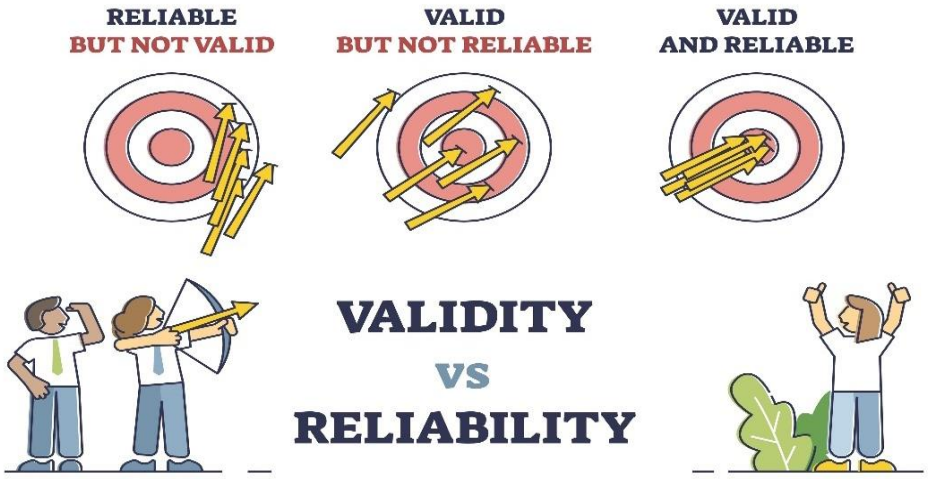
UGC NET Paper 1 Jan 03, 2026 Shift 2 Memory Based Quiz

Q1. Match List I with List II.

List I (Type of Validity)	List II (Description)
A. Construct Validity	I. The degree to which the results of a study can be generalized to other contexts, populations, or times.
B. Content Validity	II. The extent to which a measurement or test corresponds with an external criterion or outcome.
C. Criterion Validity	III. The degree to which a test measures the theoretical construct it claims to measure.
D. External Validity	IV. The extent to which a measurement instrument covers all facets of the concept being measured.

Choose the correct answer from the options given below:
(a) (A)–(III), (B)–(IV), (C)–(II), (D)–(I)
(b) (A)–(II), (B)–(III), (C)–(I), (D)–(IV)
(c) (A)–(IV), (B)–(I), (C)–(III), (D)–(II)
(d) (A)–(I), (B)–(II), (C)–(IV), (D)–(III)
Answer:
A
Sol:
The correct matches for the types of validity are:
A. Construct Validity -> III. The degree to which a test measures the theoretical construct it claims to measure. This is the most complex form of validity, concerned with how well an instrument operationalizes an abstract, theoretical concept (e.g., intelligence, anxiety, motivation).
B. Content Validity -> IV. The extent to which a measurement instrument covers all facets of the concept being measured. This assesses whether the test items are a representative sample of the entire domain or universe of content that the test is intended to cover.
C. Criterion Validity -> II. The extent to which a measurement or test corresponds with an external criterion or outcome. This involves correlating the test score with some external standard (criterion). It can be concurrent (if measured at the same time) or predictive (if the test predicts future performance).
D. External Validity -> I. The degree to which the results of a study can be generalized to other contexts, populations, or times. This relates to the generalizability of the research findings beyond the specific conditions of the study itself.



The correct match sequence is A-III, B-IV, C-II, D-I.

Information Booster:
Construct Validity (A): Demonstrated through techniques like Convergent Validity (test correlates highly with other measures of the same construct) and Discriminant Validity (test does not correlate highly with measures of different constructs).
Content Validity (B): Usually assessed by a panel of subject matter experts (SMEs) who review the test items to ensure adequate coverage and relevance.
Criterion Validity (C): A classic example is correlating entrance exam scores (the measure) with first-year GPA (the criterion) to establish predictive validity.
External Validity (D): Low external validity occurs when the sample is highly unrepresentative or the experimental conditions are highly artificial (e.g., a laboratory setting).

Q2. Match List - I with List - II.

List - I (Research Types)	List - II (Meaning / Purpose)
A. Explanatory Research	I. Research conducted to explore a problem where little is known, often to develop hypotheses
B. Descriptive Research	II. Research that focuses on understanding cause-and-effect relationships and explaining why phenomena occur
C. Exploratory Research	III. Research aimed at describing characteristics of a population or phenomenon accurately
D. Correlational Research	IV. Research that measures the relationship between two or more variables without manipulating them

Choose the correct answer from the options given below:
(a) (A)–(I), (B)–(IV), (C)–(II), (D)–(III)
(b) (A)–(III), (B)–(II), (C)–(IV), (D)–(I)
(c) (A)–(II), (B)–(III), (C)–(I), (D)–(IV)
(d) (A)–(IV), (B)–(I), (C)–(III), (D)–(II)
Answer:
C
Sol:
The correct matches for the types of research and their primary purposes are:
A. Explanatory Research -> II. Research that focuses on understanding cause-and-effect relationships and explaining why phenomena occur. This type of research aims to establish causality, often through experimental designs, to explain the underlying reasons for observed patterns.
B. Descriptive Research -> III. Research aimed at describing characteristics of a population or phenomenon accurately. Descriptive research seeks to answer the questions of who, what, where, when, and how much about a population or situation (e.g., a survey of student demographics).
C. Exploratory Research -> I. Research conducted to explore a problem where little is known, often to develop hypotheses. This is foundational research, typically qualitative, done when the problem is unclear or unstructured. Its goal is to gain preliminary understanding and formulate testable hypotheses for future research.
D. Correlational Research -> IV. Research that measures the relationship between two or more variables without manipulating them. Correlational studies aim to determine the strength and direction of a relationship (association) between variables, but they cannot establish causation.
The correct match sequence is A-II, B-III, C-I, D-IV.
Information Booster:
The three main purposes of research are often classified as Exploration (I), Description (III), and Explanation (II).
Exploratory Research (C) uses methods like literature reviews and in-depth interviews.

Descriptive Research (B) primarily uses surveys and observational methods.
Explanatory Research (A) often uses experimental designs to isolate and test causal links.
Correlational Research (D), while establishing relationships (which may lead to causal hypotheses), is a distinct non-experimental quantitative method.
Additional Information:
Explanatory Research (A) often follows descriptive research, as you must first know what is happening before you can explain why.
A key limitation of Correlational Research (D) is the third-variable problem (a hidden variable may be causing both) and the directionality problem (it's unclear which variable influences the other).
Exploratory Research (C) is crucial in education when investigating new teaching methodologies or technologies where existing literature is scarce.
Descriptive statistics (mean, median, mode) are the primary output of Descriptive Research (B).

Q3. Match the following variables with their most appropriate scale of measurement:

List-I (Variable)	List-II (Scale of Measurement)
1. Military Rank (Captain, Major)	A. Ratio
2. Temperature in Celsius	B. Ordinal
3. Height of individuals	C. Nominal
4. Gender	D. Interval

Codes:
(a) 1-B, 2-D, 3-A, 4-C
(b) 1-D, 2-B, 3-A, 4-C
(c) 1-B, 2-D, 3-C, 4-A
(d) 1-A, 2-C, 3-D, 4-B
Answer:
A
Sol:
Correct Option – (a)
Introduction: The scale of measurement, as classified by psychologist Stanley Smith Stevens, defines the properties of numbers assigned to variables and determines the statistical techniques that can be validly used for analysis. The four levels are Nominal, Ordinal, Interval, and Ratio.
Information Booster:
1. Military Rank (Matches with B - Ordinal): Military ranks have a meaningful order or hierarchy (Captain < Major < Colonel), but the difference between ranks is not quantifiable or equal. Therefore, it represents an Ordinal scale.
2. Temperature in Celsius (Matches with D - Interval): The difference between temperatures is meaningful and equal (e.g., the difference between 20°C and 30°C is the same as between 30°C and 40°C). However, 0°C is an arbitrary point (it does not mean 'no heat'), so ratios are not meaningful (e.g., 20°C is not 'twice as hot' as 10°C). This is characteristic of an Interval scale.
3. Height of individuals (Matches with A - Ratio): Height has a true, absolute zero (meaning 'complete absence of height'), and ratios are meaningful (e.g., a person 180 cm tall is twice as tall as a 90 cm child). This is the strongest level of measurement, the Ratio scale.
4. Gender (Matches with C - Nominal): Gender categories (Male, Female, Other) are used for labeling and grouping only. There is no inherent order, ranking, or quantitative difference between the categories. This is a Nominal scale.
Additional Knowledge: The choice of statistical test is heavily influenced by the scale of measurement. For example, the Mode is the only appropriate measure of central tendency for nominal data, while the

Mean can be used for interval and ratio data. A common mnemonic to remember the order is NOIR (Nominal, Ordinal, Interval, Ratio).

Q4 In the argument, *"Sky flower is fragrant because it is a lotus"*, e.g., *"Whatever is a lotus is fragrant"*, e.g., *"Lotus growing in that pond"*.

Mention the type of fallacy from the following:

(a) Swaroopāsiddha

(b) Ashrayāsiddha

(c) Vyāptyāsiddha

(d) Viruddha

Correct Answer: 2. Ashrayāsiddha

Explanation (in simple terms):

The term *"sky flower"* refers to a **non-existent entity**. Since the subject (āśraya / locus) itself does not exist, the reason (*being a lotus*) cannot meaningfully apply to it.

In Indian logic (Nyāya), this defect is called **Ashrayāsiddha** — *the fallacy of an unreal or unestablished locus*.

Q5. Match the following terms related to experimental research with their definitions:

List-I (Term)	List-II (Definition)
A. Independent Variable	I. The variable that is measured to determine the effect of the treatment.
B. Dependent Variable	II. The variable that the researcher manipulates.
C. Control Group	III. The group that does not receive the treatment.

1. A-II, B-I, C-III

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

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

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

Answer:

A

Sol:

Correct Option – (a)

Introduction: This question tests your fundamental understanding of the core components of any experimental research design.

Information Booster:

A. Independent Variable (IV): This is the variable that the researcher actively manipulates or changes to see if it influences the dependent variable. It is the "cause" in a cause-and-effect relationship. This matches with List-II (II).

B. Dependent Variable (DV): This is the variable that the researcher measures to see if it is affected by the independent variable. It is the "effect" or "outcome" that is being studied. This matches with List-II (I).

C. Control Group: In a pure experimental design, the control group is the group that does not receive the experimental treatment or receives a standard treatment. Its purpose is to provide a baseline for comparison to the experimental group. This matches with List-II (III).

Additional Knowledge: An experimental group is the group that receives the treatment or the manipulated independent variable. A placebo is often used in a control group to ensure that any psychological effects of receiving a treatment are accounted for.

Q6. The share of renewable energy in the energy mix of our country sought to be achieved by 2030 is now
(a) 35%
(b) 40%
(c) 45%
(d) 50%
Answer:
D
Sol:
The Government of India has committed to achieving 50% of its installed energy capacity from non-fossil fuel sources by 2030 as part of its updated Nationally Determined Contributions (NDCs) under the Paris Agreement. This goal reflects India's focus on renewable energy expansion to mitigate climate change impacts.
Information Booster: This commitment is a cornerstone of India's transition towards a low-carbon economy. It aligns with global climate goals, particularly the reduction of greenhouse gas emissions. India's renewable energy targets include extensive solar, wind, and hydroelectric power generation. The country is among the top performers in renewable energy installation globally, with significant strides in solar capacity through initiatives like the International Solar Alliance.

Q7. Which of the following SDGs is most directly focused on addressing the primary cause of ocean acidification?
(a) SDG 6: Clean Water and Sanitation
(b) SDG 7: Affordable and Clean Energy
(c) SDG 13: Climate Action
(d) SDG 14: Life Below Water
Answer:
C
Sol:
Correct Option – (c)
Introduction: This is a factual and analytical question that tests the understanding of the cause-and-effect relationships between different environmental issues and the specific SDGs designed to tackle their root causes.
Information Booster:
Ocean acidification is primarily caused by the uptake of excess carbon dioxide (CO_2) from the atmosphere by the oceans. This is a direct consequence of anthropogenic climate change.
Therefore, the goal that aims to combat climate change at its root by taking urgent action to reduce greenhouse gas emissions is SDG 13: Climate Action.
While SDG 14 (Life Below Water) aims to conserve the oceans and mitigate the *effects* of acidification, SDG 13 is targeted at the *primary cause*.
SDG 6 deals with freshwater, and SDG 7, while promoting renewable energy (which can help reduce emissions), is not as directly and comprehensively focused on the climate system as SDG 13.
Additional Knowledge:
The main international agreement for implementing SDG 13 is the Paris Agreement under the UNFCCC, which aims to limit global warming.

Q8. Which one of the following pollutants is responsible for acid rain formation?
(a) CH4 (Methane)

(b) C6H6 (Benzene)
(c) SO2 (Sulphur dioxide)
(d) CO (carbon monoxide)
Answer:
C
Sol:
Acid rain is primarily caused by the release of sulfur dioxide (SO2) and nitrogen oxides (NOx) into the atmosphere. When these gases react with water vapor, oxygen, and other chemicals in the atmosphere, they form sulfuric acid (H2SO4) and nitric acid (HNO3), which then fall to the ground as acid rain.
Information booster: Methane (CH4), benzene (C6H6), and carbon monoxide (CO) are not significant contributors to acid rain formation. Therefore, the correct answer is (c) SO2 (Sulphur dioxide).

Q9. Match the Learning Theory (List I) with its fundamental Educational Principle (List II):

List I (Learning Theory)	List II (Fundamental Principle)
A. Behaviorism	I. Learners actively build their own understanding and knowledge.
B. Cognitivism	II. Learning is a process of forming associations between stimuli and responses.
C. Constructivism	III. Learning involves internal mental processes like encoding, storage, and retrieval.
D. Experiential Learning	IV. Learning is a holistic process of making meaning from direct experience.

1. A-II, B-III, C-I, D-IV
(b) A-III, B-II, C-IV, D-I
(c) A-II, B-I, C-III, D-IV
(d) A-IV, B-III, C-I, D-II
Answer:
A
Sol:
Correct Option – (a)
INTRODUCTION:
These four theories represent major paradigm shifts in the understanding of how humans learn, ranging from external observable actions to internal mental processing and networked knowledge acquisition.
INFORMATION BOOSTER:
Behaviorism (A-II): Focuses on observable behavior and sees learning as a change in behavior due to environmental reinforcement, establishing Stimulus-Response associations (e.g., Pavlov, Skinner).
Cognitivism (B-III): Focuses on the internal mental processes that intervene between stimulus and response, comparing the mind to a computer that processes information (e.g., Piaget, Bruner).
Constructivism (C-I): Posits that learners do not passively receive information but actively build their own understanding based on existing knowledge and experience (e.g., Piaget, Vygotsky).
Experiential Learning (D-IV): Based on David Kolb's model, it sees learning as a holistic process where knowledge is continuously derived from and tested in experiences, emphasizing the cyclical process of doing and reflecting.
ADDITIONAL KNOWLEDGE:
The shift from Behaviorism to Cognitivism is often referred to as the Cognitive Revolution. Constructivism is further divided into Individual (or Psychological) Constructivism (e.g., Piaget, focusing on internal construction) and Social Constructivism (e.g., Vygotsky, focusing on the role of culture and social interaction).

Q10. Match the Events of Instruction (List I) from Robert Gagné's nine events with their purpose in the Information Processing Phase (List II):

List I (Event of Instruction)	List II (Associated Information Processing Phase)
A. Gaining attention	I. Stimulating the retrieval of prior knowledge to attach new ideas.
B. Stimulating recall of prior learning	II. Moving information from short-term to long-term memory.
C. Presenting the content	III. Making the learning goal salient and guiding selective perception.
D. Providing learning guidance	IV. Enhancing comprehension through meaningful context and examples.

1. A-III, B-I, C-IV, D-II
(b) A-I, B-III, C-II, D-IV
(c) A-III, B-IV, C-I, D-II
(d) A-II, B-I, C-III, D-IV
Answer:
A
Sol:
Correct Option – (a)
INTRODUCTION:
Robert Gagné's Nine Events of Instruction provide a systematic sequence for designing instructional activities that align with and support the human brain's internal Information Processing model of learning (reception, storage, retrieval).
INFORMATION BOOSTER
Gaining attention (A-III): Corresponds to the reception phase. It aims at making the learning goal salient and guiding the learner to selectively perceive the instruction.
Stimulating recall of prior learning (B-I): Corresponds to the retrieval phase. It helps learners access relevant existing schemas to link to the new information.
Presenting the content (C-IV): Corresponds to the acquisition phase. It provides the core information, using various media to enhance comprehension.
Providing learning guidance (D-II): Corresponds to the retention phase. It helps the learner encode the new information into memory, often through examples, non-examples, or practice (which facilitates moving information from short-term to long-term memory).
ADDITIONAL KNOWLEDGE:
The later events in Gagné's model include Eliciting performance (response), Providing feedback (reinforcement), and Assessing performance (retrieval/transfer), ensuring that the learning is transferred to real-world contexts and skills are internalized.

Q11. Which of the following is an example of negative feedback in the context of climate change?
(a) Oceans remove carbon dioxide from the air
(b) Warming increases water vapour in air
(c) Snow cover loss and iceshelf melt reduce sun's reflection
(d) Global temperature increases due to global warming
Answer:
A
Sol:

Oceans removing carbon dioxide from the air is an example of negative feedback in the context of climate change. Negative feedback mechanisms work to counteract changes in a system. In this case, as carbon dioxide levels rise, oceans absorb more CO2, which can reduce the amount of this greenhouse gas in the atmosphere, helping to moderate the warming effect.
Information Booster:
Negative feedback tends to stabilize a system by reducing the impact of changes. In climate, examples include the ocean's carbon absorption and increased cloud cover reflecting sunlight.
Positive feedback amplifies changes in the system, like the increased absorption of heat due to ice melt or higher water vapor levels.
Oceans as carbon sinks play a significant role in climate regulation by absorbing about 25% of CO2 emissions.
Albedo effect: The loss of reflective surfaces like ice and snow leads to greater heat absorption by the Earth's surface.
Additional Knowledge:
Option B (Water vapor increase): Water vapor is a greenhouse gas, so its increase due to warming leads to further warming, a classic example of positive feedback.
Option C (Loss of snow and ice): This reduces the Earth's albedo, meaning less sunlight is reflected and more is absorbed, leading to more warming, a positive feedback mechanism.
Option D (Global temperature increase): This is a direct consequence of global warming rather than a feedback mechanism.

Q12. What is the difference between the total number of schools participating in exams from School B in the year 2020 and 2022?
The table below shows the percentage of male students and the difference in the number of male and female students who took the board exams in six different schools (A-F) over four distinct years (2019-2022). Based on the data provided in the table, answer the following questions:
School Wise details of number of students

year	2019		2020		2021		2022	
Schools	Boys (%)	Difference (*)	Boys (%)	Difference (*)	Boys (%)	Difference (*)	Boys (%)	Difference (*)
A	70	136	60	70	72	184	60	86
B	40	84	48	18	45	48	60	90
C	44	60	55	24	60	52	56	24
D	44	84	57	84	55	72	65	192
E	75	280	60	136	70	264	66	224
F	44	90	56	96	65	228	45	84

Where Difference (*) means the difference between the numbers of male and female students.
(a) 0
(b) 17
(c) 29
(d) 35
Answer:
A
Sol:
Let the total number of students in school B in 2020 = 100

Number of boys = 48

Then, number of girls = 100 – 48 = 52

Difference = 52 – 48 = 4

ATQ,

4% = 18

$1\% = \frac{18}{4} = \frac{9}{2}$

$100\% = 100 \times \frac{9}{2} = 450$

Let the number of students in school B in year 2022 = 100

Number of boys = 60

Then, number of girls = 40

Difference = 60 – 40 = 20

ATQ,

20% = 90

$1\% = \frac{9}{2}$

$100\% = 100 \times \frac{9}{2} = 450$

So the difference between total number of students = 450 – 450 = 0

Q13. In 2019, by what percentage is the number of students taking exams from School F more than the number of students taking exams from the school C?

The table below shows the percentage of male students and the difference in the number of male and female students who took the board exams in six different schools (A-F) over four distinct years (2019-2022). Based on the data provided in the table, answer the following questions:

School Wise details of number of students

year	2019		2020		2021		2022	
Schools	Boys (%)	Difference (*)	Boys (%)	Difference (*)	Boys (%)	Difference (*)	Boys (%)	Difference (*)
A	70	136	60	70	72	184	60	86
B	40	84	48	18	45	48	60	90
C	44	60	55	24	60	52	56	24
D	44	84	57	84	55	72	65	192
E	75	280	60	136	70	264	66	224
F	44	90	56	96	65	228	45	84

Where Difference (*) means the difference between the numbers of male and female students.
(a) 40%
(b) 66.66%
(c) 20%
(d) 50%
Answer:
D
Sol:
Let the total number of students in school C in 2019 = 100
Number of boys = 44
Then number of girls = 100 – 44 = 56
Difference = 56 – 44 = 12
ATQ,

12% = 60

$1\% = \frac{60}{12} = 5$

100% = 500

Let the total number of students in school F in 2019 = 100

Number of boys = 44

Number of girls = 100 – 44 = 56

Difference = 56 – 44 = 12

12% = 90

$1\% = \frac{90}{12} = \frac{15}{2}$

$100\% = \frac{15}{2} \times 100 = 750$

Difference between number of students of C and F = 750 – 500 = 250

Required percentage $= \frac{250}{500} \times 100 = 50\%$

Q14. What is the average number of boys taking exams from School E over all four years combined?
The table below shows the percentage of male students and the difference in the number of male and female students who took the board exams in six different schools (A-F) over four distinct years (2019-2022). Based on the data provided in the table, answer the following questions:
School Wise details of number of students

year	2019		2020		2021		2022	
Schools	Boys (%)	Difference (*)	Boys (%)	Difference (*)	Boys (%)	Difference (*)	Boys (%)	Difference (*)
A	70	136	60	70	72	184	60	86
B	40	84	48	18	45	48	60	90
C	44	60	55	24	60	52	56	24
D	44	84	57	84	55	72	65	192
E	75	280	60	136	70	264	66	224
F	44	90	56	96	65	228	45	84

Where Difference (*) means the difference between the numbers of male and female students.
(a) 424
(b) 434
(c) 438
(d) 454
Answer:
C
Sol:
Number of students in school E in 2019 = 420
Number of students in school E in 2020 = 408

Number of students in school E in 2021 = 462

Number of students in school E in 2022 = 462

Average = $\frac{420+408+462+462}{4} = \frac{1752}{4} = 438$

Q15. What is the ratio of the number of boys taking exams from School C in 2019 to the number of girls taking exams from the school F in 2022?
The table below shows the percentage of male students and the difference in the number of male and female students who took the board exams in six different schools (A-F) over four distinct years (2019-2022). Based on the data provided in the table, answer the following questions:
School Wise details of number of students

year	2019		2020		2021		2022	
Schools	Boys (%)	Difference (*)	Boys (%)	Difference (*)	Boys (%)	Difference (*)	Boys (%)	Difference (*)
A	70	136	60	70	72	184	60	86
B	40	84	48	18	45	48	60	90
C	44	60	55	24	60	52	56	24
D	44	84	57	84	55	72	65	192
E	75	280	60	136	70	264	66	224
F	44	90	56	96	65	228	45	84

Where Difference (*) means the difference between the numbers of male and female students.
(a) 5:4
(b) 8:7

(c) 9:8
(d) 10:9
Answer:
D
Sol:
Solution:
Let the total number of students in school C in 2019 = 100
Number of boys = 44
Then number of girls = 100 – 44 = 56
Difference = 56 – 44 = 12
ATQ,
12% = 60
1% = 60 / 12 = 5
100% = 500
Number of boys in school C in 2019 = 220
Number of girls in school F in 2022 = 462
Ratio = 220 : 198 = 10 : 9

Q16. What is the total number of girls taking exams from all six schools in the year 2020?
The table below shows the percentage of male students and the difference in the number of male and female students who took the board exams in six different schools (A-F) over four distinct years (2019-2022). Based on the data provided in the table, answer the following questions:
School Wise details of number of students

year	2019		2020		2021		2022	
Schools	Boys (%)	Difference (*)	Boys (%)	Difference (*)	Boys (%)	Difference (*)	Boys (%)	Difference (*)
A	70	136	60	70	72	184	60	86
B	40	84	48	18	45	48	60	90
C	44	60	55	24	60	52	56	24
D	44	84	57	84	55	72	65	192
E	75	280	60	136	70	264	66	224
F	44	90	56	96	65	228	45	84

Where Difference (*) means the difference between the numbers of male and female students.
(a) 1364
(b) 1386
(c) 1404
(d) 1414
Answer:
A
Sol:
number of girls in A in 2020 = 140
Number of girls in B in 2020 = 234
Number of girls in C in 2020 = 108
Number of girls in D in 2020 = 258
Number of girls in E in 2020 = 272
Number of girls in F in 2020 = 352

Total number of girls = 140 + 234 + 108 + 258 + 272 + 352 = 1364

Q17. If the number of students who have passed from B and C are equal, then what is the ratio between the number of failed students from B and C, respectively?
Read the given passage and answer the following questions
The following table presents data about academic performance of students showing pass percentage (%) and ratio of male to female among passed and failed students of six different colleges A-F in a city.
Based on the data in the table, answer the questions 1-5:
College-wise Academic Performance of Students

College	Pass percentage	Ratio of Male to Female in pass students	Ratio of Male to Female in fail students
A	40%	12:13	12:5
B	55%	5:3	11:14
C	70%	7:5	5:3
D	45%	4:1	7:3
E	50%	2:1	1:2
F	37.50%	3:2	2:1

(a) 13:23
(b) 23:13
(c) 11:21
(d) 21:11
Answer:
D
Sol:
Given:
The data about academic performance of students showing pass percentage and ratio of male to female among passed and failed students of six different colleges A-F in a city
The number of students passed from B and C are equal
Solution:
Let the number of students passed from B and C college be x
Then in college B number of students failed = 100 -55 = 45%
55% ≡ x
Number of students failed
$= 45\% = \frac{x}{55} \times 45$
In college C the number of students failed = 100-70 = 30%
Here students failed =
$\frac{x}{70} \times 30$
= 3x/7
Ratio of students failing in B to C
$\frac{45x}{55} \div \frac{3x}{7} = \frac{45x}{55} \times \frac{7}{3x} = \frac{21}{11}$

Q18. If the ratio of students in B and C is 2:3, then what is the ratio between the number of males who passed from B and the number of females who failed from C?
Read the given passage and answer the following questions

The following table presents data about academic performance of students showing pass percentage (%) and ratio of male to female among passed and failed students of six different colleges A-F in a city. Based on the data in the table, answer the questions 1-5:

College-wise Academic Performance of Students

College	Pass percentage	Ratio of Male to Female in pass students	Ratio of Male to Female in fail students
A	40%	12:13	12:5
B	55%	5:3	11:14
C	70%	7:5	5:3
D	45%	4:1	7:3
E	50%	2:1	1:2
F	37.50%	3:2	2:1

(a) 2:1 2:1
(b) 1:2 1:2
(c) 55:27
(d) 27:55
Answer:
C
Sol:
Given:
The data about academic performance of students showing pass percentage and ratio of male to female among passed and failed students of six different colleges A-F in a city
The ratio of students in B and C is 2:3
Solution:
Let the number of students in B and C be 2x and 3x respectively
Ratio of Male to Female who passed in college B = 5:3
Then the number of males who passed from B =

$$2x \times \left(\frac{55}{100}\right) \times \left(\frac{5}{8}\right) = \frac{11x}{16}$$

Ratio of Male to Female who failed in college C = 5:3
Then the number of females who failed in college C =

$$3x \times \left(\frac{30}{100}\right) \times \left(\frac{3}{8}\right) = \frac{27x}{80}$$

Ratio =

$$\frac{11x}{16} \times \frac{80}{27x} = \frac{55}{27}$$

Q19. Find the ratio of number of male to female students in D?
Read the given passage and answer the following questions
The following table presents data about academic performance of students showing pass percentage (%) and ratio of male to female among passed and failed students of six different colleges A-F in a city. Based on the data in the table, answer the questions 1-5:
College-wise Academic Performance of Students

College	Pass percentage	Ratio of Male to Female in pass students	Ratio of Male to Female in fail students
A	40%	12:13	12:5
B	55%	5:3	11:14
C	70%	7:5	5:3
D	45%	4:1	7:3
E	50%	2:1	1:2
F	37.50%	3:2	2:1

(a) 149:51
(b) 51:149
(c) 3:1 3:1
(d) 1:3 1:3
Answer:
A
Sol:
Given:
The data about academic performance of students showing pass percentage and ratio of male to female among passed and failed students of six different colleges A-F in a city
Solution:
Let the number of students in D = 100
Then the number of students passed = 45% of 100 = 45
Ratio of Male to Female who passed in college D = 4:1
Sum of ratio = 4+1 = 5
So the number of males who passed =

$$\frac{4}{5} \times 45 = 36$$

The number of females = 45-36 = 9
The number of students who failed = 100-45 = 55
Ratio of Males to Females who failed in D = 7:3
Sum of ratio = 7+3 =10
Number of males who failed =

$$\frac{7}{10} \times 55 = 38.5$$

Number of females = 55-38.5 = 16.5
Total number of males = 36+38.5 = 74.5
Total number of females = 9 + 16.5 = 25.5
Ratio of males to females =

$$\frac{74.5}{25.5} = \frac{149}{51}$$

Q20. What is the pass percentage of male students in College A?
Read the given passage and answer the following questions
The following table presents data about academic performance of students showing pass percentage (%) and ratio of male to female among passed and failed students of six different colleges A-F in a city. Based on the data in the table, answer the questions 1-5:

College-wise Academic Performance of Students

College	Pass percentage	Ratio of Male to Female in pass students	Ratio of Male to Female in fail students
A	40%	12:13	12:5
B	55%	5:3	11:14
C	70%	7:5	5:3
D	45%	4:1	7:3
E	50%	2:1	1:2
F	37.50%	3:2	2:1

(a) $17\frac{1}{4}\%$
(b) 20%
(c) $19\frac{1}{5}\%$
(d) $20\frac{4}{5}\%$
Answer:
C
Sol:
Given:
The data about academic performance of students showing pass percentage and ratio of male to female among passed and failed students of six different colleges A-F in a city
Solution:
Let the number of students in A = 100
Then the number of students passed = 40% of 100 = 40
Ratio of Male to Female who passed in college A = 12:13
Sum of ratio =12+13=25
So the number of males who passed =
$\frac{12}{25} \times 40 = \frac{96}{5} = 19\frac{1}{5}$
Pass Percentage of male students =
$\left(19\frac{1}{5}\right) \div 100 \times 100 = 19\frac{1}{5}\%$

Q21. .If the number of male students who have passed from D and F are equal, then what is the ratio of number of students in D and F respectively?
Read the given passage and answer the following questions
The following table presents data about academic performance of students showing pass percentage (%) and ratio of male to female among passed and failed students of six different colleges A-F in a city.
Based on the data in the table, answer the questions 1-5:
College-wise Academic Performance of Students

College	Pass percentage	Ratio of Male to Female in pass students	Ratio of Male to Female in fail students
A	40%	12:13	12:5
B	55%	5:3	11:14
C	70%	7:5	5:3
D	45%	4:1	7:3
E	50%	2:1	1:2
F	37.50%	3:2	2:1

(a) 8:5
(b) 3:8
(c) 8:3
(d) 5:8
Answer:
D
Sol:
Given:
The data about academic performance of students showing pass percentage and ratio of male to female among passed and failed students of six different colleges A-F in a city
Solution:
Let the number of male students passed from D and F be x
The number of students passed from D = 45%
Ratio of Males to Females who passeed in D = 4:1
The total number of students =
$x \times \left(\frac{5}{4}\right) \times \left(\frac{100}{45}\right) = \frac{25x}{9}$
The number of students passed from F = 37.5%
Ratio of Males to Females who passed in F = 3:2
Then the total number of students =
$x \times \left(\frac{5}{3}\right) \times \left(\frac{100}{37.5}\right) = \frac{40x}{9}$
Ratio of number of students in D and F =
$\frac{25x}{9} \times \frac{9}{40x} = \frac{5}{8}$

Q22. Which of the following are true about Class I and Class II ozone-depleting substances? A. Ozone-depleting potential of Class-I substances is far more than Class II B. Ozone-depleting potential of Class II substances is far more than Class I C. All chlorofluorocarbons belong to Class II ozone-depleting substances D. HCFC-21 belongs to Class II ozone-depleting substance E. Class-I contains fully halogenated gases
Choose the correct answer from the options given below:
(a) A, D, and E only
(b) B, C, and E only
(c) A, C, and D only
(d) C, D, and E only
Answer:
A
Sol:
Class I and Class II ozone-depleting substances (ODS) are categorized based on their ozone-depleting potential (ODP) and chemical composition:

1. A. Ozone-depleting potential of Class-I substances is far more than Class II: Correct. Class I substances, such as chlorofluorocarbons (CFCs) and halons, have a significantly higher ODP compared to Class II substances.
2. D. HCFC-21 belongs to Class II ozone-depleting substance: Correct. HCFCs (hydrochlorofluorocarbons) are classified as Class II substances due to their lower ODP compared to CFCs.
3. E. Class-I contains fully halogenated gases: Correct. Class I substances, such as CFCs, are fully halogenated hydrocarbons, meaning all hydrogen atoms are replaced by halogens like chlorine or fluorine.
Thus, the correct options are: A, D, and E.
Information Booster:
1. Class I substances: Include CFCs, halons, carbon tetrachloride, and methyl chloroform. These have a high ozone-depleting potential and are phased out globally under the Montreal Protocol.
2. Class II substances: Primarily HCFCs, with a lower ODP, are transitional substitutes for CFCs but are also being phased out.
3. The Montreal Protocol has been instrumental in phasing out ODS to protect the ozone layer.
4. ODS contribute to ozone layer thinning, increasing ultraviolet (UV) radiation reaching Earth, leading to health and environmental hazards.
5. Alternatives like hydrofluorocarbons (HFCs) are non-ozone-depleting but may have high global warming potential (GWP).
Additional Knowledge:
1. B. Ozone-depleting potential of Class II substances is far more than Class I: Incorrect. Class II substances, like hydrochlorofluorocarbons (HCFCs), have a much lower ODP than Class I substances.
2. C. All chlorofluorocarbons belong to Class II ozone-depleting substances: Incorrect. All chlorofluorocarbons (CFCs) belong to Class I substances, not Class II.

Q23. A 30 dB increase in noise pollution level represents.
(a) 30-fold increase in sound intensity
(b) 100- fold increase in sound intensity
(c) 1000- fold increase in sound intensity
(d) 15-fold increase in sound intensity
Answer:
C
Sol:
The dB scale is logarithmic, and each 10 dB increase corresponds to a 10-fold increase in sound intensity. Therefore, a 30 dB increase represents a 10 x 10 x 10 = 1000-fold increase in sound intensity
1. Logarithmic Scale: The decibel (dB) scale used to measure sound levels is logarithmic, not linear. This means that each increase of 10 dB represents a tenfold increase in intensity.
2. Reference Point: The dB scale is based on a reference point, which is often the quietest sound that can be detected by the average human ear, referred to as the threshold of hearing. This threshold is set at 0 dB.
3. Relation to Intensity: The intensity of a sound wave, which is the amount of energy it carries per unit area, is what the dB scale measures. An increase of 10 dB corresponds to a tenfold increase in intensity.

Q24. Match the type of Categorical Proposition (List I) with its corresponding distribution of terms (List II):

List I (Proposition)	List II (Distributed Terms)
A. All S is P (Universal Affirmative)	I. Both Subject and Predicate are distributed.
B. No S is P (Universal Negative)	II. Only the Subject term is distributed.
C. Some S is P (Particular Affirmative)	III. Neither Subject nor Predicate is distributed.
D. Some S is not P (Particular Negative)	IV. Only the Predicate term is distributed.

Options:
(a) A-II, B-I, C-III, D-IV
(b) A-I, B-II, C-IV, D-III
(c) A-II, B-IV, C-III, D-I
(d) A-III, B-II, C-I, D-IV
Answer:
A
Sol:
Correct Option – (a)
Introduction
"Distribution" refers to whether a proposition makes a statement about every member of a class. Understanding which terms are distributed is the "secret key" to solving almost all formal fallacies in syllogisms.
Information Booster
A (All S is P): Distributes the Subject only. It says something about every "S" but not every "P".
E (No S is P): Distributes Both. It excludes every "S" from "P" and every "P" from "S".
I (Some S is P): Distributes Neither. It only refers to at least one member of each class.
O (Some S is not P): Distributes the Predicate only. It excludes some "S" from the *entire* class of "P".
Additional Knowledge
To remember this for the exam, use the mnemonic "ASEB INOP":
A distributes Subject.
E distributes Both.
I distributes None.
O distributes Predicate.

Q25. Which of the following is NOT a characteristic of a valid hetu (middle term) in Nyāya syllogism?
(a) Pakṣadharmatā
(b) Sapakṣasattva
(c) Asiddha
(d) Abādhita
Answer:
C
Sol:
Asiddha (C) is not a characteristic of a valid hetu but rather a fallacy (hetvābhāsa) where the middle term is unproved or invalid.
Information booster
Characteristics of a Valid Hetu (Middle Term) in Nyāya Syllogism
(a) Pakṣadharmatā
- Thehetumust be present in the minor term (pakṣa).

(b) Sapakṣasattva
- Thehetumust be present in all positive cases where the major term (sādhya) exists.

(c) Vipakṣasattva
- Thehetumust beabsent in all negative caseswhere the major term is absent.

(d) Abādhita
- The hetu must be non-incompatible with the minor term

5. Aviruddha
- Thehetumustnot be counteredby other valid evidence.

Q26.
Statement-I: National Council for Teacher Education (NCTE) was made a statutory body by the Act of Parliament in 1993.
Statement-II: Dr. S. Radhakrishnan was the Chairman of University Education Commission set up in 1948.
In the light of the above statements, choose the most appropriate answer from the options given below:
Given below are two statements:
(a) Both Statement I and Statement II are correct.
(b) Both Statement I and Statement II are incorrect.
(c) Statement I is correct but Statement II is incorrect.
(d) Statement I is incorrect but Statement II is correct.
Answer:
A
Sol:
Both statements are correct. The National Council for Teacher Education (NCTE) was made a statutory body by an Act of Parliament in 1993, and Dr. S. Radhakrishnan was indeed the Chairman of the University Education Commission set up in 1948.
Statement I: NCTE was established to regulate and ensure the quality of teacher education in India.
Statement II: Dr. S. Radhakrishnan, a renowned philosopher and statesman, chaired the commission to reform and improve university education in India.

Q27. Examine the given argument and choose the correct name of the fallacy from the provided codes.
All horses are four footed animals.
No oxen are horse.
∴ No oxen are four footed animal.
Which of the following fallacies is present in the given argument?
(a) Fallacy of illicit major
(b) Fallacy of illicit middle
(c) Fallacy of illicit minor
(d) None of these
Answer:
A
Sol:
All horses are four-footed animals. (Major Premise)
No oxen are horses. (Minor Premise)
∴ No oxen are four-footed animals. (Conclusion)
Standard Form:
Major Term (P): four-footed animals (predicate of conclusion)
Minor Term (S): oxen (subject of conclusion)
Middle Term (M): horses

Structure:
All M are P
No S are M
∴ No S are P
Checking Validity:
Distribution Rules:
In the conclusion ("No S are P"), both S and P are distributed.
In the premises:
"All M are P" - M is distributed, P is not.
"No S are M" - Both S and M are distributed.
Fallacy Identification:
The major term (P) is distributed in the conclusion but not in the premises. This violates the rule that "no term may be distributed in the conclusion if it was not distributed in the premises."
This specific violation is called theFallacy of Illicit Major.
Information booster
Illicit Middle: Not applicable here because the middle term ("horses") is distributed in the first premise.
Illicit Minor: Not applicable because the minor term ("oxen") is properly distributed in both the premise and conclusion.

Q28. Which of the following statements are sub-contraries?
A. All sparrows are birds.
B. No sparrows are birds.
C. Some sparrows are birds.
D. Some sparrows are not birds.
(a) C and D Only
(b) B and D Only
(c) A and B Only
(d) B and C Only
Answer:
A
Sol:
Introduction: This question asks to identify which of the given statements are "sub-contraries." In classical logic, particularly within the framework of the Square of Opposition, sub-contrary is a specific relationship between two types of propositions.
Information Booster: Let's first classify each statement according to the standard forms of categorical propositions:

- A. All sparrows are birds.
  - This is a Universal Affirmative (A) proposition. (All S are P)
- B. No sparrows are birds.
  - This is a Universal Negative (E) proposition. (No S are P)
- C. Some sparrows are birds.
  - This is a Particular Affirmative (I) proposition. (Some S are P)
- D. Some sparrows are not birds.
  - This is a Particular Negative (O) proposition. (Some S are not P)

Now, let's define sub-contrary statements: Two propositions are sub-contraries if they are both particular propositions (I and O) and they cannot both be false at the same time, but they can both be true.
Applying this definition to our classified statements:

- The particular propositions are C (Some sparrows are birds) and D (Some sparrows are not birds). Therefore, C. Some sparrows are birds, and D. Some sparrows are not birds are sub-contrary statements.

Q29. The National Education Policy (2020) has recommended the replacement of the UGC by an umbrella organisation, the Higher Education Commission of India (HECI) with its four Verticals, namely-
(A) National Higher Educational Regulatory Council
(B) General Educational Council
(C) Medical Council of India
(D) National Accreditation Council.
(E) Higher Education Grants Council.
Choose the most appropriate answer from the options given below:
(a) A, B, C, D Only
(b) B, C, D, E Only
(c) A, C, D, E Only
(d) A, B, D, E Only
Answer:
D
Sol: The National Education Policy (2020) recommends the establishment of the Higher Education Commission of India (HECI) to replace the University Grants Commission (UGC). The HECI will be an overarching regulatory body for higher education in India, excluding medical and legal education. It is proposed to have four distinct verticals, which are:
1. National Higher Educational Regulatory Council (NHERC): This will regulate higher education institutions in terms of standards and norms.
2. General Education Council (GEC): This council will define the standards for higher education institutions and design the expected learning outcomes.
3. National Accreditation Council (NAC): This vertical will handle the accreditation of higher education institutions, ensuring quality benchmarks.
4. Higher Education Grants Council (HEGC): This body will replace the UGC's function of disbursing grants to higher education institutions.
The Medical Council of India (MCI) is not part of the HECI, as the regulation of medical education falls under separate entities.
Information Booster 1. HECI is expected to streamline regulation and improve the quality of higher education across India, replacing the UGC.
2. NHERC will focus on light but tight regulation to ensure that institutions meet minimum standards.
3. The GEC will work towards the development of National Higher Education Qualification Framework (NHEQF), aligned with National Skills Qualifications Framework (NSQF).
4. NAC will ensure that educational institutions are evaluated based on their performance and quality, pushing for continuous improvement.

Q30. Match LIST–I with LIST–II

LIST–I (n, p)	LIST–II (Mean and SD)
A. n = 10, p = 0.4	I. 2.4 and 1.385
B. n = 6, p = 0.3	II. 1.8 and 1.095
C. n = 12, p = 0.2	III. 4.0 and 1.549
D. n = 8, p = 0.5	IV. 4.0 and 1.414

1. A–II, B–III, C–I, D–IV
(b) A–III, B–II, C–I, D–IV
(c) A–II, B–I, C–IV, D–III
(d) A–IV, B–III, C–I, D–II
Answer:
B
Sol:
Correct Answer: (b)
Solution:
Mean = np ; SD = sqrt(npq)
• A: 10×0.4 = 4.0; SD = √2.4 = 1.549 → III
• B: 6×0.3 = 1.8; SD = √1.26 = 1.095 → II
• C: 12×0.2 = 2.4; SD = √1.92 = 1.385 → I
• D: 8×0.5 = 4.0; SD = √2.0 = 1.414 → IV
Correct mapping → A–III, B–II, C–I, D–IV

Q31. Which of the following numbers will replace the question mark (?) in the given series?
A2B , B3D, C5F, ? E11
(a) C7H
(b) D7M
(c) D7F
(d) D7H
Answer:
D
Sol:
Given Series:
A2B , B3D , C5F , ? , E11
Solution:
Step-by-step Analysis:
First Letters: A, B, C, ?, E → They are in alphabetical order:
A +1→, B +1→, C+1→, D +1→, E +1→ → So the missing first letter is D.
Middle Digits: 2, 3, 5, ?, 11 → These are all prime numbers.
Prime sequence: 2 , 3 , 5 , 7 , 11 → So the missing number is 7.
Last Letters: B, D, F, ?, ? → The letters are increasing by +2 in alphabet position:
B +2 → , D +2→, F +2→, H +2→, J +2→ → So the missing letter is H.
The missing term is D7H

Q32. Identify the correct chronological order of the following British-era education policies:
I. Macaulay's Minute
II. Charter Act of 1813
III. Foundation of Calcutta Madrasa
IV. William Bentinck's Resolution
Options:
(a) B, D, C, A
(b) D, B, C, A
(c) B, C, D, A
(d) C, B, A, D

Answer:
A
Sol:
The correct chronological order (oldest to newest) is: B (1916), D (1921/1951), C (1922), A (1974).
Information Booster:
B. Banaras Hindu University (1916): It was established through the concerted efforts of Pandit Madan Mohan Malaviya and is one of the oldest and largest residential universities in Asia.
D. Visva-Bharati University (1921): Although founded in 1921, its status as a Central University was formalized in 1951, recognizing its unique educational philosophy and role in national development.
C. University of Delhi (1922): Initially focused on unitary, teaching, and residential functions, it later became a large affiliating university, playing a key role in the capital's education.
A. University of Hyderabad (1974): Established later in the post-independence era to promote advanced learning and research, particularly in the Southern region, under the UGC Act, 1956.
The sequence reflects the evolution of Central Universities, starting with institutions of national importance (BHU), those with cultural significance (Visva-Bharati), the national capital's university (DU), and modern research-intensive universities (UoH).
Additional Information:
The establishment of BHU (B) was a major indigenous effort, independent of British government initiative, to blend modern science with Indian culture.
Visva-Bharati (D) is unique as the only Indian university whose Chancellor is the Prime Minister of India.
University of Delhi (C) was established by an Act of the then Central Legislative Assembly to create a central teaching and unitary university for the territory of Delhi.
University of Hyderabad (A) was established based on the recommendations of the UGC, following a period of regional imbalances in higher education access.

Q33. What is the policy on foreign universities as per NEP 2020?
(a) Foreign universities cannot establish campuses in India
(b) Foreign universities can establish campuses in India
(c) Foreign universities will only offer online courses in India
(d) Foreign universities will be given priority over Indian universities
Answer:
B
Sol:
According to NEP 2020, foreign universities can establish campuses in India. This policy is designed to improve the quality of higher education in India by bringing global academic standards and fostering greater international collaboration in education.
Information booster
Liberalization of Entry:
NEP 2020 allows top-ranked foreign universities(as per global rankings) to set up campuses in India.
These institutions can operate autonomously with the same regulatory, governance, and academic standards as in their home country.
Objective:
To enhance global exposure and improve the quality of higher education in India by fostering international collaboration.
Provide Indian students access to world-class education without going abroad, reducing foreign exchange outflow.
Regulatory Framework:

Foreign universities must comply with basic eligibility criteria set by the University Grants Commission (UGC).
They will be granted equivalence with Indian degrees for further studies or employment in India.

Q34. Match the LIST-I with LIST-II (Interpersonal Communication)

LIST-I (Type)	LIST-II (Description)
A. Interpersonal	I. Between individuals
B. Intrapersonal	II. Self-talk
C. Organizational	III. Hierarchical structures
D. Group	IV. Small team dynamics

Choose the correct answer from the options given below:
(a) A-I, B-II, C-III, D-IV
(b) A-II, B-I, C-IV, D-III
(c) A-III, B-IV, C-I, D-II
(d) A-IV, B-III, C-II, D-I
Answer:
A
Sol:
Introduction: Communication types vary by participants, matched A-I (dyadic), B-II (internal), C-III (formal), D-IV (collective).
Information Booster:
A. Interpersonal – Between individuals: Builds personal relationships.
B. Intrapersonal – Self-talk: Aids self-regulation.
C. Organizational – Hierarchical structures: Follows chains of command.
D. Group – Small team dynamics: Leverages synergy.
Additional Knowledge:
Interpersonal – Between individuals: Builds personal relationships.
- Involves direct exchanges like face-to-face talks, calls, or emails between two people, fostering trust, empathy, and mutual understanding.
- Key for rapport-building through verbal/non-verbal cues, active listening, and feedback, essential in personal or professional dyads.
- Enhances emotional connections via tailored messages adapting to the other's needs and context.

Intrapersonal – Self-talk: Aids self-regulation.
- Internal dialogue or mental processing where individuals reflect, plan, or motivate themselves without external input.
- Supports emotional control, decision-making, and goal-setting by evaluating thoughts and behaviors privately.
- Boosts self-awareness and resilience, using positive affirmations to manage stress or focus.

Organizational – Hierarchical structures: Follows chains of command.
- Flows through formal levels like top-down directives or bottom-up reports in workplaces, following authority lines.
- Ensures coordination via memos, meetings, and policies, maintaining order and accountability in large systems.
- Balances official channels with informal networks for efficiency and compliance.

Group – Small team dynamics: Leverages synergy.
- Occurs among 3-20 members interacting interdependently, pooling diverse ideas for collective outcomes.

- Harnesses groupthink avoidance through roles, norms, and cohesion to amplify creativity and problem-solving.
- Thrives on shared goals, feedback loops, and conflict resolution for superior results.

Q35. Arrange the key steps in overcoming communication barriers chronologically.
A. Identify the Barrier
B. Analyze Causes
C. Implement Solutions
D. Evaluate Effectiveness
Choose the correct answer from the options given below:
(a) A, B, C, D
(b) B, A, D, C
(c) C, D, A, B
(d) D, A, B, C
Answer:
A
Sol:
Introduction: Overcoming barriers follows systematic diagnosis to assessment: Identify, Analyze, Implement, Evaluate (A, B, C, D).
Information Booster:
Identify the Barrier (A): Pinpoint physical/psychological types.
Analyze Causes (B): Examine roots like hierarchy or emotions.
Implement Solutions (C): Use feedback, clarity.
Evaluate Effectiveness (D): Measure improvements.
Additional Knowledge:

Step	Core Action	Strengths	Limitations/Why Not First
Analyze Causes (B)	Examine roots like hierarchy, emotions, or perceptions via root-cause tools.	Uncovers hidden factors; refines diagnosis	Requires prior identification; risks speculation without evidence
Implement Solutions (C)	Use feedback, clarity through training, simple language, or channels.	Applies fixes like active listening or empathy	Premature without ID/analysis; solutions may mismatch barriers
Evaluate Effectiveness (D)	Measure improvements via metrics, surveys post-implementation.	Validates ROI; iterates strategies	Last stage only; ineffective if earlier steps flawed

Q36. Some of the key recommendations of the Mudaliar Commission (1952–53) on Secondary Education were:
A. Introduce a diversified curriculum at the secondary stage
B. Extend the duration of secondary education to 6 years
C. Shift secondary education to vocational and technical training
D. Strengthen teaching of languages and social studies
E. Abolish the Higher Secondary stage
Choose the correct answer from the options given below:
(a) A, B and D only
(b) A, C and D only
(c) B, C and E only

(d) A, D and E only
Answer:
B
Sol:
The Secondary Education Commission (1952–53), also known as the Mudaliar Commission (chaired by Dr. A. Lakshmanaswami Mudaliar), was established to examine the existing system of secondary education and suggest measures for its reorganization and improvement. Its key focus was on diversification and making education more practical and related to life.
Information Booster:
The Mudaliar Commission made several significant recommendations, which included:
Introduce a diversified curriculum at the secondary stage (A): The Commission strongly recommended introducing a diversified curriculum to cater to the varying interests and abilities of students. This diversification was planned through the introduction of seven groups of subjects (e.g., Humanities, Sciences, Technical, Commercial, Agriculture, Fine Arts, and Home Science) at the high school level.
Shift secondary education to vocational and technical training (C): A major goal of the Commission was to vocationalize secondary education. It suggested that a large number of diversified courses, including technical and vocational streams, should be made available to prepare students for definite vocations and meet the country's industrial and agricultural needs.
Strengthen teaching of languages and social studies (D): The Commission laid specific emphasis on the importance of languages and social studies. It recommended a three-language formula (Mother tongue/Regional language, Hindi/another Indian language, and English/a foreign language) and stressed that social studies should be taught in an integrated and meaningful manner.
Additional Knowledge:
The following options were not the specific recommendations of the Mudaliar Commission:
Extend the duration of secondary education to 6 years (B): The Commission recommended a seven-year course of secondary education (Middle School: 3 years; High School: 4 years), followed by a three-year degree course. It did not recommend a six-year secondary stage.
Abolish the Higher Secondary stage (E): The Commission actually recommended the establishment of the Higher Secondary stage by converting the existing four-year high school course into a three-year high school course and adding one year to it to create a four-year higher secondary stage (or merging the intermediate class into it). The goal was to provide a complete secondary education up to Class XI or XII, followed by a three-year degree course. Thus, the commission recommended restructuring, not abolishing, the higher secondary stage.

Q37. Arrange the following categories from Bloom's Taxonomy revised 2001, Cognitive Domain in the correct sequence from the lowest-order thinking skill LOTS to the highest-order thinking skill HOTS:
1. Evaluating
2. Remembering
3. Analyzing
4. Applying
5. Creating
(a) 2, 4, 3, 1, 5
(b) 5, 1, 3, 4, 2
(c) 2, 4, 3, 5, 1
(d) 4, 2, 3, 1, 5
Answer:
A
Sol:

Correct Option – (a)
INTRODUCTION: Bloom's Taxonomy provides a hierarchical model for classifying educational learning objectives into levels of complexity and specificity. The revised taxonomy Anderson & Krathwohl, 2001 uses verbs instead of nouns to describe the cognitive process.
INFORMATION BOOSTER: The correct ascending order of cognitive complexity in the Revised Bloom's Taxonomy is:
1. 2. Remembering: Retrieving, recognizing, and recalling relevant knowledge from long-term memory.
2. 4. Applying: Using a procedure to execute or implement e.g., using a formula.
3. 3. Analyzing: Breaking material into constituent parts and determining how the parts relate to one another and to an overall structure.
4. 1. Evaluating: Making judgments based on criteria and standards e.g., critiquing an argument.
5. 5. Creating: Putting elements together to form a new coherent whole or generating a novel product the pinnacle of cognitive skill.
ADDITIONAL KNOWLEDGE: The two highest levels in the original taxonomy were "Evaluation" and "Synthesis." The revised taxonomy swapped them and renamed "Synthesis" to "Creating," placing Creating at the top as the most complex cognitive skill.

Q38. Arrange these education commissions in chronological order:
(a) Kothari Commission
(b) Radhakrishnan Commission
(c) National Knowledge Commission
(d) Mudaliar Commission
Choose the correct answer from the options given below:
(a) 2-4-1-3
(b) 4-3-2-1
(c) 1-3-4-2
(d) 1-2-3-4
Answer:
A
Sol:
(a) Radhakrishnan Commission (1948-49)
- This was the first commission set up to look into higher education and the state of universities in India. It is also known as the University Education Commission.

(b) Mudaliar Commission (1952-53)
- The Mudaliar Commission was tasked with assessing secondary education in India and is also known as the Secondary Education Commission.

(c) Kothari Commission (1964-66)
- The Kothari Commission was focused on a comprehensive reform of the education system in India, spanning primary, secondary, and higher education, and is also known as the Education Commission.

(d) National Knowledge Commission (2005-2009)
- The National Knowledge Commission was established under Prime Minister Manmohan Singh to suggest reforms and improvements in higher education, research, and knowledge management in India.

Information Booster:
(a) Radhakrishnan Commission (1948-49): Also known as the University Education Commission, it laid the foundation for higher education reforms in India, emphasizing the role of universities in nation-building.
(b) Mudaliar Commission (1952-53): The Secondary Education Commission recommended a significant shift in how secondary education should be structured to ensure quality and inclusivity in education.

(c) Kothari Commission (1964-66): The commission's report was crucial in shaping curriculum reforms, teacher training, and evaluation practices across the country, aiming for educational equity and national integration.
(d) National Knowledge Commission (2005-09): The commission's work led to the development of key recommendations in higher education policy, including the need for greater academic autonomy, promoting interdisciplinary education, and improving research standards.

Q39. Match the SWAYAM National Coordinators in List I with their primary mandated area of content development in List II:

List I (National Coordinator)	List II (Mandated Area)
A. NPTEL	I. Non-technical Post-Graduate Education
B. CEC	II. Engineering and Technology
C. IGNOU	III. Teacher Training Programme
D. NITTR	IV. Non-technical Under-Graduate Education

1. A-II, B-III, C-I, D-IV
(b) A-IV, B-II, C-I, D-III
(c) A-II, B-IV, C-I, D-III
(d) A-I, B-IV, C-II, D-III
Answer:
C
Sol:
Correct Option – (c)
Introduction:
The Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) is a flagship program of the Government of India designed to achieve the three cardinal principles of Education Policy: Access, Equity, and Quality. To ensure quality content across diverse disciplines, the Ministry of Education (MoE) has appointed nine National Coordinators responsible for preparing and delivering courses in their respective domains.
Information Booster:
The correct pairing is based on the specific mandate assigned to each coordinating body:
A. NPTEL (National Programme on Technology Enhanced Learning): Primarily focuses on content for Engineering and Technology programs. (A-II)
B. CEC (Consortium for Educational Communication): Focuses on Non-technical Under-Graduate Education. (B-IV)
C. IGNOU (Indira Gandhi National Open University): Manages content for Non-technical Post-Graduate Education, Out of School students, and Certificate/Diploma level courses. (C-I)
D. NITTR (National Institute of Technical Teachers Training and Research): Specializes in Teacher Training Programme and faculty development courses. (D-III)
Additional Knowledge:
The other National Coordinators for SWAYAM are AICTE (Self-paced and International courses), NCERT (School Education - 9th to 12th), NIOS (School Education - Open Schooling), UGC (Non-technical Post-Graduate Education, alongside IGNOU), and IIM Bangalore (Management Studies).

Q40. Arrange the following layers of a typical computer system from the most fundamental (closest to hardware) to the most user-facing:
i. Application Software
ii. Hardware

iii. System Software (OS)
iv. User
Codes:
(a) ii, i, iii, iv
(b) iii, ii, i, iv
(c) ii, iii, i, iv
(d) i, ii, iii, iv
Answer:
C
Sol:
Correct Option – (c)
Introduction: A computer system can be visualized as a series of layers, each building upon the services provided by the layer below it. This abstraction hides complexity and makes the system usable.
Information Booster: The correct order from the most fundamental to the most user-facing is:
1. ii. Hardware: This is the physical foundation—the CPU, memory, storage, and input/output devices. All software ultimately runs on this layer.
2. iii. System Software (OS): This layer sits directly on top of the hardware. The Operating System manages the hardware resources and provides common services (like file management and device drivers) for application software.
3. i. Application Software: This layer runs on top of the system software. Application Software (e.g., web browsers, word processors) uses the services provided by the OS to perform specific tasks for the user.
4. iv. User: The User interacts with the application software to accomplish their goals. The user is at the top of this hierarchy.
Additional Knowledge: This layered architecture is a key design principle in computing. It allows developers to work on one layer without needing to understand the intricate details of the layers below. For example, a programmer writing a word processor doesn't need to know how to control the hard disk directly; they can use the file management services provided by the OS.

Q41. Which type of virus or destructive software could appear to be useful, but will actually cause damage once installed or run by a user?
(a) Hoax
(b) Worm
(c) Trojan Horse
(d) System Sector
Answer:
C
Sol:
A Trojan Horse appears useful or legitimate but causes harm when executed. It often provides unauthorized access to systems or installs malware.
Information Booster:
1. Types of Malware:
Worm: Self-replicates and spreads across networks.
Trojan Horse: Deceptive and requires user execution.
Hoax: False alarms or misinformation about threats.
2. Characteristics of a Trojan Horse:
Does not self-replicate.
Hidden in seemingly useful programs.
Additional Knowledge:

Option (a): Hoaxes are not actual malware.
Option (b): Worms spread independently but are not disguised as useful software.
Option (d): System sector refers to a part of the disk, not malware.

Q42. A university plans to protect its internal network from hacking attempts. Which combination of ICT tools would be most effective?
(a) Firewall + Encryption
(b) Bandwidth + IP address allocation
(c) Cloud storage + Data compression
(d) DNS + HTTP
Answer:
A
Sol:
Correct Option: (a)
Introduction: Cybersecurity strategies aim to prevent unauthorized access and secure communication.
Information Booster:
Firewall: Filters incoming and outgoing traffic.
Encryption: Secures data so it is unreadable without a key.
Other options: Not primarily focused on security.
Additional Information: A layered defence strategy (firewall + encryption + intrusion detection) offers maximum protection.

Q43. Which of the following electronic technologies is the key technology for making the fourth generation electronic computer ?
(a) Transistor based
(b) Integrated Circuit (IC) based
(c) Vacuum Tube based
(d) Microprocessor based
Answer:
D
Sol:
The fourth-generation electronic computers are based on microprocessor technology, which integrates the CPU on a single chip. This technology allowed computers to become compact, powerful, and affordable, ushering in the era of personal computing. This key innovation aligns directly with the characteristics of fourth-generation computers, as asked in the question.
Information Booster 1. Microprocessor Technology:
A microprocessor is an integrated circuit that contains all the functions of a central processing unit (CPU).
First developed in the early 1970s, with Intel 4004 being the first microprocessor (1971).
Allowed integration of control, processing, and arithmetic functions on a single chip.
2. Impact on Fourth-Generation Computers:
Miniaturization: Reduced the size of computers drastically.
Cost Reduction: Made computers affordable, leading to the mass adoption of personal computers.
Improved Speed and Efficiency: Allowed faster data processing and multitasking.
Portability: Enabled the development of portable devices such as laptops and handheld devices.
3. Examples of Fourth-Generation Computers:
IBM Personal Computer (PC).

Apple II.
4. Revolution in Usage:
Shift from institutional use to personal and business applications.
Enhanced applications in areas like gaming, education, and enterprise computing.
Additional Knowledge · Transistor Technology:
Used in the second generation of computers.
Replaced vacuum tubes, offering increased reliability and reduced size.
Integrated Circuit (IC) Technology:
Formed the core of third-generation computers.
ICs enabled faster and more reliable systems, but without the compactness of microprocessors.
Vacuum Tube Technology:
Central to first-generation computers.
Large, power-hungry, and prone to frequent failures.

Q44. The Classical Square of Opposition is defined by the relationships between four propositions. Match the missing relationship for the pair E and O.

Proposition Pair	Their Relationship
A and E	Contrary
A and I	Subalternation
E and I	Contradictory
I and O	Subcontrary
A and O	Contradictory
E and O	?

Options:
(a) Contradictory
(b) Subalternation
(c) Contrary
(d) Superalternation
Answer:
B
Sol:
Correct Option – (b)
Introduction: The Square of Opposition is a complete and symmetric system. Every possible pair of propositions with the same subject and predicate has a defined relationship. The relationship between E and O is implied by the others.
Information Booster: The relationship between E and O is Subalternation (b), specifically from E to O.
Just as A (the universal affirmative) is the superaltern of I (the particular affirmative),
E (the universal negative) is the superaltern of O (the particular negative). The rule of subalternation states: if the universal is true, the particular must be true.
If "No S are P" (E) is true, then "Some S are not P" (O) must also be true. This is the inverse of the relationship between A and I. The superaltern (E) implies the truth of its subaltern (O).
Additional Knowledge: The term "superaltern" refers to the universal proposition (A or E) that implies its corresponding "subaltern" particular proposition (I or O). This is a one-way implication. The truth of the particular does not imply the truth of the universal.

Q45. Unscramble the strings below to create a meaningful word and then find the odd one out:
A. EIWNTR
B. UMRSME
C. PIGRSN
D. EAWTHER
Choose the correct answer from the options given below:
(a) A only
(b) B only
(c) C only
(d) D only
Answer: D
Sol: Solution:
Words formed after unscrambling:
EIWNTR - WINTER
UMRSME - SUMMER
PIGRSN- SPRING
EAWTHER - WEATHER
A,B and C are season's name while D is odd one out.
Hence correct option is (d)

Q46. Arrange the following fraction in decreasing order:
A. $\frac{12}{19}$
B. $\frac{7}{12}$
C. $\frac{11}{17}$
D. $\frac{17}{28}$
Choose the correct answer from the options given below:
(a) A, B, C, D
(b) C, A, D, B
(c) B, C, D, A
(d) D, A, B, C
Answer: B
Sol: Now,
A. 12/19 = 0.631
B. 7/12 = 0.583
C. 11/17 = 0.647
D. 17/28 = 0.607
Comparing , we can see that:
0.647 > 0.631 > 0.607 > 0.583
Therefore, the fractions in decreasing order are:
C, A, D, B
So, the correct answer is (c) C, A, D, B.