

CUET PG 2025 B.Ed Question Paper with Solutions

Time Allowed :1 Hour 30 Mins	Maximum Marks :300	Total Questions :75
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General Instructions

Read the following instructions very carefully and strictly follow them:

1. The examination duration is 90 minutes. Manage your time effectively to attempt all questions within this period.
2. The total marks for this examination are 300. Aim to maximize your score by strategically answering each question.
3. There are 75 mandatory questions to be attempted in the Atmospheric Science paper. Ensure that all questions are answered.
4. Questions may appear in a shuffled order. Do not assume a fixed sequence and focus on each question as you proceed.
5. The marking of answers will be displayed as you answer. Use this feature to monitor your performance and adjust your strategy as needed.
6. You may mark questions for review and edit your answers later. Make sure to allocate time for reviewing marked questions before final submission.
7. Be aware of the detailed section and sub-section guidelines provided in the exam. Understanding these will aid in effectively navigating the exam.

1. "Man is born free but everywhere he is in chains" whose words are these?

- (A) W. Kilpatrick
- (B) Abraham Maslow
- (C) John Dewey
- (D) Jean Jacques Rousseau

Correct Answer: (D) Jean Jacques Rousseau

Solution:

Step 1: Understanding the Concept

The question asks to identify the author of the famous philosophical quote, "Man is born free but everywhere he is in chains." This requires knowledge of major works in political philosophy.

Step 2: Detailed Explanation

This iconic line is the opening sentence of Jean-Jacques Rousseau's influential work, *The Social Contract* (*Du Contrat Social*), published in 1762.

In this book, Rousseau explores the concept of legitimate political authority. He argues that

while man exists in a state of natural freedom, civil society and conventional forms of government have imposed constraints ("chains") on this liberty.

He posits that a just society is one where individuals voluntarily agree to a social contract that protects their mutual freedom and equality.

The other options are incorrect:

- **W. Kilpatrick:** An American educator and a proponent of progressive education.
- **Abraham Maslow:** An American psychologist known for his "hierarchy of needs."
- **John Dewey:** An American philosopher, psychologist, and educational reformer, also associated with pragmatism and progressive education.

Step 3: Final Answer

The quote is from Jean Jacques Rousseau's *The Social Contract*. Therefore, option (D) is the correct answer.

💡 Quick Tip

For general knowledge questions, focus on memorizing famous quotes and associating them with their authors, especially those who have significantly influenced philosophy, politics, and literature. Creating flashcards can be a very effective study method.

2. Who among the following wrote a famous dissertation on Sanskrit grammar?

- (A) Panini
- (B) Patanjali
- (C) Sushruta
- (D) Chanakya

Correct Answer: (A) Panini

Solution:

Step 1: Understanding the Concept

The question asks to identify the ancient Indian scholar renowned for his work on Sanskrit grammar. This requires knowledge of ancient Indian history and literature.

Step 2: Detailed Explanation

Panini was an ancient Sanskrit philologist, grammarian, and a revered scholar in ancient India. His most famous work is the *Ashtadhyayi* (meaning "Eight Chapters").

This text is a comprehensive and scientific grammar of Sanskrit, setting the standard for the language. It is considered a foundational text of linguistics and is one of the earliest known

works on descriptive grammar.

The other options are known for different fields:

- **Patanjali:** Wrote the *Mahabhashya*, a commentary on Panini's *Ashtadhyayi*. While related to grammar, Panini is the original author of the foundational dissertation. Patanjali is also associated with the Yoga Sutras.
- **Sushruta:** A physician in ancient India, known as the "Father of Surgery." His main work is the *Sushruta Samhita*.
- **Chanakya (also known as Kautilya or Vishnugupta):** An ancient Indian teacher, philosopher, economist, and royal advisor. He authored the political treatise, the *Arthashastra*.

Step 3: Final Answer

Panini is credited with writing the foundational and most famous work on Sanskrit grammar, the *Ashtadhyayi*. Therefore, option (A) is correct.

💡 Quick Tip

When studying ancient history, create a table of important figures, their primary field of contribution (e.g., grammar, medicine, politics), and their major works. This helps in quickly distinguishing their achievements.

3. The field of study concerned with the construction of thought processes, including remembering, problem solving, and decision - making is called:

- (A) Education
- (B) Epistemology
- (C) Pedagogy
- (D) Cognitive Domain

Correct Answer: (D) Cognitive Domain

Solution:

Step 1: Understanding the Concept

The question asks for the specific term that describes the study of mental processes like thinking, remembering, and problem-solving. This relates to the fields of psychology and education.

Step 2: Detailed Explanation

The **Cognitive Domain** involves knowledge and the development of intellectual skills. This includes the recall or recognition of specific facts, procedural patterns, and concepts that serve

in the development of intellectual abilities and skills.

The processes mentioned in the question—remembering, problem-solving, and decision-making—are all core components of cognition.

Let's analyze the other options:

- **Education:** This is a very broad term for the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habits. It encompasses the cognitive domain but is not specific to it.
- **Epistemology:** This is a branch of philosophy concerned with the theory of knowledge. It studies the nature of knowledge, justification, and the rationality of belief. It's about "how we know what we know," rather than the mental processes themselves.
- **Pedagogy:** This is the theory and practice of teaching and learning. It focuses on the methods and strategies used by teachers to impart knowledge, while the cognitive domain focuses on the internal mental processes of the learner.

Step 3: Final Answer

The field that specifically studies thought processes like remembering, problem-solving, and decision-making is the Cognitive Domain. Hence, option (D) is the correct choice.

💡 Quick Tip

In educational psychology, remember the three domains of learning: Cognitive (thinking), Affective (feeling/emotion), and Psychomotor (doing/physical skills). This framework helps categorize learning objectives and related questions.

4. At the pre-primary stage reading aloud while writing is given importance. This is based on which theory of learning ?

- (A) Trial & Error
- (B) Conditioning
- (C) Insight
- (D) Imitation

Correct Answer: (B) Conditioning

Solution:

Step 1: Understanding the Concept

The question asks for the learning theory that explains the practice of simultaneous reading aloud and writing at the pre-primary level. This practice aims to build a strong association between the sound of a word/letter and its written form.

Step 2: Detailed Explanation

Conditioning is a theory of learning that states that behavior is learned through the association between a stimulus and a response. There are two main types: classical and operant conditioning.

In this context, the practice uses principles of conditioning to create a strong link between the auditory stimulus (the sound of the word being read aloud) and the motor response (the action of writing the word). This repeated pairing reinforces the learning of letters and words. The child associates the shape of the letter with its sound, strengthening memory and recall.

Let's look at the other theories:

- **Trial & Error:** This theory, proposed by Thorndike, involves solving a problem by trying various responses until one is successful. The educational practice described is structured and guided, not random.
- **Insight:** This Gestalt theory of learning involves a sudden realization or understanding of a problem's solution. It's about grasping the whole picture, not the repetitive reinforcement of basic skills.
- **Imitation:** This involves learning by observing and replicating others' actions. While a child might imitate a teacher writing, the core principle behind reading aloud *while* writing is the self-reinforcement of the sound-symbol connection, which is a form of conditioning.

Step 3: Final Answer

The practice of reading aloud while writing is based on strengthening the association between auditory and visual/motor skills, which is a core principle of the learning theory of Conditioning. Thus, option (B) is correct.

💡 Quick Tip

For questions on learning theories, focus on the key mechanism of each theory. Conditioning is about association/reinforcement, Trial & Error is about random attempts, Insight is about sudden understanding, and Imitation is about observation.

5. Arrange the given Education Ministers/HRD Ministers in chronological order (according to the year when they held the post)

- (A). P.V.Narasimha Rao
- (B). Karan Singh
- (C). K.C.Pant
- (D). Fakhruddin Ali Ahmed

Choose the correct answer from the options given below:

- (A) (A), (C), (B), (D).
- (B) (C), (A), (B), (D).

(C) (D), (B), (C), (A).
(D) (B), (D), (A), (C).

Correct Answer: (C) (D), (B), (C), (A).

Solution:

Step 1: Understanding the Concept

The question requires arranging four former Union Ministers of India, who held the portfolio of Education (later renamed Human Resource Development), in the correct chronological order of their tenures.

Step 2: Detailed Explanation

Let's identify the period each individual served as the Union Minister for Education/HRD.

- **(D) Fakhruddin Ali Ahmed:** He served as the Minister of Education from 14 November 1966 to 13 March 1967.
- **(B) Karan Singh:** He served as the Minister of Education and Social Welfare from 30 July 1979 to 14 January 1980.
- **(C) K.C. Pant (Krishna Chandra Pant):** He served as the Minister of Education from 31 December 1984 to 25 September 1985.
- **(A) P.V. Narasimha Rao:** He was the first minister to head the newly named Ministry of Human Resource Development, serving from 25 September 1985 to 25 June 1988.

Step 3: Chronological Arrangement

Based on the tenures above, the correct chronological order is:

1. Fakhruddin Ali Ahmed (1966-1967)
2. Karan Singh (1979-1980)
3. K.C. Pant (1984-1985)
4. P.V. Narasimha Rao (1985-1988)

This sequence corresponds to (D), (B), (C), (A).

Step 4: Final Answer

The correct chronological order is (D), (B), (C), (A), which matches option (C).

💡 Quick Tip

For questions involving chronological order of political figures, it's helpful to associate them with major events or Prime Ministers of their time. For example, P.V. Narasimha Rao's tenure as HRD minister was under Rajiv Gandhi's government, just before he himself became PM.

6. Match List-I with List-II

List-I (Book's Name)	List-II (Author's Name)
(A) The Godfather	(I) Rudyard Kipling
(B) The Jungle Book	(II) Mario Puzo
(C) The Blue Umbrella	(III) Charles Dickens
(D) A tale of two cities	(IV) Ruskin Bond

Choose the correct answer from the options given below:

- (A) (A) - (II), (B) - (I), (C) - (III), (D) - (IV)
(B) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
(C) (A) - (II), (B) - (I), (C) - (IV), (D) - (III)
(D) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Correct Answer: (C) (A) - (II), (B) - (I), (C) - (IV), (D) - (III)

Solution:

Step 1: Understanding the Concept

This is a matching question that tests knowledge of famous books and their respective authors. The task is to correctly pair each book from List-I with its author from List-II.

Step 2: Detailed Explanation

Let's match each book with its author:

- **(A) The Godfather:** This famous novel about an Italian-American crime family was written by **(II) Mario Puzo**.
- **(B) The Jungle Book:** This collection of stories, featuring characters like Mowgli and Baloo, was written by the British author **(I) Rudyard Kipling**.
- **(C) The Blue Umbrella:** This well-known novella set in a small village in Himachal Pradesh was written by the Indian author **(IV) Ruskin Bond**.
- **(D) A Tale of Two Cities:** This historical novel set during the French Revolution was penned by the celebrated English writer **(III) Charles Dickens**.

Step 3: Final Combination

The correct pairings are:

- A matches with II.
- B matches with I.

- C matches with IV.
- D matches with III.

This combination, (A)-(II), (B)-(I), (C)-(IV), (D)-(III), is given in option (C).

💡 Quick Tip

Matching questions are common in general awareness sections. When you encounter one, try to match the pairs you are most confident about first. This can help you eliminate incorrect options quickly, even if you don't know all the pairings.

7. Who is the author of the book 'Freedom Behind Bars'?

- (A) Kiran Bedi
- (B) Jawaharlal Nehru
- (C) Nelson Mandela
- (D) Mahatama Gandhi

Correct Answer: (A) Kiran Bedi

Solution:

Step 1: Understanding the Concept

The question asks to identify the author of the book 'Freedom Behind Bars'. This requires knowledge of books written by prominent Indian public figures.

Step 2: Detailed Explanation

Kiran Bedi, the first woman officer in the Indian Police Service (IPS), is the author of 'Freedom Behind Bars'. The book is based on her experiences and reforms implemented during her tenure as the Inspector General of Prisons, Tihar Jail, Delhi. It details her efforts to transform the prison into a place of reform and positive activity.

The other authors are famous for different works:

- **Jawaharlal Nehru:** Authored books like 'The Discovery of India' and 'Glimpses of World History'.
- **Nelson Mandela:** Wrote the autobiography 'Long Walk to Freedom'.
- **Mahatma Gandhi:** His autobiography is titled 'The Story of My Experiments with Truth'.

Step 3: Final Answer

The book 'Freedom Behind Bars' was authored by Kiran Bedi. Therefore, option (A) is the correct answer.

💡 Quick Tip

Pay special attention to autobiographies and books written by influential leaders, social reformers, and civil servants, as they often reflect significant events and personal experiences, making them popular subjects for questions.

8. Who is the author of the book "The Birth of New India"?

- (A) Jawaharlal Nehru
- (B) Annie Besant
- (C) John Milton
- (D) Manik Bandopadhyay

Correct Answer: (B) Annie Besant

Solution:

Step 1: Understanding the Concept

The question asks to identify the author of the book "The Birth of New India". This book is related to the Indian independence movement.

Step 2: Detailed Explanation

Annie Besant was a British socialist, theosophist, women's rights activist, writer, and a prominent figure in the Indian independence movement. She was a strong advocate for Indian self-rule. Her book, "The Birth of New India," reflects her thoughts and perspectives on India's struggle for freedom and its future. She also founded the Home Rule League in 1916.

Let's check the other options:

- **Jawaharlal Nehru:** A key figure in the independence movement and India's first Prime Minister. His famous books include 'The Discovery of India'.
- **John Milton:** An English poet from the 17th century, famous for his epic poem 'Paradise Lost'. He is not associated with Indian history.
- **Manik Bandopadhyay:** A famous Bengali novelist and writer, known for works like 'Padma Nadir Majhi'.

Step 3: Final Answer

The author of "The Birth of New India" is Annie Besant. Hence, option (B) is the correct choice.

💡 Quick Tip

When studying the Indian freedom struggle, make a list of important leaders (both Indian and foreign supporters like Annie Besant) and note down their key contributions, including newspapers they started and books they authored.

9. Which was the first 3D movie made in India?

- (A) Roadside Romeo
- (B) My dear Kuttichathan
- (C) Hanuman
- (D) Ra. One

Correct Answer: (B) My dear Kuttichathan

Solution:

Step 1: Understanding the Concept

The question asks to identify the first feature film produced in India that used 3D technology. This is a question about the history of Indian cinema.

Step 2: Detailed Explanation

The first 3D film made in India was **My Dear Kuttichathan**. It was a Malayalam language fantasy film released in 1984. It was directed by Jijo Punnoose. The film was a huge success and was later dubbed into Hindi as 'Chhota Chetan' and released in 1997, which also became very popular.

Let's analyze the other options:

- **Roadside Romeo (2008):** This was a 3D animated film.
- **Hanuman (2005):** This was a 2D animated film.
- **Ra.One (2011):** This was a live-action superhero film that was also released in a 3D format, but much later than 'My Dear Kuttichathan'.

Step 3: Final Answer

The first 3D movie made in India was the Malayalam film 'My Dear Kuttichathan'. Therefore, option (B) is correct.

💡 Quick Tip

Questions about "firsts" in various fields (e.g., first talkie film, first colour film, first 3D film) are very common in general knowledge sections. It's a good idea to create a list of such milestones in Indian history and culture.

10. Which of the following song has won the "Best original song" award at Oscar 2023?

- (A) Naacho Naacho
- (B) Yara Teri Meri Yaari
- (C) Neendraan Ni Aandiyaaan
- (D) Naatu Naatu

Correct Answer: (D) Naatu Naatu

Solution:

Step 1: Understanding the Concept

The question asks to identify the song that won the Academy Award (Oscar) for Best Original Song in the year 2023. This is a current affairs question related to international awards in cinema.

Step 2: Detailed Explanation

At the 95th Academy Awards held in 2023, the song "**Naatu Naatu**" from the Telugu-language film *RRR* won the award for Best Original Song.

This was a historic win as it was the first song from an Indian film to win in this category.

The music for the song was composed by M. M. Keeravani, and the lyrics were written by Chandrabose. "Naacho Naacho" is the title of the Hindi version of the song, but the original Telugu version "Naatu Naatu" is the one that was awarded.

Step 3: Final Answer

The song "Naatu Naatu" won the Oscar for Best Original Song in 2023. Therefore, option (D) is the correct answer.

Quick Tip
For current affairs, keep track of major international awards like the Oscars, Grammy Awards, Nobel Prizes, and Booker Prize, especially noting any Indian winners or significant achievements.

11. What was the title of the first full length feature film of India ?

- (A) Shree 420
- (B) Jagriti
- (C) Alam Ara
- (D) Raja Harishchandra

Correct Answer: (D) Raja Harishchandra

Solution:

Step 1: Understanding the Concept

The question asks for the title of the first-ever full-length feature film produced in India. This is a foundational question in the history of Indian cinema.

Step 2: Detailed Explanation

The first full-length Indian feature film was **Raja Harishchandra**. It was a silent film directed and produced by Dadasaheb Phalke, who is considered the "Father of Indian Cinema." The film was released on May 3, 1913.

It is important to distinguish this from the first Indian "talkie" (a film with sound).

- **Alam Ara (1931):** This was the first Indian film with sound (talkie), directed by Ardeshir Irani.
- **Shree 420 (1955) and Jagriti (1954):** These are classic films from a much later period.

Since the question asks for the "first full length feature film" without specifying sound, the correct answer is the first silent film.

Step 3: Final Answer

The first full-length feature film of India was 'Raja Harishchandra'. Hence, option (D) is correct.

💡 Quick Tip

Be careful with terminology in film history questions. "First feature film" refers to Raja Harishchandra (silent, 1913), while "first talkie" refers to Alam Ara (sound, 1931). Read the question carefully to understand what is being asked.

12. ICDS is a major national programme which addresses:

- (A) Needs of children upto the age of six years
- (B) Needs of Teenagers only
- (C) Issues regarding political awareness in students
- (D) Needs of Unemployed Youth

Correct Answer: (A) Needs of children upto the age of six years

Solution:

Step 1: Understanding the Concept

The question asks about the target group of the ICDS programme. This requires knowledge of major government welfare schemes in India.

Step 2: Detailed Explanation

ICDS stands for **Integrated Child Development Services**. It is a flagship programme of the Government of India launched in 1975.

The primary beneficiaries of the ICDS programme are:

- Children in the age group of 0-6 years.
- Pregnant women.
- Lactating mothers.

The scheme provides a package of services including supplementary nutrition, immunization, health check-ups, referral services, and pre-school non-formal education through Anganwadi Centres. Therefore, its main focus is on the needs of children up to the age of six years and their mothers.

Step 3: Final Answer

The ICDS programme primarily addresses the needs of children up to the age of six years. So, option (A) is the correct answer.

💡 Quick Tip

For questions on government schemes, it's crucial to know the full form, launch year, target ministry, and the specific beneficiary group. Acronyms like ICDS, MGNREGA, PM-KISAN are very common in exams.

13. B.C. Roy Award is given in the field of:

- (A) Music
- (B) Medicine
- (C) Journalism
- (D) Environment

Correct Answer: (B) Medicine

Solution:

Step 1: Understanding the Concept

The question asks to identify the field associated with the B.C. Roy Award. This tests knowledge of important national awards in India.

Step 2: Detailed Explanation

The **Bidhan Chandra Roy Award** (B.C. Roy Award) is the highest recognition for medical practitioners in India. It was instituted in 1962 by the Medical Council of India (now the National Medical Commission) in memory of Dr. Bidhan Chandra Roy.

Dr. B.C. Roy was a renowned physician, educationist, philanthropist, freedom fighter, and the

second Chief Minister of West Bengal. The award is presented annually by the President of India on National Doctors' Day (July 1st), which is also Dr. Roy's birth and death anniversary. It recognizes outstanding contributions in the field of **Medicine**.

Step 3: Final Answer

The B.C. Roy Award is given in the field of Medicine. Thus, option (B) is the correct choice.

💡 Quick Tip

When learning about awards, try to also learn about the person the award is named after. Connecting the B.C. Roy Award to Dr. B.C. Roy, a famous physician, makes it easy to remember that the award is for medicine.

14. The highest gallantry award in India is:

- (A) The Maha vir Chakra
- (B) The Param vir Chakra
- (C) The Ashoka Chakra
- (D) The Bharat Ratna

Correct Answer: (B) The Param vir Chakra

Solution:

Step 1: Understanding the Concept

The question asks to identify the highest award for bravery (gallantry) in India. This requires knowledge of the Indian honours system, specifically military decorations.

Step 2: Detailed Explanation

Gallantry awards in India are divided into two categories: wartime and peacetime.

Wartime Gallantry Awards: These are given for bravery in the face of the enemy. The order of precedence is:

1. **Param Vir Chakra (PVC):** Highest military award.
2. **Maha Vir Chakra (MVC):** Second highest.
3. **Vir Chakra (VrC):** Third highest.

Peacetime Gallantry Awards: These are given for courage or self-sacrifice away from the battlefield. The order of precedence is:

1. **Ashoka Chakra:** Highest peacetime award.
2. **Kirti Chakra:** Second highest.
3. **Shaurya Chakra:** Third highest.

The question asks for the "highest gallantry award" without specifying wartime or peacetime. In this general context, the Param Vir Chakra is considered the overall highest gallantry award of the nation.

The **Bharat Ratna** is the highest *civilian* award in India, not a gallantry award.

Step 3: Final Answer

The Param Vir Chakra is the highest gallantry award in India. Therefore, option (B) is correct.

💡 Quick Tip

Memorize the hierarchy of both military (gallantry) and civilian awards. Understand the distinction between wartime (Param Vir Chakra) and peacetime (Ashoka Chakra) awards, as questions can be specific.

15. Shanti Swaroop Bhatnagar award is given to those who excel in the field of science and technology. The institution associated with prof. Shanti Swaroop Bhatnagar is:

- (A) DST
- (B) ICMR
- (C) IISC
- (D) CSIR

Correct Answer: (D) CSIR

Solution:

Step 1: Understanding the Concept

The question provides information about the Shanti Swaroop Bhatnagar Award and asks to identify the institution with which Prof. Shanti Swaroop Bhatnagar was associated.

Step 2: Detailed Explanation

Professor **Shanti Swaroop Bhatnagar** was a renowned Indian scientist and visionary. He is widely regarded as the "Father of research laboratories" in India.

His most significant contribution was the establishment of the **Council of Scientific and Industrial Research (CSIR)**. He became its first Director-General in 1942 and was instrumental in setting up a network of national laboratories across the country.

The **Shanti Swaroop Bhatnagar Prize for Science and Technology** was instituted in his honor by CSIR. It is awarded annually for outstanding contributions to science and technology. The other institutions are:

- **DST:** Department of Science and Technology.
- **ICMR:** Indian Council of Medical Research.
- **IISC:** Indian Institute of Science.

While these are all premier scientific institutions, Prof. Bhatnagar's foundational role is most directly linked to CSIR.

Step 3: Final Answer

The institution associated with Prof. Shanti Swaroop Bhatnagar is the Council of Scientific and Industrial Research (CSIR). Hence, option (D) is the correct answer.

💡 Quick Tip

To remember the association, think of the award's giver. The Shanti Swaroop Bhatnagar Prize is awarded by CSIR. This directly links the person (Bhatnagar) to the institution (CSIR).

16. Which of the following atmospheric gas does not dissolve in water at standard temperature and pressure conditions?

- (A) Oxygen
- (B) Carbon dioxide
- (C) Nitrogen
- (D) Chlorine

Correct Answer: (C) Nitrogen

Solution:

Step 1: Understanding the Concept

The question asks to identify which of the given atmospheric gases has the lowest solubility in water under standard conditions. Solubility of a gas in a liquid depends on factors like the nature of the gas, temperature, and pressure.

Step 2: Detailed Explanation

Let's analyze the solubility of each gas in water:

- **Oxygen (O_2):** It is slightly soluble in water, which is crucial for aquatic life. Its solubility is about 9 mg/L at 20°C.
- **Carbon dioxide (CO_2):** It is moderately soluble in water. It reacts with water to form carbonic acid (H_2CO_3), which increases its solubility. This is the reason for the fizz in carbonated drinks.
- **Nitrogen (N_2):** It is the most abundant gas in the atmosphere (about 78%). However, it is very poorly soluble in water due to the strong triple bond between the two nitrogen atoms, which makes the molecule very stable and non-polar.

- **Chlorine (Cl₂):** It is quite soluble in water and reacts with it to form hydrochloric acid (HCl) and hypochlorous acid (HOCl).

Comparing the four, nitrogen has the lowest solubility in water under standard conditions.

Step 3: Final Answer

Among the given options, Nitrogen is the gas that does not readily dissolve in water at standard temperature and pressure. Therefore, option (C) is the correct answer.

💡 Quick Tip

Remember Henry's Law, which states that the solubility of a gas in a liquid is directly proportional to the partial pressure of the gas above the liquid. However, the intrinsic solubility (Henry's Law constant) varies greatly between gases. Gases that can react with water (like CO₂ and Cl₂) tend to be more soluble than non-reactive, non-polar gases like N₂.

17. Who coined the word 'ecology'.

- (A) Earnest Haeckel
- (B) Charles Darwin
- (C) Gregory Mandel
- (D) John Barker

Correct Answer: (A) Earnest Haeckel

Solution:

Step 1: Understanding the Concept

The question asks to identify the scientist who first introduced the term 'ecology'. This is a question about the history of biological science.

Step 2: Detailed Explanation

The term 'ecology' (Ökologie) was coined in 1866 by the German scientist **Ernst Haeckel**. He derived it from the Greek words 'oikos' (meaning house or dwelling) and 'logos' (meaning study or discourse). Haeckel defined ecology as the study of the relationship of organisms with their environment.

The other scientists listed are known for different contributions:

- **Charles Darwin:** Proposed the theory of evolution by natural selection.
- **Gregor Mendel:** Known as the "father of modern genetics" for his work on pea plants.

- **John Barker:** Not a widely recognized figure in the context of coining major biological terms like ecology.

Step 3: Final Answer

The word 'ecology' was coined by Ernst Haeckel. Therefore, option (A) is the correct answer.

💡 Quick Tip

For questions about the origin of scientific terms, focus on the key figures who founded or defined major fields. Ernst Haeckel is a central figure in the history of ecology, just as Mendel is for genetics and Darwin is for evolution.

18. In the pyramid of biomass, which among the following will have the highest biomass?

- (A) Primary Producer
- (B) Primary Consumer
- (C) Secondary Consumer
- (D) Tertiary Consumer

Correct Answer: (A) Primary Producer

Solution:

Step 1: Understanding the Concept

The question is about the ecological pyramid of biomass. A pyramid of biomass represents the total dry weight (biomass) of all organisms at each trophic level in an ecosystem.

Step 2: Detailed Explanation

In most terrestrial ecosystems, the pyramid of biomass is upright. This means that the biomass decreases as you move up the food chain from lower to higher trophic levels.

The trophic levels are:

- **Primary Producers (Trophic Level 1):** These are autotrophs, like plants, that produce their own food. They form the base of the pyramid and have the largest total biomass because they support all other levels.
- **Primary Consumers (Trophic Level 2):** These are herbivores that feed on primary producers. Their total biomass is less than that of the producers.
- **Secondary Consumers (Trophic Level 3):** These are carnivores or omnivores that feed on primary consumers. Their biomass is less than that of the primary consumers.

- **Tertiary Consumers (Trophic Level 4):** These are top predators that feed on secondary consumers. They have the smallest biomass.

This decrease in biomass occurs because only about 10% of the energy from one trophic level is transferred to the next. The rest is lost as heat or used for metabolic processes. Since biomass is a store of energy, it also decreases at each successive level.

Step 3: Final Answer

The Primary Producers form the base of the pyramid and have the highest biomass. Therefore, option (A) is correct.

💡 Quick Tip

Remember the "10% rule" of energy transfer in ecosystems. Because so much energy is lost at each step, the biomass that can be supported at each higher level is progressively smaller. This naturally leads to an upright pyramid of biomass in most ecosystems.

19. Which of the following physical processes is responsible for the blue color of the sky?

- (A) Absorption of solar radiation by air molecules
- (B) Total internal reflection of solar radiations by clouds
- (C) Scattering of solar radiation by air molecules and particles
- (D) Dispersion of solar radiations by clouds

Correct Answer: (C) Scattering of solar radiation by air molecules and particles

Solution:

Step 1: Understanding the Concept

The question asks for the physical phenomenon that explains why the sky appears blue on a clear day. This relates to the interaction of sunlight with the Earth's atmosphere.

Step 2: Detailed Explanation

The blue color of the sky is due to a phenomenon called **Rayleigh scattering**.

Sunlight is composed of a spectrum of colors (VIBGYOR - Violet, Indigo, Blue, Green, Yellow, Orange, Red). When this white light enters the Earth's atmosphere, it interacts with the tiny gas molecules (mostly nitrogen and oxygen) and other fine particles, which are much smaller than the wavelength of visible light.

According to Rayleigh scattering, the amount of scattering is inversely proportional to the fourth power of the wavelength ($Scattering \propto 1/\lambda^4$). This means that shorter wavelengths are scattered much more effectively than longer wavelengths.

Blue and violet light have the shortest wavelengths, so they are scattered the most in all directions by the air molecules. Our eyes are more sensitive to blue light than violet light, so we perceive the sky as blue.

The other options are incorrect:

- **Absorption** would mean the light energy is converted to heat, not re-emitted as colored light.
- **Total internal reflection** is responsible for phenomena like the twinkling of stars or the shimmering of a mirage, not the color of the sky.
- **Dispersion** is the splitting of white light into its constituent colors, as seen in a rainbow, and it requires a medium like a prism or water droplets, not just air molecules.

Step 3: Final Answer

The sky is blue due to the scattering of solar radiation by air molecules and particles. Option (C) is the correct answer.

💡 Quick Tip

Remember the key difference: Scattering makes the sky blue (shorter wavelengths scattered more) and sunsets red (longer wavelengths pass through to our eyes when the sun is low). Dispersion creates rainbows. Absorption makes things warm.

20. Microbes in a detritus food chain, which degrades the dead organic matter to meet their energy and nutrient requirement are best referred to as -----.

- (A) Autotrophs
- (B) Herbivores
- (C) Saprophytes
- (D) Heterotrophs

Correct Answer: (C) Saprophytes

Solution:

Step 1: Understanding the Concept

The question asks for the specific term for microbes that obtain nutrients by decomposing dead organic matter. This is a fundamental concept in ecology, related to nutrient cycling.

Step 2: Detailed Explanation

Let's define the terms:

- **Autotrophs:** Organisms that produce their own food, usually through photosynthesis (e.g., plants, algae). They are producers.

- **Herbivores:** Animals that feed on plants. They are primary consumers.
- **Saprotrophs (or Saprophytes):** Organisms, primarily fungi and bacteria, that get their nutrition from dead and decaying organic matter. They are a type of decomposer. The term "saprophyte" is often used for fungi and bacteria that perform this role. They secrete digestive enzymes onto the dead matter and then absorb the resulting soluble organic compounds.
- **Heterotrophs:** Organisms that cannot produce their own food and must obtain energy and nutrients by consuming other organisms. This is a very broad category that includes herbivores, carnivores, omnivores, and decomposers.

While saprophytes are a type of heterotroph, the term **saprophytes** is the most specific and accurate description for microbes that degrade dead organic matter. They are the key players in the detritus food chain.

Step 3: Final Answer

The most appropriate term for microbes that degrade dead organic matter is Saprophytes. Therefore, option (C) is the correct answer.

💡 Quick Tip

In multiple-choice questions, always look for the most specific and accurate answer. While decomposers are heterotrophs, "Saprotrophs/Saprophytes" is a more precise term for the organisms described in the question.

21. Which of the following soil type is the most suitable for plant growth?

- (A) Clayey silt
- (B) Sandy loam
- (C) Loamy
- (D) Silty Clay

Correct Answer: (C) Loamy

Solution:

Step 1: Understanding the Concept

The question asks to identify the best type of soil for general plant growth. The suitability of soil depends on its texture, which is the relative proportion of sand, silt, and clay particles.

Step 2: Detailed Explanation

Let's analyze the properties of different soil components:

- **Sand:** Large particles, which create large pore spaces. This allows for good drainage and aeration but results in poor water and nutrient retention.
- **Silt:** Medium-sized particles. Silt has better water retention than sand but can be prone to compaction.
- **Clay:** Very small particles, which create small pore spaces. This leads to high water and nutrient retention but can result in poor drainage and aeration (waterlogging).

Loamy soil is considered the ideal soil for most plants because it contains a balanced mixture of sand, silt, and clay (typically about 40% sand, 40% silt, and 20% clay). This combination provides the best of all worlds:

- Good drainage and aeration from the sand.
- Good water and nutrient retention from the clay and silt.
- It is easy to work with (good tilth).

Other options like Sandy loam, Clayey silt, and Silty Clay are variations that lean towards the properties of one component, making them less ideal than a well-balanced loamy soil.

Step 3: Final Answer

Loamy soil is the most suitable for plant growth due to its balanced composition of sand, silt, and clay. Therefore, option (C) is the correct answer.

💡 Quick Tip

To remember the best soil type, think of the "Goldilocks" principle. Sandy soil is "too porous," clayey soil is "too dense," but loamy soil is "just right" with a balanced mix of properties for most plants.

22. Match List-I with List-II

List-I (Name of Interaction)	List-II (Species A, Species B)
(A). Mutualism	(I). +, -
(B). Commensalism	(II). +, +
(C). Competition	(III). +, 0
(D). Predation	(IV). -, -

Choose the correct answer from the options given below:

(A) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)

- (B) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
 (C) (A) - (II), (B) - (IV), (C) - (III), (D) - (I)
 (D) (A) - (II), (B) - (III), (C) - (I), (D) - (IV)

Correct Answer: (B) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)

Solution:

Step 1: Understanding the Concept

The question requires matching different types of ecological interactions with the symbols that represent their effect on the two interacting species. The symbols used are:

- **+**: The species benefits from the interaction.
- **-**: The species is harmed by the interaction.
- **0**: The species is unaffected by the interaction.

Step 2: Detailed Explanation

Let's define each interaction and determine its symbolic representation:

- **(A) Mutualism:** An interaction where both species benefit. For example, bees pollinating flowers. The representation is **(+, +)**, which corresponds to **(II)**.
- **(B) Commensalism:** An interaction where one species benefits and the other is unaffected. For example, barnacles on a whale. The representation is **(+, 0)**, which corresponds to **(III)**.
- **(C) Competition:** An interaction where both species are harmed as they compete for the same limited resources. The representation is **(-, -)**, which corresponds to **(IV)**.
- **(D) Predation:** An interaction where one species (the predator) benefits by hunting and killing another species (the prey), which is harmed. The representation is **(+, -)**, which corresponds to **(I)**.

Step 3: Final Combination

The correct pairings are:

- A - II
- B - III

- C - IV
- D - I

This combination is found in option (B).

💡 Quick Tip

Create a small table of ecological interactions (Mutualism, Commensalism, Competition, Predation, Parasitism, Amensalism) and their (+, -, 0) symbols. Visualizing this table can help you answer matching questions quickly and accurately.

23. Arrange the following coal types in the increasing order of their heat content (KJ/kg)

- (A). Peat
- (B). Lignite
- (C). Anthracite
- (D). Bituminous
- (E) Sub-bituminous

Choose the correct answer from the options given below:

- (A) (A), (B), (C), (D), (E)
- (B) (A), (B), (E), (D), (C)
- (C) (C), (D), (E), (B), (A)
- (D) (A), (B), (D), (E), (C)

Correct Answer: (B) (A), (B), (E), (D), (C)

Solution:

Step 1: Understanding the Concept

The question asks to arrange different types of coal in increasing order of their heat content (calorific value). This order corresponds to the rank of coal, which is determined by the degree of metamorphism or "coalification" it has undergone.

Step 2: Detailed Explanation

The process of coal formation from dead plant matter (peat) involves burial under sediment, leading to increased pressure and temperature over millions of years. This process drives off moisture and volatile matter, increasing the concentration of carbon. Higher carbon content results in higher heat content. The ranks of coal from lowest to highest are:

1. **(A) Peat:** This is not technically coal but is the precursor to coal. It has a very high moisture content and the lowest carbon content and heat value.

2. **(B) Lignite:** Also known as brown coal. It is the lowest rank of coal, with low carbon content and high moisture. It has a low heat content.
3. **(E) Sub-bituminous:** This coal is an intermediate stage between lignite and bituminous coal. Its properties are between the two.
4. **(D) Bituminous:** This is a common type of coal with a high heating value. It is used extensively for electricity generation and making coke for the steel industry.
5. **(C) Anthracite:** This is the highest rank of coal. It is a hard, brittle, black lustrous coal, often referred to as hard coal. It has the highest carbon content, the lowest moisture, and the highest heat content.

Step 3: Chronological Arrangement

The correct order of increasing heat content is:

Peat < Lignite < Sub-bituminous < Bituminous < Anthracite

This corresponds to the sequence: (A), (B), (E), (D), (C).

Step 4: Final Answer

The correct sequence is (A), (B), (E), (D), (C), which matches option (B).

💡 Quick Tip

A useful mnemonic to remember the increasing rank of coal is "PLAYful Babies Seldom Bite Ants" for Peat, Lignite, Sub-bituminous, Bituminous, Anthracite. The rank directly corresponds to the heat content.

24. In which of the following layers of atmosphere, does the temperature decrease with the increase in height from the earth's surface?

- (A). Troposphere
- (B). Mesosphere
- (C). Thermosphere
- (D). Stratosphere

Choose the correct answer from the options given below:

- (A) (A), (B) and (D) only.
- (B) (A) and (B) only.
- (C) (A) and (D) only
- (D) (B), (C) and (D) only.

Correct Answer: (B) (A) and (B) only.

Solution:

Step 1: Understanding the Concept

The question asks to identify the layers of the Earth's atmosphere where the temperature decreases as altitude (height) increases. This relates to the thermal structure of the atmosphere.

Step 2: Detailed Explanation

The Earth's atmosphere is divided into layers based on how temperature changes with altitude. Let's examine each layer starting from the ground up:

- **(A) Troposphere (0 to 12 km):** This is the lowest layer, where we live and where weather occurs. Temperature **decreases** with increasing height. This is because the primary source of heat is the Earth's surface, which absorbs solar radiation and warms the air above it. The rate of decrease is called the environmental lapse rate.
- **(D) Stratosphere (12 to 50 km):** Above the troposphere, the temperature begins to **increase** with height. This is due to the presence of the ozone layer, which absorbs harmful ultraviolet (UV) radiation from the sun, warming this layer.
- **(B) Mesosphere (50 to 85 km):** Above the stratosphere, the temperature once again **decreases** with increasing height. This is because there is no ozone to absorb UV radiation, and the air is extremely thin. It is the coldest layer of the atmosphere.
- **(C) Thermosphere (85 km and above):** In this outermost layer, the temperature **increases** dramatically with height. This is due to the absorption of high-energy solar radiation (X-rays and UV) by the few gas molecules present.

So, the temperature decreases with height in the Troposphere and the Mesosphere.

Step 3: Final Answer

The layers where temperature decreases with an increase in height are the Troposphere (A) and the Mesosphere (B). This corresponds to option (B).

💡 Quick Tip

Remember the temperature profile of the atmosphere by visualizing a zigzag line going up from the ground: Down (Troposphere), Up (Stratosphere), Down (Mesosphere), Up (Thermosphere).

25. Choose the correct statement from the following:

- (A). Water has highest density at 4°C
- (B). Freezing point of water is 0°C

- (C) An Ice cube does not completely dip in water, rather floats on water in a glass.
(D). Addition of common salt reduces freezing point of water.

Choose the correct answer from the options given below:

- (A) (A), (B) and (D) only.
(B) (B), (C) and (D) only.
(C) (A), (B), (C) and (D).
(D) (A), (B) and (C) only.

Correct Answer: (C) (A), (B), (C) and (D).

Solution:

Step 1: Understanding the Concept

The question asks to evaluate the correctness of four statements related to the physical properties of water.

Step 2: Detailed Explanation

Let's analyze each statement:

- **(A) Water has highest density at 4°C:** This is a well-known anomalous property of water. As water cools, it contracts and becomes denser until it reaches approximately 4°C. Below this temperature, it starts to expand and become less dense due to the formation of an open crystalline structure. This statement is **correct**.
- **(B) Freezing point of water is 0°C:** At standard atmospheric pressure (1 atm), pure water freezes to become ice at 0 degrees Celsius (or 32 degrees Fahrenheit). This statement is **correct**.
- **(C) An Ice cube does not completely dip in water, rather floats on water in a glass:** This is a direct consequence of statement (A). Because water expands as it freezes, solid ice is less dense than liquid water. According to Archimedes' principle, an object less dense than the fluid it is in will float. Therefore, an ice cube floats on water. This statement is **correct**.
- **(D) Addition of common salt reduces freezing point of water:** This phenomenon is known as freezing-point depression. When a solute (like salt, NaCl) is dissolved in a solvent (like water), it disrupts the formation of the solvent's crystal lattice, requiring a lower temperature for it to freeze. This is why salt is used to de-ice roads in winter. This statement is **correct**.

Step 3: Final Answer

All four statements (A), (B), (C), and (D) are scientifically correct. Therefore, the correct option is (C).

 Quick Tip

The unique properties of water, such as its anomalous expansion (max density at 4°C), high specific heat, and solvent capabilities, are fundamental concepts in chemistry and physics and are frequent topics in exams. Ensure you understand why these properties occur and their real-world implications (e.g., ice floating, salt on roads).

26. Which of the following variables are included in the Human Poverty Index?

- (A). The probability of not surviving till the age of 40.
- (B). The adult illiteracy rate.
- (C). The number of people who do not have access to clean water.
- (D). The number of small children who are underweight.

Choose the correct answer from the options given below:

- (A) (A), (B) and (D) only.
- (B) (A), (B) and (C) only.
- (C) (A), (B), (C) and (D).
- (D) (B), (C) and (D) only.

Correct Answer: (C) (A), (B), (C) and (D).

Solution:

Step 1: Understanding the Concept

The question asks about the components of the Human Poverty Index (HPI). The HPI was introduced by the United Nations Development Programme (UNDP) to measure deprivation in a country. It focused on three essential elements of human life already reflected in the Human Development Index (HDI): longevity, knowledge, and a decent standard of living.

Step 2: Detailed Explanation

The Human Poverty Index for developing countries (HPI-1) was a composite index that measured the following three dimensions of deprivation:

1. **Deprivation in a long and healthy life:** This was measured by the probability at birth of not surviving to age 40. This corresponds to statement **(A)**.
2. **Deprivation in knowledge:** This was measured by the adult illiteracy rate. This corresponds to statement **(B)**.
3. **Deprivation in a decent standard of living:** This was a composite variable measured by the percentage of the population without access to safe water and the percentage of underweight children under five. This corresponds to statements **(C)** and **(D)**.

Since all four statements represent variables that were included in the calculation of the HPI-1, all of them are correct.

Step 3: Final Answer

All the given variables (A), (B), (C), and (D) were components used to calculate the Human Poverty Index. Therefore, option (C) is the correct answer.

Quick Tip

The Human Poverty Index (HPI) was replaced by the Multidimensional Poverty Index (MPI) in 2010. While the HPI focused on deprivations in three dimensions, the MPI uses ten indicators across health, education, and living standards. Knowing the components of both indices is useful for exams.

27. The nature of goods and services denotes which of the following terms in international trade?

- (A) Volume of trade
- (B) Composition of trade
- (C) Direction of trade
- (D) Balance of trade

Correct Answer: (B) Composition of trade

Solution:

Step 1: Understanding the Concept

The question asks to identify the correct term in international trade that describes the types or nature of goods and services being traded.

Step 2: Detailed Explanation

Let's define the given terms:

- **Volume of trade:** Refers to the total quantity or value of goods and services traded between countries. It measures 'how much' is being traded.
- **Composition of trade:** Refers to the 'what' of trade – the specific types, kinds, or nature of goods and services that a country exports and imports. For example, whether a country primarily exports raw materials and imports manufactured goods.
- **Direction of trade:** Refers to the countries with which a nation trades. It answers 'with whom' a country is trading, identifying its major trading partners for exports and imports.
- **Balance of trade:** Refers to the difference between the value of a country's exports and the value of its imports over a specific period. It can be a surplus, deficit, or in balance.

The phrase "nature of goods and services" directly aligns with the definition of Composition of trade.

Step 3: Final Answer

The term that denotes the nature of goods and services in international trade is the Composition of trade. Therefore, option (B) is correct.

💡 Quick Tip

To easily remember these terms, associate them with question words: Volume (How much?), Composition (What?), Direction (With whom?), and Balance (What is the difference?).

28. Which of the following characteristics of a population is correct, if the population pyramid of that population has a narrow base and a tapered top?

- (A) High birth and high death rate
- (B) Low birth rate and low death rate
- (C) High birth and low death rate
- (D) Low birth rate and high death rate

Correct Answer: (B) Low birth rate and low death rate

Solution:

Step 1: Understanding the Concept

The question asks to interpret the characteristics of a population based on the shape of its population pyramid. A population pyramid is a graphical illustration of the age and sex distribution of a population.

Step 2: Detailed Explanation

Let's analyze the features of the described pyramid:

- **Narrow base:** The base of the pyramid represents the youngest age groups (children). A narrow base indicates that there are fewer young people compared to the older age groups. This is a direct result of a **low birth rate**.
- **Tapered top:** The top of the pyramid represents the oldest age groups. A tapered top is a natural feature of all populations, as the number of people decreases in older age groups due to mortality. In a population with a low birth rate, we typically also find a **low death rate** (high life expectancy) due to better healthcare, nutrition, and living conditions. This results in a pyramid that tapers gradually and has a broader top section compared to a pyramid with a high death rate. This type of pyramid is often called 'constrictive' or 'stationary' and is characteristic of developed countries with stable or declining populations.

Combining these observations, a narrow base and a tapered top (implying a low mortality rate) correspond to a population with a low birth rate and a low death rate.

Step 3: Final Answer

The described population pyramid shape signifies a low birth rate and a low death rate. Therefore, option (B) is the correct answer.

💡 Quick Tip

Remember the general shapes of population pyramids:

- Expansive (classic pyramid shape): Broad base, sharp taper. High birth rate, high death rate.
- Stationary (beehive or rectangular shape): Narrower base, tapers slowly. Low birth rate, low death rate.
- Constrictive (urn shape): Base is narrower than the middle. Very low birth rate, low death rate (aging population).

29. Who coined the term 'Sanskritization'?

- (A) G. S. Ghurye
- (B) M. N. Srinivas
- (C) Radha Kamal Mukharjee
- (D) D. P. Mukharjee

Correct Answer: (B) M. N. Srinivas

Solution:

Step 1: Understanding the Concept

The question asks to identify the sociologist who introduced the term 'Sanskritization'. This is a key concept in the study of Indian sociology and social mobility.

Step 2: Detailed Explanation

M. N. Srinivas (Mysore Narasimhachar Srinivas) was a pioneering Indian sociologist and social anthropologist. In his studies of social change in India, particularly in his book "Religion and Society Among the Coorgs of South India" (1952), he coined and defined the term '**Sanskritization**'.

Sanskritization refers to a process of social mobility where people from lower castes or tribes adopt the rituals, customs, and way of life of the upper or dominant castes to improve their social standing. It is a form of cultural change aimed at upward mobility within the caste hierarchy.

Step 3: Final Answer

The term 'Sanskritization' was coined by M. N. Srinivas. Thus, option (B) is correct.

💡 Quick Tip

Associate key sociological terms with their proponents. M. N. Srinivas is strongly linked to 'Sanskritization' and 'Dominant Caste'. G. S. Ghurye is known as one of the founding fathers of Indian sociology and did extensive work on caste and race.

30. Which of the following is a Christian majority state in India?

- (A) Meghalaya
- (B) Tripura
- (C) Kerala
- (D) Sikkim

Correct Answer: (A) Meghalaya

Solution:

Step 1: Understanding the Concept

The question asks to identify which of the given Indian states has a population where Christianity is the majority religion. This requires knowledge of the religious demographics of India.

Step 2: Detailed Explanation

Based on the 2011 Census of India, the religious demographics of the states listed are as follows:

- **Meghalaya:** Christians form the majority, accounting for approximately 74.59% of the population.
- **Tripura:** Hinduism is the majority religion, with about 83.4% of the population being Hindu.
- **Kerala:** While Kerala has a significant Christian population (about 18.4%), Hinduism is the majority religion at about 54.7%.
- **Sikkim:** Hinduism is the majority religion (about 57.8%), followed by Buddhism (about 27.4%).

Three states in India have Christian majorities: Nagaland, Mizoram, and Meghalaya.

Step 3: Final Answer

Among the given options, Meghalaya is the only state with a Christian majority population. Therefore, option (A) is the correct answer.

💡 Quick Tip

For demographic questions, it's helpful to remember the states with unique religious majorities or significant minorities. For instance, Punjab is a Sikh-majority state, Jammu Kashmir (now a UT) was a Muslim-majority state, and Nagaland, Mizoram, and Meghalaya are Christian-majority states.

31. Which of the following powers and responsibility are delegated to Panchayats?

- (A). to prepare plans and schemes for economic development
- (B). to promote schemes that will enhance social justice
- (C). to levy, collect and appropriate taxes, duties, tolls and fees
- (D). to help in the devolution of governmental responsibilities especially that of finances to local authorities

Choose the correct answer from the options given below:

- (A) (A), (B) and (D) only.
- (B) (A), (B) and (C) only.
- (C) (A), (B), (C) and (D).
- (D) (B), (C) and (D) only.

Correct Answer: (B) (A), (B) and (C) only.

Solution:

Step 1: Understanding the Concept

The question asks about the specific powers and responsibilities delegated to Panchayats under the Indian Constitution, specifically after the 73rd Amendment Act of 1992.

Step 2: Detailed Explanation

Let's analyze each statement based on the constitutional provisions:

- **(A) to prepare plans and schemes for economic development:** This is a core function of Panchayats as mandated by Article 243G of the Constitution. They are responsible for the preparation of plans for economic development and social justice. This statement is **correct**.
- **(B) to promote schemes that will enhance social justice:** This is the other part of the core function mentioned in Article 243G. Panchayats are tasked with the implementation of schemes for social justice. This statement is **correct**.
- **(C) to levy, collect and appropriate taxes, duties, tolls and fees:** Article 243H empowers the Legislature of a State to authorize a Panchayat to levy, collect, and appropriate such taxes, duties, tolls, and fees. This is a key aspect of their financial autonomy. This statement is **correct**.

- **(D) to help in the devolution of governmental responsibilities...:** This statement describes the *objective* of the Panchayati Raj system itself, which is the devolution of power. It is the role of the State Governments and State Finance Commissions to ensure this devolution. It is not a power or responsibility delegated *to* the Panchayat. The Panchayat is the *recipient* of this devolution, not the enabler of it. Therefore, this statement does not represent a direct power or responsibility of the Panchayat in the same way as A, B, and C do.

Step 3: Final Answer

Statements (A), (B), and (C) accurately describe the powers and responsibilities delegated to Panchayats. Statement (D) describes the principle behind the system rather than a function of the Panchayat itself. Thus, the best choice is option (B).

Quick Tip

Remember the key articles related to Panchayats: Article 243G (Powers, authority and responsibilities) and Article 243H (Powers to impose taxes). These two articles cover the core functions and financial powers of the Panchayati Raj Institutions.

32. Which of the following is not a feature of social movement?

- (A) Sustained collective action
- (B) Degree of organization
- (C) Leadership and structure
- (D) Support of government and state

Correct Answer: (D) Support of government and state

Solution:

Step 1: Understanding the Concept

The question asks to identify which of the given options is not a characteristic feature of a social movement. A social movement is a type of group action aimed at bringing about or resisting social change.

Step 2: Detailed Explanation

Let's examine the defining features of a social movement:

- **Sustained collective action:** This is a core feature. Social movements are not isolated, spontaneous events but are collective efforts that persist over a considerable period. This is a feature.
- **Degree of organization:** To sustain collective action, some level of organization is necessary. This can range from informal networks to highly formal structures. This is a feature.

- **Leadership and structure:** Social movements typically have leaders (who may be formal or informal) and a structure that helps in mobilizing members, defining goals, and strategizing actions. This is a feature.
- **Support of government and state:** This is **not** a defining feature. In fact, social movements often emerge to challenge or protest against the policies, actions, or inaction of the government and the state. They typically operate outside of state institutions and may be in direct opposition to them. While some movements may eventually gain government support, it is not a prerequisite or a defining characteristic.

Step 3: Final Answer

The support of the government and state is not a necessary feature of a social movement; often, the opposite is true. Therefore, option (D) is the correct answer.

💡 Quick Tip

Think of famous social movements like the Indian Independence Movement, the Civil Rights Movement in the US, or recent environmental movements. They were characterized by sustained collective action, organization, and leadership, and they were often in direct conflict with the state authorities.

33. Identify the sequence of art forms in India from East to West:

- (A). Bhaona
- (B). Jatra
- (C). Ramlila
- (D). Dashavatar
- (E). Maach

Choose the correct answer from the options given below:

- (A) (A), (B), (D), (E), (C).
- (B) (B), (A), (C), (E), (D).
- (C) (A), (B), (C), (E), (D).
- (D) (E), (B), (D), (C), (A).

Correct Answer: (C) (A), (B), (C), (E), (D).

Solution:

Step 1: Understanding the Concept

The question requires arranging five traditional Indian folk theatre forms in geographical order from East to West based on their state of origin.

Step 2: Detailed Explanation

Let's identify the geographical location of each art form:

- **(A) Bhaona:** A traditional theatre form originating in **Assam**, which is in the Northeast of India (Easternmost among the options).
- **(B) Jatra:** A popular folk theatre form from **West Bengal** and Odisha, located to the west of Assam.
- **(C) Ramlila:** A widely performed folk theatre based on the Ramayana, most prominent in the Hindi belt, particularly **Uttar Pradesh**, which is to the west of West Bengal.
- **(E) Maach:** The traditional theatre form of the Malwa region of **Madhya Pradesh**, which lies to the west/south-west of Uttar Pradesh.
- **(D) Dashavatar:** A traditional folk theatre form of the Konkan region, specifically Southern **Maharashtra** and Goa, which is the westernmost location among all the options.

Step 3: Arranging in East-to-West Sequence

Based on the locations, the correct sequence from East to West is:

1. Bhaona (Assam)
2. Jatra (West Bengal)
3. Ramlila (Uttar Pradesh)
4. Maach (Madhya Pradesh)
5. Dashavatar (Maharashtra/Goa)

This corresponds to the order (A), (B), (C), (E), (D).

Step 4: Final Answer

The correct East to West sequence is (A), (B), (C), (E), (D), which matches option (C).

💡 Quick Tip

For geography-based sequencing questions, it's very helpful to visualize the map of India. Pinpointing the state of origin for each cultural item (dance, festival, art form) on a mental map makes arranging them in order (North-South or East-West) much easier.

34. Which of the following ideas does the concept of 'Sustainability' in Human Development refer to ?

- (A). Continuity in the availability of opportunities.
- (B). Each future generation must have higher opportunities (At least double) than their previous generation.
- (C). All environmental, financial and human resources must be used keeping in mind the future
- (D). Each generation must ensure the availability of choices and opportunities to

its future generations.

Choose the correct answer from the options given below:

- (A) (A), (B) and (C) only.
- (B) (A), (C) and (D) only.
- (C) (A), (B), (C) and (D).
- (D) (B), (C) and (D) only.

Correct Answer: (B) (A), (C) and (D) only.

Solution:

Step 1: Understanding the Concept

The question asks for the core ideas behind the concept of 'Sustainability' within the context of Human Development. Sustainability, in this context, refers to inter-generational equity.

Step 2: Detailed Explanation

Let's analyze each statement:

- **(A) Continuity in the availability of opportunities:** This is a central tenet of sustainable development. It means that the opportunities (social, economic, environmental) available to the present generation should also be available to future generations. This statement is **correct**.
- **(B) Each future generation must have higher opportunities (At least double) than their previous generation:** This is an incorrect and overly rigid interpretation. Sustainability ensures that future generations have opportunities that are *at least as good as* the current generation. It does not mandate a specific rate of growth like "doubling." The primary goal is non-depletion of opportunities. This statement is **incorrect**.
- **(C) All environmental, financial and human resources must be used keeping in mind the future:** This is the essence of sustainable resource management. It implies that current consumption and use of resources should not compromise the ability of future generations to meet their own needs. This statement is **correct**.
- **(D) Each generation must ensure the availability of choices and opportunities to its future generations:** This is another way of expressing the principle of inter-generational equity and is a core idea of sustainability. This statement is **correct**.

Step 3: Final Answer

Statements (A), (C), and (D) accurately describe the concept of sustainability in human development. Statement (B) is an exaggeration of the principle. Therefore, the correct option is (B).

💡 Quick Tip

The most famous definition of sustainable development comes from the Brundtland Report (1987): "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Keep this core principle in mind when evaluating statements about sustainability.

35. Who was the founder of the Indian National Congress?

- (A) Mahatma Gandhi
- (B) Jawahar Lal Nehru
- (C) A. O. Hume
- (D) Bal Gangadhar Tilak

Correct Answer: (C) A. O. Hume

Solution:

Step 1: Understanding the Concept

The question asks to identify the founder of the Indian National Congress (INC), one of the oldest political parties in India.

Step 2: Detailed Explanation

The Indian National Congress was founded on 28 December 1885 at Gokuldas Tejpal Sanskrit College in Bombay. While it was a collective effort of many Indian leaders and intellectuals, the primary initiative for its establishment came from **Allan Octavian Hume**, a retired British member of the Indian Civil Service (ICS). He served as the first General Secretary of the INC. The first session was presided over by Womesh Chunder Bonnerjee. The other individuals listed became prominent leaders of the INC at later stages of the Indian independence movement.

Step 3: Final Answer

The founder of the Indian National Congress was A. O. Hume. Therefore, option (C) is the correct answer.

💡 Quick Tip

For questions about the INC, remember these key facts:

- **Founder:** A. O. Hume (1885)
- **First President:** W. C. Bonnerjee (Bombay, 1885)
- **First Woman President:** Annie Besant (Calcutta, 1917)
- **First Indian Woman President:** Sarojini Naidu (Kanpur, 1925)

36. The difference between two numbers is 16. If one-third of the smaller number is greater than one-seventh of the larger number by 4, then what is the larger number?

- (A) 33
- (B) 46
- (C) 49
- (D) 54

Correct Answer: (C) 49

Solution:

Step 1: Understanding the Concept

This is a word problem that can be solved by setting up a system of two linear equations with two variables based on the given conditions.

Step 2: Key Formula or Approach

Let the larger number be L and the smaller number be S . We translate the given statements into equations.

1. "The difference between two numbers is 16":

$$L - S = 16$$

2. "one-third of the smaller number is greater than one-seventh of the larger number by 4":

$$\frac{1}{3}S = \frac{1}{7}L + 4$$

Step 3: Detailed Explanation

From the first equation, we can express S in terms of L :

$$S = L - 16$$

Now, substitute this expression for S into the second equation:

$$\frac{1}{3}(L - 16) = \frac{1}{7}L + 4$$

To eliminate the fractions, we can multiply the entire equation by the least common multiple (LCM) of 3 and 7, which is 21:

$$\begin{aligned} 21 \times \frac{1}{3}(L - 16) &= 21 \times \frac{1}{7}L + 21 \times 4 \\ 7(L - 16) &= 3L + 84 \end{aligned}$$

Distribute the 7 on the left side:

$$7L - 112 = 3L + 84$$

Now, gather the L terms on one side and the constant terms on the other:

$$\begin{aligned} 7L - 3L &= 84 + 112 \\ 4L &= 196 \end{aligned}$$

Finally, solve for L :

$$L = \frac{196}{4}$$
$$L = 49$$

The larger number is 49. We can find the smaller number: $S = 49 - 16 = 33$.

Let's check the second condition: $\frac{1}{3}S = \frac{1}{3}(33) = 11$. And $\frac{1}{7}L = \frac{1}{7}(49) = 7$. Is 11 greater than 7 by 4? Yes, $11 - 7 = 4$. The solution is correct.

Step 4: Final Answer

The larger number is 49. Therefore, option (C) is the correct answer.

💡 Quick Tip

After setting up the initial equations, the quickest way to solve is often substitution. Express one variable in terms of the other from the simpler equation and substitute it into the more complex one. Remember to check your final answer against the original problem statement.

37. A man completes $\frac{5}{8}$ part of a job in 10 days. At this rate, how many more days will he take to complete the job?

- (A) 5
- (B) 6
- (C) 7
- (D) 8

Correct Answer: (B) 6

Solution:

Step 1: Understanding the Concept

This is a work and time problem that can be solved using the unitary method. We need to find the time required to complete the remaining part of the job.

Step 2: Key Formula or Approach

1. Calculate the work remaining.
2. Calculate the rate of work (work done per day).
3. Use the rate to find the time needed for the remaining work.

Step 3: Detailed Explanation

The man completes $\frac{5}{8}$ of the job in 10 days.

First, let's find the time it would take to complete the entire job.

If $\frac{5}{8}$ of the job takes 10 days,

Then $\frac{1}{8}$ of the job takes $\frac{10}{5} = 2$ days.

The whole job ($\frac{8}{8}$) would take $8 \times 2 = 16$ days.

Now, let's calculate the remaining work.

Total work = 1

Work done = $\frac{5}{8}$

Remaining work = $1 - \frac{5}{8} = \frac{8}{8} - \frac{5}{8} = \frac{3}{8}$

Finally, let's find the time required to complete the remaining work.

We know that it takes 2 days to complete $\frac{1}{8}$ of the job.

So, to complete $\frac{3}{8}$ of the job, it will take:

$$\text{Time required} = 3 \times (\text{time for } \frac{1}{8} \text{ of the job}) = 3 \times 2 = 6 \text{ days}$$

Step 4: Final Answer

The man will take 6 more days to complete the job. Therefore, option (B) is the correct answer.

💡 Quick Tip

A quick shortcut: The ratio of work is proportional to the ratio of time. Work done : Remaining work = $\frac{5}{8} : \frac{3}{8} = 5 : 3$. So, Time taken : Time remaining = $5 : 3$. If 5 parts of time = 10 days, then 1 part = 2 days. Therefore, 3 parts of time = $3 \times 2 = 6$ days.

38. A car covers 4 successive stretches of 3 km each at speed of 10 kmph, 20 kmph, 30 kmph and 60 kmph respectively. The average speed of the car for the entire journey is:

- (A) 15 kmph
- (B) 20 kmph
- (C) 25 kmph
- (D) 35 kmph

Correct Answer: (B) 20 kmph

Solution:

Step 1: Understanding the Concept

The problem asks for the average speed of a car that travels four equal distances at different speeds. The average speed is calculated as the total distance divided by the total time taken.

Step 2: Key Formula or Approach

$$\text{Average Speed} = \frac{\text{Total Distance}}{\text{Total Time}}$$

Since the distance for each stretch is the same, the average speed is the harmonic mean of the individual speeds. For four speeds s_1, s_2, s_3, s_4 , the formula for average speed is:

$$\text{Average Speed} = \frac{4}{\frac{1}{s_1} + \frac{1}{s_2} + \frac{1}{s_3} + \frac{1}{s_4}}$$

Step 3: Detailed Explanation

Method 1: Using the Harmonic Mean Formula

The speeds are $s_1 = 10, s_2 = 20, s_3 = 30, s_4 = 60$.

$$\text{Average Speed} = \frac{4}{\frac{1}{10} + \frac{1}{20} + \frac{1}{30} + \frac{1}{60}}$$

To add the fractions in the denominator, we find the least common multiple (LCM) of 10, 20, 30, and 60, which is 60.

$$\frac{1}{10} + \frac{1}{20} + \frac{1}{30} + \frac{1}{60} = \frac{6}{60} + \frac{3}{60} + \frac{2}{60} + \frac{1}{60} = \frac{6+3+2+1}{60} = \frac{12}{60} = \frac{1}{5}$$

Now, substitute this back into the average speed formula:

$$\text{Average Speed} = \frac{4}{\frac{1}{5}} = 4 \times 5 = 20 \text{ kmph}$$

Method 2: Using Total Distance / Total Time

Distance of each stretch = 3 km.

Total Distance = 4 stretches $\times$ 3 km/stretch = 12 km.

Time for each stretch is calculated as Time = Distance / Speed.

$$t_1 = \frac{3}{10} \text{ hr}$$

$$t_2 = \frac{3}{20} \text{ hr}$$

$$t_3 = \frac{3}{30} = \frac{1}{10} \text{ hr}$$

$$t_4 = \frac{3}{60} = \frac{1}{20} \text{ hr}$$

$$\text{Total Time} = t_1 + t_2 + t_3 + t_4 = \frac{3}{10} + \frac{3}{20} + \frac{1}{10} + \frac{1}{20}$$

$$\text{Total Time} = \left(\frac{3}{10} + \frac{1}{10}\right) + \left(\frac{3}{20} + \frac{1}{20}\right) = \frac{4}{10} + \frac{4}{20} = \frac{2}{5} + \frac{1}{5} = \frac{3}{5} \text{ hr.}$$

$$\text{Average Speed} = \frac{\text{Total Distance}}{\text{Total Time}} = \frac{12}{\frac{3}{5}} = 12 \times \frac{5}{3} = 4 \times 5 = 20 \text{ kmph.}$$

Step 4: Final Answer

The average speed of the car for the entire journey is 20 kmph. Therefore, option (B) is the correct answer.

💡 Quick Tip

Whenever a journey consists of equal distances covered at different speeds, the average speed is the harmonic mean of the speeds, not the arithmetic mean. Using the harmonic mean formula is often faster than calculating total distance and total time, especially if the distance value is not simple.

39. The traffic lights at three different road crossings change after every 48 seconds, 72 seconds and 108 seconds respectively. If they all change simultaneously at 8:20:00 hours, then at what time will they again change simultaneously?

- (A) 8:25:12 hours
- (B) 8:27:12 hours
- (C) 9:25:12 hours

(D) 8:30:15 hours

Correct Answer: (B) 8:27:12 hours

Solution:

Step 1: Understanding the Concept

To find the time when the traffic lights will change simultaneously again, we need to find the least common multiple (LCM) of their individual time intervals. The LCM represents the smallest amount of time after which all three events will coincide.

Step 2: Key Formula or Approach

Calculate the LCM of the given time intervals: 48, 72, and 108 seconds.

Step 3: Detailed Explanation

We will find the LCM of 48, 72, and 108 using the prime factorization method.

First, find the prime factors of each number:

$$48 = 2 \times 24 = 2 \times 2 \times 12 = 2 \times 2 \times 2 \times 6 = 2^4 \times 3^1$$

$$72 = 2 \times 36 = 2 \times 2 \times 18 = 2 \times 2 \times 2 \times 9 = 2^3 \times 3^2$$

$$108 = 2 \times 54 = 2 \times 2 \times 27 = 2^2 \times 3^3$$

The LCM is found by taking the highest power of each prime factor present in the numbers.

Highest power of 2 is 2^4 .

Highest power of 3 is 3^3 .

$$\text{LCM} = 2^4 \times 3^3 = 16 \times 27$$

$$\text{LCM} = 432 \text{ seconds}$$

Now, we need to convert 432 seconds into minutes and seconds to add it to the initial time.

$$\frac{432}{60} = 7 \text{ with a remainder of } 12$$

So, 432 seconds is equal to 7 minutes and 12 seconds.

The lights last changed simultaneously at 8:20:00 hours.

The next simultaneous change will be after 7 minutes and 12 seconds.

New Time = 8:20:00 + 00:07:12 = 8:27:12 hours.

Step 4: Final Answer

The traffic lights will again change simultaneously at 8:27:12 hours. Therefore, option (B) is the correct answer.

💡 Quick Tip

Problems involving events that repeat at different intervals and ask when they will occur together are always solved by finding the LCM of the intervals. This applies to bells ringing, runners on a circular track, or traffic lights changing.

40. Which of the following multipliers will increase a given number by 25.3 % ?

- (A) 12.53
- (B) 1.253
- (C) 13.53
- (D) 125.3

Correct Answer: (B) 1.253

Solution:

Step 1: Understanding the Concept

The question asks for a single number (a multiplier) that, when multiplied by an original number, results in a new number that is 25.3% larger than the original.

Step 2: Key Formula or Approach

Let the original number be N .

An increase of $P\%$ on N is calculated as $N + \frac{P}{100} \times N$.

The new number can be expressed as $N \times (1 + \frac{P}{100})$.

The term $(1 + \frac{P}{100})$ is the required multiplier.

Step 3: Detailed Explanation

We are given a percentage increase of $P = 25.3\%$.

First, convert the percentage to a decimal:

$$\frac{P}{100} = \frac{25.3}{100} = 0.253$$

Now, use the formula for the multiplier:

$$\text{Multiplier} = 1 + \frac{P}{100} = 1 + 0.253 = 1.253$$

Let's verify this. If we multiply a number N by 1.253, we get:

$$N \times 1.253 = N \times (1 + 0.253) = N \times 1 + N \times 0.253 = N + (25.3\% \text{ of } N)$$

This shows that multiplying by 1.253 correctly increases the number by 25.3%.

Step 4: Final Answer

The multiplier that will increase a given number by 25.3% is 1.253. Therefore, option (B) is the correct answer.

💡 Quick Tip

To quickly find the multiplier for a percentage increase, convert the percentage to a decimal and add 1. For a 25.3% increase, the decimal is 0.253, so the multiplier is $1 + 0.253 = 1.253$. For a percentage decrease, subtract the decimal from 1. For example, a 15% decrease would have a multiplier of $1 - 0.15 = 0.85$.

41. How many liters of water should be added to a 30-liter mixture containing milk and water in the ratio 7:3 such that the resultant mixture has 40% water in it?

- (A) 5
- (B) 2
- (C) 3
- (D) 8

Correct Answer: (A) 5

Solution:

Step 1: Understanding the Concept

This is a problem based on mixtures and ratios. We first need to find the initial quantities of milk and water. Then, we set up an equation to find the amount of water that needs to be added to achieve the desired concentration.

Step 2: Key Formula or Approach

1. Calculate the initial quantities of milk and water.

Quantity of component = (Ratio of component / Sum of ratios) $\times$ Total mixture.

2. Set up the equation for the new mixture.

New percentage of water = $\frac{\text{Initial water} + \text{Added water}}{\text{Initial mixture} + \text{Added water}} \times 100$.

Step 3: Detailed Explanation

The total initial mixture is 30 liters.

The ratio of milk to water is 7:3.

The sum of the ratio parts is $7 + 3 = 10$.

Initial quantity of milk = $(\frac{7}{10}) \times 30 = 21$ liters.

Initial quantity of water = $(\frac{3}{10}) \times 30 = 9$ liters.

Check: $21 + 9 = 30$ liters.

Let x liters of water be added to the mixture.

New quantity of water = $9 + x$ liters.

New total volume of the mixture = $30 + x$ liters.

The quantity of milk remains the same, which is 21 liters.

The desired concentration of water in the new mixture is 40%.

This means the concentration of milk in the new mixture will be $100\% - 40\% = 60\%$.

We can set up the equation using either water or milk concentration. Using milk is often simpler as its quantity is unchanged.

$$\frac{\text{Quantity of Milk}}{\text{Total Mixture}} = \frac{60}{100}$$
$$\frac{21}{30 + x} = \frac{60}{100} = \frac{3}{5}$$

Now, we cross-multiply to solve for x :

$$21 \times 5 = 3 \times (30 + x)$$

$$105 = 90 + 3x$$

$$105 - 90 = 3x$$

$$15 = 3x$$

$$x = \frac{15}{3} = 5$$

So, 5 liters of water should be added.

Step 4: Final Answer

To make the water content 40%, 5 liters of water must be added to the mixture. Therefore, option (A) is correct.

💡 Quick Tip

In mixture problems where one component is added, it's often easier to set up the equation using the component whose quantity remains constant. In this case, the amount of milk did not change, which simplified the calculation.

42. If A earns $33\frac{1}{3}\%$ more than B, then how much percent does B earn less than A?

- (A) 20%
- (B) 25%
- (C) 30%
- (D) $30\frac{1}{2}\%$

Correct Answer: (B) 25%

Solution:

Step 1: Understanding the Concept

This is a percentage comparison problem. If one value is a certain percentage more than another, the second value will be a different percentage less than the first. The key is to use the correct base for the percentage calculation.

Step 2: Key Formula or Approach

1. Convert the percentage to a fraction for easier calculation. $33\frac{1}{3}\% = \frac{1}{3}$.
2. Assume a value for B's earnings (e.g., 100 or a value divisible by the fraction's denominator).
3. Calculate A's earnings based on B's.
4. Calculate the percentage difference of B with respect to A: $\frac{A-B}{A} \times 100\%$.

Step 3: Detailed Explanation

First, let's represent the percentage as a fraction.

$$33\frac{1}{3}\% = \frac{100}{3}\% = \frac{100}{3 \times 100} = \frac{1}{3}$$

This means A earns $\frac{1}{3}$ more than B.

Let's assume B's earning is 300 (a number easily divisible by 3).

B's earning = 300.

A's earning is $\frac{1}{3}$ more than B's.

Increase in earning = $\frac{1}{3} \times 300 = 100$.

A's earning = B's earning + Increase = $300 + 100 = 400$.

Now, we need to find how much percent B earns less than A.

The difference in earnings is $A - B = 400 - 300 = 100$.

The question asks "less than A", so A's earning (400) will be the base for the percentage calculation.

$$\text{Percentage less} = \frac{\text{Difference}}{\text{A's earning}} \times 100\%$$

$$\text{Percentage less} = \frac{100}{400} \times 100\% = \frac{1}{4} \times 100\% = 25\%$$

Step 4: Final Answer

B earns 25% less than A. Therefore, option (B) is correct.

Quick Tip

For this specific type of problem, if a value is $\frac{1}{x}$ more than another, the other value will be $\frac{1}{x+1}$ less than the first. Here, $33\frac{1}{3}\% = \frac{1}{3}$. So, B is $\frac{1}{3+1} = \frac{1}{4}$ less than A. And $\frac{1}{4}$ is 25%.

43. If the average of six consecutive even numbers is 13, then the average of the next three even numbers is:

- (A) 18
- (B) 20
- (C) 22
- (D) 24

Correct Answer: (C) 22

Solution:

Step 1: Understanding the Concept

The problem involves the properties of averages and arithmetic progressions. Consecutive even numbers form an arithmetic progression. The average of an arithmetic progression is the middle

term or the average of the middle two terms.

Step 2: Key Formula or Approach

1. Identify the six consecutive even numbers.
2. Use the given average to find the actual values of these numbers.
3. Identify the next three even numbers in the sequence.
4. Calculate the average of these next three numbers.

Step 3: Detailed Explanation

Let the six consecutive even numbers be $n, n + 2, n + 4, n + 6, n + 8, n + 10$.

Since there is an even number of terms (six), the average is the average of the two middle terms, which are the 3rd and 4th terms.

Middle terms are $n + 4$ and $n + 6$.

$$\text{Average} = \frac{(n+4)+(n+6)}{2} = \frac{2n+10}{2} = n + 5.$$

We are given that the average is 13.

$$\text{So, } n + 5 = 13.$$

$$n = 13 - 5 = 8.$$

The first number is 8. The six consecutive even numbers are:

8, 10, 12, 14, 16, 18.

(Check: The average is $\frac{12+14}{2} = \frac{26}{2} = 13$. Correct.)

The question asks for the average of the *next three* even numbers.

The next three even numbers after 18 are:

20, 22, 24.

Now, find the average of these three numbers.

$$\text{Average} = \frac{20+22+24}{3}.$$

Since these three numbers are also in an arithmetic progression, their average is the middle number.

$$\text{Average} = 22.$$

Step 4: Final Answer

The average of the next three even numbers is 22. Therefore, option (C) is correct.

Quick Tip

The average of an odd number of consecutive terms (like the next three even numbers) is always the middle term. Once you identify the numbers are 20, 22, and 24, you can immediately pick the middle one, 22, as the average without any calculation.

44. In order to arrange the fractions in any order, if the denominators are made equal, then in which of the following fractions the numerators will be an even number?

- (A) 17/18
(B) 28/36
(C) 43/45
(D) 59/60

Choose the correct answer from the options given below:

- (A) (A), (B) and (D) only.
(B) (A), (B) and (C) only.
(C) (A), (B), (C) and (D).
(D) (C) and (D) only.

Correct Answer: (B) (A), (B) and (C) only.

Solution:

Step 1: Understanding the Concept

To compare or arrange fractions, we often find a common denominator, which is the Least Common Multiple (LCM) of the individual denominators. The question asks us to find which of the given fractions will have an even numerator after being converted to this common denominator form.

Step 2: Key Formula or Approach

1. Find the LCM of the denominators: 18, 36, 45, and 60.
2. Convert each fraction to an equivalent fraction with the LCM as the denominator.
New Numerator = Old Numerator $\times$ (LCM / Old Denominator).
3. Check if the new numerator is even or odd.

Step 3: Detailed Explanation

First, we find the LCM of the denominators (18, 36, 45, 60).

Prime factorization of each denominator:

$$18 = 2 \times 9 = 2 \times 3^2$$

$$36 = 4 \times 9 = 2^2 \times 3^2$$

$$45 = 5 \times 9 = 3^2 \times 5$$

$$60 = 6 \times 10 = 2 \times 3 \times 2 \times 5 = 2^2 \times 3 \times 5$$

The LCM is the product of the highest powers of all prime factors:

$$\text{LCM} = 2^2 \times 3^2 \times 5 = 4 \times 9 \times 5 = 180.$$

The common denominator is 180.

Now, we convert each fraction:

(A) 17/18: The multiplying factor is $\frac{180}{18} = 10$.

New numerator = $17 \times 10 = 170$. (Even)

The fraction becomes 170/180.

(B) 28/36: The multiplying factor is $\frac{180}{36} = 5$.

New numerator = $28 \times 5 = 140$. (Even)

The fraction becomes 140/180.

(C) 43/45: The multiplying factor is $\frac{180}{45} = 4$.

New numerator = $43 \times 4 = 172$. (Even)

The fraction becomes $172/180$.

(D) 59/60: The multiplying factor is $\frac{180}{60} = 3$.

New numerator = $59 \times 3 = 177$. (Odd)

The fraction becomes $177/180$.

The fractions with even numerators are (A), (B), and (C).

Step 4: Final Answer

The fractions that will have an even numerator are $17/18$, $28/36$, and $43/45$. This corresponds to option (B).

💡 Quick Tip

You can determine if the new numerator will be even without full calculation. New Numerator = Old Numerator $\times$ Factor. The result is even if either the Old Numerator is even or the Factor is even. (A) $17(\text{odd}) \times 10(\text{even}) = \text{Even}$. (B) $28(\text{even}) \times 5(\text{odd}) = \text{Even}$. (C) $43(\text{odd}) \times 4(\text{even}) = \text{Even}$. (D) $59(\text{odd}) \times 3(\text{odd}) = \text{Odd}$.

45. If P is the principal, R is the rate of interest and T is the time, then arrange the simple interest obtained from the following in descending order:

(A). P = Rs 6000, R = 5% and T = 5 years

(B). P = Rs 18000, R = 5.5% and T = 3 years

(C). P = Rs 6000, R = 5/3% and T = 2.5 years

(D). P = Rs 8000, R = 4% and T = 5/8 years

Choose the correct answer from the options given below:

(A) (A), (B), (C), (D).

(B) (A), (C), (B), (D).

(C) (B), (A), (C), (D).

(D) (C), (B), (D), (A).

Correct Answer: (C) (B), (A), (C), (D).

Solution:

Step 1: Understanding the Concept

The problem requires calculating the simple interest (SI) for four different scenarios and then arranging these amounts in descending order (from largest to smallest).

Step 2: Key Formula or Approach

The formula for Simple Interest (SI) is:

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

We will apply this formula to each case.

Step 3: Detailed Explanation

Let's calculate the SI for each option:

(A) $P = 6000$, $R = 5\%$, $T = 5$ years

$$SI_A = \frac{6000 \times 5 \times 5}{100} = 60 \times 25 = 1500$$

(B) $P = 18000$, $R = 5.5\%$, $T = 3$ years

$$SI_B = \frac{18000 \times 5.5 \times 3}{100} = 180 \times 5.5 \times 3 = 180 \times 16.5 = 2970$$

(C) $P = 6000$, $R = 5/3\%$, $T = 2.5$ years

$$SI_C = \frac{6000 \times \frac{5}{3} \times 2.5}{100} = 60 \times \frac{5}{3} \times 2.5 = 20 \times 5 \times 2.5 = 100 \times 2.5 = 250$$

(D) $P = 8000$, $R = 4\%$, $T = 5/8$ years

$$SI_D = \frac{8000 \times 4 \times \frac{5}{8}}{100} = 80 \times 4 \times \frac{5}{8} = 10 \times 4 \times 5 = 200$$

The calculated simple interest amounts are:

$$SI_A = 1500$$

$$SI_B = 2970$$

$$SI_C = 250$$

$$SI_D = 200$$

Arranging these values in descending order:

$$2970 > 1500 > 250 > 200$$

This corresponds to the sequence: $SI_B > SI_A > SI_C > SI_D$.

Step 4: Final Answer

The correct descending order of the simple interest amounts is (B), (A), (C), (D). This matches option (C).

Quick Tip

For quicker comparison without full calculation, you can find the effective percentage for the entire term ($R \times T$). (A) 5% for 5 years = 25% of 6000. (B) 5.5% for 3 years = 16.5% of 18000. (C) $(5/3)\%$ for 2.5 years = 4.17% of 6000. (D) 4% for $5/8$ years = 2.5% of 8000. Even a rough estimation shows B is the largest and D is the smallest.

46. Formative Assessment should be:

(A) Continuous

(B) Annual

(C) Quarterly

(D) Monthly

Correct Answer: (A) Continuous

Solution:

Step 1: Understanding the Concept

The question asks about the nature of Formative Assessment. Formative assessment is also known as 'assessment for learning'. Its primary purpose is to monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning.

Step 2: Detailed Explanation

Let's analyze the options:

- **Continuous:** This aligns perfectly with the purpose of formative assessment. It is an ongoing, dynamic process that happens throughout the learning process, not just at specific intervals. It includes methods like classroom discussions, quizzes, observations, and homework.
- **Annual:** This describes a summative assessment (like a final exam) that happens once a year to evaluate what has been learned. It is the opposite of formative assessment.
- **Quarterly / Monthly:** While these are more frequent than annual assessments, they still represent periodic, often summative, evaluations rather than the seamless, ongoing nature of true formative assessment. Formative assessment can happen daily or even moment-to-moment.

Therefore, 'Continuous' is the term that best describes the ideal implementation and philosophy of formative assessment.

Step 3: Final Answer

Formative Assessment is an ongoing process and should be continuous. Therefore, option (A) is the correct answer.

 Quick Tip

Remember the key distinction:

- **Formative** = *For* learning (happens *during* the process, like a coach giving tips during practice).
- **Summative** = *Sum* of learning (happens *at the end*, like the final score of a game).

This distinction makes it clear that formative assessment must be a continuous activity.

47. ITEP stands for

- (A) Integrated Teacher Education Programme
- (B) Integral Teacher Education Programme
- (C) Indian Teacher Education Programme
- (D) Indian Technical Education Programme

Correct Answer: (A) Integrated Teacher Education Programme

Solution:

Step 1: Understanding the Concept

The question asks for the full form of the acronym ITEP, which is related to teacher education in India, particularly emphasized in the National Education Policy (NEP) 2020.

Step 2: Detailed Explanation

ITEP stands for **Integrated Teacher Education Programme**. It is a 4-year dual-major undergraduate degree that is a key mandate of the NEP 2020. This programme aims to combine general education (in a chosen major) with professional teacher training, preparing teachers for the Foundational, Preparatory, Middle, and Secondary stages of school education. The goal is to integrate teacher training into mainstream higher education and enhance the quality of teachers.

Step 3: Final Answer

The correct full form of ITEP is Integrated Teacher Education Programme. Therefore, option (A) is correct.

 Quick Tip

When studying new policies like the NEP 2020, create a list of all new acronyms and their full forms (e.g., ITEP, ECCE, PARAKH, NCF). These are very common questions in exams related to education.

48. According to NEP 2020, what is the full form of ECCE?

- (A) Elementary Classes of Child Education
- (B) Education of a Caring Child in Elementary Class
- (C) Early Childhood Care and Education
- (D) Educational Classes for Caring Early Childhood

Correct Answer: (C) Early Childhood Care and Education

Solution:

Step 1: Understanding the Concept

The question asks for the full form of the acronym ECCE as per the National Education Policy

(NEP) 2020. ECCE is a foundational component of the new educational structure proposed by the policy.

Step 2: Detailed Explanation

ECCE stands for **Early Childhood Care and Education**. NEP 2020 places great emphasis on ECCE for all children between the ages of 3 and 6. The policy aims to ensure universal access to high-quality ECCE, which is crucial for the optimal development of a child's brain and future learning. It forms the first part of the new 5+3+3+4 curricular structure, where the first '5' years are the Foundational Stage, comprising 3 years of Anganwadi/preschool/balvatika followed by 2 years in primary school (Grades 1 and 2).

Step 3: Final Answer

The correct full form of ECCE is Early Childhood Care and Education. Therefore, option (C) is correct.

Quick Tip

Remember the new 5+3+3+4 structure of schooling in NEP 2020. ECCE covers the first part of the foundational stage (the '5'), highlighting its importance in the new policy framework.

49. Achievement tests are commonly used in a class for the purpose of:

- (A) Making selections for a specific job
- (B) Selecting candidates for a course
- (C) Identifying strengths and weaknesses of learners
- (D) Assessing the amount of learning achieved after teaching

Correct Answer: (D) Assessing the amount of learning achieved after teaching

Solution:

Step 1: Understanding the Concept

The question asks for the primary purpose of an achievement test in a classroom setting. An achievement test is designed to measure the knowledge and skills a person has acquired through a course of instruction or training.

Step 2: Detailed Explanation

Let's analyze the given options:

- **Making selections for a specific job:** This usually involves aptitude tests, personality tests, or specific skill-based assessments, not general classroom achievement tests.
- **Selecting candidates for a course:** This is the purpose of entrance examinations or proficiency tests, which assess a candidate's readiness for a course, not what they have

learned in a previous one.

- **Identifying strengths and weaknesses of learners:** While an achievement test can give some indication of this, the primary tool for this purpose is a *diagnostic test*, which is designed specifically to pinpoint areas of difficulty.
- **Assessing the amount of learning achieved after teaching:** This is the exact definition and purpose of an achievement test. It is a summative tool used to evaluate how well students have mastered the content and objectives of a lesson, unit, or course. Examples include unit tests, mid-term exams, and final exams.

Step 3: Final Answer

The primary purpose of an achievement test is to assess the learning that has taken place after a period of instruction. Therefore, option (D) is correct.

💡 Quick Tip

Differentiate between the types of educational tests:

- **Achievement Test:** What have you *achieved/learned*? (Looks backward)
- **Aptitude Test:** What are you *capable of learning*? (Looks forward)
- **Diagnostic Test:** *Why* are you struggling to learn? (Looks for problems)

50. The sequence of stages in active listening is

- (A). Understanding
- (B). Remembering
- (C). Responding
- (D). Receiving
- (E) Evaluating

Choose the correct answer from the options given below:

- (A) (A), (B), (C), (D), (E)
- (B) (D), (B), (C), (A), (E)
- (C) (B), (A), (D), (C), (E)
- (D) (D), (A), (E), (B), (C)

Correct Answer: (D) (D), (A), (E), (B), (C)

Solution:

Step 1: Understanding the Concept

The question asks for the correct sequence of stages in the process of active listening. Active

listening is a communication technique that requires the listener to fully concentrate, understand, respond, and then remember what is being said.

Step 2: Detailed Explanation

The process of listening can be broken down into several stages. While models may vary slightly, the generally accepted sequence is as follows:

1. **(D) Receiving:** This is the initial physical stage of hearing the speaker's message, involving the reception of sound waves. It is the prerequisite for all other stages.
2. **(A) Understanding:** After receiving the message, the listener must interpret and comprehend its meaning. This is also known as decoding.
3. **(E) Evaluating:** Once the message is understood, the listener assesses its content, judging its validity, and considering its implications. This critical thinking stage happens before the information is fully committed to long-term memory.
4. **(B) Remembering:** The listener then stores the relevant parts of the message in their memory for future recall.
5. **(C) Responding:** This is the final stage, where the listener provides verbal or non-verbal feedback to the speaker, indicating that the message has been heard, understood, and considered.

Based on this logical flow, the correct sequence is Receiving → Understanding → Evaluating → Remembering → Responding.

Step 3: Final Answer

The correct sequence of stages in active listening is (D), (A), (E), (B), (C). This corresponds to option (D).

💡 Quick Tip

To remember the sequence of listening, think of a logical process: You must first **re-ceive** the information before you can **understand** it. You typically **evaluate** what you've understood before you decide what to **remember**. Finally, you **respond** based on your comprehension.

51. Kindergarten system of education was contributed by:

- (A) Montessori
- (B) Spencer

- (C) T.P. Nunn
(D) Friedrich Froebel

Correct Answer: (D) Friedrich Froebel

Solution:

Step 1: Understanding the Concept

The question asks to identify the educational philosopher who is credited with creating the Kindergarten system. This is a factual question about the history of education.

Step 2: Detailed Explanation

Friedrich Froebel (1782–1852), a German educator, is renowned for developing the concept of the "Kindergarten," which literally translates to "children's garden." He founded the first Kindergarten in 1837 in Bad Blankenburg, Germany. His educational philosophy emphasized the importance of play, self-activity, and creative expression in the development of young children. He believed that children are like plants in a garden that need careful nurturing by teachers (the "gardeners").

The other options are associated with different contributions:

- **Maria Montessori:** An Italian physician and educator who developed the Montessori method of education, which also focuses on child-centered learning but has a distinct philosophy and materials.
- **Herbert Spencer:** An English philosopher and sociologist known for applying evolutionary theory to philosophy and ethics.
- **T.P. Nunn:** A British educationalist who was influential in the field of education theory, emphasizing individuality.

Step 3: Final Answer

The Kindergarten system of education was contributed by Friedrich Froebel. Therefore, option (D) is correct.

 Quick Tip

Associate key educational concepts with their founders: Froebel = Kindergarten; Montessori = Montessori Method; Dewey = Pragmatism/Progressive Education. Creating these simple links can help you quickly answer history of education questions.

52. National Education Policy 2020 recommends:

- (A) Multilingualism

- (B) Monolingualism
- (C) Standardization of Curriculum
- (D) Standardization of Assessment

Correct Answer: (A) Multilingualism

Solution:

Step 1: Understanding the Concept

The question asks to identify a key recommendation of the National Education Policy (NEP) 2020 of India from the given options.

Step 2: Detailed Explanation

Let's analyze the key tenets of NEP 2020 in relation to the options:

- **Multilingualism:** NEP 2020 strongly promotes multilingualism and the power of language in education. It recommends that the medium of instruction until at least Grade 5 (and preferably till Grade 8 and beyond) should be the home language/mother tongue/local language. It also encourages the learning of multiple languages, including classical and foreign languages. This is a core recommendation.
- **Monolingualism:** This is the opposite of the policy's recommendation. NEP 2020 explicitly moves away from a rigid, single-language approach.
- **Standardization of Curriculum:** The policy advocates for a flexible and multidisciplinary curriculum. While a National Curricular Framework (NCF) will be developed to provide guidelines, the goal is to reduce curriculum content to its core essentials and allow for more critical thinking and inquiry-based learning, not rigid standardization.
- **Standardization of Assessment:** NEP 2020 recommends a shift from the current system of high-stakes board exams to a more holistic, continuous, and competency-based assessment. It proposes a new National Assessment Centre, PARAKH, to set norms and guidelines, but the goal is to move away from a single, standardized mode of assessment towards more diverse and formative methods.

Step 3: Final Answer

Among the given choices, Multilingualism is a major and explicit recommendation of the National Education Policy 2020. Therefore, option (A) is correct.

💡 Quick Tip

The keywords for NEP 2020 are 'flexibility', 'multidisciplinary', 'holistic', 'multilingualism', and 'competency-based'. Any option that reflects rigidity or strict standardization is likely to be contrary to the spirit of the policy.

53. Identify the correct statements:

- (A). Learning modifies behaviour
- (B). Learning is permanent change
- (C). Learning is temporary
- (D). Learning does not change behaviour

Choose the correct answer from the options given below:

- (A) (A) and (C) only.
- (B) (B) and (D) only.
- (C) (A) and (B) only.
- (D) (B) and (C) only.

Correct Answer: (C) (A) and (B) only.

Solution:

Step 1: Understanding the Concept

The question asks to identify the correct statements that define the psychological concept of learning. Learning is a fundamental topic in educational psychology.

Step 2: Detailed Explanation

Let's evaluate each statement based on the standard psychological definition of learning:

- **(A) Learning modifies behaviour:** This is a core aspect of learning. Learning is the process through which experience or practice results in a change in an individual's knowledge, skills, or behaviour. This statement is **correct**.
- **(B) Learning is permanent change:** Psychologists define learning as a "*relatively* permanent" change. The word 'relatively' is important as memories can fade, but the change is not temporary in the way that changes due to fatigue, illness, or drugs are. In the context of these options, "permanent change" is used to contrast with "temporary," making it a correct statement in this framework.
- **(C) Learning is temporary:** This is incorrect. Changes in behaviour due to factors like fatigue, maturation, or intoxication are considered temporary and are not classified as learning.
- **(D) Learning does not change behaviour:** This is incorrect. A change in behaviour (or behavioural potential) is the primary evidence that learning has occurred.

Based on the analysis, statements (A) and (B) are the ones that correctly describe the characteristics of learning.

Step 3: Final Answer

The correct statements are (A) and (B). Therefore, option (C) is the correct choice.

💡 Quick Tip

The formal definition of learning in psychology is "a relatively permanent change in behavior that results from experience." Remember the three key parts: (1) it's a change in behavior, (2) it's relatively permanent, and (3) it's a result of experience.

54. OMR stands for:

- (A) Online Marked Response
- (B) Optically Marked Response
- (C) Optical Mark Recognition
- (D) Online Mark Reader

Correct Answer: (C) Optical Mark Recognition

Solution:

Step 1: Understanding the Concept

The question asks for the full form of the acronym OMR, which is a common technology used in exams and surveys.

Step 2: Detailed Explanation

OMR stands for **Optical Mark Recognition**. It is the process of capturing human-marked data from document forms such as surveys and tests. OMR scanners use a beam of light to detect the presence or absence of a mark in a predetermined position (e.g., a shaded bubble on a multiple-choice answer sheet). The technology recognizes the marks and converts the data into a digital format for processing. It is also sometimes referred to as "Optical Mark Reading." Among the given options, "Optical Mark Recognition" is the most standard and widely accepted full form.

Step 3: Final Answer

The correct full form of OMR is Optical Mark Recognition. Therefore, option (C) is correct.

💡 Quick Tip

Differentiate between similar technologies:

- **OMR** (Optical Mark Recognition): Recognizes marks/bubbles.
- **OCR** (Optical Character Recognition): Recognizes printed or handwritten characters/text.
- **MICR** (Magnetic Ink Character Recognition): Recognizes characters printed with magnetic ink (used on cheques).

55. Attitude, values and interests are reflected by:

- (A) Cognitive domain
- (B) Psychomotor domain
- (C) Affective domain
- (D) Functional domain

Correct Answer: (C) Affective domain

Solution:

Step 1: Understanding the Concept

The question asks to identify which domain of learning, according to Bloom's Taxonomy, deals with attitudes, values, and interests. Benjamin Bloom and his colleagues classified learning objectives into three domains.

Step 2: Detailed Explanation

The three domains of learning are:

- **Cognitive Domain:** This domain involves intellectual skills and the acquisition of knowledge. It deals with thinking, knowing, and problem-solving. It includes levels like knowledge, comprehension, application, analysis, synthesis, and evaluation.
- **Psychomotor Domain:** This domain involves physical movement, coordination, and the use of motor-skill areas. It deals with physical skills and "doing." Examples include typing, driving a car, or playing a musical instrument.
- **Affective Domain:** This domain is concerned with feelings, emotions, attitudes, values, and interests. It describes the way people react emotionally and their ability to feel another living thing's pain or joy. Levels in this domain range from receiving (awareness) to internalizing values and characterizing (acting consistently with a value system). Attitudes, values, and interests are central components of this domain.

- **Functional domain:** This is not one of the three domains of learning in Bloom's Taxonomy.

Step 3: Final Answer

Attitudes, values, and interests are components of the Affective domain. Therefore, option (C) is correct.

💡 Quick Tip

A simple way to remember the three domains is the "KSA" model or "Head, Hands, Heart":

- **Cognitive** = Knowledge (Head)
- **Psychomotor** = Skills (Hands)
- **Affective** = Attitude (Heart)

This makes it easy to classify concepts like 'values' and 'interests' into the 'Heart' or Affective domain.

56. Match List-I with List-II

List-I (Method of Teaching)	List-II (Basic Requirement for Success)
(A). Lecturing	(I). Small step presentation with feedback provided
(B). Discussion in group	(II). Production of large number of ideas
(C). Brainstorming	(III). Content delivery in a lucid language
(D). Programmed instructional procedure	(IV). Theme based interaction among participants

Choose the correct answer from the options given below:

- (A) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
 (B) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
 (C) (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
 (D) (A) - (III), (B) - (IV), (C) - (II), (D) - (I)

Correct Answer: (D) (A) - (III), (B) - (IV), (C) - (II), (D) - (I)

Solution:

Step 1: Understanding the Concept

This question requires matching different teaching methods with the primary requirement for their successful implementation.

Step 2: Detailed Explanation

Let's analyze each teaching method and its corresponding requirement:

- **(A) Lecturing:** This is a teacher-centric method where the teacher presents information to the students. For a lecture to be successful, the teacher must be able to deliver the content clearly and in an easily understandable manner. This matches with **(III) Content delivery in a lucid language**.
- **(B) Discussion in group:** This method involves students interacting with each other to explore a topic. Its success depends on having a focused, **(IV) Theme based interaction among participants** to ensure the discussion is productive and on-topic.
- **(C) Brainstorming:** This is a creativity technique where a group tries to find a solution for a specific problem by gathering a list of ideas spontaneously contributed by its members. The main goal is the **(II) Production of large number of ideas** without initial criticism.
- **(D) Programmed instructional procedure:** This is a self-instructional method where material is presented in a logical sequence of small segments or "frames." After each step, the learner is tested and given immediate feedback. This matches perfectly with **(I) Small step presentation with feedback provided**.

Step 3: Final Combination

The correct pairings are:

- A - III
- B - IV
- C - II
- D - I

This combination is found in option (D).

Quick Tip

When faced with matching questions on teaching methods, focus on the core purpose of each method. Lecturing is about delivery, discussion is about interaction, brainstorming is about idea generation, and programmed learning is about structured, self-paced steps.

57. Which of the following statements is NOT correct?

- (A) A good communicator has a good sense of humour
- (B) A good communicator has a wide reading knowledge.
- (C) A good communicator has command over language.
- (D) A good communicator cannot be a good teacher.

Correct Answer: (D) A good communicator cannot be a good teacher.

Solution:

Step 1: Understanding the Concept

The question asks to identify the incorrect statement about the qualities of a good communicator, especially in the context of teaching.

Step 2: Detailed Explanation

Let's analyze each statement:

- **1. A good communicator has a good sense of humour:** A sense of humour can make communication more engaging and effective. It helps in building rapport and making the message more memorable. This is a desirable trait.
- **2. A good communicator has a wide reading knowledge:** Wide reading provides a broad perspective, rich vocabulary, and numerous examples, which enhances communication skills. This is a desirable trait.
- **3. A good communicator has command over language:** This is a fundamental requirement for effective communication. Clarity, precision, and eloquence depend on language proficiency. This is a core trait.
- **4. A good communicator cannot be a good teacher:** This statement is incorrect. Effective communication is one of the most crucial skills for a teacher. A teacher needs to explain concepts clearly, engage students, and provide feedback, all of which are aspects of good communication. Therefore, a good communicator has the potential to be an excellent teacher.

Step 3: Final Answer

The statement that a good communicator cannot be a good teacher is fundamentally flawed and incorrect. Therefore, option (D) is the correct answer.

Quick Tip

Questions with "NOT" require careful reading. Evaluate each statement for its truthfulness. The incorrect statement is often a direct contradiction of a commonly accepted principle. In this case, the link between good communication and good teaching is very strong.

58. Which of the following factors does not impact teaching ?

- (A) Socio-economic background of teachers
- (B) Class room activities that encourage teaching and learning
- (C) Teacher's subject knowledge
- (D) Learning through experience

Correct Answer: (A) Socio-economic background of teachers

Solution:

Step 1: Understanding the Concept

The question asks to identify which factor from the given list does not have a direct impact on the quality and effectiveness of the teaching process.

Step 2: Detailed Explanation

Let's analyze the impact of each factor on teaching:

- **1. Socio-economic background of teachers:** In an ideal professional environment, a teacher's socio-economic background should not determine their teaching effectiveness. Teaching quality is a function of their knowledge, skills, training, and dedication, not their financial or social status. While it might influence their life experiences, it is not considered a direct factor impacting the teaching-learning process itself.
- **2. Class room activities that encourage teaching and learning:** These have a very strong and direct impact. Interactive and engaging activities are crucial for effective teaching and student participation.
- **3. Teacher's subject knowledge:** This is a fundamental prerequisite for effective teaching. A teacher cannot effectively teach a subject they do not have a deep understanding of.
- **4. Learning through experience:** This impacts both the teacher and the student. A teacher's own experiences shape their teaching style and ability to connect with students. For students, experiential learning is a powerful method. This factor clearly impacts teaching.

Comparing the options, the socio-economic background of the teacher is the least direct and, ideally, a non-influential factor on the quality of teaching.

Step 3: Final Answer

The socio-economic background of a teacher is not a direct factor that impacts teaching quality. Therefore, option (A) is the correct answer.

💡 Quick Tip

When analyzing factors that impact teaching, differentiate between professional attributes (like subject knowledge, pedagogical skills) and personal attributes (like background, beliefs). Professional attributes have a direct and undeniable impact, while personal ones are less direct.

59. Maximum participation of students during teaching is possible through:

- (A) Deductive method
- (B) Textbook method
- (C) Discussion and Demonstration method
- (D) Lecture method

Correct Answer: (C) Discussion and Demonstration method

Solution:

Step 1: Understanding the Concept

The question asks which teaching method is most effective in ensuring maximum participation from students. This involves comparing teacher-centered and student-centered methodologies.

Step 2: Detailed Explanation

Let's evaluate the level of student participation in each method:

- **1. Deductive method:** This involves the teacher presenting a rule or general principle and then having students apply it to specific examples. While students participate in the application part, the initial phase is teacher-led.
- **2. Textbook method:** This method relies heavily on the textbook as the primary source of information. It can be passive, with students mainly reading and answering questions from the book.
- **3. Discussion and Demonstration method:** This is a highly interactive and student-centered approach. The discussion component allows students to voice their opinions, ask questions, and learn from their peers. The demonstration component provides a visual and practical experience, often inviting students to participate or observe closely. This

combination actively engages students both mentally and physically.

- **4. Lecture method:** This is the most teacher-centered method. The teacher speaks, and the students listen. It typically involves minimal student participation, often limited to asking a few questions at the end.

Comparing these methods, the Discussion and Demonstration method is explicitly designed to be interactive and is the most likely to achieve maximum student participation.

Step 3: Final Answer

The Discussion and Demonstration method facilitates the highest level of student participation. Therefore, option (C) is correct.

💡 Quick Tip

To determine the level of student participation, ask yourself: "Who is doing most of the work/talking?" In a lecture, it's the teacher. In a discussion, it's the students. Student-centered methods always promote higher participation than teacher-centered ones.

60. Arrange the steps in the Deductive Method in a logical order:

(A). Definition of technical terms and making assumptions

(B). Identification and perception of problem

(C). Formulation of hypothesis

(D). Testing and Verification of Hypothesis

Choose the correct sequence of steps from the options given below:

(A) (A), (B), (C), (D).

(B) (A), (B), (D), (C).

(C) (B), (A), (C), (D).

(D) (A), (C), (B), (D).

Correct Answer: (C) (B), (A), (C), (D).

Solution:

Step 1: Understanding the Concept

The question asks for the logical sequence of steps in the deductive method of reasoning or research. The deductive method moves from a general theory or problem to a specific, testable conclusion.

Step 2: Detailed Explanation

Let's arrange the given steps in a logical sequence for a research process:

1. **(B) Identification and perception of problem:** The process must begin with identifying a problem or a question that needs to be answered. This is the starting point of any inquiry.
2. **(A) Definition of technical terms and making assumptions:** Once the problem is identified, it is crucial to clearly define all the terms involved and state the assumptions under which the inquiry will proceed. This ensures clarity and sets the boundaries for the research.
3. **(C) Formulation of hypothesis:** Based on the problem and the defined terms/assumptions, a specific, testable hypothesis is formulated. A hypothesis is a proposed explanation for a phenomenon that can be tested.
4. **(D) Testing and Verification of Hypothesis:** The final step is to conduct experiments or gather data to test the hypothesis. The results will either support or refute the hypothesis.

This logical flow from problem to verification is the hallmark of the deductive scientific method.

Step 3: Final Answer

The correct logical order is (B), (A), (C), (D). This corresponds to option (C).

Quick Tip

Remember that scientific inquiry starts broad and gets progressively more specific. You start with a general **Problem**, then you **Define** your terms, then you create a specific **Hypothesis**, and finally, you **Test** it.

61. Match List-I with List-II

List-I	List-II
(A). Homework	(I). Authoritarian
(B). Project	(II). Independent Learning
(C). Examination	(III). Individual Learning
(D). Punishment	(IV). Assessment and Evaluation

Choose the correct answer from the options given below:

- (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
- (A) - (III), (B) - (II), (C) - (IV), (D) - (I)
- (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
- (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Correct Answer: (B) (A) - (III), (B) - (II), (C) - (IV), (D) - (I)

Solution:

Step 1: Understanding the Concept

The question asks to match pedagogical tools and concepts in List-I with their corresponding description or purpose from List-II.

Step 2: Detailed Explanation

Let's match each item from List-I to its best description in List-II:

- **(A) Homework:** This refers to tasks assigned to students to be completed outside the classroom. It is a form of **(III) Individual Learning** meant to reinforce concepts taught in class.
- **(B) Project:** A project is a more in-depth, often long-term assignment that requires students to apply their knowledge and skills in a more autonomous way. This promotes **(II) Independent Learning**, where students take more responsibility for their learning process.
- **(C) Examination:** An examination is a formal method used to measure a student's knowledge or proficiency in a subject. Its primary function is **(IV) Assessment and Evaluation**.
- **(D) Punishment:** In a classroom context, punishment is a disciplinary action taken in response to misbehavior. It is often seen as a characteristic of an **(I) Authoritarian** teaching style, which relies on strict rules and control.

Step 3: Final Combination

The correct pairings are:

- A - III
- B - II
- C - IV
- D - I

This combination is found in option (B).

💡 Quick Tip

Distinguish between related terms: 'Individual Learning' (working alone on a set task like homework) and 'Independent Learning' (taking ownership and initiative in a larger task like a project).

62. Who explained school as a social institution and education as a philosophical process.

- (A) John Dewey
- (B) Sigmund Freud
- (C) Jean Piaget
- (D) Howard Gardner

Correct Answer: (A) John Dewey

Solution:

Step 1: Understanding the Concept

The question asks to identify the philosopher and educator who famously described the school as a social institution and education as a continuous, philosophical process of growth.

Step 2: Detailed Explanation

John Dewey (1859-1952) was an American philosopher, psychologist, and educational reformer whose ideas have been highly influential. A central theme in his work is the connection between education and democracy.

- He viewed the **school as a social institution**, a miniature community where children could learn and practice the skills needed for democratic living.
- He saw **education as a philosophical process** of "reconstruction or reorganization of experience," which is continuous throughout life. For Dewey, education was not just preparation for life; it was life itself.

The other figures are known for different contributions:

- **Sigmund Freud:** The founder of psychoanalysis, focused on the unconscious mind.
- **Jean Piaget:** A developmental psychologist known for his theory of cognitive development in children.
- **Howard Gardner:** A developmental psychologist known for his theory of multiple intelligences.

Step 3: Final Answer

The philosopher who explained school as a social institution and education as a philosophical process was John Dewey. Therefore, option (A) is correct.

💡 Quick Tip

Associate key thinkers with their big ideas: Dewey = Democracy and Education, School as Society; Piaget = Cognitive Stages; Freud = Psychoanalysis; Gardner = Multiple Intelligences.

63. Teaching is-

- (A) delivering lecture
- (B) facilitating students to construct knowledge
- (C) evaluation and assessment of students
- (D) giving and checking assignments

Correct Answer: (B) facilitating students to construct knowledge

Solution:

Step 1: Understanding the Concept

The question asks for the most comprehensive and modern definition of teaching from the given options. This reflects a shift from traditional teacher-centered views to more modern student-centered, constructivist views.

Step 2: Detailed Explanation

Let's analyze the options:

- **1. delivering lecture:** This describes only one method of teaching, and a very traditional, teacher-centered one. It is a part of teaching, but not its entirety.
- **2. facilitating students to construct knowledge:** This is a modern, constructivist view of teaching. It sees the teacher's role as a guide or facilitator who helps students actively build their own understanding and knowledge, rather than passively receiving information. This is a comprehensive and widely accepted definition of effective teaching today.
- **3. evaluation and assessment of students:** This is a crucial component of the teaching process, but it is not the process itself. Assessment is done to measure the effectiveness of teaching and learning.
- **4. giving and checking assignments:** Like assessment, this is a tool used within the teaching process to reinforce and evaluate learning, but it does not define the entire act of

teaching.

The most encompassing and philosophically current definition among the choices is that teaching is a process of facilitating knowledge construction.

Step 3: Final Answer

The best description of teaching among the given options is facilitating students to construct knowledge. Therefore, option (B) is correct.

Quick Tip

Modern pedagogy emphasizes a shift from "sage on the stage" (lecturer) to "guide on the side" (facilitator). Look for answers that reflect this student-centered, constructivist approach where students are active builders of knowledge.

64. The Language of word is not necessary for:

- (A) Imaginative thinking
- (B) Conceptual Thinking
- (C) Associative thinking
- (D) Perceptual thinking

Correct Answer: (D) Perceptual thinking

Solution:

Step 1: Understanding the Concept

The question asks to identify a type of thinking that does not fundamentally require language (words) to occur. This involves understanding different cognitive processes.

Step 2: Detailed Explanation

Let's examine the role of language in each type of thinking:

- **1. Imaginative thinking:** While we can imagine images and sounds without words, complex imagination, such as creating stories or scenarios, is heavily reliant on language to structure and express the thoughts.
- **2. Conceptual Thinking:** Concepts are abstract ideas that are typically defined and understood through words. Thinking about concepts like 'justice', 'democracy', or 'gravity' is almost impossible without the language that represents them.
- **3. Associative thinking:** This involves making connections between ideas. While some associations can be purely visual or sensory, language provides a powerful framework for

creating and navigating these associations (e.g., word association games).

- **4. Perceptual thinking:** This is the process of interpreting and organizing sensory information from the environment (what we see, hear, smell, taste, touch). It is a direct, pre-verbal process. An infant can perceive a face, an animal can perceive danger, all without the use of words. It is the most fundamental type of thinking that does not rely on language.

Step 3: Final Answer

Perceptual thinking, which is the interpretation of sensory data, is the form of thinking for which language is not necessary. Therefore, option (D) is the correct answer.

Quick Tip

To answer this, consider which type of thinking is possible for beings without language, such as infants or animals. They can certainly perceive and react to their environment, which points to perceptual thinking as the correct answer.

65. Identify the correct statement/s from the following:

- (A). Reward-Punishment is to maintain discipline
- (B). Homework- is to keep students busy at home
- (C). Teaching aids - ease the teachers' work
- (D). Project method is learner centric

Choose the correct answer from the options given below:

- (A) (D) only.
- (B) (B) and (C) only.
- (C) (A), (B), (C) and (D).
- (D) (C) and (D) only.

Correct Answer: (A) (D) only.

Solution:

Step 1: Understanding the Concept

The question asks to identify the statement(s) that correctly describe the purpose or nature of different pedagogical concepts.

Step 2: Detailed Explanation

Let's evaluate each statement:

- **(A) Reward-Punishment is to maintain discipline:** This is a very narrow and out-dated view. While it can be used for discipline, the primary purpose of rewards (positive reinforcement) and punishment in behaviorist theory is to shape and modify behavior, not

just maintain order. Modern pedagogy largely discourages the use of punishment. So, this statement is a simplistic and arguably incorrect description of a complex pedagogical tool.

- **(B) Homework- is to keep students busy at home:** This is an incorrect and negative view of homework. The true educational purpose of homework is to reinforce learning, develop independent study skills, and practice concepts taught in class, not merely to occupy a student's time.
- **(C) Teaching aids - ease the teachers' work:** This is an incorrect statement about the primary purpose. The main goal of teaching aids is to enhance student learning by making concepts clearer, more engaging, and more memorable. While they might make some aspects of teaching easier, their purpose is centered on improving learning outcomes, not reducing teacher effort.
- **(D) Project method is learner centric:** This statement is **correct**. The project method, pioneered by educators like John Dewey and W. H. Kilpatrick, is fundamentally a student-centered approach where students learn by actively engaging in real-world and personally meaningful projects. The learner takes ownership of the process.

Based on a critical evaluation, only statement (D) is unambiguously correct from a modern pedagogical standpoint. The others describe either a misuse or a misunderstanding of the concept.

Step 3: Final Answer

The only correct statement is (D). Therefore, option (A) is the correct choice.

💡 Quick Tip

When evaluating statements about educational practices, think about the ultimate goal: student learning. A correct statement will align with this goal. Statements that focus on control (discipline), busywork (homework), or teacher convenience (aids) are often describing a misuse or a secondary benefit, not the core educational purpose.

66. Match List-I with List-II

List-I (Work)	List-II (Author)
(A). Ramayana	(I). Rabindranath Tagore
(B). Geetanjali	(II). Vyasa
(C). Mahabharata	(III). Jayadev
(D). Astapadi	(IV). Valmiki

Choose the correct answer from the options given below:

(A) (A) - (IV), (B) - (I), (C) - (II), (D) - (III)

(B) (A) - (IV), (B) - (III), (C) - (II), (D) - (I)
(C) (A) - (III), (B) - (I), (C) - (IV), (D) - (II)
(D) (A) - (II), (B) - (IV), (C) - (I), (D) - (III)

Correct Answer: (A) (A) - (IV), (B) - (I), (C) - (II), (D) - (III)

Solution:

Step 1: Understanding the Concept

This question requires matching famous Indian literary works with their respective authors.

Step 2: Detailed Explanation

Let's match each work from List-I with its author from List-II:

- **(A) Ramayana:** The ancient Sanskrit epic poem, Ramayana, is traditionally attributed to the sage **(IV) Valmiki**.
- **(B) Geetanjali:** A collection of poems, Gitanjali (Song Offerings), was written by **(I) Rabindranath Tagore**. It won him the Nobel Prize in Literature in 1913.
- **(C) Mahabharata:** The other major Sanskrit epic of ancient India, the Mahabharata, is traditionally ascribed to **(II) Vyasa**.
- **(D) Astapadi:** The term 'Astapadi' refers to the lyrical poems in the 'Gita Govinda', a composition that describes the relationship between Krishna and the gopis, particularly Radha. This work was written by the 12th-century poet **(III) Jayadev**.

Step 3: Final Combination

The correct pairings are:

- A - IV
- B - I
- C - II
- D - III

This combination is found in option (A).

 Quick Tip

The authors of the two great Indian epics, Ramayana and Mahabharata, are fundamental general knowledge. Ramayana is by Valmiki, and Mahabharata is by Vyasa. Remembering these two can often help you eliminate incorrect options in matching questions.

67. Arrange the process of a theatrical production in a logical sequence from beginning to the end:

- (A). Script
- (B). Actors
- (C). Performance
- (D). Technical Run through
- (E). Composition

Choose the correct answer from the options given below:

- (A) (A), (B), (E), (D), (C)
- (B) (B), (A), (C), (E), (D)
- (C) (D), (B), (A), (E), (C)
- (D) (E), (B), (D), (C), (A)

Correct Answer: (A) (A), (B), (E), (D), (C)

Solution:

Step 1: Understanding the Concept

The question asks for the correct chronological sequence of the major stages involved in producing a theatrical play, from the initial idea to the final show.

Step 2: Detailed Explanation

Let's arrange the steps in a logical order:

1. **(A) Script:** The entire production starts with the written text of the play. The script is the foundation upon which everything else is built.
2. **(B) Actors:** Once a script is chosen, actors are cast to play the roles. This involves auditions and selection.
3. **(E) Composition:** This is part of the rehearsal process. The director works with the actors on blocking (movements on stage), character development, and creating the overall artistic vision and stage pictures. This happens after the actors have been cast and have started working with the script.
4. **(D) Technical Run through:** Towards the end of the rehearsal period, a 'tech run' is conducted. This is a full rehearsal where all the technical elements like lighting, sound,

set changes, and costumes are integrated with the actors' performance for the first time.

5. **(C) Performance:** This is the final step, where the fully rehearsed and technically prepared play is presented to an audience.

Step 3: Final Answer

The logical sequence from beginning to end is Script → Actors → Composition → Technical Run through → Performance. This corresponds to the sequence (A), (B), (E), (D), (C), which is option (A).

💡 Quick Tip

Think of producing a play like building a house. You start with the blueprint (Script), then you bring in the materials and workers (Actors), then you build the structure (Composition/Rehearsals), then you do the wiring and plumbing (Tech Run), and finally, you have the finished house (Performance).

68. What is the correct sequence of Surya namaskar?

- (A). Equestrian pose
- (B). Raised arms pose
- (C). Hand to foot pose
- (D). Prayer Pose

Choose the correct answer from the options given below:

- (A) (D), (B), (C), (A).
- (B) (D), (C), (B), (A).
- (C) (C), (A), (B), (D).
- (D) (C), (B), (D), (A).

Correct Answer: (A) (D), (B), (C), (A).

Solution:

Step 1: Understanding the Concept

The question asks for the correct starting sequence of asanas (poses) in the Surya Namaskar (Sun Salutation) practice.

Step 2: Detailed Explanation

Surya Namaskar is a sequence of 12 yoga poses. Let's identify the given poses and their place in the sequence:

1. **(D) Prayer Pose (Pranamasana):** This is the first pose, where one stands with palms joined in front of the chest in a prayer position.

2. **(B) Raised Arms Pose (Hastauttanasana):** This is the second pose, where one inhales and raises the arms up and back, stretching the whole body.
3. **(C) Hand to Foot Pose (Hasta Padasana):** This is the third pose, where one exhales and bends forward from the waist, bringing the hands down to the floor beside the feet.
4. **(A) Equestrian Pose (Ashwa Sanchalanasana):** This is the fourth pose, where one inhales and pushes the right leg back, bringing the right knee to the floor and looking up.

Therefore, the correct sequence of these four poses is Prayer Pose → Raised Arms Pose → Hand to Foot Pose → Equestrian Pose.

Step 3: Final Answer

The correct sequence is (D), (B), (C), (A), which corresponds to option (A).

💡 Quick Tip

To remember the start of Surya Namaskar, think of a greeting to the sun: You start with a **Prayer** (D), then you **raise your arms** to the sky (B), then you **bow down** to the earth (C), and then you go into a lunge or **Equestrian** pose (A).

69. Agility is a combination of which of the following abilities?

- (A). Speed
- (B). Balance
- (C). Endurance
- (D). Co-ordination

Choose the correct answer from the options given below:

- (A) (A), (B) and (C) only.
- (B) (A), (B) and (D) only.
- (C) (A), (B), (C) and (D).
- (D) (B) and (C) only.

Correct Answer: (B) (A), (B) and (D) only.

Solution:

Step 1: Understanding the Concept

The question asks to identify the component abilities that make up agility. Agility is a key component of physical fitness, defined as the ability to move and change direction and position of the body quickly and effectively while under control.

Step 2: Detailed Explanation

Let's analyze the contribution of each ability to agility:

- **(A) Speed:** This is essential for agility. The ability to move quickly is a prerequisite for changing direction quickly.
- **(B) Balance:** This is crucial. To change direction without falling or losing control, an individual must maintain their center of gravity (static and dynamic balance).
- **(C) Endurance:** This refers to the ability to sustain physical activity over a long period. While important for overall fitness and sports performance, it is not a direct component of the instantaneous act of agility. An agile movement can be performed even when an athlete is not at peak endurance.
- **(D) Co-ordination:** This is the ability to use different parts of the body together smoothly and efficiently. It is vital for executing the complex, multi-limb movements required for agile actions.

Therefore, agility is a combination of speed, balance, and co-ordination.

Step 3: Final Answer

Agility is a combination of Speed (A), Balance (B), and Co-ordination (D). This corresponds to option (B).

💡 Quick Tip

Think of an agile athlete like a basketball player or a dancer. They need to be fast (Speed), stay upright while changing direction (Balance), and have their limbs work together perfectly (Co-ordination). Endurance is what allows them to keep doing this for the whole game, but it's not part of the definition of a single agile move.

70. The correct conception about Yoga is that_____.

- (A) Yoga is asanas and a system of exercises.
- (B) Yoga is a system of breathing exercises.
- (C) Yoga is a system of attaining supra-natural powers.
- (D) Yoga is the harmony of body, mind and soul.

Correct Answer: (D) Yoga is the harmony of body, mind and soul.

Solution:

Step 1: Understanding the Concept

The question asks for the most accurate and comprehensive definition of Yoga from the given options.

Step 2: Detailed Explanation

Let's evaluate the options based on the philosophical foundations of Yoga:

- **1. Yoga is asanas and a system of exercises:** Asanas (physical postures) are a part of Yoga (one of the eight limbs in Patanjali's Yoga Sutras), but they are not the entirety of Yoga. This is a very limited, modern, and Westernized view.
- **2. Yoga is a system of breathing exercises:** Breathing exercises (Pranayama) are also just one component of Yoga, another of the eight limbs. This is also an incomplete definition.
- **3. Yoga is a system of attaining supra-natural powers:** While advanced yogic texts mention 'siddhis' (supra-natural powers) as potential by-products of deep practice, attaining them is not the goal of Yoga. The true goal is self-realization and liberation, and attachment to such powers is considered an obstacle.
- **4. Yoga is the harmony of body, mind and soul:** This is the most accurate and holistic definition. The word 'Yoga' itself comes from the Sanskrit root 'yuj,' which means to unite or integrate. The practice aims to create a union and harmony between the physical body, the mind, and the spirit or soul, leading to a state of balance and enlightenment.

Step 3: Final Answer

The most correct and comprehensive conception of Yoga is that it is the harmony of body, mind, and soul. Therefore, option (D) is the correct answer.

💡 Quick Tip

Remember that asanas (poses) and pranayama (breathing) are just tools or components of the much larger and deeper system of Yoga. The ultimate goal is always union and harmony, as the name 'Yoga' implies.

71. The current international governing body for Badminton is

- (A) BWF
- (B) FIBA
- (C) IBA
- (D) IBF

Correct Answer: (A) BWF

Solution:

Step 1: Understanding the Concept

The question asks to identify the current international governing body for the sport of badminton.

Step 2: Detailed Explanation

Let's analyze the acronyms:

- **BWF:** Stands for the **Badminton World Federation**. It is the international governing body for badminton recognized by the International Olympic Committee (IOC).
- **FIBA:** Stands for the International Basketball Federation (from its French name Fédération Internationale de Basketball). It governs international basketball.
- **IBA:** Stands for the International Boxing Association. It governs amateur (Olympic-style) boxing.
- **IBF:** Stands for the **International Badminton Federation**. This was the *former* name of the governing body for badminton. It was founded in 1934 and was renamed the Badminton World Federation (BWF) in 2006.

Since the question asks for the *current* governing body, BWF is the correct answer.

Step 3: Final Answer

The current international governing body for Badminton is the BWF (Badminton World Federation). Therefore, option (A) is correct.

💡 Quick Tip

For sports governance questions, be aware of name changes. The IBF became the BWF, just as the IAAF (for athletics) became World Athletics. Questions often include the old name as a distractor.

72. Who was the recipient of the title "Aftab-e-Mausiki"?

- (A) Haridas
- (B) Tansen
- (C) Faiyaz Khan
- (D) Bade Ghulam Ali Khan

Correct Answer: (C) Faiyaz Khan

Solution:

Step 1: Understanding the Concept

The question asks to identify the Indian classical musician who was awarded the title "Aftab-e-Mausiki" (The Sun of Music).

Step 2: Detailed Explanation

Ustad Faiyaz Khan (1886–1950) was an eminent Indian classical vocalist, belonging to the Agra gharana. He was a court musician at the court of Sayajirao Gaekwad III, the Maharaja of Baroda. In 1938, the Maharaja of Mysore conferred upon him the title "**Aftab-e-Mausiki**" in recognition of his immense contribution and mastery in the field of Hindustani classical music. The other musicians are known for different reasons:

- **Swami Haridas:** A spiritual poet and classical musician, believed to be the teacher of Tansen.
- **Tansen:** A legendary musician in the court of Emperor Akbar, one of the 'Navaratnas' (nine jewels).
- **Bade Ghulam Ali Khan:** A celebrated vocalist of the Patiala gharana.

Step 3: Final Answer

The recipient of the title "Aftab-e-Mausiki" was Faiyaz Khan. Therefore, option (C) is correct.

💡 Quick Tip

For questions on Indian classical music, create a list of great masters, their gharanas (schools), and any special titles or honours they received. Titles like 'Aftab-e-Mausiki' or 'Sangeet Samrat' are often asked.

73. The number of Murchhanas (mode of scale) produced from each gramas (tuning system) is:

- (A) 21
- (B) 24
- (C) 7
- (D) 17

Correct Answer: (C) 7

Solution:

Step 1: Understanding the Concept

The question asks for the number of 'Murchhanas' that can be derived from a single 'Grama' in the theory of ancient Indian classical music.

Step 2: Detailed Explanation

In the context of ancient Indian music theory (as described in texts like the Natya Shastra):

- A **Grama** is a parent scale or a fundamental tuning system, consisting of seven 'swaras' (notes).
- A **Murchhana** is a melodic scale or mode that is created by starting a scale from each of the seven notes of a Grama in succession. Essentially, it is a modal shift of the tonic note ('Sa') to the other notes of the parent scale.

Since a Grama has seven notes, and a Murchhana can be started from each of these seven notes, the number of Murchhanas that can be produced from *each* Grama is **7**.

(Note: Ancient texts describe three Gramas - Shadja-grama, Madhyama-grama, and the obsolete Gandhara-grama. Thus, the total number of Murchhanas from all three would be $3 \times 7 = 21$. However, the question asks for the number produced from *each* grama).

Step 3: Final Answer

The number of Murchhanas produced from each Grama is 7. Therefore, option (C) is correct.

💡 Quick Tip

Read the question carefully. It asks for the number of Murchhanas from "each" grama, not the total number of Murchhanas. A grama has 7 swaras (notes), so it can produce 7 Murchhanas (one starting on each note).

74. The examples of the string instruments are:

- (A). Guitar
- (B). Mridangam
- (C). Sitar
- (D). Cymbal

Choose the correct answer from the options given below:

- (A) (A) and (C) only.
- (B) (B) and (C) only.
- (C) (C) and (D) only.
- (D) (D) and (A) only.

Correct Answer: (A) (A) and (C) only.

Solution:

Step 1: Understanding the Concept

The question asks to identify the string instruments from the given list. String instruments, or

chordophones, are musical instruments that produce sound by means of vibrating strings.

Step 2: Detailed Explanation

Let's classify each instrument:

- **(A) Guitar:** A very popular instrument that produces sound from the vibration of its plucked or strummed strings. It is a **string instrument**.
- **(B) Mridangam:** A double-sided drum from Southern India. It is a percussion instrument (membranophone), producing sound when its stretched membrane is struck. It is *not* a string instrument.
- **(C) Sitar:** A classical Indian instrument that produces sound from plucked strings, with a number of sympathetic strings that vibrate as well. It is a **string instrument**.
- **(D) Cymbal:** A percussion instrument consisting of a round metal plate, which is either struck with a stick or clashed with another cymbal. It is an idiophone, not a string instrument.

The string instruments in the list are the Guitar and the Sitar.

Step 3: Final Answer

The examples of string instruments are (A) Guitar and (C) Sitar. This corresponds to option (A).

💡 Quick Tip

Musical instruments are generally classified into four main groups:

- **Chordophones** (String instruments): Guitar, Violin, Sitar.
- **Aerophones** (Wind instruments): Flute, Trumpet, Clarinet.
- **Membranophones** (Drums): Tabla, Mridangam, Snare drum.
- **Idiophones** (Vibrating body): Cymbals, Bells, Xylophone.

Knowing this classification helps in identifying instrument types.

75. What is the significance of the International Yoga Day celebrated on 21st June

- (A) to promote Yoga globally
- (B) to mark the launch of new Yoga equipments only
- (C) to conduct competitive Yoga events only

(D) to honor Yoga instructors only

Correct Answer: (A) to promote Yoga globally

Solution:

Step 1: Understanding the Concept

The question asks for the primary significance or purpose behind the celebration of the International Day of Yoga on June 21st.

Step 2: Detailed Explanation

The International Day of Yoga was established by the United Nations General Assembly in 2014, following a proposal by the Prime Minister of India, Narendra Modi. Let's analyze the options:

- **1. to promote Yoga globally:** This is the core objective. The UN resolution recognized the holistic benefits of Yoga and its universal appeal. The day aims to raise awareness worldwide about the many benefits of practicing yoga and to encourage people everywhere to adopt this practice for physical and mental well-being.
- **2. to mark the launch of new Yoga equipments only:** This is incorrect. The day is about the practice of Yoga, not commercial products.
- **3. to conduct competitive Yoga events only:** While some competitive events may take place, the primary focus is on mass participation and awareness, not just competition.
- **4. to honor Yoga instructors only:** While Yoga instructors are vital, the day is for everyone to participate in and benefit from Yoga, not exclusively to honor instructors.

The main purpose is the global promotion of Yoga and its benefits.

Step 3: Final Answer

The significance of International Yoga Day is to promote Yoga globally. Therefore, option (A) is the correct answer.

 Quick Tip

Remember that UN-designated international days are always about raising global awareness and promoting a cause for the benefit of all humanity. Look for the option that reflects this broad, inclusive, and promotional goal.