UGC NET Paper -1 Memory Based 29th June Shift -2

Q1. What is the total number of male employees in A and E together.

The table shows **the number** of **total** employee **in five departments** and **the** percentage **of males** working **in these departments**. **Read the table** and answer **the following questions.**

Department	Total Employees	Percentage of Male
A	1120	25%
B	1245	20%
C	520	10%
D	720	15%
E	800	35%

(a) 227

(b) 217

(c) 326

(d) None of these

Answer: D

Department	Total Employees	Male Employees	Female Employees
A	1120	25% of 1120 = 280	840
B	1245	20% of 1245 = 249	996
C	520	10% of 520 = 52	468
D	720	15% of 720 = 108	612
E	800	35% of 800 = 280	520

Total number of male employees in A and E = (280 + 280) = 560

Q2. Which department has **the highest number of** female **employees?**

The table shows **the** number of total employee in **five** departments and **the** percentage of **males** working in **these departments. Read** the table and answer **the** following questions.

Department	Total Employees	Percentage of Male
A	1120	25%
B	1245	20%
C	520	10%
D	720	15%
E	800	35%

(a) B

(b) D

(c) E

(d) A

Answer: A

Department	Total Employees	Male Employees	Female Employees
A	1120	25% of 1120 = 280	840
B	1245	20% of 1245 = 249	996
C	520	10% of 520 = 52	468
D	720	15% of 720 = 108	612
E	800	35% of 800 = 280	520

B has the highest number of female employees (996).

Q3. What **is** the ratio of the number of female employees in A to the difference between male and female employees in D?

The table shows **the** number of total employee **in five** departments and **the** percentage of males working **in these** departments**.**

Department	Total Employees	Percentage of Male
A	1120	25%
B	1245	20%
C	520	10%
D	720	15%
E	800	35%

(a) 37:39
(b) 36:35
(c) 35:37
(d) 5:3

Answer: D

Department	Total Employees	Male Employees	Female Employees
A	1120	25% of 1120 = 280	840
B	1245	20% of 1245 = 249	996
C	520	10% of 520 = 52	468
D	720	15% of 720 = 108	612
E	800	35% of 800 = 280	520

Required ratio = 840:612 – 108
= 840 : 504
= 5:3

Q4. If the ratio of salary of each employee in D to E **is** 5:3**,** then what **is the** ratio of total salary of male employees in D **to** the female employees **in E?**

The table shows the number of total employee in five departments and **the** percentage of males working in **these** departments**.** Read **the table** and answer **the** following **questions.**

Department	Total Employees	Percentage of Male
A	1120	25%
B	1245	20%
C	520	10%
D	720	15%
E	800	35%

(a) 12:13
(b) 13:15
(c) 26:9
(d) 9:26
Answer: D

Department	Total employees	Male employees	Female employees
A	1120	25% of 1120 = 280	840
B	1245	20% of 1245 = 249	996
C	520	10% of 520 = 52	468
D	720	15% of 720 = 108	612
E	800	35% of 800 = 280	520

Required ratio = 5×108 : 520×3 = 9:26

Q5. The male employees **in A** is what **percent the female** employees **in C?**
The table shows the number **of** total employee in **five** departments and **the** percentage **of males** working in these departments. Read **the table** and answer **the following questions**.

Department	Total Employees	Percentage of Male
A	1120	25%
B	1245	20%
C	520	10%
D	720	15%
E	800	35%

(a) 75%
(b) 60%
(c) 68%
(d) 64%
Answer: B

Department	Total employees	Male employees	Female employees
A	1120	25% of 1120 = 280	840
B	1245	20% of 1245 = 249	996
C	520	10% of 520 = 52	468
D	720	15% of 720 = 108	612
E	800	35% of 800 = 280	520

Required percentage = 280/468×100= 60% (approx.)

Q6. Which domain is not named in Bloom's taxonomy?
A. Cognitive
B. Conative
C. Affective
D. Psychomotor
Answer: B
Sol: Bloom's Taxonomy classifies learning into three domains:
1. Cognitive **Domain** (Knowledge-based learning)
2. **Affective Domain** (Emotion-based learning)
3. Psychomotor **Domain** (Skill-based learning)

However, the Conative **domain** is not a part of Bloom's Taxonomy. The conative **domain** refers to willpower, **motivation,** and intention to **act**, but it is not explicitly included in Bloom's original classification. Bloom's model focuses primarily on cognitive, affective, and psychomotor skills in the learning process.

Information **Booster**:

• Benjamin Bloom introduced **Bloom's Taxonomy** in **1956** to classify learning objectives.

• The **Cognitive domain** includes six levels: Remembering**,** Understanding**, Applying, Analyzing**, **Evaluating**, and Creating.

• The **Affective domain** deals with emotions, attitudes, and values, progressing from receiving to characterization.

• The **Psychomotor domain**, later developed by Simpson and **Dave**, focuses on physical skills and motor abilities.

• Revised Bloom's **Taxonomy (2001)** updated the cognitive domain with action-oriented verbs.

• Educators use Bloom's Taxonomy to **design curriculum,** assessments, and learning **objectives**.

Additional Knowledge**:**

• **Cognitive (a):** Deals with mental processes such as knowledge, understanding, and critical thinking.

• **Affective (c):** Involves emotions, values, and attitudes in learning.

• Psychomotor (**d):** Focuses on physical actions and motor skills essential for tasks like sports, dance, or surgery.

Q7. Which stage **in Erikson's** psychosocial development theory is crucial for developing **a** sense of identity?

A. Trust vs. Mistrust

B. Autonomy vs. Shame and Doubt

C. Industry vs. Inferiority

D. Identity vs. Role Confusion

Answer: D

Sol:

The stage of Identity vs. Role Confusion is crucial for developing a sense of identity. During this stage, typically occurring during adolescence, individuals explore various aspects of themselves and form their personal identity.

Information Booster:

1. Identity vs. Role Confusion: The fifth stage in Erikson's theory, focusing on self-identity.
2. Adolescence: The developmental period where this stage typically occurs.
3. Exploration: Critical for forming a coherent and stable sense of self.
4. Role Confusion: May result if the individual fails to establish a clear identity. Additional Information:

• Psychosocial Development: Erikson's theory of eight stages throughout the lifespan.

• Crisis Resolution: Successful resolution leads to positive outcomes.

• Social Influences: Peer and societal influences play a significant role during adolescence.

Identity Formation: A key developmental task in adolescence.

Q8. Active listening involves:
A. Hearing the words someone says
B. Understanding the words someone says
C. Understanding the underlying meaning of what someone says
D. All of the above
Answer: D
Sol: The correct answer **is: (D)** All of **the above**
Explanation:
Active **listening** is a communication skill that involves not just **hearing** the words, but also understanding **their meaning** and interpreting the emotions, intentions, and **context** behind them.
It requires full attention, non-verbal engagement (like nodding), asking clarifying questions, and giving thoughtful responses. Active listening strengthens relationships, reduces misunderstandings, and promotes empathy.
Important Key Points:
• Includes **hearing**, understanding**,** and interpreting the message.
• Requires **focus, eye contact**, and **non-**verbal **cues**.
• Helps in **conflict resolution**, collaboration, and building trust.
• Encourages the speaker to **express openly** and **feel heard**.
Knowledge Booster (Option Related Information)**:**
• **Hearing the** words **someone says (**A**):** This is the **first step** of listening.
• Understanding **the** words someone **says (B):** Understanding improves communication, but **active** listening **goes** beyond just understanding words.
• Understanding **the** underlying **meaning** of **what someone says (C):** This is a **crucial part** of active listening, but when done **along** with **hearing** and understanding**,** it completes the process.

Q9. Arrange **the correct** sequence from the lowest **to the highest** scale of measurement?
I) **Ratio scale**
II) Interval scale
III) Nominal **scale**
IV) Ordinal **scale**
A. II, III, IV, I
B. III, IV, II, I
C. IV, I, III, II
D. I, IV, III, II
Answer: B
Sol: The correct option is (b). Measurement is the process of assigning numbers to objects and events in accordance with a set of rules. To grasp the full impact of measurement, it is important to understand the concept of a measurement scale. There are several different kinds of scales: nominal, ordinal, interval, and ratio.
Scales of Measurement:
1) Nominal (Label or category):

With a nominal scale, numbers are assigned to objects or events simply for identification purposes.
For example, participants in various sports have numbers on their jerseys that quickly allow spectators, referees, and commentators to identify them. This identification is the sole purpose of the numbers.
• Labeling or naming allows us to make qualitative distinctions or to categorize and then count the frequency of persons, objects, or things in each
category.
2) Ordinal (Rank order):
• An ordinal scale allows us to rank-order events.
• Original numbers are assigned to the order, such as first, second, third, and so on.
• For example, grades such as "A," "B," "C," "D," and "F"; scores are given in terms of high, medium, and low; birth order in terms of firstborn, second- born, or later-born; a list of examination scores from highest to lowest; a list of job candidates ranked from high to low; and a list of the ten best- dressed persons.
For example, a researcher may pose a question to a teacher as follows:
Although most psychological scales are probably ordinal, psychologists assume that many of the scales have equal intervals actually accordingly.
The difference in the level of aggression between a score of 1 and a score of 2 is about the same as the difference in the level of aggression between a score of 2 and a score of 3, and so on.
Many researchers believe that these scales do approximate equality of intervals reasonably well, and it is unlikely that this assumption will lead to serious difficulties in interpreting our findings.
3) Interval (Rank order + Equal Intervals):
When we can specify both the order of events and the distance between events, we have an interval scale.
The distance between any two intervals on this type of scale is equal throughout the scale.
The central shortcoming of an interval scale is its lack of an absolute zero point—a location where the user 5 - 8 can say that there is a complete absence of the variable being measured. This type of scale often has an arbitrary zero point, sometimes called an anchor point.
For example,
scores on intelligence tests are considered to be on an interval scale.
With intelligence test scores, the anchor point is set at a mean IQ value of 100 with a standard deviation (SD) of 15.
4) Ratio (Rank order + Equal Intervals + Absolute zero)
A ratio scale has a number of properties that the others do not. With ratio scales, we can identify rank order, equal intervals, and equal ratios-two times as much, one-half as much.
Ratios can be determined because the zero points are absolute, a true anchor-the complete absence of a property.
Zero weight or height means the complete absence of weight or height. A
100-pound person has one-half the weight of a 200-pound person and twice the weight of a 50-pound person. We can say these things because we know that the starting points for these dimensions or measures are 0.
For example, you might measure a child's aggressive behavior by counting the number of times that the child inflicts physical harm on another person during a one-week observation period. Clearly, 10 incidents would be twice as many as 5, and 0 incidents would represent the absence of the variable you are measuring.

Q10. In experimental research, how is **the cause**-and-effect relationship **established**?
A. By correlating two variables.
B. By observing natural occurrences.
C. By manipulating the independent variable and measuring its impact on the dependent variable.
D. By conducting surveys and interviews.
Answer: C
Sol:
In experimental research, the cause-and-effect relationship is established by manipulating the independent variable and measuring its impact on the dependent variable. This manipulation allows researchers to control for extraneous variables and isolate the effect of the independent variable. By doing so, they can make more confident assertions about causality. Random assignment of participants to experimental and control groups helps ensure that any observed differences in the dependent variable are due to the manipulation of the independent variable rather than other factors. Information Booster:
(a) By correlating two variables: Correlational research examines the relationship between two variables but does not establish causality. It can show associations but cannot prove that one variable causes change in another.
(b) By observing natural occurrences: This is characteristic of observational or ex-post facto research, where researchers study events as they naturally occur without manipulation, making it difficult to establish cause-and-effect relationships.
(d) By conducting surveys and interviews: Surveys and interviews are data collection methods used in various but, on their own, do not establish causality. They are often used in descriptive or exploratory research.

Q11. A boat **covers** a distance of 12 km in 1 hour upstream and in 45 minutes **downstream. Find the** speed of the boat and the stream (in km/h).
A. 12;4
B. 16;4
C. 16; 2
D. 14; 2
Answer: D
Sol: Given:
Distance covered = 12 km (both upstream and downstream)
Time taken upstream = 1 hour
Time taken downstream = 45 minutes = 45/60 = 0.75 hours
Formula Used:
Upstream speed, U = u – v km/h
(When the boat is moving against the current, the effective speed is reduced by the speed of the stream.)
Downstream speed, D = u + v km/h
(When the boat is moving with the current, the effective speed is increased by the speed of the stream.)
Where, u is speed of boat, v is speed of stream.
Speed= Distance/Time

Solution:

$U = u - v = \frac{12}{1} = 12$ km/h

$D = u + v = \frac{12}{45} \times 60 = 16$ km/h

Speed of boat $= \frac{U+D}{2} = 14$ km/h

Speed of stream $= \frac{D-U}{2} = 2$ km/h

Q12. The perimeter of a circle whose diameter **is** 50 cm **is:**

A. 40 π cm

B. 20 π cm

C. 30 π cm

D. 50 π cm

Answer: D

Diameter of the circle d = 50 cm

Radius, r = 25

Formula Used:

Circumference = 2πr

Solution:

Circumference of circle, C =π×50

=50πcm

Q13. Which of **the** following statements is **logically** equivalent to the statement - "No liquids are beverages**."?**

A. All non-bevarages are non-liquids

B. All liquids are beverages.

C. Some beverages are not liquids

D. No beverages are liquids.

Answer: D

Sol**:**

The given statement, "No **liquids** are beverages," implies that there is no overlap between the categories of liquids and beverages. In formal logic, this means the two sets are mutually exclusive. The logically equivalent statement must convey the same idea of mutual exclusivity. No beverages are liquids**:**

Correct. This directly states that the set of beverages and the set of liquids have no overlap, which is logically equivalent to "No liquids are beverages."

Information Booster: Logical equivalence: Two statements are logically equivalent if they have the same truth value in all possible scenarios.

Statements involving "no" often imply mutual exclusivity of two sets.

Using Venn Diagrams can help visually confirm logical equivalence in such problems.

The original statement and its equivalent, "No beverages are liquids," both assert mutual exclusion without implying anything about non-beverages or non-liquids.

Q14. The full form of PSTN is**?**

A. Public Switching Telephone Network

B. Port Switching Telephone Network

C. Public Switched Telephone Network

D. Port Source Telephone Network

Answer: C

Sol:

The PSTN stands for Public Switched Telephone Network, which is the traditional circuit-switched telephone network used for voice communications worldwide.

Key Features of PSTN:

1. It is a global network that connects telephone systems for voice communication.
2. Uses circuit switching to establish a dedicated communication path between callers.
3. It includes analog and digital telephone lines, exchanges, and switching centers.

Q15. Full form of PAN, a type of air pollutant, is

A. Polycyclic Aromatic Nitrate

B. Polycyclic Acetyl Nitrate

C. Peroxy Aromatic Nitrate

D. Peroxy Acetyl Nitrate

Answer: D

Sol: PAN stands for Peroxy Acetyl Nitrate. It is a significant air pollutant, particularly in urban areas where it is a major component of photochemical smog.

PAN is formed through the reaction of volatile organic compounds (VOCs) with nitrogen oxides (NOx) in the presence of sunlight. It is known for being a strong eye and respiratory irritant and can cause significant harm to plant life. PAN is also a potent greenhouse gas and contributes to the formation of tropospheric ozone, another harmful air pollutant.

Q16. Identify the correct order of the following storage devices A-D as per their increasing data storage capacity:

(A) DVD

(B) Hard Disk

(C) CD-ROM

(D) Blu-Ray Disk

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

A. (C), (A), (D), (B)

B. (A), (C), (D), (B)

C. (B), (D), (C), (A)

D. (C), (A), (B), (D)

Answer: A

Sol: The correct order of these storage devices based on their increasing data storage capacity is:

(C) CD-ROM: A **Compact** Disc-Read **Only Memory** typically stores up to **700 MB** of data.

(**A**) **DVD:** A **Digital** Versatile **Disc** has a storage capacity of **4.7 GB** (single layer) to **8.5 GB** (dual layer).

(D) Blu-Ray **Disc:** A **Blu-Ray Disc** can store **25 GB** (single layer) to **50 GB** (dual layer) and is used for high-definition video and data storage.

(B) Hard **Disk:** A **Hard** Disk **Drive (HDD)** can store data in terabytes (TB), far exceeding the capacity of the other devices listed. Information Booster:

1. **CD-ROM:**

• Used for storing music, software, and small files.

Read-only and limited in capacity compared to modern devices.

2. **DVD**:

• Introduced to store larger files like movies and software.

Available in single-layer and dual-layer formats.

3. **Blu-Ray Disc:**

Designed for high-definition media.

Uses a blue laser for higher precision and more data storage.

4. Hard **Disk**:

Provides massive storage capacities (e.g., 1 TB, 2 TB and beyond).

Commonly used in computers for storing operating systems, applications, and data.

Q17. Decimal equivalent of binary **number** 1100011000 **is**:

A. 790

B. 791

C. 792

D. 793

Answer: C

Sol:

1. **Write the binary number:** 1100011000
2. Assign powers of 2 to each bit (starting from the rightmost bit, which is 2^0):

$$2^9\ 2^8\ 2^7\ 2^6\ 2^5\ 2^4\ 2^3\ 2^2\ 2^1\ 2^0$$

Corresponding to: 1 1 0 0 0 1 1 0 0 0

3. Multiply each bit by its corresponding power of 2:

$$(1 \times 2^9) + (1 \times 2^8) + (0 \times 2^7) + (0 \times 2^6) + (0 \times 2^5) + (1 \times 2^4) + (1 \times 2^3) + (0 \times 2^2) + (0 \times 2^1) + (0 \times 2^0)$$

4. Perform the calculations:

$$(1 \times 512) + (1 \times 256) + (0 \times 128) + (0 \times 64) + (0 \times 32) + (1 \times 16) + (1 \times 8) + (0 \times 4) + (0 \times 2) + (0 \times 1)$$

$$= 512 + 256 + 0 + 0 + 0 + 16 + 8 + 0 + 0 + 0$$

5. Add the results:

$$512 + 256 + 16 + 8 = 792$$

Q18. Kyoto Protocol is an international treaty to reduce
A. E waste
B. Greenhouse gas emissions
C. Ozone Depleting substances
D. All of the above
Answer: B
Sol**:** Kyoto Protocol is an international treaty to reduce greenhouse gas emissions. Kyoto Protocol applies to 6 greenhouse gases; carbon dioxide,
methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride. It is an extension to the 1992 UNFCCC.

Q19. The prescribed permissible noise level, Leq for commercial area at day time **is :**
A. 75 dBA
B. 50 dBA
C. 55 dBA
D. 65 dBA
Answer: D
Sol:

As per EPA

Area code	Category of area zone	Limits in dB	
		day time	night time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	Silence	50	40

Q20. In which year did **the** Bhopal gas **tragedy occur?**
A. 1988
B. 1982
C. 1985
D. 1984
Answer: D
Sol: The correct answer **is: (d) 1984**
Explanation:
The **Bhopal Gas Tragedy** occurred on the night of **2nd-3rd** December **1984** in **Bhopal, Madhya Pradesh**. It was one of the world's worst industrial **disasters**, caused by the **leakage** of methyl isocyanate **(MIC) gas** from the **Union** Carbide **India Limited** (**UCIL)** pesticide plant. The toxic gas spread rapidly, leading to thousands of deaths and long-term health effects on survivors.

Information **Booster**:

• **Casualties:** Over **15,000** people died (official and unofficial estimates).

• **Aftereffects:** Severe health issues like **respiratory** problems, cancer, **birth** defects, and blindness.

• **Responsible Company: Union Carbide** India **Limited (UCIL)**

• **Legal Consequences:** Union Carbide faced lawsuits, and **Dow Chemical** (which later acquired Union Carbide) still faces demands for compensation.

Q21. What is the aim and objective of yoga education?

A. To enable the student to have good health

B. To practice mental hygiene

C. To possess emotional stability

D. All of the above

Answer: D

Sol: The aim and objective of yoga education encompass all the options listed, as it promotes holistic development of the individual. Yoga is not limited to physical postures; it also focuses on mental, emotional, and spiritual well-being.

Objectives of Yoga Education:

1. To enable **the** student to have good **health**: Yoga asanas and pranayama improve physical fitness, flexibility, and immunity.

2. **To** practice mental hygiene: Meditation and breathing techniques enhance mental clarity, focus, and relaxation.

3. To **possess** emotional stability: Yoga helps regulate emotions, reducing stress, anxiety, and promoting inner peace.

By addressing physical, mental, and emotional dimensions, yoga education aims to create a balanced and harmonious life, supporting personal and societal well-being.

Q22. Arrange **the** following universities **in** the chronological order of their establishment.

A. Banaras Hindu University

B. Jawaharlal Nahru University

C. University of Allahabad

D. University of Delhi

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

A. C, A, D, B

B. A, C, D, B

C. A, D, C, B

D. A, C, B, D

Answer: A

Sol: The correct answer is (a) C, A, D, B. The University of Allahabad was established first in 1887, followed by Banaras Hindu University in 1916. The University of Delhi was then established in 1922, and Jawaharlal Nehru University was the most recent, established in 1969. This chronological order reflects the historical development of these prominent Indian institutions.

Information Booster:
- Banaras Hindu University was founded by Madan Mohan Malaviya in 1916, with a strong emphasis on blending Eastern and Western educational philosophies.
- University of Allahabad, also known as the "Oxford of the East," was one of the first universities to be established in India.
- University of Delhi has been distinguished by its high academic standards and a wide array of disciplines.
- Jawaharlal Nehru University, established in 1969, has a strong focus on postgraduate and doctoral level studies and has been recognized for its emphasis on liberal arts and social sciences.

Q23. Given below are **two** statements**:**
Statement **I: In** the Vedic age both men and women had access to education.
Statement II: Woods Despatch (**1854**) recognised for the **first** time that the Government should give "frank and cordial support' to female
education.
In the light of the above statements**.** choose the **correct** answer from the options given below
A. Both Statement I and Statement II are true
B. Both Statement I and Statement II are false
C. Statement I is true but Statement II is false
D. Statement 1 is false but Statement IT is true
Answer: A
Sol**:** Both Statement I and Statement II are true. In the Vedic age, education was indeed accessible to both men and women. Women, known as 'Brahmavadinis,' were allowed to study the Vedas and participate in intellectual debates.
Statement II is also true. Woods Despatch, introduced in 1854 by Sir Charles Wood, was a significant step in the development of education in India during British rule. It emphasized the importance of women's education and acknowledged the role of the government in providing 'frank and cordial support' to it. This was a landmark recognition of the role of government in promoting female education in India.

Q24. Arrange the following chronologically:
A. Secondary Education Commission
B. Kothari Education Commission
C. Establishment of UGC
D. Chattopadhyay Commission
E. University Education Commission
Choose the **correct** answer from the options given below:
A. A, E, B, D, C
B. A, D, C, B, E
C. E, A, C, B, D
D. E, B, D, C, A
Answer: C
Sol**:** The chronological order of these educational commissions is as follows:
1. University Education Commission (E): Established in 1948-49 under Dr. S. Radhakrishnan to study and improve university education in India.

2. Secondary Education Commission (A): Formed in 1952 under Dr. A.L. Mudaliar to look into secondary education and suggest improvements.
3. Establishment of UGC (C): The University Grants Commission (UGC) was established in 1956 to coordinate and promote university education in
India.
4. Kothari Education Commission (B): Formed between 1964-66, it recommended a comprehensive national policy on education, which included the 10+2+3 system.
5. Chattopadhyay Commission (D): The Chattopadhyay Commission was established in 1983 to review the condition and needs of teachers in India. It provided recommendations for improving the quality of teaching and the integration of vocational education.

Q25. Find the wrong term in the given series:
7, 28, 63, 124, 215**,** 342, 511,
Choose the **correct answer** from **the** options given below:
A. 28
B. 63
C. 342
D. 511
Answer: A
Sol:
The correct pattern follows the formula: **n3**± 1 alternating between +1 and -1.
23-17
33 + 1 = 28
43 - 1 = 63
53 - 1 = 124
63 - 1 = 215
73 - 1 = 342
83 - 1 = **511**
Upon checking, 28 should follow the pattern **33** - 1 = **26**, not 28. Hence, the wrong term is 28.