

CTET PAPER 2 MATHS & SCIENCE**CHILD DEVELOPMENT AND PEDAGOGY**

Direction: Answer the following questions (Q. Nos. 1 to 30) by select the correct/most appropriate options.

Q1. Assertion A: Teachers should respect the individual difference among learners and adapt their teaching to cater to needs of all students.

Reason R: Collaboration, group works and interactions among students should be avoided while teaching a class of diverse learners.

Choose the correct option.

- (a) A is true but R is false.
- (b) Both A and R are false.
- (c) Both A and R are true and R is the correct explanation of A.
- (d) Both A and R are true but R is not the correct explanation of A.

Q2. A key commonality in Piaget and Vygotsky's theories is:

- (a) Involvement and engagement of children in their own learning.
- (b) The role of culture in the cognitive processes.
- (c) Their views of relationship between language and thought.
- (d) Focus on stage-like progression in children's development.

Q3. Which of the following correctly describes 'culturally responsive teaching' to cater to diverse groups of students?

- I. Intentional
- II. Adaptive
- III. Differentiated
- IV. Standardized

- (a) I, II, III
- (b) I, II, III, IV
- (c) I, IV
- (d) II, III

Q4. According to Jean Piaget how are children different from adults?

- (a) Children's thinking is qualitatively different from that of adults.
- (b) Children's thinking is qualitatively different from that of adults.
- (c) Children are dependent on adults while adults are independent.
- (d) Adults are must more knowledgeable than children.

Q5. You are a teacher who wants to help your students develop metacognitive skills. Which of the following strategies is most likely to foster this type of thinking?

- (a) Providing students with summarized notes for assignments.
- (b) Assigning homework that requires memorization and recall.
- (c) Giving students marks instead of qualitative feedback on their performance.
- (d) Encouraging students to reflect on their own learning and thinking processes.

Q6. According to Lev Vygotsky what is the relationship between language and thought?

- (a) Language and thought are independent of each other
- (b) Language and thought are complex interrelated processes of development
- (c) Language does not shape thought
- (d) Thought shapes language

Q7. A teacher asks herself- "How can I provide experiences that require students to classify different types of objects in the environment and analyse their classification schemes?" which intelligence is she trying to promote in students?

- (a) Naturalistic Intelligence
- (b) Bodily-Kinesthetics Intelligence
- (c) Linguistic Intelligence
- (d) Inter-personal Intelligence

Q8. Feedback to the students in a classroom is most effective when:

- (a) It focuses on what the child cannot do rather than what they can do.
- (b) It centres around tests and exams at the end of the year.
- (c) It assigns comparative ranks to the students.
- (d) It occurs during as well as after the learning activity.

Q9. Rama is a teacher who is implementing Vygotsky's theory in her classroom and she assigns her students to work in groups to complete a challenging task. During the task, one student struggles to understand a key concept. What would be the most effective way for Rama to help this student?

- (a) Assign a different task to the student that is better suited to her abilities.
- (b) Work through the problem with the student and providing guidance and feedback as needed while involving other group members.
- (c) Provide the student with the answer to the problem so the group can move on.
- (d) Encourage the student to try to solve the problem on her own.

Q10. Change and stability in emotions, personality and social relationship together constitute:

- (a) Psychosocial development
- (b) Cognitive development
- (c) Personality development
- (d) Emotional development

Q11. Constructivist teaching leads to_____ learning by students.

- (a) rote
- (b) receptive
- (c) discovery
- (d) meaningless

Q12. In progressive education children are perceived as:

- (a) Knowledgeable and meaning-makers
- (b) Vulnerable and in need of protection
- (c) Innocent and dependent
- (d) Compliant and capable of only consuming knowledge

Q13. Jean Piaget's theory of cognitive development implicates that:

- (a) Curriculum should be designed keeping children's age-group and stage in mind.
- (b) Focus of teaching should be the outcome of the activity instead of the process of thinking.
- (c) Behaviour should be conditioned using rewards and punishments.
- (d) Concepts should be taught in a sequence of complex to simple.

Q14. How does setting mastery goals impact a student's motivation and views of ability?

- (a) It often implies enhanced extrinsic motivation and belief in the entity view of ability.
- (b) It often implies enhanced extrinsic motivation and belief in the incremental view of ability.
- (c) It often implies enhanced intrinsic motivation and belief in the entity view of ability.
- (d) It often implies enhanced intrinsic motivation and belief in the incremental view of ability.

Q15. Assertion A: During adolescence the pressure to conform to gender expectations and follow conventions of femininity or masculinity increases.

Reason R: Gender and gender roles are determined biologically.

Choose the correct option.

- (a) A is true but R is false.
- (b) Both A and R are false.
- (c) Both A and R are true and R is the correct explanation of A.
- (d) Both A and R are true but R is not the correct explanation of A.

Q16. Assertion A: Teachers should encourage debates, discussions and collaborations among students.

Reason R: Knowledge production is an inactive process and engagement in group activities hinders meaningful learning.

Choose the correct option.

- (a) A is true but R is false.
- (b) Both A and R are false.
- (c) Both A and R are true and R is the correct explanation of A.
- (d) Both A and R are true but R is not the correct explanation of A.

Q17. Which of the following hinders the participation of students with visual impairment in classroom?

- (a) raised-line drawings and maps
- (b) tactile models of graphic materials
- (c) electronically formatted lecture transcriptions
- (d) printed textbooks and notes

Q18. Which of the following is a correctly matched pair?

- (a) Formative assessment: determining what the students can do before and after the class
- (b) Summative assessment: involves paper-pencil tests as well as detailed accounts of non-written behaviours
- (c) Criterion-referenced assessment: includes mastery of specific topics
- (d) Norm-references assessment: compares performance to that of peers

Q19. Sunita, a 12 year old girl, shows exceptional musical ability. Both her parents are accomplished signers, and they send her for classes for voice training after school. Her capabilities are most likely to be the result of an interaction between.

- (a) heredity and environment
- (b) gender identity and genetic make-up
- (c) growth and maturation
- (d) nutrition and discipline

Q20. Which method did Lawrence Kohlberg used to study moral development of children?

- (a) Conducting observations of children during play
- (b) Experimental method
- (c) Quantitative research approach
- (d) Posing moral dilemmas to children and analyzing responses

Q21. Assertion A: Schools should function within frameworks which assess the finished product and learning outcomes.

Reason R: Learning is tightly sequential and hierarchical.

Choose the correct option.

- (a) A is true but R is false.
- (b) Both A and R are false.
- (c) Both A and R are true and R is the correct explanation of A.
- (d) Both A and R are true but R is not the correct explanation of A.

Q22. Which of the following statement is correct about 'Autism'?

- (a) Autism is caused solely by environmental factors.
- (b) Autism can be cured and improves with age.
- (c) All autistic people have at least one exceptional skill.
- (d) Autism is a neuro-developmental disorder.

Q23. Which learning strategy involves children teaching others what they have learned?

- (a) Expository teaching
- (b) Reciprocal teaching
- (c) Conditioned learning
- (d) Rote learning

Q24. Sensitive periods are those time periods during which certain _____ are especially important for course of 'normal' development.

- (a) environmental factors
- (b) hereditary factors
- (c) genetic predispositions
- (d) ethnic factors

Q25. Students struggling with dyslexia can be taught to read:

- (a) By giving long and complex passages.
- (b) Through association method of conditioning.
- (c) Through systematic phonological training.
- (d) By providing higher grade level reading texts.

Q26. Which of the following question promotes analytical thinking?

- (a) What is the total population of India?
- (b) What are the various causes of increase of population in India?
- (c) The capital city of India is _____.
- (d) How many States are there in India?

Q27. Assertion A: Teachers should give lot of opportunities to children for experimentation and discuss examples and non-examples.

Reason R: A constructive way of dealing with misconceptions in children is to provide counter examples.

Choose the correct option.

- (a) A is true but R is false.
- (b) Both A and R are false.
- (c) Both A and R are true and R is the correct explanation of A.
- (d) Both A and R are true but R is not the correct explanation of A.

Q28. Assertion A: In Asian cultures which stress social harmony, expressions of 'anger' are discouraged and 'shame' is encouraged.

Reason R: Emotions are subjective and do not play any role in learning.

Choose the correct option.

- (a) A is true but R is false.
- (b) Both A and R are false.
- (c) Both A and R are true and R is the correct explanation of A.
- (d) Both A and R are true but R is not the correct explanation of A.

Q29. In order to develop critical thinking among students a teacher should:

- (a) give questions that involve inference and explanations.
- (b) avoid questions which need inference and analysis.
- (c) ask only those questions which carry single answers.
- (d) discourage the students from asking doubts and questions.

Q30. Inclusive classrooms"

- (a) Are meant to offer differentiated instructions as per individual differences.
- (b) Aim to remove all kinds of differences among the children.
- (c) Recognize that every child will learn at the same rate and at the same time.
- (d) Is an educational program offered to cater to the needs of 'special children'.

PART-II MATHEMATICS AND SCIENCE

Directions: Answer the following questions by selecting the correct/most appropriate options.

Q31. A teacher distributed different type of triangle shaped paper cuttings to the learners and tells them to measure and tabulate the angles in order to find the sum of angles. He tells them to note the result in each case.

This method of teaching is an example of:

- (a) Deductive method
- (b) Analytical approach
- (c) Discovery method
- (d) Teacher centred approach

Q32. The number of faces (F), edges (E) and vertices (V) of a polyhedron are 7, 15 and x, respectively.

Then, the value of $(2F + 3E - 4x)$ is:

- (a) 18
- (b) 17
- (c) 20
- (d) 19

Q33. Marks obtained by some students of a class are 36, 37, 31, 42, 23, 38, 17, 18, 35, 25, 29 and 35.

The difference of the mean and the range of the data is:

- (a) 5.5
- (b) 6.0
- (c) 4.5
- (d) 5.0

Q34. If $(2x + 5y)^2 - 5(2x + 5y) - 14 = (2x + 5y + p)(2x + 5y + q)$, then the value of $(p + q)$ is:

- (a) 9
- (b) -5
- (c) 7
- (d) -14

Q35. A trader buys 12 fans for Rs.24,000. He marks each fan at 5% above the cost price. If he sells all fans by giving 10% discount on the marked price, then his overall profit (in Rs.) is:

- (a) 3200
- (b) 3500
- (c) 2700
- (d) 3000

Q36. $\frac{(a-b+c)^2 - (a-b-c)^2}{b-a}$ is equal to:

- (a) $-4c$
- (b) $2c$
- (c) $b-c$
- (d) $c-a$

Q37. Which of the following NOT true?

- (a) The expression $(x^2 + 10x + 25)$ cannot be simplified further
- (b) The value of the variable in an equation which satisfy the equation is called a solution of the equation
- (c) $3 + 4 \times 5$ is not a mathematical expression
- (d) Operations of multiplication can be done on mathematical expressions

Q38. The domain of learning that deals with attitudes and values of known as:

- (a) Affective domain
- (b) Psychomotor domain
- (c) Knowledge domain
- (d) Cognitive domain

Q39. According to National Curriculum Framework 2005 which of the following process is least important in mathematics?

- (a) Finding short-cuts in mathematics.
- (b) Generalizing a mathematical formula.
- (c) Solving day to day problems.
- (d) Understating when and how a mathematical technique is to be used.

Q40. M is a point on side AB of a triangle ABC such that $AM = BM = CM$. if angles A and B respectively x and 70° , then the value of $(3x + 25^\circ)$ is equal to:

- (a) 100°
- (b) 115°
- (c) 70°
- (d) 85°

Q41. The sum of the largest and smallest fractions among $\frac{6}{7}, 2\frac{3}{5}, \frac{3}{8}$ and $2\frac{8}{15}$ is:

- (a) $2\frac{7}{35}$
- (b) $2\frac{39}{40}$
- (c) $2\frac{9}{35}$
- (d) $2\frac{37}{40}$

Q42. The ratio of two numbers is 3:7 and their LCM is 630. Then, sum of the LCM and HCF of these numbers is:

- (a) 600
- (b) 660
- (c) 30
- (d) 300

Q43. Area of a right triangle is 240cm^2 . If its one side to than the hypotenuse is 30cm, then perimeter (in cm) of the triangle is:

- (a) 92
- (b) 100
- (c) 80
- (d) 84

Q44. A sum invested at 10% p.a. for 2 years become Rs.3,267, when the interest is compounded annually.

What will be the simple interest on the same sum at the same rate in $2\frac{1}{2}$ years?

- (a) Rs.675
- (b) Rs.700
- (c) Rs.625
- (d) Rs.650

Q45. How many natural numbers between 1 and 500 are divisible by each of the number 3,5 and 7?

- (a) 5
- (b) 6
- (c) 3
- (d) 4

Q46. Two parallel lines are intersected by a transversal and the two interior angles so formed on the same side of the transversal are $(2x + 15^\circ)$ and $(3x - 20^\circ)$. Then, the value of $(4x + 6^\circ)$ is:

- (a) 148°
- (b) 146°
- (c) 154°
- (d) 150°

Q47. In a pie chart, the marks obtained by a students in Mathematics, Science, Social Science, Hindi and English are respectively represented by sectors of central angles $90^\circ, 80^\circ, 65^\circ, 75^\circ$ and 50° . If the total marks obtained by the students were 540, then what is the difference of the marks obtained by him/her in Mathematics and English?

- (a) 40
- (b) 30
- (c) 60
- (d) 50

Q48. Which of the following does not imply the meaning of assessment?

- (a) It helps to diagnose individual differences.
- (b) It is a procedure to gather information of student's performance.
- (c) It is evolution.
- (d) It helps to label the students.

Q49. Arrange the following statements according to ascending levels of geometrical thinking as per Van- Hiele's theory of geometrical learning.

- I. Identification of properties of geometrical shapes
- II. Classification of different shapes
- III. Finding relationship between the properties of geometrical shapes
- IV. Identification of geometrical shapes as they are

Choose the correct option:

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

Q50. PQRS is a parallelogram whose diagonals PR and QS intersect at a point O such that $OP = (x + 7)$ cm, $OQ = (x + y)$ cm, $OR = 20$ cm and $OS = 16$ cm. Then, value of $(7y + 5)$ (in cm) is:

- (a) 26
- (b) 28
- (c) 21
- (d) 23

Q51. If x is the least number which must be added to 955 to make it a perfect square, then value of $3x + 2$ is equal to:

- (a) 11
- (b) 5
- (c) 20
- (d) 14

Q52. D is a point on side AB of a ΔABC such that CD is the bisector of $\angle ACB$. If $\angle A = 50^\circ$ and $\angle B = 70^\circ$, then $\angle ADC$ is equal to:

- (a) 70°
- (b) 100°
- (c) 30°
- (d) 50°

Q53. At upper primary stage, as per NCERT, which of the following topics have NOT been included under number system?

- (a) Exponents and Powers
- (b) Square roots and cube roots
- (c) Complex Numbers
- (d) Fractions

Q54. Perimeter of a quadrilateral ABCD is 120cm. if $BC = 48$ cm, $CD = 17$ cm, $AD = 40$ cm and $\angle A = \angle B = 90^\circ$, then area of quadrilateral ABCD (in cm^2) is:

- (a) 720
- (b) 750
- (c) 660
- (d) 690

Q55. Which of the following statements is least appropriate regarding the proofs in mathematics?

- (a) It can help the students to validate their own reasoning.
- (b) Proofs are built on intuitive knowledge and not reasoning.
- (c) It explains why a particular mathematical result must be true.
- (d) It helps to reveal the connections and provide insights into the underlying structure of mathematics.

Q56. Which of the following is NOT an indicator of creativity in Mathematics?

- (a) Students use multiple and alternate problem solving strategies.
- (b) Students can pose questions.
- (c) Students use convergent thinking in different contexts.
- (d) Students are able to think flexibly.

Q57. Arun is three years older than Varun. Eight years ago, $\frac{5}{6}$ th of Arun's age exceeded $\frac{3}{5}$ th of Varun's age by 6 years. If the present age of Varun is x years, then the value of x can be determined by solving the equation:

- (a) $\frac{3}{5}(x + 5) - \frac{5}{6}(x - 8) = 6$
- (b) $\frac{3}{5}(x + 3) - \frac{5}{6}(x - 8) = 6$
- (c) $\frac{5}{6}(x - 5) - \frac{3}{5}(x - 8) = 6$
- (d) $\frac{5}{6}(x - 8) - \frac{3}{5}(x - 5) = 6$

Q58. Which of the following statement is NOT correct with respect to Rubrics as a tool of assessment

- (a) Rubrics consist of a clear performance target for students.
- (b) Rubrics make evaluation more subjective.
- (c) Rubric has a fixed scale.
- (d) Rubric has a list of characteristics describing performance for each point on the scale.

Q59. The height and base radius of right circular cylinder are 9cm and 6cm respectively. If the base radius becomes half and height increases by 3cm, then which of the following describes the new volume of the cylinder?

- (a) The new volume will be thrice the original volume.
- (b) The new volume will be one-third the original volume.
- (c) The new volume will be twice the original volume.
- (d) The new volume will be half the original volume.

Q60. The value of $52 \times 3 \div 4 + \sqrt{441} \div 7 \times 3 + 5 - 32 \div 8 \times 12$ is:

- (a) 15
- (b) 21
- (c) 0
- (d) 5

Direction: Answer the following questions by selecting the correct/most appropriate options.

Q61. Discussion on socio-scientific issues in class helps in:

- I. developing argumentative skills in learners
- II. developing multiple perspectives on an issue
- III. encouraging citizen science activities
- IV. appreciating the role of society in development of science

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

Q62. A. Metal oxides are basic in nature.

- B. Air expands on heating.
- C. Lime water turns milky on passing carbon dioxide.
- D. Sodium hydroxide and hydrochloric acid neutralize each other.

If observation is represented by O and inference by I, which of the following statements is correct?

- (a) O-C; I-A, B, D
- (b) O-A, B; I-B, C
- (c) O-C, D; I-A, B
- (d) O-B, C; I-A, D

Q63. An object floats with $\frac{1}{4}$ th part of its volume outside the liquid when put in liquid A and $\frac{3}{4}$ th part of its volume outside the liquid when put in liquid B. Which of the following statements is true?

- (a) Density of liquid B is greater than density of liquid A.
- (b) The densities of liquid cannot be compared on the basis of above information.
- (c) Density of liquid A is greater than density of liquid B.
- (d) Both liquids have same density.

Q64. Which of the following is/are true regarding scientific investigation?

- A. Results are not influenced by procedure.
- B. Social context may influence conclusions in any investigation.
- C. Data and evidence are same.
- D. There is no universal scientific method.

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

Q65. Which of the following statements is/are true?

- A. Self-pollination takes place only in bisexual flowers.
- B. Bisexual flowers can pollinate both by self and cross-pollination.

- (a) Both A and B are false.
- (b) Both A and B are true.
- (c) A is true and B is false.
- (d) A is false and B is true.

Q66. Which of the following statements is/are true regarding Rainwater harvesting?

- A. It conserves ground water.
- B. It reduces local flooding.
- C. It creates drainage problems.
- D. It can be used for irrigation of crops.

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

Q67. Which of the following factors are responsible for generation and flow of winds on the earth?

- A. Uneven heating of the earth
- B. Uneven heating of the oceans
- C. Distance between earth and sun
- D. Gravitational force on the earth

- (a) A and B
- (b) A and D
- (c) Only A
- (d) A and C

Q68. Read the statements given below and choose the correct options:

Assertion A: The filament of an incandescent bulb is made up of tungsten.

Reason R: Tungsten has low resistance and high melting point.

- (a) A is true and R is false.
- (b) Both A and R are false.
- (c) Both A and R are true and R is correct explanation of A.
- (d) Both A and R are true but R is not correct explanation of A.

Q69. A gender-responsive pedagogy in science entails.

- A. Use of gender-sensitive language
- B. Engaging students in examining stereotypes
- C. Making gender-based groups
- D. Using differentiated instruction and assessment

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

Q70. Which of the following statements is not true regarding conduction of heat?

- (a) Conduction does not take place in gases.
- (b) All materials do not allow heat to flow through them in the same way.
- (c) Conduction is faster in solids than liquids.
- (d) Two objects should be in contact with each other for heat flow.

Q71. The purpose of divergent questions in science classroom can be:

- A. to promote critical thinking
- B. to discern between students
- C. to develop communication
- D. to identify gifted students
- E. to identify alternate conceptions
- F. to appreciate subjectivity in science

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

Q72. Which of the following characterizes human circulatory system?

- (a) closed, single circulation
- (b) closed, double circulation
- (c) open, single circulation
- (d) open, double circulation

Q73. Which of the following is true regarding scientific laws?

- (a) They can't be challenged.
- (b) They provide reasoning for physical phenomena.
- (c) They describe relationship between observable phenomena.
- (d) They are formed from scientific theories.

Q74. Read the statements given below and choose the correct option:

Assertion A: The rate of breathing in aquatic animals is slower than land animals.

Reason R: Presence of large amounts of dissolved oxygen affects rate of breathing of aquatic animals.

- (a) A is true but R is false.
- (b) Both A and R are false.
- (c) Both A and R are true and R is correct explanation of A.
- (d) Both A and R are true but R is not correct explanation of A.

Q75. Assertion A: The ceilings of cinema halls and correct halls are generally curved.

Reason R: Sound waves after striking a curved surface get reflected in all directions.

- (a) A is true but R is false.
- (b) Both A and R are false.
- (c) Both A and R are true and R is correct explanation of A.
- (d) Both A and R are true but R is not correct explanation of A.

Q76. Which of the following is not caused due to excessive use of fertilizer and pesticides?

- (a) Eutrophication
- (b) Bio-magnification
- (c) Soil erosion
- (d) Nitrification

Q77. An odometer in a car measures:

- (a) average speed of the car
- (b) acceleration of the car
- (c) distance travelled by the car
- (d) instantaneous speed of the car

Q78. Identify the mirrors on the basis of information given in the following table:

Mirror	Nature of image	Size of image
A	Virtual and erect	Same as object
B	Real and inverted	Same as object
C	Real and inverted	Enlarged
D	Virtual and erect	Diminished

- (a) A-Plane mirror, B-Concave, C-Concave, D-Convex
- (b) A-Concave, B-Plane, C-Convex, D-Concave
- (c) A-Plane, B-Convex, C-Concave, D-Convex
- (d) A-Convex, B-Concave, C-Convex, D-Concave

Q79. Three identical holes are punched at different level (heights) in a plastic bottle. The bottle is filled with water. Which of the following statements is true regarding the flow of water from the holes?

- A. Water from lowest hole comes out with greatest force
- B. Water from highest hole come out with greatest force
- C. Water from all holes comes out with equal force
- D. Water from lowest hole falls at maximum distance
- E. Water from highest hole falls at maximum distance
- F. Water from all holes falls at same distance

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

Q80. The colour of flame depends on:

- I. Nature of combustible substance
- II. Oxygen supply
- III. Temperature of the surroundings

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

Q81. A class VII teacher plans to identify alternate conceptions of students in the topic 'Adaptations in plants and animals'. Which of the following sets of strategies is best suited for this purpose

- (a) Diagnostic questionnaire, interview, drawings
- (b) Project, checklist, drawings
- (c) Drawings, checklist, interview
- (d) Portfolio, group discussion, diagnostic questionnaire

Q82. Sunita drops a piece of potassium metal in a beaker of cold water and notes down the observations.

Which of the following observation is not correct?

- (a) Hydrogen gas is evolved.
- (b) Pop sound is heard.
- (c) Potassium reacts violently with water.
- (d) It is endothermic reaction.

Q83. Following table depicts colour changes in acids and bases when various indicators are added:

Indicator	Colour change in acids	Colour change in bases
Turmeric	No change	A
China rose	Dark Pink	B
Phenolphthalein	C	Pink
Methyl orange	D	Pink

A, B, C, D respectively are:

- (a) reddish, brown, pink, orange, colourless
- (b) yellow, orange, pink, colourless
- (c) reddish brown, green, colourless, orange
- (d) yellow, green, orange, colourless

Q84. Two sperms of a man fuse with two eggs of a woman.

This twins formed are:

- (a) may be identical or fraternal
- (b) always conjoint.
- (c) identical
- (d) fraternal

Q85. Which of the following illustrates 'science as inquiry'?

- (a) List five uses of coconut tree
- (b) Observe the types of venation in various leaves
- (c) Classify the given plants into herbs, shrubs and trees
- (d) Explore factors which affect the rate of germination in gram seeds

Q86. Read the following statements and choose the correct option:

S1- Photosynthesis is endothermic reaction.

S2- Respiration is exothermic reaction.

- (a) S1 and true and S2 is false.
- (b) S1 is false and S2 is true.
- (c) Both S1 and S2 are true.
- (d) Both S1 and S2 are false.

Q87. Which of the following activities is best suited to develop inductive reasoning?

- (a) verify laws of reflection experimentally
- (b) solve numerical problems based on law of reflection
- (c) asking students to state laws of reflection
- (d) asking students to measure angle of reflection for various cases of angle of incidence in a plan mirror

Q88. The atomic number of A is 13 and the atomic number of B is 17. The chemical formula of the compound formed from A and B could be:

- (a) AB₂
- (b) AB
- (c) A₃B
- (d) AB₃

Q89. Assertion A: It is recommended that acid should be added to water for diluting the acid and not vice-versa.

Reason R: Dilution of acid is a highly exothermic reaction.

- (a) A is true but R is false.
- (b) Both A and R are false.
- (c) Both A and R are true and R is correct explanation of A.
- (d) Both A and R are true but R is not correct explanation of A.

Q90. Which of the following is not a feature of alternate conceptions in science?

- (a) Ideas are developed from observable features.
- (b) Ideas do not demonstrate cause and effect reasoning.
- (c) Ideas are stable.
- (d) Ideas are resistant to change.

भाषा -I: हिन्दी

निर्देश: नीचे दिए गए गद्यांश को पढ़कर पूछे गए प्रश्नों (प्र.सं. 91-99) के सबसे उपयुक्त उत्तर वाले विकल्प का चुनिए:

साहित्य सदैव समाज को निरंतरता प्रदान करता है। चयन साहित्य और समाज का गहरा संबंध ही है कि साहित्य में समाज के विशृंखलित होते सिद्धांतों और टूटते-बिखरते मूल्यों की चिंता बराबर बनी रहती है। वही साहित्य कालों के बंधन को तोड़कर, उसकी सीमाओं से परे जाकर कालजयी बन पाता है, जिसमें मानवीय सत्य की व्याख्या हो और संवेदनाओं के सहारे आस्था जगाने का प्रयास हो। समय-समय पर साहित्यकारों ने समाज के बदतर होने की स्थिति को पहचाना है। कुछ रचनाकार हमारे साहित्य पटल पर ऐसी गहरी छाप छोड़ जाते हैं, जिनकी आवश्यकता हर युग में बनी रहती है, जिनके विचार सदैव तरोताजा ही रहते हैं और जिनकी रचनाएँ समाज को दीप्त करने का दायित्व निभाती चलती हैं। उनका साहित्यकार व्यक्तित्व केवल समस्याओं को ही नहीं परखता बल्कि मनुष्यता में विश्वास को बचाए रखने की कोशिश करता है।

Q91. 'समाज के बदतर होने की स्थिति' वाक्य में रेखांकित शब्द का अर्थ है:

- (a) अत्यधिक बुरा
- (b) दुराचारी
- (c) अभिमानी
- (d) बेईमानी

Q92. गद्यांश के अनुसार साहित्य में किस तरह की चिंता झलकती है?

- (a) नए सिद्धान्तों के बनने की
- (b) सामाजिक विघटन की
- (c) समाज के आधुनिक होने की
- (d) मूल्यों के बिखरने की

Q93. कौन-सा साहित्य कालजयी साहित्य बन पाता है?

- (a) जो मानवीय सत्य की व्याख्या करे।
- (b) जो बिखरते सिद्धान्तों की चिंता करे।
- (c) जो पाठकों का मनोरंजन करे।
- (d) जो समाज का दर्पण हो।

Q94. 'विश्वास' शब्द का अर्थ है:

- (a) तत्वज्ञान संबंधी
- (b) निश्चित धारणा
- (c) विश्वमय
- (d) विश्व से संबंधित नियम

Q95. 'विशृंखलित' में प्रत्यय है:

- (a) इत
- (b) खलित
- (c) लित
- (d) त

Q96. साहित्यकारों ने समाज की किस स्थिति की पहचान करने का प्रयास किया है?

- (a) उन्नतशील समाज
- (b) बिखरता हुआ समाज
- (c) विकास की ओर अग्रसर समाज
- (d) पतन की ओर जाता हुआ समाज

Q97. 'कालजयी' से तात्पर्य है:

- (a) काल विशेष की सही व्याख्या करता हो।
- (b) अल्प काल तक रहने वाला।
- (c) जो काल विशेष में बँधा हुआ हो।
- (d) हर काल में प्रासंगिक हो।

Q98. किस तरह के साहित्यकारों की आवश्यकता हर युग में बनी रहती है?

- (a) जो समाज को नैतिक बनाते हैं।
- (b) जो समाज का विकास करते हैं।
- (c) जो समाज को जागरूक करते हैं।
- (d) जो समाज का मनोरंजन करते हैं।

Q99. समाज को गति कौन प्रदान करता है?

- (a) शिक्षा
- (b) साहित्य
- (c) विज्ञान
- (d) तकनीकी विकास

निम्नलिखित पद्यांश को पढ़कर पूछे गए प्रश्नों (प्र.सं. 100-105) के सबसे उपयुक्त उत्तर वाले विकल्प को चुनिए:

दिवसावसान का समय,
मेघमय आसमान से उतर रही है
वह संख्या सुंदरी परी-सी
धीरे-धीरे-धीरे।
तिमिरांचल में चंचलता का नहीं कहीं आभास,
मधुर मधुर हैं दोनों उसके अधर-
किंतु जरा गंभीर नहीं है उनमें हास-विलास
हँसता है तो केवल तारा एक
गुँथा हुआ उन घुँघराले काले-काले बालों से
हृदयराज की रानी कावह करता है अभिषेक।

Q100. संध्या सुंदरी किस तरह के आकाश से उतर रही है?

- (a) चंद्रमा की रोशनी से भरे आकाश से
- (b) सूर्य लालिमा से भरे आकाश से
- (c) तारों भरे आकाश से
- (d) बादलों से भरे आकाश से

Q101. 'हृदयराज की रानी' किसके लिए प्रयुक्त हुआ है?

- (a) संध्या
- (b) तिमिर
- (c) मेघ
- (d) आकाश

Q102. 'दिवसावसान' का संधि विच्छेद है:

- (a) दिवसा + वसान
- (b) दिवस + आवसान
- (c) दिवस + अवसान
- (d) दिवा + अवसान

Q103. पद्यांश में किस का चित्रण हुआ है?

- (a) वेदना का
- (b) प्रेमभाव का
- (c) प्रकृति का
- (d) नवचेतना का

Q104. किसके हँसने की बात की गई है?

- (a) संध्या
- (b) आकाश
- (c) मेघ
- (d) तारा

Q105. पद्यांश में किस अंलकार का प्रयोग अधिक मुखरित है?

- (a) यमक
- (b) मानवीकरण
- (c) अतिशयोक्ति
- (d) अनुप्रास

- Q106.** अध्यापकों, शिक्षार्थियों और सामग्री पर टैस्ट एवं आकलन का प्रभाव क्या कहलाता है?
- (a) कक्षायी प्रभाव
(b) पुनर्बलन
(c) विधि प्रभाव (कार्पस इफेक्ट)
(d) भाषा परीक्षण का प्रभाव (वाशवैक इफेक्ट)

- Q107.** कॉलम में भाषा शिक्षण विधियाँ हैं और कॉलम में उनकी समझ या संबंधि गतिविधियाँ है, मिलान करें।

कालंम A	कालंम B
A. सम्प्रेषणात्मक भाषा शिक्षण	I. सामाजिक रूप से स्वीकृत और संदर्भ के अनुरूप भाषा
B. प्रत्यक्ष विधि	II. मौन पठन
C. व्याकरण अनुवाद	III. लिखित साहित्यिक सामग्री
D. वेस्ट (West's) की नवीन विधि	IV. व्याकरण को आगमनात्मक तरीके से पढ़ाना

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

- Q108.** अधिगम का कौन-सा मत इस बात में विश्वास रखता है कि मौखिक या अमौखिक भाषा आदत निर्माण की प्रक्रिया के माध्यम से आती है?
- (a) संज्ञानात्मकवादी
(b) अन्तः क्रियात्मकवादी
(c) उपयोगितावादी (फंक्शनलिस्ट)
(d) व्यवहारवादी (बिहेवियरिस्ट)

- Q109.** कक्षा पाँच की भाषा अध्यापक अपनी कक्षा में भाषा शिक्षण के लिए प्रतिदिन अनेक प्रकार की सामग्री जैसे कि समाचारपत्र, भोजन तालिका और रेल यात्रा के टिकट आदि लाती है। वह अधिगम के लिए क्या कर रही है?
- (a) वह चाहती है कि उसके विद्यार्थी जीवन की वास्तविक स्थितियों से अंग्रेजी सीखें।
(b) वह विद्यार्थियों में जागरूकता लाना चाहती है।
(c) वह अधिगम को और अधिक वास्तविक तथा उपयोगी बनाने के लिए प्रामाणिक सामग्री का प्रयोग कर रही है।
(d) वह अपने विद्यार्थियों को बहुविध भाषाएँ सीखने में मदद कर रही हैं।

- Q110.** भारत में भाषाओं के बारे में कौन-सा कथन सही नहीं है?
- (a) संस्कृत आधुनिक भारतीय भाषा है
(b) हिंदी भारतयी उप महाद्वीप की लोक भाषा (लिंग्वा फ्रांका) है
(c) भारत के संविधान के अनुसार अंग्रेजी सह राजकीय भाषा है
(d) भारत के संविधान की आठवीं अनुसूची के अनुसार -22 भाषाएँ हैं

- Q111.** भारत में बहुभाषावाद के संदर्भ में अध्यापक के लिए क्या समझना ज़रूरी है?
- (a) विविधता भरे समाज में 'एक भाषा' नीति बनानी चाहिए
(b) भाषा, अस्मिता और संस्कृति ये भिन्न-भिन्न अस्तित्व रखती हैं
(c) सम्प्रेषण से सामाजिक सम्बद्धता स्थापित होती है
(d) अल्पसंख्यक भाषाओं को प्रभुत्वशाली भाषाओं में मिला देना चाहिए

- Q112.** किसी भी कहानी का समय और स्थान क्या कहलाता है?
- (a) कथानक (प्लॉट)
(b) क्लाइमेक्स (अंत)
(c) थीम
(d) सैटिंग

- Q113.** श्रवण में क्या शामिल है?
- (a) विषय के पूर्व ज्ञान का इस्तेमाल करना
(b) ध्वनियों की पहचान करना और उनसे अर्थ निकालना
(c) ध्वनि सुनना, ध्वनियाँ जैसी हैं, तदनुसार डिकोड करना
(d) विषयवस्तु के बारे में अनुमान लगाना

- Q114.** किसी श्रवण से जुड़ गतिविधि की योजना बनाते समय कौन-सा कारक महत्वपूर्ण नहीं है?
- (a) वक्ताओं का जेन्डर (बोलने वाले महिला हैं या पुरुष)
(b) वक्ताओं की संख्या
(c) रिकार्डिंग को थोड़ा सा रोकना (पॉज़ देना)
(d) बोलने की गति

- Q115.** भाषा के कौन से कौशल ग्राह्य कौशल हैं?
- (a) पठन और लेखन
(b) श्रवण और पठन
(c) श्रवण और बोलना
(d) बोलना और लेखन

- Q116.** एक अध्यापक ने बच्चों को रेस्टोरेंट से जुड़ी शब्दसंपदा से परिचित कराने वाला काम दिया। इस पाठ का क्या उद्देश्य होना चाहिए?
- (a) अवकाश के दौरान कहीं जाने से संबंधित पाठ्य सामग्री से परिचित करवाना
(b) समालोचनात्मक चिंतन विकसित करना
(c) शिक्षार्थियों को कोश विषयक सामग्री से परिचित करवाना
(d) व्याकरणिक सामग्री से परिचित करवाना

- Q117.** भाषा की कक्षा में विद्यार्थी अध्यापक के निर्देशन में समूह बनाकर दिए गए टॉपिक पर एक विज्ञापन प्रस्तुत करते हैं। इस तरीके से भाषा सीखना क्या कहलाता है?
- (a) भाषायी खेल
(b) निर्देशन और परमर्श
(c) सहयोगात्मक अधिगम
(d) प्रतियोगिता और प्रतिद्वंद्विता

- Q118.** भाषागत कार्य जैसे स्वरशैली, तान, बलाघात और लय को क्या कहा जाएगा?
- (a) ध्वन्यात्मकता
(b) प्रशासनिक अध्यादेश (प्रेगमेटिक)
(c) काव्य
(d) छंदशास्त्र

Q119. भाषा की कक्षा में एक अध्यापक ने विद्यार्थियों के एक समूह को ग्राहक, प्रापर्टी डीलर, मकानमालिक और किराएदार का अभिनय करने के लिए कहा और शेष विद्यार्थियों से का कि इस अभिनय को देखें और वार्तालाप का आनन्द लें। इस गतिविधि को क्या कहा जाएगा?

- (a) अभिनय की कक्षा
- (b) निर्देशन
- (c) रोलप्ले
- (d) ड्रामा

Q120. विद्यालयों को योगात्मक द्विभाषावाद का अनुसरण करना चाहिए क्योंकि यह _____।

- (a) बच्चे की भाषा को तो समुन्नत करता है परन्तु उनकी संस्कृति को नहीं
- (b) प्रथम भाषा के विकास में अवरोध पैदा करता है
- (c) बच्चे की संस्कृति और भाषा को महत्व देता है
- (d) अंग्रेजी शिक्षण को द्वितीय भाषा के रूप में महत्व देता है

LANGUAGE-II: ENGLISH

Read the passage given below and answer the questions (121-128) that follow:

1. chocoholics no longer need to feel guilty about their desire for chocolate. They are simply the victim of the genes, scientists have found. The so called "sweet-tooth gene" has been identified by separate teams of researchers and helps explain why some find it harder to resist chocolate bars and cream cakes. It also raises the possibility of designing a drug which could "switch off" the gene and help people resist sugary foods. Children, in particular, risk their health by eating too many sweets and chocolates.

2. To identify the gene, research teams conducted almost identical experiments using mice which have differences in their ability to taste sweet foods. One of the team members said "A sweet taste receptor recognizes the sweet content of food and initiates a cascade of events which signals to the brain that a sweet food has been eaten." He further added. "The same gene exists in humans, so it means that if your parents have a sweet tooth then you probably will as well".

3. he said, "We have always known that some people have a sweeter tooth than others. But it has also been proved that if you are gradually exposed to less sugar, then the body becomes accustomed to less. They will be satisfied with a lower level of sweetness. Doctors warn against any form of gene therapy which seeks to deactivate the sweet gene . "We have produced this gene through evolution because sweet foods in nature are not poisonous, they give us energy. We all need to have some sugar in our diet," claim scientists. US researchers are using this discovery to develop artificial sweeteners without any after-taste.

Q121. Having a sweet tooth means :

- (a)teeth being sweet to taste
- (b)teeth becoming decayed due to sugary, food items
- (c)buying sweet food items from shops
- (d)being fond of sweets and chocolates

Q122. Doctors are not in favour of gene therapy because :

- (a) People will feel guilty after going through-it.
- (b) It will enhance sugar levels in the body.
- (c) Sweet foods give energy to the body.
- (d) It is poisonous.

Q123. According to doctors, sweet foods are:

- (a) poisonous
- (b) deactivated genes
- (c) dangerous
- (d) energy boosters

Q124. The phrase '..... initiates a cascade of events', means:

- (a) signals given to the brain
- (b) to start a series of occurrences
- (c) to put a stop to orderly events
- (d) to halt and hinder sequential events

Q125. Read the statements given below:

A. Doctors have favoured gene therapy to control sweet gene.
B. A sweet taste receptor recognizes the amount of sweetness in food.

C. Heredity factors have absolutely no role to play in inheriting the sweet gene.

- (a) B and C are incorrect, A is correct
- (b) A, B and C are all incorrect
- (c) A and C are incorrect, B is correct
- (d) A and B are incorrect, C is correct

Q126. 'Chocoholic' are people:

- (a) who are fond of chocolates
- (b) who are makers of chocolates
- (c) who hate chocolates
- (d) who enjoy both chocolates and alcohol

Q127. Identify parts of speech of the underlined words in the given sentence:

'Doctors warn against any form of gene therapy which seeks to deactivate the sweet gene'.

- (a) preposition, noun
- (b) conjunction, noun
- (c) preposition, adjective
- (d) adverb, adjective

Q128. Complete the given word analogy:

Accustomed: habitual:: initiate:?

- (a) start off
- (b) hinder
- (c) halt
- (d) complicate

Read the passage given below and answer the questions (129-135) that follow:

1. Every now and then we would speed through a village line with waving Tibetan children. Their villages looked wonderful and so inviting that Dorje was not showing any signs of slowing down. Small clusters of single and double storey buildings with walk-in courtyards jostled together in the foothills to gain maximum exposure to the sun. The houses looked solid, built for the harsh environment. Walls are made up of stone to waist height and finished off with mud bricks to the roof. Tin cans lined the window ledges, with the bright orange of marigolds in full bloom livening up the black-and-white of the houses.

2. Branches of trees adorned with colorful prayer flags stood high into the wind from the top of the flat roofs. The auspicious blue, white, red, green and yellow colours of the fabrics stood out against the rich blue of the Tibetan sky. Each prayer flag carries a picture of Lungta, the jeweled dragon horse, who carries the owner's prayers up to the divine every time the flag flaps in the wind.

3. The larger village have healthy trees, usually willows or poplars which look quite out of place in the generally treeless landscape. Wood is a precious commodity in the highland areas of Tibet and is never wasted. The few shrubs which grow wild on the hillsides are harvested for use as brushwood and each courtyard wall is piled high with sticks gathered from the mountains to get a fire started. The lack of solid fuel in the shape of wood is not a problem for the Tibetans, who have an ingenious wood substitute: yak dung.

Q129. The phrase 'courtyards jostling together' implies:

- (a) being one on top of the other
- (b) being in close proximity
- (c) being very far apart
- (d) being in different sizes and dimensions

Q130. What aspect of Tibetan houses as described in the passage is incorrect?

- (a) Roofs are made of mud bricks.
- (b) They are solidly built.
- (c) Walls are made of mortar and cement.
- (d) Tin cans line the window ledges.

Q131. Why do the willows and poplars look absurd in the landscape?

- (a) Because the landscape is generally treeless.
- (b) The other trees camouflage them,
- (c) They are stunted shrubs.
- (d) They have minimum branches and leaves.

Q132. Complete the given word analogy:

Precious: valuable:: ingenious:?

- (a) genuine
- (b) practical
- (c) theoretical
- (d) inventive

Q133. Yak dung is used by the Tibetans as a substitute for:

- (a) fire
- (b) wood
- (c) buildings
- (d) marigolds

Q134. Read the following two statements:

Assertion A: Wood and sticks are piled high against the courtyard walls in the houses

Reasoning R: Wood is found in abundance across Tibet

- (a) A and R are both incorrect
- (b) A is correct and R is the reason for it.
- (c) A is incorrect, but R is correct
- (d) A is correct and R is not the reason for it

Q135. Identify the underlined words in the given sentence:

The lack of solid fuel in the shape of wood is not a problem for the Tibetans.

- (a) noun, noun
- (b) verb, noun
- (c) noun, adjective
- (d) adjective, noun

Q136. India's language in education policy (Three Language Formula) attempts to promote:

- (a) Bilingual education with the focus on Hindi
- (b) Mother-tongue based multilingualism
- (c) Multi language education
- (d) Monolingual education

Q137. What is a short story which has animals as the main characters and teacher an explicit moral called?

- (a) Science Fiction
- (b) Travelogue
- (c) Fantasy
- (d) Fable

Q138. Which of the following statements are correct?

- A. Dyslexia is a reading disorder.
 - B. Dysgraphia is a writing disorder.
 - C. Dysgraphia is a reading disorder.
 - D. Dyslexia is a writing disorder.
- (a) Both A and B are correct
 - (b) Both C and D are correct
 - (c) Only A is correct
 - (d) Only B and D are correct

Q139. Rita, a government school teacher, uses visual devices and language games to teach English to class VII students.

Which principle of teaching is Rita applying?

- (a) Principle of motivation and interest
- (b) Principle of correlating with life
- (c) Principle of natural process
- (d) Principle of practice and habit formation

Q140. What is NOT true about top-down processing?

- (a) Listeners make use to the knowledge of the world
- (b) Listeners need to understand every word
- (c) Listeners rely on their background knowledge
- (d) Listeners make guesses about the intended meaning

Q141. Which tool is not ideal for formative assessment?

- (a) Project
- (b) Class presentation
- (c) Assignment
- (d) Paper pencil test

Q142. Assessment done throughout the teaching-learning process to clarify student learning and understanding is called_____.

- (a) Assessment in learning
- (b) Assessment as learning
- (c) Assessment for learning
- (d) Assessment of learning

Q143. Learners should be exposed to language, and errors are evidence that learning is taking place is advocated by:

- (a) Humanist
- (b) Psychoanalyst
- (c) Behaviourists
- (d) Cognitivist

Q144. Creativity in language education is :

- (a) classroom activity using new methods of teaching.
- (b) classroom material using communicative language teaching.
- (c) open-ended classroom tasks which allow for different interpretations and answers
- (d) merging elements from different subjects to understand something.

Q145. Which is a tool that allows for a number of synchronous and asynchronous online teaching opportunities?

- (a) Television
- (b) Padlet
- (c) Textbook
- (d) Railway ticket

Q146. What is NOT true about errors in language learning?

- (a) Errors are crucial aspects of the language learning process.
- (b) Errors help to understand the process of second language acquisition.
- (c) Errors hinder the language learning process.
- (d) Errors are not always bad and help in learning.

Q147. In a second language class, a teacher played audio on 'Health is wealth'. He then distributed handouts and asked the students to tick the correct answer from the given option. The objective of the lesson was to enable the learner:

- (a) to listen, to analyse the ideas
- (b) to memorise the lesson on health and wealth
- (c) to hear the lesson on health
- (d) to engage the learners with a task

Q148. When is International Mother Language Day celebrated?

- (a) 21st February
- (b) 13th April
- (c) 1st January
- (d) 14th February

Q149. Identify the type of email you would write if you were writing to a colleague who is your friends

- (a) Business
- (b) Correspondence
- (c) Informal
- (d) Formal

Q150. Using everyday objects to teach language is called_____.

- (a) Teaching aid
- (b) Text
- (c) Realia
- (d) Language games

Solutions

S1. Ans.(a)

Sol. Teachers should indeed respect individual differences among learners and adapt their teaching strategies to meet the needs of all students. This approach is fundamental to inclusive education. However, Reason R is false because collaboration, group work, and interactions among students are beneficial in a diverse classroom. These activities promote social skills, peer learning, and a deeper understanding of the material. Therefore, while Assertion A is true, Reason R does not support it and is incorrect.

S2. Ans.(a)

Sol. Both Piaget and Vygotsky emphasized the importance of active involvement and engagement of children in their own learning processes. Piaget's theory of cognitive development focuses on how children construct knowledge through interaction with their environment, while Vygotsky's theory highlights the role of social interaction and scaffolding in learning. Both theorists agree that children are active participants in their learning, exploring, and interacting with their surroundings to develop cognitive skills.

S3. Ans.(a)

Sol. Culturally responsive teaching involves being intentional in recognizing and valuing students' cultural backgrounds, being adaptive in teaching methods to meet the diverse needs of students, and differentiating instruction to ensure all students can access and engage with the curriculum. Standardization, which implies uniformity, does not align with the principles of culturally responsive teaching, which emphasizes flexibility and responsiveness to students' cultural contexts.

S4. Ans.(a)

Sol. Jean Piaget's theory of cognitive development posits that children think differently from adults. Children's thinking is qualitatively different, meaning they process and understand the world in fundamentally different ways. Piaget identified distinct stages of cognitive development, each characterized by unique ways of thinking. This qualitative difference is a cornerstone of Piaget's work, highlighting that children are not just less knowledgeable than adults, but their cognitive processes are structured differently.

S5. Ans.(d)

Sol. Encouraging students to reflect on their own learning and thinking processes is crucial for developing metacognitive skills. Metacognition involves awareness and control over one's learning and cognitive processes. By reflecting on what they know, how they learn, and what strategies are effective, students can become more self-regulated learners. This reflection helps them to plan, monitor, and evaluate their learning, which is essential for lifelong learning and academic success.

S6. Ans.(b)

Sol. Lev Vygotsky proposed that language and thought are deeply interconnected and develop together. He believed that social interaction, particularly through language, plays a crucial role in cognitive development. According to Vygotsky, language is a primary tool of intellectual adaptation and shapes thought processes. Thought and language influence each other, and this relationship evolves over time, becoming more complex as children grow. This view contrasts with theories that treat language and thought as separate or hierarchical processes.

S7. Ans.(a)

Sol. Naturalistic intelligence involves the ability to recognize, classify, and categorize various elements in nature, such as plants, animals, and weather patterns. It is closely related to observing and understanding the natural world, making it relevant when students are required to classify different types of objects and analyze their classification schemes. The teacher's focus on providing such experiences aims to develop students' naturalistic intelligence.

S8. Ans.(d)

Sol. Effective feedback is continuous and timely, occurring during and after the learning activity. This approach helps students understand their progress and areas for improvement in real-time, fostering an ongoing learning process. Timely feedback can guide students toward better performance and understanding, reinforcing positive behaviors and correcting misunderstandings promptly.

S9. Ans.(b)

Sol. According to Vygotsky's theory, scaffolding is crucial in supporting students as they learn new concepts. By working through the problem with the student and providing guidance, Rama can help the student build understanding and skills. Involving other group members promotes collaborative learning, aligning with Vygotsky's emphasis on social interaction as a key component of cognitive development.

S10. Ans.(a)

Sol. Psychosocial development encompasses the changes and consistency in an individual's emotions, personality, and social relationships over time. This concept, introduced by Erik Erikson, highlights how social experiences and crises at different stages of life influence personality and emotional growth, integrating both change and stability aspects.

S11. Ans.(c)

Sol. Constructivist teaching emphasizes discovery learning, where students actively engage in exploring, questioning, and understanding concepts through hands-on experiences and critical thinking. This approach encourages students to construct their own understanding and knowledge of the world, promoting deeper learning and retention.

S12. Ans.(a)

Sol. Progressive education views children as knowledgeable and meaning-makers, capable of constructing their own understanding through exploration, experience, and interaction with their environment. This philosophy supports student-centered learning, critical thinking, and active participation, recognizing the inherent potential and creativity of each child.

S13. Ans.(a)

Sol. Jean Piaget's theory emphasizes that cognitive development occurs in stages, and each stage is characterized by different abilities and ways of thinking. Therefore, the curriculum should be designed to align with the developmental stage and age group of children, ensuring that the content and teaching methods are appropriate for their cognitive abilities.

S14. Ans.(d)

Sol. It often implies enhanced intrinsic motivation and belief in the incremental view of ability. Setting mastery goals focuses on learning, understanding, and improving one's skills, which fosters intrinsic motivation. Students who adopt mastery goals typically believe that their abilities can grow with effort and persistence, aligning with the incremental view of ability. This mindset encourages a positive attitude towards challenges and a resilience in the face of setbacks.

S15. Ans.(a)

Sol. Adolescents face increased pressure to conform to gender norms, but gender and gender roles are socially constructed, not determined biologically. Therefore, the reason provided does not correctly explain the assertion.

S16. Ans.(a)

Sol. Engaging students in debates, discussions, and collaborations promotes active learning and deeper understanding. The reason provided is false because knowledge production is an active process, and group activities enhance meaningful learning rather than hinder it.

S17. Ans.(d)

Sol. Printed textbooks and notes are not accessible to students with visual impairments unless they are converted into accessible formats such as Braille, audio, or electronic text. Therefore, they hinder participation in the classroom.

S18. Ans.(d)

Sol. Norm-referenced assessment: compares performance to that of peers. Norm-referenced assessments evaluate a student's performance in relation to the performance of a larger group. This type of assessment ranks students, typically placing them on a bell curve to see where they stand in comparison to their peers.

S19. Ans.(a)

Sol. Sunita's exceptional musical ability is likely the result of both genetic inheritance (heredity) from her accomplished singer parents and the environment, which includes her voice training classes and supportive family background. This interaction of heredity and environment shapes her musical talents.

S20. Ans.(d)

Sol. Lawrence Kohlberg studied moral development by posing moral dilemmas to children and analyzing their responses. This qualitative approach allowed him to explore the reasoning behind their moral decisions and understand the stages of moral development.

S21. Ans.(b)

Sol. Both A and R are false. The assertion that schools should only function within frameworks that assess the finished product and learning outcomes is limiting, as it overlooks the importance of the learning process itself. Additionally, the reason that learning is tightly sequential and hierarchical is also incorrect. Learning can be non-linear, with students often revisiting and integrating knowledge in various ways rather than following a strict sequence.

S22. Ans.(d)

Sol. Autism is a neuro-developmental disorder characterized by challenges with social interaction, communication, and restricted, repetitive behaviors. It is not caused solely by environmental factors, cannot be cured, and not all autistic individuals have exceptional skills.

S23. Ans.(b)

Sol. Reciprocal teaching is a learning strategy where students take turns teaching and learning from each other, reinforcing their understanding and knowledge through the process of teaching their peers.

S24. Ans.(a)

Sol. Sensitive periods are specific times in development when environmental factors have a particularly strong influence on the normal development of certain skills or abilities. These periods are critical for learning and development.

S25. Ans.(c)

Sol. Students with dyslexia benefit from systematic phonological training, which helps them understand the relationship between sounds and letters, thereby improving their reading skills. Long and complex passages or higher-grade level texts would not be suitable, and conditioning methods are not typically effective for reading difficulties.

S26. Ans.(b)

Sol. What are the various causes of increase of population in India? promotes analytical thinking because it requires students to analyze multiple factors and their relationships, rather than recalling a fact or performing a straightforward calculation. Analytical thinking involves breaking down complex information, examining cause and effect, and understanding interconnections, which is crucial for deep learning and critical thinking.

S27. Ans.(c)

Sol. Both A and R are true and R is the correct explanation of A. This statement is correct because providing opportunities for experimentation and discussing examples and non-examples helps children explore and understand concepts deeply. Counter examples specifically help in rectifying misconceptions, reinforcing correct understanding by contrasting incorrect notions.

S28. Ans.(a)

Sol. A is true but R is false. The assertion that in Asian cultures, expressions of 'anger' are discouraged and 'shame' is encouraged is correct as it reflects cultural norms focusing on social harmony. However, the reason that emotions are subjective and do not play any role in learning is false. Emotions significantly influence learning by affecting motivation, memory, and cognitive processes.

S29. Ans.(a)

Sol. Give questions that involve inference and explanations. This approach encourages students to think critically, as they must analyze information, draw conclusions, and articulate their reasoning. Critical thinking skills are essential for problem-solving and understanding complex concepts.

S30. Ans.(a)

Sol. Are meant to offer differentiated instructions as per individual differences. Inclusive classrooms are designed to accommodate the diverse learning needs of all students, ensuring that each child receives appropriate support and instruction. This approach recognizes and values individual differences, promoting equality and participation for all students.

S31. Ans.(c)

Sol. Analytical Method-The analytical method involves breaking down complex information or concepts into smaller, more manageable parts to understand them better. It focuses on analyzing and interpreting data or phenomena.

Teacher-Centered Method-Efficient for covering a large syllabus within a limited time. Provides clear structure and expectations. Can be less effective for fostering critical thinking and creativity. May not address individual learning needs and styles.

Deductive Method-The deductive method is a teaching and learning approach where the educator presents the general principles or theories first, followed by specific examples and applications. It typically moves from a general idea to a specific conclusion.

Discovery Method-The discovery method is a student-centered approach where learners are encouraged to explore, ask questions, and discover new information and insights on their own, often through experiments or problem-solving tasks.

S32. Ans.(d)

Sol. $V-E+F=2$

use Euler's formula to find x

$$x-15+7=2$$

$$x=10$$

$$2F+3E-4x = 2(7)+3(15)-4(10) = 19$$

S33. Ans.(a)

Sol. $36+37+31+42+23+38+17+18+35+25+29+35=366$

$$\text{Mean} = 366/12 = 30.5$$

$$\text{Range} = \text{Maximum mark} - \text{Minimum mark} = 42 - 17 = 25$$

$$\text{Difference} = \text{Mean} - \text{Range} = 30.5 - 25 = 5.5$$

S34. Ans.(b)

Sol. $(2x+5y)^2 - 5(2x+5y) - 14 = (2x+5y+p)(2x+5y+q)$

$$\text{Let } (2x+5y) = z$$

$$z^2 - 5z - 14 = (z+p)(z+q)$$

$$z^2 - 5z - 14 = z^2 + (p+q)z + pq$$

$$-5 = p+q \text{ and } -14 = pq$$

S35. Ans.(d)

Sol. Total Cost Price = Rs. 24,000 , Number of Fans = 12

$$\text{Cost Price per Fan} = \text{Total Cost Price} / \text{Number of Fans} = 24,000 / 12 = \text{Rs. 2,000}$$

Increase in Price = 25% of Cost Price

$$\text{Increase per Fan} = \text{Rs. 2,000} \times 25/100 = \text{Rs. 500}$$

$$\text{Marked Price per Fan} = \text{Cost Price per Fan} + \text{Increase} = 2,000 + 500 = \text{Rs. 2,500}$$

Selling Price per Fan Discount = 10% of Marked Price

$$\text{Discount per Fan} = \text{Rs. 2,500} \times 10/100 = \text{Rs. 250}$$

$$\text{Selling Price per Fan} = \text{Marked Price per Fan} - \text{Discount} = 2,500 - 250 = \text{Rs. 2,250}$$

Total Profit- Profit per Fan = Selling Price - Cost Price

$$\text{Profit per Fan} = \text{Rs. 2,250} - \text{Rs. 2,000} = \text{Rs. 250}$$

$$\text{Total Profit} = \text{Profit per Fan} \times \text{Number of Fans} = \text{Rs. 250} \times 12 = \text{Rs. 3,000}$$

S36. Ans.(a)

Sol. $[(a-b+c)^2 - (a-b-c)^2]/(b-a)$

$$[(a-b+c+a-b-c)(a-b+c-a+b+c)]/(b-a) = 2(a-b)(2c)/(b-a) = -4c$$

S37. Ans.(a)

S38. Ans.(a)

Sol. Affective Domain: This domain deals with emotions, feelings, values, and attitudes related to learning. It encompasses a student's interest, motivation, and disposition towards the subject matter.

Psychomotor Domain: This domain focuses on developing physical or manual skills. It involves coordination, dexterity, and manipulation of objects. This could be anything from learning to play an instrument to performing a scientific experiment.

Cognitive Domain: This domain focuses on the mental skills involved in learning, such as knowledge acquisition, comprehension, application, analysis, synthesis, and evaluation. It's essentially the "thinking" part of learning.

S39. Ans.(a)

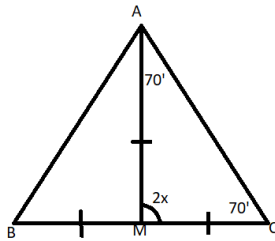
Sol. finding short-cuts in mathematics.

S40. Ans.(d)

Sol. given $AM = BM = CM$

Angle $A = x$ and $B = 70$

$$\angle A + \angle B + \angle C = 180^\circ$$



$$2x + 70^\circ + 70^\circ = 180^\circ$$

$$2x = 180^\circ - 140^\circ = 40^\circ$$

$$x = 20^\circ$$

$$3x + 25^\circ = 3 \times 20^\circ + 25^\circ = 85^\circ$$

S41. Ans.(b)

Sol. $2\frac{3}{5} + \frac{3}{8} = 2 + \frac{3}{5} + \frac{3}{8} = 2 + \left(\frac{24+15}{40}\right) = 2\frac{39}{40}$

S42. Ans.(b)

Sol. the ratio of two number = 3:7 and LCM = 630

$$21x = 630$$

$$x = 30 = \text{HCF}$$

$$\text{LCM} + \text{HCF} = 630 + 30 = 660$$

S43. Ans.(c)

Sol. Area of triangle = $\frac{1}{2}(30)(a)$

$$240 = \frac{1}{2}(30)(a)$$

$$a = 16$$

$$b^2 = 900 + 256 = 1156$$

$$b = 34$$

$$\text{Perimeter of triangle} = 30 + 16 + 34 = 80$$

S44. Ans.(a)

Sol. $A = P \left(1 + \frac{r}{100}\right)^n$

$$3267 = P \left(1 + \frac{10}{100}\right)^2$$

$$3267 = P \times 1.21$$

$$P = 2700$$

$$S.I = (2700 \times 10 \times 2.5)/100 = 67500/100 = \text{Rs.}675$$

S45. Ans.(d)

Sol. 105, 210, 315, 420

S46. Ans.(c)

Sol. $2x + 15^\circ + 3x - 20^\circ = 180^\circ$

$$5x = 185^\circ$$

$$x = 37^\circ$$

$$4x + 6^\circ = 4 \times 37^\circ + 6^\circ = 154^\circ$$

S47. Ans.(c)

Sol. Difference of the marks mathematics and English =

$$(90^\circ - 50^\circ) \times \frac{540}{360} = 60$$

S48. Ans.(d)

S49. Ans.(d)

S50. Ans.(a)

Sol. In parallelogram PQRS

$$OP = OR$$

$$X + 7 = 20$$

$$X = 13 \text{ cm}$$

$$OQ = OS$$

$$X + y = 16$$

$$13 + y = 16$$

$$y = 16 - 13 = 3$$

$$(7y + 5) = 7 \times 3 + 5 = 26$$

S51. Ans.(c)

Sol. $955 + 6 = 961$ this is perfect square number

$$x = 6 \text{ then } 3x + 2 = 3(6) + 2 = 20$$

S52. Ans.(c)

Sol. $\angle A + \angle B + \angle C = 180^\circ$

$$50^\circ + 70^\circ + \angle C = 180^\circ$$

$$\angle C = 180^\circ - 120^\circ = 60^\circ$$

$$\angle ADC = 60^\circ / 2 = 30^\circ$$

S53. Ans.(b)

S54. Ans.(c)

Sol. $AB + BC + CD + DA = 120$

$$AB + 48 + 17 + 40 = 120$$

$$AB = 15 \text{ cm}$$

$$\text{Area} = (1/2) \times (AD + BC) \times AB$$

$$\text{Area} = (1/2) \times (40 + 48) \times 15$$

$$\text{Area} = (1/2) \times 88 \times 15 = 660 \text{ cm}^2$$

S55. Ans.(b)

S56. Ans.(c)

S57. Ans.(c)

Sol. varun's age = x year

Arun's age = x+3

According to question

$$\frac{5}{6}(x - 5) - \frac{3}{5}(x - 8) = 6$$

S58. Ans.(b)

S59. Ans.(b)

S60. Ans.(d)

$$\text{Sol. } 52 \times \frac{3}{4} + \frac{\sqrt{441}}{7} \times 3 + 5 - \frac{32}{8} \times 12 = 39 + 9 + 5 - 48 = 5$$

S61. Ans.(b)

Sol. Discussing socio-scientific issues in class plays a significant role in enhancing various competencies and understandings among students. Firstly, it helps in developing multiple perspectives on an issue (II). Students learn to view problems from different angles, which enhances their critical thinking and empathy. Secondly, such discussions can encourage citizen science activities (III), where learners participate in scientific research projects, contributing to data collection and analysis, thus actively engaging with science outside the classroom. Thirdly, it helps in appreciating the role of society in the development of science (IV). Understanding the interplay between societal values, ethics, and scientific advancements helps students recognize the broader implications of scientific work.

S62. Ans.(d)

Sol. Observations are direct phenomena that can be seen, measured, or noted directly through sensory experience or empirical evidence, while inferences are conclusions drawn based on observations or existing knowledge.

O-B, C (Observation):

B. Air expands on heating: This is an observable phenomenon. When air is heated, it expands.

C. Lime water turns milky on passing carbon dioxide: This is also an observable phenomenon. The reaction between lime water (calcium hydroxide) and carbon dioxide forms calcium carbonate, which makes the lime water milky.

I-A, D (Inference):

A. Metal oxides are basic in nature: This is an inference drawn from the observation that metal oxides react with acids to form salts and water, indicating their basic nature.

D. Sodium hydroxide and hydrochloric acid neutralize each other: This is an inference based on the observed chemical reaction where an acid and a base neutralize each other to form water and salt.

S63. Ans.(c)

Sol. The object floating with 1/4th of its volume outside liquid A indicates that the liquid is denser than the object. When it floats with 3/4th of its volume outside liquid B, it suggests that liquid B is less dense than liquid A. Therefore, the density of liquid A is greater than that of liquid B.

S64. Ans.(d)

Sol. Social context may influence conclusions in any investigation (B), as social, cultural, and economic factors can shape scientific interpretation. There is no universal scientific method (D); while the scientific method generally involves hypothesis, experimentation, observation, and conclusion, its application can vary widely across different scientific fields and contexts.

S65. Ans.(d)

Sol. Self-pollination can also occur in unisexual flowers under certain conditions, making statement A false. Bisexual flowers can indeed undergo both self and cross pollination, making statement B true.

S66. Ans.(a)

Sol. Rainwater harvesting conserves ground water (A) by replenishing aquifers. It reduces local flooding (B) by capturing runoff and directing it to storage or recharge areas. Additionally, harvested rainwater can be used for irrigation of crops (D), reducing dependency on conventional water sources.

S67. Ans.(a)

Sol. Winds are primarily generated due to the uneven heating of the earth (A) and the oceans (B). The differential heating causes pressure differences, leading to the movement of air from high to low-pressure areas, creating wind.

S68. Ans.(a)

Sol. The filament of an incandescent bulb is made of tungsten (A) because tungsten has a very high melting point, allowing it to withstand high temperatures without melting. However, the reason (R) is incorrect because tungsten actually has a relatively high electrical resistance. This high resistance is what causes it to heat up and emit light when an electric current passes through it.

S69. Ans.(a)

Sol. A gender-responsive pedagogy in science involves using gender-sensitive language (A) to avoid reinforcing stereotypes and engaging students in examining stereotypes (B) to promote critical thinking about gender roles. This approach encourages inclusivity and equity in the classroom.

S70. Ans.(a)

Sol. Conduction can occur in gases, though it is less efficient compared to solids and liquids due to the greater distance between particles in a gas. The other statements are true as materials have different thermal conductivities, conduction is generally faster in solids due to tightly packed molecules, and contact is necessary for conduction.

S71. Ans.(a)

Sol. Divergent questions are designed to promote critical thinking (A), develop communication (C), identify alternate conceptions (E), and appreciate subjectivity in science (F). These questions encourage students to think broadly and explore various possibilities, leading to a deeper understanding of the subject matter.

S72. Ans.(b)

Sol. The human circulatory system is characterized by being closed (blood flows within vessels) and having double circulation (blood passes through the heart twice in one complete circuit - pulmonary and systemic circulation).

S73. Ans.(c)

Sol. Scientific laws describe relationships between observable phenomena and are typically expressed mathematically. They are empirical generalizations based on repeated observations and experiments.

S74. Ans.(b)

Sol. The assertion (A) that the rate of breathing in aquatic animals is slower than land animals is false. Aquatic animals generally have a higher rate of breathing to compensate for the lower concentration of oxygen in water compared to air. The reason (R) is also false because the presence of large amounts of dissolved oxygen would typically decrease the breathing rate, but in natural conditions, dissolved oxygen levels are lower in water than in air, necessitating faster breathing in aquatic animals.

S75. Ans.(c)

Sol. The ceilings of cinema halls and concert halls are generally curved to ensure sound waves are reflected evenly in all directions, enhancing sound distribution and acoustics.

Information Booster:

Acoustics: The study of sound and how it behaves in different environments.

Curved surfaces: Used to manage sound reflection and absorption for optimal auditory experience.

S76. Ans.(c)

Sol. Soil erosion is primarily caused by water, wind, and tillage, rather than the excessive use of fertilizers and pesticides. Eutrophication (a) is caused by nutrient runoff from fertilizers leading to excessive growth of algae in water bodies. Bio-magnification (b) occurs when pesticides accumulate in organisms and move up the food chain. Nitrification (d) is a natural microbial process of converting ammonia into nitrates in the soil, which can be influenced but not primarily caused by the use of fertilizers.

S77. Ans.(c)

Sol. An odometer measures the distance traveled by a car, tracking the total mileage covered over time.

Information Booster:

Average speed: Total distance divided by total time, not measured by an odometer.

Acceleration: The rate of change of velocity, measured by an accelerometer.

Instantaneous speed: Speed at a particular moment, measured by a speedometer.

S78. Ans.(a)

Sol. A plane mirror creates a virtual and erect image of the same size as the object. A concave mirror can produce a real, inverted image of the same size (B) or an enlarged image (C). A convex mirror produces a virtual and erect diminished image (D).

Information Booster:

Plane mirror: Reflects an image with the same size and orientation.

Concave mirror: Can magnify or invert depending on object distance.

Convex mirror: Always produces a diminished, erect virtual image.

S79. Ans.(b)

Sol. Water from the lowest hole comes out with the greatest force (A) due to higher water pressure at greater depth. Water from the lowest hole also falls at the maximum distance (D) because it exits with more force.

Information Booster:

Water pressure: Increases with depth due to the weight of the water above.

Flow force: Greater at lower levels where pressure is higher.

S80. Ans.(a)

Sol. The color of a flame depends on the nature of the combustible substance (I) and the oxygen supply (II). Different substances burn with different colors, and varying the oxygen supply can change the temperature and color of the flame.

Information Booster:

Nature of combustible substance: Different elements and compounds produce distinct flame colors.

Oxygen supply: Affects combustion temperature and flame color. More oxygen generally results in a hotter, blue flame.

S81. Ans.(a)

Sol. A diagnostic questionnaire can help the teacher identify students' initial conceptions. Interviews allow for deeper exploration of students' thinking, and drawings can visually reveal students' understanding and misconceptions about adaptations in plants and animals.

S82. Ans.(d)

Sol. The reaction of potassium with water is exothermic, meaning it releases heat. Potassium reacts violently with water, producing hydrogen gas and a pop sound due to the rapid release of hydrogen.

S83. Ans.(d)

Sol. The color changes for the indicators in acids and bases are as follows:

Turmeric: No change in acids and turns yellow in bases.

China rose: Dark pink in acids and green in bases.

Phenolphthalein: Colorless in acids and pink in bases.

Methyl orange: Red/orange in acids and pink in bases.

Therefore, the correct matching is:

- A (Turmeric in bases) = Yellow

- B (China rose in bases) = Green

- C (Phenolphthalein in acids) = Colourless

- D (Methyl orange in acids) = Orange

Information Booster:

Turmeric: A natural indicator that remains yellow in acids and turns reddish-brown in bases.

China rose: Turns dark pink in acids and green in bases.

Phenolphthalein: A synthetic indicator that is colorless in acidic solutions and turns pink in basic solutions.

Methyl orange: Turns red/orange in acidic solutions and yellow in basic solutions, though it appears as orange in the table context.

S84. Ans.(a)

Sol. The correct answer is that the twins formed by the fusion of two sperms with two eggs may be fraternal (dizygotic) or, in rare cases, may be identical (monozygotic) if one of the fertilized eggs splits after fertilization. Typically, when two sperms fertilize two eggs, the twins are fraternal. However, the identical scenario can happen if one of the fertilized eggs splits early after fertilization, leading to identical twins.

S85. Ans.(d)

Sol. Exploring factors that affect the rate of germination in gram seeds involves conducting experiments, making observations, and drawing conclusions, which are fundamental aspects of scientific inquiry.

S86. Ans.(c)

Sol. Photosynthesis is an endothermic reaction as it requires energy from sunlight to convert carbon dioxide and water into glucose and oxygen. Respiration is an exothermic reaction as it releases energy by breaking down glucose in the presence of oxygen.

Information Booster:

Endothermic reaction: Absorbs energy (e.g., photosynthesis).

Exothermic reaction: Releases energy (e.g., respiration).

Photosynthesis: Occurs in plants, converting solar energy into chemical energy.

Respiration: Occurs in all living organisms to release energy for cellular processes.

S87. Ans.(d)

Sol. Inductive reasoning involves observing specific instances and drawing general conclusions. Measuring the angle of reflection for various angles of incidence allows students to observe a pattern and derive the law of reflection.

Information Booster:

Inductive reasoning: Deriving general principles from specific observations.

Reflection laws: Can be discovered through practical measurements and observations.

S88. Ans.(a)

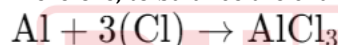
Sol. The atomic number 13 corresponds to aluminum (Al), which has a valency of +3, and the atomic number 17 corresponds to chlorine (Cl), which has a valency of -1. To form a neutral compound, two chlorine ions (Cl⁻) are needed to balance the charge of one aluminum ion (Al³⁺), resulting in the formula AlCl₃.

The correct formula is thus formed based on the valencies:

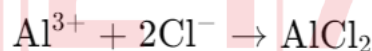
- Aluminum (Al) with a valency of +3.

- Chlorine (Cl) with a valency of -1.

Therefore, to balance the charges:



However, since the correct answer from the provided options that reflects the correct ratio of the ions is AB₂:



Information Booster:

Aluminum (Al): Atomic number 13, typically forms a +3 cation.

Chlorine (Cl): Atomic number 17, typically forms a -1 anion.

Compound formation: Involves combining ions in ratios that balance their charges, resulting in a neutral compound.

S89. Ans.(c)

Sol. It is recommended to add acid to water for safety because the dilution process is highly exothermic. Adding water to acid can cause the mixture to splatter and potentially cause burns or other injuries.

Information Booster:

Exothermic reaction: Releases heat, making the dilution of acids potentially dangerous.

Safety procedure: Adding acid to water minimizes the risk of splashing and ensures safer dilution.

S90. Ans.(b)

Sol. Alternate conceptions in science often do demonstrate cause and effect reasoning, though it may be incorrect. These ideas are typically developed from observable features, are stable, and resistant to change.

Information Booster:

Alternate conceptions: Misconceptions or preconceptions that students hold about scientific concepts.

Cause and effect reasoning: Even incorrect alternate conceptions often follow a logical cause and effect pattern.

Stability and resistance: Such ideas are stable and resistant to change even when confronted with conflicting evidence.

S91. Ans.(a)

Sol. बदतर का अर्थ है अत्यधिक बुरा। इस संदर्भ में, "समाज के बदतर होने की स्थिति" का मतलब है कि समाज की स्थिति बहुत ही खराब हो गई है।

S92. Ans.(d)

Sol. गद्यांश में स्पष्ट किया गया है कि साहित्य में समाज के टूटते-बिखरते मूल्यों की चिंता बनी रहती है।

S93. Ans.(a)

Sol. गद्यांश के अनुसार, वही साहित्य कालजयी बन पाता है जिसमें मानवीय सत्य की व्याख्या हो और संवेदनाओं के सहारे आस्था जगाने का प्रयास हो।

S94. Ans.(b)

Sol. विश्वास का अर्थ है निश्चित धारणा, जो किसी पर पूर्ण विश्वास प्रकट करती है।

S95. Ans.(a)

Sol. विशुद्धलिखित शब्द में 'इत' प्रत्यय है, जिससे यह शब्द बना है।

S96. Ans.(b)

Sol. गद्यांश के अनुसार, साहित्यकारों ने समय-समय पर बिखरते हुए समाज की स्थिति को पहचाना है।

S97. Ans.(d)

Sol. कालजयी का अर्थ है जो हर काल में प्रासंगिक हो, अर्थात् जिसकी महत्वपूर्णता समय के साथ बनी रहे।

S98. Ans.(c)

Sol. गद्यांश के अनुसार, ऐसे साहित्यकारों की आवश्यकता हर युग में रहती है जिनकी रचनाएँ समाज को दीस करने का दायित्व निभाती हैं और जो समाज को जागरूक करते हैं।

S99. Ans.(b)

Sol. गद्यांश के अनुसार, साहित्य सदैव समाज को निरंतरता और गति प्रदान करता है।

S100. Ans.(d)

Sol. पद्यांश के अनुसार, संध्या सुंदरी मेघमय (बादलों से भरे) आकाश से उतर रही है।

S101. Ans.(a)

Sol. 'हृदयराज की रानी' संध्या के लिए प्रयुक्त हुआ है, जो संध्या सुंदरी का ही एक अन्य रूप है।

S102. Ans.(c)

Sol. 'दिवसावसान' का संधि विच्छेद है 'दिवस + अवसान'।

S103. Ans.(c)

Sol. पद्यांश में संध्या सुंदरी के माध्यम से प्रकृति का चित्रण किया गया है।

S104. Ans.(d)

Sol. पद्यांश में तारा के हँसने की बात की गई है, जो संध्या सुंदरी के घुँघराले काले बालों में गुँथा हुआ है।

S105. Ans.(b)

Sol. पद्यांश में संध्या, तारा, और मेघ को मानवीय गुण दिए गए हैं, जो मानवीकरण अलंकार का प्रयोग है।

S106. Ans.(a)

Sol. अध्यापकों, शिक्षार्थियों और सामग्री पर टैस्ट एवं आकलन का प्रभाव कक्षायी प्रभाव कहलाता है।

S107. Ans.(c)

Sol. A-I, B-IV, C-III, D-II

A. सम्प्रेषणात्मक भाषा शिक्षण - सामाजिक रूप से स्वीकृत और संदर्भ के अनुरूप भाषा

B. प्रत्यक्ष विधि - व्याकरण को आगमनात्मक तरीके से पढ़ाना

C. व्याकरण अनुवाद - लिखित साहित्यिक सामग्री

D. वैस्ट (West's) की नवीन विधि - मौन पठन

S108. Ans.(d)

Sol. व्यवहारवादी (बिहेवियरिस्ट) मत इस बात में विश्वास रखता है कि भाषा अधिगम आदत निर्माण की प्रक्रिया के माध्यम से होता है।

S109. Ans.(c)

Sol. अध्यापक अधिगम को और अधिक वास्तविक तथा उपयोगी बनाने के लिए प्रामाणिक सामग्री का प्रयोग कर रही है।

S110. Ans.(a)

Sol. संस्कृत आधुनिक भारतीय भाषा है यह कथन सही नहीं है।

S111. Ans.(c)

Sol. सम्प्रेषण से सामाजिक सम्बद्धता स्थापित होती है, यह समझना अध्यापक के लिए ज़रूरी है।

S112. Ans.(a)

Sol. किसी भी कहानी का समय और स्थान कथानक (प्लॉट) कहलाता है।

S113. Ans.(c)

Sol. श्रवण में ध्वनि सुनना, ध्वनियाँ जैसी हैं, तदनुसार डिकोड करना शामिल है।

S114. Ans.(c)

Sol. रिकार्डिंग को थोड़ा सा रोकना (पॉज़ देना) महत्वपूर्ण कारक नहीं है।

S115. Ans.(b)

Sol. भाषा के श्रवण और पठन ग्राह्य कौशल हैं।

S116. Ans.(a)

Sol. अवकाश के दौरान कहीं जाने से संबंधित पाठ्य सामग्री से परिचित करवाना इस पाठ का उद्देश्य होना चाहिए।

S117. Ans.(b)

Sol. भाषा की कक्षा में विद्यार्थी अध्यापक के निर्देशन में समूह बनाकर दिए गए टॉपिक पर एक विज्ञापन प्रस्तुत करते हैं। इस तरीके से भाषा सीखना निर्देशन और परमर्श कहलाता है।

S118. Ans.(c)

Sol. भाषागत कार्य जैसे स्वरशैली, तान, बलाघात और लय को काव्य कहा जाएगा।

S119. Ans.(c)

Sol. भाषा की कक्षा में एक अध्यापक ने विद्यार्थियों के एक समूह को ग्राहक, प्रापर्टी डीलर, मकानमालिक और किराएदार का अभिनय करने के लिए कहा और शेष विद्यार्थियों से का कि इस अभिनय को देखें और वार्तालाप का आनन्द लें। इस गतिविधि को रोलप्ले कहा जाएगा।

S120. Ans.(c)

Sol. योगात्मक द्विभाषावाद बच्चे की संस्कृति और भाषा को महत्व देता है, इसलिए विद्यालयों को इसका अनुसरण करना चाहिए।

S121. Ans.(d)

Sol. Having a sweet tooth means being fond of sweets and chocolates. It refers to a strong liking or craving for sweet foods.

S122. Ans.(c)

Sol. Doctors are not in favor of gene therapy because sweet foods give energy to the body. The passage mentions that sweet foods in nature are not poisonous and they provide energy, which is necessary for our diet.

S123. Ans.(d)

Sol. According to doctors, sweet foods are energy boosters. The passage highlights that sweet foods provide energy, which is necessary for our diet.

S124. Ans.(b)

Sol. The phrase "initiates a cascade of events" means to start a series of occurrences. This implies a sequence of events triggered by an initial action.

S125. Ans.(c)

Sol. Statement A is incorrect because doctors are not in favor of gene therapy. Statement C is incorrect because heredity factors do play a role in inheriting the sweet gene. Statement B is correct as per the passage, which states that a sweet taste receptor recognizes the sweet content of food.

S126. Ans.(a)

Sol. 'Chocoholics' are people who are fond of chocolates. The term refers to individuals who have a strong liking for chocolate.

S127. Ans.(c)

Sol. "Against" is a preposition, and "sweet" is an adjective. "Against" indicates the relationship between "warn" and "any form of gene therapy." "Sweet" describes the noun "gene."

S128. Ans.(a)

Sol. The analogy "Accustomed: habitual:: initiate:?" means that "accustomed" is synonymous with "habitual," and similarly, "initiate" is synonymous with "start off."

S129. Ans.(b)

Sol. The phrase 'courtyards jostling together' implies being in close proximity. The courtyards are built close to each other to maximize sun exposure in the foothills.

S130. Ans.(c)

Sol. The incorrect aspect is that walls are made of mortar and cement. The passage states that walls are made of stone up to waist height and finished with mud bricks.

S131. Ans.(a)

Sol. Willows and poplars look absurd in the landscape because the landscape is generally treeless. The passage highlights that trees are a rarity in the Tibetan highlands.

S132. Ans.(d)

Sol. The analogy "Precious: valuable:: ingenious:?" implies that just as 'precious' is synonymous with 'valuable,' 'ingenious' is synonymous with 'inventive.'

S133. Ans.(b)

Sol. Yak dung is used by the Tibetans as a substitute for wood. The passage mentions that wood is a precious commodity, and yak dung is used as an ingenious substitute for solid fuel.

S134. Ans.(d)

Sol. Assertion A is correct; wood and sticks are piled high against the courtyard walls. Reasoning R is not correct; wood is not found in abundance in Tibet, making the assertion correct but not the reason.

S135. Ans.(a)

Sol. In the sentence, "lack" is a noun and "wood" is a noun, making the correct identification of parts of speech noun, noun.

S136. Ans.(b)

Sol. India's Three Language Formula aims to promote mother-tongue based multilingualism, encouraging students to learn their regional language, Hindi, and English, fostering multilingual competence.

S137. Ans.(d)

Sol. A short story that features animals as the main characters and teaches an explicit moral is called a fable. Examples include Aesop's fables.

S138. Ans.(a)

Sol. Dyslexia is a reading disorder, and dysgraphia is a writing disorder. Hence, both A and B are correct.

S139. Ans.(a)

Sol. Rita is applying the principle of motivation and interest by using visual devices and language games to engage students and make learning more enjoyable.

S140. Ans.(b)

Sol. In top-down processing, listeners do not need to understand every word. They rely on their background knowledge and make guesses about the intended meaning based on context and prior knowledge.

S141. Ans.(d)

Sol. Paper pencil tests are typically used for summative assessments rather than formative assessments, which are ongoing and used to monitor student learning and provide ongoing feedback.

S142. Ans.(c)

Sol. Assessment for learning is done throughout the teaching-learning process to clarify student learning and understanding, guiding instruction and providing feedback for improvement.

S143. Ans.(c)

Sol. Behaviourists advocate that learners should be exposed to language and that errors are evidence that learning is taking place. They view errors as a natural part of the learning process and as opportunities for reinforcement and correction.

S144. Ans.(c)

Sol. Creativity in language education involves open-ended classroom tasks which allow for different interpretations and answers, encouraging students to think divergently and express themselves in unique ways.

S145. Ans.(b)

Sol. Padlet is a digital tool that allows for both synchronous and asynchronous online teaching opportunities, enabling interactive and collaborative learning experiences.

S146. Ans.(c)

Sol. It is not true that errors hinder the language learning process. Errors are a natural part of learning, helping both learners and teachers understand where improvement is needed and facilitating the learning process.

S147. Ans.(a)

Sol. The objective of the lesson was to enable the learner to listen and analyse the ideas. The exercise involved listening to the audio and comprehending and evaluating the content.

S148. Ans.(a)

Sol. International Mother Language Day is celebrated on 21st February. This day is observed to promote linguistic and cultural diversity and multilingualism.

S149. Ans.(c)

Sol. If you are writing to a colleague who is your friend, you would write an informal email. The tone and style would be casual and friendly.

S150. Ans.(c)

Sol. Using everyday objects to teach language is called realia. These objects help to create a more authentic and engaging learning experience by connecting language learning to the real world.