

## UGC NET MEMORY BASED QUESTION PAPER 2026 WITH ANSWER KEY- 2 JAN SHIFT 2

**Q1.** Match the LIST-I with LIST-II

| List - I (Teaching Methods) | List - II (Key Characteristic)                                                 |
|-----------------------------|--------------------------------------------------------------------------------|
| A. Inquiry-based Learning   | I. Students engage in small group discussions to solve problems.               |
| B. Collaborative Learning   | II. Students watch lectures at home and complete practical exercises in class. |
| C. Flipped Classroom        | III. Students investigate a topic by asking questions and exploring resources. |
| D. Project-based Learning   | IV. Students build knowledge on a subject through hands-on projects.           |

Choose the correct match:

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

**Ans.(b)**

**Sol.** Correct match is:

Introduction to various teaching methods commonly used in education and their primary characteristics. This section provides information on four methods: Inquiry-based Learning, Collaborative Learning, Flipped Classroom, and Project-based Learning. It matches each method with its key characteristic from a list. Inquiry-based Learning (A) matches with III (Students investigate a topic by asking questions and exploring resources). Collaborative Learning (B) matches with I (Students engage in small group discussions to solve problems). The core of Flipped Classroom (C) is that students watch lectures at home and complete practical exercises in class. This matches with II (Students watch lectures at home and complete practical exercises in class). This method contrasts with traditional teacher-centered approaches. They are designed to promote critical thinking, problem-solving, and deeper engagement with the subject matter. Project-based Learning (D) matches with IV (Students build knowledge on a subject through hands-on projects).

**Q2.** Arrange the levels of the Cognitive Domain of Bloom's Taxonomy from the lowest to the highest order:

- A. Evaluation
- B. Synthesis
- C. Knowledge
- D. Application
- E. Comprehension

Choose the correct answer from the options given below:

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

**Ans.(a)**

**Sol.** Correct Option - (a)

Introduction: The correct answer is (a) as it correctly arranges the cognitive levels of Bloom's Taxonomy from the simplest to the most complex.

Information Booster: The original Bloom's Taxonomy of the Cognitive Domain, from lowest to highest, is:

1. C. Knowledge: Recalling facts and basic concepts.

2. E. Compre

3. D. Applica

4. B. Synthes

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5. A. Evaluat

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**Q3. Match I**

**LIST - I (Le**

A. Albert B

B. Jerome B

C. David Ke

D. Paulo Fr

**LIST - II (Unique**

I. Learning occurs

II. Spiral curriculu

III. Learning occurs

IV. Learning occurs

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Choose the correct answer from the options given below:

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

**Ans.(b)**

**Sol.** Correct Option - (b)

Introduction: This question asks to match prominent learning theorists with their distinct contributions to educational thought. Understanding these connections is fundamental to grasping the evolution of learning theories and their practical implications in teaching.

Information Booster: Let's analyze each pairing:

A. Albert Bandura

Unique Educational Contribution: I. Learning occurs through observation and modeling. Albert Bandura is famous for his Social Learning Theory (later Social Cognitive Theory). His groundbreaking work, particularly the Bobo doll experiments, demonstrated that individuals, especially children, learn behaviors, attitudes, and emotional reactions by observing others (models) and the consequences of their actions, rather than solely through direct reinforcement. This concept of observational learning or modeling is his unique and significant contribution.

Unique Educational Contribution: II. Spiral curriculum and discovery learning. Jerome Bruner, a cognitive psychologist, was a strong advocate for discovery learning, where students actively explore and discover information for themselves. He also proposed the spiral curriculum, an instructional approach where key concepts are revisited repeatedly over different grade levels, each time at a more complex level, building on prior knowledge.

Unique Educational Contribution: III. Experiential learning cycle: concrete to abstract. David Kolb is best known for his Experiential Learning Theory (ELT), which describes learning as a four-stage cycle: Concrete Experience (feeling), Reflective Observation (observing), Abstract Conceptualization (thinking), and Active Experimentation (doing). This cycle emphasizes that learning is a continuous process grounded in experience.

Unique Educational Philosophy: Paulo Freire, a Brazilian educator, He famously critiqued the traditional banking model of education, where students (who are seen as passive recipients of knowledge) are simply "banked" with information. Freire advocated for a dialogical model of education, where education is a process of co-creation and empowers learners to become critical thinkers and agents of change.

Additional Researcher's Perspective: Bandura's Social Learning Theory focuses from cognitive perspective of learning. It includes classroom management.

# Active Learning

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| <b>List I (Correlation Coefficient)</b> | <b>List II (Application)</b>                                                                                  |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------|
| A. Pearson's r                          | I. Used to measure the linear relationship between two continuous variables that are not normally distributed |
| B. Spearman's rho                       | II. Used to measure the linear relationship between two continuous variables that are normally distributed    |
| C. Point-Biserial                       | III. Used to measure the relationship between one dichotomous variable and one continuous variable            |
| D. Phi Coefficient                      | IV. Used to measure the association between two dichotomous variables                                         |

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Choose the correct answer from the options given below:

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

**Ans.(b)**

**Sol.** Correct Option - (b)

Introduction

Correlation analysis is used to determine the strength and direction of a relationship between two variables. Different types of correlation coefficients are used depending on the measurement scale of the variable. The different types of correlation coefficients are as follows:

Information

- A. Pearson's Correlation Coefficient: This coefficient is used for continuous variables (e.g., height and weight). It is sensitive to outliers. The coefficient ranges from -1 to +1.
  - B. Spearman's Rank Correlation Coefficient: This coefficient is used for continuous variables when the relationship is monotonic but not necessarily linear. It is less sensitive to outliers than Pearson's coefficient.
  - C. Point-Biserial Correlation Coefficient: This coefficient is used when one variable is continuous and the other is dichotomous (e.g., height and gender). It matches with III.
  - D. Phi Coefficient: This coefficient is used for two dichotomous variables (e.g., employed/unemployed). It could be used to determine the relationship between two dichotomous variables.
- Additional Key Points:
- A correlation coefficient ranges from -1 to +1. A value of +1 indicates a perfect positive correlation, -1 indicates a perfect negative correlation, and 0 indicates no linear relationship.
  - Correlation does not imply causation. Even a strong correlation does not mean that one variable is influencing the other (e.g., ice cream sales and drowning deaths).

**Q5.** Which of the following are the characteristics of a distribution-free non-parametric test?

- A. They can be applied to original data obtained on any type of scale.
- B. They require homogeneity of variance.
- C. They do not require any particular type of distribution.
- D. They cannot be used if the sample is randomly selected.
- E. They are quicker and easier than parametric tests.

Choose the correct answer from the options given below:

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

**Ans.(c)**

**Sol. Introduction:**

In statistics, non-parametric tests are a category of hypothesis testing methods that do not depend on assumptions about the parameters of the population distribution (such as the mean or variance). They are also called distribution-free tests because they can be applied even when the data does not follow a normal distribution. Non-parametric tests are widely used when:

- The data is ordinal or nominal.
- The sample size is small.
- The data violates normality assumptions required for parametric tests.

Non-parametric tests are often simpler and less restrictive, making them useful in real-life research situations where perfect conditions for parametric analysis cannot be met.

**Information Booster:**

Let us evaluate

- (a) A. They do not require assumptions about the type of distribution –
- This statement is true. Non-parametric tests do not require assumptions about the type of distribution.
  - While non-parametric tests are simpler, they are not necessarily more powerful than parametric tests.
  - They can be used for both ordinal and nominal data.
  - Since the statement is true, this is the correct option.
- (b) B. They require assumptions about the type of distribution –
- This is a characteristic of parametric tests (like t-test, ANOVA) where groups have similar variances.
  - Non-parametric tests do not require assumptions of normality or homogeneity of variances.
  - Therefore, this statement is false for non-parametric tests.
- (c) C. They do not require assumptions about the type of distribution –
- This is true. Non-parametric tests are distribution-free.
  - They can be used for both ordinal and nominal data.
  - This is a characteristic of parametric tests.
- (d) D. They can be used when the sample is randomly selected –
- This statement is false. Random selection is a requirement for all statistical tests to ensure unbiased results.
  - Non-parametric tests do not have additional requirements beyond random selection.
5. E. They are easier to compute and interpret.
- This is true. Non-parametric tests are generally simpler to calculate and interpret.
  - Since non-parametric tests do not require complicated assumptions, they are easier to compute and interpret.
  - This makes them especially suitable for small-scale or time-sensitive research projects.

**Additional Information:**

- Examples of Non-Parametric Tests:
  - *Chi-square test* – for categorical data association.
  - *Mann-Whitney U test* – alternative to the independent t-test.
  - *Wilcoxon signed-rank test* – alternative to paired t-test.
  - *Kruskal-Wallis H test* – alternative to one-way ANOVA.
- Parametric vs. Non-Parametric:
  - Parametric tests require assumptions such as normal distribution, equal variances, and scale data.
  - Non-parametric tests require fewer assumptions and can work on ranked or categorical data.



**Ans.(d)**

**Sol.** The "Blue Baby Syndrome" is associated with contamination of drinking water by Nitrates (option d). Nitrate contamination, particularly from agricultural runoff, can lead to the conversion of hemoglobin in infants' blood to methemoglobin, which reduces the blood's ability to carry oxygen. This condition causes a bluish tint to the skin, hence the name "Blue Baby Syndrome."

Hence, the correct answer is (d) Nitrates.

**Information Booster:**

Nitrates in drinking water primarily come from fertilizers, sewage, and agricultural runoff. They are particularly harmful to infants under six months old, as their digestive systems are less capable of handling high nitrate levels.

The condition occurs when nitrate in the blood interferes with the ability of red blood cells to carry oxygen, leading to hypoxia (low oxygen levels).

The syndrome can be prevented by using filtered water and by using nitrates-free fertilizers. The U.S. Environmental Protection Agency (EPA) has set a maximum contaminant level for nitrates in drinking water at 10 mg/L.

Additional Key Points: Nitrates in drinking water should not exceed 10 mg/L. High levels of nitrates can also lead to other health issues, such as thyroid problems.

Lead (Option a) is associated with "Blue Baby Syndrome." Lead poisoning can cause various health issues, including developmental delays and neurological damage. Fluorides (Option b) are added to drinking water to prevent tooth decay. Arsenic (Option c) is a toxic element that can cause various health issues, including skin lesions and cancer, but it is not associated with "Blue Baby Syndrome."

Fluorides (Option b) are added to drinking water to prevent tooth decay. Arsenic (Option c) is a toxic element that can cause various health issues, including skin lesions and cancer, but it is not associated with "Blue Baby Syndrome."

**Q8.** The 'International Big Cat Alliance (IBCA)' was launched by India in 2023, focusing on the conservation of big cat species. Which of the following species is NOT a member of the IBCA?

- (a) All big cat species globally
- (b) Only tiger and lion
- (c) Snow leopard and Amur leopard
- (d) Cheetah and Black Panther

**Ans.(a)**

**Sol.** Introduction

- The International Big Cat Alliance (IBCA) is a landmark global initiative launched by India in April 2023, commemorating 50 years of the highly successful Project Tiger.
- The primary objective of the IBCA is to secure the long-term conservation of the world's major wild cat species.
- It is conceived as a multi-country, multi-agency coalition involving 96 big cat range countries and non-range countries with an interest in conservation.
- The alliance is modelled after the International Solar Alliance (ISA) and has its headquarters in New Delhi, India. Critically, the IBCA is dedicated to the conservation of all seven of the world's principal big cat species, which is why option 1 is the correct answer.

**Information Booster:**

- The IBCA's focus is on the "Big Seven" cat species, encompassing both the *Panthera* genus (the roaring cats) and two other important non-*Panthera* species (the purring cats).



- These seven species are: Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar, and Puma .
- The alliance aims to strengthen conservation efforts through cooperation, knowledge exchange, capacity building, and resource mobilization, leveraging India's decades of expertise gained from Project Tiger.

Additional knowledge:

- While the Tiger and the Asiatic Lion (found only in India's Gir Forest) are central to India's domestic conservation success, the IBCA was launched explicitly to extend this conservation expertise to a global level, covering all seven endangered or threatened big cat species found worldwide, including the three species not naturally found in India: the Jaguar, Puma, and Cheetah (the last of which has been reintroduced).
- Firstly, it excludes five other major big cat species, including the Tiger and Lion. Secondly, while the Snow Leopard is considered a medium-sized cat, the IBCA focuses on the larger, more iconic species.
- The IBCA focuses on seven major big cats: Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar, and Puma.
- Focusing on these seven species would ignore these other critically endangered big cats.

**Q9.** Arrange the following natural hazards in increasing order of severity, from least severe to most severe, based on their typical scale of impact:

- Flood
- Earthquake
- Landslide
- Tsunami

Choose the correct option:

- C, A, B, D
- A, C, B, D
- B, C, A, D
- D, B, C, A

**Ans.(a)**

**Sol.** Correct Option: (a)

**Introduction**

This question tests your ability to categorize natural hazards based on their typical scale and severity. While any disaster can be devastating, there is a general hierarchy of impact based on the scope of the event.

**Information Booster**

1. C. Landslide: Landslides are typically localized disasters that affect a specific area, such as a mountain slope or a hillside. While they can be deadly, their geographical scope is limited compared to other disasters.
2. A. Flood: Floods can cover a much larger geographical area than landslides, affecting entire communities, regions, or even countries. They are more widespread in their impact, causing property damage and displacement.



3. B. Earthquake: Earthquakes can cause widespread destruction over a large area, including the collapse of buildings, infrastructure damage, and loss of life. Their impact is often regional, and a major earthquake can be catastrophic.

4. D. Tsunami: A tsunami is a series of large waves caused by a major displacement of water, usually from an underwater earthquake. Tsunamis can travel across entire oceans, causing devastation to coastal areas across multiple countries. The scale of impact is global or trans-regional, making it potentially the most severe of the options.

#### Additional Knowledge

The severity of a disaster is also determined by other factors, such as population density, infrastructure, and early warning systems. A strong earthquake in a sparsely populated area may have a lower impact than a moderate earthquake in a densely populated city.

**Q10.** The average age of 12 boys is 8 years. If 3 new boys join the group, the average age is increased by 1 year. What is the average age of the 3 new boys?

- (a) 12
- (b) 13
- (c) 9
- (d) 10

**Ans.(b)**

**Sol: Given:**

Average age of 12 boys = 8 years

Total boys after 3 new boys join = 12 + 3 = 15

New average age after 3 boys join = 8 + 1 = 9 years

**Formula Used:**

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

**Solution:**

Total age of 12 boys initially = 12 boys  $\times$  8 years = 96 years

Total age of 15 boys after 3 new join = 15 boys  $\times$  9 years = 135 years

The total age of the 3 new boys = Total age after they join - Total age before they join = 135 - 96 = 39 years

$$\text{Average age of the 3 new boys} = \frac{\text{Total age of 3 new boys}}{\text{Number of new boys}} = \frac{39}{3} = 13 \text{ years}$$

$\therefore$  The average age of the three new boys is 13 years.

**Q11.** Which of the following are sources of biogas?

A. Marsh Gas

Choose the correct answer from the options given below:

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

**Ans.(a)**

**Sol.** Biogas is a type of renewable energy produced from the anaerobic digestion of organic matter, such as plant and animal waste. It mainly consists of methane (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>).

A. Marsh Gas: This is a common term for methane produced in natural wetlands, a major component of biogas.

B. Swamp Gas: Similar to marsh gas, this refers to methane produced by decomposing organic matter in swamps.

D. Compost Gas: Biogas generated during the decomposition of organic waste in composting conditions is referred to as compost gas.

Information booster:

C. Producer Gas: This is a synthetic gas produced by the incomplete combustion of carbon-based fuels (e.g., coal, wood) and typically contains carbon monoxide and nitrogen. It is not biogas.

E. Flue Gas: This is a by-product of industrial combustion processes, consisting mainly of nitrogen, carbon dioxide, and water vapor, and is not considered biogas.

Additional Information:

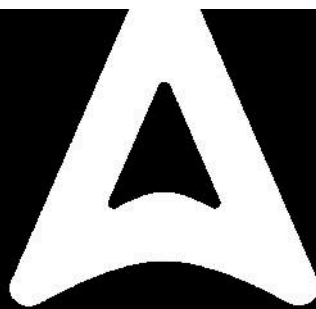
1. Biogas is mainly methane and can be used as a renewable energy source for cooking, heating, and electricity generation.

2. It is produced through the anaerobic digestion of organic waste materials in environments such as swamps, landfills, and biogas plants.

Q12

Arrange the fractions  $\frac{5}{9}$ ,  $\frac{4}{7}$ ,  $\frac{3}{5}$  and  $\frac{2}{3}$  in ascending order.

- A.  $\frac{3}{5}$ ,  $\frac{4}{7}$ ,  $\frac{2}{3}$ ,  $\frac{5}{9}$   
B.  $\frac{5}{9}$ ,  $\frac{4}{7}$ ,  $\frac{3}{5}$ ,  $\frac{2}{3}$   
C.  $\frac{2}{3}$ ,  $\frac{3}{5}$ ,  $\frac{4}{7}$ ,  $\frac{5}{9}$   
D.  $\frac{3}{4}$ ,  $\frac{5}{9}$ ,  $\frac{2}{3}$ ,  $\frac{4}{5}$



Convert each to decimal:

$$\frac{5}{9} = 0.555 \dots$$

$$\frac{4}{7} \approx 0.5714$$

$$\frac{3}{5} = 0.6$$

$$\frac{2}{3} = 0.666 \dots$$

Arrange in increasing order (smallest  $\rightarrow$  largest):

$$0.555 < 0.571 < 0.6 < 0.666$$

Convert back to fractions:  $\frac{5}{9} < \frac{4}{7} < \frac{3}{5} < \frac{2}{3}$

**Q13.** Match the term (List I) with its definition in formal logic (List II):

| List I (Term)       | List II (Definition)                                                      |
|---------------------|---------------------------------------------------------------------------|
| A. Valid Argument   | I. A deductive argument that is valid AND has all true premises.          |
| B. Invalid Argument | II. A deductive argument where the conclusion follows from the premises.  |
| C. Sound Argument   | III. A deductive argument where premises do not guarantee the conclusion. |
| D. Cogent Argument  | IV. An inductive argument that is strong and has all true premises.       |

Options:

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

**Ans.(a)**

**Sol.** Correct

Information

Validity: Cor

Soundness: A

Cogency: Th

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**Q14.** Match the fallacy (List I) with its appropriate Description (List II):

| List I (Fallacy)          | List II (Description)                                             |
|---------------------------|-------------------------------------------------------------------|
| A. Ad Hominem             | I. Attacking the person instead of the argument.                  |
| B. Fallacy of Composition | II. Assuming that what is true of the parts is true of the whole. |
| C. Appeal to Emotion      | III. Using emotional language to persuade.                        |
| D. Hasty Generalization   | IV. Drawing a conclusion based on insufficient evidence.          |

Options:

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

**Ans.(a)**

**Sol.** Correct Option – (a)

Introduction: Fallacies are errors in reasoning. Formal fallacies relate to the structure of the argument, while informal fallacies relate to the content or language used to persuade.

Information Booster: \* Ad Hominem: "Don't believe his economic theory; he was once arrested for speeding." (Attacks person, not theory).

Composition: "Every atom in this table is invisible, so the table must be invisible." (Error in part-to-whole logic).

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Appeal to Ignorance: "No one has proven ghosts don't exist, so they must exist."

Hasty Generalization: "I met two rude people in Paris; therefore, all French people are rude."

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**Q15.** The Square of Opposition defines logical relationships between categorical propositions. Arrange the following relationships in order of strength from strongest to weakest: Contradictory, Contrary, Subcontrary, Subalternation.

I Contradictory

II Contrary

III Subcontrary

IV Subalternation

Options:

(a) I, II, IV, III

(b) II, I, III, IV

(c) I, II, III, IV

(d) II, I, IV, III

**Ans.(b)**

**Sol.** Correct

Introduction: A diagram that shows the relationships between corresponding categorical propositions that have the same terms. These relationships are based on the logical principles of contradiction, contrariety, subcontrariety, and subalternation.

Information: The diagram is a square with four vertices. The top vertex is labeled 'A' (All S are P), the bottom vertex is labeled 'O' (Some S are not P), the left vertex is labeled 'E' (No S are P), and the right vertex is labeled 'I' (Some S are P). The relationships are: 1. II Contrary: A and E are contraries. They cannot both be true, but they can both be false. This is a very strong relationship.

2. I Contradictory: A and O are contradictories. They cannot both be true or both be false. This is the strongest possible relationship.

3. III Subcontrary: E and I are subcontraries. They cannot both be false, but they can both be true. This is a weaker relationship.

4. IV Subalternation: Holds between A and I, and between E and O. If A is true, the corresponding particular proposition (I) must also be true. This is the weakest relationship.

Additional Relationships: The diagram also shows the relationships between the four propositions themselves. A and E are contraries, E and I are subcontraries, and A and O are contradictories. This is known as the Square of Opposition. The diagram is considered to have existential import.

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**Q16.** In a certain code language, RED is written as 27 and BLUE is written as 40. How will GREEN be written in the same code language?

(a) 46

(b) 47

(c) 49

(d) 48

**Ans.(c)**

**Sol.** Given:

In a certain code language, RED is written as 27 and BLUE is written as 40.

|    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 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 |

Logic: Sum of the place value of letters = Number

For, RED - 27

$$= 18 + 5 + 4$$

$$= 27$$

For, BLUE - 40

$$= 2 + 12 + 21 + 5$$

$$= 40$$

Similarly,

GREEN - ?

$$= 7 + 18 + 5$$

$$= 49$$

So, GREEN is 49

Thus, correct

**Q17.** Given

Statement I: "Point sources of water pollution are concentrated in specific areas and release pollutants at discrete locations." and Statement II: "Nonpoint sources of water pollution are widespread and release pollutants over a large area."

Statement I is true and Statement II is false. Which of the following is true?

Statement I is false and Statement II is true. Which of the following is true?

Statement I is true and Statement II is true. Which of the following is true?

Statement I is false and Statement II is false. Which of the following is true?

In light of the above, which of the following is true?

(a) Both Statement I and Statement II are true.

(b) Both Statement I and Statement II are false.

(c) Statement I is true but Statement II is false.

(d) Statement I is false but Statement II is true.

**Ans.(b)**

**Sol.** Statement I: "Point sources of water pollution are concentrated in specific areas and release pollutants at discrete locations." This statement is true. Point sources are specific and localized.

Statement II: "Nonpoint sources of water pollution are widespread and release pollutants over a large area." This statement is false. Nonpoint sources are often highly variable and can be influenced by seasonal changes, weather patterns, and land use practices.

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Statement II: "Nonpoint sources of water pollution are widespread and release pollutants over a large area." This statement is false. Nonpoint sources are often highly variable and can be influenced by seasonal changes, weather patterns, and land use practices.

**Q18.** BOD (Biochemical Oxygen Demand) is the measure of:

(a) Air pollution

(b) Water contamination

(c) Soil contamination

(d) Dissolved oxygen of river water

**Ans.(b)**

**Sol.** Biochemical Oxygen Demand (BOD) is a measure of the amount of oxygen required by aerobic microorganisms to break down organic matter in water. A higher BOD indicates a greater level of organic pollution in water, which can lead to reduced oxygen levels, harming aquatic life. It is an important parameter in assessing the degree of water contamination and the health of aquatic ecosystems.

**Q19.** Which scale measures earthquake intensity?

- (a) Mercalli
- (b) Richter
- (c) Beaufort
- (d) Saffir-Simpson

**Ans.(a)**

**Sol.** The Mercalli scale measures earthquake intensity based on the observed effects and damage to structures and the Earth's surface. It is a qualitative scale, meaning it is based on subjective observations rather than objective measurements. The scale ranges from I (not felt) to XII (total destruction). The Mercalli scale is used to assess the severity of an earthquake's impact, particularly in terms of damage to buildings and infrastructure. It does not measure the energy released by an earthquake, which is the focus of the Richter scale. The Mercalli scale can vary depending on the location of the epicenter, the depth of the earthquake, and local building codes. Unlike the Richter scale, the Mercalli scale does not provide an objective measure of the energy released by an earthquake. The scale helps to understand the severity of an earthquake's impact, particularly in terms of damage to buildings and infrastructure. Additional knowledge is required to understand the differences between the Mercalli and Richter scales. The Richter scale is a logarithmic scale that measures the magnitude of an earthquake based on the amplitude of seismic waves recorded at a specific distance from the source. The Beaufort scale is used to measure wind speed and direction. The Saffir-Simpson scale is used to measure the intensity of hurricanes.

**Q20.** Which of the following statements about malware are true?

- (A) A Trojan Horse is malware disguised as legitimate software.
- (B) A Virus inserts itself into another program. It runs and spreads itself when the program is opened.
- (C) A worm is similar to a virus except that it does not need a program in order to run. It spreads by itself.

Choose the correct answer from the options given below:

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

**Ans.(d)**

**Sol.** All three statements are true.

Trojan Horse is a type of malware that masquerades as legitimate software to trick users into executing it.

A virus attaches itself to a legitimate program and spreads when the program is executed.

A worm is similar to a virus but can spread without needing to attach itself to a host program.

**Important Key Points:**

1. Trojan Horse: Disguised as legitimate software, but its true purpose is malicious.
2. Virus: Attaches itself to other programs and spreads when the host program runs. Viruses typically require user interaction, like opening an infected file.
3. Worm: Self-replicating and can spread independently of any host program. Worms exploit network vulnerabilities to spread.

**Q21.** In the given statements, some are true and some are false. Based on those statements, which of the following conclusions is true? **Solutions based on those statements are given below. The correct answer is (c) as it follows the logic of the statements.**

**Statements:**

I. Some carom are red.

II. All red are carom.

**Conclusion:**

I. Some red are carom.

II. Some carom are red.

III. Some red are not carom.

(a) All conclusions follow.

(b) Both conclusions I and II follow.

(c) Neither conclusion I nor II follows.

(d) Both conclusions I and II follow.

**Ans.(c)**

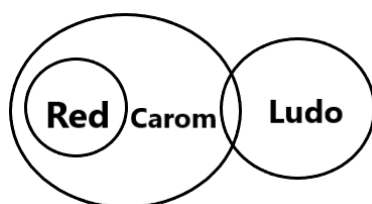
**Sol.** Given:

**Statements:**

I. Some carom are red.

II. All red are carom.

From the given statements Venn diagram will be:



**Conclusion:**

I. Some red are not ludo. Does not follow → This is not necessarily true. It's possible that all red carom are also ludo.

II. Some carom are not red. Does not follow → Since all red are carom, so, not red is not possible.



III. Some red are not carom. Does not follows → "All red are carom," directly contradicts this conclusion  
So, Neither conclusion follows.

Thus, the correct option is: (c)

**Q22.** Performance of computer hardware components is measured in different ways. Which of the following hardware component's performance is measured in Hertz?

- (a) Hard Disk Drive (HDD)
- (b) Solid State Drive (SSD)
- (c) CPU
- (d) Laser Printer

**Ans.(c)**

**Sol.** The performance of a computer hardware component is measured in Hertz (Hz), specifically the CPU. The CPU's performance is measured in Hertz (Hz), which represents the number of cycles per second. Hertz is a unit of frequency, and it is used to measure the speed of processors, memory, and other hardware components. The speed of a processor is measured in Hertz (Hz), which represents the number of cycles per second. The speed of a processor is measured in Hertz (Hz), which represents the number of cycles per second. The speed of a processor is measured in Hertz (Hz), which represents the number of cycles per second.

- CPU performance is measured in Hertz (Hz), which represents the number of cycles per second. The speed of a processor is measured in Hertz (Hz), which represents the number of cycles per second. The speed of a processor is measured in Hertz (Hz), which represents the number of cycles per second.
  - Clock speed is measured in Hertz (Hz), which represents the number of cycles per second. The speed of a processor is measured in Hertz (Hz), which represents the number of cycles per second. The speed of a processor is measured in Hertz (Hz), which represents the number of cycles per second.
  - Measured in Hertz (Hz), which represents the number of cycles per second. The speed of a processor is measured in Hertz (Hz), which represents the number of cycles per second. The speed of a processor is measured in Hertz (Hz), which represents the number of cycles per second.
  - While clock speed is measured in Hertz (Hz), which represents the number of cycles per second. The speed of a processor is measured in Hertz (Hz), which represents the number of cycles per second. The speed of a processor is measured in Hertz (Hz), which represents the number of cycles per second.
- Additional Key Points:
- Option a: Hard Disk Drive (HDD) performance is measured in RPM (Revolutions per Minute) and data transfer rate (MB/s), not Hertz. It involves the speed of the disk's rotation and the rate at which data is read or written.
  - Option b: Solid State Drive (SSD) performance is measured in IOPS (Input/Output Operations Per Second) and read/write speeds (MB/s), not Hertz. It involves the speed at which data is read or written from the drive.
  - Option d: Laser Printer performance is typically measured in pages per minute (PPM) or images per minute (IPM), which denotes printing speed, not in Hertz.

The speed of a laser printer is typically measured in pages per minute (PPM) or images per minute (IPM), which denotes printing speed, not in Hertz.

**Q23.** In which of the following years did the performance of girls show maximum improvement as compared to the previous year?

The following table shows the percentage (%) of girls who passed in an examination and the percentage (%) of boys who failed in that exam in a school during the six years from 2018 to 2023. Based on the data in the table, answer the questions that follow.

---

### Year-wise Result details of Students

| Year | Percentage of Girls who passed | Percentage of Boys who failed |
|------|--------------------------------|-------------------------------|
| 2018 | 32%                            | 40%                           |
| 2019 | 42%                            | 60%                           |
| 2020 | 55%                            | 25%                           |
| 2021 | 40%                            | 30%                           |
| 2022 | 60%                            | 50%                           |
| 2023 | 42%                            | 80%                           |

Sub Questions No:

(a) 2019

(b) 2020

(c) 2022

(d) 2023

**Ans.(c)**

**Sol.** Solution

Step 1: Percentage of girls who passed

2018 → 32%

2019 → 42%

2020 → 55%

2021 → 40%

2022 → 60%

2023 → 42%

Step 2: Calculate the improvement or decline

2019 – 2018 = 42% – 32% = 10% improvement

2020 – 2019 = 55% – 42% = 13% improvement

2021 – 2020 = 40% – 55% = -15% (decline)

2022 – 2021 = 60% – 40% = 20% improvement

2023 – 2022 = 42% – 60% = -18% (decline)

Final Answer

The maximum improvement in girls' performance was in 2022 compared to 2021.

Correct Year: 2022

---

**Q24.** If in the year 2020, the total number of boys and the total number of girls who appeared in the exam are 800 and 700 respectively, then what is the ratio of the total number of boys who passed to the total number of girls who failed?

The following table shows the percentage (%) of girls who passed in an examination and the percentage (%) of boys who failed in that exam in a school during the six years from 2018 to 2023. Based on the data in the table, answer the questions that follow.

---

### Year-wise Result details of Students

| Year | Percentage of Girls who passed | Percentage of Boys who failed |
|------|--------------------------------|-------------------------------|
| 2018 | 32%                            | 40%                           |
| 2019 | 42%                            | 60%                           |
| 2020 | 55%                            | 25%                           |
| 2021 | 40%                            | 30%                           |
| 2022 | 60%                            | 50%                           |
| 2023 | 42%                            | 80%                           |

Sub Questions No:

(a) 40 : 21

(b) 154 : 20

(c) 18 : 11

(d) 7 : 10

**Ans.(a)**

**Sol.** Given:

Year: 2020

Total Boys A

Total Girls A

Solution:

From the table

Percentage of

Percentage of

Step 1: Calculate

Boys Passed

Number of Boys

75% of 800

Step 2: Calculate

Girls Failed

Number of Girls

45% of 700

Step 3: Calculate Ratio

Ratio of Boys Passed to Girls Failed =

600 : 315

Simplify by dividing both by 15:

$600 \div 15 = 40$

$315 \div 15 = 21$

Final Ratio =

40 : 21

Final Answer:

The required ratio is 40 : 21



**Q25.** If in the year 2018, the total number of boys who appeared in the exam is 600, then what is the percentage difference between the percentage of boys who passed and the percentage of girls who passed in the exam?

The following table shows the percentage (%) of girls who passed in an examination and the percentage (%) of boys who failed in that exam in a school during the six years from 2018 to 2023. Based on the data in the table, answer the questions that follow.

Year-wise Result details of Students

| Year | Percentage of Girls who passed | Percentage of Boys who failed |
|------|--------------------------------|-------------------------------|
| 2018 | 32%                            | 40%                           |
| 2019 | 42%                            | 60%                           |
| 2020 | 55%                            | 35%                           |
| 2021 | 40%                            | 25%                           |
| 2022 | 60%                            | 15%                           |
| 2023 | 42%                            | 30%                           |

Sub Question

- (a) 18%
- (b) 23%
- (c) 25%
- (d) 28%

**Ans.(d)**

**Sol.** Given Data

Year: 2018

Total Boys Appeared

Percentage of Boys who passed

Percentage of Boys who failed

**Solution:**

Step 1: Calculate Percentage of Boys who passed

Boys Passed =  $600 \times \frac{60}{100} = 360$

Boys Passed =  $600 - 400 = 200$

Step 2: Calculate Percentage of Girls who passed

Boys Passed = 200

Girls Passed = 32%

Percentage of Boys who failed

$60\% - 32\% = 28\%$

**Final Answer:**

The percentage difference between the percentage of boys who passed and the percentage of girls who passed in 2018 is: 28%

**Q26.** If in the year 2019, the total number of boys and the total number of girls who appeared in the exam are 800 each, then what is the sum of the total number of boys and girls who passed in that year? The following table shows the percentage (%) of girls who passed in an examination and the percentage (%) of boys who failed in that exam in a school during the six years from 2018 to 2023. Based on the data in the table, answer the questions that follow.

---

Year-wise Result details of Students

| Year | Percentage of Girls who passed | Percentage of Boys who failed |
|------|--------------------------------|-------------------------------|
| 2018 | 32%                            | 40%                           |
| 2019 | 42%                            | 60%                           |
| 2020 | 55%                            | 25%                           |
| 2021 | 40%                            | 30%                           |
| 2022 | 60%                            | 50%                           |
| 2023 | 42%                            | 80%                           |

Sub Questions No:

(a) 650

(b) 656

(c) 662

(d) 668

**Ans.(b)**

**Sol.** Given Data

Year: 2019

Total Boys Appeared

Total Girls Appeared

Percentage of Girls who passed

Percentage of Boys who failed

**Solution:**

Step 1: Calculate

Boys Passed

$= 100\% - 60\%$

Number of Boys who Passed

$40\% \text{ of } 800 = \frac{40}{100} \times 800 = 320$

Step 2: Calculate

Number of Girls who Passed

$42\% \text{ of } 800 = \frac{42}{100} \times 800 = 336$

Step 3: Calculate

Sum of Boys and Girls who Passed

$320 + 336 = 656$

**Final Answer:**

The sum of the total number of boys and girls who passed in 2019 is:

656

---

**Q27.** If in the year 2023, the total number of boys and the total number of girls who appeared in the exam are 1250 and 850 respectively, then the number of boys who failed is approximately \_\_\_\_% more than the number of girls who failed in the exam.

The following table shows the percentage (%) of girls who passed in an examination and the percentage (%) of boys who failed in that exam in a school during the six years from 2018 to 2023. Based on the data in the table, answer the questions that follow.

---

#### Year-wise Result details of Students

| Year | Percentage of Girls who passed | Percentage of Boys who failed |
|------|--------------------------------|-------------------------------|
| 2018 | 32%                            | 40%                           |
| 2019 | 42%                            | 60%                           |
| 2020 | 55%                            | 25%                           |
| 2021 | 40%                            | 30%                           |
| 2022 | 60%                            | 50%                           |
| 2023 | 42%                            | 80%                           |

Sub Questions No:

- (a) 42.67  
(b) 81.53  
(c) 89.77  
(d) 102.84

**Ans.(d)**

**Sol.** Given Data

Year: 2023

Total Boys Appeared

Total Girls Appeared

Percentage of Boys who failed

Percentage of Girls who passed

**Solution:**

Step 1: Calculate the number of Boys who failed

Boys Failed = 80% of 1250

$80\% \text{ of } 1250 = \frac{80}{100} \times 1250 = 1000$  boys

Step 2: Calculate the number of Girls who failed

Girls Failed = 100% - 42%

$100\% - 42\% = 58\%$

Girls Who Failed = 58% of 850

$58\% \text{ of } 850 = \frac{58}{100} \times 850 = 493$  girls

Step 3: Calculate the Percentage more than

We need:

(Number of Boys who failed - Number of Girls who failed) / Number of Girls who failed

$\frac{1000 - 493}{493} \times 100 = \frac{507}{493} \times 100 \approx 102.84\%$

$\frac{507}{493} \times 100 \approx 102.84\%$

$507 \div 493 \times 100 \approx 102.84\%$

**Final Answer:**

The number of boys who failed is approximately 102.84% more than the number of girls who failed in the exam in 2023.

---

**Q28.** In computer networking, MAC addresses are unique to each device. Which of the following is the meaning of the term MAC?

- (a) Medium Access Card  
(b) Media Address Command  
(c) Modem Addressing Card  
(d) Media Access Control

**Ans.(d)**

**Sol.** In computer networking, MAC stands for Media Access Control. The MAC address is a unique identifier assigned to the network interface card (NIC) of a device. It operates at the Data Link Layer (Layer 2) of the OSI model and is used to identify devices within a local network.

Information Booster:

1. Purpose of MAC Addresses: Ensures that data packets are delivered to the correct hardware device on a local network.

2. Types of MAC Addresses:

Unicast MAC Address: Represents a single device.

Multicast MAC Address: Represents a group of devices.

Broadcast MAC Address: Represents all devices on the network.

3. Layers of the OSI Model:

MAC address

They are used

4. ARP Protocol: Used for mapping IP addresses to MAC addresses for communication.

5. Key features

Format: Typ

Uniqueness

Role: Helps

(LAN).

Static Nature

device hard

**Q29.** The

establishing

A. National

B. National

C. State

D. National

E. Teacher

Choose the

(a) A, B and

(b) B, C and

(c) A, D and E only

(d) B, C and D only

**Ans.(a)**

**Sol.** The National Education Policy (NEP) 2020 emphasizes systemic reforms in teacher education, professional development, and mentoring. It recommends strengthening existing institutions and introducing new professional frameworks and missions for teachers.

Information Booster:

National Council for Teacher Education (NCTE)

NCTE already existed before NEP 2020, but the policy explicitly recommends restructuring, strengthening, and empowering NCTE.

NEP 2020 assigns NCTE a central role in transforming teacher education, including:

Overseeing the 4-year integrated B.Ed. programme  
 Ensuring quality and accreditation norms  
 Hence, NCTE is correctly included as part of the restructuring framework.  
 National Professional Standards for Teachers (NPST)  
 NPST is a new and key recommendation of NEP 2020.  
 It aims to define clear professional standards for:  
 Teacher recruitment  
 Career progression  
 Performance appraisal  
 NPST is to be developed by NCTE in consultation with NCERT, SCERTs, teachers, and experts.  
 Therefore, NPST is correctly included.

National Mission for Proficiency Development in School Education (NMPPD)  
 NEP 2020 provides a framework for the implementation of the mission.  
 Provide systematic and structured training to teachers.  
 Use senior and experienced teachers as mentors.  
 It is meant to develop the professional skills of teachers.  
 Hence, NMPPD is correctly included.  
 Additional Key Features of NEP 2020  
 State Professional Standards for Teachers (SPST)  
 NEP 2020 does not recommend the implementation of the standards.  
 Instead, it emphasises the importance of the standards (NPST).  
 Therefore, SPST is not correctly included.  
 Teacher Education  
 NEP 2020 does not recommend the implementation of the standards.  
 Teacher education is a key recommendation of NEP 2020.  
 Hence, TECE is correctly included.

**Q30.** Match List I with List II

| List I (Institution) | List II (Year of Establishment) |
|----------------------|---------------------------------|
| A. NCERT             | I. 1961                         |
| B. UGC               | II. 1956                        |
| C. NTA               | III. 2017                       |
| D. IGNOU             | IV. 1985                        |

Choose the correct answer from the options given below:

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

**Ans.(b)**

**Sol.** The correct match for these premier Indian educational institutions with their respective years of establishment is NCERT (1961), UGC (1956), NTA (2017), and IGNOU (1985).

Information Booster:



The following pointers explain the founding context and roles of these institutions:

- UGC (University Grants Commission) – 1956: Although it was formally inaugurated in 1953 by Maulana Abul Kalam Azad, it became a statutory body in 1956 through an Act of Parliament. It is responsible for coordinating, determining, and maintaining standards of higher education in India.
- NCERT (National Council of Educational Research and Training) – 1961: Set up by the Government of India as an autonomous organization to assist and advise the Central and State Governments on policies for qualitative improvement in school education.
- IGNOU (Indira Gandhi National Open University) – 1985: Established by an Act of Parliament in 1985, it was named after former Prime Minister Indira Gandhi. It is the largest university in the world by enrollment and was founded to democratize higher education through Open and Distance Learning (ODL).
- NTA (National Testing Agency) – 2019: Set up by the Union Cabinet in May 2019, it is a statutory body responsible for conducting major entrance examinations for higher education. It is the first central agency for conducting major entrance testing organization for admission to higher education (JEE) for

**Q31.** Match

| List I (Commissions)                    | List II (Chairpersons)             |
|-----------------------------------------|------------------------------------|
| (A) Indian University Commission        | (I) Sir C.D. Deshmukh              |
| (B) University Education Commission     | (II) Sir Thomas Raleigh            |
| (C) Secondary Education Commission      | (III) Dr. Sarvepalli Radhakrishnan |
| (D) Educational Institutions Commission | (IV) Dr. A.L. Mudaliar             |

Choose the correct

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

**Ans.(b)**

**Sol.** Educational Institutions Commission

education system

Information Commission

Indian University Commission

This commission is also known as the Raleigh Commission.

Sir Thomas Raleigh was its chairperson.

Its main focus was on reforming higher education and universities during the British period.

University Education Commission 1948 → Dr. Sarvepalli Radhakrishnan

Popularly called the Radhakrishnan Commission.

Headed by Dr. Sarvepalli Radhakrishnan, a renowned philosopher and educationist.

It emphasized university autonomy, quality teaching, and research orientation.

Secondary Education Commission 1952 → Dr. A. L. Mudaliar

Known as the Mudaliar Commission.

Chaired by Dr. A. L. Mudaliar.

It focused on reforms in secondary education, curriculum diversification, and examination reforms.

---

Education Commission 1964 → Dr. C. D. Deshmukh (as per given options)

The Education Commission (1964–66) is widely known as the Kothari Commission.

Although historically chaired by Dr. D. S. Kothari, Dr. C. D. Deshmukh is associated with major higher education reforms and appears as the correct match according to the given options.

---

**Q32.** Which of the following is a key characteristic that distinguishes RAM (Random Access Memory) from ROM (Read-Only Memory)?

(a) RAM is non-volatile, while ROM is volatile.

(b) RAM has a larger storage capacity than ROM.

(c) RAM is volatile, while ROM is non-volatile.

(d) ROM is used for temporary data storage, while RAM is used for long-term storage.

**Ans.(c)**

**Sol.** Correct

**Solution:**

Introduction: Memory is crucial in a computer system for storing data and instructions. It is divided into two main types: Random Access Memory (RAM) and Read-Only Memory (ROM). RAM is volatile, meaning it loses data when power is removed, while ROM is non-volatile, meaning it retains data even when power is removed.

Information: Volatility refers to the ability of memory to retain data without power. RAM is volatile, while ROM is non-volatile.

Volatility: Volatile memory (RAM) requires power to retain data, while non-volatile memory (ROM) retains data even when power is removed.

RAM (Random Access Memory) is the primary memory used by the application processor. It is volatile, meaning it loses data when power is removed. ROM (Read-Only Memory) is non-volatile, meaning it retains data even when power is removed.

is volatile. When power is removed, all data in RAM is lost. ROM is non-volatile, meaning it retains data even when power is removed.

ROM (Read-Only Memory) is used for storing permanent data, such as the operating system, firmware, and other critical data. It is non-volatile, meaning it retains data even when power is removed.

devices. Data is stored in ROM and is not changed after the manufacturing process. The memory device (those that store data) is called ROM (Read-Only Memory). It is used to store firmware, like the BIOS. It is non-volatile.

Additional Knowledge: The term "Read-Only" is somewhat misleading in modern systems, as a mix of ROM and Flash memory is used, allowing for updates (e.g., BIOS updates) and bugs or add features, but the data is not lost when power is removed.

---

**Q33.** Arrange the following programming languages according to their generations in ascending order:

A. Machine language

B. High level language

C. Assembly language

D. Very high level language

(a) D, B, A, C

(b) B, D, C, A

(c) A, C, D, B

(d) A, C, B, D

**Ans.(d)**

**Sol.** The programming languages are arranged according to their generations as follows:

A. Machine language: This is the first generation language and the most basic, consisting of binary code (0s and 1s) that is directly understood by the computer's hardware.

C. Assembly language: This is a second-generation language, using mnemonics that correspond to machine language instructions.

B. High-level language: This is a third-generation language (3GL), such as C, C++, or Java, that is closer to human language and abstracted from the hardware.

D. Very high-level language: This is a fourth-generation language (4GL), such as SQL which is even more abstracted and focused on problem-solving and applications, rather than programming logic.

Information Booster:

(a) Machine language is the most basic and primitive language consisting of binary code, directly executed by the computer's CPU.

(b) Assembly language is a low-level language that is translated to machine code.

(c) High-level languages are designed to be easier to understand and use than machine code.

(d) Very high-level languages are designed to be even easier to use than high-level languages, focusing on the specifics of the problem to be solved rather than the details of the programming language.

**Q34.** Which of the following is an advantage of using Solid State Drives (SSDs) over Hard Disk Drives (HDDs)?

- A. SSD is much faster than HDD.
- B. SSD has a longer lifespan than HDD.
- C. SSDs are more expensive than HDDs.

Choose the correct answer from the options given below:

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

**Ans.(a)**

**Sol.** A. SSD is much faster than HDD.  
B. SSD has a longer lifespan than HDD.  
C. SSDs are more expensive than HDDs.  
So, the correct advantages are A and B.

**Q35.** Match List - I with List - II:

| List - I (Four Independent Verticals of HECI) | List - II (Major Function)                     |
|-----------------------------------------------|------------------------------------------------|
| A. HEGC                                       | I. Frame graduate attributes                   |
| B. GEC                                        | II. Common Single Point Regulator              |
| C. NAC                                        | III. Funding and Financing of Higher Education |
| D. NHERC                                      | IV. Accreditation of Institutions              |

Choose the correct answer from the options given below:

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

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

**Ans.(d)**

**Sol.** Introduction:

This question is about the proposed structure of the Higher Education Commission of India (HECI) as outlined in the National Education Policy (NEP) 2020. The NEP 2020 aims to replace the existing fragmented system with a single, overarching body with four independent verticals.

**Information Booster:**

- A. HEGC (III. Funding and Financing of Higher Education): The Higher Education Grants Council (HEGC) is the proposed body for funding and financing higher education institutions in India. Its role is to ensure equitable distribution of funds and to monitor the quality of higher education.
- B. GEC (I. Governance and Regulation): The Governance and Regulation Council (GEC) is proposed for setting the standards and regulating higher education. It will also be responsible for the National Qualification Framework (NQF) and disciplinary education.
- C. NAC (II. National Accreditation Council): The National Accreditation Council (NAC) is the proposed single accreditation system for higher education. It will be based on the standards set by the GEC and is tasked with accrediting all higher education institutions.
- D. NHERC (IV. National Health Education Research Council): The National Health Education Research Council (NHERC) will be responsible for identifying and promoting research in health and legal education. It will also be responsible for enforcing standards in these fields.

**Additional Knowledge:**

The creation of HECI is proposed by the NEP 2020 to improve the governance of higher education. It will replace the existing bodies like the UGC and the All India Council for Technical Education (AICTE) to ensure autonomy and accountability to higher education institutions.

**Q36.** Match List - I with List - II.

| List - I (Institutions)                            |           |
|----------------------------------------------------|-----------|
| A. National Institute of Advanced Studies          |           |
| B. Indian Institute of Management                  |           |
| C. Indian Institutes of Information Technology Act | III. 2007 |
| D. Institutes of Technology Act                    | IV. 2014  |

Choose the correct answer from the options given below:

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

**Ans.(a)**

**Sol.** Introduction: This question asks to match various Acts related to Institutions of National Importance (INIs) in India with their respective years of enactment. Understanding these acts helps in tracing the legislative framework for premier educational institutions in the country.

Information Booster: Let's find the enactment year for each Act:

- A. National Institute of Technology Act:
    - The National Institutes of Technology Act, 2007, was enacted to declare NITs as Institutions of National Importance. It received the President's assent on June 5, 2007.
    - Match: III. 2007
  - B. Indian Institute of Management Act:
    - The Indian Institutes of Management Act, 2017, was enacted to grant statutory powers to the IIMs and declare them as Institutions of National Importance. It received the President's assent on December 31, 2017.
    - Match: I. 2017
  - C. Indian Institutes of Information Technology Act:
    - The Indian Institutes of Information Technology Act, 2014, was enacted to declare IIITs as Institutions of National Importance. It received the President's assent on December 4, 2014.
    - Match: IV. 2014
  - D. Institute of Technology Act:
    - The Institute of Technology Act, 1961, was enacted to declare Institutes of Technology as Institutions of National Importance. It received the President's assent on December 1961.
    - Match: II. 1961
- Conclusion: A-III, B-I, C-IV, D-II.
- Additional Information: Institutes of National Importance (INI) status grants the institutions in India that are established by an Act of Parliament. This status is typically conferred on institutions that play a significant role in developing and conducting advanced research and education. INI status grants the institutions increased autonomy, grants them the power to grant their own degrees and standards globally.

**Q37.** Arrange the following schools based on their degree of "Realism" (from most idealistic to most idealistic):

1. Yoga
  2. Carvaka
  3. Advaita Vedanta
- (a) 2, 3, 1  
(b) 1, 2, 3  
(c) 3, 2, 1  
(d) 2, 1, 3

**Ans.(d)**

**Sol.** Correct Option – (d)

Introduction: Indian philosophy ranges from extreme materialism (only matter exists) to absolute idealism (only consciousness exists).

Information Booster:

Carvaka: Pure Materialism. Only what we perceive exists.

Yoga: Dualistic Realism. Both matter (*Prakriti*) and spirit (*Purusha*) are real.

Advaita: Monistic Idealism. Only Brahman is real; the material world is an illusion (*Maya*).

---

Additional Knowledge: Understanding this spectrum helps in identifying which *Pramanas* each school accepts (e.g., Idealists rely more on intuition/testimony, Materialists on perception).

---

**Q38.** In its formative years, which university had taken to the strategy of adopting multi-media instructions through Gyan Vani and Gyan Darshan?

- (a) Karnataka State Open University
- (b) Indira Gandhi National Open University
- (c) Dr. B.R. Ambedkar Open University
- (d) Yashwant Rao Chavan Open University

**Ans.(b)**

**Sol.** Indira Gandhi National Open University (IGNOU) adopted a multi-media instruction strategy through planned television and radio broadcasts. This strategy made education accessible to a large number of people. Information Technology (IT) has been used by Karnataka State Open University and Dr. B.R. Ambedkar Open University. Yashwant Rao Chavan Open University, Maharashtra, has used IT.

**Q39.** The chronological order of the normative media theories is:

- (A) Libertarian theory
  - (B) Soviet Media theory
  - (C) Authoritarian theory
  - (D) Social responsibility theory
- Choose the correct answer from the options given below.
- (a) (A), (C), (B), (D)
  - (b) (C), (A), (B), (D)
  - (c) (C), (A), (D), (B)
  - (d) (A), (B), (C), (D)

**Ans.(b)**

**Sol.** The chronological order of the normative media theories is as follows.

- (C) Authoritarian theory: The earliest theory, which emphasized state control over the media. This theory was prominent in monarchies and autocratic systems where the press was seen as an instrument to serve the interests of the ruling class.
- (A) Libertarian theory: Developed in the 17th and 18th centuries, this theory advocated for freedom of speech and free press. It emphasized minimal government intervention, with the belief that the press should operate freely in serving the public good.
- (B) Soviet Media theory: This theory developed in the context of Marxist-Leninist ideology after the Russian Revolution and involved state-controlled media, where the media was used to promote socialist principles and defend the state.

- (D) Social responsibility theory: Developed in the 20th century, it is an evolution of libertarian theory. It calls for media freedom with ethical responsibilities, ensuring that the media serves the public interest, rather than being driven solely by profit.

Information Booster:

(a) Authoritarian theory: The earliest media theory that emphasized total control over media to ensure state security, often associated with monarchies or dictatorial regimes.

(b) Libertarian theory: Advocates for a free press and freedom of expression, aligning with democratic ideals where the government does not restrict media or suppress opinions.

(c) Soviet Media theory: This is based on the principles of Marxist-Leninist thought, where the media is controlled by the state and its function is to promote socialist ideals.

(d) Social responsibility theory: While it still supports media freedom, it stresses that the media has a duty to provide accurate, unbiased information and to serve the public interest.

**Q40.** Which of the following are transactional models of communication?

I. Linear model: One-way communication with no feedback.

II. Interactional model: Two-way communication but still sees roles as separate rather than simultaneous.

III. Transactional model: Views communication as a simultaneous process where both parties are senders and receivers, creating meaning together in an engaging interaction.

IV. Linear model: One-way communication with no feedback.

Choose the correct answer from the options given below:

(a) I, II and III  
(b) I and IV  
(c) II, III and IV  
(d) I, III and IV

**Ans.(a)**

**Sol.** Introduction: Communication models evolve from linear to transactional, each adding more complexity regarding feedback, context and shared meaning.

Information Booster: Linear models view communication as a one-way process from sender to receiver, with no feedback.

Interactional models view communication as a two-way process with feedback, but often as alternating roles: one sends, the other responds.

Transactional models depict both parties as simultaneous senders and receivers, co-creating meaning within a shared context, including non-verbal cues and feedback.

These models help analyse communication from simple message transmission to complex relational and contextual processes.

Additional Knowledge: Noise is not exclusive to linear models; it can be conceptualized in all models as any disturbance affecting message clarity.

Transactional models are widely used in understanding interpersonal and face-to-face communication where mutual influence is continuous.

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**Q41.** Arrange the following computer memory types in increasing order of their data access speed (Slowest to Fastest):

1. Cache Memory
2. Secondary Storage (HDD)
3. RAM (Main Memory)
4. CPU Registers
5. SSD

(a) 2, 5, 3, 1, 4

(b) 5, 2, 3, 1, 4

(c) 2, 5, 1, 3, 4

(d) 4, 1, 3, 5, 2

**Ans.(a)**

**Sol.** Correct

Introduction

based on res

Information

HDD (Magne

SSD (Flash)

RAM: Volati

Cache: Loca

Registers: L

Additional F

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or long-term

The logo for Adda247, featuring the word 'Adda' in a stylized white font, followed by '247' in a white font inside a white rectangular box, all on a black background.