Bihar BET Sample Paper 1

Q1. What is the difference between average of number of students studying science in college X and Y and average of number of students studying arts in college Z and A?

Table given below shows the total no. of student in six different college and percentage of student studying arts and commerce. Study the table carefully and answer the following questions.

College	Total student	Percentage of student studying arts	Percentage of student studying commerce
X	1200	15%	25%
Y	800	35%	40%
Z	1600	12%	48%
A	1000	44%	16%
B	600	20%	35%
C	2100	30%	40%

Total student in each college = Student studying arts, commerce & science.

(a) 206
(b) 120
(c) 216
(d) 144

Ans.(d)

Sol: Average number of student studying science in college X & Y= $\frac{1}{2}\left[1200 \times \frac{60}{100} + 800 \times \frac{25}{100}\right]$

$= \frac{920}{2} = 460$

Average number of student studying arts in college Z & A = $\frac{1}{2}\left[1600 \times \frac{12}{100} + 1000 \times \frac{44}{100}\right]$

$= \frac{632}{2} = 316$

Required difference = 460 – 316 = 144

Q2. Total student in each college = Student studying arts, commerce & science.

(a) 6%
(b) 4%
(c) 10%
(d) 9%

Ans.(b)

Sol: Males studying commerce in college Z = $1600 \times \frac{48}{100} \times \frac{3}{8} = 288$

Females studying science in college A = $1000 \times \frac{40}{100} \times \frac{3}{4} = 300$

Required percentage = $\frac{300 - 288}{300} \times 100$

$= \frac{1200}{300} = 4\%$

Q3. Total student in each college = Student studying arts, commerce & science.
(a) 5 : 7
(b) 7 : 5
(c) 8 : 9
(d) 9 : 8
Ans.(a)

Sol: Total student studying arts in college X & science in college B together = $1200 \times \frac{15}{100} + 600 \times \frac{45}{100}$
=180+270=450

Student studying science in college C = $2100 \times \frac{30}{100} = 630$

Required ratio = $\frac{450}{630}$ = 5 : 7

Q4. Total student in each college = Student studying arts, commerce & science.
(a) 150%
(b) 120%
(c) 190%
(d) 110%
Ans.(c)

Sol: Total commerce student studying in college Y & C together = $800 \times \frac{40}{100} + 2100 \times \frac{40}{100} = 1160$
Total arts student studying in college B & Y together = $600 \times \frac{20}{100} + 800 \times \frac{35}{100} = 400$

Required percentage = $\frac{1160 - 400}{400} \times 100 = 190\%$

Q5. Total student in each college = Student studying arts, commerce & science.
210
180
200
240
Ans.(d)

Sol: Required average = $\frac{1}{2}\left[1000 \times \frac{16}{100} + 800 \times \frac{40}{100}\right]$
= 240

Q6. Match List–I with List–II:

List – I	List – II
A. Learner-cantered approach	I. Competency-Based Education
B. Self-paced learning	II. Montessori Method
C. Mastery learning	III. Programmed Instruction
D. Behavioural objectives	IV. Bloom's Taxonomy

Choose the correct answer from the options given below:
(a) A–III, B–II, C–I, D–IV
(b) A–II, B–III, C–I, D–IV
(c) A–II, B–I, C–III, D–IV
(d) A–IV, B–II, C–I, D–III
Ans.(b)
Sol. Correct Option – (b)
Introduction: Matching questions test conceptual clarity about educational theories, instructional design, and methodology. This question connects approaches/methods with their key educational frameworks or origins.
Information Booster:
• A–II: Montessori Method emphasizes a learner-centered approach where the child's needs and pace dictate learning activities.
• B–III: Programmed Instruction allows students to proceed at their own pace, making it self-paced learning.
• C–I: Competency-Based Education focuses on mastery learning — ensuring learners demonstrate required skills before moving forward.
• D–IV: Bloom's Taxonomy is often used to frame behavioural objectives for measurable learning outcomes.
Additional Information:
• Learner-centered approaches reduce teacher dominance, encouraging student autonomy.
• Programmed Instruction is often linked to B.F. Skinner's principles of reinforcement.
• Bloom's Taxonomy has cognitive, affective, and psychomotor domains.

Q7. Arrange the following stages of Gagné's Nine Events of Instruction in correct sequence:
A. Provide learning guidance
B. Gain attention
C. Assess performance
D. Present the stimulus material
E. Enhance retention and transfer
Options:
(a) B, D, A, C, E
(b) D, B, A, C, E
(c) B, A, D, C, E
(d) B, D, C, A, E
Ans.(a)
Sol. Correct Option – (a)
Introduction: Gagné's Nine Events of Instruction provide a systematic instructional framework for effective learning.
Information Booster: Correct sequence:
1. Gain attention (B) – Capture learners' interest.
2. Present the stimulus material (D) – Provide the new content or skill.
3. Provide learning guidance (A) – Offer strategies, cues, and examples.
4. Assess performance (C) – Test learner understanding.
5. Enhance retention and transfer (E) – Provide opportunities to apply learning in new contexts.
Additional Information:
• Steps before these include "Informing learners of objectives" and "Stimulating recall of prior learning."
• Gagné's model is heavily used in instructional design, especially e-learning.

Q8. Which of the following are NOT features of Heutagogy?
(A) Teacher-centred decision-making
(B) Emphasis on self-determined learning
(C) Linear curriculum delivery
(D) Focus on capability rather than just competence
Choose the correct answer from the options given below:
(a) only (b)
(b) (b) and (c) only
(c) (a) and (c) only
(d) (b) and (d) only
Ans.(c)
Sol. Correct Option – (c)
Introduction:
Heutagogy is a self-determined learning approach emphasising learner autonomy and capability.
Information Booster:
• NOT features:
• (a) Teacher-centred decision-making → Opposite of heutagogy, which is learner-driven.
• (c) Linear curriculum delivery → Heutagogy allows flexible, non-linear paths.
• ARE features:
• (b) Self-determined learning is the core of heutagogy.
• (d) Focuses on building capability — adaptability and problem-solving skills beyond competence.
Additional Information:
• Developed by Stewart Hase and Chris Kenyon (2000).
• Considered an evolution of andragogy (self-directed learning) toward even greater learner control.

Q9. Arrange the following types of evaluation in the sequence they generally occur during an instructional process:
A. Summative Evaluation
B. Diagnostic Evaluation
C. Formative Evaluation
D. Placement Evaluation
Options:
(a) D, B, C, A
(b) B, D, C, A
(c) D, C, B, A
(d) B, C, D, A
Ans.(a)
Sol. Correct Option – (a)
Introduction: Evaluation in education occurs at different stages, each with specific purposes — from assessing initial readiness to final learning outcomes.
Information Booster: Correct sequence:
1. Placement Evaluation (D) – Conducted at the start to determine learners' entry level.
2. Diagnostic Evaluation (B) – Identifies specific weaknesses and learning difficulties.
3. Formative Evaluation (C) – Ongoing checks during instruction for improvement.
4. Summative Evaluation (A) – Final assessment of learning at the end of instruction.
Additional Information:
• Placement evaluation ensures correct course allocation.

• Formative evaluation aligns with continuous feedback models.
• Summative evaluation includes final exams, projects, etc.

Q10. Match List–I (Teaching Methods) with List–II (Key Characteristics):

List – I	**List – II**
A. Programmed Learning	I. Immediate feedback after each step
B. Lecture Method	II. Teacher talks; students listen
C. Brainstorming	III. Rapid generation of multiple ideas
D. Demonstration Method	IV. Showing and explaining a process in real time

Choose the correct answer from the options given below:
(a) A–I, B–II, C–III, D–IV
(b) A–III, B–I, C–II, D–IV
(c) A–I, B–III, C–IV, D–II
(d) A–II, B–I, C–III, D–IV
Ans.(a)
Sol. Correct Option – (a)
Introduction: Matching instructional methods to their defining characteristics tests the teacher's understanding of pedagogy.
Information Booster:
• A–I: Programmed learning provides immediate feedback after each step to reinforce learning.
• B–II: Lecture method is predominantly a one-way communication where the teacher talks, and students listen.
• C–III: Brainstorming encourages rapid generation of diverse ideas without criticism.
• D–IV: Demonstration method involves showing and explaining a process in real time.
Additional Information:
• Programmed learning is often delivered in linear or branching frames.
• Brainstorming is widely used in creative problem-solving sessions.
• Demonstrations are effective for skill-based subjects like science labs and technical training.

Q11. Which of the following statements most accurately describes the difference between an Intranet and an Extranet?
(a) An Intranet is a network used for communication within a private company, while an Extranet is a public network.
(b) An Intranet is a private network, and an Extranet is a public network.
(c) Both are private networks, but an Intranet is for internal access, while an Extranet allows limited external access.
(d) An Intranet is a wide area network (WAN), while an Extranet is a local area network (LAN).
Ans.(c)
Sol. Correct Option – (c)
Introduction
This question tests your ability to distinguish between two key network concepts that are often confused. The primary difference lies in the level of access and who is allowed to use the network.
Information Booster
• An Intranet is a private network that is only accessible to an organization's internal employees. It uses Internet-based technology (like web browsers and TCP/IP) to share information and resources internally. It is protected by a firewall and is not accessible to the public.
• An Extranet is also a private network, but it extends the Intranet to allow controlled access to specific external parties, such as partners, suppliers, or customers. It uses secure protocols to allow these

external users to access certain parts of the internal network's data and applications. For example, a company might use an Extranet to allow its suppliers to check inventory levels.
Additional Knowledge
The key to remembering the difference is the prefix: "Intra-" means inside, and "Extra-" means outside. Both are more secure and private than the public Internet. The use of an Extranet is a form of B2B (Business-to-Business) communication.

Q12. Match the following ICT threats with their primary method of attack:

List-I (Threat)	**List-II (Attack Method)**
A. SQL Injection	1. Overloading a system with traffic to make it unavailable.
B. Denial of Service (DoS)	2. Exploiting a website's input forms to access a database.
C. Man-in-the-Middle	3. Intercepting communication between two parties.

Choose the correct option:
(a) A-2, B-1, C-3
(b) A-1, B-2, C-3
(c) A-3, B-1, C-2
(d) A-2, B-3, C-1
Ans.(a)
Sol. Correct Option – (a)
Introduction
This question tests your knowledge of advanced ICT security threats that target network services and web applications. These attacks are more sophisticated than simple malware and exploit specific vulnerabilities in systems.
Information Booster
• A. SQL Injection (2): This is a type of attack that targets database-driven websites. A hacker inserts malicious SQL (Structured Query Language) code into a web form's input field. When the website processes this input, the code is executed, giving the attacker unauthorized access to the database's information, such as user lists or confidential data.
• B. Denial of Service (DoS) (1): A DoS attack is a malicious attempt to disrupt the normal traffic of a targeted server, service, or network by overwhelming it with a flood of Internet traffic. This prevents legitimate users from accessing the service. A Distributed Denial of Service (DDoS) attack uses multiple compromised computer systems to launch the attack, making it harder to block.
• C. Man-in-the-Middle (3): In a Man-in-the-Middle (MitM) attack, an attacker secretly intercepts and relays messages between two parties who believe they are communicating directly with each other. This allows the attacker to eavesdrop on the conversation or even alter the data being sent, often without either party's knowledge.
Additional Knowledge
These attacks highlight the importance of security protocols and practices. SQL Injection can be prevented by proper input validation and the use of parameterized queries. DoS attacks can be mitigated with network security measures and specialized services. MitM attacks are prevented by using encryption protocols like HTTPS and SSL/TLS.

Q13. Which of the following statements about cybersecurity threats is the most accurate?
(a) A Trojan is a self-replicating program that spreads without user intervention.
(b) A worm is a type of malware that disguises itself as a legitimate application.
(c) Phishing is a technique that uses emails to trick users into revealing personal information.
(d) Spyware is a type of ransomware that encrypts a user's files and demands a ransom.
Ans.(c)
Sol. Correct Option – (c)

Introduction
This question tests your knowledge of common cybersecurity threats and their specific, often-confused, characteristics. A precise understanding of each threat's mechanism is essential for a comprehensive grasp of modern ICT security.
Information Booster
• (c) Phishing: This is the correct definition. Phishing is a social engineering technique where an attacker sends fraudulent emails that appear to be from a legitimate source (e.g., a bank or a social media company) to trick the recipient into clicking a malicious link or revealing sensitive information like passwords or credit card numbers.
• Why other options are incorrect:
• (a) Trojan: A Trojan (or Trojan horse) is a type of malware that disguises itself as a legitimate application to trick a user into downloading and running it. Trojans do not self-replicate. Worms are the ones that self-replicate and spread independently across networks.
• (b) Worm: A worm is a self-replicating program that can spread to other computers without human help. It exploits vulnerabilities in computer systems.
• (d) Spyware: Spyware is malware designed to secretly gather information about a user and their computer activity without their knowledge. It monitors keystrokes, browsing history, and other activities. The malware that encrypts files and demands ransom is called ransomware.
Additional Knowledge
The term "malware" is a catch-all term for malicious software. Within this category, different threats are defined by their method of operation. A worm's primary goal is to self-propagate, while a Trojan's goal is to deceive a user into launching it. The term "social engineering" is also important, referring to the psychological manipulation of people into performing actions or divulging confidential information.

Q14. Match the following generations of computers with the core technology used:

List-I (Generation)	**List-II (Core Technology)**
A. First Generation	1. Integrated Circuits (IC)
B. Second Generation	2. Transistors
C. Third Generation	3. Microprocessors
D. Fourth Generation	4. Vacuum Tubes

Choose the correct option:
(a) A-4, B-2, C-1, D-3
(b) A-1, B-2, C-3, D-4
(c) A-2, B-4, C-3, D-1
(d) A-4, B-3, C-1, D-2
Ans.(a)
Sol. Correct Option – (a)
Introduction
This question is a factual test of the foundational history of computing. Understanding the generational shifts in computer technology is crucial for grasping the evolution of modern ICT. Each generation is defined by a major technological advancement that made computers smaller, faster, and more efficient.
Information Booster
• A. First Generation (1940s-1950s) - 4. Vacuum Tubes: These computers were massive, slow, and expensive. They used thousands of vacuum tubes for circuitry and magnetic drums for memory. They generated a lot of heat and consumed a large amount of electricity. Examples include ENIAC and UNIVAC.

• B. Second Generation (1950s-1960s) - 2. Transistors: The invention of the transistor revolutionized computing. Transistors were significantly smaller, cheaper, more reliable, and consumed less power than vacuum tubes. This led to more compact and powerful computers.
• C. Third Generation (1960s-1970s) - 1. Integrated Circuits (IC): The IC, or microchip, brought a collection of transistors and other components onto a single, small silicon chip. This further reduced size and cost while dramatically increasing speed and efficiency. This is the era of the first minicomputers.
• D. Fourth Generation (1970s-Present) - 3. Microprocessors: The invention of the microprocessor, which placed all the components of a central processing unit (CPU) on a single IC, marked the beginning of the personal computer (PC) revolution. This generation has led to the development of powerful desktops, laptops, and mobile devices.
Additional Knowledge
The fifth generation of computers is a concept based on future technologies, with the goal of creating computers that use artificial intelligence (AI). These computers are intended to have the ability to think, reason, and learn, much like humans. This research area is still in its early stages but holds significant promise for the future of ICT.

Q15. The hexadecimal number 3D is equivalent to which of the following decimal values?
(a) 61
(b) 51
(c) 75
(d) 110
Ans.(a)
Sol. Correct Option – (a)
Introduction
This question tests a fundamental skill in ICT: converting between different number systems. Hexadecimal (base−16) is a common number system used in computing, so understanding how to convert it to the decimal system (base−10) is essential.
Information Booster
To convert a hexadecimal number to a decimal number, you need to remember that each position in the hexadecimal number represents a power of 16.
1. The hexadecimal number is 3D.
2. The rightmost digit, D, is in the 160 position. In hexadecimal, D is equivalent to the decimal number 13. So, its value is $13\times160=13\times1=13$.
3. The next digit to the left, 3, is in the 161 position. Its value is $3\times161=3\times16=48$.
4. To get the final decimal value, you sum the values from each position: $48+13=61$.
Additional Knowledge
Hexadecimal is often used in computer programming and digital electronics because it provides a more concise representation of binary numbers. Each hexadecimal digit can represent four binary digits (bits), making it easier to read and write long strings of binary code. For example, the hexadecimal digit F is equivalent to the binary value 1111.

Q16. Match the following variable types with their most appropriate research paradigm:

List-I (Variable Type)	**List-II (Most Appropriate Paradigm)**
A. Dummy Variable	1. Qualitative Research
B. Latent Variable	2. Quantitative Research
C. Thematic Variable	3. Mixed Methods Research

Choose the correct option:
(a) A-2, B-1, C-3

(b) A-2, B-3, C-1
(c) A-1, B-2, C-3
(d) A-3, B-1, C-2
Ans.(b)
Sol. Introduction:
Identifying the relationship between variable types and research paradigms is essential for selecting the correct methodology for a study. Each variable type serves a specific function within its respective framework, ranging from the purely numerical to the highly conceptual.
Based on standard methodological practices, here is the correct matching:
Information Booster:
The matching is determined by how each variable is defined and utilized within the research process:

List-I (Variable Type)	List-II (Most Appropriate Paradigm)
A. Dummy Variable	2. Quantitative Research
B. Latent Variable	3. Mixed Methods Research
C. Thematic Variable	1. Qualitative Research

- Dummy Variable (Quantitative): These are numerical "stand-ins" used in regression analysis to represent categorical data. They typically take the value of 0 or 1 (e.g., 1 for "Treated Group" and 0 for "Control Group").
- Thematic Variable (Qualitative): These are not numerical but are instead patterns or "themes" identified within qualitative data (like interviews or focus groups). They represent the core concepts extracted through Thematic Analysis.
- Latent Variable (Mixed Methods): While often used in advanced quantitative modeling (like Structural Equation Modeling), latent variables represent "hidden" constructs (e.g., happiness, intelligence) that cannot be measured directly. Because they require both a conceptual definition (often derived qualitatively) and numerical indicators (measured quantitatively), they are frequently the bridge in Mixed Methods studies.

Additional Knowledge:
To deepen your understanding of these variables, consider their specific technical applications:
- The Dummy Variable Trap: In quantitative research, if you have n categories, you must only use $n-1$ dummy variables to avoid perfect multicollinearity, where the variables provide redundant information that crashes the statistical model.
- Reflexivity in Thematic Variables: Unlike quantitative variables, thematic variables are subject to the researcher's perspective. In Qualitative Research, the researcher must practice "reflexivity," acknowledging how their own biases might influence the "themes" they identify.
- Construct Validity: Latent variables are often synonymous with "constructs." Ensuring that your observable measurements actually represent the hidden latent variable is a process known as establishing Construct Validity.
- Triangulation: Mixed methods research often uses Latent Variables to perform "triangulation"—comparing qualitative findings with quantitative data to see if they both point toward the same underlying "hidden" reality.

Q17. The primary ontological shift from positivism to post-positivism is from:
(a) A belief in a subjective reality to a belief in an objective reality.
(b) The rejection of quantitative methods to the acceptance of them.
(c) A perfectly knowable and objective reality to an imperfectly knowable, yet objective reality.
(d) The use of deductive reasoning to the use of inductive reasoning.
Ans.(c)
Sol. Correct Option – (c).
Introduction

This question focuses on a key philosophical distinction between positivism and post-positivism: the nature of their ontological assumptions (the study of being or reality). It requires a precise understanding of how the later paradigm refined the earlier one.

Information Booster

• Ontology is the philosophical study of the nature of reality. Positivism's ontology is that of a single, objective reality that can be fully captured and described by scientific laws.

• Post-Positivism, while maintaining the belief in an objective reality, introduced the crucial nuance that this reality cannot be known with absolute certainty. Human observation, measurement tools, and the complexity of the world all introduce limitations and potential biases. Therefore, post-positivism's ontology can be described as a belief in an objective but only imperfectly knowable reality. This led to a focus on probability, replication, and the acknowledgment of potential error.

• (a) and (d) are incorrect; both are about other distinctions. (b) is incorrect, as both paradigms use quantitative methods, though post-positivism also incorporates qualitative ones.

Additional Knowledge

This shift is crucial because it moved science from a quest for absolute truth to a humbler and more pragmatic search for the most accurate and reliable knowledge possible. This is why post-positivist research emphasizes the importance of acknowledging the limitations of a study and the use of methods like triangulation to increase confidence in findings.

Q18. Match the plagiarism detection tools with their functions:

List 1	**List 2**
I. Turnitin	A. Focuses on checking plagiarism in web content
II. Plagscan	B. Detects similarities in writing against global databases
III. Copyscape	C. Detects errors in grammar, spelling, and plagiarism
IV. Grammarly	D. Checks for potential plagiarism in academic work

Options: Match the Following

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

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

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

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

Ans.(a)

Sol. • Turnitin (I-B) is widely used in academic settings to detect similarities in writing by comparing the submitted work against a global database of academic articles, student papers, and publications.

• Plagscan (II-D) is used to detect plagiarism in academic works and checks the document against databases to ensure originality in scholarly research.

• Copyscape (III-A) primarily focuses on checking plagiarism in web content, scanning the internet for instances where the submitted text may appear online without proper citation.

• Grammarly (IV-C) is known for detecting grammar, spelling errors, and also provides a plagiarism check for identifying potential unacknowledged content in writing.

Information Booster:

• Turnitin and Plagscan are more oriented towards academic writing, with Turnitin also used by institutions to ensure originality in student assignments.

• Grammarly is a versatile tool that offers comprehensive writing assistance, including grammar, style, and plagiarism detection, and is widely used by professionals and students alike.

• Copyscape is predominantly used for web content, ensuring that digital content is unique and not copied from existing online sources.

Additional Knowledge:

• Turnitin often gets integrated with Learning Management Systems (LMS) like Moodle and Blackboard for streamlined submission and plagiarism checking.
• Plagscan is useful for academic institutions and also offers integration with systems like Moodle and Canvas.
• Copyscape is a popular tool for webmasters and content creators to ensure content originality on websites, blogs, and digital publications.
• Grammarly Premium also includes a more detailed plagiarism detection service, making it a valuable tool for content creators who focus on quality and originality in writing.

Q19. What is the concept of 'informed consent' in research ethics?
(a) Researchers must be informed of the study's findings before the participant's consent is obtained.
(b) Participants must voluntarily agree to the study with full knowledge of the risks involved.
(c) Researchers must seek consent from their colleagues before publishing findings.
(d) Participants must be given incentives to take part in the research.
Ans.(b)
Sol. Informed consent means that participants are fully informed about the nature of the research, any potential risks, and their right to withdraw at any time. This ensures they participate voluntarily and knowingly.
Information Booster:
• Informed consent is a cornerstone of ethics in human research.
• It ensures that participants are aware of the purpose, methodology, and any potential discomforts or hazards involved in the study.
Additional Knowledge:
• Informed consent forms include information about confidentiality, the purpose of the study, and any compensation for participation.
• Ethics review boards ensure that researchers follow these guidelines.

Q20. Match Hollywood actors with one of their Oscar-winning roles:

List-I (Actor)	**List-II (Role)**
a. Leonardo DiCaprio	1. Forrest Gump
b. Tom Hanks	2. Joker
c. Joaquin Phoenix	3. Hugh Glass
d. Meryl Streep	4. Margaret Thatcher

1. a-3, b-1, c-2, d-4
(b) a-2, b-3, c-4, d-1
(c) a-4, b-2, c-3, d-1
(d) a-3, b-4, c-1, d-2
Ans.(a)
Sol. Correct Option – (a)
Introduction: Actors often become iconic through award-winning performances, which can define their careers.
Information Booster:
• Leonardo DiCaprio → Hugh Glass in *The Revenant* (2015).
• Tom Hanks → Forrest Gump (1994).
• Joaquin Phoenix → Joker (2019).
• Meryl Streep → Margaret Thatcher in *The Iron Lady* (2011).
Additional Information:
• Some actors have multiple Oscar wins, like Meryl Streep.

• The Oscars often boost an actor's career significantly.

Q21. "Phool Khile Hain Gulshan Gulshan" was...
(a) A cooking show
(b) A news documentary
(c) A celebrity talk show
(d) A musical contest
Ans.(c)
Sol. Correct Option - (c)
Introduction: "Phool Khile Hain Gulshan Gulshan" was one of Doordarshan's earliest programs to mix entertainment with celebrity insights.
Information Booster:
• Hosted by Tabassum, it aired from 1972 to 1993.
• It featured interviews with Bollywood stars.
• Aired weekly before movies on Friday nights.
Additional Information: This show laid the foundation for celebrity interviews on Indian television.

Q22. The important characteristics of Internet communication are:
(A) Absence of sub-media
(B) Multi-data networking
(C) High fidelity realism
(D) Sophisticated reciprocity
(E) Non-interactive
Choose the correct answer from the options given below:
(a) (A), (B) and (C) Only
(b) (B), (C) and (D) Only
(c) (C), (D) and (E) Only
(d) (A), (D) and (E) Only
Ans.(b)
Sol. The correct characteristics of Internet communication are:
(B) Multi-data networking: The Internet enables the simultaneous transfer of various types of data (text, audio, video, etc.) through multi-data networking.
(C) High fidelity realism: The Internet allows for realistic representations through high-quality multimedia content, such as HD video and immersive graphics.
(D) Sophisticated reciprocity: Internet communication is characterized by interactive and reciprocal exchanges between users, such as real-time chats, social media interactions, and collaborative tools.
Information Booster:
1. Multi-data networking: Supports simultaneous transmission of multimedia content for effective communication.
2. High fidelity realism: Facilitates immersive user experiences with advanced visual and audio quality.
3. Sophisticated reciprocity: Promotes real-time feedback and collaboration through interactive platforms like social media, email, and video conferencing.
4. Integration of sub-media: The Internet acts as a meta-medium, merging text, graphics, audio, and video seamlessly.
5. Interactivity: A defining feature of the Internet, enabling two-way communication and user engagement.
Additional Knowledge:
(A) Absence of sub-media: This is incorrect as the Internet integrates various sub-media (e.g., audio, video, text, and animation) into a single platform.

(E) Non-interactive: The Internet is inherently interactive, allowing users to engage dynamically with content and other users.

Q23. Interpersonal communication is _____.
(A) Direct face to face
(B) With a group of people
(C) With a large number of anonymous persons
(D) Between two persons
(E) Within ourselves or self-communication
Choose the correct answer from the options given below:
(a) (A) and (D) only
(b) (A) and (B) only
(c) (C) and (A) only
(d) (D) and (E) only
Ans.(a)
Sol. Interpersonal communication refers to the exchange of information, feelings, and meaning between two people, typically face-to-face. It is most accurately described as direct communication between two persons. Therefore, options (A) "Direct face to face" and (D) "Between two persons" are correct.
Information Booster:
(a) Interpersonal communication is direct and occurs between two individuals, typically face-to-face.
(b) This type of communication often involves personal exchange, sharing emotions, thoughts, and ideas in real-time.
(c) Group communication and communication with anonymous persons (such as broadcasting) are not classified as interpersonal communication.
(d) Self-communication refers to internal dialogues or thoughts and is not typically categorized under interpersonal communication.

Q24. Match the List I with List II

List I		**List II**	
A	Shannon & Weaver	I	Mean World Syndrome
B	George Gerbner	II	Noise reduction
C	Lasswell	III	Transmission of social heritage
D	John Fiske	IV	Critiqued transmission view as mechanistic

Choose the correct answer from the options given below:
(a) A- I, B- II, C- III, D-IV
(b) A- III, B- II, C- I, D-IV
(c) A- II, B- I, C- III, D-IV
(d) A- I, B- III, C- II, D-IV
Ans.(c)
Sol. A-II (Shannon & Weaver - Noise reduction): Their model focuses ontechnical efficiency of communication channels, minimizing noise (e.g., static in telephones).
B-I (George Gerbner - "Mean World Syndrome"): Gerbner'scultivation theory argues heavy TV viewers perceive the world as more violent/dangerous.
C-III (Harold Lasswell - Transmission of social heritage): Lasswell's functionalist view highlights media's role in passing cultural values(e.g., schools, newspapers).
D-IV (John Fiske - Critiqued transmission view): Fiske (semiotics school) rejected the mechanistic approach, emphasizing audience interpretation and cultural meaning.
Information booster

Shannon & Weaver (A) – Noise Reduction
Focus: Shannon and Weaver's Mathematical Model of Communication(1949) is a technical/engineering approach to communication.
Key Concept: Noise reduction– Their model aims to improve the efficiency of signal transmission by minimizing "noise" (e.g., static in phone lines, distortions in radio signals).
Their work was developed at Bell Labsto optimize telephone and radio communication.
The model includes sender → encoder → channel → decoder → receiver, with "noise" as a disruptive factor.
George Gerbner (B) – "Mean World Syndrome"
Focus: Gerbner'sCultivation Theoryexamines howTV shapes viewers' perceptions of reality.
Key Concept:"Mean World Syndrome"– Heavy TV viewers (especially of violent content) perceive the world as more dangerous than it is.
Gerbner argued that TVcultivatesa distorted worldview, making people more fearful and dependent.
Example: Crime shows lead audiences to overestimate real-world violence.
Harold Lasswell (C) – Transmission of Social Heritage
Focus:Lasswell's Functionalist Approach studies how communication maintains social order.
Key Concept:Transmission of social heritage– Media and institutions (schools, family) pass down cultural values and norms.
Lasswell'sthree functions of communication:
Surveillance(monitoring the environment, e.g., news).
Correlation(interpreting events, e.g., editorials).
Transmission(cultural education, e.g., history lessons).
Example: Schools teach national history to instill shared identity.
John Fiske (D) – Critiqued Transmission View as Mechanistic
Focus: Fiske represents theCultural Studies/Semiotic School, which critiques simplistic transmission models.
Key Concept:Critique of mechanistic models– Fiske argued communication isnot just signal transferbut involvesmeaning-makingand cultural interpretation.
Fiske emphasizedaudience agency(how people decode messages differently based on culture).
Example: A TV show's violence might be interpreted as "exciting" by some and "disturbing" by others.

Q25. Match List-I with List-II:

List-I	List-II
A. Asiddha	I. Irrelevant middle term
B. Badhita	II. Unproven middle term
C. Viruddha	III. Contrary middle term
D. Savyabhicharra	IV. Contradicted middle term

Choose the correct answer from the options given below:
(a) A-I, B-II, C-III, D-IV
(b) A-II, B-IV, C-III, D-I
(c) A-II, B-III, C-I, D-IV
(d) A-III, B-IV, C-II, D-I
Ans.(b)
Sol. Introduction: This question asks to match specific fallacies of the middle term (Hetvabhasa) in Indian Logic (Nyaya philosophy) with their corresponding descriptions. Understanding these fallacies is crucial for evaluating the validity of inferences (Anumana).
Information Booster: In Indian Logic, a valid inference (Anumana) requires a sound middle term (Hetu). A Hetvabhasa is a fallacy of the middle term, meaning the middle term appears to be a valid reason but is not. There are five main types of Hetvabhasa. Let's match them:

- A. Asiddha (Unproven/Unestablished Middle Term):
  - Description: This fallacy occurs when the existence or presence of the middle term itself is not established or is unproven. The middle term is not present in the minor term.
  - Example: "The mountain has fire because it is smokeless." Here, "smokeless" (middle term) is unproven to be present in the mountain (minor term) if, in fact, the mountain *does* have smoke.
  - Matches with: II. Unproven middle term
- B. Badhita (Contradicted Middle Term):
  - Description: This fallacy occurs when the middle term is contradicted by another stronger means of knowledge (e.g., perception, testimony, or other valid inferences). The major term is contradicted in the minor term by another valid source of knowledge.
  - Example: "Fire is cold, because it is a substance." Here, the conclusion "Fire is cold" is directly contradicted by perception (we perceive fire as hot).
  - Matches with: IV. Contradicted middle term
- C. Viruddha (Contrary Middle Term):
  - Description: This fallacy occurs when the middle term, instead of proving the presence of the major term in the minor term, actually proves the *absence* of the major term (or establishes the opposite of what was intended).
  - Example: "Sound is eternal, because it is produced." Here, "produced" (middle term) proves that sound is *non-eternal*, which is the opposite of the intended conclusion ("eternal").
  - Matches with: III. Contrary middle term
- D. Savyabhichara (Irregular/Erratic/Inconclusive Middle Term):
  - Description: This fallacy occurs when the middle term is not uniformly related to the major term. It is present in some instances where the major term is present, and also in some instances where the major term is absent, making the inference inconclusive. It leads to uncertainty.
  - Example: "The mountain has fire, because it has smoke." (If "smoke" could also be present where there is no fire, like mist, then "smoke" would be erratic). A better example: "The mountain has fire, because it is knowable." "Knowable" is present in both fiery and non-fiery things, making it inconclusive.
  - Matches with: I. Irrelevant middle term (or inconclusive middle term). "Irrelevant" captures the sense that it doesn't consistently point to the major term.

Additional Information: The other major fallacy of the middle term in Nyaya philosophy is Satpratipaksha (Inferentially Contradicted). This occurs when the middle term of an inference is contradicted by another middle term that establishes the opposite conclusion. It's similar to Badhita but the contradiction comes from another inference, not a direct perception or strong knowledge. These fallacies are critical for ensuring logical rigor and avoiding erroneous conclusions in reasoning.

Q26. Which of the following is NOT a type of Savyabhicāra fallacy?
(a) Sādhāraṇa (too wide)
(b) Asādhāraṇa (too narrow)
(c) Anupasaṁhārin (non-exclusive)
(d) Vyāpyatvāsiddha (conditional)
Ans.(d)
Sol. Vyāpyatvāsiddhais a separate fallacy where the middle term fails to establish a necessary invariable connection (vyāpti) with the major term.
It falls underHetvābhāsa (fallacious reason)but is distinct from Savyabhicāra.
Information booster
Savyabhicāra(the fallacy of irregular middle term) occurs when the hetu (reason) fails to establish a universal relationship (vyāpti) with the sādhya (major term). It hasthree subtypes:

A) Sādhāraṇa (too wide)– The middle term is overly broad and applies to both sapakṣa (similar cases) and vipakṣa (dissimilar cases).
Example: "All things are non-eternal because they are knowable." (Knowability applies to both eternal, like the soul, and non-eternal things.)
B) Asādhāraṇa (too narrow)– The middle term is unique to the pakṣa (subject) and does not appear in any other case.
Example: "Sound is eternal because it is audible." (Audibility is only in sound, not in other eternal or non-eternal things.)
C) Anupasaṁhārin (non-exclusive)– The middle term is present in the pakṣa but absent in both sapakṣa and vipakṣa.
Example: "All things are eternal because they are nameable." (Nameability is present in the subject but does not help distinguish between eternal and non-eternal things.)

Q27. According to Nyaya, Karana is also known as
(a) Samavayi Karana
(b) Asamvayi Karana
(c) Nimitta Karana
(d) Sahaj Karana
Ans.(c)
Sol. InNyāya philosophy,Kāraṇa(cause) is classified into three types:
(a) Samavāyi Kāraṇa(Inherent cause): The material cause (e.g., threads for a cloth).
(b) Asamavāyi Kāraṇa(Non-inherent cause): The connection between material and its form (e.g., the weaving of threads).
(c) Nimitta Kāraṇa(Efficient cause): The primary agent or immediate cause of an effect (e.g., the weaver for the cloth).
Nimitta Kāraṇa is the most general term for "cause" in Nyāya and is synonymous with *Kāraṇa* itself.

Q28. In the light of Jaina Epistemology, Matijñāna springs in which particular order?
(A) Dhamā
(B) Iha
(C) Avagrah
(D) Apāya
Choose the correct answer from the options given below:
(a) (A), (D), (C), (B)
(b) (D), (C), (B), (A)
(c) (B), (D), (A), (C)
(d) (C), (B), (D), (A)
Ans.(d)
Sol. InJaina epistemology,Matijñāna(sensory knowledge) arises in aspecific four-stage process:
(a) Avagraha (Sensation/Grasping)→ Initial contact with an object through the senses.(First stage)
(b) Īhā (Inquiry/Speculation)→ Curiosity or desire to know more about the object.(Second stage)
(c) Apāya (Determination/Judgment)→ Deciding the nature of the object based on analysis.(Third stage)
(d) Dhāmā (Retention/Memory)→ Storing the knowledge for future recall.(Final stage)

Q29. Which of the following statements are so related that they cannot both be true, nor can they both be false?
A. All dogs are omnivores

B. Some dogs are omnivores
C. Some dogs are not omnivores
D. No dogs are omnivores
Choose the *correct* answer from the options given below:
(a) A and C only
(b) B and C only
(c) C and D only
(d) A and D only
Ans.(a)
Sol. If A is true, then all dogs are omnivores, which directly contradicts C (which says that some dogs are not omnivores).
If C is true, then not all dogs are omnivores, which directly contradicts A (which claims that all dogs are omnivores).
Therefore, A and C cannot both be true, and they cannot both be false. If one is true, the other must be false, and vice versa.
Information Booster:
(a) Contradictory statements cannot be true at the same time, nor can they both be false at the same time.
(b) In the square of opposition, contradictory pairs are in direct opposition to each other.
(c) Statements like "All dogs are omnivores" and "Some dogs are not omnivores" cannot coexist logically.
(d) Contradictories create a logical boundary for any truth-value assessment, ensuring clarity in reasoning.

Q30. What is the correct sequence of events that leads to the formation of photochemical smog?
A. Reaction of nitrogen oxides and volatile organic compounds in sunlight
B. Emission of nitrogen oxides and volatile organic compounds from vehicles
C. Formation of tropospheric ozone and other harmful chemicals
D. Trapping of the pollutants by a thermal inversion layer
Choose the correct answer from the options given below:
(a) B, A, C, D
(b) A, B, C, D
(c) B, C, A, D
(d) D, A, B, C
Ans.(a)
Sol. Correct Option - (a)
Introduction:
- Photochemical smog is a significant environmental problem, especially in large urban areas with heavy vehicle traffic and abundant sunlight.
- It has severe impacts on human health, agriculture, and the environment.

Information Booster:
- Emission of nitrogen oxides and volatile organic compounds from vehicles: The process begins with the release of primary pollutants, primarily from vehicle exhaust.
- Reaction of nitrogen oxides and volatile organic compounds in sunlight: These primary pollutants then react with each other in the presence of sunlight (a key ingredient) to form secondary pollutants.
- Formation of tropospheric ozone and other harmful chemicals: This reaction results in the creation of tropospheric ozone, peroxyacetyl nitrate (PAN), and other components of smog.

• Trapping of the pollutants by a thermal inversion layer: Often, a thermal inversion layer—where a layer of warm air sits above cooler air—traps these pollutants close to the ground, preventing them from dispersing and leading to high concentrations of smog.
• Photochemical smog is a significant environmental problem, especially in large urban areas with heavy vehicle traffic and abundant sunlight. It has severe impacts on human health, agriculture, and the environment.

Q31. Which convention regulates the international trade of endangered species?
(a) CITES
(b) Basel Convention
(c) Rotterdam Convention
(d) Stockholm Convention
Ans.(a)
Sol. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is the international agreement that regulates the trade of endangered species. It was adopted in 1973 to ensure that international trade does not threaten the survival of species in the wild. CITES provides a framework for the protection of species by listing them in three appendices, with varying levels of protection depending on the species' conservation status. The goal is to ensure that trade in specimens of wild animals and plants does not threaten their survival.
Information Booster
CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) is one of the most widely recognized international agreements dedicated to the protection of wildlife. It works by regulating the trade of species through a system of permits, ensuring that species are not over-exploited due to international trade. The convention classifies species into three appendices based on the degree of protection they need:
Appendix I: Species that are threatened with extinction and are prohibited from international trade unless under exceptional circumstances.
Appendix II: Species that are not currently threatened with extinction but could become so if trade is not regulated.
Appendix III: Species that are protected in at least one country and require international cooperation to regulate their trade.
Additional Knowledge
Basel Convention: This convention primarily focuses on the control of hazardous wastes and their disposal, and does not regulate the trade of endangered species.
Rotterdam Convention: The Rotterdam Convention deals with the prior informed consent procedure for the trade of certain hazardous chemicals and pesticides, not the trade of wildlife.
Stockholm Convention: The Stockholm Convention focuses on persistent organic pollutants (POPs) and aims to reduce and eliminate the use of hazardous chemicals in the environment, but it does not deal with the international trade of endangered species.

Q32. The "DART System" is used for:
(a) Tsunami detection
(b) Earthquake prediction
(c) Cyclone tracking
(d) Flood monitoring
Ans.(a)

Sol. The DART (Deep-ocean Assessment and Reporting of Tsunamis) system is primarily used for tsunami detection. It uses a network of buoys and sensors to monitor changes in ocean conditions, allowing for early warning of tsunami waves generated by undersea earthquakes or volcanic eruptions. Hence, the correct answer is (a) Tsunami detection.
Information Booster:
The DART system involves a series of ocean buoys and seafloor sensors to detect the rise and fall of the ocean surface, which indicates the presence of a tsunami.
The system can detect tsunamis minutes after they occur, providing critical early warnings to affected coastal areas.
DART systems are crucial for reducing tsunami-related fatalities by enabling timely evacuation and preparedness measures.
The system relies on data transmission from the sensors to satellites, providing real-time updates to tsunami warning centers.
DART technology is part of a global network that aims to mitigate the impacts of tsunamis on coastal populations.
Additional Knowledge:
Earthquake prediction remains an ongoing challenge in seismology, and there is currently no reliable method for predicting earthquakes in advance.
Cyclone tracking is achieved using radar, satellites, and weather monitoring systems, but the DART system is not involved in this.
Flood monitoring involves different technologies, such as river gauges and weather forecasts, but it is not related to the DART system, which focuses specifically on tsunamis.

Q33. Where will COP30 be held in 2025?
(a) Dubai, UAE
(b) Baku, Azerbaijan
(c) Belém, Brazil
(d) Sharm El Sheikh, Egypt
Ans.(c)
Sol. The 30th Conference of the Parties (COP30) to the United Nations Framework Convention on Climate Change (UNFCCC)will be held in Belém, Brazil, in November 2025.
Information booster
COP (Conference of the Parties)is the supreme decision-making body of the UNFCCC.
It meets annually to assess global climate progress, negotiate agreements, and strengthen climate commitments.
Key agreements like theKyoto Protocol (COP3, 1997)and theParis Agreement (COP21, 2015)were adopted at COPs.
Belém is the capital ofPará statein theAmazon rainforest, making it a symbolic location for climate discussions due to the Amazon's role in carbon sequestration and biodiversity.
Brazil officially offered to host COP30 during COP27 (2022) in Sharm El-Sheikh, Egypt, as part of President Lula da Silva's push for stronger Amazon protection.
This will be the first COP held in theAmazon biome, highlighting the importance of rainforest conservation in climate policy.
Additional Knowledge:
Dubai, UAE→ HostedCOP28 (2023).
Baku, Azerbaijan→ HostingCOP29 (2024).
Sharm El-Sheikh, Egypt→ HostedCOP27 (2022).

Q34. Match the List I with List II:

Choose the correct answer from the options given below:

List I (Process)	List I (Output)
1. Coal gasification	A. Synthetic crude oil
2. Coal liquefaction	B. Used in steel Production
3. Coal washing	C. Syngas
4. Coking coal	D. Reduced-ash coal

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

Ans.(a)

Sol. The correct pairing is:
1-C, 2-A, 3-D, 4-B
(a) Coal Gasification → C. Syngas
Process: Coal gasification converts coal into synthesis gas (syngas)by reacting it with oxygen and steam at high temperatures.
Output: Syngas (a mixture of CO + H_2) is used for electricity generation, fertilizers, or synthetic fuels.
(b) Coal Liquefaction → A. Synthetic crude oil
Process: Coal liquefaction (e.g.,Fischer-Tropsch process) transforms coal into liquid hydrocarbons.
Output: Synthetic crude oil, refined into diesel, gasoline, or jet fuel.
(c) Coal Washing → D. Reduced-ash coal
Process: Coal washing removes impurities (ash, sulfur, rocks) from raw coal.
Output: Cleaner coal with reduced ash content(not "reduced-salt," likely a typo forash).
(d) Coking Coal → B. Used in steel production
Process: Coking coal is heated in absence of air to produce coke, a porous, high-carbon material.
Output: Coke is essential for blast furnaces in steelmaking (removes oxygen from iron ore).

Q35. Match the LIST–I with LIST–II

LIST-I (Document)	**LIST-II** (Recommendation)
A. Macaulay's minute	I. Promotion of Science knowledge among inhabitants
B. Dispatch of 1854	II. Establishment of a Sanskrit College at Calcutta
C. Rajaram Mohan Roy Memorandum	III. Establishment of a college in Nadiea
D. Lord Minto's minute	IV. Closure of oriental learning institutions

Choose the correct answer from the options given below:
(a) A-I, B-II, C-III, D-IV
(b) A-II, B-III, C-IV, D-I
(c) A-III, B-IV, C-I, D-II
(d) A-IV, B-I, C-II, D-III

Ans.(d)

Sol. Matching the Entries:

List–I (Document)	Correct Match from List–II
A. Macaulay's Minute (1835)	IV. Closure of oriental learning institutions – Promoted English education; devalued oriental studies
B. Dispatch of 1854 (Wood's Dispatch)	I. Promotion of Science knowledge among inhabitants – Emphasized practical and modern subjects
C. Rajaram Mohan Roy Memorandum	II. Establishment of a Sanskrit College at Calcutta – Advocated for modern scientific education using Sanskrit
D. Lord Minto's Minute	III. Establishment of a college in Nadie – Promoted traditional Hindu learning institutions

Q36. Which of the following were UGC recommendations on quality assurance?
A. Dismantling unviable colleges and universities
B. Creating a parallel accreditation agency for private universities
C. Adoption of total quality management practices
D. Sustaining quality through innovation and creativity
E. Establishment of suitable assessment and accreditation systems
Choose the correct answer from the options given below:
(a) A, B, C Only
(b) B, C, D Only
(c) C, D, E Only
(d) A, D, E Only
Ans.(c)
Sol. The University Grants Commission (UGC) in India has recommended several measures to ensure and enhance quality in higher education institutions. These include:
• Adoption of Total Quality Management (TQM) practices (C): Encouraging institutions to systematically focus on continuous quality improvement in all functions.
• Sustaining quality through innovation and creativity (D): Promoting innovative teaching, learning, and administrative methods to maintain high standards.
• Establishment of suitable assessment and accreditation systems (E): Developing robust frameworks for evaluating and accrediting institutions to ensure quality benchmarks.
Dismantling unviable colleges and universities (A) and creating a parallel accreditation agency for private universities (B) are not part of the formal UGC recommendations on quality assurance.
Information Booster:
• The UGC promotes quality assurance through bodies like NAAC (National Assessment and Accreditation Council).
• Quality assurance focuses on institutional governance, curriculum, faculty, infrastructure, and research output.
• Continuous quality improvement is emphasized rather than punitive measures like dismantling.
Additional Knowledge:
• The UGC's quality assurance framework aligns with global practices, emphasizing transparency and accountability.
• Innovation in curriculum design and pedagogy helps institutions stay relevant and competitive.
• Accreditation systems provide stakeholders with credible information on institutional performance.

Q37. Identify among the following which is associated with Buddhism:
A. Rejection of the authority of the Veda
B. Denial of God
C. Belief in the categories of Jiva and Ajiva

D. The concept of Nirvana
E. Theory of Prakriti and Purusa
Choose the correct answer from the options given below
(a) A, B, C only
(b) B, C, D only
(c) A, B, D only
(d) A, B, E only"
Ans.(c)
Sol. A, B, D only
A. Rejection of the authority of the Veda
Buddhism's Stance: Buddhism emerged as a sramana tradition that challenged the orthodox Vedic religious system of ancient India. A fundamental aspect of this challenge was the rejection of the Vedas as infallible revealed texts and the authority of the Brahmanical priesthood that upheld them.
Conclusion for A: This statement is TRUE and is a core characteristic distinguishing Buddhism from Vedic traditions.
B. Denial of God
Buddhism's Stance: Buddhism is often described as non-theistic. While it doesn't explicitly deny the existence of deities (devas), it does not consider them to be creators, saviors, or ultimate sources of liberation. The focus in Buddhism is on individual effort, karma, and the path to enlightenment (Nirvana) through understanding the Four Noble Truths and following the Eightfold Path, rather than devotion to a supreme being.
Conclusion for B: This statement is largely TRUE in the context of a personal, creator God.
C. Belief in the categories of Jiva and Ajiva
Jiva and Ajiva: These are core metaphysical categories in Jainism, not Buddhism. In Jainism, Jiva refers to the living soul (consciousness), and Ajiva refers to non-living substances (matter, space, time, dharma, adharma). Jainism's philosophy is built around these distinctions.
Buddhism's Stance: Buddhism holds to the concept of Anatta (non-self or no-soul), which directly contrasts with the Jain concept of an eternal Jiva. While Buddhism analyzes phenomena into various aggregates (skandhas), it does not use the Jiva/Ajiva framework.
Conclusion for C: This statement is FALSE regarding Buddhism.
D. The concept of Nirvana
Nirvana in Buddhism: Nirvana (Pali: Nibbana) is the ultimate goal in Buddhism. It signifies the cessation of suffering (dukkha), craving (tanha), and the cycle of rebirth (samsara). It is often described as the extinction of the "flame" of desire, ignorance, and attachment.
Conclusion for D: This statement is profoundly TRUE and central to Buddhist teachings.
E. Theory of Prakriti and Purusa
Prakriti and Purusa: These are fundamental concepts in the Samkhya school of Hindu philosophy, and also play a significant role in Yoga philosophy. Prakriti is the primordial matter or nature, the material cause of the universe. Purusa is the pure consciousness, the conscious principle. The interaction of Prakriti and Purusa explains the creation and experience of the world in these systems.
Buddhism's Stance: Buddhism does not adopt the Samkhya philosophy of Prakriti and Purusa. Its cosmological and psychological explanations are based on concepts like dependent origination (pratītyasamutpāda), karma, and the aggregates (skandhas).
Conclusion for E: This statement is FALSE regarding Buddhism.
Evaluating the Options Provided:
Now let's see which combination of true statements matches the given options:
We found A (True), B (True), D (True).
We found C (False), E (False).
Let's check the given options:

(a) A, B, C only: Incorrect, because C is false.
(b) B, C, D only: Incorrect, because C is false.
(c) A, B, D only: Correct, as A, B, and D are all true and associated with Buddhism.
(d) A, B, E only: Incorrect, because E is false.
Final Answer:
Based on the detailed analysis, the statements associated with Buddhism are "Rejection of the authority of the Veda," "Denial of God," and "The concept of Nirvana."
The correct answer is (c) A, B, D only.

Q38. What was the primary recommendation of the Yashpal Committee Report on Higher Education in India?
(a) Privatization of higher education institutions
(b) Introduction of a common entrance exam for all universities
(c) Establishment of a National Higher Education Authority
(d) Reduction of governmental funding for higher education
Ans.(c)
Sol. Establishment of a National Higher Education Authority
The primary recommendation of the Yashpal Committee Report on Higher Education in India. Let's analyze each option:
About the Yashpal Committee: The Yashpal Committee was constituted in 2009 under the chairmanship of Professor Yash Pal to suggest reforms in higher education in India. Its report was titled "Renovation and Rejuvenation of Higher Education in India."
(a) Privatization of higher education institutions: While there has been an increase in private institutions, the primary recommendation of the Yashpal Committee was not to promote privatization. In fact, it aimed to regulate and improve the quality of both public and private institutions.
(b) Introduction of a common entrance exam for all universities: While common entrance exams exist for specific courses or groups of universities (like JEE for engineering or NEET for medical), the primary recommendation of the Yashpal Committee was not solely focused on a common entrance exam for all universities. Their focus was broader, on restructuring the regulatory framework.
(c) Establishment of a National Higher Education Authority: This is the most accurate option. A central and significant recommendation of the Yashpal Committee was the abolition of multiple regulatory bodies like the UGC (University Grants Commission), AICTE (All India Council for Technical Education), NCTE (National Council for Teacher Education), and the Medical Council of India (MCI), and instead, to establish a single overarching regulatory body called the National Commission for Higher Education and Research (NCHER). This body was envisioned to be a truly independent and empowered authority for setting standards, regulating, and promoting higher education and research across all disciplines. This aligns well with the concept of a "National Higher Education Authority."
(d) Reduction of governmental funding for higher education: The Yashpal Committee's report generally advocated for increased investment in higher education and better utilization of existing funds, rather than a reduction in governmental funding. Its thrust was on improving quality and access, which often requires adequate funding.
Conclusion:
The primary recommendation of the Yashpal Committee Report was indeed the establishment of a single, overarching regulatory body for higher education, which can be broadly interpreted as a "National Higher Education Authority" or, more specifically, the National Commission for Higher Education and Research (NCHER).
Therefore, the correct answer is (c).

Q39. The University of Allahabad was founded in the year
(a) 1887
(b) 1901
(c) 1905
(d) 1911
Ans.(a)
Sol. 1887
The University of Allahabad.
The University of Allahabad is one of the oldest modern universities in India. It was established on September 23, 1887. It was initially an affiliating and examining body, later becoming a teaching university. It is often referred to as the "Oxford of the East."
Let's check the given options:
(a) 1887: This is the correct founding year for the University of Allahabad.
(b) 1901: Incorrect.
(c) 1905: Incorrect. The Partition of Bengal occurred in this year, but it's unrelated to the university's founding.
(d) 1911: Incorrect. The capital of British India was shifted from Calcutta to Delhi in this year, but it's unrelated to the university's founding.
Conclusion:
The University of Allahabad was founded in the year 1887.

Q40. There is a circular track 1240 m long, and two people, A and B, starting from the same point, are running around it in the same direction. A runs at a speed of 12 km/h while B runs at a speed of 16 km/h. After how much time (in minutes) will they meet for the first time?
(a) 18.6
(b) 16.8
(c) 20.5
(d) 15.5
Ans.(a)
Sol. Given:
Length of circular track = 1240 m
Speed of A = 12 km/h = 12000 m/h
Speed of B = 16 km/h = 16000 m/h
Both run in the same direction starting from the same point.
Formula Used:
Time =
Track LengthRelative Speed
Relative Speed
Track Length
Solution:
Relative speed = 16000 - 12000 = 4000 m/h
Time to meet =
1240×604000=744004000
4000
1240×60= 4000
74400 = 18.6 minutes

Q41. Find the difference between the average sales on Monday and Friday together, and the average sales on Wednesday and Friday together.
Statements:
(I) The average sales on Monday, Wednesday, and Friday is Rs 18,000.
(II) The total sales on Wednesday and Friday together is Rs 39,000.
(III) The total sales on Monday and Friday together is Rs 36,000.
(a) Rs 1,500
(b) Rs 2,000
(c) Rs 2,500
(d) Rs 3,000
Ans.(a)
Sol. Given Statements:
(I) Average sales on Monday (M), Wednesday (W), and Friday (F) = Rs 18,000 (M+W+F)/3 = 18000
M + W + F = 54000....(1)
(II) Total sales on Wednesday and Friday = Rs 39,000
W + F = 39000 ...(2)
(III) Total sales on Monday and Friday = Rs 36,000
M + F = 36000 .....(3)
Substitute equation (2) into (1):
M + (W + F) = 54000
M + 39000 = 54000
M = 15000 ..... (4)
Now use equation (4) in equation (3):
15000 + F = 36000
F = 21000....(5)
Now use equation (2) to find W:
W + 21000 = 39000
W = 18000....(6)
Now find:
A. Average of Monday and Friday:
(M + F)/2 = (15000+21000)/2 = 18000
B. Average of Wednesday and Friday:
(W+F)/2 = (18000+21000)/2 = 19500
Difference in averages
19500-18000 = Rs 1500

Q42. Seven bells ring at intervals of 2, 3, 4, 6, 8, 9, and 12 minutes, respectively. They started ringing simultaneously at 7:10 a.m. What will be the next time when they all ring simultaneously?
(a) 8:22 a.m
(b) 8:20 a.m
(c) 8:26 a.m
(d) 8:24 a.m
Ans.(a)
Sol. Given: Bell intervals: 2, 3, 4, 6, 8, 9, 12 minutes.
Initial simultaneous ring time: 7:10 a.m.

Prime Factorization:

2 = 2

3 = 3

4 = 2^2

6 = 2×3

8 = 2^3

9 = 3^2

12 = $2^2 \times 3$

LCM = $2^3 \times 3^2 = 8 \times 9$ = 72 minutes

The bells will ring together again after 72 minutes.
Since they started ringing at 7:10 a.m., we add 72 minutes to this time. 7:10 a.m. + 72 minutes = 8:22 a.m.

Q43. A can do a piece of work in 15 days and B can do it in 24 days. If they do the work alternately, in how many days will they finish the work, provided that A begins the work?

A. $18\frac{1}{4}$
B. $18\frac{3}{8}$
C. 17
D. $17\frac{2}{5}$

Sol: **Given:**
A can do a piece of work in 15 days and B can do it in 24 days. A begins the work and works alternately.
Solution:
Total Work = LCM of 15 and 24 = 120 days
Efficiency of A = $\frac{120}{15} = 8$ days
Efficiency of B = $\frac{120}{24} = 5$ days
Total amount of work done by both in 2 days = 8 + 5 = 13 unit
Total amount of work done by both in 16 days = 13×8 = 104 unit
Now the 17th days, Work will be done by A:
So, Amount of work done by A on 17th day = 8 unit
So, Remaining work = 120-104-8 = 8 unit
Amount of work done by B on 18th day = 5 unit
Reamining work = 3 unit
This 3 unit of work has to be done by A in $\frac{3}{8}$ days
Total Time to complete the work alternately = $18 + \frac{3}{8} = 18\frac{3}{8}$ days

Q44. The following observations are arranged in ascending order.
29, 32, 48, 50, x, x + 2 , 72, 78, 84, 90
If the median is 63, then the value of x is:
(a) 63
(b) 65
(c) 51
(d) 62
Ans.(d)

Sol: Given:

Data (in ascending order):

29, 32, 48, 50, **x**, **x + 2**, 72, 78, 84, 90

Median = 63

Formula Used:

For an even number of observations :

$$\text{Median} = \frac{(\frac{n}{2})^{th}\text{ term} + (\frac{n}{2}+1)^{th}\text{ term}}{2}$$

Solution:

n = 10

$$\text{Median} = \frac{5^{th}\text{ term} + 6^{th}\text{ term}}{2}$$

$$63 = \frac{x + (x+2)}{2}$$

$$63 = \frac{2x+2}{2}$$

63 = x + 1

x = 62

Q45. n a certain code language 'USJI' is coded as '49' and 'DPTQ' is coded as '51'. What is the code for 'FAUL' in the given language?
(a) 62
(b) 57
(c) 68
(d) 59
Ans.(c)

Sol: **Given:** 'USJI' is coded as '49' and 'DPTQ' is coded as '51'.

Logic: Sum of opposite letter positions = Code

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

Question: Find the code for FAUL

Logic:
Code = Sum of opposite alphabet positions (27 − letter position). or some of place values of opposite letters.

Explanation:
USJI:
U(21)→6, S(19)→8, J(10)→17, I(9)→18
Sum = 6+8+17+18 = 49

DPTQ:
D(4)→23, P(16)→11, T(20)→7, Q(17)→10
Sum = 23+11+7+10 = 51

FAUL:
F(6)→21, A(1)→26, U(21)→6, L(12)→15
Sum = 21+26+6+15 = 68

Final Answer:
68

Directions (46-50): In the 21st century, communication has evolved into a dynamic and multidimensional process, shaped by rapid technological advancements and shifting societal expectations. From the printing press to the digital age, communication media have continuously evolved to cater to the growing demand for speed, accuracy, and accessibility. Among the most transformative forces in recent decades has been the rise of digital and mass media. Social media platforms, in particular, have democratised the production and distribution of information, enabling individuals to share content instantly with a global audience. However, this openness has also led to challenges such as misinformation, reduced attention spans, and echo chambers that reinforce existing beliefs.

Mass media, encompassing television, radio, cinema, newspapers, and now digital platforms, plays a crucial role in shaping public opinion, cultural norms, and even political outcomes. For instance, movies and television dramas not only entertain but also serve as powerful tools for education, advocacy, and cultural exchange. News media, on the other hand, acts as a watchdog, holding governments and institutions accountable, though it is often criticized for biases, sensationalism, and commercial interests.

The education sector has also embraced mass media as a vehicle for delivering knowledge beyond the classroom. Educational television programs, podcasts, and YouTube lectures have made learning more accessible, particularly in remote areas. The integration of interactive tools and multimedia content has enhanced learner engagement and comprehension. Yet, the digital divide continues to be a significant barrier, as access to technology and reliable internet remains uneven across regions and socio-economic groups.

In the context of globalization, the media has emerged as a bridge connecting diverse cultures, ideas, and experiences. International cinema, music, and online collaborations foster cross-cultural understanding and empathy. However, this global connectivity also raises concerns over cultural homogenization, where dominant cultures may overshadow local traditions. Thus, while

communication technologies have undoubtedly expanded human connectivity, they have also introduced complex challenges that demand critical evaluation and responsible usage.

Q46. Which of the following is *NOT* mentioned in the passage as a challenge of digital communication?
(a) Misinformation
(b) Reduced attention spans
(c) Increase in the production costs of newspapers
(d) Echo chambers
Ans.(c)
Sol. Introduction:
The passage discusses both the benefits and challenges of digital and mass media in contemporary society.
Information Booster:
The text highlights misinformation, reduced attention spans, and echo chambers as key challenges of the digital era. However, it does not mention the increase in production costs of newspapers anywhere.
Additional Information:
- (a), (b), and (d) are directly stated challenges in the passage.
- (c) is unrelated to the main challenges discussed and thus is the correct answer.

Q47. According to the passage, which of the following is a *positive* contribution of mass media in education?
(a) Encouraging sensationalism in news coverage
(b) Delivering knowledge beyond the classroom
(c) Reinforcing existing beliefs through echo chambers
(d) Promoting cultural homogenization
Ans.(b)
Sol. Introduction:
Mass media have been integrated into education in multiple ways, especially with the rise of digital platforms.
Information Booster:
The passage clearly states that mass media helps deliver knowledge beyond the classroom, through television programs, podcasts, and online lectures, making education more accessible.
Additional Information:
- (a) and (c) are negative aspects.
- (d) is mentioned as a concern of globalisation, not as a benefit in education.

Q48. What does the term *cultural homogenization* refer to in the context of the passage?
(a) Strengthening of local traditions through media
(b) The blending of diverse cultures into one dominant culture
(c) Encouraging multilingualism through movies and music
(d) Preserving endangered cultural practices
Ans.(b)
Sol. Introduction:
The passage discusses cultural homogenization as a concern linked to globalisation and mass media.
Information Booster:
Cultural homogenization occurs when dominant cultures overshadow or replace local traditions, resulting in reduced cultural diversity.
Additional Information:
- (a) and (d) are the opposite of homogenization.

- (c) is a positive cultural exchange, not homogenization.

Q49. Which medium is *NOT* included in the definition of mass media in the passage?
(a) Cinema
(b) Radio
(c) Social media platforms
(d) Personal handwritten letters
Ans.(d)
Sol. Introduction:
The passage lists multiple mass media channels and their functions.
Information Booster:
Mass media includes television, radio, cinema, newspapers, and digital platforms, including social media. Personal handwritten letters are a form of interpersonal communication, not mass media.
Additional Information:
- (a), (b), and (c) are explicitly included in the passage.
- (d) is private communication, not public mass communication.

Q50. Which of the following best describes the author's overall stance in the passage?
(a) Completely critical of mass media
(b) Strongly supportive without acknowledging drawbacks
(c) Balanced view highlighting both benefits and challenges
(d) Indifferent towards communication technologies
Ans.(c)
Sol. Introduction:
The passage provides a nuanced discussion of communication technologies and mass media.
Information Booster:
The author acknowledges the transformative and beneficial aspects of communication technologies while also pointing out significant drawbacks, suggesting a balanced perspective.
Additional Information:
- (a) and (b) represent one-sided views.
- (d) is incorrect because the author is actively engaged in discussing the topic.