

PREVIOUS YEAR PAPER

CTET Paper II — 7 July 2024 (Set K) — Mathematics and Science

CTET · 7 July 2024

133 of the paper's 150 questions · +1 for a correct answer, -0 for a wrong one · 150 minutes

Left out of the original paper: 17 (any question that needs a figure, a symbol or formatting we cannot show, or whose text did not read back cleanly from the booklet).

Questions from the Central Board of Secondary Education's paper of 7 July 2024. Each question is followed by its answer, and the answer key is repeated on the last page.

Take it as a timed practice test: exambharo.com/ctet/previous-year-papers/ctet-2024-paper-2-7-jul-set-k-maths-science/

Child Development and Pedagogy

1. Assertion (A) : Teachers should respect the individual differences among learners and adapt their teaching to cater to needs of all students. Reason (R) : Collaborations, 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).

Answer: (a)

2. 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.

Answer: (a)

3. 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)

Answer: (a)

4. 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 quantitatively different from that of adults.
 - (c) Children are dependent on adults while adults are independent.
 - (d) Adults are much more knowledgeable than children.

Answer: (a)

5. 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 summarised 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.

Answer: (d)

6. 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

Answer: (b)

7. 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

Answer: (a)

8. 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.

Answer: (d)

9. 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.

Answer: (b)

10. Change and stability in emotions, personality and social relationships together constitute :

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

Answer: (a)

11. Constructivist teaching leads to _____ learning by students.

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

Answer: (c)

12. 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

Answer: (a)

13. 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.

Answer: (a)

14. 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.

Answer: (d)

15. Assertion (A) : During adolescence the pressures 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).

Answer: (a)

16. 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).

Answer: (a)

17. 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

Answer: (d)

18. 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 - referenced assessment : compares performance to that of peers

Answer: (d)

20. 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

Answer: (d)

21. 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).

Answer: (b)

22. 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.

Answer: (d)

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

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

Answer: (b)

24. 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

Answer: (a)

25. 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.

Answer: (c)

26. 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 ?

Answer: (b)

27. 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).

Answer: (c)

28. 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).

Answer: (a)

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

- (a) give questions that involve inferences 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 / questions.

Answer: (a)

30. 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'.

Answer: (a)

| Mathematics and Science

31. A teacher distributes different types 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 centered approach

Answer: (c)

32. 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

Answer: (d)

33. 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

Answer: (a)

34. 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

Answer: (b)

36. is equal to : $b-a$

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

Answer: (a)

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

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

Answer: (a)

39. 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) Understanding when and how a mathematical technique is to be used.

Answer: (a)



42. 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

Answer: (b)

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

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

Answer: (c)

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

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

Answer: (d)

48. 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 on student's performance.
- (c) It is evaluation.
- (d) It helps to label the students.

Answer: (d)

49. Arrange the following statements according to ascending levels of geometrical thinking as per Van-Hiele's theory of geometrical learning. (a) Identification of properties of geometrical shapes (b) Classification of different shapes (c) Finding relationship between the properties of geometrical shapes (d) 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)

Answer: (d)

50. 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

Answer: (a)

51. 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

Answer: (c)

53. 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

Answer: (c)

55. Which of the following statement is least appropriate regarding the proofs in mathematics ?

- (a) It can help the students to validate their 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.

Answer: (b)

56. 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.

Answer: (c)

58. 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) Rubrics has a fixed scale.
- (d) Rubrics has a list of characteristics describing performance for each point on the scale.

Answer: (b)

59. The height and base radius of a right circular cylinder are 9 cm and 6 cm respectively. If the base radius becomes half and height increases by 3 cm, 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.

Answer: (b)

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

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

Answer: (d)

61. Discussion on socio-scientific issues in class helps in : (a) developing argumentative skills in learners (b) developing multiple perspectives on an issue (c) encouraging citizen science activities (d) 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)

Answer: (d)

62. (A) Metal oxides are basic in nature. (B) Air expands on heating. (C) Lime water turns milky on passing carbondioxide. (D) Sodium hydroxide and hydrochloric acid neutralise 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

Answer: (a)

64. Which of the following is/are true regarding scientific investigations ? (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)

Answer: (d)

65. 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.

Answer: (d)

66. 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)

Answer: (a)

67. 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)

Answer: (a)

68. 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).

Answer: (a)

69. 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)

Answer: (a)

70. Which of the following statement 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 same way.
- (c) Conduction is faster in solids than liquids.
- (d) Two objects should be in contact with each other for heat flow.

Answer: (a)

71. 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)

Answer: (c)

72. Which of the following characterizes human circulatory system ?

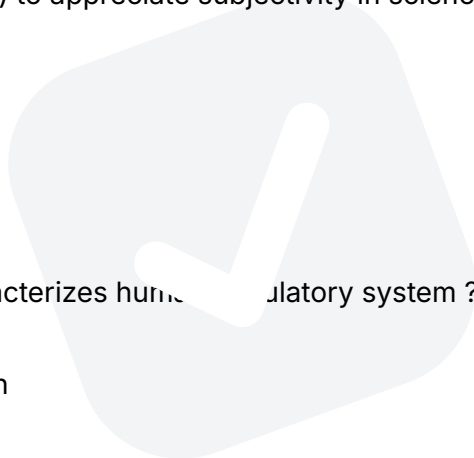
- (a) closed, single circulation
- (b) closed, double circulation
- (c) open, single circulation
- (d) open, double circulation

Answer: (b)

73. 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 relationships between observable phenomena.
- (d) They are formed from scientific theories.

Answer: (c)



74. 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).

Answer: (b)

75. Assertion (A) : The ceilings of cinema halls and concert 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 for (A).
- (d) Both (A) and (R) are true but (R) is not correct explanation for (A).

Answer: (c)

76. 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

Answer: (c)

77. An odometer in a car measures :

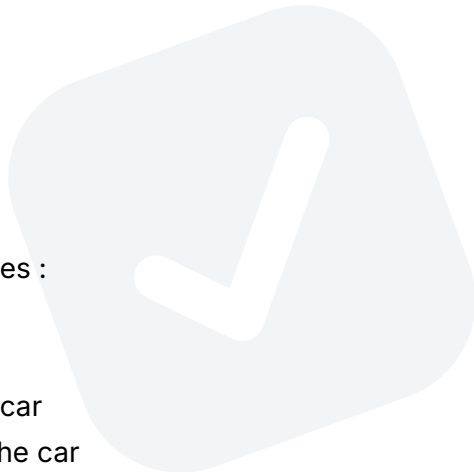
- (a) average speed of the car
- (b) acceleration of the car
- (c) distance travelled by the car
- (d) instantaneous speed of the car

Answer: (c)

78. 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

Answer: (a)



79. Three identical holes are punched at different levels (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 comes 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)

Answer: (b)

80. The colour of flame depends on : (a) Nature of combustible substance (b) Oxygen supply (c) Temperature of the surroundings

- (a) (a) and (b)
- (b) (a) and (c)
- (c) (a) only
- (d) (b) only

Answer: (a)

81. 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

Answer: —

82. 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.

Answer: (d)

83. 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

Answer: (c)

84. Two sperms of a man fuse with two eggs of a woman. The twins formed are :

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

Answer: (d)

85. 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

Answer: (d)

86. Read the following statements and choose the correct option : S1 - Photosynthesis is endothermic reaction. S2 - Respiration is exothermic reaction.

- (a) S1 is 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.

Answer: (c)

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

- (a) verify laws of reflection experimentally
- (b) solve numerical problems based on laws 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 plane mirror

Answer: (d)

88. 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

Answer: (d)

89. Read the statements given below and choose the correct option : 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).

Answer: (c)

90. 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.

Answer: (b)

Language I (English)

Passage — for questions 91–99

On 15 January 2009, several interesting things happened. A plane crash landed into the Hudson River, right in the middle of New York City. The pilot, crew and 155 passengers escaped safely. But then, something else happened... Jim was nearby and watched the event happen. He immediately tweeted that he had just seen a plane crash in the Hudson. From there the news spread quickly. People contacted him immediately and asked him what was happening, and other people on the street took photos and videos with their phones and posted them online. Ordinary people suddenly became journalists. It was 15 minutes before the news broke on official news channels.

Photos, videos and tweets from ordinary people at the scene of dramatic events now provide the words and images that describe events in the news. When a meteor exploded over a Russian city in 2013, millions of people around the world watched videos and photos of the event on Facebook and YouTube. Social media can also save lives. In January 2010, an earthquake hit the Caribbean island of Haiti. The government said that there had been an earthquake, but they didn't give many details at first. Meanwhile, people living in the disaster area were posting photos and eye witness accounts on Twitter and Facebook and telling the world that it was an emergency and houses were collapsing. A local radio presenter used this information to help people find family members, and people even phoned his program to ask if their relatives were safe.

News travels fast on social media, but false stories spread just as quickly as the truth. Some of these "facts" are erroneous, others are deliberate hoaxes. Hoaxes remind us that not everything people post and publish is reliable. But social media can change our lives for the better.

91. News on social media :

- (a) are deliberate hoaxes
- (b) are insignificant
- (c) are reliable
- (d) travel fast

Answer: (d)

92. Read the following statements : (a) A plane crashed on 15 January, 2009 (b) 155 passengers escaped, but the pilot lost his life. (c) Jim, an onlooker, posted pictures on Facebook
- (a) (a) is correct, but (b) and (c) are incorrect
 - (b) (a), (b) and (c) are all incorrect
 - (c) (a) and (b) are correct, but (c) is incorrect
 - (d) (c) is correct, but (a) and (b) are incorrect

Answer: (a)

93. The meteor explosion in 2013 in Russia was watched by people on :
- (a) All social media handles
 - (b) Facebook and YouTube
 - (c) Twitter
 - (d) YouTube

Answer: (b)

95. Complete the given word analogy : dramatic : exciting : : hoax : ? .
- (a) example
 - (b) excuse
 - (c) media posts
 - (d) deception

Answer: (d)

96. Arrange the following events as mentioned in paragraph in the correct sequential order. (a) Jim watched the crash and tweeted. (b) People started contacting Jim for updated news. (c) A plane crashed into the Hudson River. (d) The news of the crash was broadcast 15 minutes later.
- (a) (d) → (c) → (a) → (b)
 - (b) (c) → (a) → (b) → (d)
 - (c) (c) → (b) → (d) → (a)
 - (d) (b) → (c) → (a) → (d)

Answer: (b)

98. Why should we not take news on social media lightly ?
- (a) They can change our lives for the better.
 - (b) News posted are hoax and confusing.
 - (c) The facts are erroneous.
 - (d) Strangers can call you to seek information.

Answer: (a)

99. Ordinary people suddenly became journalists means :
- (a) they started contacting Jim to know the details
 - (b) they left the jobs where they were employed
 - (c) they started posting news-bits pictures and videos on social media
 - (d) they headed towards media houses to seek employment

Answer: (c)

Passage — for questions 100–105

Great, wide, beautiful, wonderful world,
With the wonderful water round you curled.
And the wonderful grass upon your breast
World, you are beautifully drest.
The wonderful air is over me,
And the wonderful wind is shaking the tree,
It walks on the water, and whirls the mills,
And talks to itself on the tops of the hills.
You friendly Earth! How far do you go,
With the wheat-fields that nod and the rivers that flow.
With cities and gardens, and cliffs, and isles,
And people upon you for thousands of miles ?
Ah, you are so great, and I am so small,
I tremble to think of you, World, at all;
And yet, when I said my prayers today,
A whisper inside me seemed to say,
'You are more than the Earth, though you are such a dot,
You can love and think, and the Earth cannot!'

100. The wind in the poem talks to :

- (a) clouds
- (b) hills
- (c) itself
- (d) trees

Answer: (c)

101. In this poem, the poet describes the :

- (a) beauty and vastness of Earth
- (b) life in the cities
- (c) the Earth, its present and past
- (d) the plants that grow on the Earth

Answer: (a)

103. In the line, 'with the wonderful water round you curled', the word 'curled' means :

- (a) mounted
- (b) turbulent
- (c) arched
- (d) surrounded

Answer: (d)

104. Identify the figures of speech in line 1 and line 4.

- (a) alliteration, personification
- (b) simile, alliteration
- (c) anaphora, personification
- (d) alliteration, metaphor

Answer: (a)

105. List the 3 different things (in stanza 3) found on Earth that make it great.

- (a) wheatfields, trees, whisper
- (b) cities, grass, mills
- (c) rivers, gardens, cliffs
- (d) isles, oceans, people

Answer: (c)

106. The impact of tests and assessments on teachers, learners, and materials is called _____.

- (a) Classroom effect
- (b) Reinforcement
- (c) Corpus effect
- (d) Washback effect

Answer: (d)

107. Match the language teaching methods in Column - A with their understanding or related activities in Column - B : Column - A Column - B (a) Communicative Language Teaching (i) Socially acceptable and contextually appropriate language (b) Direct method (ii) Silent reading (c) Grammar Translation (iii) Written literary texts (d) West's New Method (iv) Grammar is taught inductively

- (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)

Answer: (c)

108. Which school of learning believed that language, whether verbal or non-verbal, takes place through the process of habit formation ?

- (a) Cognitivist
- (b) Interactionalist
- (c) Functionalist
- (d) Behaviourist

Answer: (d)

109. A language teacher brings everyday objects such as newspapers, menu cards and train tickets to teach the students of class V. What is she doing to make learning happen ?

- (a) She wants her students to learn English through real life like situations.
- (b) She is creating awareness in the students.
- (c) She is using authentic materials to make her teaching more realistic and useful.
- (d) She is trying to help her students to learn multiple languages.

Answer: (c)

110. Which of the following statements is NOT true about languages in India ?

- (a) Sanskrit is a Modern Indian Language.
- (b) Hindi is the lingua franca of the Indian sub-continent.
- (c) According to the Indian Constitution, English is an Associate Official Language.
- (d) According to the list of Eighth schedule of the Constitution of India, there are 22 languages.

Answer: (a)

111. Multilingualism in India intends teachers to understand :

- (a) 'a language' policy should be framed in a diverse society
- (b) language, identity and culture are separate entities
- (c) communication happens, and social cohesion is maintained
- (d) minority languages should be clubbed with dominant languages

Answer: (c)

112. The time and place of the story are called the _____.

- (a) Plot
- (b) Climax
- (c) Theme
- (d) Setting

Answer: (d)

113. Listening involves :

- (a) using prior knowledge of the subject
- (b) recognising sounds and deducing the meaning from it
- (c) hearing the sound, decoding the sound and they are
- (d) guessing the content

Answer: (b)

114. Which of the following is NOT an important factor in planning a listening lesson ?

- (a) Gender of speakers.
- (b) Number of speakers.
- (c) Pausing the recording.
- (d) Speed of delivery.

Answer: (a)

115. Which skill of language is known as receptive skills ?

- (a) Reading and Writing
- (b) Listening and Reading
- (c) Listening and Speaking
- (d) Speaking and Writing

Answer: (b)

116. A teacher gives a task to familiarise the learners with the vocabulary used in restaurants. What among the following should be objective of the lesson ?

- (a) To introduce the text about a holiday destination
- (b) To develop critical thinking
- (c) To acquaint the learner with the lexical items
- (d) To familiarise with the grammatical items

Answer: (c)

117. In a language class, students form groups under the guidance of a teacher and present an advertisement on a given topic. Learning a language in this way is called _____.

- (a) Language games
- (b) Guidance and counseling
- (c) Collaborative learning
- (d) Competition and rivalry

Answer: (c)

118. Linguistic function such as intonation, tone, stress, and rhythm are known as :

- (a) Phonetics
- (b) Pragmatics
- (c) Poetry
- (d) Prosody

Answer: (d)

119. In a language class, a teacher asks a group of students to act as purchasers, property sellers, landlords and tenants while other students are asked to watch them and enjoy their conversation. This activity is called _____.

- (a) Acting class
- (b) Guidance
- (c) Roleplay
- (d) Drama

Answer: (c)

120. Schools should follow additive bilingualism because it :

- (a) promotes the child's language but not the culture
- (b) hinders the development of the first language
- (c) values the culture and language of the child
- (d) gives importance to teaching English as a second language

Answer: (c)

| Language II (English)

Passage — for questions 121–128

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.

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 recognises 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".

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.

121. 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

Answer: (d)

122. 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.

Answer: (c)

123. According to doctors, sweet foods are :

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

Answer: (d)

124. 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

Answer: (b)

125. 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

Answer: (c)

126. 'Chocoholics' 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

Answer: (a)

128. Complete the given word analogy : accustomed : habitual :: initiate : ? .

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

Answer: (a)

Passage — for questions 129–134

Every now and then we would speed through a valley lined with waving Tibetan children. Their villages looked wonderful and so inviting that the car 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.

Branches of trees adorned with colourful 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 jewelled dragon horse, who carries the owner's prayers up to the divine every time the flag flaps in the wind.

The larger villages 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.

129. 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

Answer: (b)

130. 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.

Answer: (c)

131. 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.

Answer: (a)

132. Complete the given word analogy : precious : valuable :: ingenious : ? .

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

Answer: (d)

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

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

Answer: (b)

134. 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

Answer: (d)

136. 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

Answer: (b)

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

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

Answer: (d)

138. 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

Answer: (a)

139. Rita, a government school teacher, uses visual devices and language games to teach English to class VII students. Which principle of teaching is she 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

Answer: (a)

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

- (a) Listeners make use of 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

Answer: (b)

141. Which tool is not ideal for formative assessment ?

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

Answer: (d)

142. 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

Answer: (c)

143. 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

Answer: (d)

144. 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.

Answer: (c)

145. 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

Answer: (b)

146. 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.

Answer: (c)

147. 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

Answer: —

148. When is International Mother Language Day celebrated ?

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

Answer: (a)

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

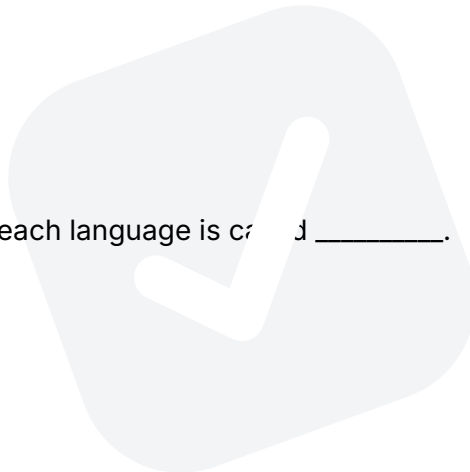
- (a) Business
- (b) Correspondence
- (c) Informal
- (d) Formal

Answer: (c)

150. Using everyday objects to teach language is called _____.

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

Answer: —



Answer key

Answer key from the Central Board of Secondary Education's official answer key for this sitting. "—" means the key gave none.

Child Development and Pedagogy

1	(a)	2	(a)	3	(a)	4	(a)	5	(d)	6	(b)	7	(a)	8	(d)
9	(b)	10	(a)	11	(c)	12	(a)	13	(a)	14	(d)	15	(a)	16	(a)
17	(d)	18	(d)	20	(d)	21	(b)	22	(d)	23	(b)	24	(a)	25	(c)
26	(b)	27	(c)	28	(a)	29	(a)	30	(a)						

Mathematics and Science

31	(c)	32	(d)	33	(a)	34	(b)	36	(a)	38	(a)	39	(a)	42	(b)
43	(c)	45	(d)	48	(d)	49	(d)	50	(a)	51	(c)	53	(c)	55	(b)
56	(c)	58	(b)	59	(b)	60	(d)	61	(d)	62	(a)	64	(d)	65	(d)
66	(a)	67	(a)	68	(a)	69	(a)	70	(a)	71	(c)	72	(b)	73	(c)
74	(b)	75	(c)	76	(c)	77	(c)	78	(a)	79	(b)	80	(a)	81	—
82	(d)	83	(c)	84	(d)	85	(d)	86	(c)	87	(d)	88	(d)	89	(c)
90	(b)														

Language I (English)

91	(d)	92	(a)	93	(b)	95	(d)	96	(b)	98	(a)	99	(c)	100	(c)
101	(a)	103	(d)	104	(a)	105	(c)	106	(d)	107	(c)	108	(d)	109	(c)
110	(a)	111	(c)	112	(d)	113	(b)	114	(a)	115	(b)	116	(c)	117	(c)
118	(d)	119	(c)	120	(c)										

Language II (English)

121	(d)	122	(c)	123	(d)	124	(b)	125	(c)	126	(a)	128	(a)	129	(b)
130	(c)	131	(a)	132	(d)	133	(b)	134	(d)	136	(b)	137	(d)	138	(a)
139	(a)	140	(b)	141	(d)	142	(c)	143	(d)	144	(c)	145	(b)	146	(c)
147	—	148	(a)	149	(c)	150	—								