.
 - Chanhudaro, located in Sindh (Pakistan), was primarily an industrial town famous for bead-making, shell-working, and seal-making.

Step 3: Final Answer:

1. The Indus Valley Civilization site considered a major port city is Lothal.
2. Therefore, the correct option is Option (B).

Quick Tip: 1. Whenever "port", "dockyard", or "maritime trade" is mentioned in connection with the Indus Valley Civilization, think of Lothal in Gujarat immediately.

2. Lothal is also nicknamed the "Manchester of the Harappan Civilization" due to its extensive trade and bead-making industries.

9. Karst Topography develops mainly on:

- (A) Limestone
- (B) Basalt
- (C) Granite
- (D) Sandstone

Correct Answer: (A) Limestone

Solution:

Step 1: Understanding the Question:

1. This physical geography question asks us to identify the type of rock on which Karst topography primarily develops.
2. Karst topography is a distinct geographical landscape characterized by underground drainage, caves, sinkholes, and stalactite formations.

Step 2: Detailed Explanation:

1. Firstly, Karst topography is a landscape formed by the chemical dissolution of soluble rocks.
2. The main geological material required for this process is calcium carbonate ($CaCO_3$), which is the primary component of limestone and dolomite.
3. Secondly, let us understand the chemical process:
 - Rainwater absorbing carbon dioxide from the atmosphere and soil forms a very weak acid called carbonic acid (H_2CO_3).
 - When this acidic water flows over and percolates through joints and cracks in limestone, it chemically reacts with the calcium carbonate.
 - This reaction converts the insoluble calcium carbonate into highly soluble calcium bicarbonate,

which dissolves into the water and is washed away.

- Over thousands of years, this continuous chemical weathering dissolves large areas of rock, leaving behind sinkholes, losing streams, caves, stalactites, stalagmites, and natural pillars.

4. Thirdly, let us analyze why other rocks do not form Karst topography:

- Basalt is an extrusive igneous rock composed of silicate minerals that do not dissolve easily in weak acids.

- Granite is an intrusive igneous rock composed of quartz and feldspar, which is highly resistant to chemical dissolution of this nature.

- Sandstone is a sedimentary rock made of silica grains; although it can experience some weathering, it does not dissolve chemically to create underground karst systems.

Step 3: Final Answer:

1. Karst topography develops mainly on Limestone.
2. This matches Option (A).

Quick Tip: 1. Associate the word "Karst" directly with "Limestone" and "chemical dissolution".

2. Classic examples of Karst landforms include the Karst region in Slovenia, and the Borra Caves in Andhra Pradesh, India.

10. Which dance form originated in Kerala?

- (A) Bharatanatyam
- (B) Kathakali
- (C) Odissi
- (D) Kuchipudi

Correct Answer: (B) Kathakali

Solution:

Step 1: Understanding the Question:

1. This question is from Indian Art and Culture. It requires us to identify which of the major classical dance forms of India originated in the state of Kerala.

Step 2: Detailed Explanation:

1. Firstly, let us study Kathakali, which is the correct answer.

2. Kathakali is a highly stylized classical dance-drama that originated in Kerala during the 17th century.

3. It is famous for its elaborate, heavy make-up (Vesham), massive colorful headgear, and dramatic costumes.

4. The stories in Kathakali are generally adapted from Hindu epics like the Ramayana, the Mahabharata, and the Puranas, presented through complex hand gestures (Mudras) and facial expressions (Bhava).

5. Another classical dance form that originated in Kerala is Mohiniyattam, which translates to the "dance of the enchantress."

6. Secondly, let us look at the other classical dances mentioned:

- Bharatanatyam is the oldest classical dance form of India and originated in the temples of Tamil Nadu.

- Odissi originated in the temples of Odisha and is characterized by its lyrical movements and "Tribhanga" posture.

- Kuchipudi originated in the Krishna district of Andhra Pradesh and involves both speech and dance.

Step 3: Final Answer:

1. The classical dance form that originated in Kerala is Kathakali.

2. Therefore, the correct option is Option (B).

Quick Tip: 1. Kerala is home to two classical dance forms: Kathakali (dramatic, male-dominated historically) and Mohiniyattam (graceful, female-solo dance).

2. Make a table of all 8 classical dance forms of India and their respective states of origin for quick exam revision.