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ENGLISH 20 Questions

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SCIENCE 25 Questions

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MENTAL ABILITY 10 Questions

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1. English

1.1 Determiners

Determiners are words placed in front of nouns to clarify what the noun refers to. They can indicate quantity, possession, definiteness, and more.

Types of Determiners:

1. Articles:

- o Indefinite: a, an
- o Definite: the

2. Demonstratives:

- o this, that, these, those

3. Possessives:

- o my, your, his, her, its, our, their

4. Quantifiers:

- o some, many, few, all, several

Examples:

- Article: I saw a dog.
- Demonstrative: This book is interesting.
- Possessive: My sister is coming.
- Quantifier: There are many apples in the basket.



Questions:

1. Identify the determiner in the sentence: "The cat sat on the mat."
2. What type of determiner is used in the sentence: "I have some friends."?
3. Write a sentence using a demonstrative determiner.
4. List three examples of possessive determiners.

1.2 Tense Forms

Tenses indicate the time of an action or state of being in a sentence. They are crucial for conveying when events occur.

Key Tenses:

1. **Present Tense:** Indicates current actions.
 - o Example: She **writes** a letter.
2. **Past Tense:** Indicates actions that have already happened.
 - o Example: He **wrote** a letter.
3. **Future Tense:** Indicates actions that will happen.
 - o Example: They **will write** a letter.

Examples:



- Simple Present:** I **eat** breakfast every day.
- Simple Past:** She **visited** her grandmother yesterday.
- Simple Future:** We **will go** to the park tomorrow.

Questions:

1. Convert the following sentence to past tense: "He plays soccer."
2. Write a sentence in future tense.
3. Identify the tense in this sentence: "They are studying for the exam."
4. Provide an example of a sentence in simple present tense.

1.3 Passivation

Passivation (or passive voice) emphasizes the action performed on the subject rather than who performs the action. In passive sentences, the focus is on the recipient of the action.

Structure:

- Passive Voice:** Subject + form of "to be" + past participle
 - o Example: The letter **was written** by Mary.

Examples:

- Active: The chef **cooked** the meal.
- Passive: The meal **was cooked** by the chef.



Questions:

1. Convert the following active sentence to passive voice: "The teacher teaches the students."
2. Identify the passive voice in the sentence: "The book was read by the entire class."
3. Rewrite this sentence in passive voice: "The dog chased the cat."
4. Provide an example of a sentence in passive voice.

1.4 Linking Words

Linking words (or conjunctions) are used to connect phrases, clauses, or sentences. They help in creating coherent and cohesive writing.

Types of Linking Words:

1. **Coordinating Conjunctions:** and, but, or
2. **Subordinating Conjunctions:** although, because, since, while
3. **Conjunctive Adverbs:** however, therefore, moreover

Examples:

- Coordinating:** I wanted to go, **but** it was raining.



- Subordinating:** **Although** it was late, she decided to go for a walk.
- Conjunctive Adverb:** It was raining; **however**, we went for a picnic.

Questions:

1. Identify the linking word in this sentence: "She wanted to stay home, but her friends convinced her to go out."
2. Write a sentence using a subordinating conjunction.
3. Provide an example of a sentence with a conjunctive adverb.
4. Connect the two sentences using a linking word: "He studied hard. He did not pass the exam."



2.Mathematics

1.1 Integers, Fractions, and Decimals

Integers, fractions, and decimals are essential numerical concepts used in various mathematical operations.

Integers

- Definition:** Whole numbers that can be positive, negative, or zero.
- Examples:** -3, -2, -1, 0, 1, 2, 3

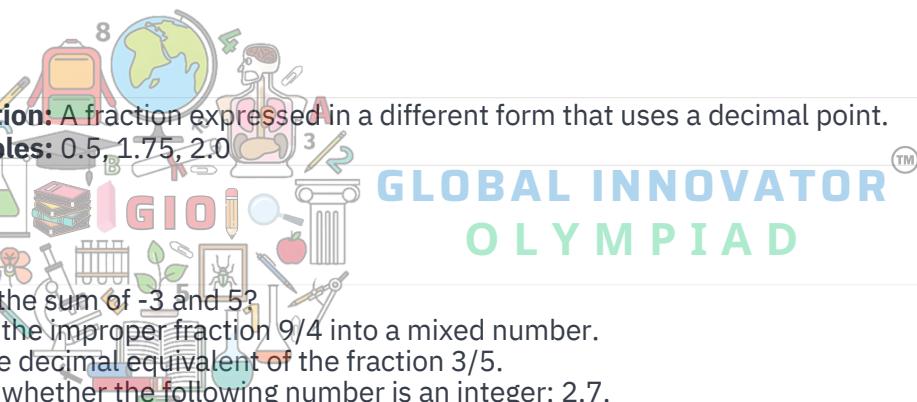
Fractions

- Definition:** A part of a whole expressed as a ratio of two integers.
- Types of Fractions:**
 - o Proper Fraction: Numerator < Denominator (e.g., $\frac{3}{4}$)
 - o Improper Fraction: Numerator \geq Denominator (e.g., $\frac{5}{3}$)
 - o Mixed Number: A whole number combined with a proper fraction (e.g., $2\frac{1}{2}$)

Decimals

- Definition:** A fraction expressed in a different form that uses a decimal point.
- Examples:** 0.5, 1.75, 2.0

Questions:



1. What is the sum of -3 and 5?
2. Convert the improper fraction $\frac{9}{4}$ into a mixed number.
3. Write the decimal equivalent of the fraction $\frac{3}{5}$.
4. Identify whether the following number is an integer: 2.7.

1.2 Data Handling

Data handling involves collecting, organizing, and interpreting data. It is crucial for making informed decisions based on statistical information.

Key Concepts:

- Data Collection:** Gathering information from various sources.
- Organizing Data:** Arranging data in tables, charts, or graphs.
- Interpretation:** Analyzing and drawing conclusions from data.

Examples:

- Bar Graph:** A visual representation of data using bars.
- Pie Chart:** A circular chart divided into sectors representing proportions.



Questions:

1. What are the different ways to represent data?
2. How can you organize data collected from a survey?
3. Create a simple bar graph using the following data: Number of pets (Dog: 5, Cat: 3, Fish: 2).
4. Explain the importance of data interpretation.

1.3 Simple Equations

Simple equations are mathematical statements that express the equality of two expressions. Solving equations involves finding the value of the unknown variable.

Key Concepts:

- Form of Equation:** $ax + b = c$, where a, b, and c are constants, and x is the variable.
- Solving Equations:** Finding the value of x that makes the equation true.

Examples:

- Solve for x: $2x + 3 = 11$
 - Solution: $2x = 8 \rightarrow x = 4$

Questions:

1. Solve the equation: $3x - 5 = 10$.
2. What is the value of x in the equation: $5x + 2 = 17$?
3. Write an equation for the statement: "Five times a number is 20."
4. Explain the steps to solve the equation: $4(x - 1) = 8$.

1.4 Lines and Angles

Lines and angles are fundamental concepts in geometry. Understanding their properties is essential for solving geometric problems.

Key Concepts:

- Lines:** Straight paths that extend infinitely in both directions.
- Angles:** Formed by two rays with a common endpoint (vertex).
- Types of Angles:**
 - Acute: Less than 90°
 - Right: Exactly 90°
 - Obtuse: Greater than 90° but less than 180°
 - Straight: Exactly 180°

Examples:

- Complementary Angles:** Two angles that add up to 90° .
- Supplementary Angles:** Two angles that add up to 180° .



Questions:

1. Identify the type of angle that measures 45° .
2. What are complementary angles? Give an example.
3. Draw a pair of parallel lines and label the angles formed.
4. Explain the difference between acute, obtuse, and right angles.



3.Science

1.1 Nutrition in Plants

Key Concepts:

- Photosynthesis:** The process by which plants make their own food using sunlight, carbon dioxide, and water.
- Chlorophyll:** The green pigment in plants that absorbs sunlight.

Questions:

1. What is photosynthesis, and why is it important?
2. Which part of the plant is primarily responsible for photosynthesis?
3. What are the raw materials needed for photosynthesis?
4. Explain the process of photosynthesis in detail.

1.2 Nutrition in Animals

Key Concepts:

- Types of Nutrition:** Autotrophic (self-feeding) and heterotrophic (dependent on others for food).
- Digestive System:** The system in animals that breaks down food into nutrients.

Questions:

1. What are the two main types of nutrition in living organisms?
2. Describe the digestive process in humans.
3. What role do enzymes play in digestion?
4. Explain how nutrients are absorbed in the body.

1.3 Acids, Bases and Salts

Key Concepts:

- Acids:** Substances that release hydrogen ions in solution (e.g., hydrochloric acid).
- Bases:** Substances that release hydroxide ions in solution (e.g., sodium hydroxide).
- Salts:** Formed by the reaction of acids and bases.

Questions:

1. What is the pH scale, and what does it measure?
2. Give examples of common acids and bases.
3. How are salts formed from acids and bases?
4. Explain the neutralization reaction.



1.4 Heat

Key Concepts:

- Heat Transfer:** The movement of heat from one body to another (conduction, convection, radiation).
- Temperature:** A measure of the average kinetic energy of particles in a substance.

Questions:

1. What are the three methods of heat transfer?
2. How does conduction differ from convection?
3. What is the difference between temperature and heat?
4. Explain how heat affects the state of matter.



4. Social Science

1.1 Geography

Geography is the study of the Earth's landscapes, environments, and the relationships between people and their environments. It helps us understand physical features, climate, and human activities.

Key Concepts:

- Physical Geography:** Studies natural features like mountains, rivers, and ecosystems.
- Human Geography:** Examines human activities, cultures, and how they interact with the environment.

Questions:

1. Explain the difference between physical geography and human geography.
2. Name three major landforms and describe their characteristics.
3. How does climate affect human settlement?
4. What role do natural resources play in the development of a region?

1.2 Environment

The environment encompasses all living and non-living things occurring naturally. Understanding the environment is crucial for sustainable development and conservation.

Key Concepts:

- Ecosystem:** A community of living organisms and their interactions with the environment.
- Biodiversity:** The variety of life in a particular habitat or ecosystem.

Questions:

1. Define an ecosystem and provide examples of different types.
2. What are the components of the environment?
3. Discuss the importance of biodiversity.
4. What human activities threaten the environment?

1.3 Inside Our Earth

The Earth is composed of different layers, each with unique characteristics. Understanding these layers helps us comprehend geological processes.

Key Concepts:

- Layers of the Earth:**



- o **Crust:** The outermost layer; consists of solid rock.
- o **Mantle:** The layer beneath the crust; made of semi-solid rock.
- o **Core:** The innermost layer; composed of iron and nickel.

Questions:

1. Describe the three layers of the Earth.
2. How do geological processes like earthquakes occur?
3. What is the significance of studying the Earth's interior?
4. Explain how tectonic plates contribute to changes on Earth.

1.4 Our Changing Earth

The Earth undergoes constant change due to natural forces such as weathering, erosion, and tectonic activities. Understanding these processes is essential for grasping environmental changes.

Key Concepts:

- Weathering:** The breakdown of rocks due to environmental factors.
- Erosion:** The movement of soil and rock by wind, water, or ice.

Questions:

1. What are the main types of weathering?
2. How do human activities contribute to erosion?
3. Discuss the impact of natural disasters on the environment.
4. Explain the processes of sedimentation and deposition.

1.5 Civics

Civics is the study of the rights and duties of citizens and how governments function. It emphasizes the importance of civic engagement in democracy.

Key Concepts:

- Equality:** The state of being equal, especially in status, rights, and opportunities.
- Role of Government:** Governments are responsible for protecting citizens' rights and providing public services.

Questions:

1. What does equality mean in a democratic society?
2. Discuss the role of government in promoting health and well-being.
3. How does local government work to serve its community?
4. What are the responsibilities of citizens in a democracy?

1.6 On Equality



Equality is a fundamental principle of democracy, ensuring that all individuals have equal rights and opportunities. Understanding equality helps address social issues and discrimination.

Key Concepts:

- Social Justice:** Fair treatment and equal access to opportunities for all individuals.
- Discrimination:** Unjust treatment of different categories of people.

Questions:

1. What is social justice, and why is it important?
2. Describe the various forms of discrimination prevalent in society.
3. How can individuals promote equality in their communities?
4. Discuss the impact of legislation on equality and rights.

1.7 Role of Government in Health

Governments play a crucial role in ensuring the health and well-being of their citizens through various programs and policies.

Key Concepts:

- Public Health Policies:** Initiatives aimed at improving the health of populations.
- Healthcare Systems:** Structures through which health services are delivered to individuals.

Questions:



1. What are some key responsibilities of government in public health?
2. How does the government respond to health crises, such as epidemics?
3. Discuss the importance of access to healthcare services.
4. What role do local governments play in health initiatives?

1.8 How the State Government Works

State governments have specific functions and responsibilities that vary from federal governments, focusing on local issues and governance.

Key Concepts:

- State Legislature:** The body responsible for making laws at the state level.
- Executive Branch:** Enforces laws and manages state operations.

Questions:

1. Describe the structure of state government.
2. What are the functions of the state legislature?
3. How do state governments address local issues?



- 
- Explain the relationship between state and federal governments.

1.9 Introduction to History

History is the study of past events, particularly in human affairs. Understanding history helps us learn from past experiences and shapes our understanding of the present.

Key Concepts:

- Chronology:** The arrangement of events in the order they occurred.
- Historical Sources:** Documents, artifacts, and other evidence from the past.

Questions:

- Why is studying history important for society?
- What are primary and secondary historical sources?
- How do historians determine the reliability of a source?
- Discuss the significance of oral history.

1.10 Tracing Changes through Thousand Years



Human history spans thousands of years, marked by significant changes in societies, cultures, and technologies. Understanding these changes provides insights into human development.

Key Concepts:



- Civilization:** A complex society characterized by urban development, social stratification, and governance.
- Cultural Exchange:** The sharing of ideas, traditions, and technologies between cultures.

Questions:

- Identify key milestones in human history over the last thousand years.
- Discuss the impact of the agricultural revolution on societies.
- How did trade routes contribute to cultural exchange?
- What role did empires play in shaping history?

1.11 Kings and Kingdoms

Kings and kingdoms played a crucial role in shaping history, governance, and society. Understanding their influence helps us appreciate historical power dynamics.

Key Concepts:

- Monarchy:** A form of government where a single person rules as king or queen.
- Feudal System:** A hierarchical system of land ownership and duties in medieval Europe.



Questions:

1. Describe the characteristics of a monarchy.
2. What were the roles of kings in their kingdoms?
3. Discuss the impact of the feudal system on society.
4. How did conflicts between kingdoms shape historical events?

1.12 Delhi: 12th to 15th Century

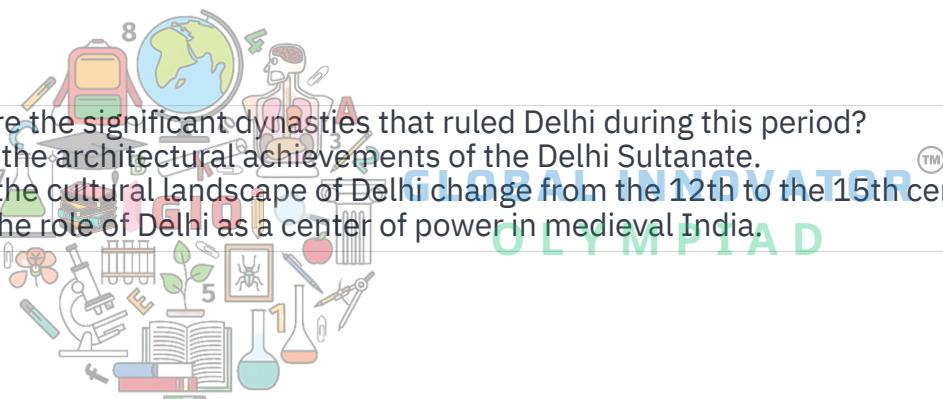
Delhi has a rich historical legacy, particularly during the 12th to 15th centuries when it became a center of power and culture in India.

Key Concepts:

- Delhi Sultanate:** A series of Islamic dynasties that ruled parts of India from the 13th to the 16th century.
- Cultural Developments:** The period saw advancements in architecture, literature, and art.

Questions:

1. What were the significant dynasties that ruled Delhi during this period?
2. Describe the architectural achievements of the Delhi Sultanate.
3. How did the cultural landscape of Delhi change from the 12th to the 15th century?
4. Discuss the role of Delhi as a center of power in medieval India.



5. Mental Ability

This section focuses on enhancing mental ability through various exercises. These exercises help develop logical reasoning, pattern recognition, and problem-solving skills.

1.1 Number Series

Number series problems involve identifying patterns in a sequence of numbers. The objective is to determine the next number in the series based on the observed pattern.

Examples:

1. **Series:** 2, 4, 6, 8, ...
 - o **Pattern:** Each number increases by 2.
 - o **Next Number:** 10
2. **Series:** 5, 10, 20, 40, ...
 - o **Pattern:** Each number is multiplied by 2.
 - o **Next Number:** 80

Questions:

1. What is the next number in the series: 3, 6, 9, 12, ...?
2. Find the missing number in the series: 1, 4, __, 16, 25.
3. What is the next number in the series: 10, 20, 30, 40, ...?
4. Identify the pattern and find the next number: 2, 5, 10, 17, ...?

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1.2 Alphabet Series

Alphabet series problems involve identifying patterns in sequences of letters. These problems test knowledge of the English alphabet and help in recognizing patterns.

Examples:

1. **Series:** A, C, E, G, ...
 - o **Pattern:** Each letter is two places ahead in the alphabet.
 - o **Next Letter:** I
2. **Series:** Z, Y, X, W, ...
 - o **Pattern:** The letters are in reverse order.
 - o **Next Letter:** V

Questions:

1. What is the next letter in the series: B, D, F, H, ...?
2. Find the missing letter in the series: A, C, __, E, G.
3. Identify the pattern and find the next letter: K, M, O, Q, ...?
4. What letter comes next in the series: X, W, V, U, ...?



1.3 Alphabet Test

Alphabet tests involve determining the position of letters in the English alphabet or finding relationships between different letters.

Examples:

1. **Position:** A = 1, B = 2, C = 3, ...
 - o **Question:** What is the position of the letter D?
 - Answer:** 4
2. **Reverse Position:** Z = 1, Y = 2, X = 3, ...
 - o **Question:** What is the reverse position of the letter A?
 - Answer:** 26

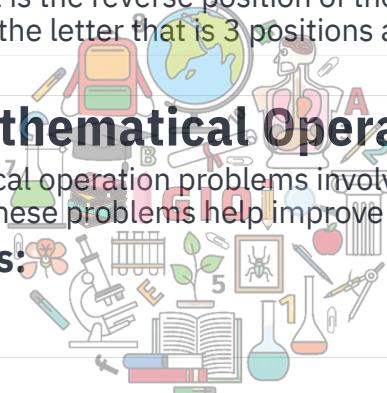
Questions:

1. What is the position of the letter F in the English alphabet?
2. If A = 1, what is the sum of the positions of the letters A, B, and C?
3. What is the reverse position of the letter M?
4. Find the letter that is 3 positions after J in the alphabet.

1.4 Mathematical Operation

Mathematical operation problems involve performing calculations based on given instructions or patterns. These problems help improve numerical skills and logical thinking.

Examples:



1. **Operation:** $5 + 3 \times 2$
 - o **Solution:** $5 + 6 = 11$
2. **Operation:** $(10 - 2) \times 4$
 - o **Solution:** $8 \times 4 = 32$

Questions:

1. Solve: $6 + 4 \times 3 - 2$.
2. What is the result of $15 \div 3 + 5 \times 2$?
3. If you subtract 7 from 20 and then multiply the result by 3, what do you get?
4. Calculate: $(12 - 4) \div 2 + 5 \times 3$.