

CBT TEST PAPER

CLASS X

APRIL 2026

SCIENCE CLASS X CBT QUESTIONS APRIL 2026

Subject : English

1) A letter to God

2) Dust of Snow

3) Fire And Ice Footprints without feet

Q.1 What is the supreme irony in "A Letter to God"?

- a. Lencho was a farmer who didn't know how to farm.
- b. The postmaster stole all the money.
- c. The employees who helped Lencho were called "a bunch of crooks".
- d. God sent 100 pesos, but only 70 arrived.

C. The employees who helped Lencho were called "a bunch of crooks".

Explanation:

In *A Letter to God*, the irony lies in the fact that the post office employees, out of kindness, collect money to help Lencho after his crops are destroyed. However, instead of being grateful, Lencho believes God sent the money and suspects the post office workers of stealing the remaining amount. This misunderstanding creates the **supreme irony** of the story.

Q.2 Lencho's calling the post office employees a "bunch of crooks" shows that he was:

- a. Ungrateful and suspicious.
- b. Funny and sarcastic.
- c. Intelligent and witty.
- d. Confused.

a. Ungrateful and suspicious.

Explanation:

In *A Letter to God*, Lencho receives money sent by the post office employees, but instead of appreciating their kindness, he suspects they stole part of it and calls them a "bunch of crooks." This shows he was **ungrateful** and **suspicious**.

Q.3 Why did Lencho call the raindrops 'new coins'?

- a. They were shining like silver.
- b. They promised a good harvest, resulting in money.
- c. He needed to buy new clothes.
- d. It was a metaphor for cold weather

b. They promised a good harvest, resulting in money.

Explanation:

In *A Letter to God*, Lencho called the raindrops "new coins" because rain would help his crops grow well, leading to a rich harvest and income.

Q.4 "Dust of Snow" The poet's mood at the beginning of the poem can best be described as:

- a. Cheerful and excited
- b. Gloomy and regretful
- c. Angry and frustrated
- d. Curious and alert

b. Gloomy and regretful

Explanation:

In *Dust of Snow*, the poet begins in a sad and disappointed mood. He mentions that the day had been spoiled, which shows he felt gloomy and regretful before nature changed his mood.

Q.5 “Dust of Snow”, The line “Has given my heart / A change of mood” shows that:

- a. Nature has magical powers to control humans
- b. Small natural events can have a big emotional impact
- c. The poet was pretending to be sad
- d. Snow can cure all problems

b. Small natural events can have a big emotional impact

Explanation:

In *Dust of Snow*, the falling dust of snow from the hemlock tree changes the poet’s sad mood. This shows that even a small event in nature can greatly affect a person’s feelings.

Q.6 What life skill does the poem “Dust of Snow” encourage?

- a. Ignoring small events as unimportant
- b. Finding joy and change in small, unexpected moments
- c. Avoiding nature during winter
- d. Depending on others to change your mood

b. Finding joy and change in small, unexpected moments

Explanation:

In *Dust of Snow*, a small natural incident changes the poet’s sad mood. The poem teaches us to notice little moments that can bring happiness and a fresh perspective.

Q.7 Assertion (A): “Dust of Snow” The poet’s mood changes from gloomy to relieved in the poem.

Reason (R): A crow shook down dust of snow on him from a hemlock tree.

- a. Both A and R are true and R is the correct explanation of A
- b. Both A and R are true but R is not the correct explanation of A
- c. A is true but R is false
- d. A is false but R is true

a. Both A and R are true and R is the correct explanation of A

Explanation:

In *Dust of Snow*, the poet’s mood changes from sadness to relief after a crow shakes dust of snow from a hemlock tree onto him. This small incident causes the positive change in his feelings.

Q.8 Assertion (A): “Dust of Snow” suggests that only big events can change our life.

Reason (R): The poet's mood changed because of a very small, sudden natural action.

- a. Both A and R are true and R is the correct explanation of A
- b. Both A and R are true but R is not the correct explanation of A
- c. A is true but R is false
- d. A is false but R is true

d. A is false but R is true

Explanation:

In *Dust of Snow*, the poem does **not** suggest that only big events can change life. Instead, it shows that a **small and sudden natural action**—the dust of snow falling on the poet—changed his mood positively.

Passage: Riya and Aman had a heated argument during a group project. Riya kept demanding her ideas be used, not listening to anyone else. Aman stopped speaking altogether and later refused to contribute, saying "do whatever you want, I don't care." The project failed because the team couldn't work together.

Q.9 In terms of the poem *Fire and Ice*, Riya's behavior represents:

- a. Ice — because she was cold and silent
- b. Fire — because she was driven by strong desire to control
- c. Neither — she was just confident
- d. Both fire and ice

b. Fire — because she was driven by strong desire to control

Explanation:

In *Fire and Ice*, **fire** symbolizes strong desires, passion, and uncontrolled emotions. Riya's insistence on controlling the group and forcing her ideas shows this "fire-like" behavior.

Q.10 What does this case show about the poem's message?

- a. Only desire destroys teamwork
- b. Only hatred destroys teamwork
- c. Both uncontrolled desire and hatred/indifference can destroy a group
- d. Arguments are always good for projects.

c. Both uncontrolled desire and hatred/indifference can destroy a group

Explanation:

In *Fire and Ice*, **fire** represents desire and uncontrolled passion, while **ice** represents hatred, coldness, or indifference. In the passage, Riya shows "fire" through control and stubbornness, while Aman shows "ice" through silence and refusal to help. Both attitudes caused the group to fail.

SCIENCE CLASS X CBT QUESTIONS APRIL 2026

1. In both chemistry and biology, reactions follow certain principles. For example, the equation $2H_2 + O_2 \rightarrow 2H_2O$ demonstrates conservation of mass, while in human digestion, enzymes break down carbohydrates into glucose for energy. Which statement best connects these two processes?

- A. Both show that physical changes are reversible.
- B. Both highlight the importance of balancing inputs and outputs to maintain consistency.
- C. Both prove that enzymes are required for every reaction.
- D. Both indicate that chemical reactions always produce gases.

EXPLANATION AND ANSWER

In chemistry, the equation $2H_2 + O_2 \rightarrow 2H_2O$ demonstrates the law of conservation of mass. The number of atoms on the reactant side equals the number of atoms on the product side, showing that inputs and outputs must balance.

In biology, during digestion, enzymes break down carbohydrates into glucose. The body carefully regulates how much energy is released and how nutrients are absorbed, again showing the principle of balancing what goes in with what comes out.

Correct Answer: B Both highlight the importance of balancing inputs and outputs to maintain consistency.

2. Which of the following represents a chemical reaction?

- A. Melting of ice
- B. Dissolving sugar in water
- C. Burning of magnesium ribbon**
- D. breaking glass

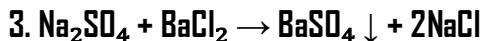
EXPLANATION AND ANSWER

Let's carefully break down the options to see which one truly represents a **chemical reaction**:

- **A. Melting of ice** → This is a **physical change**. Ice changes state from solid to liquid, but the chemical composition (H_2O) remains the same.
- **B. Dissolving sugar in water** → Another **physical change**. Sugar molecules disperse in water, but no new substance is formed.
- **C. Burning of magnesium ribbon** → This is a **chemical reaction**. Magnesium reacts with oxygen in the air to form magnesium oxide (MgO), a new substance with different properties.
[$2Mg + O_2 \rightarrow 2MgO$]
- **D. Breaking glass** → This is a **physical change**. The glass shatters into smaller pieces, but its chemical composition remains unchanged.

Correct Answer: C. Burning of magnesium ribbon

Double Displacement (Reasoning)



Why is this reaction irreversible?

- A. Formation of gas
- B. Formation of precipitate
- C. Heat released
- D. Colour change

EXPLANATION AND ANSWER

the reaction step by step:



- Here, **barium sulfate ($BaSO_4$)** is formed as a **precipitate** (insoluble solid) that settles out of the solution.
- Once a precipitate forms, the reaction cannot be easily reversed because the solid separates from the liquid and does not readily dissolve back under normal conditions.
- This makes the reaction **irreversible**.

Correct Answer: B. Formation of precipitate

The reaction is irreversible because an insoluble precipitate (BaSO_4) is formed, which cannot easily revert back into the original reactants.

4. A metal X reacts with dilute HCl to produce gas Y. Gas Y burns with a 'pop' sound. X also reacts with CuSO_4 and displaces copper.

What is X?

- A. Copper
- B. Zinc
- C. Silver
- D. Gold

EXPLANATION AND ANSWER

Let's carefully analyze the problem:

- The reaction with **dilute HCl** produces a gas that burns with a **'pop' sound**. → That gas is **hydrogen (H_2)**. Metals that react with dilute acids to release hydrogen are typically more reactive than hydrogen in the reactivity series.
- The metal also reacts with **CuSO_4** and displaces copper. → This means the metal is **more reactive than copper**.

Correct Answer: B. ZINC

5. Iron nails are left in moist air for a few days. What type of reaction occurs?

- A. Combination
- B. Decomposition
- C. Oxidation
- D. Displacement

EXPLANATION AND ANSWER

When iron nails are left in moist air for a few days, they undergo **rusting**. Rusting is a slow chemical process where iron reacts with oxygen and moisture to form hydrated iron(III) oxide ($\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$). This is an example of **oxidation**, because iron atoms lose electrons and combine with oxygen.

Checking the options:

- **A. Combination** → Not correct; rusting is not a simple combination reaction.
- **B. Decomposition** → Not correct; no breakdown of a compound into simpler substances occurs.
- **C. Oxidation** → Correct; rusting is an oxidation reaction.
- **D. Displacement** → Not correct; no element is displaced here.

Correct Answer: C. Oxidation

Explanation: Rusting of iron in moist air is an oxidation reaction where iron reacts with oxygen and water to form rust (hydrated iron oxide). This process is irreversible and damages the metal over time.

6. Which of the following is the correct reactivity order?

- A. $\text{Fe} > \text{Zn} > \text{Cu} > \text{Ag}$
- B. $\text{Zn} > \text{Fe} > \text{Cu} > \text{Ag}$

C. $\text{Ag} > \text{Cu} > \text{Fe} > \text{Zn}$

D. $\text{Cu} > \text{Fe} > \text{Zn} > \text{Ag}$

EXPLANATION AND ANSWER

To solve this, we need to recall the **reactivity series of metals**. The reactivity series ranks metals according to how easily they lose electrons to form positive ions.

Key points:

- **Zinc (Zn)** is more reactive than **iron (Fe)**.
- Both zinc and iron are more reactive than **copper (Cu)**.
- **Silver (Ag)** is the least reactive among these four.

So the correct order is:

[$\text{Zn} > \text{Fe} > \text{Cu} > \text{Ag}$]

Checking the options:

- **A. $\text{Fe} > \text{Zn} > \text{Cu} > \text{Ag}$** → Incorrect, because zinc is more reactive than iron.
- **B. $\text{Zn} > \text{Fe} > \text{Cu} > \text{Ag}$** → Correct, matches the reactivity series.
- **C. $\text{Ag} > \text{Cu} > \text{Fe} > \text{Zn}$** → Incorrect, this is the reverse order.
- **D. $\text{Cu} > \text{Fe} > \text{Zn} > \text{Ag}$** → Incorrect, copper is less reactive than both zinc and iron.

Correct Answer: B. $\text{Zn} > \text{Fe} > \text{Cu} > \text{Ag}$

Explanation: According to the reactivity series, zinc is more reactive than iron, both are more reactive than copper, and silver is the least reactive among them.

7. A plant is kept in the dark for 48 hours, then placed in sunlight for 6 hours. A leaf is tested with iodine solution and shows no blue-black colour.

What is the most likely reason?

- A. Plant did not absorb water
- B. Chlorophyll was absent
- C. CO_2 was not available**
- D. Leaf was not properly destarched

EXPLANATION AND ANSWER

Let's carefully analyze the situation:

- The plant was kept in the **dark for 48 hours**. This process is called **destarching** — it ensures that any starch already present in the leaves is used up, so the test will only show starch formed during the experiment.
- Then the plant was placed in **sunlight for 6 hours**. Normally, if photosynthesis occurs, starch should be produced and the leaf would turn **blue-black** with iodine solution.
- But here, the leaf **did not show blue-black colour**, meaning **no starch was formed**.

Possible reasons:

- **A. Plant did not absorb water** → Not correct; water absorption is not the limiting factor here.
- **B. Chlorophyll was absent** → If chlorophyll were absent, photosynthesis could not occur. This is a valid possibility.
- **C. CO_2 was not available** → Correct. If carbon dioxide is absent, photosynthesis cannot produce glucose, and hence no starch is formed.

- **D. Leaf was not properly destarched** → Not correct; the leaf was destarched by keeping in dark for 48 hours.

Correct Answer: C. CO₂ was not available

Explanation: Even though the plant had chlorophyll and sunlight, without carbon dioxide photosynthesis could not take place. As a result, no starch was formed, and the iodine test showed no blue-black colour.

8. Why is CO₂ concentration increased in greenhouse farming?

- A. To reduce respiration
- B. To increase chlorophyll
- C. **To increase rate of photosynthesis**
- D. To reduce transpiration

EXPLANATION AND ANSWER

In greenhouse farming, the concentration of CO₂ is deliberately increased to boost plant growth. Let's break down the options:

- **A. To reduce respiration** → Not correct. Respiration is a natural process and increasing CO₂ does not reduce it.
- **B. To increase chlorophyll** → Not correct. Chlorophyll content depends on the plant's genetics and health, not directly on CO₂ levels.
- **C. To increase rate of photosynthesis** → Correct. CO₂ is a raw material for photosynthesis. By increasing its concentration, plants can photosynthesize faster, producing more glucose and growing better.
- **D. To reduce transpiration** → Not correct. Transpiration is mainly influenced by humidity, temperature, and stomatal activity, not CO₂ concentration.

Correct Answer: C. To increase rate of photosynthesis

Explanation: In greenhouse farming, CO₂ enrichment ensures that plants have more of this essential raw material for photosynthesis. This accelerates the formation of glucose and starch, leading to faster growth and higher yields.

9. When ferrous sulphate crystals are heated strongly, they undergo decomposition. Which of the following sets correctly represents the products formed?

- A. Ferric oxide, sulphur dioxide, sulphur trioxide
- B. Ferrous oxide, sulphur dioxide, oxygen
- C. Ferric oxide, sulphur dioxide, oxygen
- D. Ferrous oxide, sulphur trioxide, sulphur dioxide

EXPLANATION AND ANSWER

When **ferrous sulphate (FeSO₄) crystals** are heated strongly, they undergo **thermal decomposition**. The reaction is:



- **Ferric oxide (Fe₂O₃)** is formed as a solid residue.
- **Sulphur dioxide (SO₂)** and **sulphur trioxide (SO₃)** gases are released.

Checking the options:

- **A. Ferric oxide, sulphur dioxide, sulphur trioxide** → ✓ Correct, matches the reaction.
- **B. Ferrous oxide, sulphur dioxide, oxygen** → ✗ incorrect, oxygen is not released here.
- **C. Ferric oxide, sulphur dioxide, oxygen** → ✗ incorrect, oxygen is not a product.
- **D. Ferrous oxide, sulphur trioxide, sulphur dioxide** → ✗ incorrect, ferric oxide (Fe_2O_3) is formed, not ferrous oxide.

Correct Answer: A. Ferric oxide, sulphur dioxide, sulphur trioxide

Explanation: On heating, ferrous sulphate decomposes to form ferric oxide (solid) and releases sulphur dioxide and sulphur trioxide gases. This is a classic example of a **thermal decomposition reaction**.

10. A plant is kept in bright sunlight but still shows slow photosynthesis. What is the most likely limiting factor?

- A. Light
- B. CO_2
- C. Chlorophyll
- D. Water vapour

EXPLANATION AND ANSWER

Let's analyze this scenario: The plant is kept in **bright sunlight**, so **light is not limiting**.

- If photosynthesis is still **slow**, another factor must be limiting.
- The main raw materials for photosynthesis are **CO_2** and **water**, and the presence of **chlorophyll** is essential.
- Among the given options:
 - **A. Light** → Not correct, because light is already abundant.
 - **B. CO_2** → Correct. If carbon dioxide concentration is low, photosynthesis slows down even in bright light.
 - **C. Chlorophyll** → If chlorophyll were absent, photosynthesis would not occur at all, not just slow.
 - **D. Water vapour** → Not directly relevant; water is needed, but water vapour is not the limiting factor here.

Correct Answer: B. CO_2

Explanation: In bright sunlight, the most likely limiting factor for photosynthesis is the availability of carbon dioxide. Without sufficient CO_2 , the rate of photosynthesis cannot increase, even if light is abundant.

MATHS CLASS X CBT QUESTIONS ANSWER

Real-Life Problem (LCM Concept)

1. Two traffic lights change after every 24 seconds and 36 seconds respectively. If they change together now, after how many seconds will they change together again?

- A. 48
- B. 60
- C. 72
- D. 144

EXPLANATION AND ANSWER

To solve this, we need to determine **when both traffic lights will change together again**. This is a problem of finding the **Least Common Multiple (LCM)** of the two time intervals.

Step 1: Identify the intervals

- First light changes every **24 seconds**
- Second light changes every **36 seconds**

Step 2: Prime factorization

- $(24 = 2^3 \cdot 3)$
- $(36 = 2^2 \cdot 3^2)$

Step 3: Take the highest powers of each prime

- For (2): highest power is (2^3)
- For (3): highest power is (3^2)

So,

$$[\text{LCM} = 2^3 \cdot 3^2 = 8 \cdot 9 = 72]$$

Step 4: Conclusion

The two traffic lights will change together again after **72 seconds**.

Correct Answer: **C. 72**

Error Detection (Concept-Based)

2. Identify the incorrect statement:

- A. $56 = 2^3 \times 7$
- B. $81 = 3^4$
- C. $100 = 2^2 \times 5^2$
- D. $72 = 2^3 \times 3^3$

EXPLANATION AND ANSWER

Let's carefully check each option by breaking down the prime factorization:

Option A: $(56 = 2^3 \times 7)$

- $(2^3 = 8)$
- $(8 \times 7 = 56)$ Correct

Option B: ($81 = 3^4$)

- ($3^4 = 3 \times 3 \times 3 \times 3 = 81$) correct

Option C: ($100 = 2^2 \times 5^2$)

- ($2^2 = 4$), ($5^2 = 25$)
- ($4 \times 25 = 100$) correct

Option D: ($72 = 2^3 \times 3^3$)

- ($2^3 = 8$), ($3^3 = 27$)
- ($8 \times 27 = 216$), not 72 incorrect

The correct prime factorization of 72 is:

$$[72 = 2^3 \times 3^2]$$

Correct Answer: D. $72 = 2^3 \times 3^3$ is incorrect

Terminating Decimal (Reasoning)

3. Which of the following fractions will have a terminating decimal expansion?

- A. $13/75$
- B. $7/40$
- C. $11/18$
- D. $19/24$

EXPLANATION AND ANSWER

To determine whether a fraction has a **terminating decimal expansion**, we look at the **denominator in its simplest form**.

A fraction in lowest terms will have a terminating decimal **if and only if** the denominator's prime factors are **only 2 and/or 5**.

A. ($\frac{13}{75}$)

- ($75 = 3 \times 5^2$)
- Denominator has factor **3** \rightarrow not terminating

B. ($\frac{7}{40}$)

- ($40 = 2^3 \times 5$)
- Denominator has only **2 and 5** \rightarrow terminating

C. ($\frac{11}{18}$)

- ($18 = 2 \times 3^2$)
- Denominator has factor **3** \rightarrow not terminating

D. ($\frac{19}{24}$)

- ($24 = 2^3 \times 3$)
- Denominator has factor **3** \rightarrow not terminating

Correct Answer: B. 7/40

Explanation: Because the denominator ($40 = 2^3 \times 5$) contains only prime factors 2 and 5, the decimal expansion will terminate.

Concept-Based (Zeros of Polynomial)

4. If α and β are zeros of the polynomial $x^2 - 5x + 6$, then $(\alpha + \beta)$ is:

- A. 5
- B. 6
- C. -5
- D. -6

EXPLANATION AND ANSWER

We're working with the polynomial:

$$[x^2 - 5x + 6]$$

Step 1: Recall the relationship between coefficients and roots

For a quadratic ($ax^2 + bx + c$):

- Sum of the roots ($(\alpha + \beta) = -\frac{b}{a}$)
- Product of the roots ($(\alpha \cdot \beta) = \frac{c}{a}$)

Step 2: Apply to given polynomial

Here, ($a = 1$), ($b = -5$), ($c = 6$).

So,

$$[\alpha + \beta = -\frac{-5}{1} = 5]$$

Step 3: Verify by factoring

$$[x^2 - 5x + 6 = (x - 2)(x - 3)]$$

Thus, roots are ($\alpha = 2$), ($\beta = 3$).

$$[\alpha + \beta = 2 + 3 = 5]$$

Correct Answer: A. 5

Graph-Based Understanding

5. The number of zeroes of a polynomial is equal to:

- A. Number of terms
- B. Number of x-intercepts of its graph
- C. Degree of polynomial
- D. Number of coefficients

EXPLANATION AND ANSWER

For this question, let's break it down clearly:

We are asked: **The number of zeroes of a polynomial is equal to...**

Key Concept:

- The **degree of a polynomial** is the highest power of (x) in it.

- A fundamental theorem of algebra states:
A polynomial of degree (n) has exactly (n) zeroes (roots), counting multiplicity.

Check the options:

A. Number of terms → ❌ Wrong. Example: $(x^2 - 5x + 6)$ has 3 terms but only 2 zeroes.

B. Number of x-intercepts of its graph → ❌ Not always true. Some roots may be complex, so they don't appear as x-intercepts.

C. Degree of polynomial → ✅ Correct. The number of zeroes equals the degree (though some may be repeated or complex).

D. Number of coefficients → ❌ Wrong. Example: $(x^2 - 5x + 6)$ has 3 coefficients but 2 zeroes.

Correct Answer: C. Degree of polynomial

Case Study Based Question

6. A company models its profit using polynomial $P(x) = x^2 - 4x - 5$, where x is number of units sold.

Q: Find the values of x when profit is zero.

- A. $x = 1, -5$
- B. $x = 5, -1$
- C. $x = 4, -5$
- D. $x = 3, -2$

EXPLANATION AND ANSWER

We're solving for the values of (x) when profit is zero in the polynomial:

$$[P(x) = x^2 - 4x - 5]$$

Step 1: Set profit equal to zero

$$[x^2 - 4x - 5 = 0]$$

Step 2: Factorize

We need two numbers that multiply to (-5) and add to (-4).

Those numbers are (-5) and (+1).

So,

$$[x^2 - 4x - 5 = (x - 5)(x + 1)]$$

Step 3: Solve for roots

$$[x - 5 = 0 \quad \rightarrow \quad x = 5]$$

$$[x + 1 = 0 \quad \rightarrow \quad x = -1]$$

Correct Answer: B. (x = 5, -1)

Notice that in a business context, the negative solution ((x = -1)) doesn't make sense for "units sold," but mathematically it is still a valid root. The meaningful solution for profit being zero in real life would be **(x = 5)** units.

Error Detection (Concept-Based)

7. Identify the incorrect statement:

- A. Degree of polynomial $5x^3 + 2x^2$ is 3
- B. Polynomial can have negative coefficients

- C. Zero polynomial has degree 0
- D. Constant polynomial has degree 0

EXPLANATION AND ANSWER

Let's carefully analyze each statement:

A. Degree of polynomial $(5x^3 + 2x^2)$ is 3

- The highest power of (x) is 3 → correct

B. Polynomial can have negative coefficients

- Example: $(x^2 - 5x + 6)$ has negative coefficient (-5) → correct

C. Zero polynomial has degree 0

- This is **incorrect**. The zero polynomial (all coefficients are zero) does **not** have a defined degree. Its degree is considered **undefined** (sometimes written as $(-\infty)$). → incorrect

D. Constant polynomial has degree 0

- Example: $(P(x) = 7)$. Degree is 0 → correct

Correct Answer: C. Zero polynomial has degree 0 (this statement is incorrect because the degree of the zero polynomial is undefined).

Real-Life Competency Question

8. The area of a rectangle is given by polynomial $x^2 + 5x + 6$. If length = $(x + 2)$, what is the breadth?

- A. $x + 3$
- B. $x + 2$
- C. $x + 1$
- D. $x + 4$

EXPLANATION AND ANSWER

We're given:

$$[\text{Area} = x^2 + 5x + 6, \quad \text{Length} = (x + 2)]$$

We need to find the **breadth**.

Step 1: Formula for area

$$[\text{Area} = \text{Length} \times \text{Breadth}]$$

So,

$$[x^2 + 5x + 6 = (x + 2) \times \text{Breadth}]$$

Step 2: Factorize the area polynomial

$$[x^2 + 5x + 6 = (x + 2)(x + 3)]$$

Step 3: Compare with given length

Since length = $(x + 2)$, the other factor must be the breadth:

$$[\text{Breadth} = x + 3]$$

Correct Answer: A. $(x + 3)$

9. A school wants to arrange students in rows such that each row has the same number of students. There are 360 boys and 480 girls.

Q: What is the maximum number of students in each row?

- A. 60
- B. 120
- C. 40
- D. 80

EXPLANATION AND ANSWER

We're asked: **What is the maximum number of students in each row if there are 360 boys and 480 girls?**

Step 1: Total students

$$[360 + 480 = 840]$$

But the question is about arranging them in rows with equal numbers of boys and girls per row. That means we need the **greatest common divisor (GCD)** of 360 and 480.

Step 2: Prime factorization

- $(360 = 2^3 \cdot 3^2 \cdot 5)$
- $(480 = 2^5 \cdot 3 \cdot 5)$

Step 3: Take common factors

- For (2): minimum power is (2^3)
- For (3): minimum power is (3^1)
- For (5): minimum power is (5^1)

So,

$$[\text{GCD} = 2^3 \cdot 3 \cdot 5 = 8 \cdot 3 \cdot 5 = 120]$$

Step 4: Conclusion

The maximum number of students in each row is **120**.

Correct Answer: B. 120

This means the school can arrange students into **120 per row**, ensuring both boys and girls are evenly distributed.

10. A number leaves remainder 9 when divided by 23. What will be the remainder when it is divided by 23×2 ?

- A. 9
- B. 18
- C. 32
- D. 46

EXPLANATION AND ANSWER

We're asked: **A number leaves remainder 9 when divided by 23. What will be the remainder when it is divided by $(23 \times 2 = 46)$?**

Step 1: Represent the number

If a number leaves remainder 9 when divided by 23, we can write it as:

$$[N = 23k + 9] \text{ for some integer } (k).$$

Step 2: Divide by 46

Now, we want the remainder when (N) is divided by 46.

$$[N = 23k + 9]$$

- If (k) is **even**, say ($k = 2m$):
[$N = 23(2m) + 9 = 46m + 9$]
Remainder = **9**
- If (k) is **odd**, say ($k = 2m + 1$):
[$N = 23(2m + 1) + 9 = 46m + 23 + 9 = 46m + 32$]
Remainder = **32**

Step 3: Conclusion

The remainder depends on whether (k) is even or odd. So the possible remainders are **9 or 32**.

From the given options:

- **A. 9** → possible
- **C. 32** → possible

Correct Answer: **Both 9 and 32 are valid remainders** depending on the number chosen.

Subject : Social Studies

1. Nationalism in Europe

2. Power sharing

Q.1 In which form of power-sharing is power divided among different levels of government such as central, state, and local?

- Horizontal power-sharing
- Vertical power-sharing
- Social power-sharing
- Political power-sharing

b . Vertical power-sharing

Explanation:

In Political Science, **vertical power-sharing** means power is divided among different levels of government such as the **central, state, and local governments**. Each level has its own responsibilities and authority.

Q.2 Which of the following is an example of power shared among different social groups?

- Power shared between the central and state governments
- Power shared among the executive, legislative, and judiciary
- Power shared in the form of community government in Belgium
- Power shared among different political parties

c. Power shared in the form of community government in Belgium

Explanation:

In Belgium, power is shared among different social groups (such as language communities) through the **community government**, which represents cultural and linguistic groups. This is an example of power-sharing among social groups.

Q.3 Assertion (A): Power sharing is important for maintaining political stability in a country.

Reason (R): It helps to reduce the chances of conflict between different social groups

- Both A and R are true, and R is the correct explanation of A.
- Both A and R are true, but R is not the correct explanation of A.

- c. A is true, but R is false.
- d. A is false, but R is true.

a. Both A and R are true, and R is the correct explanation of A.

Explanation:

In Political Science, power sharing gives representation to different groups and reduces tensions or conflicts among them. This helps create cooperation and maintain political stability in a country.

Q.4 Assertion (A): In a democracy, power must be shared among different institutions to prevent any one branch from becoming too powerful.

Reason (R): Power-sharing ensures that every citizen has equal power in decision-making.

- a. Both A and R are true, and R is the correct explanation of A.
- b. Both A and R are true, but R is not the correct explanation of A.
- c. A is true, but R is false.
- d. A is false, but R is true

b. Both A and R are true, but R is not the correct explanation of A.

Explanation:

In Political Science, power is shared among institutions like the executive, legislature, and judiciary to prevent concentration of power. However, power-sharing does **not** mean every citizen has equal direct power in decision-making; citizens usually participate through elected representatives.

Q.5 Which of the following statements about power sharing is incorrect?

- a. Power sharing is necessary to reduce the possibility of conflict.
- b. Power sharing ensures political stability in a country.
- c. Power sharing always leads to weak governments.
- d. Power sharing accommodates the diversity of the population.

The correct answer is **c. Power sharing always leads to weak governments.**

Explanation:

In Political Science, this statement is incorrect because power sharing does not always create weak governments. It often strengthens democracy, promotes cooperation, reduces conflict, and improves political stability.

Q.6 Assertion (A): Italy was divided into seven states, of which only one was ruled by an Italian princely house.

Reason (R): The north was under the domination of the Bourbon kings of Spain.

- a. Both A and R are true, and R is the correct explanation of A.
- b. Both A and R are true, but R is not the correct explanation of A.
- c. A is true, but R is false.
- d. A is false, but R is true.

The correct answer is **c. A is true, but R is false.**

Explanation:

In Italian Unification, Italy was divided into seven states, and only one—Kingdom of Sardinia—was ruled by an Italian princely house. However, the **north** was under the domination of the Austrian Empire, not the Bourbon kings of Spain. The Bourbons ruled the south, especially the Kingdom of the Two Sicilies

Q.7 Assertion (A): The Civil Code of 1804 (Napoleonic Code) was seen as a major step toward administrative efficiency

Reason (R): It established equality before the law, secured the right to property, and abolished all privileges based on birth.

- a. Both A and R are true, and R is the correct explanation of A.
- b. Both A and R are true, but R is not the correct explanation of A.
- c. A is true, but R is false.
- d. A is false, but R is true.

The correct answer is **a. Both A and R are true, and R is the correct explanation of A.**

Explanation:

Napoleonic Code introduced equality before law, protected property rights, and ended privileges based on birth. These reforms created a more uniform and organized legal system, making administration more efficient.

Read the following passage and answer the questions that follow: "Belgium is a small country in Europe with a complex power-sharing arrangement. The country is home to two major ethnic groups: the Dutch-speaking community, which forms the majority, and the French-speaking community, which forms a significant minority. To ensure peace and harmony between these two communities, Belgium's government has implemented a unique power-sharing system. This system includes equal representation in the central government, special laws that require the consent of both groups for any decisions, and a community government that addresses cultural, educational, and language issues. On the other hand, Sri Lanka, which gained independence in 1948, adopted a majoritarian approach. The Sinhalese community, which is in the majority, dominates the political scene, often sidelining the Tamil minority. This approach has led to tensions, conflicts, and demands for greater autonomy from the Tamil-speaking population."

Q.8 Power sharing is a strategy to ensure the stability of political order and _____.

- a. Increase economic growth
- b. Promote unity and reduce conflict
- c. Eliminate political competition
- d. Centralize authority in one leader

The correct answer is **b. Promote unity and reduce conflict**

Explanation: In Political Science, power sharing helps maintain political stability by accommodating different groups, promoting unity, and reducing chances of conflict in society

Q.9 In Belgium, power is shared among different _____ groups.

- a. Economic
- b. Political
- c. Linguistic
- d. Regional

The correct answer is **c. Linguistic**

Explanation:

In Belgium, power is shared among different linguistic groups such as the Dutch-speaking, French-speaking, and German-speaking communities. This helps maintain harmony and unity.

Q.10 In a democracy, power is also shared among different organs of government, such as the executive, legislature, and _____.

- a. Military
- b. Judiciary
- c. Police
- d. Bureaucracy

The correct answer is:

b. Judiciary

In a democracy, power is shared among the **executive (government), legislature (parliament/assembly), and judiciary (courts)**. This separation of powers ensures that no single organ becomes too powerful, maintaining checks and balances for fair governance.