UGC NET Paper 1 Jan 05, 2026 Shift 1 Memory Based Quiz

Q1. Who among the following was appointed as the Chairperson of the Committee for the Draft National Education Policy (NEP) 2020?
(a) T.S.R. Subramanian
(b) Dr. K. Kasturirangan
(c) Ramesh Pokhriyal 'Nishank'
(d) Amitabh Kant
Answer: b
Sol: Introduction:

- The National Education Policy (NEP) 2020 is a landmark reform passed by the Union Cabinet of India on July 29, 2020.
- It is the first education policy of the 21st century and replaces the 34-year-old National Policy on Education (NPE), 1986 (modified in 1992).

Information Booster:

- The Committee: The Ministry of Human Resource Development (now Ministry of Education) constituted a Committee for the Draft National Education Policy in June 2017.
- The Chairperson: The committee was chaired by Dr. K. Kasturirangan, a renowned scientist and former Chairman of ISRO (Indian Space Research Organisation).
- Submission: The committee submitted the Draft National Education Policy to the Union Human Resource Development Minister on May 31, 2019. This draft formed the basis for the final NEP 2020 approved by the Cabinet on July 29, 2020.

Additional knowledge:

- T.S.R. Subramanian: He was a former Cabinet Secretary who chaired the Committee for Evolution of the New Education Policy in 2015.
- He submitted a report in May 2016. However, the government decided to form a second committee (Kasturirangan's) to draft the final policy, making this option incorrect for the NEP 2020 draft specifically.
- Ramesh Pokhriyal 'Nishank': He was the Union Minister of Education (MHRD) at the time the NEP 2020 was launched. While he oversaw the ministry during its release, he was the political head, not the chairperson of the drafting committee.
- Amitabh Kant: He was the CEO of NITI Aayog during the drafting phase. While NITI Aayog provided crucial inputs and strategic advice for the policy, Amitabh Kant himself did not chair the drafting committee.

Q2. Identify the correct statements about p-values in hypothesis testing.
(A) A p-value is the probability that the null hypothesis is true.
(B) A smaller p-value provides stronger evidence against the null hypothesis.
(C) A p-value less than the significance level (α) leads to rejection of the null hypothesis.
(D) A p-value can be greater than 1.

Choose the correct answer from the options given below:
(a) (A) and (C) Only
(b) (B) and (C) Only
(c) (A), (B) and (C) Only
(d) (B) and (D) Only
Answer: b
Sol: The p-value is a statistical measure used to determine the strength of evidence against the null hypothesis; in this context, the correct statements are that a smaller p-value provides stronger evidence against the null hypothesis and a p-value less than the significance level (α) leads to its rejection.
Information Booster:
- Evidence Against the Null: A p-value quantifies how "extreme" your observed data is, assuming the null hypothesis (H_0) is true. Therefore, the smaller the p-value, the more unlikely it is that your results occurred by random chance, providing stronger evidence to support the alternative hypothesis.
- Decision Rule (p < alpha α): In formal hypothesis testing, we compare the p-value to a pre-determined significance level, denoted as α (usually 0.05). If the p-value is less than or equal alpha α, the result is considered statistically significant, and we reject the null hypothesis.
- Probability of Observed Results: It represents the probability of obtaining test results at least as extreme as the results actually observed, under the assumption that the null hypothesis is correct.

Additional Knowledge:
- Not the Probability of the Null being True: A common misconception is that the p-value is the "probability that the null hypothesis is true." This is incorrect. In frequentist statistics, the null hypothesis is either true or false (it is not a random variable). The p-value only tells us about the compatibility of the data with the hypothesis, not the truth of the hypothesis itself.
- Probability Range (0 to 1): By definition, a p-value is a probability. Therefore, it must always fall within the range of 0 and 1. It is mathematically impossible for a p-value to be greater than 1. If a calculation yields a result greater than 1, it indicates a computational error.
- Effect Size vs. P-value: It is important to note that a small p-value does not necessarily mean the effect is "large" or practically important; it only means the effect is statistically unlikely to be zero.

Q3. Evaluate the following statements regarding digital logic and number systems:
I. The binary representation of the decimal number 43 is (101011)2(101011)_2(101011)2. II. In binary arithmetic, the operation (101)2×(11)2(101)_2 \times (11)_2(101)2×(11)2 results in the decimal value 15. III. Hexadecimal numbers are commonly used in ICT to represent MAC addresses because they are more readable than long binary strings.
Options:
(a) I and II only
(b) I and III only
(c) II and III only
(d) I, II, and III
Answer: d
Sol: Correct Option: (d)

Introduction: Computers process data using the Binary Number System (Base-2). To make binary data easier for humans to read and manage, systems like Hexadecimal (Base-16) are commonly used.

Information Booster:

- Statement I (Correct): 43=32+8+2+143 = 32 + 8 + 2 + 143=32+8+2+1, which corresponds to powers 25,23,21,202^5, 2^3, 2^1, 2^025,23,21,20. Hence, the binary form is (101011)2(101011)_2(101011)2.
- Statement II (Correct): (101)2=5(101)_2 = 5(101)2=5 and (11)2=3(11)_2 = 3(11)2=3. 5×3=155 \times 3 = 155×3=15, so the result is correct.
- Statement III (Correct): A MAC address is 48 bits long. Writing it in binary would be lengthy and error-prone. Therefore, it is represented using 12 hexadecimal digits for better readability.

Additional Knowledge: To convert a decimal number into binary, the repeated division-by-2 method is commonly used, where remainders are read from bottom to top.

Q4. Regarding MS Office functionalities, which statements are true?

I. In MS Excel, the function =COUNT(A1:A10) counts the number of cells that contain any data, including text.

II. A "Macro" in MS Office is a series of commands and instructions that you group together as a single command to accomplish a task automatically.

III. "Mail Merge" in MS Word is used to create multiple documents (like letters or labels) at once using a data source like an Excel sheet.

Options:

(a) I and II only

(b) II and III only

(c) I and III only

(d) I, II, and III

Answer: b

Sol: Correct Option – (b)

- Information Booster: * Statement I (Incorrect): The COUNT function only counts cells containing numbers. To count cells with text, one must use COUNTA.
- Statement II (Correct): Macros are written in VBA (Visual Basic for Applications) and save time on repetitive tasks.
- Statement III (Correct): This is a core feature for administrative efficiency.
- Additional Knowledge: In Excel, Absolute Cell Referencing (using $ like A1) prevents cell addresses from changing when a formula is copied.

Q5. Identify the correct full forms and their meanings:

I. WORM (in storage) stands for "Write Once, Read Many," referring to data that cannot be modified after it is written.

II. ASCII stands for "American Standard Code for Information Interchange" and is a 7-bit or 8-bit character encoding standard.

III. BIOS stands for "Binary Input Output System" and is responsible for booting the computer.

Options:

(a) I and II only
(b) II and III only
(c) I and III only
(d) I, II, and III
Answer: a
Sol: Correct Option – (a)
- Information Booster: * Statement I (Correct): Common in CD-Rs and archival storage.
- Statement II (Correct): It represents English characters as numbers.
- Statement III (Incorrect): BIOS stands for Basic Input Output System, not "Binary."
- Additional Knowledge: UTF-8 is the modern successor to ASCII, supporting characters from almost all languages in the world (Unicode).

Q6. Which of the following were key outcomes of the United Nations Conference on Environment and Development (UNCED), known as the Rio Summit, held in 1992?
I. The Convention on Biological Diversity (CBD) was opened for signature, aiming for the conservation, sustainable use, and equitable sharing of genetic benefits.
II. The adoption of Agenda 21, a comprehensive global action plan for sustainable development into the 21st century.
III. The establishment of the International Solar Alliance (ISA) as a treaty-based organisation to promote solar energy.
Choose the correct answer from the codes given below:
(a) I and II only
(b) II and III only
(c) I and III only
(d) I, II, and III
Answer: a
Sol: Introduction:
- The United Nations Conference on Environment and Development (UNCED), widely known as the Rio Summit or Earth Summit, was held in Rio de Janeiro, Brazil, in 1992.
- This landmark conference established the core framework for sustainable development by balancing economic growth, social equity, and environmental protection.

Information Booster:
- The CBD is one of the three legally binding Rio Conventions adopted at the Summit (the others being the UNFCCC and the Convention to Combat Desertification - which was later opened).
- Its three main goals are precisely conservation, sustainable use, and the Access and Benefit-Sharing (ABS) from genetic resources.
- Agenda 21 is a non-binding but comprehensive 40-chapter blueprint for action that was unanimously adopted by 178 governments at the Summit.
- The "21" refers to the 21st century, outlining global strategies for cleaning up the environment and encouraging environmentally sound development.
- Rio Declaration on Environment and Development: A set of 27 broad, non-binding principles guiding sustainable development (e.g., Principle of Common But Differentiated Responsibilities).
- United Nations Framework Convention on Climate Change (UNFCCC): Opened for signature, aimed at stabilizing greenhouse gas concentrations in the atmosphere.

Additional knowledge:

- The International Solar Alliance (ISA) was jointly launched much later by the Prime Minister of India and the President of France on November 30, 2015, on the sidelines of the COP21 Paris Climate Change Conference.

Q7. Graduate students in school S is how much more or less than the non-graduate students in school T?

The table DI given below shows the total number of students who are studying in various schools (P, Q, R, S and T), and percentage of graduate students out of the total students.

Total number of students in any school = Total number of (graduate + Non graduate) students in that school.

Schools	Total number of Students	Percentage of graduate Students
P	4000	25%
Q	6000	40%
R	5000	20%
S	7000	15%
T	9000	30%

(a) 5250
(b) 5440
(c) 5160
(d) 5350

Answer: a

Sol:

$$\text{Required difference} = 9000 \times \frac{100-30}{100} - 7000 \times \frac{15}{100} = 5250$$

Q8. Find out the total number of graduate students in all these five schools together?

The table DI given below shows the total number of students who are studying in various schools (P, Q, R, S and T), and percentage of graduate students out of the total students.

Total number of students in any school = Total number of (graduate + Non graduate) students in that school.

Schools	Total number of Students	Percentage of graduate Students
P	4000	25%
Q	6000	40%
R	5000	20%
S	7000	15%
T	9000	30%

(a) 7500
(b) 8150
(c) 8000
(d) 8250

Answer: b

Sol:

Total graduate student =

$$4000 \times \frac{25}{100} + 6000 \times \frac{40}{100} + 5000 \times \frac{20}{100} + 7000 \times \frac{15}{100} + 9000 \times \frac{30}{100}$$

$= 8150$

Q9. Find out the average of non-graduate students in school Q and school R?

The table DI given below shows the total number of students who are studying in various schools (P, Q, R, S and T), and percentage of graduate students out of the total students.

Total number of students in any school = Total number of (graduate + Non graduate) students in that school.

Schools	Total number of Students	Percentage of graduate Students
P	4000	25%
Q	6000	40%
R	5000	20%
S	7000	15%
T	9000	30%

(a) 3500
(b) 3600
(c) 3700
(d) 3800

Answer: d

Sol:

$$\text{Required average} = \frac{1}{2}\left(6000 \times \frac{60}{100} + 5000 \times \frac{80}{100}\right) = 3800$$

Q10. Find out the ratio between graduate students in school S to that of in school P ?

The table DI given below shows the total number of students who are studying in various schools (P, Q, R, S and T), and percentage of graduate students out of the total students.

Total number of students in any school = Total number of (graduate + Non graduate) students in that school.

Schools	Total number of Students	Percentage of graduate Students
P	4000	25%
Q	6000	40%
R	5000	20%
S	7000	15%
T	9000	30%

(a) 21:20
(b) 20:19
(c) 19:20
(d) 21:23

Answer: a

Sol:

$$\text{Required ratio} = (7000 \times \frac{15}{100}) : \left(4000 \times \frac{25}{100}\right) = 21:20$$

Q11. Graduate students in school T is what percentage of total students in school R?

The table DI given below shows the total number of students who are studying in various schools (P, Q, R, S and T), and percentage of graduate students out of the total students.

Total number of students in any school = Total number of (graduate + Non graduate) students in that school.

Schools	Total number of Students	Percentage of graduate Students
P	4000	25%
Q	6000	40%
R	5000	20%
S	7000	15%
T	9000	30%

(a) 50%

(b) 58%

(c) 54%

(d) 60%

Answer: c

Sol:

$$\text{Required \%} = \frac{9000 \times \frac{30}{100}}{5000} \times 100 = 54\%$$

Q12. Which of the following international agreements/efforts were specifically aimed at addressing global climate change and its mitigation?

A. Kyoto Protocol

B. Montreal Protocol

C. Paris Agreement

D. International Solar Alliance (ISA)

E. Convention on Biological Diversity (CBD)

Choose the correct answer from the options given below:

(a) A, C and D Only

(b) A, B and C Only

(c) B, C and E Only

(d) C and D Only

Answer: a

Sol: Introduction:

- Since the Rio Summit (1992), global efforts have intensified to combat the threats posed by climate change, resulting in several foundational treaties and collaborative initiatives.

Information Booster:

- Kyoto Protocol (1997): Set mandatory emission reduction targets for industrialized nations to reduce greenhouse gases.
- Paris Agreement (2015): A global agreement to limit global warming to well below 2°C, preferably to 1.5°C, through nationally determined contributions (NDCs).
- International Solar Alliance (ISA) (2015): An alliance of over 120 countries, primarily sunny nations, working to promote solar energy to mitigate climate change.

Additional Knowledge:

- Montreal Protocol (1987): Specifically addresses the phase-out of ozone-depleting substances, not climate change, although many ODS are also powerful greenhouse gases.
- Convention on Biological Diversity (CBD) (1992): Focuses on the conservation and sustainable use of biodiversity, not primarily climate change mitigation.

Q13. A merchant fixes the marked price of his goods at 50% above the cost price. He sells his goods at 12% discount. His percentage of profit is:

(a) 37%

(b) 32%

(c) 43%

(d) 35%

Answer: b

Sol: Given:

Let the Cost Price (CP) = 100

Marked Price is 50% above the Cost Price

Discount given = 12%

Formula Used:

$$\text{Marked Price} = \text{CP} \times \left(1 + \frac{\text{Increase\%}}{100}\right)$$

$$\text{Selling Price} = \text{MP} \times \left(1 - \frac{\text{Discount\%}}{100}\right)$$

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

Solution:

Let Cost Price (CP) = 100

Marked Price (MP) = $100 \times (1 + \frac{50}{100}) = 150$

Selling Price (SP) = $150 \times (1 - \frac{12}{100}) = 132$

Profit = SP − CP = 132 − 100 = 32

Profit Percentage = $\frac{32}{100} \times 100 = 32\%$

Q14. Which of the following factors primarily distinguish the Teaching-Learning process at the Reflective Level (RML) from the Understanding Level (UML)?

I. The use of problem-solving assignments that demand original and creative solutions.

II. The instructional focus shifts from making concepts meaningful to helping students structure the problem space.

III. The teacher assumes the role of a facilitator/guide rather than a provider of structured explanations.
IV. The evaluation process relies heavily on the objective testing of defined concepts and relationships.
Options:
(a) I, II, and III only
(b) II, III, and IV only
(c) I, III, and IV only
(d) I, II, III, and IV
Answer: a
Sol: Correct Option – (a)
Introduction:

- The RML and UML differ significantly in their goals, methods, and evaluation techniques, marking the transition from structured comprehension to autonomous, creative thought.

Information Booster:

- UML focuses on applying concepts to known situations. RML demands original and creative solutions (Creating/Synthesis) to novel, ill-defined problems.
- In UML, the goal is clarity (making meaning). In RML, the problem is often vague, so the first step is the higher-order task of structuring and defining the problem itself.
- In UML, the teacher acts as the structural provider (Morrison's model). In RML, the teacher is a democratic facilitator who encourages self-expression and critical inquiry (Hunt's model).
- The Reflective Level directly aligns with the philosophy of Constructivism, where the learner is expected to actively construct their own knowledge and solutions, rather than just assimilate the structured information provided by the instructor.

Additional Knowledge:

- Objective testing of defined concepts is characteristic of the Understanding Level (UML).
- RML evaluation is subjective, based on the quality of the student's problem-solving process, originality, and comprehensive essay-type answers

Q15. Match list I with list II.

List I (Mechanism)	List II (Defining Characteristic)
A. Formative Assessment	ii. A process of continuous, iterative assessment for improvement.
B. Summative Assessment	i. Designed to certify competence and assign a final grade.
C. Synchronous Feedback	iii. Feedback provided in real-time, often during a live session.
D. Asynchronous Feedback	iv. Feedback provided after a delay, such as comments on a submitted assignment.

Choose the correct option:
(a) A-i, B-ii, C-iii, D-iv
(b) A-ii, B-i, C-iii, D-iv
(c) A-iii, B-iv, C-i, D-ii
(d) A-iv, B-iii, C-ii, D-i
Answer: b
Sol: Correct Option – (b)

Introduction: Assessment and feedback are critical components of online teaching, serving to measure learning and guide improvement.

Information Booster (Assessment and Feedback Types):

- Formative Assessment (A): Assessment *for* learning. It's an ongoing, continuous process used to monitor student learning and provide non-graded feedback to modify teaching and learning activities.
- Summative Assessment (B): Assessment *of* learning. It evaluates student learning at the end of an instructional unit, aiming to certify competence and determine the final outcome/grade.
- Synchronous Feedback (C): Given during a live interaction (like a live chat or webinar), allowing for immediate clarification and dialogue.
- Asynchronous Feedback (D): Given *after* the activity, often through an email, a comment on a learning management system (LMS) submission, or a grade report, and can be more detailed and reflective.

Additional Knowledge:

In online learning, quizzes and polls used during a live session are examples of Synchronous Formative Assessment. A final proctored online exam is an example of Summative Assessment.

Q16. Arrange the following bodies in chronological order of their establishment:

1. AICTE
2. UGC
3. ICSSR
4. NAAC

Options:

(a) 1, 2, 3, 4
(b) 4, 3, 1, 2
(c) 2, 1, 4, 3
(d) 1, 2, 4, 3

Answer: a

Sol: Correct Option – (a)

Introduction:

Chronology helps in tracing the historical development of educational governance in India. Each body was established to address new challenges emerging within higher education as India evolved politically, economically, and technologically.

Information Booster:

1. AICTE (1945): The earliest among these, AICTE was formed before independence to oversee technical and engineering education.
2. UGC (1956): Post-independence, UGC was set up to manage the entire higher education sector, ensuring coordination between central and state universities.
3. ICSSR (1969): Established to promote social science research and provide fellowships, ICSSR encourages studies on socio-economic issues and policy formulation.
4. NAAC (1994): Created to ensure quality and accountability in institutions through a structured accreditation process.

Additional Knowledge:
The creation of NAAC marked a new era in higher education quality assurance. Today, institutions accredited by NAAC are recognised globally for maintaining excellence.

Q17. In a certain time, a sum becomes 4 times of itself on simple interest at the rate of 10% per annum. What is the rate of interest if the same sum becomes 7 times of itself in the same duration?
(a) 20%
(b) 15%
(c) 10%
(d) 5%
Answer: a
Sol: Given:
A sum becomes 4 times at 10% SI.
Same duration makes the sum become 7 times.
Find the new rate of interest.
Formula Used:

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

Solution:

From first condition (4 times at 10%):

$4P = P + SI \Rightarrow SI = 3P$

Now,

$3P = \frac{P \cdot T \cdot 10}{100}$

$3 = \frac{10T}{100}$

$T = 30 \text{ years}$

Now for second condition (7 times):

$7P = P + SI \Rightarrow SI = 6P$

Now,

$6P = \frac{P \times 30 \times R}{100}$

$6 = \frac{30R}{100}$

R = 20%

Q18. In a race of 800 m, Ram can beat Shyam by 50 m, and in a race of 600 m, Shyam can beat Ghanshyam by 40 m. By how many metres will Ram beat Ghanshyam in a race of 400m?
(a) 80 m
(b) 50 m
(c) 40 m
(d) 100 m
Answer: b
Sol: Given:
In a race of 800 m, Ram can beat Shyam by 50 m, and in a race of 600 m, Shyam can beat Ghanshyam by 40 m.
Solution:
Ram runs 800 metres when Shyam runs 750 metres.
Shyam runs 600 metres when Ghanshyam runs 560 metres.
LCM of 750 and 600 = 3000 metres.
Ram runs 3200 metres when Shyam runs 3000 metres
Shyam Runs 3000 metres Ghanshyam runs 2800 metres.
Ram beats Ghanshyam by 400 metres in a 3200 metre race.
In 400 metre race =
400×4003200
3200
400×400
= 50 metres
∴ Ram beats Ghanshyam in 400 metre race by 50 metres.

Q19. Arrange the following steps in the logical progression of a student's academic pathway under the NEP 2020's flexible degree structure:
1. Bachelor of Research (B.Res.) / Master's Degree
2. Diploma
3. Certificate
4. Bachelor's Degree
Codes:
(a) 3, 2, 4, 1
(b) 2, 3, 1, 4
(c) 3, 2, 1, 4
(d) 2, 3, 4, 1
Answer: a
Sol: Correct Option – (a)
Introduction: This sequencing question tests the comprehension of the multiple entry and exit system, a cornerstone of the NEP 2020, which restructures the traditional linear academic path.
Information Booster: The NEP 2020 proposes a flexible 4-year undergraduate programme where a student can formally exit at different stages with a recognized qualification:

1. Certificate (3): After successfully completing 1 year (2 semesters) in a discipline/field, including vocational and professional areas.
2. Diploma (2): After successfully completing 2 years (4 semesters) of study.
3. Bachelor's Degree (4): The award for completing a 3-year programme. This is the standard undergraduate degree.
4. Bachelor of Research (B.Res.) / Master's Degree (1): A 4-year Bachelor's degree (B.Res.) is awarded for a 4-year programme with a research component. Alternatively, a 1-year Master's degree can be pursued after a 3-year Bachelor's, or an integrated 5-year Bachelor's/Master's programme can be undertaken.
Additional Knowledge: This system is supported by the Academic Bank of Credits (ABC), which stores academic credits digitally, allowing students to re-enter the education system after an exit and continue their studies without losing previously earned credits.

Q20. What should come in place of the question mark (?) in the given series?
6, 9, 21, 39, 81, ?
(a) 158
(b) 160
(c) 159
(d) 157
Answer: c
Sol: Given Series:
6, 9, 21, 39, 81, ?
Logic:
Multiply by 2 and add 3 (×2 + 3)
Multiply by 2 and subtract 3 (×2 – 3)
6 + 3 = 9
9 × 2 + 3 = 21
21 × 2 – 3 = 39
39 × 2 + 3 = 81
81 × 2 – 3 = 159
Thus, the correct option is (c).

Q21. Which pedagogical approach forms the core foundation of the teaching-learning process recommended in NEP 2020?
(a) A uniform, standardized instructional method for all
(b) Flexible, learner-centered, and experiential education
(c) Teacher-directed and lecture-based instruction
(d) Emphasis on memorization and repetitive practice
Answer: b
Sol: The correct answer is (b) Flexible, learner-centered, and experiential education
Explanation:

- NEP 2020 promotes a shift from rote-based, lecture-driven instruction to learner-centered, flexible, and experiential learning.
- This approach ensures active student participation, conceptual understanding, and real-world application of knowledge.

Information Booster:

- Experiential Learning: Encourages project-based, inquiry-based, and discovery learning.
- Learner-Centered Focus: Recognizes student diversity and interests.
- Interdisciplinary Integration: Combines art, science, and vocational areas.
- Holistic Development: Balances cognitive, emotional, and social skills.
- Outcome-Based Education: Measures learning through understanding, not memorization.

Q22. Arrange the following layers of the atmosphere from the Earth's surface upwards.

i. Mesosphere
ii. Stratosphere
iii. Thermosphere
iv. Troposphere

Options:

(a) iv, i, ii, iii
(b) iv, ii, i, iii
(c) iv, iii, i, ii
(d) iii, i, ii, iv

Answer: b

Sol: Correct Option – (b)

Introduction: The atmosphere is composed of distinct layers, each with unique temperature and chemical characteristics. This sequence is fundamental to understanding weather, climate, and atmospheric phenomena.

Information Booster:

1. iv. Troposphere: This is the lowest layer, extending up to about 8-15 km. It is where all weather phenomena occur.
2. ii. Stratosphere: Located above the troposphere, extending up to about 50 km. It contains the ozone layer, which absorbs and scatters ultraviolet solar radiation.
3. i. Mesosphere: The layer above the stratosphere, extending up to about 85 km. It is the layer where most meteors burn up upon atmospheric entry.
4. iii. Thermosphere: The outermost layer of the atmosphere (though it transitions into the exosphere), extending from about 85 km to the edge of space. It is where the International Space Station orbits and where auroras occur.

Additional Knowledge:

- The boundary between the troposphere and the stratosphere is called the tropopause.

Q23. Match the following Indian Environmental Acts with the year of their enactment.

List-I (Environmental Act)	List-II (Year)
A. The Water (Prevention and Control of Pollution) Act	1. 1986
B. The Air (Prevention and Control of Pollution) Act	2. 1974
C. The Environment (Protection) Act	3. 1981
D. The Wildlife (Protection) Act	4. 1972

Codes:
(a) A-2, B-3, C-1, D-4
(b) A-3, B-2, C-4, D-1
(c) A-2, B-1, C-3, D-4
(d) A-4, B-3, C-1, D-2
Answer: a
Sol: Correct Option – (a)
Introduction: India's environmental legal framework has evolved over decades. Knowing the chronology of these key legislations helps understand the country's response to growing environmental challenges.
Information Booster:
- A. The Water Act (Matches with 2): This was India's first central legislation on environmental pollution, enacted in 1974. It established the Central and State Pollution Control Boards.
- B. The Air Act (Matches with 3): Enacted in 1981 to provide for the prevention, control, and abatement of air pollution.
- C. The Environment (Protection) Act (Matches with 1): Enacted in 1986 following the Bhopal Gas Tragedy, this is an umbrella legislation that empowers the central government to take all necessary measures for protecting and improving the environment.
- D. The Wildlife (Protection) Act (Matches with 4): Enacted in 1972, it provides for the protection of wild animals, birds, and plants.

Additional Knowledge:
- The National Green Tribunal (NGT) was established in 2010 for the effective and expeditious disposal of cases relating to environmental protection.

Q24. Match the following internet protocols with their primary function:

List-I (Protocol)	List-II (Primary Function)
1. HTTP/HTTPS	A. Translates domain names (e.g., google.com) to IP addresses.
2. DNS	B. Transfers files between a client and a server on a network.
3. FTP	C. Sends and receives email messages between servers.
4. SMTP	D. Delivers web pages and other resources from a server to a client.

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

Answer: c

Sol: Correct Option – (c)

Introduction: The internet operates on a suite of protocols, each defining a specific set of rules for how different types of communication should occur between devices. These protocols are the invisible foundation of all online activities.

Information Booster:

- 1. HTTP/HTTPS (Matches with D): HyperText Transfer Protocol (Secure) is the foundation of data communication for the World Wide Web. It defines how messages are formatted and transmitted, and what actions web servers and browsers should take in response to various commands. Its primary function is to deliver web pages.
- 2. DNS (Matches with A): The Domain Name System is often called the "phonebook of the internet." It is a hierarchical and decentralized naming system that translates human-friendly domain names (like www.example.com) into machine-readable IP addresses (like 192.0.2.1).
- 3. FTP (Matches with B): File Transfer Protocol is a standard network protocol used for the transfer of computer files between a client and a server on a computer network. It is less common for general web browsing but is still used for uploading files to a web server.
- 4. SMTP (Matches with C): Simple Mail Transfer Protocol is an internet standard communication protocol for electronic mail transmission. Mail servers use SMTP to send and receive mail messages, while client applications typically use other protocols (like IMAP or POP3) to retrieve them.

Additional Knowledge: While HTTP is for viewing websites, HTTPS is the secure version, encrypting the data between your browser and the website. This is crucial for protecting sensitive information like login credentials and credit card numbers.

Q25. Match the following international environmental agreements with their primary focus:

List-I (Agreement/Protocol)	List-II (Primary Focus)
1. Kyoto Protocol	A. Conservation of Biological Diversity
2. Montreal Protocol	B. Reducing Greenhouse Gas Emissions
3. Convention on Biological Diversity (CBD)	C. Phasing out Ozone-Depleting Substances
4. Paris Agreement	D. Limiting global warming to well below 2°C

Codes:

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

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

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

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

Answer: a

Sol: Correct Option – (a)

Introduction: Global environmental challenges require coordinated international efforts. Various multilateral agreements have been established to address specific issues like climate change, biodiversity loss, and ozone layer depletion. Understanding their distinct objectives is crucial.

Information Booster:

- 1. Kyoto Protocol (1997) (Matches with B): This was an international treaty that extended the 1992 UN Framework Convention on Climate Change (UNFCCC). It operationalized the principle of "common but differentiated responsibilities" by committing industrialized countries (Annex I) to specific, legally binding targets for reducing greenhouse gas emissions.
- 2. Montreal Protocol (1987) (Matches with C): A landmark international treaty designed to protect the ozone layer by phasing out the production of numerous substances responsible for ozone depletion, such as chlorofluorocarbons (CFCs). It is widely regarded as one of the most successful environmental agreements.
- 3. Convention on Biological Diversity (CBD) (1992) (Matches with A): Opened for signature at the Rio Earth Summit, the CBD has three main objectives: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from genetic resources.
- 4. Paris Agreement (2015) (Matches with D): The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Unlike the Kyoto Protocol, it requires action from all countries.

Additional Knowledge: The Kigali Amendment to the Montreal Protocol (2016) aims to phase down hydrofluorocarbons (HFCs), potent greenhouse gases. India, in line with its commitments, has developed a national strategy for phasing down HFCs.

Q26. The "Red Herring" fallacy is best described as:
(a) Using emotionally charged language to sway an audience.
(b) Introducing an irrelevant topic to divert attention from the original issue.
(c) Arguing that a claim is true because it has not been proven false.
(d) Assuming that what is true of the parts is true of the whole.
Answer: b
Sol: Correct Option – (b)
Introduction: Fallacies of Relevance, like the Red Herring, derail an argument by shifting the discussion to a different, often more emotionally charged, subject.
Information Booster:

- Red Herring (b) is a deliberate diversionary tactic. The arguer abandons the original point to pursue a side issue, leading the audience away from the relevant facts.
- Example: Politician A: "What is your plan to address the budget deficit?" Politician B: "What we really need to be talking about is my opponent's weak record on national security." The topic of national security is a "red herring" used to avoid the question about the deficit.
- Option (a) describes the use of Loaded Language.
- Option (c) describes the Appeal to Ignorance (Argumentum ad Ignorantiam).
- Option (d) describes the Fallacy of Composition.

Additional Knowledge: The term originates from the practice of using a strong-smelling smoked fish (a red herring) to train hounds to follow a scent, or to drag it across a trail to distract them from their quarry.

Q27. Arrange the following events in the history of Indian universities:
1. Establishment of the University of Allahabad
2. Foundation of the first three universities (Calcutta, Bombay, Madras)
3. Passing of the Indian Universities Act
4. Appointment of the Sadler Commission
5. Establishment of the University Grants Commission (UGC)
(a) 2, 1, 3, 4, 5
(b) 1, 2, 3, 4, 5
(c) 2, 1, 4, 3, 5
(d) 2, 1, 5, 4, 3
Answer: a
Sol: The correct chronological order of these events is:
Foundation of the first three universities (Calcutta, Bombay, Madras) (1857)
Establishment of the University of Allahabad (1887)
Passing of the Indian Universities Act (1904)
Appointment of the Sadler Commission (1917)
Establishment of the University Grants Commission (UGC) (1956)
Information Booster
The history of Indian universities reflects a progression from the British colonial era's administrative and educational goals to the post-independence nation's focus on national development and academic autonomy.
1. The Foundation of Presidency Universities (1857)
Based on the recommendations of Wood's Despatch of 1854, the Universities of Calcutta, Bombay, and Madras were established in 1857. Modeled on the University of London, they were initially examining bodies rather than teaching universities.
2. Establishment of Allahabad University (1887)
The University of Allahabad was founded in 1887, becoming the fifth university in British India. It was often called the "Oxford of the East" and grew to become a significant center of learning in northern India.
3. The Indian Universities Act (1904)
Passed during the viceroyalty of Lord Curzon, this Act aimed to reform and increase government control over Indian universities. Based on the recommendations of the Raleigh Commission, it made university affiliation for private colleges more stringent and increased government nomination of university fellows.
4. The Sadler Commission (1917)
Also known as the Calcutta University Commission, it was appointed in 1917 to study the problems of the University of Calcutta. Its recommendations had a far-reaching impact, leading to the establishment of Boards of Secondary and Intermediate Education and proposing the creation of unitary, teaching, and residential universities.
5. Establishment of the University Grants Commission (UGC) (1956)
Following the recommendations of the Radhakrishnan Commission (1948-49), the UGC was made a statutory body by an Act of Parliament in 1956. Its establishment was a pivotal step in independent India, giving it the authority to coordinate, determine, and maintain standards of university education.

Q28. Arrange the following communication models in the correct chronological order of their development:
1. Shannon-Weaver Model
2. Lasswell's Model
3. Berlo's S-M-C-R Model
4. Aristotle's Model
(a) 4, 2, 1, 3
(b) 2, 4, 1, 3
(c) 4, 1, 2, 3
(d) 1, 2, 3, 4
Answer: a
Sol: Correct Option – (a)
Introduction Knowing the chronological development of communication models is important for understanding the evolution of the field from simple, one-way processes to more complex, interactive and transactional views.
Information Booster
- Aristotle (c. 300 BCE): The first formal model, focusing on public speaking.
- Lasswell (1948): Developed to analyze propaganda during and after World War II.
- Shannon-Weaver (1949): The technical model of communication, created for Bell Laboratories.
- Berlo (1960): A more human-focused linear model that adds psychological variables.

Additional Knowledge: This historical progression shows how communication studies evolved. It started with a focus on persuasion (Aristotle), then moved to mass media analysis (Lasswell), a technical-mechanical approach (Shannon-Weaver), and finally began to incorporate psychological and social factors (Berlo).

Q29. In Indian logic (Nyāya philosophy), which Pramāṇa is considered as the primary and most important source of valid knowledge?
(a) Pratyakṣa (Perception)
(b) Anumāna (Inference)
(c) Upamāna (Comparison)
(d) Śabda (Verbal testimony)
Answer: a
Sol: Correct Option – (a)
Introduction: In Indian epistemological systems, particularly Nyāya, Pramāṇa refers to the valid means or instruments of acquiring true knowledge (pramā). While multiple pramāṇas are accepted, one is considered foundational.
Information Booster: Pratyakṣa (Perception) is regarded as the primary and most fundamental pramāṇa in Nyāya philosophy. It is defined as direct, sense-mediated cognition that arises from the contact of a sense organ with an object. Nyāya argues that all other pramāṇas ultimately depend on perception for their validation. For instance, an inference (anumāna) must be based on a perceived correlation (e.g., seeing smoke and fire together on a mountain).

Additional Knowledge: Different schools of Indian philosophy accept a different number of pramāṇas. Cārvāka materialism accepts only Pratyakṣa. Sāṅkhya and Yoga accept three (Pratyakṣa, Anumāna, Śabda), while Nyāya accepts four (the above three plus Upamāna). Mīmāṃsā and Vedānta accept six, adding Arthāpatti (presumption) and Anupalabdhi (non-apprehension).

Q30. Match List I with List II:

List I (Hypothesis Testing Concept)	List II (Definition)
A. Significance Level (α)	I. The probability of correctly rejecting a false null hypothesis.
B. Statistical Power	II. The probability of observing the data (or more extreme) given that the null hypothesis is true.
C. P-value	III. A pre-determined threshold for rejecting the null hypothesis.
D. Critical Region	IV. The range of values of the test statistic that would lead to the rejection of the null hypothesis.

Choose the correct answer 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-II, B-I, C-IV, D-III
(d) . A-IV, B-III, C-I, D-II
Answer: a
Sol: Correct Option - (a)
Introduction
This question tests your understanding of the inter-related concepts that form the basis of hypothesis testing. Each term—significance level, power, p-value, and critical region—plays a specific role in the decision-making process, and confusing them can lead to misinterpretation of research findings.
Information Booster

- A. Significance Level (α) matches with III. The significance level is the maximum risk of making a Type I error that a researcher is willing to accept. It is set *before* the data is collected and analyzed. Common values are 0.05, 0.01, and 0.10.
- B. Statistical Power matches with I. Power is the probability of a test correctly identifying a real effect. It is the probability of rejecting a null hypothesis that is, in fact, false. Researchers often aim for a power of 0.80 or higher.
- C. P-value matches with II. The p-value is a calculated probability that is used to make the decision. If the p-value is less than the significance level (α), the result is considered statistically significant, and the null hypothesis is rejected.
- D. Critical Region matches with IV. The critical region, also known as the rejection region, is the area in the tails of the sampling distribution. If the test statistic falls into this region, it is considered so extreme that it is unlikely to have occurred by chance, and the null hypothesis is rejected.

Additional Knowledge

- The relationship between the p-value and the critical region is key to understanding the decision. If the p-value is less than α, the test statistic will always fall within the critical region. If the p-value is greater than α, the test statistic will not fall in the critical region.

- Effect size is another important concept. It measures the magnitude of the observed effect. A statistically significant result (small p-value) does not necessarily mean the effect is practically important. A large effect size is more likely to be found significant with a smaller sample size and can lead to a more powerful test.

Q31. In a certain code language, if CHEF is coded as 22, DOCTOR is coded as 75, then how will TEACHER be coded?
(a) 72
(b) 65
(c) 55
(d) 60
Answer: d
Sol: Given:
In a certain code language, if CHEF is coded as 22, DOCTOR is coded as 75.

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 place value of letter = number
For, CHEF - 22
C - 3, H - 8, 3 - 5, F - 6
Sum = 3 + 8 + 5 + 6
= 22
For, DOCTOR - 75
D - 4, O - 15, C - 3, T - 20, O - 15, R - 18
Sum = 4 + 15 + 3 + 20 + 15 + 18
= 75
Similarly,
TEACHER - ?
T - 20, E - 5, A - 1, C - 3, H - 8, E - 5, R - 18
Sum = 20 + 5 + 1 + 3 + 8 + 5 + 18
= 60
So, TEACHER is coded as 60.
Thus, correct option is (d).

Q32. Which among the following statements is NOT true about SITE (Satellite Instructional Television Experiment)?
(a) It was supported by NASA
(b) It aimed at rural education via satellite
(c) It was started in 1982 during Asian Games
(d) It helped lay the groundwork for Indian satellite broadcasting

Answer: c

Sol: Correct Option - (c)

Solution Introduction: SITE was a landmark experiment in using satellite technology for rural education.

Information Booster:

- Launched in 1975 and supported by NASA.
- Targeted rural areas with content on agriculture, health, etc.
- Laid foundation for INSAT and further satellite programs.

Additional Information: 1982 saw colour TV's debut, not the start of SITE.

Q33. In the Buddha Period, which educational centres were established along with monasteries?

A. Ballabhi

B. Baba Mastnath University

C. Nalanda

D. Vikramshila

E. Taxila

Choose the correct answer from the options given below:

(a) B, C and E Only

(b) A, B, C and D Only

(c) A, C, D and E Only

(d) B, D and E Only

Answer: c

Sol: Introduction:

An educational centre is a place dedicated to teaching and learning. This question asks to identify ancient Indian educational centres, often associated with monasteries, that flourished during or were influenced by the Buddha Period.

Information Booster:

During the Buddhist period, many monasteries (Viharas) became learning centres.

Ballabhi (:Vallabhi) (A): A centre of learning that rivalled Nalanda, Vallabi was known for its Hinayana studies and had around 6,000 monk-students. It also imparted secular education in subjects like economics, law, politics, and medical sciences.

Nalanda (C): A renowned university that flourished during the Gupta dynasty. It was a major center for the study of Buddhism and other subjects like philosophy, medicine, and astronomy. Nalanda University had dormitories for students, lecture halls, meditation halls, and a vast library.

Vikramshila (D): Founded by King Dharmapala in the 8th century AD, Vikramshila University was another prominent center of learning. It had 108 temples and six colleges, with a focus on Buddhist studies, logic, philosophy, and tantra.

Taxila (E): A famous center of learning that attracted scholars from different parts of India. It provided higher education and specialized in various subjects like the Vedas, grammar, philosophy, medicine, military arts, astrology, commerce, and agriculture.

Therefore, the correct centers are A, C, D, E.

Additional Knowledge:

- "Buddha Period" broadly covers Buddha's time and the flourishing of Buddhist institutions.
- These centers taught both religious and secular subjects.
- Chinese travelers documented their importance.

Q34. Match the type of film classification by CBFC with its description:

List I (Classification)	List II (Description)
A. U	1. Restricted to adults only
B. A	2. Suitable for all ages
C. U/A	3. Parental guidance suggested
D. S	4. For special audiences (doctors, scientists)

Choose the correct answer from the options given below:

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

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

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

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

Answer: a

Sol: Correct Option: (a) A-2, B-1, C-3, D-4

Introduction: CBFC assigns categories for audience suitability in India.

Information Booster:

- U: Universal (A-2)
- A: Adult (B-1)
- U/A: Parental guidance (C-3)
- S: Specialized (D-4)

Q35. In square of opposition which one of the following is contradictory of 'All S is P?

(a) All S is Q

(b) Some S is not P

(c) No S is P

(d) Some S is P

Answer: b

Sol: In the square of opposition, contradictory statements are pairs where one is always true, and the other is always false.

- The universal affirmative 'All S is P' (A-type proposition) states that every member of S belongs to P.
- The contradictory of this is the particular negative 'Some S is not P' (O-type proposition), which states that at least one member of S does not belong to P.

If "All S is P" is true, then "Some S is not P" must be false, and vice versa, making them contradictory.

Information Booster

1. Contradictory statements: One is true, and the other is false (e.g., A and O; E and I).
2. Contrary statements: Both cannot be true but can be false (e.g., A and E).
3. Subalternation: Truth flows downward (A → I, E → O), and falsity flows upward.
4. Sub-contrary statements: Both cannot be false but can be true (e.g., I and O).
5. The square of opposition visually represents these logical relationships among categorical propositions.

Q36. Which of the following are admitted by the Naiyayikas (Indian Logicians) as kinds of Inferences?
(A) Inference of the effect from the cause
(B) Inference of the cause from the effect
(C) Inference from knowledge of similarity between two kinds of objects
(D) Inference from observation for general inseparability
Choose the correct answer from the options given below:
(a) (A), (B) and (C) only
(b) (A), (B) and (D) only
(c) (A) and (B) only
(d) (A) and (D) only
Answer: b
Sol: The Naiyāyikas (Indian Logicians) in the Nyāya school of philosophy recognize the following kinds of inferences:

- (A) Inference of the effect from the cause: This is based on understanding the relationship where a cause leads to an effect. For example, the presence of clouds is inferred to result in rain.
- (B) Inference of the cause from the effect: This involves inferring a cause from its observed effect. For example, seeing water on the ground and inferring it has rained.
- (D) Inference from observation for general inseparability: Known as *vyāpti* in Nyāya logic, this inference relies on the observed invariable concomitance or inseparability between two entities. For example, wherever there is smoke, there is fire.

Information Booster 1. Naiyāyikas classify inference (*anumāna*) into three types:

- Pūrvavat (From cause to effect): Inferring rain from clouds.
- Śeṣavat (From effect to cause): Inferring fire from smoke.
- Sāmānyato dṛṣṭa (General inseparability): Based on repeated observation of a relation, like fire and smoke.

2. Their logical framework relies on *vyāpti*, the universal relation between the inferential sign (*hetu*) and the object inferred.
3. Naiyāyikas do not prioritize analogical reasoning (similarity) in their inferences.
4. Observation (*pratyakṣa*) and testimony (*śabda*) are other key pramāṇas (means of knowledge) in Nyāya philosophy.
Additional Knowledge: (C) is incorrect because the Naiyāyikas do not base inferences on mere similarity between objects. They emphasize invariable relations (cause-effect, general inseparability) rather than analogical reasoning.

Q37. The quantitative research is based on
(a) Reductionism
(b) Grounded theory
(c) Field notes
(d) Expansionism
Answer: a
Sol: Quantitative research is primarily based on reductionism, which is the approach of breaking down complex phenomena into simpler components to measure and analyze them more systematically. This approach allows researchers to focus on specific variables, isolate them, and use statistical tools to examine relationships and test hypotheses. Quantitative research relies on structured data, numerical analysis, and a deductive approach to understand patterns and make generalizations.
The other options are not foundational to quantitative research:

- Option (b) Grounded theory: Grounded theory is a qualitative research method focused on generating theories from data collected, usually through interviews and observations.
- Option (c) Field notes: Field notes are primarily used in qualitative research to record observations, behaviors, and contextual details that cannot be captured numerically.
- Option (d) Expansionism: Expansionism is not a concept in quantitative research. It generally refers to broadening or extending scope, which is unrelated to the quantitative method's structured and focused approach.

Information Booster:
1. Reductionism in Quantitative Research: Allows focusing on specific, measurable variables.
2. Structured Data Collection: Uses structured tools like surveys and experiments for data.
3. Numerical Analysis: Employs statistical techniques for analyzing data.
4. Hypothesis Testing: Based on deducing predictions from theories, which are then tested.
5. Objectivity: Aims to maintain objectivity by controlling variables and minimizing researcher influence.
6. Generalizability: Often seeks results that can be generalized to broader populations.

Q38. Both qualitative and quantitative research are concerned with
(a) Data reduction
(b) Artificial settings
(c) Uniformity of data
(d) Social fantasy
Answer: a
Sol: Both qualitative and quantitative research deal with data reduction, which is the process of simplifying and summarizing large sets of data to draw meaningful conclusions. In quantitative research, data reduction may involve statistical analysis, where raw data is processed into averages, percentages, and other summary statistics. In qualitative research, it may involve coding and categorizing data into themes or patterns to make it more manageable and understandable.
Artificial settings (b) are more typical of experimental research in controlled environments, not a general concern for all research types. Uniformity of data (c) is a focus in quantitative research but not typically emphasized in qualitative research, which values variation and complexity. Social fantasy (d) is unrelated to the aims of research.

Information Booster:

- Data reduction helps in managing large datasets and simplifying information for analysis in both research approaches.
- In quantitative research, it often involves the use of statistical tools and techniques to summarize numerical data.
- In qualitative research, it involves coding, categorizing, and identifying key themes from textual or observational data.
- Both research methods aim to extract meaningful patterns from data, although the nature of the data differs.
- Data reduction in qualitative studies often focuses on distilling insights, while in quantitative studies, it focuses on presenting trends and relationships.
- The process of reducing data ensures that only the most relevant and significant findings are emphasized.

Q39. What do 5W (What, Where, Whom, Who, Why) and 1H (How) indicate in planning?

(a) Objective setting

(b) Situation analysis

(c) Plan of work

(d) Monitoring and evaluation

Answer: c

Sol: Introduction:

- In systematic planning, different phases serve different cognitive purposes—thinking, deciding, acting, and reviewing.
- The 5W–1H technique (What, Where, Whom, Who, Why, and How) is a classic operational tool used to convert intentions into concrete action.
- Its strength lies not in diagnosis or evaluation, but in organizing how a plan will actually be carried out.

Information Booster:

- The Plan of Work phase focuses on operational clarity. The 5W–1H framework directly answers the core implementation questions:
- What activities will be undertaken
- Where they will be executed
- Whom they will benefit
- Who will be responsible
- Why the activity is necessary (link to objectives)
- How it will be implemented
- This makes the technique ideal for structuring tasks, assigning roles, and defining methods hallmarks of the plan of work stage rather than objective setting, situation analysis, or monitoring.

Additional Knowledge:

- Objective setting defines ends (goals), not means.
- Situation analysis diagnoses the present condition using tools like SWOT or baseline surveys.
- Monitoring and evaluation assess progress and outcomes after implementation.