

# UGC NET 2024



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## UGC NET MEMORY BASED QUESTION-PAPER 1

### TOPICS ASKED IN UGC NET PAPER - 1 (6 JANUARY 2025 SHIFT- 1)

**DI-** SIMPLE (RATIO, PERCENTAGE), TABLE BASED

**ICT-** ANDROID DEVELOPMENT

**LR-** CODING DECODING, FALLACY, SAUQRE OF OPPOSITION 5 QUES

**H.E. –** CHRONOLOGY BASED (INSTITUTE, UNIVERSITY), NEP 2020(2QUES), OPEN UNIVERSITY, 5 YEAR PLAN

**P.D.-** PH VALUE ACID BASE, WATER POLLUTANT, BOD, DO

**R.C. –** SHORT AND EASY

**MATHS-** PROFIT AND LOSS

**RESEARCH-** TYPES, MEAN MEDIAN MODE, SAMPLING

**COMMUNICATION-** MASS COMMUNICATION

**MATCHING QUES-**MORE

**TEACHING –** COGNITIVE MODEL , TRANSFORMER , HOIGH ROAD LOW ROAD TRANSFER

### MEMORY BASED QUESTION

**Q1. The cost price of 35 articles is the same as the selling price of N articles. If the profit earned is 40%, the value of N is:**

- (a) 15
- (b) 20
- (c) 25
- (d) 30

**Ans.(c)**

**Sol.**  $35CP = N SP$

$CP/SP = N/35$

Profit =  $35-N$

Profit percent =  $(35-N)/N \times 100 = 40\%$

$(35-N)/N = 40/100$

$5(35-N) = 2N$

$175 - 5N = 2N$

$N = 175/7 = 25$

**Q2. In a certain coding scheme, 'MANGO' is written as 'KYLEM'. In the same scheme, how will 'GUAVA' be written?**

- (a) ESCTC
- (b) FSYUY
- (c) ESCUC
- (d) ESYTY

**Ans.(d)**

**Sol.** Given: 'MANGO' → 'KYLEM' To determine how 'GUAVA' is coded.

Let's analyze the transformation:

**MANGO**

**KYLEM**

**Pattern Analysis:**

1. Observe that the letters **move backward 2 places** in the alphabet.

M → K

A → Y

N → L

G → E

O → M

Now, apply the same logic to **GUAVA**:

**GUAVA**

**ESYTY**

· G → E (2 places back)

U → S (2 places back)

A → Y (2 places back)

V → T (2 places back)

A → Y (2 places back)

Thus, **GUAVA** is coded as **ESYTY**.

**Q3. In a certain coding language, if 'CRICKET is coded as 2632479. ROCKET is coded as 612479, and 'KETTLE' is coded as 479907. then how LOCKER shall be coded in that language?**

(a) 102674

(b) 021647

(c) 120764

(d) 012476

**Ans.(d)**

**Sol. Given:**

'CRICKET' is coded as 2632479

'ROCKET' is coded as 612479

'KETTLE' is coded as 479907

**Solution:**

Using the coded we can decode the number assigned to each letter:

C = 2, R = 6, I = 3, K = 2, E = 7, T = 9, O = 1, L = 0

The code for LOCKER is 012476

Hence the correct option is (d)

**Q4. The selling price of 30 fans is equal to the purchase price of 25 fans. What is the profit or loss in percentage?**

(a) A gain of 16%

(b) A loss of 15%

(c) A loss of 16%

(d) No gain, no loss

**Ans.(c)**

**Sol. Given:**

The selling price of 30 fans is equal to the purchase price of 25 fans

**Formula Used:**

$$\text{Loss} = \text{CP} - \text{SP}$$

$$\text{Loss Percentage} = \frac{\text{Loss}}{\text{CP}} \times 100$$

**Solution:**

$$30 \text{ SP} = 25 \text{CP}$$

$$6 \text{SP} = 5 \text{CP}$$

$$\frac{\text{SP}}{\text{CP}} = \frac{5}{6}$$

If CP = 6, then SP = 5

$$\text{Loss} = 6 - 5 = 1$$

Then loss percent :

$$\frac{1}{6} \times 100 = 16\frac{2}{3}\%$$

The correct option is (c)

**Q5. According to NEP-2020, which is/are not under curriculum framework of adult education?**

**A. Critical Life Skills**

**B. Vocational Skills Development**

**C. Continuing Education**

**D. Art in Education**

**E. Basic Education**

**Choose the correct answer from the options given below:**

(a) A only

(b) B and C only

(c) D only

(d) A, D and E only

**Ans.(c)**

**Sol.** According to the **National Education Policy (NEP) 2020**, the curriculum framework for **adult education** includes the following key components:

**Critical Life Skills (A):** These include essential life skills such as financial literacy, health awareness, and digital literacy, which are integral to adult education.

**Vocational Skills Development (B):** NEP 2020 emphasizes vocational training as part of adult education to improve employability and self-sufficiency.

**Continuing Education (C):** Lifelong learning opportunities are encouraged under adult education, including skill development, general knowledge, and higher education opportunities.

**Basic Education (E):** Foundational education is an important component of adult education, especially for individuals who missed out on formal schooling.

However, **Art in Education (D)** is not specifically mentioned under the adult education curriculum framework in NEP-2020. While arts and creative learning are encouraged across the education system, this component is not a core part of adult education as per NEP-2020's guidelines.

**Information Booster:** 1. **Critical Life Skills:** Includes personal and professional development skills such as health, digital literacy, and financial management.

2. **Vocational Skills Development:** Aims to equip adults with job-specific skills to enhance their employability.
3. **Continuing Education:** Focuses on providing opportunities for adults to continue learning and improving skills throughout their lives.
4. **Basic Education:** Emphasizes foundational literacy and numeracy for adults who missed formal education.
5. NEP-2020 promotes flexible learning environments and a holistic approach to adult education.
6. Art-based learning is important in school education but is not categorized as part of adult education.

**Q6. Match List-I with List-II:**

List-I (Institutions)	List-II (Areas of Education)
(A) NCTE	(I) Assessment and accreditation of higher education institutions
(B) AICTE	(II) Maintenance of standards in teacher education
(C) NMC	(III) Maintaining quality and standards in medical education
(D) NAAC	(IV) Promotion of quality in technical education

**Choose the correct answer from the options given below:**

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

**Ans.(d)**

**Sol.** The correct matching is as follows:

**1. (A) NCTE – (II) Maintenance of standards in teacher education:**

The **National Council for Teacher Education (NCTE)** is responsible for regulating and maintaining standards in teacher education programs across India.

**2. (B) AICTE – (IV) Promotion of quality in technical education:**

The **All India Council for Technical Education (AICTE)** oversees the promotion and quality maintenance of technical education and professional courses.

**3. (C) NMC – (III) Maintaining quality and standards in medical education:**

The **National Medical Commission (NMC)** regulates and ensures the quality of medical education and training in India.

**4. (D) NAAC – (I) Assessment and accreditation of higher education institutions:**

The **National Assessment and Accreditation Council (NAAC)** is responsible for the assessment and accreditation of higher education institutions to ensure quality education.

**Information Booster:**

1. **NCTE** focuses on teacher education programs, including teacher training courses like B.Ed., D.El.Ed., etc.
2. **AICTE** regulates technical institutions and ensures quality education in engineering, management, and technical fields.
3. **NMC** replaced the Medical Council of India (MCI) and works on improving medical education and standards.
4. **NAAC** evaluates higher education institutions based on predefined criteria like curriculum, teaching-learning processes, and research.

**Q7. Arrange the following institutions according to their year of establishment (from earliest to the most recent)**

- A. National Council of Rural Institutes (NCRI)
- B. Indian Council of Social Science Research (ICSSR)
- C. Indian Council of Advanced Study (IIAS)
- D. India Council of Historical Research (ICHR)
- E. Indian Council of Philosophical Research (ICPR)

**Choose the correct answer from the options given below:**

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

**Ans.(d)**

**Sol.** The correct chronological order of the establishment of the institutions is as follows:

1. **Indian Council of Advanced Study (IIAS) (C):** Established in **1965** in Shimla to promote higher research in the humanities, arts, and social sciences.
2. **Indian Council of Social Science Research (ICSSR) (B):** Established in **1969** to promote research in social sciences in India.
3. **India Council of Historical Research (ICHR) (D):** Founded in **1972** to encourage and promote historical research and scholarship.
4. **Indian Council of Philosophical Research (ICPR) (E):** Set up in **1977** to promote philosophical research and teaching.
5. **National Council of Rural Institutes (NCRI) (A):** Established in **1995** to strengthen rural higher education and research in rural development.

**Information Booster:** 1. **IIAS:** Focuses on promoting high-level research in humanities and social sciences.

2. **ICSSR:** Aims to support social science research and disseminate knowledge.

3. **ICHR:** Encourages historical research through funding and fellowships.

4. **ICPR:** Supports research in Indian and Western philosophy.

5. **NCRI:** Engages in the development of rural higher education and rural studies.

**Q8. Which of the following is true about an over fertile lake?**

- (a) Nitrate level decreases
- (b) Depletion in algal productivity
- (c) Oxygen level increases
- (d) Quality of fishes produced is impaired.

**Ans.(d)**

**Sol.** An over-fertile lake, also known as a eutrophic lake, experiences a process called **eutrophication**. This occurs when excessive nutrients, particularly **nitrates** and **phosphates**, enter the lake, often from agricultural runoff, sewage, or industrial discharges. These nutrients lead to **excessive growth of algae (algal bloom)**, which significantly impacts the aquatic ecosystem.

**Information Booster:** • **Eutrophication** results from nutrient overloading in water bodies.

The process can result in massive fish kills, particularly in deeper parts of lakes where oxygen becomes depleted.



Algal blooms can produce toxins harmful to aquatic life and even humans.

Affected lakes exhibit murky water, foul odor, and reduced biodiversity.

Prevention involves reducing agricultural runoff, using phosphate-free detergents, and proper waste management.

**Additional Knowledge:** (a) **Nitrate level decreases:** Incorrect. Over-fertile lakes have elevated nitrate levels, a primary cause of eutrophication. (b) **Depletion in algal productivity:** Incorrect. Algal productivity spikes due to the availability of nutrients like nitrates and phosphates. (c) **Oxygen level increases:** Incorrect. Oxygen levels decrease as algae die and decompose, consuming oxygen in the process (hypoxia).

**Q9. Thermal pollution in river water:**

(A) Increases the solubility of oxygen

(B) Promotes the growth of certain fish

(C) Increases the metabolism of fish

(D) May cause elimination of most sponges and mollusks

(E) Does not change the ecological balance of river

**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), (B) and (D) only

**Ans.(b)**

**Sol.** Thermal pollution, which refers to an increase in water temperature due to industrial discharges or other anthropogenic factors, has the following effects:

(B) **Promotes the growth of certain fish:** Warm temperatures may favor species adapted to higher temperatures, such as certain invasive or thermophilic species.

(C) **Increases the metabolism of fish:** Higher temperatures accelerate metabolic rates, often leading to increased oxygen demand.

(D) **May cause elimination of most sponges and mollusks:** Many aquatic organisms, such as sponges and mollusks, are sensitive to temperature changes and may not survive in warmer waters.

**Incorrect Statements:**

(A) **Increases the solubility of oxygen:** Warmer water decreases the solubility of oxygen, reducing its availability.

(E) **Does not change the ecological balance of river:** Incorrect, as thermal pollution disrupts ecological balance by altering species composition and oxygen levels.

**Q10.** Which of the following are the examples of Information Development Model?

A. Self Awareness Model

B. Gagne's Information Model

C. Jerome Bruner's Model

D. Schuman's Model

E. Group Investigation Model

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Choose the correct answer from the options given below:

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

**Ans. (c)**

**Sol.** Information Development Models are educational frameworks that focus on how information is processed, learned, and retained. These models often emphasize the steps or stages through which learners must pass to successfully acquire and use new information.

Gagne's Information Processing Model is a well-known model that outlines the stages of learning and the conditions necessary for each stage to occur. It emphasizes the sequential nature of learning processes, including attention, retention, and retrieval of information.

Jerome Bruner's Model of cognitive development is another pivotal model that describes how learners construct their own knowledge and how instructional methods can be designed to facilitate this process. Bruner proposed three modes of representation (enactive, iconic, and symbolic) that are fundamental in understanding how information is processed at different stages of a child's development.

Schuman's Model might be less directly recognized in the context provided, and there seems to be a confusion with the name. The list might intend to refer to a theorist or model related to information processing or development but is not widely recognized under this name for information development specifically in educational psychology or instructional design.

Self Awareness Model and Group Investigation Model are not typically categorized under Information Development Models. The Self-Awareness Model focuses on understanding oneself and one's place within various contexts, while the Group Investigation Model is a cooperative learning strategy that emphasizes inquiry and collaboration among students.

There seems to be a mix-up or misunderstanding regarding "Schuman's Model" as it is not widely recognized or directly associated with Information Development Models in mainstream educational psychology or instructional design literature.

Given the options provided and the standard definitions of Information Development Models, the most accurate match to widely recognized models would include Gagne's Information Model and Jerome Bruner's Model for their direct relevance to the processing and development of information.

Therefore, considering the common understanding and application of these models within educational theory, and acknowledging a potential mix-up or lack of clarity regarding "Schuman's Model," the most reasonable answer would be (c) B, C, and D only, assuming "Schuman's Model" was intended to reflect a model relevant to information development, despite the ambiguity surrounding it. This question's resolution hinges on recognizing established models by Gagne and Bruner and the possible misinterpretation or misnaming of other models.

**Q11.** No one has been ever able to prove that "Glaciers in the arctic region are melting because of Global warming. Therefore, Glaciers in the arctic region must be melting on their own." Which fallacy is committed in the above statement?

- (a) Fallacy of Accident
- (b) Slippery Slope
- (c) Hasty Generalization
- (d) Appeal to Ignorance



**Ans. (d)**

**Sol.** The statement commits the Appeal to Ignorance fallacy. This fallacy occurs when it is assumed that a claim is true because it has not been or cannot be proven false, or vice versa. In this case, the statement suggests that because no one has been able to prove that glaciers are melting due to global warming, they must be melting on their own. This reasoning incorrectly assumes that the lack of evidence for one cause automatically validates an alternative cause without direct evidence supporting it.

**Q12.** If the statement- "No professors are materialists" is given as true, then which of the following statements could be inferred to be true?

- (a) All professors are materialists.
- (b) Some professors are materialists.
- (c) Some professors are not materialists.
- (d) Some materialists are professors.

**Ans. (c)**

**Sol.** The statement "No professors are materialists" implies a complete disassociation between professors and materialists; thus, it establishes that there is no overlap between the two groups. This logically confirms that some professors are not materialists because, in fact, according to the given statement, all professors are not materialists. This direct exclusion makes option (c) the only valid inference among the given choices.

**Q13.** In which of the following sampling methods, the sample is also known as an accidental sample and a haphazard sample?

- (a) Purposive sampling
- (b) Quota sampling
- (c) Stratified random sampling
- (d) Convenience sampling

**Ans. (d)**

**Sol.** The sampling method in which the sample is also known as an accidental sample or a haphazard sample is "Convenience sampling." In convenience sampling, participants are selected based on their easy accessibility and proximity to the researcher. This method does not follow a structured approach to sample selection, often resulting in a non-random and potentially biased sample. It's termed "accidental" or "haphazard" due to the casual manner in which participants are chosen. Purposive, quota, and stratified random sampling are more structured methods with specific selection criteria, making (d) Convenience sampling the correct answer.

**Q14.** Normally mass media operate in

- A. Personal Sphere
- B. Political Sphere
- C. Economic Sphere
- D. Public Sphere

**Ans. (d)**

**Sol.** Mass media primarily operate in the **public sphere**, where information, ideas, and debates are shared and exchanged among citizens. The public sphere is a conceptual space where mass communication facilitates public discourse, influences opinion, and supports democratic participation. Through platforms such as newspapers, television, radio, and the internet, mass media engage the public on political, economic, cultural, and social issues.

**Information Booster 1. Public Sphere:** A space for open discussion where citizens deliberate on public matters, facilitated by mass media.

2. **Role of Mass Media:** Includes agenda-setting, providing a platform for debate, and acting as a watchdog for democratic institutions.

3. **Political Influence:** Mass media also shape political discourse by framing issues and influencing public opinion.

4. **Economic Communication:** Though it reports economic news, its role is within the broader public sphere.

**Additional Knowledge · (a) Personal Sphere:** While social media operates in the personal sphere to some extent, mass media's focus is on public communication. Personal communication tools like messaging apps are distinct from mass communication platforms.

**(b) Political Sphere:** Mass media significantly influence the political sphere by reporting on policies, elections, and governance. However, its role here is a subset of its broader function in the public sphere.

**(c) Economic Sphere:** Mass media report on economic events, markets, and policies but are not confined to this area. Economic topics are part of the public discourse.

**Q15.** Covariance i.e  $Cov(X, Y)$  and standard deviations of different datasets are given. Estimate the correlation coefficients and arrange in increasing order

A.  $Cov(X, Y) = 32, \sigma_x = 8, \sigma_y = 7$

B.  $Cov(X, Y) = 36, \sigma_x = 12, \sigma_y = 5$

C.  $Cov(X, Y) = 35, \sigma_x = 7, \sigma_y = 8$

D.  $Cov(X, Y) = 39, \sigma_x = 6, \sigma_y = 13$

Choose the correct answer from the options given below:

(a) A, B, C, D

(b) B, C, D, A

(c) C, D, A, B

(d) D, A, B, C

ans. (d)

1. For Option A:

$$r = \frac{Cov(X, Y)}{\sigma_X \cdot \sigma_Y} = \frac{32}{8 \cdot 7} = \frac{32}{56} = 0.57$$

2. For Option B:

$$r = \frac{36}{12 \cdot 5} = \frac{36}{60} = 0.6$$

3. For Option C:

$$r = \frac{35}{7 \cdot 8} = \frac{35}{56} = 0.625$$

4. For Option D:

$$r = \frac{39}{6 \cdot 13} = \frac{39}{78} = 0.5$$

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## **TOPICS ASKED IN COMPUTER SCIENCE – 6TH JAN 2025 SHIFT - 1**

### **MODERATE LEVEL PAPPER**

**MANY QUESTIONS ON MATCH THE COLUMN**

**MANY QUESTIONS ON OPERATING SYSTEM**

**LESS QUESTION ON COMPUTER NETWORKS**

**LESS QUESTIONS ON DATA-BASE MANAGEMENT**

### **REPEATED QUESTIONS ON PYP**

- Type 0 grammar
- Opcode questions
- CG – 2D Transformation
- NP-hard and NP-complete problem
- Comprehension on TOC
- Comprehension on COA
- Time Complexity of Algorithms, Match the pair
- Probability
- TOC - many questions on grammar
- Octal to decimal
- Priority scheduling - total scheduling questions
- Questions on complexity
- Software engineer
- Slotted Aloha
- AI - 2-3 questions only
- Chomsky Hierarchy
- Natural language Processing
- Normal Forms – SQL
- Arrangement on DCHP
- Computer Network
- Syntax Analyzer
- Bandwidth Problem
- Spiral model Based
- Parse tree-based 5 Questions with a diagram