

## ABOUT THE AUTHOR



### Prateek Shivalik

13 Years' Experience in Teacher Training,  
Ex-Teacher, Kendriya Vidyalaya, Patiala

“Prateek Shivalik” is the most famous Teacher Trainer from Delhi. He has been working in the field of Teacher Training since 2013. Students even come from South India to study from him. He has trained thousands of teachers so far. He is so successful in Kendriya Vidyalaya Teaching Exams and Interviews Preparation that you will find at least one teacher in every Kendriya Vidyalaya of India who was once a student of him. Test Series created by him are known for their quality and rated best in India by the students. His students have scored perfect 60/60 marks (100% score) in KVS Interview. His students have also got 1st and 2nd rank in DSSSB Exam. He himself has scored All India Rank 4 in KVS, All India Rank 3 in DSSSB, and is 7 Times CTET Topper. You can find him on Telegram and YouTube as well. He has worked as a teacher in Kendriya Vidyalaya, Govt. and Aided Govt. school in Delhi.

### Other Useful Books



Buy books at great discounts on: [www.examcart.in](http://www.examcart.in) | [www.amazon.in/examcart](http://www.amazon.in/examcart) |

**AGRAWAL  
EXAMCART**  
Paper Pakka, Passage!

CB2184

CTET PAPER-2 (Class 6 to 8)  
Solved Papers (Mathematics & Science)

ISBN - 978-93-6890-776-3



₹ 339

CTET PAPER-2 (Class 6 to 8) Solved Papers (Mathematics & Science)

CB2184

AGRAWAL  
EXAMCART

**AGRAWAL  
EXAMCART**

Paper Pakka, Passage!

CENTRAL TEACHER ELIGIBILITY TEST

# CTET

## PAPER-2 (Class 6 to 8)

14 & 15  
DEC 2024  
PAPERS  
INCLUDED

Child Development & Pedagogy | Mathematics & Science |  
हिंदी ( भाषा I एवं II) | English (Language I & II)

# 15 Solved Papers

2021-2024

### List of papers included

Years	No. of Papers
15 Dec, 2024	1
14 Dec, 2024	1
7 July, 2024	1
21 Jan, 2024	1
Aug, 2023	1
2022-23	5
2021-22	4
2021	1

**UNIQUE BOOK!**  
**CONTAINS HIGHEST  
NUMBER OF  
SOLVED PAPERS**  
**WITH  
DETAILED SOLUTIONS!**



Prateek Shivalik

Code  
**CB2184**

Price  
**₹339**

Pages  
**305**

ISBN  
**978-93-6890-776-3**

# Exam Information

## Important Information

- (Complete Information about CTET Exam and Company Helpline No. given for any problem Related to Book and exam) vi
- Syllabus and Exam Pattern vii

## Solved Papers

1. Solved Paper Exam Date : 15-12-2024 .....	1-20
2. Solved Paper Exam Date : 14-12-2024 .....	21-42
3. Solved Paper Exam Date : 07-07-2024 (Shift-II).....	43-63
4. Solved Paper Exam Date : 21-01-2024 .....	64-88
5. Solved Paper Exam Date : 20-08-2023.....	89-111
6. Solved Paper Exam Date : 06-02-2023.....	112-129
7. Solved Paper Exam Date : 30-01-2023 .....	130-147
8. Solved Paper Exam Date : 28-01-2023.....	148-164
9. Solved Paper Exam Date : 20-01-2023 .....	165-181
10. Solved Paper Exam Date : 29-12-2022 .....	182-198
11. Solved Paper Exam Date : 21-01-2022 .....	199-216
12. Solved Paper Exam Date : 07-01-2022 .....	217-236
13. Solved Paper Exam Date : 03-01-2022 .....	237-257
14. Solved Paper Exam Date : 30-12-2021 .....	258-277
15. Solved Paper Exam Date : 31-01-2021.....	278-297

“

## Extra Study Material e-book (Download this Free e-book)

### e-book Content :-

- ✔ CTET 5 Papers e-book
  - ✔ Big Discount Coupon  
(Discount coupon given. Use it to get best Discount when you buy our books at 'www.examcart.in')
- 



### Link Expire

Download this Extra Study  
Material e-book by scanning the  
QR Code before Link Expires.

”

## Books that no one wants you to know about!

These unique books have helped many students crack their exams on the first attempt and we prove what we say—so we’ve given some sample chapters for each book. We guarantee that after reading these chapters you will know that why these books are the best and why so many students succeeded with them.

To read, scan the **QR Code** next to any book, visit its page, and click “**View PDF**” to access sample chapters. If you like it, use the discount coupon from the **Extra Study Material** e-book to even get best discount.

The cover features a globe and the text 'CTET CENTRAL TEACHER ELIGIBILITY TEST PAPER-2 (CLASS 6 TO 8) COMPLETE SYLLABUS-WISE STUDY BOOK'. It lists key features like 'Social Studies: 10th International and Pedagogical English Language' and '1000+ MCQs'. A QR code is located at the bottom right.	<p><b>CTET</b> Class 6-8 Social Studies (Guide book)</p>	The cover features a DNA helix and the text 'CTET CENTRAL TEACHER ELIGIBILITY TEST PAPER-2 (CLASS 6 TO 8) COMPLETE SYLLABUS-WISE STUDY BOOK'. It lists key features like 'Mathematics & Science: 10th International and Pedagogical English Language' and '1000+ MCQs'. A QR code is located at the bottom right.	<p><b>CTET</b> Class 6-8 Mathematics   Science (Guide book)</p>	The cover features a woman and the text 'A Simplified Textbook on PEDAGOGY All Subjects (BEd, English, Mathematics, EVS, Science & SST)'. It lists key features like 'USEFUL FOR ALL TEACHING EXAMS' and 'CRACK THE PEDAGOGY SECTION WITH CONFIDENCE!'. A QR code is located at the bottom right.	<p><b>Pedagogy</b> For All Teaching Exams (Text Book)</p>
The cover features the text 'CTET CENTRAL TEACHER ELIGIBILITY TEST PAPER-1 (Class 1 to 5) 24 Solved Papers 2011-2024'. It lists key features like '1000+ MCQs' and '1000+ MCQs'. A QR code is located at the bottom right.	<p><b>CTET</b> Class 1-5 Solved Papers</p>	The cover features the text 'CTET CENTRAL TEACHER ELIGIBILITY TEST PAPER-2 (Class 6 to 8) 23 Solved Papers 2011-2024'. It lists key features like '1000+ MCQs' and '1000+ MCQs'. A QR code is located at the bottom right.	<p><b>CTET</b> Class 6-8 Solved Papers</p>		

# Central Teacher Eligibility Test, 2024 (6-8)

## Solved Paper

Exam Date : 15-12-2024

### Child Development and Pedagogy

- Academic performance and intellectual abilities gradually improve in children who leave deprived settings and enter enriched settings. The above argument points primarily towards which of the following debates of development ?
  - Continuity versus Discontinuity
  - Entity versus Incremental
  - Heredity versus Environment
  - Differentiation versus Integration
- Which of the following factor is not proposed by Jean Piaget as affecting change in cognition ?
  - Activity
  - Biological maturation
  - Cultural tools
  - Equilibration
- Read the following statements :

**Assertion (A) :** Jean Piaget assumed that the process of learning is dependent solely on heredity.

**Reason (R) :** Development is a result of interaction between heredity and environment.

Choose the correct option :

  - Both (A) and (R) are true and (R) is the correct explanation of (A).
  - Both (A) and (R) are true but (R) is not the correct explanation of (A).
  - (A) is true but (R) is false.
  - Both (A) and (R) are false.
- According to Jean Piaget, when children cannot handle new experience within cognitive structures, they experience and resort to .....
  - disequilibrium; adaptation
  - disequilibrium; internalization
  - dissonance; adaptation
  - dissonance; internalization
- While Piaget views children as ..... Vygotsky views children as :
  - active in manipulating ideas; passive in social contexts
  - active in manipulating ideas; active in social contexts
  - passive in manipulating ideas; active in social contexts
  - passive in manipulating ideas; passive in social contexts
- What is/are the basis/bases for determining the stage of moral development in Lawrence Kohlberg's theory ?
  - Age of the individual
  - Answer given by the individual - for/against stealing
  - Reasoning underlying the individual's response

Choose the correct option :

  - Only (b)
  - (a) and (c)
  - (a) and (b)
  - (b) and (c)
- According to Lev Vygotsky, the essence of cognitive development is :
  - mastering the use of psychological tools.
  - learning to adapt to the environment.
  - identifying how to respond to cognitive conflict.
  - organizing schemes into coherent wholes.
- According to Lev Vygotsky .....play(s) an essential role in helping learn through the zone of proximal development.
  - physical environment
  - more knowledgeable others
  - maturation
  - positive reinforcement
- What is progressive education ?
  - An approach to education that emphasizes discipline and rote memorization.
  - An approach to education that emphasizes individualized learning and student centered classrooms.
  - A method of teaching that emphasizes strict adherence to standard curriculum.
  - A method of teaching that emphasizes maximum use of technology and multimedia in the classroom.
- Howard Gardner proposed that intelligence :
  - can be differentiated into multiple kinds.
  - is influenced only by genetics and not by environmental factors.
  - is dominantly about recall and memorization.
  - is primarily about emotional learning.
- Read the following statements :

**Assertion (A) :** When we look at childhood as a single category, we lose out on the social and cultural differences between children with regards to gender, ethnicity, social class.

**Reason (R) :** Childhood is a social construction.

Choose the correct option.

  - Both (A) and (R) are true and (R) is the correct explanation of (A).
  - Both (A) and (R) are true but (R) is not the correct explanation of (A).
  - (A) is true but (R) is false.
  - Both (A) and (R) are false.
- Read the following statements.

**Assertion (A):** Girls in middle school might often be silent and non – classroom discussions participative in.

**Reason (R):** Given their genetic makeup girls are not competent to comprehend and cope up with the challenging curriculum in middle schools.

Choose the correct option.

  - Both (A) and (R) are true and (R) is the correct explanation of (A).
  - Both (A) and (R) are true but (R) is not the correct explanation of (A).
  - (A) is true but (R) is false.
  - Both (A) and (R) are false.
- The nature of assessment should be ..... and assessment tasks should be .....
  - dynamic ; authentic
  - objective ; standardized
  - dynamic ; standardized
  - objective ; authentic

14. Read the following statements.  
**Assertion (A):** An inclusive classroom does not offer differentiated instruction.  
**Reason (R):** Inclusion is a policy that stresses equal opportunities by providing same learning goals, strategies and assessment methods.  
 Choose the correct option.  
 (A) Both (A) and (R) are true and (R) is the correct explanation of (A).  
 (B) Both (A) and (R) are true but (R) is not the correct explanation of (A).  
 (C) (A) is true but (R) is false.  
 (D) Both (A) and (R) are false.
15. Use of people-first language such as using the description 'students with a learning disability' instead of learning – disabled students :  
 (A) takes away the emphasis from disabilities and is not in the true spirit of inclusion.  
 (B) is in consonance with the human rights approach to inclusion.  
 (C) illustrates the emphasis on medical model of disability.  
 (D) is a hindrance in correct identification and labelling of people with disabilities.
16. Examples of assistive technological devices to cater to needs of children with visual difficulties include.  
 (a) alternative computer input devices.  
 (b) braille embosser and displays.  
 (c) speech recognition software (speech to text).  
 (d) use of sign language.  
 Choose the correct option.  
 (A) Only (a), (b) and (c)  
 (B) Only (b), (c) and (d)  
 (C) Only (b) and (c)  
 (D) (a), (b), (c) and (d)
17. to support inclusion of students with autism, it is advisable to :  
 (A) avoid giving visual support and visual cues.  
 (B) create a classroom setting that is overstimulating.  
 (C) form an unstructured setup with random routines.  
 (D) use concrete, literal and consistent language.
18. In order to address the needs of talented and creative children in the classroom, it is important to:  
 (A) keep them engaged and interested in the learning process.  
 (B) provide them with detailed and explicit instructions.  
 (C) ensure that they receive higher grades than their peers.  
 (D) give primacy to their cognitive requirements over emotional needs.
19. Read the following statements :  
**Assertion (A) :** It is advisable not to rely on standardized tests while conducting assessment for learning.  
**Reason (R) :** In criteria-referenced testing, scores are compared to a set performance standard.  
 Choose the correct option.  
 (A) Both (A) and (R) are true and (R) is the correct explanation of (A).  
 (B) Both (A) and (R) are true but (R) is not the correct explanation of (A).  
 (C) (A) is true but (R) is false.  
 (D) Both (A) and (R) are false.
20. Which of the following is an example of a question that promotes analytical skills in students?  
 (A) What is the definition of a mammal ?  
 (B) Explain the key characteristics of mammals.  
 (C) How have mammals adapted to their environments?  
 (D) Tell a few examples and a few non – examples of mammals given in the textbook.
21. Teachers should deal with failure of students in the classrooms :  
 (A) By critically examining their own pedagogical strategies.  
 (B) By correcting and overcorrecting the students who have failed.  
 (C) By administering standardized IQ tests to failed students to assess intelligence.  
 (D) By identifying the caste of the students and telling parents to provide additional support at home.
22. What is the role of prior knowledge in constructivist learning ?  
 (A) Prior knowledge can hinder the learning process since children come to school with a lot of misconceptions.  
 (B) Prior knowledge is important for building connections and facilitating new learning.  
 (C) Prior knowledge is only important for advanced learners who are already familiar with the topic.  
 (D) Prior knowledge is only important for learners who have high levels of intrinsic motivation.
23. How can teachers support students in becoming self – directed learners in a constructivist classroom?  
 (A) By providing frequent feedback and grades to motivate students to outperform each other  
 (B) By setting explicit goals and objectives for all learning tasks  
 (C) By encouraging students to take responsibility for their own learning and develop self – regulation skills  
 (D) By providing detailed and prescriptive instructions for all learning tasks
24. In discovery learning, students :  
 (A) derive information for themselves through exploration and manipulation of ideas.  
 (B) consistently make new discoveries in the world through exploration and manipulation of ideas.  
 (C) derive information for themselves through rehearsal and extended practice.  
 (D) make new discoveries in the world through rehearsal and extended practice.
25. Realizing that he is not paying attention in the science class and hence he is unable to understand the concepts, Ramesh decides to sit at the front so that he can focus attention better. Which learning strategy is Ramesh using?  
 (A) Rehearsal (B) Metacognition  
 (C) Scaffolding (D) Mnemonics
26. In order to advance problem solving skills of learners teachers should encourage ..... and should promote ..... thinking among learners.  
 (A) belief perseverance; reciprocal  
 (B) functional fixedness; divergent  
 (C) means & end analysis; convergent  
 (D) verbalization; analogical
27. Read the following statements :  
**Assertion (A) :** A middle school teacher keeps in regular touch with the parents of students of her class to understand them better.  
**Reason (R) :** Communities should direct how and what the children should learn.  
 Choose the correct option.  
 (A) Both (A) and (R) are true and (R) is the correct explanation of (A).  
 (B) Both (A) and (R) are true but (R) is not the correct explanation of (A).

- (C) (A) is true but (R) is false.  
 (D) Both (A) and (R) are false.
28. Which of the following statements about emotions is correct in context of cognition ?  
 (A) Emotions facilitate encoding but have no impact on attention.  
 (B) Emotions help in efficient retrieval of information but do not influence motivation to learn.  
 (C) Emotions modulate various aspects of cognition, however, degree and direction of effect depend on a range of factors.  
 (D) Impact of emotions on learning is always univalent and has a positive effect only irrespective of the nature of emotion.
29. How can teachers increase intrinsic motivation in the students ?  
 (A) By giving 'removal punishment'  
 (B) By giving 'negative reinforcement'  
 (C) By offering 'rewards and prizes'  
 (D) By inculcating 'joy of learning'
30. Which of the following statements correctly describes the relationship between intrinsic and extrinsic motivation ?  
 (A) Intrinsic motivation and extrinsic motivation are mutually exclusive; individuals cannot be motivated by both at the same time.  
 (B) Intrinsic motivation can impact extrinsic motivation, but extrinsic motivation cannot impact intrinsic motivation in any possible manner.  
 (C) Intrinsic and extrinsic motivations can both impact an individual's behaviour, but they operate independently of each other.  
 (D) Intrinsic and extrinsic motivations can interact with each other in complex ways, with one type of motivation affecting the other.
31. If A and B represent digits and
- $$\begin{array}{r} ABA \\ \times 5 \\ \hline 44B0 \end{array}$$
- then which of the following is true?  
 (A) A = 4, B = 2    (B) A = 9, B = 8  
 (C) A = 2, B = 4    (D) A = 8, B = 9
32. If x is the smallest number which is to be subtracted from 7751 to make it a perfect square, then the value of (3x - 5) is :  
 (A) 7                      (B) 10  
 (C) 13                     (D) 16
33. Which of the following mathematical statements is not true?  
 (A) The number of factors of a given number is finite.  
 (B) Every factor of a given number is less than or equal to the given number.  
 (C) Every factor of a given number is always greater than the given number.  
 (D) Every multiple of a given number is greater than or equal to that number.
34. If (x + 5) + 7y is written as 5 + (x + 7y) then which of the following property/properties of addition is/are being used.  
 (A) Commutative  
 (B) Distributive  
 (C) Associative and distributive both  
 (D) Commutative and associative both
35. In which of the following statements, the number 6 is used in cardinal sense?  
 (A) 6 is the predecessor of 7.  
 (B) She was sitting in the 6th row of the auditorium.  
 (C) There are 6 elements in a set.  
 (D) 6 is the successor of 5.
36. If LCM of two numbers is 392, then which of the following cannot be the HCF of these numbers?  
 (A) 28                      (B) 42  
 (C) 56                      (D) 196
37. What is the smallest positive integer which is not a factor of the product 264 × 90 × 1680?  
 (A) 12                      (B) 13  
 (C) 14                      (D) 15
38. Which of the following is a closed ended problem?  
 (A) List four rational numbers between  $\frac{5}{11}$  and  $\frac{10}{11}$ .  
 (B) List four natural numbers between 104 and 109  
 (C) Write four integers less than 5  
 (D) Write four equivalent fractions for  $\frac{5}{7}$ .
39. In the expression (5x - 3y) (6x + 5y) - (3x + 7y) (4x - 5y) what is the coefficient of xy?  
 (A) -6                      (B) 9  
 (C) -11                     (D) 13
40. One of the factors of 81x<sup>2</sup> - 126xy - 49y<sup>2</sup> - (5x + 3y)<sup>2</sup> is :  
 (A) 7x + 2y                (B) 2x + 5y  
 (C) 7x - 2y                (D) 5x - 7y
41. If  $\frac{7x-1}{4} - \frac{1}{7}(2x - \frac{1-x}{2}) = 4$  then what is the value of  $\frac{5x-3}{3x-1}$  ?  
 (A) 1                        (B) 3/2  
 (C)  $\frac{7}{5}$                         (D)  $\frac{11}{8}$
42. From a circular sheet of diameter 16 cm, a circle of radius 6 cm is removed. Then the area (in cm<sup>2</sup>) of the remaining sheet is (use  $\pi = \frac{22}{7}$ )  
 (A) 176                      (B) 88  
 (C) 66                        (D) 44
43. A metallic solid cuboidal box of dimensions 200 cm × 50 cm × 100 cm is melted and recast into a solid cube. The difference between the surface areas of the two solids is :  
 (A) 25000 cm<sup>2</sup>              (B) 20000 cm<sup>2</sup>  
 (C) 15000 cm<sup>2</sup>              (D) 10000 cm<sup>2</sup>
44. The difference of two complementary angles is 40°. If smaller of these angles is y, then the value of (2y + 15°) is :  
 (A) 45°                      (B) 50°  
 (C) 55°                      (D) 65°
45. Which of the following figures do not have equal number of lines of symmetry?  
 (A) Isosceles triangle and kite  
 (B) Kite and parallelogram  
 (C) Rectangle and rhombus  
 (D) Kite and isosceles trapezium
46. S is a point on side QR of a triangle PQR such that PS ⊥ QR and PS is the bisector of ∠QPR. Then, which of the following statements is true?  
 (A) PQS ≅ ΔPSR, by RHS  
 (B) PQS ≅ ΔPRS, by ASA  
 (C) PQS ≅ ΔPSR, by ASA  
 (D) PQS ≅ ΔPRS, by RHS
47. Which of the following can be the length of the third side of a triangle whose two sides are of lengths 19 cm and 15 cm?  
 (A) 3 cm                      (B) 4 cm  
 (C) 33 cm                    (D) 34 cm
48. In a quadrilateral ABCD, angles A, B, C and D are respectively (3x - 10°), (x + 30°), (2x + 30°) and (2x - 10°) Then, this quadrilateral is a :  
 (A) trapezium                (B) parallelogram  
 (C) kite                        (D) rectangle
49. The area of a triangle of sides 24 cm, 45 cm and 51 cm is equal to the area of a rectangle of length 45 cm. Then, the perimeter of the rectangle is :

- (A) 55 cm            (B) 57 cm  
(C) 110 cm           (D) 114 cm
50. The mean of observations (arranged in ascending order) 42, 48,  $x + 15$ ,  $x + 17$ ,  $x + 20$ , 58 and 60 is 53. The median of the data is:  
(A) 53                    (B) 54  
(C) 55                    (D) 56
51. A student was asked to find the value of  $x$  in  $x - 4 = 3$ . He completed the task by subtracting 4 from 3. Which of the following most appropriately describes the above situation?  
(A) The student has solved the problem correctly  
(B) The student has made an algorithm - based error  
(C) The student should memorize all the rules of transposition  
(D) Giving such problems to solve should be avoided
52. Which of the following is the most appropriate way to introduce experimental probability to 8th graders?  
(A) Tossing a fair coin several times and noting down the outcomes  
(B) Solving statistics – based problems  
(C) Giving examples of many outcome - based events like tossing a coin, drawing cards, etc.  
(D) Defining experimental probability on board and giving examples.
53. The National Curriculum Framework (NCF), 2005 promotes a spiral approach for mathematics curriculum at middle school level. The best example of this approach is:  
(A) including different concepts at each grade  
(B) including concepts that are repeated at each grade  
(C) including simpler as well as difficult concepts at every grade  
(D) including concepts in the increasing order of difficulty by briefly revisiting concepts taught previously
54. Which of the following represent the most appropriate reasons of assessment at upper primary stage?  
(a) To identify individual and specific needs of the learner  
(b) To find out to what extent the aims and objectives of mathematics curricula have been achieved  
(c) To find out whether students have learned a standard procedure to solve a problem  
(d) To select students for competitive exams in mathematics.
- Choose the correct option.  
(A) Only (a) and (c)  
(B) (a), (c) and (d)  
(C) (a) and (b)  
(D) (b) and (d)
55. Which of the following should be followed while using ‘questioning’ as a tool of assessment in a classroom?  
(A) Asking questions only from the low achievers  
(B) Asking questions for assessing errors and misconceptions  
(C) Asking too many questions without pause  
(D) Asking a question and answering it yourself
56. Which of the following is considered as a characteristic of an effective mathematics classroom?  
(A) Provide opportunities to the students to solve similar problems as that solved by the teacher  
(B) Sensitize the students that mathematics is an abstract subject with the help of different examples  
(C) Encourage individual problem – solving task rather than group work  
(D) Provide opportunities to the students to solve problems in multiple ways
57. The value of  $\frac{0.125 \times 57.8 \times 0.729}{0.017 \times 0.0081 \times 0.25}$  is equal to :  
(A) 153                    (B) 1530  
(C) 15300                (D) 153000
58. A sum of ₹ 16,000 amounts to ₹  $x$  in  $2\frac{1}{3}$  years at 15% p.a., interest compounded yearly. What is the value of  $x$ ?  
(A) 21,160                (B) 21,488  
(C) 22,218                (D) 22,360
59. A person sold two articles A and B for 348 each. He earned a profit of 20% on A and suffered a loss of 13% on B. His profit (in ₹) in the entire transaction is :  
(A) 6                        (B) 7  
(C) 9                        (D) 12
60. The time spent by a student during a day in different activities is represented by sectors of central angles in a pie chart as given below :  
School–90  
Homework– 60°  
Play– 60°  
Sleep– 120°  
Others– 30°  
What is the difference between the time spent by the student in the activities ‘sleep’ and ‘school’?  
(A)  $1\frac{1}{2}$  hour            (B) 2 hour  
(C) 3 hour                (D) 4 hour

### Science

61. Read the following statements.  
**Assertion (A)** : Deforestation can lead to floods.  
**Reasoning (R)** : The infiltration rate of water is reduced due to deforestation.  
Choose the correct option :  
(A) Both (A) and (R) are true and (R) is the correct reasoning for (A).  
(B) Both (A) and (R) are true but (R) is not the correct reasoning for (A).  
(C) (A) is true but (R) is false.  
(D) (A) is false but (R) is true.
62. Which hormone is responsible for the process of metamorphosis in frogs?  
(A) Adrenaline  
(B) Growth hormone  
(C) Thyroxine  
(D) Insulin
63. Which of the following statements about the sequence of events in sexual reproduction in a flower is correct?  
(A) Seedlings are formed after pollination and before development of embryo.  
(B) Embryo is formed before pollination and after fertilization.  
(C) Seedlings are formed after pollination and development of embryo.  
(D) Embryo is formed after pollination and formation of seedlings.
64. Which of the following statements is not true about endocrine glands?  
(A) Pancreas and adrenals are endocrine glands.  
(B) Endocrine glands secrete hormones through ducts.  
(C) Pituitary gland is attached to the brain.  
(D) Endocrine glands secrete hormones.
65. Microorganisms can be both useful as well as harmful to us. Which of the following processes is not carried out by microorganisms?  
(A) Breaking down of organic wastes  
(B) Increasing soil fertility  
(C) Preservation of food items in homes  
(D) Preparation of medicines

66. A sample of soil mixed with water turns the pH paper yellowish orange. Which of would now change the colour of the pH paper to bluish?
- (A) Milk of magnesia  
(B) Lemon juice  
(C) Vinegar  
(D) Common salt

67. Arrange the following steps of fixation of atmospheric nitrogen in the correct sequence.
- (a) Uptake of compounds of nitrogen by plants through the root system  
(b) Synthesis of plant proteins and other compounds  
(c) Conversion of nitrogenous wastes from dead plants and animals into nitrogenous compounds  
(d) Fixation of nitrogen from atmosphere by certain bacteria and blue – green algae.

Choose the correct option :

- (A) (d)→(c)→(a)→(b)  
(B) (a)→(d)→(c)→(b)  
(C) (d)→(a)→(b)→(c)  
(D) (d)→(b)→(a)→(c)
68. Which of the following is not likely to increase the fertility of soil?
- (A) Substitute fertilizers by organic manure  
(B) Leave the field uncultivated between two crops  
(C) Grow different crops alternately every season  
(D) Maintain minimum distance between the crops while sowing
69. An oxide of a substance X reacts with water to produce another substance Y. Y reacts with oxygen to form Z. It is observed that Y turns blue litmus red. Which of the following can be concluded about X, Y and Z?
- (A) X is a metal, Y is acidic and Z is basic in nature.  
(B) X is a metal, Y is basic and Z is acidic in nature.  
(C) X is a non – metal, Y is acidic and Z is basic in nature.  
(D) X is a non – metal, Y is acidic and Z is acidic in nature.
70. Which of the following is likely to happen when chlorine gas is added to the solution of sodium bromide ?

- (A) Sodium chloride is formed through displacement reaction  
(B) Pure sodium is obtained through sublimation  
(C) Sodium chloride is formed through decomposition  
(D) No reaction will take place

71. Which of the following statements about zones of a candle flame is not true?

- (A) The non – luminous part of the flame is the zone of complete combustion.  
(B) The temperature of middle zone and the non luminous part of the flame is same.  
(C) The yellow part of the flame is the region of partial combustion.  
(D) The innermost zone does not support burning and comprises unburnt wax vapours.

72. A girl makes a hole near the bottom of a plastic bottle. She puts her thumb over the hole to cover it, fills the bottle with water up to half of its capacity. She then closes the cap of the bottle tightly. What will happen when she removes her thumb from the hole ?

- (A) The water will spurt out of the hole because the pressure inside the bottle is less than the outside pressure.  
(B) The water will not spurt out of the hole because the pressure inside the bottle is more than the outside pressure.  
(C) The water will spurt out of the hole because the pressure inside the bottle is more than the outside pressure.  
(D) The water will not spurt out of the hole because the pressure inside the bottle is less than the outside pressure.

73. Fill in the blanks.

- Bakelite is a \_\_\_(a) and it is used for making \_\_\_(b). On the other hand, PVC is a \_\_\_(c) which is used for making \_\_\_(d).
- (A) (a)-thermosetting plastic; (b)-electrical switches; (c)-thermoplastic; (d)-containers  
(B) (a)-thermosetting plastic; (b)-containers; (c)-thermoplastic; (d)-utensils  
(C) (a)-thermoplastic; (b)-utensil handless; (c)-thermosetting plastic; (d)-electrical switches  
(D) (a)-thermoplastic; (b)-electrical switches; (c)-thermosetting plastic; (d)-containers

74. A ray of light enters two media X and Y having different optical densities. Refer to the table given below and identify a, b, c and d :

Me- dium	Change in speed of light	Change in fre- quency of light	Change in wave- length of light
X	Increase	a	b
Y	c	d	Decreases

- (A) a Increases; b Decreases; c Increases; d Decreases  
(B) a No change; b Decreases; c Decreases; d No change  
(C) a No change; b Increases; c Decreases; d No change  
(D) a Decreases; b No change; c No change; d Increases

75. A teacher gives the following materials to two groups of students.

**Group a :** Three rectangular glass strips, a circular plane glass plate, some pieces of bangles and cardboard tube and disk.

**Group b :** Two plane mirrors and a hard cardboard box.

Which of the following gadgets can be prepared by the groups a and b using the above sets of materials?

**Group a                      Group b**

- (A) Periscope                      Kaleidoscope  
(B) Kaleidoscope                      Newton's disk  
(C) Kaleidoscope                      Periscope  
(D) Periscope                      Pinhole camera
76. Bujho wants to set up a circuit for the purification of copper. Which of the following electrodes and solutions should he opt for?
- (A) Anode–Impure copper; Cathode–Pure copper; Solution– Water  
(B) Anode–Carbon; Cathode–Pure copper; Solution–Copper sulphate  
(C) Anode–Impure copper; Cathode–Pure copper; Solution– Copper sulphate  
(D) Anode–Pure copper; Cathode–Impure copper; Solution– Copper sulphate
77. Which of the following would you choose for making a fuse wire?
- |     | Resist-<br>ance | Thick-<br>ness | Melting<br>point |
|-----|-----------------|----------------|------------------|
| (A) | High            | Thick          | Low              |
| (B) | High            | Thin           | Low              |
| (C) | Low             | Thin           | High             |
| (D) | Low             | Thick          | High             |

78. Which of the following 'medium' is present between the inner and outer layers of a thermo-flask and why ?
- (A) Air, because it prevents loss of heat due to conduction
- (B) Steel, because it prevents loss of heat due to radiation and convection
- (C) Vacuum, because it prevents loss of heat due to conduction and convection
- (D) Air, because it prevents loss of heat due to radiation and conduction

79. Fill in the blanks :  
The process by which dead vegetation is converted to fossil fuel at a pressure and temperature is called as d.
- (A) a-coal; b-high; c-low; d-oxidation
- (B) a-petroleum; b-low; c-high; d-carbonization
- (C) a-natural gas; b-high; c-high; d-oxidation
- (D) a-coal; b-high; c-high; d-carbonization.

80. The following is the weather chart of a city for different months. Which month will have the highest rate of evaporation ?

	Months	Temperature (°C)	Wind speed (m/s)	Humidity (%)
(A)	a	26	0.87	83.12
(B)	b	29	2.91	72.33
(C)	c	27	0.71	75.50
(D)	d	26	0.82	75.22

81. Which of the following is not consistent with the contemporary understanding of science ?
- (A) Following one scientific method is surely and the only way to scientific discovery.
- (B) The scientific method does not help to make any aesthetic or value judgement about a phenomenon.
- (C) Investigations in science may involve repeated action on any one or all steps of scientific method in any order.
- (D) Scientific method offers a logical approach to problem solving.

82. Consider the following excerpt :  
"Bohr's theory of atom marked a revolution in science. It led to proposition of stationary energy states for electron, in

which the electron does not radiate energy while revolving round the nucleus."  
What does the above excerpt illustrate about nature of science ?

- (A) Science is subjective.
- (B) Science is value-neutral.
- (C) Science is tentative.
- (D) Science is socially and culturally embedded.

83. Read the following statements :

**Assertion (A) :** Science undergoes paradigm shifts.

**Reasoning (R) :** Existing scientific theories and laws may be discarded in light of new evidence.

Choose the correct option.

- (A) Both (A) and (R) are true and (R) is the correct reasoning for (A).
- (B) Both (A) and (R) are true but (R) is not the correct reasoning for (A).
- (C) (A) is true but (R) is false.
- (D) (A) is false but (R) is true.

84. A teacher organizes a debate on nuclear energy in class. What could be her objectives ?

- (a) To make understand connection between science, technology and society
- (b) To familiarize learners with issues of global concern
- (c) To promote students' conceptual understanding about nuclear reactor
- (d) To make understand about responsible use of science for benefit of society

Choose the correct option :

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

85. Which of the following represents a correct scientific analogy ?

- (A) Pure gold is as soft as butter.
- (B) Mitochondria is the powerhouse of a cell.
- (C) Fuel burns like a fire.
- (D) Battery is to flashlight as headlight is to car.

86. A teacher, while teaching a topic in chemistry, identifies the following conceptions. Which of the following is not an alternative conception ?

- (A) Carbon atom is black in colour.
- (B) A chemical bond is a line between two atoms.

(C) Adding oxygen in a reaction is oxidation.

(D) Allotropes of carbon have same atomic number.

87. During a science class, a teacher shared with her learners that the credit for the invention of electric bulb is usually given to Thomas Alva Edison. Several others before him worked on it but failed. What does the above remark by the teacher indicate about science ?

- (a) Science is an interdisciplinary area of learning.
- (b) Science is dynamic.
- (c) Science is a collective enterprise.
- (d) Science promotes scepticism.

Choose the correct option.

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

88. A teacher performed an experiment in the class and students recorded the following statements S1 and S2 :

S1 : Oxygen is a supporter of combustion.

S2 : Oxygen is a non-combustible gas.

Which of the following is true ?

- (A) S1 – Observation; S2 – Observation
- (B) S1 – Inference; S2 – Inference
- (C) S1 – Inference; S2 – Observation
- (D) S1 – Observation; S2 – Inference

89. Which of the following should be emphasized by the teacher for nurturing creativity ?

- (a) Engaging students in inquiry and discovery oriented tasks
- (b) Highlighting right or wrong responses while evaluating students' tasks
- (c) Encouraging students to do tasks without any fear of evaluation.
- (d) Encouraging learners to find right answers to all textbook questions

Choose the correct option :

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

90. Why do scientists use scientific modelling to analyze the behaviour of systems ?

- (A) Modelling does not need instruments.
- (B) Modelling does not require any computer calculation.
- (C) Models are simpler to analyze than real system.
- (D) Models cannot test hypothesis.

**English : Language-I****Direction (Q. No. 91 to 99)**

Read the passage given below and answer the questions that follow :

- Do children really need such long summer breaks, was a question posed by some experts recently. Apparently, such a long break disrupts their development and comes in the way of their learning process. "Let's get them back to their books", is perhaps the expert view. One would have thought the children are doing too much during their vacations and not too little, given the plethora of classes, camps and workshops involving swimming, art, personality development, music, computers and the like. Even the trips taken in the name of holidays seem laden with exotic destinations and customized experience packed into a short period of time. We can go Europe in 10 days and Australia in a week come back armed with digital memories and overflowing suitcases. Holidays are, in some ways, no longer a break but an intensified search for experience not normally encountered in everyday life-counteracted in everyday life.
  - It is a far cry from summer holidays as we know them. For us, holidays every year meant one thing and one thing alone – you went back to your native place, logging in with the emotional headquarters of your extended family and spent two months with a gaggle of uncles, aunts and first and second cousins. The happiest memories of the childhood of a whole generation seemed to be centred around this annual ritual of homecoming.
  - Summer was not really a break, but a joint. It was the bridge used to reaffirm one's connectedness with one's larger community. One did not travel, one returned. It was not an attempt to experience the new and the extraordinary but one that emphatically underlined the power of the old and the ordinary. With the change of time, what we seek from our summer breaks too has changed in a fundamental way.
  - Today, we are attached much more to our work and summer helps us temporarily detach from this new source of identity. We refuel our individual selves now; and do so with much more material than we did in the past. But for those who grew up in different times, summer was the best time of their lives.
91. How do students spend their summer breaks ?
- By killing their time and playing for endless hours
  - By attending camps and workshops like art, music, etc.
  - By revising the areas in which they are weak
  - By reading books

92. How are travel and tour not- break from daily stress ?
- They are laden with customised experience, packed into a short period of time.
  - They are a break from an intensified search for experience.
  - They require a lot of investment and exhaust our savings.
  - They are armed with memories of one's native places.
93. How are present-day summer breaks different from those of the former days ?
- We refuel our individual selves.
  - We are attached much more to our work.
  - A bridge to reaffirm our connectedness with one's larger community.
  - Both (A) and (B)
94. "Summer was not really a break, but a joint." What does the author imply ?
- Summer break intended to help a child connect to their kith and kin and build a strong bond with them.
  - Children spend their summer break by killing their time by playing for endless hours.
  - Long break disrupts the development of children and comes in the way of their learning process.
  - Summer break is necessary to rejuvenate oneself and going for trips to exotic destinations.
95. What used to be the happiest memories of childhood for the author ?
- Going on a trip to Europe
  - Visiting one's native place
  - Attending summer camps
  - Reading lots of books
96. Which one of the following words is similar in meaning to the phrase 'made to suit one's needs', as used in the passage ?
- Attached
  - Plethora
  - Customised
  - Gaggle
97. "Which one of the following words is opposite in meaning to the word 'emphatically' as used in the passage ?"
- Carefully
  - Irregularly
  - Foolishly
  - Casually

98. "It seems such a long break disrupts their development."
- Identify the clause in the underlined part of the above sentence.
- Adverb clause
  - Noun clause
  - Principal clause
  - Adjective clause
99. Identify the part of speech in the underlined word of the following sentence:
- "Summer was the best time of their lives."
- Adverb
  - Adjective
  - Modal
  - Conjunction

**Direction (Q. No. 100 to 105)**

Read the passage given below and answer the questions that follow :

- Into the sunshine,  
Full of the light,  
Leaping and flashing  
From morn till night!  
Into the moonlight,  
Whiter than snow,  
Waving no flower-like  
When the winds blow!  
Into the starlight,  
Rushing in spray,  
Happy at midnight,  
Happy by day!  
Glorious fountain!  
Let my heart be  
Fresh, cheerful, constant,  
Upward, like thee!
100. The movement of the water of the fountain reflects :
- joy
  - sadness
  - earnestness
  - weariness
101. The poet wants his heart to remain fresh. It means that he wants :
- to take a bath regularly
  - always to be dressed elegantly
  - to have new ideas all the time
  - to keep on moving all the time
102. The poet admires the fountain and he feels thrilled to see it. Which word in the last stanza expresses the poet's admiration ?
- Glorious
  - Cheerful
  - Fresh
  - Upward
103. Identify and name the poetic device used in 'waving so flower-like'.
- Metaphor
  - Alliteration
  - Personification
  - Hyperbole

104. Which literary device has been used in stanza 2 to enhance the beauty of the lines ?  
 (A) Alliteration  
 (B) Oxymoron  
 (C) Anaphora  
 (D) Transferred epithet
105. The poet has used the words like whiter, blithesome, cheerful, etc. Which part of the speech do these words belong to?  
 (A) Adjective (B) Noun  
 (C) Adverb (D) Interjection
106. Which of the following terms is not related to Vygotsky's socio-cultural theory ?  
 (A) Social interaction  
 (B) Scaffolding  
 (C) Zone of proximal development  
 (D) Language acquisition device
107. Which one of the following is true for language learning ?  
 (A) Language learning happens through reading of language textbooks only  
 (B) Language learning accelerates in print rich environment  
 (C) Language learning is not required for learning of science and mathematics  
 (D) Language learning happens unconsciously
108. Crying, cooing and babbling are all the examples of \_\_\_\_\_ stage of language development ?  
 (A) linguistic (B) pre-linguistic  
 (C) expressive (D) referential
109. Garvit was speaking in Hindi to his peers in his classroom. When his teacher called on him, he immediately replied to her in English. This is an example of :  
 (A) code-mixing  
 (B) dialects  
 (C) socio-linguistics  
 (D) code-switching
110. Looking for a number in the contact list of your phone is an example of :  
 (A) scanning (B) survey  
 (C) review (D) skimming
111. Defining new words within context instead of making the children learn meanings of new words” :  
 (A) often confuses the children  
 (B) helps in better understanding of the word  
 (C) promotes rote memorization  
 (D) leads to wastage of time
112. The type of writing in which the author mostly places himself as a character, (sometimes he may not) and narrates the story, is known as” :  
 (A) expository (B) persuasive  
 (C) descriptive (D) narrative
113. Language assessment aims at measuring \_\_\_\_\_  
 (A) how each learner achieved in comparison to his peers  
 (B) their overall or summative achievement  
 (C) the language achievement of learners  
 (D) the language proficiency of learners
114. You want to ensure maximum participation of the students of your class. Which of the following methods would you adopt for this purpose ?  
 (A) Discussion (B) Demonstration  
 (C) Model reading (D) Recitation
115. A listener while listening to the specific details recognizes cognates and word order patterns. What is this listening process known as ?  
 (A) Bottom-up process  
 (B) Top-down process  
 (C) Inferential process  
 (D) Linear process
116. Which one of the following could be the 'while-reading activity' when doing a short story ?  
 (A) Learners discuss to predict the events in the story.  
 (B) Learners do pair work and read mutually to one another.  
 (C) Learners discuss biographical details of the poet.  
 (D) Teacher asks meaning of new words and encourages them to frame sentences on them.
117. In one class you don't ask any questions; instead you give them some short texts and ask your learners to frame questions. The objective behind your task is to” :  
 (A) develop your learners as good paper setters  
 (B) take their help in your own task of setting questions  
 (C) make your learners realize how difficult it is to frame questions  
 (D) enhance your learners' analytical and critical thinking
118. The use of teaching aids aims at :  
 (A) engaging learners in learning tasks  
 (B) optimizing learning outcomes of the learners  
 (C) minimizing cases of indiscipline in the classroom  
 (D) drawing learners' attention in the classroom
119. One of your students takes a favourite book and retells the story often by using pictures as cues. This strongly suggests” :  
 (A) emergent reading stage  
 (B) phonological awareness  
 (C) syntactic awareness  
 (D) narrative awareness
120. Every syllabus talks about learning outcomes which means  
 (A) taking into account the content of the textbook  
 (B) change in the behaviour of the learners  
 (C) completion of all lessons  
 (D) change in teaching method of the teacher

## हिंदी : भाषा-I

निर्देश (प्रश्न संख्या 91 से 99 तक)

नीचे दिए गए गद्यांश को पढ़कर पूछे गए प्रश्नों के सबसे उपयुक्त उत्तर वाले विकल्प को चुनिए—

इस बात को सब लोग मानते हैं कि आत्मसंस्कार के लिए थोड़ी बहुत मानसिक स्वतंत्रता परमावश्यक है। चाहे उस स्वतंत्रता में अभिमान और नम्रता दोनों का मेल हो। यह बात तो निश्चित है कि जो मनुष्य मर्यादापूर्वक जीवन व्यतीत करना चाहते हैं, उनके लिए आत्मनिर्भरता का गुण अनिवार्य है। युवाओं को इस बात का ध्यान रखना चाहिए कि वे अपने बड़ों का सम्मान करें और छोटों से कोमलता का व्यवहार करें। यह बात आत्ममर्यादा के लिए आवश्यक है। नम्र होना एक बहुत बड़ा गुण है। नम्र होने का मतलब दबूपन से नहीं है। दबूपन की स्थिति में संकल्प क्षीण और प्रज्ञा मंद हो जाते हैं आत्मनिर्भरता के साथ-साथ उत्साह, श्रद्धा, भक्ति, करुणा ये सभी हमारे चारित्रिक गुणों में समावेशित होने चाहिए।

91. आत्मसंस्कार के लिए क्या आवश्यक माना गया है ?  
 (A) कोमलता  
 (B) उत्साह  
 (C) मानसिक स्वतंत्रता  
 (D) शारीरिक स्वास्थ्य

92. मर्यादापूर्वक जीवन व्यतीत करने के लिए कौन-सा गुण होना चाहिए ?

- (A) आत्मनिर्भरता  
(B) समालोचनात्मकता  
(C) रचनात्मकता  
(D) सकारात्मकता

93. युवाओं से किस प्रकार के व्यवहार की अपेक्षा की गई है ?

- (A) दूसरों पर अधिकार जताने की  
(B) अपनी महत्ता को दर्शाने की  
(C) बड़ों से बराबरी का व्यवहार करने की  
(D) छोटों से कोमलता का व्यवहार करने की

94. दबूपन की स्थिति किस परिणाम की ओर ले जाती है ?

- (A) विद्रोह  
(B) क्षीण संकल्प  
(C) उच्च विचार  
(D) तीव्र बुद्धि

95. आत्मनिर्भरता के साथ चरित्र में और कौन-से गुण आवश्यक माने गए हैं ?

- (A) ईमानदारी व करुणा  
(B) अनुशासन व सहृदयता  
(C) उत्साह व श्रद्धा  
(D) वीरता व नियमितता

96. 'संस्कार' शब्द से विशेषण बनेगा—

- (A) संस्कारी (B) संस्कारता  
(C) संस्कारित (D) संस्कृत

97. 'परमावश्यक' का संधि-विच्छेद है—

- (A) परमा + वश्यक  
(B) पर + मावश्यक  
(C) परम + अवश्यक  
(D) परम + आवश्यक

98. किस शब्द में 'ता' प्रत्यय का प्रयोग करना सही है ?

- (A) जीवन (B) आवश्यक  
(C) प्रज्ञा (D) सम्मान

99. 'मर्यादापूर्वक जीवन' से आशय है—

- (A) सदाचारी जीवन  
(B) स्वतंत्र जीवन  
(C) स्वावलंबी जीवन  
(D) सार्थक जीवन

निर्देश (प्रश्न संख्या 100 से 105 तक)

नीचे दिए गए पद्यांश को पढ़कर पूछे गए प्रश्नों के सबसे उपयुक्त उत्तर वाले विकल्प को चुनिए :

जो मेरे पास नहीं था

उसे ही मैं कविता में लाता रहा :

जलप्रपात, देवता, पूर्वज,

बचपन के घर के सामने छूट गए  
कठचंदन और बकौली के पेड़।

मैं कविता में नहीं लाया :

मुहल्ले की खुली हुई बदनूदार नालियाँ

कभी उफनता क्रोध, कभी अचानक हुआ उल्लास

मैं कविता में बचा पाया

जो मेरे पास नहीं था।

यह भी एक मोहक भ्रम है

कि कविता कुछ बचा पाती है।

पर बचाकर होगा क्या

बस, कविता जरूर भारी हो जाएगी।

100. रचनाकार कविता में किसका चित्रण नहीं कर सका ?

- (A) झरनों का (B) अपने क्रोध का  
(C) चंदन के वृक्ष का (D) पूर्वजों का

101. रचनाकार को किस प्रकार का भ्रम है ?

- (A) कविता द्वारा कुछ संरक्षित किया जा सकता है  
(B) कविता कुछ भी संरक्षित नहीं कर सकती है  
(C) कविता में अलभ्य का ही चित्रण हो सकता है।  
(D) कविता में सुलभ्य का ही चित्रण हो सकता है

102. रचनाकार द्वारा कविता में किसका चित्रण किया जाता रहा ?

- (A) उल्लास का  
(B) दुर्गंधपूर्ण नालियों का  
(C) जलप्रपात का  
(D) क्रोध का

103. रचनाकार ने कविता में क्या सँजोने का प्रयास किया ?

- (A) किसी प्रकार का भ्रम  
(B) अपने अनुभव  
(C) अपनी इच्छाएँ  
(D) जो स्वयं उसके पास नहीं था

104. 'कविता जरूर भारी हो जाएगी' में कविता के भारीपन से क्या आशय है ?

- (A) कविता में शब्दों की संख्या का अधिक होना  
(B) कविता में भावों की गंभीरता होना  
(C) कविता का क्लिष्ट होना  
(D) कविता का अरुचिकर होना

105. 'जलप्रपात' का सामासिक विग्रह है—

- (A) जल में प्रपात (B) जल का प्रपात  
(C) जल से प्रपात (D) जल पर प्रपात

106. भाषा अधिगम के बारे में कौन-सा कथन सही है ?

- (A) भाषा अधिगम केवल भाषा की पाठ्यपुस्तकों के पठन के माध्यम से ही होता है।

(B) मुद्रित-समृद्ध परिवेश में भाषा अधिगम त्वरित गति से होता है।

(C) विज्ञान और गणित के अधिगम के लिए भाषा अधिगम की आवश्यकता नहीं है।

(D) भाषा अधिगम अवचेतन रूप से घटित होता है।

107. रोना, कूजन और बबलाना भाषा विकास के किस चरण (अवस्था) के उदाहरण हैं ?

- (A) भाषिक  
(B) पूर्व-भाषिक  
(C) अभिव्यक्तिपरक (एक्सप्रेसिव)  
(D) संदर्भात्मक (रेफरेंशियल)

108. निम्नलिखित में से कौन-सा पद वायगोत्सकी के सामाजिक-सांस्कृतिक सिद्धान्त से संबंधित नहीं है ?

- (A) सामाजिक अंतः क्रिया  
(B) सहारा देना (स्कैफोल्डिंग)  
(C) निकटस्थ विकास का क्षेत्र  
(D) भाषा अर्जन उपकरण

109. गर्वित अपनी कक्षा में अपने सहपाठियों से हिन्दी में बातचीत करता है। जब अध्यापक उसे बुलाते हैं, तब वह तुरन्त है। यह किसका उदाहरण है ?

- (A) कोड-मिश्रण  
(B) बोलियाँ  
(C) सामाजिक-भाषिक  
(D) कोड-अन्तरण (कोड-स्विचिंग)

110. अपने फोन की सम्पर्क सूची में किसी का फोन नम्बर ढूँढ़ना किसका उदाहरण है ?

- (A) बारीकी से पठन (स्कैनिंग)  
(B) सर्वेक्षण  
(C) समीक्षा  
(D) सरसरी तौर पर पठन (स्किमिंग)

111. लेखन का वह कौन-सा प्रकार है, जिसमें लेखक बहुधा स्वयं को एक पात्र (कभी नहीं भी) के रूप में प्रस्तुत सुनाता है ?

- (A) व्याख्यात्मक  
(B) प्रत्ययकारी (परसुएसिव)  
(C) वर्णनात्मक (डेस्क्रिप्टिव)  
(D) वृत्तांतात्मक

112. आप चाहते हैं कि आपकी कक्षा के विद्यार्थी अधिक-से-अधिक प्रतिभागीता दर्ज करें। इस उद्देश्य के लिए आप वि अनुपालन करेंगे ?

- (A) चर्चा  
(B) प्रदर्शन  
(C) आदर्श पठन  
(D) सस्वर काव्य किस विधि का पाठ (रिसाइटेशन)

113. एक श्रोता किसी बात को सुनते समय, विशेष या सूक्ष्म विवरणों को सुनता है, तथा समस्रोतीय शब्दों (कॉग्नेट्स) और शब्द-क्रम प्रतिमानों की पहचान करता है। इस श्रवण-प्रक्रिया को किस रूप में जाना जाता है ?
- (A) बॉटम – अप प्रक्रियाएँ  
(B) शीर्ष – अधोगामी (टॉप-डाउन) प्रक्रियाएँ  
(C) निष्कर्षात्मक (इन्फ्रेंशियल) प्रक्रियाएँ  
(D) रेखीय प्रक्रियाएँ
114. लघु कथा कहते समय 'पठन के दौरान' की कौन-सी गतिविधि होगी ?
- (A) शिक्षार्थी कहानी की घटनाओं के बारे में अनुमान लगाते हैं  
(B) शिक्षार्थी दो-दो के जोड़ों में पठन करते हैं और एक-दूसरे को पढ़कर सुनाते हैं  
(C) शिक्षार्थी कथाकार के जीवन-संबंधी विवरणों की चर्चा करते हैं  
(D) अध्यापिका नए शब्दों के अर्थ पूछती है और उन शब्दों से वाक्य बनाने के लिए प्रोत्साहित करती है
115. प्रत्येक पाठ्यक्रम अधिगम-प्रतिफलों के बारे में उल्लेख करता है, जिसका तात्पर्य है—
- (A) पाठ्यपुस्तक की विषयवस्तु को ध्यान में रखना  
(B) शिक्षार्थियों के व्यवहार में परिवर्तन  
(C) सभी पाठों को पूरा करना  
(D) अध्यापक की शिक्षण विधियों में परिवर्तन
116. बच्चों को नए शब्दों के अर्थ सीखने के स्थान पर उन्हें संदर्भ में नए शब्द देने का क्या परिणाम हो सकता है ?
- (A) बच्चों को भ्रमित करेगा  
(B) शब्द की बेहतर समझ बनाने में मदद करेगा  
(C) कठस्थीकरण को समुन्नत करेगा  
(D) समय की बरबादी होगी
117. किसी एक कक्षा में आप प्रश्न पूछने के स्थान पर विद्यार्थियों को एक संक्षिप्त पाठ्य-सामग्री देकर उस पर आधारित प्रश्न बनाने के लिए कहते हैं। इस कार्य का क्या उद्देश्य है ?
- (A) आप चाहते हैं कि आपके विद्यार्थी कुशलतापूर्वक प्रश्न बनाएँ  
(B) प्रश्न बनाने के अपने काम में उनकी मदद लेना  
(C) अपने शिक्षार्थियों को यह अनुभव करवाना कि प्रश्न बनाना कितना कठिन कार्य है  
(D) अपने शिक्षार्थियों के विश्लेषणात्मक और समालोचनात्मक चिन्तन का संवर्द्धन करना

118. शिक्षण अधिगम सामग्री के प्रयोग का क्या उद्देश्य है ?
- (A) शिक्षार्थियों को अधिगम कार्य में संलग्न करना  
(B) शिक्षार्थियों के अधिगम प्रतिफलों के प्रति आशान्वित होना  
(C) कक्षा में अनुशासनहीनता को कम करना  
(D) शिक्षार्थियों का कक्षा में ध्यान आकर्षित करना
119. आपकी एक विद्यार्थी अपनी प्रिय पुस्तक उठाती है और अक्सर उसके चित्रों को संकेत के रूप में प्रयोग करते हुए कहानी पुनः कहती है। यह किसका उल्लेख है ?
- (A) उद्गामी पठन अवस्था  
(B) ध्वन्यात्मक जागरूकता  
(C) वाक्यगत जागरूकता  
(D) वृत्तांतात्मक जागरूकता
120. भाषा आकलन का उद्देश्य किसका मापन करना है ?
- (A) प्रत्येक शिक्षार्थी ने अपने सहपाठी की तुलना में कितना सीखा है  
(B) विद्यार्थियों की समग्र या योगात्मक उपलब्धि  
(C) शिक्षार्थियों की भाषा उपलब्धि  
(D) शिक्षार्थियों की भाषिक निपुणता

### English : Language-II

#### Direction (Q. No. 121 to 128)

Read the passage given below and answer the questions that follow :

There was a king, Shibi Rana, who enjoyed immense power. Even gods in heaven were jealous of him. They feared that Shibi might one day take away their kingdoms. They devised a plan to test his sense of justice. So they decided to reach Shibi's kingdom in disguise. One day, Shibi Rana was sitting on his throne. His courtroom was surrounded by majestic gardens. There came a scared dove flying to him and it was followed by a fierce looking eagle. The king gave shelter to the dove and saved her. The eagle argued that the king has taken away his food – the dove. It would starve. The king assured the eagle that he would give equal quantity of any other food. The eagle asked for king Shibi's flesh. The magnanimous king agreed with a smile. A balance was brought in the court. It was soon found that with each addition of the king's flesh the dove grew heavier. The equal balance was not arrived at. But the king remained calm and unperturbed.

The gods in the guise of the dove and the eagle were assured of Shibi's righteousness. The forms of the eagle and the dove soon disappeared. In their place stood Indra, the king of the gods and Agni, the god of fire smiling and blessing the king for his benevolence and greatness.

121. The gods in heaven were afraid of king Shibi because :
- (A) they thought he might have disguised himself as god.  
(B) they thought that Shibi might take away their kingdoms.  
(C) Shibi had a great sense of justice.  
(D) Shibi's courtroom was surrounded by majestic gardens.
122. The king saved \_\_\_\_\_ from the fierce \_\_\_\_\_
- (A) the eagle, dove (B) the dove, eagle  
(C) Indra, Agni (D) Agni, Indra
123. The king was blessed for his :
- (a) benevolence (b) greatness  
(c) calmness  
(A) Only (a) (B) Only (b)  
(C) Only (c) (D) Both (a) and (b)
124. Which one of the following words is similar in meaning to the word 'magnanimous' in the passage ?
- (A) Selfish (B) Generous  
(C) Petty (D) Suspicious
125. Which one of the following words is opposite in meaning to the word 'fierce' as used in the passage ?
- (A) Wild (B) Savage  
(C) Ferocious (D) Tame
126. Identify the clause in the underlined part of the following sentence :
- The king assured the eagle that he would give equal quantity of any other food.
- (A) Adjective clause  
(B) Adverb clause  
(C) Principal clause  
(D) Noun clause
127. Which part of speech is the underlined word in the following sentence ?
- His courtroom was surrounded by majestic gardens.
- (A) Noun (B) adjective  
(C) Adverb (D) Conjunction
128. Which part of the following sentence contains an error ?

- The gods in the  
(a)  
guise of dove and eagle  
(b)  
are certain of  
(c)  
Shibi's virtue.  
(d)  
(A) (a) (B) (d)  
(C) (c) (D) (b)

**Direction (Q. No. 129 to 135)**

Read the passage given below and answer the questions that follow :

Fitness is zero percent investment with infinite returns. There is a surge in diabetes and hypertension cases and other lifestyle diseases. Fitness is the only thing that can help. But with technology, physical activity has reduced. It has become fashionable to talk about fitness rather than act on it.

Several factors are cited to explain why fitness levels in school children are constantly declining. Children now walk far less than they used to. Instead of walking to or back from their school, they use a school bus, or get dropped and picked in a car. Once back home, they sit glued to the idiot box for several hours or keep playing computer games.

Excessive screen time can negatively impact a child's physical and mental health from increasing the risk of obesity to disturbing sleep patterns. There is neither place nor inclination to play outdoor games. Children's diet consists mainly of fast foods, fried foods, chocolates, crispies, sweets and fizzy drinks. These foods may be delicious and therefore, tempting, but they are highly deficient in vital nutrients. Parents are often aware of this, but out of misplaced love for children, they hardly ever discipline their eating habits. Girls, usually keen to remain slim, keep dieting unnecessarily and deprive their bodies of vital nourishment.

It is important that children spend plenty of time playing in fresh air and exercise even more than the grown-ups in order that their muscles develop and their bones grow properly. If they can go for a regular swim and walk down to the swimming pool, it would combine the benefits of both walking and swimming. In addition, they should be encouraged to take healthy and wholesome food rich in nutrients to avoid what may be described as convenience foods

129. The activity/activities that take (s) up most of the evening time of children is/are

- (a) playing video games  
(b) watching TV.  
(c) walking and swimming  
(A) Only (a)  
(B) Only (b)  
(C) Both (a) and (c)  
(D) Both (a) and (b)
130. How does girls' keenness to remain slim affect their health ?  
(A) They have more inclination towards fast food.  
(B) They fail to take essential nourishment because of dieting.  
(C) Their muscles are not developed.  
(D) They do not go for walking and swimming.
131. What fault does the author find in convenience foods ?  
(A) They are readily available  
(B) They are delicious and tempting  
(C) They lack vital nutrients  
(D) They help in muscle development
132. Which one of the following words is similar in meaning to the phrase 'going down' as used in the passage ?  
(A) Averaging (B) Dropping  
(C) Declining (D) Rising
133. Which one of the following words is opposite to the meaning of the word 'lacking' as used in the passage ?  
(A) Deficient (B) Deprived  
(C) Unnecessary (D) Vital
134. Which part of speech is the underlined word in the following sentence ?  
They are highly deficient in vital nutrients.  
(A) Adjective (B) Adverb  
(C) Noun (D) Verb
135. Explain the phrase 'out of misplaced love' as used in the passage.  
(A) Love that does not exist  
(B) Love that is harmful  
(C) Love that is blind  
(D) Love that lacks discipline
136. According to Chomsky, human beings have a to develop language.  
(A) learning set  
(B) biological disposition  
(C) perceptual set  
(D) telegraphic readiness
137. Constructivism as a learning theory believes :  
(A) learning is individual characteristic  
(B) all learners cannot learn languages  
(C) learning is completely psychological phenomena  
(D) learning is socially constructed
138. A teacher provides learners of class VIII an article which she considers slightly above their language level. Learners have to work with the text to do many tasks. What is this known as ?  
(A) Learning hypothesis  
(B) Incomprehensible input  
(C) Reading comprehension  
(D) Comprehensible input
139. Which approach to language teaching-learning believes 'language is a habit' ?  
(A) Communicative language teaching  
(B) Cooperative language learning  
(C) Natural approach  
(D) Audio-lingualism
140. Learning to writing by undergoing different stages of writing is known as :  
(A) process approach to writing  
(B) product approach to writing  
(C) analytical writing  
(D) creative writing
141. Sometimes people combine elements of different languages in the same sentence. This is an example of :  
(A) code-switching  
(B) code-mixing  
(C) socio-linguistics  
(D) dialects
142. 'Semantic cues' in reading are prompts :  
(A) that help in decoding the word  
(B) for the correct pronunciation of the word  
(C) that support the meaning making process  
(D) for identifying the grammatical form
143. Students often lack confidence when speaking due to the unique pronunciation rules of the language. One way to overcome this problem is :  
(A) encouraging children to read in class  
(B) conducting special speech therapy with a counselor  
(C) using game-like activities which require oral interaction in classroom  
(D) correcting whatever errors the students make
144. Teaching of grammar is chiefly useful for improving :  
(A) fluency (B) accuracy  
(C) literacy (D) numeracy
145. The objective of grammar teaching is to enable students to communicate. Which

among the following is not in tune with this objective ?

- (A) Students should have command over every aspect of each grammar point  
 (B) Students need overt instruction that connects grammar points with larger communication contexts  
 (C) Students should master only those aspects that are relevant to the immediate communication task  
 (D) Error correction is not always the teacher's first responsibility
146. Which of the following is the most suitable assessment activity for assessing learners' communication skills ?  
 (A) Describing a scene from a picture book  
 (B) Playing a role in a role play.  
 (C) Listening to an audio text and responding to it orally.  
 (D) Writing a speech in a given situation.
147. Reading a novel is an example of :  
 (A) extensive reading  
 (B) intensive reading  
 (C) scanning  
 (D) skimming
148. A multilingual approach to schooling from the very beginning is chiefly helpful in countering the ill consequences of :  
 (A) school dropouts  
 (B) learning disabilities  
 (C) losing one's own language  
 (D) weak communication skill
149. You engage your learners in a fun energizer activity before beginning a new lesson. You do this to :  
 (A) motivate and prepare learners for the class  
 (B) reduce your workload as a teacher  
 (C) maintain discipline in the class before the lesson  
 (D) divert the attention of the learners
150. What is the basic objective of using a quotation in an essay ?  
 (A) To set the tone of the essay  
 (B) To explain a complicated issue  
 (C) To present another's point of view  
 (D) To analyze specific data

## हिंदी : भाषा-II

निर्देश (प्रश्न संख्या 121 से 128 तक)

नीचे दिए गए गद्यांश को पढ़कर पूछे गए प्रश्नों के सबसे उपयुक्त उत्तर वाले विकल्प को चुनिए :

मेरे मन में एक ऐसे दिन की कल्पना है जब प्राथमिक विद्यालय में पढ़ाने वाले हर अध्यापक से अपेक्षा की जाएगी कि कम-से-कम तीस पारम्परिक कहानियों

पर उसका अधिकार हो। अधिकार से आशय है कि कहानी याद हो और आत्मविश्वास के साथ सुना सके। पारम्परिक कहानियों के स्रोत हैं पंचतंत्र, जातक, महाभारत, गुलिस्ताँ, लोक कथाएँ आदि। कहानियाँ अच्छी तरह से सुनने की क्षमता का विकास करती हैं। अनुमान लगाने का मौका देती हैं। कहानियाँ शब्दों को अर्थ देती हैं। शब्द ऐसी सामाजिक संपत्ति हैं, जिनका प्रयोग हम दूसरों से अपने अनुभव बाँटने के लिए करते हैं। कहानी को नाटकीय ढंग से बोला जा सकता है। इशारों, मुद्राओं का प्रयोग किया जा सकता है। कहानी के प्रत्येक पात्र को अभिनीत भी किया जा सकता है।

121. प्राथमिक विद्यालय के अध्यापक से किस तरह की अपेक्षा की गई है ?  
 (A) पारम्परिक कहानियाँ यादकर सुनाने की  
 (B) समसामयिक कहानियाँ पढ़कर सुनाने की  
 (C) पारम्परिक कहानियाँ पढ़ने और सुनने की  
 (D) समसामयिक कहानियाँ लिखने - सुनाने की
122. शिक्षक का पारम्परिक कहानियों पर अधिकार होने से क्या आशय है ?  
 (A) कहानी के पात्रों का अभिनय किया जा सके  
 (B) कहानी को पढ़कर सुनाया जा सके  
 (C) कहानी पर आधारित चित्र बनाए जा सकें  
 (D) कहानी यादकर सुनायी जा सके
123. पारम्परिक कहानियों का स्रोत है :  
 (A) समाचार-पत्र (B) पंचतंत्र  
 (C) पाठ्यपुस्तकें (D) पत्रिकाएँ
124. कहानियों का कौन-सा महत्व गद्यांश में प्रतिपादित नहीं हुआ है ?  
 (A) अनुमान लगाने के अवसर देना  
 (B) शब्दों को अर्थ देना  
 (C) कल्पनाशीलता प्रकट करना  
 (D) श्रवण क्षमता का विकास करना
125. शब्द सामाजिक सम्पत्ति हैं, क्योंकि  
 (A) शब्दों द्वारा हम दूसरों से अपने अनुभव बाँटते हैं  
 (B) हम दूसरों से तरह-तरह के शब्द सुनकर सीखते हैं  
 (C) शब्द शब्दकोश से पढ़कर सीखे जाते हैं  
 (D) हम दूसरों के अनुसार शब्दों का प्रयोग करते हैं

126. 'विद्यालय' का संधि-विच्छेद है—

- (A) विद्य + अलय (B) विद्या + अलय  
 (C) विद्या + आलय (D) विद्या + लय

127. 'पारम्परिक' में प्रयुक्त प्रत्यय का सही विकल्प चुनिए—

- (A) रिक (B) इक  
 (C) ईक (D) क

128. 'प्रत्येक' का संधि-विच्छेद है—

- (A) प्रत्य एक (B) प्रत्येक  
 (C) प्रती एक (D) प्रति एक

निर्देश (प्रश्न संख्या 129 से 135 तक)

नीचे दिए गए गद्यांश को पढ़कर पूछे गए प्रश्नों के सबसे उपयुक्त उत्तर वाले विकल्प को चुनिए :

व्यंग्य निरंतरता की माँग करता है और निरंतरता में नवीन की उपस्थिति का आग्रह स्वयं मौजूद हो जाता है। लेकिन निरंतरता का एक खतरा यह है कि व्यंग्यकार खुद को दोहराने लगते हैं। जो भाषा उनकी पृथक् पहचान और चमक बना रही होती थी वह कमजोरी हो जाती है। ज्यादा लेखन का बोझ विशेषकर व्यंग्य में दोहराव की दरिद्रता लाता है। प्रायः व्यंग्यकार भाषा के खेल में उलझ जाते हैं पर सशक्त व्यंग्य के लिए उन्हें भाषा को शक्ति बनाना होगा। समर्थ और समृद्ध भाषा के साथ-साथ व्यंग्य की गरिमा की रक्षा भी करना एक बड़ी बात है, वरना प्रायः व्यंग्यकार भाषा को रचना-दक्षता मानकर, कारक परिस्थितियों को छोड़कर सामान्य चीजों और स्थितियों की खिल्ली उड़ाना शुरू कर देते हैं।

129. 'व्यंग्य निरंतरता की माँग करता है' का आशय है—

- (A) लेखन सतत रूप से चलते रहना चाहिए  
 (B) आगामी रचना में पूर्व में लिखे गए का उल्लेख होना चाहिए  
 (C) प्रत्येक रचना में नवीनता का पुट होना चाहिए  
 (D) हर रचनाकार को अपनी रचना में व्यंग्य का समावेश करना चाहिए

130. गद्यांश में निरंतरता के किस खतरे की बात उठाई गई है ?

- (A) व्यंग्यकार एक साथ अनेक रचनाएँ लिखने लगते हैं।  
 (B) पिछली रचनाओं का कलेवर आगामी रचनाओं में झलकने लगा है।  
 (C) व्यंग्य के पाठक बहुत कम हो गए हैं।  
 (D) व्यंग्य के सराहना बोध की क्षमता खत्म होती जा रही है

131. अधिकाधिक रचनाएँ लिखने का क्या परिणाम होता है ?

- (A) विषयवस्तु में नवीनता का अभाव दिखाई देता है  
 (B) रचनाकार की ख्याति दूर-दूर तक फैलती है।  
 (C) पाठकों को अनेक रचनाएँ एक साथ पढ़ने के लिए मिलती हैं।  
 (D) प्रकाशक के लिए चयन करना कठिन हो जाता है

132. सशक्त व्यंग्य के लिए सबसे आवश्यक तत्त्व क्या है ?

- (A) विषयवस्तु में दोहराव  
 (B) समर्थ व समृद्ध भाषा

- (C) अधिक-से-अधिक लिखना  
(D) व्यंग्यकार की व्यक्तिगत पहचान
133. 'खिल्ली उड़ाना' का भाव है—  
(A) खिलखिलाकर हँसना  
(B) गौरवगान करना  
(C) हास-परिहास करना  
(D) उपहास करना
134. 'पृथक् पहचान', गद्यांश के संदर्भ में रेखांकित शब्द के स्थान पर कौन-सा शब्द उपयुक्त होगा ?  
(A) महान (B) मजबूत  
(C) विशिष्ट (D) समृद्ध
135. चमक में कौन-सा प्रत्यय लगाकर सार्थक शब्द बन सकता है ?  
(A) ईला (B) इया  
(C) आरी (D) एरा
136. चॉमस्की के अनुसार, मनुष्य के पास भाषा-विकास हेतु \_\_\_\_\_ है।  
(A) अधिगम सेट  
(B) जैवकीय व्यवस्था  
(C) बोधात्मक सेट  
(D) टेलीग्राफिक तत्परता
137. रचनावाद एक अधिगम सिद्धांत के रूप में किसमें विश्वास करता है ?  
(A) अधिगम वैयक्तिक विशेषता है  
(B) सभी शिक्षार्थी भाषा नहीं सीख सकते हैं।  
(C) अधिगम पूरी तरह से एक मनोवैज्ञानिक धारणा है  
(D) अधिगम सामाजिक रूप से होता है।
138. एक अध्यापिका कक्षा आठ के शिक्षार्थियों को एक आलेख देती है जिसका स्तर उनके भाषा स्तर से कुछ अधिक है। शिक्षार्थी को इस पाठ्य-सामग्री के साथ बहुत से कार्य करने हैं। इसे किस रूप में जाना जाएगा ?  
(A) अधिगम परिकल्पना  
(B) अबोधगम्य निवेश  
(C) पठन बोधगम्यता  
(D) बोधगम्य निवेश
139. भाषा शिक्षण-अधिगम का कौन-सा उपागम इस तथ्य में विश्वास करता है कि 'भाषा एक आदत है' ?  
(A) सम्प्रेषणात्मक भाषा शिक्षण  
(B) सहयोगात्मक भाषा अधिगम  
(C) प्राकृतिक उपागम  
(D) श्रव्य-भाषावाद
140. कई बार कुछ लोग एक ही वाक्य में विभिन्न भाषाओं का प्रयोग करते हैं। यह किसका उदाहरण है ?  
(A) कोड-अंतरण (कोड-स्विचिंग)  
(B) कोड-मिश्रण (कोड-मिक्सिंग)  
(C) सामाजिक-भाषिक  
(D) बोलियाँ
141. कुछ विद्यार्थी भाषा के अनूठे उच्चारण संबंधी नियम के कारण बोलने में आत्मविश्वास की कमी महसूस करते हैं। इस समस्या को दूर करने का क्या समाधान हो सकता है ?  
(A) बच्चों को कक्षा में पढ़ने के लिए प्रोत्साहित करना  
(B) काउन्सलर की मदद से विशेष वाक् थैरेपी करवाना  
(C) ऐसी खेल आधारित गतिविधियों का क्रियान्वयन करना, जिनसे कक्षा में मौखिक अन्तःक्रिया को अवसर मिले  
(D) विद्यार्थियों की गलती को तुरंत ठीक करना
142. उपन्यास पढ़ना किसका उदाहरण है ?  
(A) विस्तृत पठन (एक्सटेंसिव रीडिंग)  
(B) गहन पठन (इंटेंसिव रीडिंग)  
(C) बारीकी से पठन (स्कैनिंग)  
(D) सरसरी तौर पर पठन (स्किमिंग)
143. व्याकरण का शिक्षण मुख्यतः किसमें सुधार लाने के लिए उपयोगी है ?  
(A) प्रवाह (B) सटीकता  
(C) साक्षरता (D) संख्या बोध
144. व्याकरण शिक्षण का उद्देश्य विद्यार्थियों को सम्प्रेषण करने में समर्थ बनाना है। निम्नलिखित में से कौन-सा इस उद्देश्य से मेल नहीं खाता है ?  
(A) विद्यार्थियों का प्रत्येक व्याकरणिक बिन्दु के प्रत्येक पहलू पर नियंत्रण होना चाहिए  
(B) विद्यार्थियों को इस प्रकार के प्रत्यक्ष निर्देशों की आवश्यकता है, जिनके माध्यम से व्याकरणिक बिन्दु बृहत्तर सम्प्रेषण संदर्भों से जुड़ सकें  
(C) विद्यार्थियों की निपुणता केवल उन्हीं पहलुओं पर होनी चाहिए, जो तात्कालिक सम्प्रेषण कार्य के लिए प्रासंगिक हैं  
(D) त्रुटियों में सुधार करना सदैव अध्यापकों का ही पहला उत्तरदायित्व नहीं होता है
145. लेखन के विभिन्न चरणों से गुजरकर लेखन अधिगम क्या कहलाता है ?  
(A) लेखन का प्रक्रिया उपागम  
(B) लेखन का उत्पाद उपागम  
(C) विश्लेषणात्मक लेखन  
(D) रचनात्मक लेखन
146. पठन में 'अर्थगत संकेत (सीमेंटिक क्यू)' इस तरह के अवबोधक हैं जो—  
(A) शब्दों को डिकोड करने में सहायता करते हैं।  
(B) शब्दों का सही उच्चारण करने में सहायता करते हैं  
(C) अर्थ – ग्रहण की प्रक्रिया में मदद करते हैं।  
(D) व्याकरणिक नियमों की पहचान करने में मदद करते हैं
147. विद्यालयी शिक्षा की शुरुआती अवस्था में बहुभाषिक उपागम का प्रयोग करने से किसके नकारात्मक परिणाम का सामना करने में सहायता मिल सकती है ?  
(A) विद्यालय से ड्रॉपआउट  
(B) अधिगम अशक्तता  
(C) किसी की स्वयं की भाषा की क्षति  
(D) कमजोर सम्प्रेषण कौशल
148. कक्षा में नया पाठ शुरू करने से पहले आप अपने शिक्षार्थियों को किसी मजेदार ऊर्जादायक गतिविधि में संलग्न करते हैं। आप ऐसा किसलिए करते हैं ?  
(A) शिक्षार्थियों को कक्षा के लिए प्रोत्साहित व तैयार करने के लिए  
(B) अपने कार्यभार को कम करने के लिए  
(C) पाठ शुरू करने से पहले कक्षा में अनुशासन बनाए रखने के लिए  
(D) शिक्षार्थियों का ध्यान दूसरी ओर करने के लिए
149. किसी निबंध में उद्धरण (कोटेशन) लिखने का मूल उद्देश्य क्या होगा ?  
(A) निबंध का भाव सुनिश्चित करना  
(B) किसी जटिल मुद्दे की व्याख्या करना  
(C) दूसरे के दृष्टिकोण को प्रस्तुत करना  
(D) विशिष्ट आँकड़ों का विश्लेषण करना
150. शिक्षार्थी के सम्प्रेषण कौशलों का आकलन करने के लिए सर्वाधिक रूप से उपयुक्त आकलन गतिविधि कौन-सी होगी ?  
(A) चित्र पुस्तक से किसी दृश्य का वर्णन करना  
(B) रोल प्ले में किसी भूमिका का निर्वाह करना  
(C) किसी श्रव्य सामग्री का श्रवण और मौखिक रूप से इस पर प्रतिक्रिया देना  
(D) किसी दी गई स्थिति में वक्तव्य लेखन

## Solutions

### Child Development and Pedagogy

- (B) Academic performance and intellectual abilities gradually improve in children who leave deprived settings and enter enriched settings. The above argument points primarily towards Entity versus Incremental debates of development. The entity and incremental theories are different ways of thinking about how people's abilities and traits can change over time :
  - **Entity theory** : The belief that people's abilities and traits are fixed and cannot be improved. For example, an entity theorist might believe that a person's intelligence level is relatively constant and that they can't change their underlying intelligence.
  - **Incremental theory** : The belief that people's abilities and traits can be improved through effort and learning. For example, an incremental theorist might believe that intelligence can be increased through hard work and continued learning.
- (C) Cultural tools are not among the factors that modify cognition proposed by Jean Piaget. Jean Piaget proposed four major factors of cognitive development: biological maturation, activity, social experience, and equilibration. Cultural tools were described by Lev Vygotsky. According to Russian psychologist Lev Vygotsky, cultural tools are the main determinants of cognitive development and learning.
- (#) According to Jean Piaget, the process of learning depends on the interaction between heredity and environment. Assertion (A) states that the process of learning is completely dependent on heredity, which is not correct. Reason (R) is correct as it shows the interaction between heredity and environment for development.

[Note : All options are incorrect.]
- (A) According to Jean Piaget, when children cannot handle new experiences according to their existing cognitive structures, they experience disequilibrium and resort to adaptation. Disequilibrium and adaptation can be classified as follows :
  - **Disequilibrium** : When a child's experience matches what they understand they are in a state of equilibrium. If they come across a new situation or task that they do not understand, Piaget calls this disequilibrium. This occurs when a child is unable to use existing schema to understand new information to make sense of objects and concepts.
  - **Adaptation** : Two basic processes are involved in adaptation: assimilation and accommodation. Assimilation takes place when people try to understand something new by fitting it into what they already know. Accommodation occurs when a person must change existing schemes to respond to a new situation.
- (B) While Piaget views children as active in manipulating ideas, Vygotsky views children as active in social contexts. According to Piaget, children learn through their independent experiences and explorations, whereas Vygotsky believes that interactions with peers and adults are important in children's development and learning. For Piaget, children construct their own understanding of the world rather than absorbing information from their environment; for Vygotsky, children know the world through language.
- (D) The Answers given by the individual-for/against stealing and the reasoning underlying the individual's response are the basis for determining the stage of moral development in Lawrence Kohlberg's theory. The theory divides moral development into three main levels and six stages. According to Kohlberg, people can only move through these stages in the order listed. Kohlberg believed that each new stage changes the logic of the previous stage.
- (A) According to Lev Vygotsky, the essence of cognitive development is mastering the use of psychological tools. All higher-order mental processes such as problem-solving and reasoning, are mediated by psychological tools such as symbols, signs, and language, which act as mediators between objects of action and mental functions. The kernel of cognitive development depended on mastering the use of psychological tools such as language, to accomplish advanced levels of thinking and solving problems. Children develop a cultural-tool kit gradually, to collaborate the psychological and the technological tools to aid their development.
- (B) According to Lev Vygotsky more knowledgeable others play (s) an essential role in helping learn through the zone of proximal development. Vygotsky's "**more knowledgeable other**" is a person who has greater knowledge and skills than the learner. Often, this is an adult such as a parent or teacher who provides educational opportunities, such as guided instruction, within a child's zone of proximal development.
- (B) Progressive education is an approach to education that emphasizes individualized learning and student-centered classrooms. Progressive education is based on the belief that education should primarily serve the needs of children and focus on understanding, action, and experience rather than rote knowledge and memorization. A free and democratic atmosphere should be provided in the classroom for the proper development of an individual.
- (A) Howard Gardner proposed that intelligence can be differentiated into multiple kinds. Howard Gardner's theory of multiple intelligences proposes that people are not born with all of the intelligence they will ever have. It includes **nine** types of intelligence :
  - Linguistic intelligence
  - Logical-Mathematical intelligence
  - Musical intelligence
  - Bodily-kinesthetic intelligence
  - Interpersonal intelligence
  - Intrapersonal intelligence
  - Spatial intelligence
  - Naturalistic intelligence
  - Existential intelligence
- (A) The statement is correct that when we view childhood in a single category, we loss out on the social and cultural differences between children, this is because it ignores social construction. Childhood is a social concept. Childhood being a social concept, children across the world have different experiences, therefore, childhood cannot be considered universal. According to contemporary social-constructivist theorists, the concept of childhood is a social construction because it is

a theory of knowledge in sociology and communication that evaluates a child's development based on assumptions about reality. Hence, it is clear that both (A) and (R) are correct and (R) is the correct explanation of (A).

12. (A) It is not correct to say that girls in middle school are often silent and may be non-participatory in class discussions. Some girls may hesitate to participate in class discussions due to social and cultural reasons but it is unfair to say this for all. Similarly, it is also wrong to say that girls are not able to understand and cope with the challenging curriculum in middle schools because of their genetic makeup because girls' abilities do not depend on genetic makeup. Hence, it is clear that both (A) and (R) are incorrect.
13. (A) The nature of assessment should be dynamic and assessment tasks should be authentic. Assessment should be dynamic in nature so that it can adapt to the changing needs and abilities of students over time. Also, assessment tasks should be authentic so that it can accurately assess students' actual abilities and knowledge.
14. (D) It is wrong to say that an inclusive classroom does not follow differentiated instruction. Differentiated instruction is followed in inclusive classrooms. Differentiated instruction means changing teaching methods to suit the individual needs of students. Hence, it is also wrong to say that Inclusion is a policy that stresses equal opportunities by providing the same learning goals, strategies, and assessment methods because the aim of inclusion policy is to provide equal opportunities, but this is not done through the same goals, strategies, and assessment methods, but there is a need to improve the goals, strategies, and assessment methods from time to time. Hence, it is clear that both (A) and (R) are wrong.
15. (B) Use of people - first language such as using the description ' students with a learning disability ' instead of learning-disabled students, aligns with the human rights approach to inclusion. This use of language puts the person first and views their disability as a part of their personality, not a core element of their identity.
16. (A) Examples of assistive technological devices to cater to the needs of children with visual difficulties include :
- alternative computer input devices.
  - braille embosser and displays.
  - speech recognition software (speech-to-text).
- Sign language is not used for visually impaired children but for hearing impaired children.
17. (D) To support the inclusion of students with autism, it is advisable to use concrete, literal, and consistent language. Children with autism have challenges in expression and understanding, therefore, concrete, literal, and consistent language must be used to communicate with them. Autism Spectrum Disorder (ASD), is a developmental disorder that impairs the communication, self-regulation, and social interaction skills of an individual.
18. (A) In order to address the needs of talented and creative children in the classroom, it is important to keep them engaged and interested in the learning process. Creative and talented children are those who show high-performance capability in several areas such as artistic and creative work, leadership quality, keen power of observation, etc. These children have divergent thinking and are very curious in nature that's why sometimes the classroom seems monotonous to them because they grab things faster than their age peers.
19. (B) It is correct to say that it is considered appropriate not to rely on standardized tests while assessing learning. This is because standardized tests do not take into account the different needs and circumstances of all students. Similarly, it is also correct to say that, in criterion-referenced test, the scores are compared with a set performance standard. It is also called a criterion-referenced test. It is an objective assessment, in which the performance of a student is compared with predetermined standards. Hence, it is clear that both (A) and (R) are correct but (R) is not the correct explanation of (A).
20. (C) How have mammals adapted to their environments ? is an example of a question that promotes analytical skills in students. Critical thinking is a process of using own intellectual thought process to create own ideas and present one's own perspective to society. A critical thinker uses logical reasoning and problem-solving techniques to come to a conclusion without assuming or taking any information for granted.
21. (A) Teachers should deal with the failure of students in the classrooms by critically examining their own pedagogical strategies. This helps teachers to know what improvements can be made in their teaching methods. This can help them meet the educational needs of students in a better way.
22. (B) Prior knowledge is important for building connections and facilitating new learning in constructivist learning. By using prior knowledge, students can connect new knowledge to what they already know. This makes the learning process even better.
23. (C) Teachers in a constructivist classroom can help students become self-directed learners by encouraging students to take responsibility for their own learning and develop self-regulation skills. The role of the teacher in a constructivist classroom is to help and motivate students to learn. In a constructivist classroom, the teacher acts as a facilitator to actively engage students.
24. (A) In discovery learning, students derive information for themselves through exploration and manipulation of ideas. Discovery Learning was introduced by Jerome Bruner. It is considered a constructivist-based approach to education. It is also referred to as problem-based learning and experiential learning. Discovery Learning is a method of Inquiry-Based Instruction. This theory encourages learners to use past experiences and knowledge to form new experiences and knowledge. The learner is encouraged to use their intuition, imagination, and creativity, and search for new information to discover facts, correlations, and new truths.
25. (B) Realizing that he is not paying attention in the science class and hence he is unable to understand the concepts, Ramesh decides to sit at the front so that he can focus his attention better. Ramesh is using the metacognitive strategy of learning. Metacognition is a construct that describes the ability to analyze one's own thinking in a given situation. Metacognition is a process in which a learner reflects on his or her own knowledge through his or her own ideas and thinking styles. It is also called metacognition. It governs both thinking and learning. Metacognition is the response to thinking about one's own thinking. It helps to transform new information into existing schema.

26. (D) To advance the problem-solving skills of learners, teachers should encourage, verbalization and should promote analogical thinking among learners. Verbalization allows learners to express their thinking clearly and analogical thinking allows them to understand different viewpoints.
27. (C) Assertion (A) is correct because a middle school teacher keeps in regular touch with the parents of her students to understand them better. Reason (R) is wrong because communities should not dictate how and what children should learn.
28. (C) In the context of cognition, it is true that emotions modulate various aspects of cognition, however, the degree and direction of their influence depend on a range of factors. The relationship between cognition and emotions is bi-directional, meaning that they depend on one another.
29. (D) Teachers can increase intrinsic motivation in students by creating the 'joy of learning'. Intrinsic motivation refers to motivation that is driven by an interest in the task itself and exists within the individual.
30. (D) Intrinsic and extrinsic motivations can interact with each other in complex ways, with one type of motivation affecting the other. Intrinsic motivation refers to motivation that comes from inside an individual rather than from any external or outside rewards, such as money or grades. Extrinsic motivation refers to motivation that comes from outside an individual. The motivating factors are external, or outside, rewards such as money or grades. These rewards provide satisfaction and pleasure that the task itself may not provide.

### Mathematics

31. (D) If A and B represent digits,

$$\begin{array}{r} \text{Then,} \\ \text{A B A} \\ \times 5 \\ \hline \text{4 4 B 0} \end{array}$$

To get the unit digit 0 in 44 B0, the value of A can be 4 or 8.

Then, if A = 4,

$$\begin{array}{r} \text{4 B 4} \\ \times 5 \\ \hline \text{4 4 B 0} \end{array}$$

$$4 \times 5 = 20$$

And the value of B = 2 or 9.

Then, if B = 2,

$$\begin{array}{r} 424 \\ \times 5 \\ \hline 2120 \end{array}$$

The values of A = 4 and B = 2 do not satisfy the given equation.

Then, with A = 8, B = 9,

$$\begin{array}{r} 898 \\ \times 5 \\ \hline 4490 \end{array}$$

32. (D) Least perfect square number

$$= \sqrt{7751 - x}$$

$$x = 7,$$

Least perfect square numbered

$$= \sqrt{7751 - 7}$$

$$= \sqrt{7744}$$

$$= 88$$

Then,  $3x - 5 = 3 \times 7 - 15$

$$= 21 - 5 = 16$$

33. (C) It is false to say that every factor of a given number is always greater than that number. The following statements are true regarding factorization:

- The number of factors of a given number is finite.
- Every factor of a given number is less than or equal to that number.
- Every multiple of a given number is greater than or equal to that number.
- Prime numbers have only two factors.

34. (D) If

$$(x + 5) + 7 = 5 + (x + 7y)$$

the commutative property of multiplication states that a and b are two real numbers, then a times b equals b times a.

$$a + b = b + a$$

**Associative Law** - This law applies to addition and multiplication. Whenever three or more numbers are added or multiplied, changing their grouping does not change the result.

$$(a + b) + c = a + (b + c)$$

$$(a \times b) \times c = a \times (b \times c)$$

Hence, both the commutative and associative properties of addition are used.

35. (C) The number 6 is used in the cardinal sense in the statement that there are 6 elements in a set.

A cardinal number is a number that represents a quantity. Other

examples of cardinal numbers are 1, 2, 3, 4, 5, 7, 8, 9, and 10.

36. (B) Given,

The LCM of two numbers

$$= 392$$

$$= 2 \times 2 \times 2 \times 7 \times 7$$

From option (A), the HCF

$$= \frac{392}{28} = 14$$

From option (B), the HCF

$$= \frac{392}{42} = 9.33$$

From option (C), the HCF

$$= \frac{392}{56} = 7$$

From option (D), the HCF

$$= \frac{392}{192} = 2$$

Hence, option (B) cannot be the HCF of 392.

37. (B) Factor of  $264 \times 90 \times 1680$

$$= 2 \times 2 \times 3 \times 2 \times 11 \times 2 \times 3 \times 3 \times 5 \times 2 \times 2 \times 2 \times 2 \times 3 \times 5 \times 7$$

Possible least positive integer

$$= 2 \times 2 \times 3 = 12$$

$$= 2 \times 7 = 14$$

$$= 3 \times 5 = 15$$

Therefore,  $264 \times 90 \times 1680$  is not a factor of the least positive integer

38. (C) There are four natural numbers 105, 106, 107 and 108 between 104 and 109. This is a closed-ended problem. The answer of a closed-ended problem is definite. Similarly, open-ended questions are divergent questions which can have multiple answers.

- These questions encourage students to think independently. These questions develop broad and creative thinking in students.
- These questions encourage children to use their higher-order cognitive abilities by combining their original and known ideas into new ideas or explanations.
- Some examples of these questions are:
  - List four rational numbers between  $\frac{5}{11}$  and  $\frac{10}{11}$ .
  - Write four integers less than 5.
  - Write four equivalent fractions of  $\frac{5}{7}$ .

39. (A) Expression,

$$\begin{aligned} & (5x-3y)(6x+5y) - (3x+7y)(4x-5y) \\ & (5x \times 6x + 5x \times 5y - 3y \times 6x - 3y \\ & \times 5y) - (3x \times 4x - 3x \times 5y + 7y \\ & \times 4x - 7y \times 5y) \\ & (30x^2 + 25xy - 18xy - 15y^2) - (12x^2 \\ & - 15xy + 28xy - 35y^2) \\ & 30x^2 + 7xy - 15y^2 - 12x^2 - 13xy \\ & + 35y^2 \\ & 18x^2 + 20y^2 - 6xy \end{aligned}$$

The coefficient of  $18x^2 + 20y^2 - 6xy$  in XY is -6.

40. (C)  $81x^2 - 126xy + 49y^2 - (5x + 3y)^2$   
 $81x^2 - 126xy + 49y^2 - [25x^2 + 9y^2 + 30xy]$   
 $81x^2 - 126xy + 49y^2 - 25x^2 - 9y^2 - 30xy$   
 $56x^2 + 40y^2 - 156xy$   
 $(14x - 4y)(4x - 10y)$   
 $2(7x - 2y)(4x - 10y)$
- One of the factors of  $81x^2 - 126xy + 49y^2 - (5x + 3y)^2$  is  $(7x - 2y)$ .

41. (B)  $\frac{7x-1}{4} - \frac{1}{7} \left( 2x - \frac{1-x}{2} \right) = 4$

$$\frac{7x-1}{4} - \frac{1}{7} \left( \frac{4x-1+x}{2} \right) = 4$$

$$\frac{7x-1}{4} - \frac{(4x-1+x)}{14} = 4$$

$$\frac{(49x-7) - (8x-2+2x)}{28} = 4$$

$$(49x-7) - (10x-2) = 28 \times 4$$

$$49x - 7 - 10x + 2 = 112$$

$$39x - 5 = 112$$

$$39x = 112 + 5$$

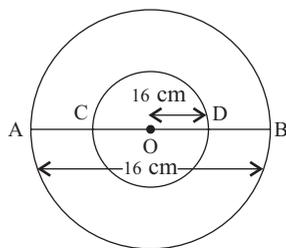
$$x = \frac{117}{39}$$

$$x = 3$$

$$\text{Then } = \frac{5x-3}{3x-1} = \frac{5 \times 3 - 3}{3 \times 3 - 1} = \frac{15-3}{9-1} =$$

$$\frac{12}{8} = \frac{3}{2}$$

42. (B) Area of the remaining sheet =



Area of the circular sheet with a diameter of 16 cm – Area of the circle with a radius of 6 cm

$$\begin{aligned} & = \pi [8^2 - 6^2] \\ & = \frac{22}{7} [(8+6)(8-6)] \\ & = \frac{22}{7} \times 14 \times 2 \\ & = 88 \end{aligned}$$

43. (D) The volume of the cuboidal box = the volume of the solid cube.

$$200 \times 50 \times 100 = a^3$$

$$a = \sqrt[3]{1000000}$$

$$a = 100 \text{ cm}$$

The difference in the surface areas of the two solids

$$\begin{aligned} & = 2(lb + bh + hl) - 6a^2 \\ & = 2(10000 + 5000 + 20000) - (100)^2 \\ & = 70000 - 60000 \\ & = 10,000 \text{ cm}^2 \end{aligned}$$

44. (D) Let the two complements be  $x$  and  $y$ , respectively.

$$x + y = 90$$

$$x - y = 40$$

$$\begin{array}{r} (+) \\ \hline \end{array}$$

$$2x = 130$$

$$x = 65$$

$$2y = 90 - 40$$

$$y = \frac{50}{2} = 25$$

$$\text{Then } (2y + 15^\circ) = (2 \times 25 + 15)$$

$$= 50 + 15$$

$$= 65^\circ$$

45. (B) A line of symmetry can be defined as an axis or imaginary line that passes through the center of a figure and divides it into two equal halves.

An isosceles triangle has only one line of symmetry. A kite has only one line of symmetry.

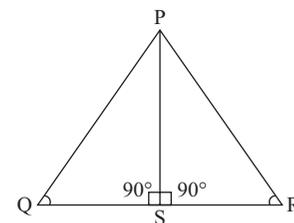
A parallelogram has no lines of symmetry.

A rectangle has two lines of symmetry.

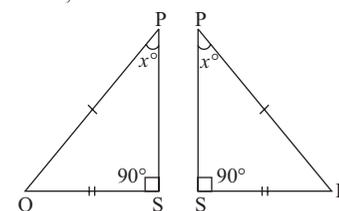
A rhombus has two lines of symmetry. An isosceles trapezoid has only one line of symmetry.

Hence, the number of lines of symmetry for a kite and a parallelogram are not equal.

46. (B) Given,  
 $PS \perp QR$



In  $\Delta PQS$  and  $\Delta PRS$ , PS is common.  
 Then,



From  $\Delta PQS$  and  $\Delta PRS$ , we have that  $PQ = PR$  and  $QS = SR$ .

$$\angle S = \angle S \text{ (common)}$$

$$(\angle QPS = \angle RPS)$$

Then  $\Delta PQS = \Delta PRS$ , (by ASA)

Hence, option (B) is correct.

47. (C) Given that the lengths of two sides of a triangle are 19 cm and 15 cm, respectively.

Length of the third side of the triangle

$$= (a - b) < c < (a + b)$$

$$= (19 - 15) < c < (15 + 19)$$

$$= 4 < c < 34$$

The third side of the triangle lies between 4 and 34.

Therefore, the third side of the triangle is 33 cm.

48. (B) Given that angles A, B, C, and D of ABCD are  $(3x - 10^\circ)$ ,  $(x + 30^\circ)$ ,  $(2x + 30^\circ)$  and  $(2x - 10^\circ)$  respectively.

The sum of the four angles of the quadrilateral = 360

$$3x - 10 + x + 30 + 2x + 30 + 2x - 10 = 360$$

$$8x = 380 - 0$$

$$x = 40$$

$$\text{Angle A} = 3x - 10^\circ = 3 \times 40 - 10$$

$$= 110^\circ$$

$$\text{Angle B} = x + 30^\circ = 40 + 30$$

$$= 70^\circ$$

$$\text{Angle C} = 2x + 30^\circ = 2 \times 40 + 30$$

$$= 110^\circ$$

$$\text{Angle D} = 2x - 10^\circ = 2 \times 40 - 10^\circ$$

$$= 70^\circ$$

Two angles of a quadrilateral ABCD are equal. The sum of two

adjacent angles is  $180^\circ$ .

So the quadrilateral is a parallelogram.

$$\begin{aligned}\angle A + \angle B &= 110^\circ + 70^\circ \\ &= 180^\circ\end{aligned}$$

49. (D) The sides of the triangle are 24 cm, 45 cm, 51 cm respectively

And the length of the rectangle is 45 cm.

According to the question,

Area of the triangle = Area of the rectangle

$$\frac{1}{2} \times \text{perpendicular base} = \text{length} \times \text{width}$$

$$\frac{1}{2} \times 24 \times 45 = 45 \times b$$

$$\text{Width } (b) = \frac{12 \times 45}{45} = 12$$

Then the perimeter of the rectangle = 2 (length + width)

$$= 2 (45 + 12)$$

$$= 2 (57)$$

$$= 114 \text{ cm}$$

50. (B) Observations : 42, 48,  $x + 15$ ,  $x + 17$ ,  $x + 20$ , 58, 60

Mean of observations =

$$\frac{42 + 48 + x + 15 + x + 17 + x + 20 + 58 + 60}{7}$$

$$53 \times 7 = 260 + 3x$$

$$x = \frac{111}{3} = 37$$

Observations 42, 48, 52, 54, 57, 58, 60

Median = 54

51. (B) A student was asked to find the value of  $x$  in  $x - 4 = 3$ . He completed the task by subtracting 4 from 3. The student in the question has made an algorithm based error.

- An algorithmic error is an error that occurs in an algorithm designed to solve a problem. It is a sequence of steps to solve a problem. If used correctly, it always leads to a solution. The student in the question has not used the correct sequence of steps to solve the problem.

52. (A) Tossing a fair coin several times and noting/writing down the outcomes is the most appropriate way to introduce experimental probability to class 8 students. This enables students to learn through direct experience.

53. (D) National Curriculum Framework, 2005, promotes spiral approach to mathematics curriculum at middle school level. Briefly revisiting previously taught concepts followed by covering concepts in increasing order of difficulty is the best example of this approach.

- According to NCF 2005, it is essential to adopt activity-based approach in teaching mathematics. According to NCF 2005, the overarching goal of teaching mathematics is to develop the ability of mathematization in children. Mathematics should be taught through appropriation rather than emphasising on formal algorithms. Real life examples should be included in the classroom to increase student engagement.

54. (C) Identifying individual and specific needs of students and assessing the extent to which the goals and objectives of the mathematics curriculum have been achieved represent the most appropriate reasons of assessment at upper primary stage.

55. (B) When using questioning in the classroom as a tool of assessment, the questions should be asked to assessing errors and misconceptions. When using questioning in the classroom as a tool of assessment, the well-defined goals should be kept in mind while also encouraging students to think.

56. (D) Providing students with opportunities to solve problems in a multiple ways is a characteristic of an effective mathematics classroom.

- This approach encourages students to think flexibly and develop deeper understanding of mathematical concepts. It also promotes critical thinking, creativity, and problem-solving skills.

57. (D)  $\frac{0.125 \times 57.8 \times 0.729}{0.017 \times 0.0081 \times 0.25}$

$$= \frac{125 \times 578 \times 729 \times 100}{17 \times 81 \times 25}$$

$$= 153000$$

58. (C) Given,

$$\text{Principal} = ₹16,000$$

$$\text{Time} = 2\frac{1}{3} \text{ year}$$

$$\text{Rate} = 15\% \text{ per annum}$$

Amount

$$\begin{aligned}&= 16000 \times \frac{115}{100} \times \frac{115}{100} \times \frac{105}{100} \\ &= \frac{16 \times 115 \times 115 \times 105}{1000} \\ &= 22218\end{aligned}$$

59. (A)

$$\begin{array}{ccc} \text{Cost Price} & : & \text{Selling Price} \\ \begin{array}{c} \diagup \quad \diagdown \\ A + B \end{array} & & \begin{array}{c} \diagup \quad \diagdown \\ A + B \end{array} \\ \text{₹}348 \times \frac{100}{120} & + & \text{₹}348 \times \frac{100}{87} : \text{₹}348 \\ & + & \text{₹}348 \end{array}$$

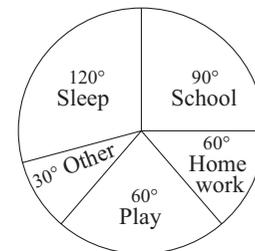
$$\text{₹}290 + \text{₹}400 : \text{₹}696$$

$$\text{₹}690 : \text{₹}696$$

$$\text{Profit} = \text{₹}(696 - 690)$$

$$= \text{₹}6$$

60. (B)  $(120^\circ + 90^\circ + 60^\circ + 60^\circ + 30^\circ)R = 360R$



Sector of the central angle of sleep

$$= \frac{120^\circ}{360}$$

$$= \frac{1^\circ}{3}$$

Sector of the central angle of the school

$$= \frac{90^\circ}{360} = \frac{1}{4}$$

Difference of time

$$= \frac{1}{3} \times 24 - \frac{1}{4} \times 24$$

$$= 8 - 6$$

$$= 2 \text{ hours}$$

## Science

61. (A) **Assertion (R):** Deforestation can cause floods. True.

**Reason (R):** Deforestation reduces the infiltration rate of water. True.

Hence, both (A) and (R) are true and (R) is the correct explanation of (A).

62. (C) Thyroxine is the hormone responsible for triggering metamorphosis in frogs. This hormone is produced

- by the thyroid gland and plays a crucial role in the transformation of a tadpole into an adult frog.
63. (A) After pollination, the seedling is formed before the embryo develops. This is true for the sequence of events in sexual reproduction in a flower. Sexual reproduction usually occurs in bisexual plants whose flowers have female reproductive organs, the pistil and male reproductive organs, the stamen.
64. (B) The false statement about endocrine glands is Endocrine glands secrete hormones through ducts. Endocrine glands are ductless, meaning they secrete hormones directly into the bloodstream, not through ducts.
65. (C) The process that is not carried out by microorganisms is Preservation of food items in homes. Microbes are used to preserve food items in homes. Microorganisms are beneficial in this practice. Microorganisms decompose food items on a large scale and make them unusable.
66. (A) Soil sample is mixed with water. Which turned the pH letter orange, milk of magnesia will turn the colour blue as milk of magnesia is alkaline in nature which changes the yellow-orange colour to blue.
67. (D) The correct sequence of steps in the fixation of atmospheric nitrogen is :  
 d → Fixation of nitrogen from atmosphere by certain bacteria and blue and green algae.  
 b → Synthesis of plant proteins and other compounds  
 a → Uptake of compounds of nitrogen by plants through the root system  
 c → Conversion of nitrogenous wastes from dead plants and animals into nitrogenous compounds.
68. (D) Maintaining minimum distance between crops while sowing them is least likely to increase soil fertility, while the other statements in the question are more likely to increase soil fertility.
69. (D) An oxide of a substance X, reacts with water to produce another substance Y. Y reacts with oxygen to form Z. It is observed that Y turns blue litmus red. It can be concluded that X, Y and Z are non-metallic and Z is acidic. Since X is a non-metal, Y is naturally acidic when it reacts with oxygen to form an acidic solution
70. (C) When chlorine gas is passed through a solution of sodium bromide, sodium chloride is likely to form by decomposition.  
 This can be understood through the following chemical equation.  

$$2\text{NaBr} + \text{Cl}_2 \longrightarrow 2\text{NaCl} + \text{Br}_2$$
71. (B) The statement that the temperature of the central region of the flame and the non-luminous part is the same is not true about the regions of the candle flame because the non-luminous part of the candle flame has the lowest temperature. The other statement in the question is true about the region of the candle flame.
72. (D) A girl made a hole in a plastic bottle near the bottom. She placed her thumb on the hole to close it, filled the bottle with water half its capacity and then closed the lid of the bottle tightly. When she removed her thumb from the hole, water would not spurt out because the pressure inside the bottle would be less than the pressure outside.
73. (A) Bakelite is a thermosetting plastic (heat-hardened) and is used in the manufacture of electrical switches. On the other hand, PVC is a thermoplastic (heat-plastic) which is used in the manufacture of containers.
74. (C) A ray of light enters two media X and Y of different optical densities. With reference to the given table, a, b, c, d will be respectively.  
 That is, a-no change, b-increases, c-decreases, d-no change
75. (C) **Group A:** Three rectangular glass strips, a circular glass plate, some pieces of bangles and a tube and disc made of sugarcane.  
**Group B:** Two plane mirrors, a rigid cardboard box.  
 Using the above materials, a kaleidoscope can be made from set A and a periscope from set B only from the materials given in sets A and B.
76. (B) Wants to make a circuit to purify slaked copper. In the question he should choose anode-carbon, cathode-pure copper, solution-copper sulphate, electrode and solution.
77. (A) To make a fuse wire, select a metal wire with high resistance, thick and low melting point from the given sets. Remember that lead and tin alloy wire is used in fuse wire. Although sometimes copper wire is also used for this.
78. (C) Vacuum medium is present between the inner and outer layers of a thermos-flask because it prevents loss of heat due to conduction and convection.
79. (D) The process by which dead vegetation is converted into fossil fuel coal at high pressure and high temperature is called carbonization. Carbon is formed by the decomposition of fossils over millions of years.
80. (B) In the chart given below, the set B of a city for different months is given below  
 This would be correct. Because the rate of evaporation is higher when the temperature is high
81. (A) According to the contemporary understanding of science, following the scientific method is not surely and the only way to scientific discovery. The scientific method is a flexible process. The scientific method provides a rational approach to solving problems.
82. (C) The above quote depicts that science is tentative. The tentative nature of scientific knowledge refers to the idea that reliable and enduring scientific knowledge is neither static nor fixed. Rather, it is subject to change in the light of new evidence or interpretation of existing evidence.
83. (A) Science undergoes paradigm shifts. This statement is true. The term "paradigm shift" was popularized by philosopher Thomas Kuhn in his book *The Structure of Scientific Revolutions*. It refers to a fundamental change in the basic concepts and experimental practices of a scientific discipline. A paradigm shift happens when the old way of thinking (the old paradigm) can no longer explain new observations, leading to a revolutionary new theory. Examples include the shift from the geocentric to the heliocentric model of the solar system, or the shift from Newtonian physics to Einstein's theory of relativity. Existing scientific theories and laws may be discarded in light of new evidence. This statement is also true. It's the very foundation of how science progresses. The scientific method relies on observation and experimentation. If new, reliable evidence contradicts an existing theory or law, that theory must be revised or, if the evidence is strong enough, discarded altogether in favor of a new one. The reason-

ing directly explains the assertion. The reason science experiences "paradigm shifts" (A) is precisely because existing theories and laws are discarded or radically revised when new evidence comes to light (R). The process of discarding an old theory and adopting a new one in response to overwhelming evidence is what constitutes a paradigm shift. Therefore, R is the correct and direct reason for A.

84. (B) A teacher organizes a debate on nuclear energy in the class. Its objectives may be as follows:
- To make understand connection between science, technology, and society
  - To promote students' conceptual understanding of nuclear reactors
  - To gain an understanding of the responsible use of science for the benefit of society
85. (B) 'Mitochondria are the powerhouse of the cell' represents a correct scientific analogy since mitochondria generate energy (ATP) for the cell, just like a powerhouse generates energy for a city or system.
86. (D) A teacher, while teaching a topic in chemistry, identifies some beliefs of students. These alternative conceptions may be as follows:
- A carbon atom is black in colour.
  - A chemical bond is a line between two atoms.
  - Adding oxygen to a reaction is oxidation.

Allotropes of carbon have the same atomic number; this cannot be considered as an alternative conception of students. This statement is **scientifically correct**. Allotropes (like diamond and graphite) are different structural forms of the same element.

Since they are all made of the same element, carbon, all their atoms have the same number of protons. The atomic number is defined by the number of protons, so it is the same for all carbon atoms, regardless of their allotropic form.

87. (A) During science class, the teacher shares with her students that Thomas Alva Edison is generally credited with inventing the electric bulb. Many others had worked on it before him, but were unsuccessful. The above quote by the teacher informs about science that science is dynamic and it is a collective enterprise.
88. (B) The teacher experimented in the class, and the students recorded the following statements, S1 and S2.  
S1: Oxygen is a supporter of combustion.  
S2: Oxygen is a non-combustible gas.  
Both statements S1 and S2 given above are conclusions. Both the conclusions S1 and S2 are true. Oxygen is a supporter of combustion, and Oxygen is a non-flammable gas. Oxygen does not burn on its own but it helps in burning other substances *i.e.*, oxygen is not flammable, but it supports combustion easily.
89. (C) To develop creativity, the teacher should focus on the following:
- Engaging students in inquiry and discovery oriented tasks
  - Encouraging students to do tasks without any fear of evaluation.
  - Emphasis on brainstorming sessions
  - Accepting imaginative answers
90. (C) Scientific modeling is used by scientists to analyze the behavior of systems because models are

simpler than the real system. It helps scientists to understand and analyze complex systems.

#### English : Language-I

91. (B) 92. (A) 93. (B) 94. (A) 95. (B)  
96. (C) 97. (D) 98. (C) 99. (B) 100. (A)  
101. (D) 102. (A) 103. (C) 104. (A) 105. (A)  
106. (D) 107. (B) 108. (B) 109. (D) 110. (A)  
111. (B) 112. (D) 113. (D) 114. (A) 115. (A)  
116. (B) 117. (D) 118. (B) 119. (A) 120. (B)

#### हिंदी : भाषा-I

91. (C) 92. (A) 93. (D) 94. (B) 95. (C)  
96. (A) 97. (D) 98. (B) 99. (A) 100. (B)  
101. (A) 102. (C) 103. (D) 104. (B) 105. (B)  
106. (B) 107. (B) 108. (D) 109. (D) 110. (A)  
111. (D) 112. (A) 113. (A) 114. (B) 115. (B)  
116. (B) 117. (D) 118. (B) 119. (A) 120. (D)

#### English : Language-II

121. (B) 122. (B) 123. (A) 124. (B) 125. (C)  
126. (D) 127. (B) 128. (C) 129. (D) 130. (B)  
131. (C) 132. (C) 133. (D) 134. (B) 135. (B)  
136. (B) 137. (D) 138. (D) 139. (D) 140. (A)  
141. (A) 142. (C) 143. (B) 144. (B) 145. (A)  
146. (B) 147. (A) 148. (C) 149. (A) 150. (A,C)

#### हिंदी : भाषा-II

121. (A) 122. (D) 123. (B) 124. (C) 125. (A)  
126. (C) 127. (B) 128. (D) 129. (C) 130. (B)  
131. (A) 132. (B) 133. (D) 134. (C) 135. (A)  
136. (B) 137. (D) 138. (D) 139. (D) 140. (B)  
141. (C) 142. (A) 143. (B) 144. (A) 145. (A)  
146. (C) 147. (C) 148. (A) 149. (A,C) 150. (B)

