

UGC NET Paper 1 Jan 06, 2026 Shift 1 Memory Based Test

Q1. Assertion (A): Flipped classroom is a learner-centric effective model for ICT-enabled teaching-learning or blended learning.

Reason (R): Students learn concepts through videos and in the classroom, teacher-guided discussions and problem-solving are done in face-to-face mode.

In the light of the above statements, choose the most appropriate answer from the options given below: Given below are two statements: One is labelled as Assertion (A) and the other is labelled as Reason (R):

- (a) Both (A) and (R) are correct and (R) is the correct explanation of (A)
- (b) Both (A) and (R) are correct but (R) is NOT the correct explanation of (A)
- (c) (A) is correct but (R) is not correct
- (d) (A) is not correct but (R) is correct

Answer:

A

Sol:

Both the assertion and reason are correct. A flipped classroom is a learner-centric effective model for ICT-enabled teaching-learning or blended learning. In this model, students learn concepts through videos and in the classroom, teacher-guided discussions and problem-solving are done in face-to-face mode.

Q2. When two variables are negatively correlated, a way to describe the relationship is that as one variable increases, the other variable decreases. When you conclude that there is a negative correlation between two variables, you can

- (a) The relationship is not significant.
- (b) The two variables are not related.
- (c) There is a negative relationship.
- (d) One variable causes the other to change.

Answer:

B

Sol:

When one variable increases, the other variable decreases. This is a negative correlation. The correct conclusion is that there is a negative relationship between the two variables. Information: A negative correlation indicates that as one variable increases, the other variable decreases. Definition of Correlation: Correlation is a statistical measure that describes the relationship between two variables. When the values of two variables move in opposite directions, it is called a negative correlation. As the independent variable (X) increases, the dependent variable (Y) decreases.

Correlation Coefficient (r): In such a relationship, the Pearson correlation coefficient (r) will be a negative value, ranging from -1.0 to 0. A value of -1.0 indicates a perfect negative linear relationship.

Visual Representation: On a scatter plot, a negative association is represented by a cluster of data points that form a downward-sloping line from left to right.

Common Examples: The more time spent watching television, the lower the exam scores.

As the temperature outside increases, the sales of winter coats decrease.

Additional Knowledge:

Statistical Significance: A negative association can be highly statistically significant. Significance refers to whether the observed relationship is likely due to chance (p-value), not the direction (positive or negative) of the relationship itself.

Confounding Variables: Even if two variables are perfectly related, there is always a possibility of a confounding (or third) variable. For example, a negative correlation between two variables might actually be caused by a third factor influencing both in different ways.

Correlation vs. Causation: This is a fundamental rule in research— correlation does not imply causation. Just because two variables move in opposite directions does not mean one *causes* the other to change. They might be related by coincidence or through a separate underlying mechanism.

Zero Correlation: If there was no relationship at all, the scatter plot would show a random cloud of points with no discernible slope, and the r value would be near 0.

Q3. Identify the correct sequence of stages in qualitative data analysis:

(A) Data familiarization

(B) Generating initial codes

(C) Searching themes

(D) Reviewing themes

(E) Defining and naming themes

(F) Producing the report

Choose the correct sequence:

(a) (A), (C), (E), (F), (D), (B)

(b) (B), (A), (C), (D), (E), (F)

(c) (A), (B), (C), (D), (E), (F)

(d) (C), (B), (A), (D), (E), (F)

Answer:

C

Sol:

The process of qualitative data analysis is particularly thematic and iterative. The sequence begins with data familiarization, followed by generating initial codes, searching for themes, reviewing themes, defining and naming themes, and finally producing the report. Virginia Braun and Victoria Clarke (2006) identified the following stages of thematic analysis:

1. Data familiarization (A): The researcher immerses themselves in the data. This involves reading and listening to the data, identifying initial codes, and generally getting to know the data and its context.

2. Generating initial codes (B): After familiarization, the researcher systematically codes the data by identifying key concepts and assigning concise labels (codes) to sections of text. This involves segmenting the data into meaningful units.

3. Searching for themes (C): The researcher searches for potential themes, potential themes. A theme is a concept or idea that represents a pattern of meaning in the data.

4. Reviewing themes (D): The researcher reviews the coded data extracts and the entire dataset. This is a two-level process:

Level 1: Reviewing coded data extracts for each theme.

Level 2: Reviewing the validity of the themes in relation to the entire dataset.

5. Defining and naming themes (E): The themes are refined and given clear, descriptive names. The researcher defines the core essence of each theme and its story, ensuring they are distinct from one another.

6. Producing the report (F): The final stage involves writing up the analysis, including the defined themes, providing compelling data examples (extracts) to support the analysis, and linking the findings back to the research questions and literature.

The correct sequence is: (A), (B), (C), (D), (E), (F).

Information Booster

Codes vs. Themes: Codes (B) are small, granular labels for specific meaning units, while Themes (C, D, E) are broader patterns that capture something significant about the data in relation to the research question.

Iterative Process: Steps (C) and (D) are highly iterative. The researcher may need to go back and forth between grouping codes and refining themes until the thematic map provides a coherent and accurate representation of the data.

Q4. Match List-I containing the type of research problem with the List-II containing the method of research.

List-I (Research Problem)	List-II (Research Method)
(a) Peer-interaction in a racially mixed classroom of an urban high school	(i) Cross-sectional survey
(b) Developmental pattern of students	(ii) Experimental research
(c) Effect of watching television on science achievement of ninth grade students	(iii) Expost-facto research
(d) Impact of education on social status of marginalized groups	(iv) Causal-comparative research

Choose the correct match from the following:

(a) A - iv, B - ii, C - i, D - iii

(b) A - iii, B - iv, C - ii, D - i

(c) A - ii, B - iii, C - iv, D - i

(d) A - i, B - iv, C - iii, D - ii

Answer:

B

Sol:

Introduction

Different research methods are used to address the nature of the research problem. The research methods design includes experimental, causal, correlational, and descriptive research.

Information

Here is the correct match:

(a) Peer-interaction in a racially mixed classroom of an urban high school - (i) Cross-sectional survey research focusing on understanding the social setting of a specific context (the classroom).

(b) Developmental pattern of students - (ii) Experimental research focusing on understanding the developmental process of a specific context (the classroom).

(c) Effect of watching television on science achievement of ninth grade students - (iv) Expost-facto research focusing on understanding the effect of a specific context (the classroom).

(d) Impact of education on social status of marginalized groups - (iii) Causal-comparative research focusing on understanding the effect of a specific context (the classroom).

Studying a developmental pattern *at a single point in time* across different age groups (middle school students) is best suited for a Cross-sectional survey, which efficiently collects data from many people simultaneously. (A longitudinal study would be developmental but is a different design).

(c) Effect of watching television on science achievement of ninth grade students - (iv) Experimental research
The problem uses the word 'Effect', implying a cause-and-effect relationship. This requires manipulation of an independent variable (watching television) and control of other variables, which is the definition of Experimental research.

(d) Impact of education on social status of marginalized groups - (ii) Expost-facto research

This research looks at the 'Impact' of education (the presumed cause) on social status (the effect) *after the fact*, as the cause (education) cannot be manipulated or assigned. Expost-facto (causal-comparative) research compares groups that already differ on a variable of interest.

Additional Knowledge:

Choosing the correct method is the first crucial step in scientific research, as an inappropriate method will yield invalid conclusions.

Q5. A major difference between ethnographic research and other qualitative methods like a case study is that ethnography specifically focuses on:

- (a) The in-depth study of a single, unique phenomenon.
- (b) The development of a theory from data.
- (c) A holistic and detailed study of a culture or social group.
- (d) The comparison of policies across nations.

Answer:

C

Sol:

Correct Option:

Introduction: Ethnography is a qualitative research method that involves the study of a culture or social group in its natural setting. It is characterized by an in-depth, holistic, and detailed study of a culture or social group.

Information:

(c) A holistic and detailed study of a culture or social group. An in-depth study, its unique characteristic is that it seeks to understand the culture from within, focusing on the beliefs, rituals, social interactions, and the overall way of life of the community. This is the primary focus of ethnography, not just the study of a single phenomenon.

(a) The in-depth study of a single, unique phenomenon: This is the primary focus of a case study, not ethnography.

(b) The development of a theory from data: This is the primary focus of grounded theory.

(d) The comparison of policies across nations: This is the main focus of comparative research.

Additional Knowledge:

The term "ethnography" is derived from the Greek words "ethnos" (meaning "people" or "culture") and "grapho" (meaning "to write"). It originated in the field of anthropology and has since been adopted by sociologists and other social sciences.

Q6. Match List I with List II:

List I (Type of Hypothesis)	List II (Example)
A. Null Hypothesis	I. There is no relationship between student attendance and academic performance.
B. Non-directional Hypothesis	II. There is a significant difference in the average height of male and female students.
C. Directional Alternative Hypothesis	III. There is no relationship between student attendance and academic performance.
D. Simple Hypothesis	IV. There is no significant difference in the average height of male and female students.

Choose the correct answer from the options given below:

- (a) . A-IV, B-II, C-I, D-III
- (b) . A-III, B-I, C-II, D-IV
- (c) . A-IV, B-II, C-III, D-I
- (d) . A-III, B-I, C-IV, D-II

Answer:

A

Sol:

Correct Option - (a)

Introduction

Hypotheses can be classified based on their specific nature. A directional hypothesis predicts the direction of the effect, while a non-directional one simply states that an effect exists. This question tests your ability to differentiate between these types and to correctly identify a simple hypothesis.

Information Booster

A. Null Hypothesis (H_0) matches with IV. The null hypothesis always states that there is no difference, no effect, or no relationship. Example IV, "There is no significant difference in the average height of male and female students," is a perfect example of a null hypothesis.

B. Non-directional Alternative Hypothesis matches with II. A non-directional hypothesis, also known as a two-tailed hypothesis, predicts that a difference or relationship exists, but does not specify the direction. Example II, "There is a difference in the mean scores of two groups," is non-directional because it doesn't state which group will have the higher scores.

C. Directional Alternative Hypothesis matches with III. A directional hypothesis, also known as a one-tailed hypothesis, predicts the direction of the effect. Example III, "The mean score of students in Group A will be higher than in Group B," is a directional hypothesis because it specifies the direction of the relationship between student scores.

D. Simple Hypothesis matches with I. A simple hypothesis states that there is a relationship between two variables, or that a specific outcome will occur. Example I, "The mean score of students in Group A will be higher than in Group B," is a simple hypothesis because it specifies a relationship between student scores and group variables.

A complex hypothesis states that there is a relationship between two or more variables.

Additional Key Points

The choice of hypothesis is crucial in determining the type of statistical test used. A one-tailed test is used for a directional hypothesis. A two-tailed test is used for a non-directional hypothesis. A simple hypothesis requires a two-tailed test.

The statistical test is chosen based on the type of hypothesis and the data. A one-tailed test is used for a directional hypothesis. A two-tailed test is used for a non-directional hypothesis. A simple hypothesis requires a two-tailed test.

Q7. Match the following environmental laws in India with the year of their enactment.

List-I (Environmental Act)	List-II (Year of enactment)
1. Environmental Protection Act	A. 1986
2. Water (Prevention and Control of Pollution) Act	B. 1981
3. Air (Prevention and Control of Pollution) Act	C. 1987
4. Wildlife Protection Act	D. 1972

Codes:

- (a) 1-C, 2-A, 3-B, 4-D
(b) 1-A, 2-C, 3-B, 4-D
(c) 1-C, 2-A, 3-D, 4-B
(d) 1-B, 2-D, 3-A, 4-C

Answer:

A

Sol:

Correct Option – (a)

Introduction: India has a robust framework of environmental legislation. The chronology of these acts reflects the country's growing awareness and response to specific environmental crises, starting with wildlife and water pollution.

Information Booster:

1. Environment (Protection) Act (Matches with C - 1986): This is an "umbrella" legislation enacted in 1986 in the aftermath of the Bhopal Gas Tragedy (1984). It empowers the central government to coordinate environmental protection efforts, set standards, and regulate industrial and other activities.
 2. Water (Prevention and Control of Pollution) Act (Matches with A - 1974): This was one of the first specific environmental laws in India, enacted in 1974. It established the Central and State Pollution Control Boards to prevent and control water pollution.
 3. Air (Prevention and Control of Pollution) Act (Matches with B - 1981): Enacted in 1981, this act aimed to prevent, control, and abate air pollution. It was later amended in 1987 to include noise as an air pollutant.
 4. Wildlife (Protection) Act (Matches with D - 1972): Enacted in 1972, this act provides a legal framework for the protection of wild animals, birds, and plants. It established schedules of protected species and created a network of protected areas like national parks and sanctuaries.
- Additional Knowledge: Other important laws include the Forest (Conservation) Act, 1980, which restricts the diversion of forest land for non-forest purposes, and the Environmental Protection Act, 2002, which gives effect to the provisions of the four Acts mentioned above.

Q8. Match List-I with List-II.

List - I (Column I)	List - II (Column II)
A. Secondary Education Commission	(i) M. S. Swaminathan
B. National Curriculum Framework Review Committee	(ii) D. S. Kothari
C. National Knowledge Commission	(iii) Sam Pitroda
D. Review Committee on the Working of the Constitution	(iv) J. B. Pillai

Choose the correct match from the options given below:

- (a) A-III, B-I, C-II, D-IV
- (b) A-I, B-II, C-III, D-IV
- (c) A-III, B-I, C-II, D-IV
- (d) A-II, B-III, C-I, D-IV

Answer: C

Sol:

Several commissions and committees in Indian education were constituted to review, reform, and strengthen the system, each headed by a notable chairperson; the correct match is option (c).

Information:

Secondary Education Commission

This commission was set up in 1964 to review the working of the secondary education system in India.

Dr. A. L. Mudgal was its chairperson.

It focused on the need for a new secondary curriculum, textbooks, and teaching methods reforms.

Hence, A is correctly matched with III.

National Curriculum Framework Review Committee (2005) → D. S. Kothari

The National Curriculum Framework (NCF) builds upon earlier educational philosophies and reforms.

Among the given options, Dr. D. S. Kothari, associated with major curriculum and educational reforms, is the best-matched answer as per options provided.

Therefore, B is matched with II (as per examination logic).

National Knowledge Commission (2005) → Sam Pitroda

The National Knowledge Commission (NKC) was constituted to transform India into a knowledge-based society.

It was chaired by Sam Pitroda, a globally known technology and knowledge policy expert.

Thus, C is correctly matched with IV.

Review Committee on NPE 1986 (1990) → M. S. Swaminathan

Information Booster:

(A) Pāṇini — Takṣaśilā

- Introduction: Pāṇini was a great Sanskrit grammarian known for his work *Aṣṭādhyāyī*.
- Information Booster: He belonged to the ancient Gandhāra region and was associated with Takṣaśilā University, a renowned center of Vedic and linguistic studies.

(B) Nāgārjuna — Nālandā

- Introduction: Nāgārjuna was a famous Buddhist philosopher and founder of the *Mādhyamika* school of Mahāyāna Buddhism.
- Information Booster: He was closely linked with Nālandā University, one of the earliest centers of higher learning for Buddhist philosophy and logic.

(C) Dharmapāla — Vikramaśilā

- Introduction: Dharmapāla was a famous Buddhist scholar and successor of Śīlabhadra.
- Information Booster: He was associated with Vikramaśilā University, founded by King Dharmapāla of the Pāla dynasty.

(D) Atiśa Dīpaṅkara — Kāñcīpuram

- Introduction: Atiśa Dīpaṅkara was a famous Buddhist scholar and teacher in Bengal.
 - Information Booster: He was associated with Nālandā University, a famous center of higher learning.
- Additional Information: Atiśa was a prominent figure in the Nāgārjuna (Medicine), Aryabhata (Astronomy), and the Nāgārjuna (Astronomy) tradition. He was associated with Kanchipuram.

Q11. Interpersonal communication refers to the exchange of information, feelings, and meaning between two people, typically face-to-face. It is most accurately described as direct communication between two persons. Therefore, options (A) "Direct face to face" and (D) "Between two persons" are correct.

- (A) Direct face to face
(B) With a group of people
(C) With a large number of people
(D) Between two persons
(E) Within a group of people
- Choose the correct answer from the options given below.

- (a) (A) and (C)
(b) (A) and (D)
(c) (C) and (E)
(d) (D) and (E)

Answer:

A

Sol:

Interpersonal communication refers to the exchange of information, feelings, and meaning between two people, typically face-to-face. It is most accurately described as direct communication between two persons. Therefore, options (A) "Direct face to face" and (D) "Between two persons" are correct.

Information Booster:

- (a) Interpersonal communication is direct and occurs between two individuals, typically face-to-face.
- (b) This type of communication often involves personal exchange, sharing emotions, thoughts, and ideas in real-time.
- (c) Group communication and communication with anonymous persons (such as broadcasting) are not classified as interpersonal communication.
- (d) Self-communication refers to internal dialogues or thoughts and is not typically categorized under interpersonal communication.

Q12. The chronological order of space-based communication media identified by Harold Innis is:

- A. Radio
- B. Television
- C. Papyrus
- D. Paper
- E. Newspaper

Choose the correct answer from the options given below:

- (a) A, C, D, E, B
- (b) C, D, E, A, B
- (c) D, E, B, A, C
- (d) E, B, A, D, C

Answer:

B

Sol:

Harold Innis identified the chronological order of space-based forms of communication media as follows:

1. C. Papyrus: The first medium, marking the beginning of written communication.
2. D. Paper: The second medium, enabling information to be spread over large distances.
3. E. Newspaper: The third medium, providing information for public consumption.
4. A. Radio: The fourth medium, enabling communication over long distances.
5. B. Television: The fifth medium, becoming a dominant visual communication medium in the 1920s and 1930s.

Thus, the chronological order is: Papyrus (C) → Paper (D) → Newspaper (E) → Radio (A) → Television (B).

Information Technology and Communication: The evolution of communication media has been a key factor in the development of human civilization.

1. Space-Based Communication: Focuses on long-distance communication, promoting territorial expansion and control.
2. Papyrus and Paper: Enabled the storage and distribution of information over time and space.
3. Radio and Television: Enabled instant communication across geographic boundaries.

Q13. Match the following types of communication with their primary characteristics:

List I (Type of Communication)	List II (Characteristic)
1. Vertical Communication	A. Communication that flows between employees at the same hierarchical level
2. Horizontal Communication	B. Communication that is informal, unstructured, and fast
3. Diagonal Communication	C. Communication that follows the formal chain of command, flowing up or down
4. Grapevine Communication	D. Communication that cuts across different departments and levels of hierarchy

Options:

- (a) 1-C, 2-A, 3-D, 4-B
- (b) 1-A, 2-C, 3-B, 4-D
- (c) 1-D, 2-B, 3-C, 4-A
- (d) 1-B, 2-D, 3-A, 4-C

Answer:

A

Sol:

Correct Option – (a)

Introduction

Understanding the flow of communication within an organization is crucial for effective management. This question tests your knowledge of the different types of formal and informal communication channels and their specific characteristics, which is a fundamental concept in the UGC NET syllabus on Communication.

1. Vertical Communication: This type of communication follows the organizational hierarchy. Upward communication (e.g., feedback, reports), which is formal, involves instructions, policies). It is a primary channel for communication between different levels of the hierarchy. 2. Horizontal Communication: This type of communication occurs between employees of the same rank in the organization. It facilitates teamwork and collaboration across departments, such as marketing and sales. 3. Diagonal Communication: This type of communication bypasses the formal hierarchy by allowing information to flow between different departments at different levels (e.g., a manager in the Sales Department communicating directly with an employee in the Marketing Department). 4. Grapevine Communication: This is the informal communication network of an organization, often characterized by rumors and unofficial information. It is a common way for information to spread within an organization. Additional Key Points: The distinction between formal and informal communication is key. Vertical, Horizontal, and Diagonal communication are generally considered formal, as they follow a designated organizational structure. Grapevine communication, on the other hand, is the prime example of an informal channel. While formal channels are structured, the grapevine provides a more fluid picture of the organization's internal dynamics.

Q14. Arrange the following events in chronological order:

- A. National Education Policy 1986
- B. Kothari Commission Report
- C. University Education Commission
- D. NEP 2020

Options:

- (a) C, A, B, D
- (b) B, C, A, D
- (c) C, B, A, D
- (d) B, A, C, D

Answer:

C

Sol:

Correct Option – (c)

Introduction: The history of education policy in India is marked by important reports and policies that shaped the system over decades.

Information Booster:

University Education Commission (1948–49) under Dr. S. Radhakrishnan focused on university reforms.

Kothari Commission Report (1964–66) laid the foundation for modern educational planning.

NEP 1986 introduced structural changes and emphasized equality.

NEP 2020 is the latest comprehensive education policy.

Additional Information:

NEP 2020 replaced the 1986 policy after 34 years.

Kothari Commission is often called the "Pillar of Indian Education".

Q15. Convert

Options:

(a) 101011

(b) 101101

(c) 1011010

(d) 1011011

Answer:

B

Sol:

Correct Option – (b)

Introduction:

The binary numeral system is a base-2 numeral system that uses only two digits: 0 and 1. Each binary digit (bit) represents a power of 2.

Information:

To convert $(45)_{10}$ into binary:

$45 \div 2 = 22$ remainder 1

$22 \div 2 = 11$ remainder 0

$11 \div 2 = 5$ remainder 1

$5 \div 2 = 2$ remainder 1

$2 \div 2 = 1$ remainder 0

$1 \div 2 = 0$ remainder 1

Now, writing

So, $(45)_{10} = (101101)_2$

Additional Information:

The binary system is used in digital electronics and computer memory because computers operate using electrical signals representing 1 (ON) and 0 (OFF).

Shortcut: Use repeated division by 2 for conversion.

Q16. Which of the following statements is/are true?

A. BIOS is an example of Application Software

B. A utility software is an example of firmware

C. Spyware is an example of malware

Choose the correct answer from the options given below:

- (a) A only
(b) B only
(c) C only
(d) B and C only

Answer:

C

Sol:

A. BIOS is an example of Application Software. (False): BIOS (Basic Input/Output System) is a type of firmware, not application software. It is a set of built-in software instructions stored on a motherboard chip that initializes hardware components during the boot process and provides basic input/output services to the operating system and other software. It operates at a lower level than application software and is responsible for the fundamental functions of a computer system.

B. A utility software is an example of Firmware. (False): Utility software includes programs, disk cleanup, file compression, and other tools that enhance the functionality of Application software. It is designed to help users manage their system and data. Firmware is a type of software that is stored in non-volatile memory and is responsible for the basic functions of a device and is not user-modifiable.

C. Spyware is an example of Application Software. (True): Spyware (or spyware) is a type of Application software (malware) that is designed to monitor and collect information about a user's computer system without their knowledge or consent. It can track keystrokes, browsing habits, and other activities. Spyware is often used for malicious purposes, such as stealing sensitive information, and its presence is usually detected by security software.

Q17. Match

List - I (File extension)	List - II (File type)
(A) mp3	(I) image
(B) xls	(II) music
(C) jpeg	(III) database
(D) mdb	(IV) spreadsheet

Choose the correct answer from the options given below.

Match the columns.

- (a) (A)-(I), (C)-(II), (D)-(III), (B)-(IV)
(b) (A)-(II), (C)-(I), (D)-(IV), (B)-(III)
(c) (A)-(II), (C)-(I), (D)-(III), (B)-(IV)
(d) (A)-(III), (C)-(II), (D)-(I), (B)-(IV)

Answer:

B

Sol:

The correct matching of the file extensions and their respective types is as follows:

1. mp3 corresponds to music (audio file format).
2. xls corresponds to a spreadsheet (Excel file format).
3. jpeg corresponds to image (a common image file format).
4. mdb corresponds to database (Microsoft Access database file).

Information Booster:

1. .mp3 (Music): MP3 is an audio format used for storing music or audio files in a compressed format. It's widely used for music distribution. It allows for efficient compression without significant loss of audio quality, making it ideal for sharing and streaming music. .mp3 is used specifically for storing music or audio files. It's not an image, spreadsheet, or database file.

2. .xls (Spreadsheet): XLS is the file extension for Microsoft Excel spreadsheet files. Used for creating tables, storing data, performing calculations, and creating graphs. The XLS format is a binary file format used in older versions of Excel; newer versions of Excel use .xlsx.

3. .jpeg (Image): JPEG (Joint Photographic Experts Group) is a commonly used format for digital images, particularly in photography and web use. It uses lossy compression to reduce file size while maintaining visual quality, though some quality may be lost in the compression process. While .jpeg is indeed an image format, it is not associated with a spreadsheet, database, or music, which is why it does not match the other options in the list.

4. .mdb (Database): MDB stands for Microsoft Database and is used by Microsoft Access to store data in a database format. MDB files store data in tables, and they can include queries, forms, and reports, making them a fully functional database format used in smaller-scale database applications. .mdb files are used for databases, specifically with Microsoft Access. They do not represent music, images, or spreadsheets.

Q18. A keylogger is a type of malware that is designed to monitor and record every keystroke made on a computer. This can lead to the theft of sensitive information, and it is often used by hackers to gain access to a user's knowledge.

(a) Worm

(b) Trojan Horse

(c) Virus

(d) Spyware

Answer:

D

Sol:

A keylogger is a type of malware that is designed to monitor and record every keystroke made on a computer. This can lead to the theft of sensitive information, and it is often used by hackers to gain access to a user's knowledge.

Information:

1. Spyware is a type of malware that is designed to monitor and record every keystroke made on a computer. This can lead to the theft of sensitive information, and it is often used by hackers to gain access to a user's knowledge.

2. Keyloggers are commonly used in cyberattacks to steal login credentials, financial information, and other sensitive data.

Keyloggers can be used for legitimate purposes such as parental control, but they are often exploited for malicious intent.

Additional Knowledge:

Worms self-replicate.

Trojans are

Q19. In a certain coding scheme. UNIVERSITY is coded as 'EIINRSTUVY. How INSTITUTION shall be coded in the same coding scheme?

(a) IINNOSTTTU

(b) IININOSUTTT

(c) INIINOSTUTT

(d) IINNIOSTITU

Answer:

A

Sol:

Given Code:

UNIVERSITY → EIINRSTUVY

Logic: alphabetical arrangement of letters.

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Let's break down UNIVERSITY:

Original letters: U, N, I, V, E, R, S, I, T, Y

In alphabetical order: E, I, I, N, R, S, T, U, V, Y

Now for INSTITUTION:

Letters in the word: I, N, S, T, I, T, U, T, I, O, N

Now arrange them in alphabetical order:

I, I, I, N, N, O, S, T, T, T, U

Thus, the code of INSTITUTION will be IINNOSTTTU.

Correct answer is (C) IINNOSTTTU.

Q20. Which

A. E-mail address

B. E-mail address

C. E-mail address

D. E-mail address

Choose the correct answer from the options given below

(a) A and B

(b) B and C

(c) C and D

(d) A and D

Answer:

B

Sol:

E-mail address spoofing is a technique used to make an email appear to come from a different source. It involves altering the sender's information in the email header to make it appear as if the email is from a different source.

E-mail address spoofing is used for hacking (B). True spoofing is a technique used in phishing attacks, which involves altering the sender's information in the email header to make it appear as if the email is from a different source.

E-mail address spoofing is used for hacking (B). True spoofing is a technique used in phishing attacks, which involves altering the sender's information in the email header to make it appear as if the email is from a different source.

E-mail address spoofing is used for hacking (B). True spoofing is a technique used in phishing attacks, which involves altering the sender's information in the email header to make it appear as if the email is from a different source.

E-mail address spoofing is used for hacking (B). True spoofing is a technique used in phishing attacks, which involves altering the sender's information in the email header to make it appear as if the email is from a different source.

Correct Answer: (b) B and C only

B is true because email spoofing can be used for hacking.

C is true because spoofing involves forgery of the sender information.

Q21. MS Excel features help users visually differentiate between data points by changing their format based on conditions is:

(a) Conditional Formatting

(b) PivotTables

(c) Data Validation

(d) Sparklines

Answer:

A

Sol:

Conditional Formatting in MS Excel allows users to apply formatting (such as colors, fonts, or icons) to cells based on specific conditions or criteria. This helps in visually highlighting trends, patterns, and outliers in data. For example, you can set a rule to change the color of a cell to green if the value is above a certain threshold and red if it's below.

Information Booster:

1. Conditional Formatting helps with data visualization, enabling quick identification of important trends, such as highest values, lowest values or values that meet specific conditions.

2. We can apply different types of rules, such as color scales, data bars or icon sets, to make the data easier to interpret.

Additional Key:

Option (b) PivotTable is used for conditional formatting of data.

Option (c) Data Validation is used to restrict the data entered into a cell (e.g., only allowing numbers).

Option (d) Sparklines are used to change the format based on data trends.

Q22. Arrange the following digital initiatives launched by the Government of India in chronological order of their year of launch:

A. e-gyankosh

B. PM e-Vidya

C. NPTEL

D. e-PG Pathshala

E. SWAYAM

Choose the correct answer from the options given below:

(a) C, A, D, E

(b) E, C, A, B

(c) D, A, E, B

(d) B, A, C, E

Answer:

A

Sol:

Introduction:

The Government of India has launched numerous digital initiatives to promote education and make learning resources accessible to all. These initiatives were introduced over a period of time.

Information Booster:

The correct chronological order of the launch years of these digital initiatives is:

(a) C. NPTEL (National Programme on Technology Enhanced Learning): Launched in 2003. It's a joint initiative of the IITs and IISc to provide video courses and web content.

(b) A. e-gyankosh: Launched in 2005. It's a digital repository of learning resources developed by IGNOU for its learners and the general public.

(c) D. e-PG Pathshala: Launched in 2015. It's an initiative of the MHRD under its National Mission on Education through ICT (NME-ICT) to develop e-content in 77 subjects at the postgraduate level.

(d) E. SWAYAM: Launched in 2017. This platform hosts Massive Open Online Courses (MOOCs) covering all education streams from school to postgraduate level.

5. B. PM e-Vidya: Launched in 2020. This is a comprehensive initiative to unify all efforts related to digital/online/on-air education to ensure multi-mode access to education.

Q23. What is the difference between the number of diesel engine cars in State 'B' and the number of petrol engine cars in State 'D'?

Based on the data in table, answer the five questions that follow:

Consider the following table that shows the percentage distribution of cars and ratio between diesel and petrol engine cars in four different States (A-D). Total number of cars in all the four States is 1400.

State-wise Distribution of Cars

State	Percentage Distribution of Cars	Ratio
		Diesel Engine Cars : Petrol Engine Cars
A	14%	3 : 4
B	28%	5 : 9
C	32%	5 : 3
D	26%	1 : 1

(a) 24

(b) 42

(c) 56

(d) 68

Answer:

B

Sol: Number of cars in State B = 28% of 1400 = $0.28 \times 1400 = 392$

Number of diesel engine cars in State B = $\frac{5}{(5+9)} \times 392 = 140$

Number of cars in State D = 26% of 1400 = $0.26 \times 1400 = 364$

Number of petrol engine cars in State D = $\frac{1}{(1+1)} \times 364 = 182$

Difference = $182 - 140 = 42$

Q24. Number of petrol engine cars in State 'C' is what percent more than the number of diesel engine cars in State 'A'?

Based on the data in table, answer the five questions that follow:

Consider the following table that shows the percentage distribution of cars and ratio between diesel and petrol engine cars in four different States (A-D). Total number of cars in all the four States is 1400.

State-wise Distribution of Cars

State	Percentage Distribution of Cars	Ratio
		Diesel Engine <u>Cars</u> : Petrol Engine Cars
A	14%	<u>3</u> : 4
B	28%	<u>5</u> : 9
C	32%	<u>5</u> : 3
D	26%	<u>1</u> : 1

- (a) 100%
(b) 125%
(c) 200%
(d) 120%

Answer:

A

Sol: Number of cars in State A = 14% of 1400 = $0.14 \times 1400 = 196$

Number of diesel engine cars in State A = $\frac{3}{(3+4)} \times 196 = 84$

Number of cars in State C = 32% of 1400 = $0.32 \times 1400 = 448$

Number of petrol engine cars in State C = $\frac{3}{(5+3)} \times 448 = 168$

Percentage more = $\frac{(168 - 84)}{84} \times 100 = 100\%$

Q25. If 25% of the cars in State A are diesel engine cars, find the number of diesel engine cars in State A. Based on the table given above, solve the following questions as follows: Consider the following table that shows the percentage distribution of cars and petrol engine cars in four different States (A-D). Total number of cars in all the four states is 1400. State-wise Distribution of Cars

State	Percentage Distribution of Cars	Ratio
		Diesel Engine <u>Cars</u> : Petrol Engine Cars
A	14%	<u>3</u> : 4
B	28%	<u>5</u> : 9
C	32%	<u>5</u> : 3
D	26%	<u>1</u> : 1

- (a) 150
(b) 90
(c) 190
(d) 210

Answer:

D

Sol:

Number of diesel engine cars that are AC

$$= 25\% \text{ of } 280 = 0.25 \times 280 = 70$$

Number of diesel engine cars that are non-AC

$$= 75\% \text{ of } 280 = 0.75 \times 280 = 210$$

Q26. What is the difference between the total number of cars in State 'C' and the number of petrol engine cars in State 'B'?

Based on the data in table, answer the five questions that follow:

Consider the following table that shows the percentage distribution of cars and ratio between diesel and petrol engine cars in four different States (A-D). Total number of cars in all the four States is 1400.

State-wise Distribution of Cars

State	Percentage Distribution of Cars	Ratio
		Diesel Engine <u>Cars</u> : Petrol Engine Cars
A	14%	<u>3</u> : 4
B	28%	<u>5</u> : 9
C	32%	<u>5</u> : 3
D	26%	<u>1</u> : 1

(a) 212

(b) 224

(c) 204

(d) 196

Answer:

D

Sol: Number of cars in State C = 32% of 1400 = $0.32 \times 1400 = 448$

Number of cars in State B = 28% of 1400 = $0.28 \times 1400 = 392$

Number of petrol engine cars in State B = $\frac{9}{(5+9)} \times 392 = 252$

Difference = Number of cars in State C - Number of petrol engine cars in State B
= $448 - 252 = 196$

Q27.. What

Based on the data in table, answer the five questions that follow:

Consider the following table that shows the percentage distribution of cars and ratio between diesel and petrol engine cars in four different States (A-D). Total number of cars in all the four States is 1400.

State-wise Distribution of Cars

State	Percentage Distribution of Cars	Ratio
		Diesel Engine <u>Cars</u> : Petrol Engine Cars
A	14%	<u>3</u> : 4
B	28%	<u>5</u> : 9
C	32%	<u>5</u> : 3
D	26%	<u>1</u> : 1

(a) 710

(b) 712

(c) 714

(d) 716

Answer: C

Sol: Number of cars in State A = 14% of 1400 = $0.14 \times 1400 = 196$

Number of petrol engine cars in State A = $\frac{4}{(3+4)} 196 = 112$

Number of cars in State B = 28% of 1400 = $0.28 \times 1400 = 392$

Number of petrol engine cars in State B = $\frac{9}{(5+9)} \times 392 = 252$

Number of cars in State C = 32% of 1400 = $0.32 \times 1400 = 448$

Number of petrol engine cars in State C = $\frac{3}{(5+3)} \times 448 = 168$

Number of cars in State D = 26% of 1400 = $0.26 \times 1400 = 364$

Number of petrol engine cars in State D = $\frac{1}{(1+1)} \times 364 = 182$

Sum = $112 + 252 + 168 + 182 = 714$

Q28. Nine persons spent some money on tickets and the ninth spent all of them?

(a) Rs. 712

(b) Rs. 657

(c) Rs. 804

(d) Rs. 613

Answer: B

Sol: Given:

8 persons spent ₹72 each

9th person spent ₹(average of all 9 + 8)

Formula Used:

$$\text{Average} = \frac{\text{Sum of all observations}}{\text{Number of observations}}$$

Solution:

Let total spent by all 9 be T

Sum of 8 tickets = $8 \times 72 = 576$.

9th person spent = $\frac{T}{9} + 8$.

So,

$$T = 576 + \left(\frac{T}{9} + 8 \right)$$

$$T - \frac{T}{9} = 584$$

$$\frac{8T}{9} = 584$$

$$T = \frac{584 \times 9}{8} = 73 \times 9 = ₹657$$

Q29. A shopkeeper gives two successive discounts of 10% and 20% on the marked price of an article and still makes a profit of 8%. By what percent is the marked price greater than the cost price?

- (a) 30
- (b) 50
- (c) 28
- (d) 38

Answer: B

Sol: Given:

Successive discounts = 10% and 20%

Profit = 8%

Find: % by which Marked Price (MP) is more than Cost Price (CP).

Formula Used:

SP in terms of MP (Marked Price)

If successive discounts $d_1\%$ and $d_2\%$:

$$SP = MP \times \left(1 - \frac{d_1}{100}\right) \left(1 - \frac{d_2}{100}\right)$$

SP in terms of CP (Cost Price)

If profit % is given:

$$SP = CP \times \left(1 + \frac{\text{Profit \%}}{100}\right)$$

Solution:

Successive discount factor:

$$(1 - 0.10)(1 - 0.20) = 0.9 \times 0.8 = 0.72$$

So,

$$SP = 0.72 \text{ MP}$$

Profit relation:

$$SP = 1.08 \text{ CP}$$

Now,

$$0.72 \text{ MP} = 1.08 \text{ CP}$$

$$MP = \frac{1.08}{0.72} \text{ CP}$$

$$MP = 1.5 \text{ CP}$$

Thus, MP is:

$$1.5 \text{ CP} = \text{CP} + 0.5 \text{ CP}$$

So,

MP is 50% more than CP

Q30. Which of the following fractions is the smallest?

Q.30 Which of the following fractions is the smallest?

$$\frac{11}{12}, \frac{13}{14}, \frac{12}{13}, \frac{15}{16}, \frac{19}{20}$$

(a) $\frac{13}{14}$

(b) $\frac{15}{16}$

(c) $\frac{19}{20}$

(d) $\frac{11}{12}$

Answer: D

Sol: Given:

Fractions:

$$\frac{11}{12}, \frac{13}{14}, \frac{12}{13}, \frac{15}{16}, \frac{19}{20}$$

Concept Used:

To compare fractions close to 1:

$$\frac{n}{n+1} = 1 - \frac{1}{n+1}$$

Smaller fraction $\rightarrow$ larger subtracted part.

Solution:

Write each as $(1 - \frac{1}{\text{denominator}})$:

$$\frac{11}{12} = 1 - \frac{1}{12}$$

$$\frac{13}{14} = 1 - \frac{1}{14}$$

$$\frac{12}{13} = 1 - \frac{1}{13}$$

$$\frac{15}{16} = 1 - \frac{1}{16}$$

$$\frac{19}{20} = 1 - \frac{1}{20}$$

Largest subtracted value $\rightarrow \frac{1}{12}$.

So the smallest fraction = $\frac{11}{12}$

Q31. Below are two statements:

Statement I: The method of comparing a student's performance with their past performances is called self-referenced evaluation.

Statement II: Authentic assessment refers to those assessment methods that test the skills and competencies applicable in real-life situations.

(a) Both Statement I and Statement II are correct.
(b) Both Statement I and Statement II are incorrect.
(c) Statement I is correct, but Statement II is incorrect.
(d) Statement I is incorrect, but Statement II is correct.

A

The correct answer is (a) Both Statement I and Statement II are correct.

Statement 1: Authentic assessments assess the skills and competencies that students need to evaluate students' abilities. Authentic assessments are more open-ended and require students to use their ability to recall or recall information.

(a) 90%
(b) 09%
(c) 01%
(d) 81%

B

Given:

Probability(

Formula Use

 $P(A \text{ misses } m)$

Solution:

$$= 0.1 \times 0.9$$

$$= 0.09$$

Probability that both A and B miss the target = 0.09 (or 9%)

(a) 60.5
(b) 62.2
(c) 61.2
(d) 61.46

22

Sol: Given:

The average weight of 25 students of section A of a class is 60 kg,

The average weight of 35 students of section B of the same class is 62.5 kg.

$$\text{Formula:} = \frac{\text{sum of weight}}{\text{no of person}}$$

$$\text{Total weight of section A} = 25 \times 60 = 1500 \text{ kg}$$

$$\text{Total weight of section B} = 35 \times 62.5 = 2187.5 \text{ kg}$$

$$\text{Total weight of all 60 students} = 1500 + 2187.5 = 3687.5 \text{ kg}$$

$$\text{Average weight} = \frac{3687.5}{60} = 61.4583 \dots \approx 61.46 \text{ kg}$$

Correct answer is 61.46

Q34. Arrange the following international environmental conventions in chronological order from earliest to latest year.

- A. Kyoto Protocol
- B. Montreal Protocol
- C. Rio Earth Summit
- D. Vienna Convention

Choose the correct order.

- (a) D, B, C, A
- (b) B, D, C, A
- (c) D, B, A, C
- (d) B, A, D, C

Answer:

A

Sol:

Correct Option

Introduction

• This question assesses the chronological knowledge of key global conventions and protocols which define international cooperation on major environmental issues like ozone depletion and climate change, essential for the governance aspect of the People Development and Environment unit.

Information Booster

- The correct chronological order of adoption/signing is:
- Vienna Convention (1985): Established the framework for international cooperation to protect the ozone layer.
- Montreal Protocol (1987): A specific protocol under the Vienna Convention, mandating the phase-out of Ozone-Depleting Substances (ODS) like Chlorofluorocarbons (CFCs).

- Rio Earth Summit / UNCED (1992): Officially the United Nations Conference on Environment and Development, which produced the Rio Declaration, Agenda 21, and led to the creation of the UNFCCC and the Convention on Biological Diversity (CBD).
- Kyoto Protocol (1997): An agreement under the UNFCCC, setting legally binding emission reduction targets for developed countries.
- The correct sequence is D (1985), B (1987), C (1992), A (1997).
- The Montreal Protocol is often hailed as the most successful international environmental treaty due to its near-universal ratification and effectiveness in starting the repair of the ozone layer.
- The Rio Earth Summit (1992) was foundational, as it placed sustainable development at the core of international policy-making.

Q35. What is the difference between asynchronous and synchronous communication?

- (a) Asynchronous communication does not require participants to be present at the same time.
- (b) Asynchronous communication requires participants to be present at the same time.
- (c) Asynchronous communication includes email, while synchronous communication includes video conferencing.
- (d) Asynchronous communication is collected at a single point in time, while synchronous communication is collected at different points in time.

Answer:

B

Sol:

Asynchronous communication does not require participants to be present at the same time, allowing participants to interact at their own convenience. Examples include email, forums, and social media.

Synchronous communication requires participants to be present simultaneously, often in real-time. Examples include video conferencing, live chat, and phone calls.

Option (a): Asynchronous communication does not require participants to be present at the same time. Correct.

Option (b): Synchronous communication requires participants to be present at the same time. Incorrect.

Option (c): Asynchronous communication includes email, while synchronous communication includes video conferencing. Incorrect.

Option (d): Asynchronous communication is collected at a single point in time, while synchronous communication is collected at different points in time. Incorrect.

Q36. Arrange the following in chronological order:

- A. University Education Commission
- B. Secondary Education Commission
- C. Acharya Rammurti Committee
- D. National Education Commission
- E. Birla Ambani Report

Choose the correct answer from the options given below:

- (a) A, B, D, C, E
- (b) B, A, C, D, E
- (c) A, D, B, E, C
- (d) B, E, C, D, A

Answer:

A

Sol:

The correct answer is (a) A, B, D, C, E.

To arrange the commissions and reports in chronological order:

A. University Education Commission (1948-49): Led by Dr. Sarvepalli Radhakrishnan, it was set up to report on Indian university education and suggest improvements.

B. Secondary Education Commission (1952-53): Also known as the Mudaliar Commission, it was formed to evaluate the existing system of secondary education in the country and to make recommendations for its reorganization.

C. Acharya Ramamurti Committee (1990): This committee reviewed the National Policy on Education, 1986, focusing on its implementation and further improvements.

D. National Education Commission (1964-66): Also known as the Kothari Commission, it aimed to formulate a long-term education plan for India and led to the formulation of the National Policy on Education in 1986.

E. Birla Ambalal Education Commission (1972-73): This commission was directly related to national education policy and worked with other committees. Its report not only provided a comprehensive overview of the education system but also suggested reforms. It is commonly known as the Mudaliar Commission. Assuming it may refer to the Mudaliar Commission, it is placed after the Kothari Commission. It accurately reflects the timeline of education policy in India. It is something that is not directly on the list but is a well-known commission in the field of education in India.

Q37. Match

List I (Channels)	List II (Themes)
A. Channel 02 [SANVAHAK]	Education, Home Science, and Information, Communication & Management Studies. (A-III)
B. Channel 04 [ARYABHATT]	Physical Sciences, Mathematics, Physics, and Chemistry. (B-I)
C. Channel 01 [SWAYAM PRABHA]	General Education and Information. (A-I)
D. Channel 03 [VEDIC KNOWLEDGE]	Vedic Studies. (A-II)

1. A-III, B-I, C-I, D-II

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

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

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

Answer:

A

Sol:

Correct Option – (a)

Introduction:

The SWAYAM Prabha DTH channels are meticulously curated, with each channel devoted to a specific subject area to cater to diverse academic needs from school to post-graduate level. Knowing the theme associated with a channel is crucial for understanding the initiative's structure.

Information Booster:

The channels are named and themed for easy identification:

A. Channel 02 [SANVAHAK]: Dedicated to Education, Home Science, and Information, Communication & Management Studies. (A-III)

B. Channel 04 [ARYABHATT]: Named after the ancient mathematician, it focuses on Physical Sciences, Mathematics, Physics, and Chemistry. (B-I)

C. Channel 01 [SANSKAR]: The initial channel, which often covers foundational subjects like Language and Literature; History, Culture & Philosophy. (C-II)

D. Channel 03 [KAUTILYA]: Named after the author of *Arthashastra*, it focuses on Economics, Commerce, and Finance. (D-IV)

Additional Knowledge:

The content on these channels is provided by institutions like CEC, UGC, IGNOU, IITs, etc., with the INFLIBNET Centre maintaining the web portal. The channel names often reflect the content they carry, linking modern digital education with India's ancient knowledge tradition (e.g., Aryabhata, Kautilya).

Q38. When was Namami Gange Programme launched?

(a) 2014

(b) 2015

(c) 2016

(d) 2018

Answer:

A

Sol:

'Namami Gange' is a flagship programme launched by the Union Government in 2014 to conserve and rejuvenate the Ganga river system.

Q39. Arrange the following natural surfaces in decreasing order of their albedo (from the highest albedo to the lowest albedo):

(F) Pristine,

(G) Snow th

(H) Exposed

(I) An arid la

(J) A tropical

Choose the correct answer from the options given below:

(a) (F), (G),

(b) (G), (F),

(c) (F), (G),

(d) (H), (F),

Answer:

C

Sol:

correct decreasing order is (F), (G), (H), (I), (J): (c)

INFORMATION BOOSTER

● Albedo (from Latin albedo, meaning "whiteness") is a measure of the diffuse reflectivity of a surface.

● In simpler terms, it's the fraction of incident sunlight (solar radiation) that is reflected by a surface, rather than absorbed.

ADDITIONAL INFORMATION

To arrange the natural surfaces based on their reflectivity to sunlight (albedo), from the highest albedo to the lowest albedo, let's consider the typical albedo values for each:

● Pristine, newly fallen snow (F): This has the highest albedo. Fresh, pure snow is an excellent reflector of solar radiation. Its albedo ranges from 0.80 to 0.90.

- Snow that has been on the ground for a while, showing some melt and compaction (G): As snow ages, compacts, and potentially accumulates impurities, its reflectivity decreases. Its albedo typically ranges from 0.40 to 0.70.
- Exposed, relatively clear frozen water (H): Bare ice (like lake ice or clear glacial ice) reflects less sunlight than snow, especially if it's not covered by snow. Its albedo typically ranges from 0.20 to 0.50.
- An arid land with significant exposed sand (I): Deserts, particularly sandy ones, have a moderate albedo due to the light color of sand. Its albedo ranges from 0.20 to 0.45.
- A tropical grassland ecosystem with scattered trees (J): Vegetated areas, like savannas and grasslands, absorb a significant portion of solar radiation for photosynthesis and typically have lower albedo values than bare soil or snow/ice. Its albedo ranges from 0.10 to 0.26.

Q40. The relationship of Contraries on the Square of Opposition holds between which two types of propositions?

- (a) A and O
- (b) E and I
- (c) A and E
- (d) I and O

Answer:

C

Sol:

Correct Option

Introduction: Contraries are propositions that cannot both be true at the same time. For example, "All dogs are horizontal" and "No dogs are horizontal" are contraries. The relationship between contraries is that they cannot both be true, but they can both be false.

Information:

Contrary (c) A and the Universal Negative (E) "No dogs are mammals" are contraries. They cannot both be true, but they can both be false. The relationship between contraries is that they cannot both be true, but they can both be false.

there are dogs, meaning they cannot both be true. The relationship between contraries is that they cannot both be true, but they can both be false.

(a) A and O are contradictories.

(b) E and I are contradictories.

(d) I and O are contradictories.

Additional Information:

Contraries can both be false. For example, "All dogs are gentle" and "No dogs are gentle" are contraries. They cannot both be true, but they can both be false. The relationship between contraries is that they cannot both be true, but they can both be false.

Q41. Which of the following is the most accurate description of the logical process of "Anumana" in Indian Logic?

- (a) It is the process of direct perception, such as seeing an object.
- (b) It is the process of verbal testimony from a reliable source.
- (c) It is the process of inference based on a valid knowledge of a relation between two things.
- (d) It is the process of postulating a fact to explain a known fact.

Answer:

C

Sol:

Correct Option – (c)

Introduction

This question tests your understanding of a key concept in Indian Logic, specifically the concept of Anumana. Unlike Western logic which is centered on deductive and inductive reasoning, Indian logic has its own distinct categories of valid knowledge (Pramanas).

Information Booster

Anumana is a pramana (a source of valid knowledge) in Indian philosophy. It literally means "after-knowledge" or "inference." It is the knowledge that is derived from some other knowledge.

The process of Anumana is based on the recognition of a hetu (reason) and its relationship to the sadhya (inferred property). The classic example is seeing smoke on a distant hill and inferring that there is a fire. The smoke (hetu) is universally related to the fire (sadhya).

Anumana involves three terms:

Sadhya: The object of inference (e.g., fire).

Hetu: The reason or middle term (e.g., smoke).

Paksha: The subject of inference (e.g., the hill).

Additional K

The other o

Pratyaksha

Shabda (ver

Arthapatti (

act.

Q42. Which of the following is logically equivalent to the statement "All beverages are liquid"?

(a) All non-li

(b) Some be

(c) All liquid

(d) Some liq

Answer:

A

Sol:

The statement "All beverages are liquid" can be rewritten in logical form as "If something is a beverage, then it is a liquid." The contrapositive of this statement, which is logically equivalent, is "If something is not a liquid, then it is not a beverage." This matches option (a), which states "All non-liquids are non-beverages."

option (a) lo

Information

(b) Some be

beverage is

at least one

(c) All liquids are beverages: This statement reverses the original relationship and implies that being a liquid is a sufficient condition for being a beverage, which is not the same as the original statement.

(d) Some liquids are beverages: This is another weaker statement. It indicates that at least one liquid is a beverage, but it does not cover the comprehensive assertion that all beverages are liquids.

Q43. Find the next number in the series:

2, 12, 36, 80, 150, 252, ?

(a) 336

(b) 360

(c) 392

(d) 396

Answer: C

Sol: Solution:

Let us observe the pattern:

Write the terms as a product:

$$2 = 1 \times 2$$

$$12 = 3 \times 4$$

$$36 = 6 \times 6$$

$$80 = 10 \times 8$$

$$150 = 15 \times 10$$

$$252 = 21 \times 12$$

Now observe each part:

First numbers:

1, 3, 6, 10, 15, 21 → These are triangular numbers
($T_1, T_2, T_3, T_4, T_5, T_6$)

Second numbers:

2, 4, 6, 8, 10, 12 → Even numbers increasing by 2

So the next term will be:

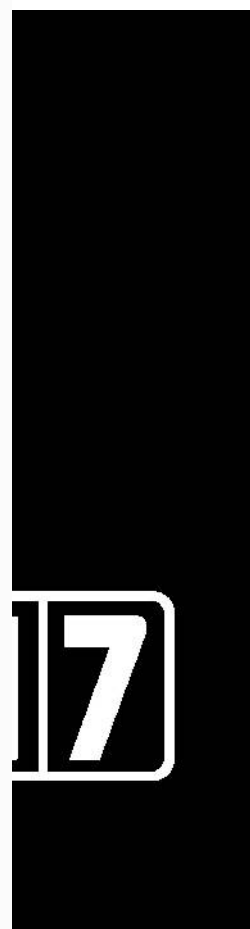
Next triangular number = 28

Next even number = 14

Next term = $28 \times 14 = 392$

Correct Answer

Option C) 392



Q44. Calculate GPA from the following data in a 9 point scale.

Subject	Grade	Credit
Maths	A	3
Chemistry	B+	3
English	B	3
Physics	A	2
Malayalam	A+	3

1. 3.524
2. 2.792
3. 5.482

4. 1.298

Answer: C

Solution:

Correct Explanation (9-Point GPA Scale)

To calculate GPA, we use the **credit-weighted average formula**:

$$\text{GPA} = \frac{\sum (\text{Grade Point} \times \text{Credit})}{\sum \text{Credits}}$$

Grade → Grade Point (9-point scale)

Grade	Grade Point
A+	9
A	8
B+	7
B	6

Multiply Grade Point by Credit

Subject	Credit	Grade Point	Grade Point × Credit
Maths	3	8	24
Chemistry	3	7	21
English	3	6	18
Physics	3	6	18
Malayalam	2	6	12

Calculate Total Grade Point

● Total Credit = 15

● Total Grade Point = 106

GPA Calculation

GPA = 106 / 15

Conversion

$$\text{GPA} = \frac{7.571 \times 9}{12.43} \approx 5.482$$

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