PRACTICE SET-1

PART-I : CHILD DEVELOPMENT AND PEDAGOGY

1. **The major responsibility of a teacher is to :**
   (a) maintain strict discipline
   (b) provide learning opportunities as per the different learning styles of students
   (c) prepare lesson plans and teach accordingly
   (d) organize as many activities as possible

2. **"Thought not only determines language, but also precedes it." was an idea put forward by :**
   (a) Vygotsky   (b) Pavlov
   (c) Jean Piaget (d) Kohlberg

3. **For maintaining an effective discipline in the class the teacher should :**
   (a) allow students to do whatever they like
   (b) deal with the students strictly
   (c) give the students some problems to solve
   (d) (b) and (c)

4. **If you get an opportunity to teach a visually challenged student along with normal students, what type of treatment would you like to give him/her in the class ?**
   (a) Not giving extra attention because majority may suffer
   (b) Take care of him sympathetically in the classroom
   (c) You will think that blindness is his destiny and hence you can do nothing
   (d) Arrange a seat in the front row and try to teach at a pace convenient to him.

5. **At the upper primary stage there is a need of :**
   (a) educational and career guidance
   (b) educational, career and personal guidance
   (c) only career guidance
   (d) only educational guidance

6. **The best way to inculcate moral values in children is by:**
   (a) giving moral lectures in the morning assembly
   (b) putting across a situation and asking students to take action
   (c) demonstration of moral values by teachers and elders
   (d) teaching students to differentiate between moral and immoral

7. **There are five students having physical disability in a class. During the games period they should be :**
   (a) seated in a corner so that these children can enjoy watching the game
   (b) encouraged to take part in the games appropriate for them with other children
   (c) allowed to take part only in indoor games
   (d) forced to play with all the students of the class

8. **Errors made by student in classes above 5 must be considered as indicators of :**
   (a) their lack of learning skill
   (b) their learning steps
   (c) their learning disabilities
   (d) their ignorance towards learning

9. **Science and Art exhibitions, music and dance shows and bringing out school magazines, are meant to :**
   (a) train students for various professions
   (b) establish a name for the school
   (c) satisfy the parents
   (d) provide a creative channel for learners

10. **Inclusive education refers to a school education system that :**
    (a) emphasizes the need to promote the education of the girl child only
    (b) induces all children with disability
    (c) includes children regardless of physical, intellectual, social, linguistic or other differently abled conditions
    (d) encourage education of children with special needs through exclusive schools

11. **Which of the following best describes the extent of effect of heredity upon development ?**
    (a) Heredity determines how far an individual will develop
    (b) Heredity determines how far an individual can develop
    (c) Both (a) and (b)
    (d) Neither (a) nor (b)

12. **For maximum reinforcement effect, a given reward should :**
    (a) be applied immediately upon the response
    (b) be applied immediately preceding the response
    (c) be applied simultaneously with the response
    (d) follow the response only after a substantial delay

13. **The new progressive pedagogy professes :**
    (a) assessment in learning
    (b) assessment of learning
    (c) assessment for learning
    (d) assessment along learning

14. **In a Continuous and Comprehensive Evaluation, the phrase 'Comprehensive Evaluation' indicates :**
    (a) evaluation of whole syllabus
    (b) evaluation of all subjects
    (c) evaluation of cognitive domain, affective domain and psychomotor domain
    (d) evaluation of cognitive domain

15. **A concept learnt by a student in mathematics class is used by her in Geography class. This is an example of**
    (a) positive transfer
    (b) negative transfer
    (c) zero transfer
    (d) None of these

16. **Which of the following statements is most appropriate in relation to adolescents ?**
    (a) Thinking starts reflecting in concrete actions
    (b) Abrupt increase in the intelligence quotient
    (c) Increase in the incidence of emotional upheavals
    (d) Carefree nature towards studies

17. **............ plays a significant role in the development of personality**
    (a) A blend of heredity and environment
    (b) Number of examinations
    (c) Heredity
    (d) Environment

18. **According to Jean Piaget, adaptation takes place through :**
    (a) Assimilation
    (b) Accommodation
    (c) Experiences
    (d) Assimilation and accommodation

19. **What does not include in counselling ?**
    (a) Listening with attention the child
    (b) Talking with child in friendly manner
    (c) Understanding point of view of child
    (d) Keeping child in discipline

20. **At the state level the curriculum of class I to VIII is developed by :**
    (a) SCERT   (b) NCTE
    (c) NCERT   (d) SIEMAT

21. **During the mid-day meal, high caste students deny to have meal in a line with lower caste students. What will you do ?**
    (a) You will agree to make separate sitting arrangement for them
    (b) You will seek direction from higher authorities
    (c) You will convince students to sit together and have meal
    (d) You will stop cooking mid-day meal in school

22. **Monika is good achiever in science, but poor in mathematics. The most probable reason is :**
    (a) girls are generally poor in mathematics
    (b) parents of Monika are uneducated
    (c) mathematics teaching is not effective
    (d) mathematics is a hard subject

23. **A teacher is appointed in a remote village, where villagers are uneducated, school building and drinking water facility are also not available. The biggest hindrance to work in the village is :**
    (a) lack of school building
    (b) uneducated parents
    (c) lack of motivation to solve problems
    (d) lack of drinking water facility

24. **According to the Kohlberg, the thinking process involved in judgment about questions of right and wrong is called :**
    (a) moral dilemma
    (b) morality co-operation
    (c) moral reasoning
    (d) moral realism

25. **In Constructivism :**
    (a) children participate in the process of learning passively
    (b) education is teacher-centered
    (c) education is child-centered
    (d) education is behaviouristic

26. **For building good character in students :**
    (a) there should be chapters in the textbook regarding character development
    (b) lecture should be given for character development
    (c) the classroom activities should be such that it may promote character building
    (d) the autobiography of eminent persons should be taught

27. **In which of the following conditions the social and emotional development of the child will occur in good manner ?**
    (a) When the child is considered important and his feelings are respected
    (b) When the child is told to learn more and more
    (c) When the child gets good marks in the class
    (d) When the child is taught according to his intellectual level

28. **Which of the following situations will help in the development of creativity ?**
    (a) When there will be limited opportunities for learning
    (b) When children are asked to learn answers
    (c) When the solution of a problem is told to the student
    (d) When children are given opportunities to learn on their own

29. Activity based teaching emphasizes :
   (a) active participation by all the students
   (b) completion of activity in specified time
   (c) play
   (d) disciplined class

30. "If you want to teach the children, learn from the children" indicates :
   (a) Teacher centered education
   (b) Child centered education
   (c) Evaluation centered education
   (d) Examination centered education

PART II : MATHEMATICS AND SCIENCE

31. If 9/4th of 7/2 of a number is 126, then 7/2th of that number is :
   (a) 56   (b) 284
   (c) 72   (d) 26

32. $5 \times [-0.6 (2.8 + 1.2)]$ of 0.3 is equal to
   (a) -1.44 (b) -1.08
   (c) -1.2 (d) -3.6

33. In a class of 56 students there are 21 girls. The average weight of these girls is 56 kg and average weight of the full class is 62.875 kgs. What is the average weight of the boys of the class ?
   (a) 69.75 kg   (b) 72.5 kg
   (c) 67 kg   (d) 65 kg

34. A student multiplied a number by 11/13 instead of 13/11. What is the percentage error in the calculation ?
   (a) 39.67 percent
   (b) 28.4 percent
   (c) 14.2 percent
   (d) 19.83 percent

35. Marked price of an item is ₹ 800. On purchase of 1 item discount is 15%, on purchase of 4 items discount is 38%. Rajshri buys 5 items, what is the effective discount.
   (a) 33.4 percent
   (b) 16 percent
   (c) 9 percent
   (d) 17.5 percent

36. If $a : b = 5 : 8$, find the value of $(6a - 5b)/(a + 2b)$.
   (a) 10/21   (b) 20/11
   (c) 11/20   (d) 21/10

37. A carpenter can build a cupboard in 48 hours. After 12 hours he takes a break. What fraction of the cupboard is yet to be built?
   (a) 0.4   (b) 0.5
   (c) 0.75   (d) 0.25

38. A missile travels at 1116 km/h. How many metres does it travel in one second?
   (a) 360 metres (b) 368 metres
   (c) 310 metres (d) 348 metres

39. A bank offers 5% compound interest per half year. A customer deposits ₹ 3200 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained by way of interest is:
   (a) ₹ 976   (b) ₹ 244
   (c) ₹ 488   (d) ₹ 122

40. The radius of a hemisphere is 14 cm, find its volume?
   (a) 11498.66 cubic cm
   (b) 1916.44 cubic cm
   (c) 2874.67 cubic cm
   (d) 5749.33 cubic cm

41. What is the difference of the cube and square of the common root of $(x^2 - 8x + 15) = 0$ and $(y^2 + 2y - 35) = 0$?
   (a) 76   (b) 100
   (c) 294   (d) 318

42. What is the compound interest (in ₹) for 1 year on a sum of ₹ 20000 at the rate of 40% per annum compounded half yearly ?
   (a) 8000   (b) 8650
   (c) 8750   (d) 8800

43. A train of length 100 metre crosses another train of length 150 metre, running on a parallel track in the opposite direction in 9 seconds. If the speed of train having length 150 metre is 40 km/hr. then what the speed (in km/hr) of the other train ?
   (a) 30   (b) 48
   (c) 50   (d) 60

44. The present population of a town is 26010. It increases annually at the rate of 2%. What is was the population of town two years ago?
   (a) 25000   (b) 25100
   (c) 25200   (d) 25500

45. While selling an article for ₹ 18450, a person suffered a loss of 50%. At what price he should have sold the article (in ₹) to earn a profit of 50 %?
   (a) 13837   (b) 52000
   (c) 55350   (d) 56775

46. The average of three consecutive even numbers is A. If next five even numbers are added, what is the average of these eight numbers ?
   (a) A + 3   (b) A + 4
   (c) A + 5   (d) A + 7

47. A man has 3 sons, 2 daughters and a wife. They divided a sum of ₹ 19000 among themselves such that each daughter got 1.5 times the amount received by each son and his wife received ₹ 600 less than each son. What is the total amount (in ₹) received by the three sons together ?
   (a) 2800   (b) 3600
   (c) 5600   (d) 8400

48. If after giving a discount of 18%, a book is sold for ₹1599, what will be the marked price (in ₹) of the book ?
   (a) 1800   (b) 1880
   (c) 1950   (d) 2000

49. A farmer's land is in the shape of a trapezium which has its parallel sides measuring 2.56 yards and 3.44 yards and the distance between the parallel sides in 1.44 yards. The cost of ploughing the

land is ₹ 1800 per square yard. What amount will (in ₹) have to be spent in order to plough the entire land ?

(a) 3672   (b) 6732
(c) 7776   (d) 8214

50. S, T and U can complete a work in 40, 48 and 60 days, respectively. They received ₹ 10800 to complete the work. They begin the work together but T left 2 days before the completion of the work and U left 5 days before the completion of the work has completed the remaining work alone. What is the share of S (in ₹) from total money ?

(a) 4000   (b) 4320
(c) 4500   (d) 4860

51. What is the value of
$$\left[\frac{12}{(\sqrt{5}+\sqrt{3})}+\frac{18}{(\sqrt{5}-\sqrt{3})}\right]?$$

(a) $15\left(\sqrt{5}-\sqrt{3}\right)$

(b) $3\left(5\sqrt{5}+\sqrt{3}\right)$

(c) $15\left(\sqrt{5}+\sqrt{3}\right)$

(d) $3\left(3\sqrt{5}+\sqrt{3}\right)$

52. If medians of a triangle have lengths 18 cm, 24 cm and 30 cm, what is the area (in cm^2) of the triangle ?

(a) $24\sqrt{6}$ (b) 244
(c) 288   (d) 360

53. Two smaller circles touch a large circle internally and pass through the centre O of the larger circle. If the diameter of the bigger circle is 28 cm, what is the area of the bigger circle which is not enclosed by the two smaller circles (in cm^2) ?

(a) 154   (b) 256
(c) 308   (d) 616

54. Two chords of length 20 cm and 24 cm are drawn perpendicular to each other in a circle of radius 15 cm. What is the distance between the points of intersection of these chords (in cm) from the centre of the circle?

(a) $\sqrt{114}$ (b) $\sqrt{182}$
(c) $\sqrt{206}$ (d) $\sqrt{218}$

55. With the help of 'Geogebra' software, students can learn all concepts of geometry through :

(a) exploratory approach
(b) inquiry-based approach
(c) project-based approach
(d) lecture-based approach.

56. In order to help the students with difficulties in remembering the geometrical terms and their meaning, a teacher must

(a) test students on definition of geometrical terms
(b) encourage group discussions
(c) stress on rote memorisation of all terms and definitions
(d) use lots of activities like preparing or solving crossword puzzles, jig-saw puzzles, etc.

57. Problem solving method is the :

(a) teaching the development of mathematics within a historical, social and cultural context
(b) cultivation of mathematical ingenuity, creativity and heuristic thinking by making students open-minded
(c) gradual and systematic guided through the hierarchy of mathematical notions, ideas and techniques
(d) teaching of mathematical results, definitions and concepts by repetition and memorisation.

58. The twin premises to fix the place of Mathematics teaching in our school curriculum are :

(a) ''how to engage the mind of every student'' and ''how to strengthen the student's resources.''
(b) ''how to improve the reasoning ability of every student'' and ''how to enhance his spatial ability''.
(c) ''how to raise the performance of every student in Mathematics'' and ''how to prepare meritorious students for international olympiads''.

(d) ''how to make the Mathematics class more activity-oriented'' and ''how to enhance the procedural skills and understanding of algorithms in every student''

59. A teacher asked the students to ''find the number of possible pentominoes using 5 squares and then further explore the number of possible hexaminoes and so on.'' These types of activities help the child to :

(a) improve the observation skills
(b) identify relation between number pattern and shapes
(c) improve spatial ability
(d) improve analytical ability.

60. As per the vision statement of NCF 2005, School Mathematics does not takes place in a situation, where children :

(a) learn to enjoy Mathematics
(b) see Mathematics as a part of their daily life experience
(c) pose and solving meaningful problems
(d) memorise formulae and algorithms

61 . The rate of change of momentum of a body is equal to the resultant

(a) energy   (b) power
(c) force   (d) impulse

62. The SI unit of mechanical energy is

(a) Joule
(b) Watt
(c) Newton-second
(d) Joule-second

63. Two systems are said to be in thermal equilibrium, if and only if

(a) there can be a heat flow between them even if they are at different temperatures
(b) there cannot be a heat flow between them even if they are at different temperatures
(c) there is no heat flow between them
(d) their temperatures are slightly different

64. Which one of the following statements is correct?
The velocity of sound
(a) does not depend upon the nature of media
(b) is maximum in gases and minimum in liquids
(c) is maximum in solids and minimum in liquids
(d) is maximum in solids and minimum in gases

65. Which one of the following statements is not correct?
(a) Sound waves in gases are longitudinal in nature
(b) Sound waves having frequency below 20 Hz are known as ultrasonic waves
(c) Sound waves having higher amplitudes are louder
(d) Sound waves with high audible frequencies are sharp

66. A myopic person has a power of -1.25 D. What is the focal length and nature of his lens?
(a) 50 cm and convex lens
(b) 80 cm and convex lens
(c) 50 cm and concave lens
(d) − 80 cm and concave lens

67. After a hot sunny day, people sprinkle water on the roof-top because
(a) water helps air around the roof-top to absorb the heat instantly
(b) water has lower specific heat capacity
(c) water is easily available
(d) water has large latent heat of vaporisation

68. The handle of pressure cookers is made of plastic because it should be made non-conductor of heat. The plastic used there is the first man-made plastic, which is
(a) polythene   (b) terylene
(c) nylon   (d) bakelite

69. Methyl isocyanate gas, which was involved in the disaster in Bhopal in December, 1984, was used in the Union Carbide factory for production of
(a) dyes   (b) detergents
(c) explosives   (d) pesticides

70. 'German silver' is used to make decorative articles, coinage metal, ornaments etc. The name is given because
(a) It is an alloy of copper and contains silver as one of its components
(b) Germans were the first to use silver
(c) Its appearance is like silver
(d) It is an alloy of silver

71. Vitamin-B_{12} deficiency causes pernicious anaemia. Animals cannot synthesise vitamin-B_{12}. Humans must obtain all their vitamin-B_{12} from their diet. The complexing metal ion in vitamin-B_{12} is
(a) Mg^{2+} (magnesium ion)
(b) Fe^{2+} (iron ion)
(c) Co^{3+} (cobalt ion)
(d) Zn^{2+} (zinc ion)

72. A piece of ice, 100 g in mass is kept at 0°C. The amount of heat it requires to melt at 0°C is (take latent heat of melting of ice to be 333.6 J/g)
(a) 750.6 J   (b) 83.4 J
(c) 33360 J   (d) 3.336 J

73. Which one of the following is an example of chemical change?
(a) Burning of paper
(b) Magnetisation of soft iron
(c) Dissolution of cane sugar in water
(d) Preparation of ice cubes from water

74. Which of the following statement(s) is/are correct?
1. Acid rain reacts with buildings made from limestone.
2. Burning of sulphur containing coal can contribute to acid rain.
3. Eutrophication is an effective measure to control pollution.
Select the correct answer using the codes given below.
(a) 1 and 2   (b) 2 and 3
(c) Only 1   (d) All of these

75. Which one of the following is considered as 'good cholesterol' with reference to individuals facing the risk of cardio-vascular diseases and hypertension?
(a) High Density Lipoprotein (HDL)
(b) Low Density Lipoprotein (LDL)
(c) Triglyceride
(d) Fatty acids

76. Which of the following pairs of vitamin and disease is/are correctly matched?
1. Vitamin-A Rickets
2. Vitamin-B_1 Beri-beri
3. Vitamin-C Scurvy
Select the correct answer using the codes given below:
(a) Only 2   (b) 2 and 3
(c) 1 and 3   (d) 1, 2 and 3

77. The germplasm is required for the propagation of plants and animals. Germplasm is the
1. genetic resources
2. seeds or tissues for breeding
3. egg and sperm repository
4. a germ cell's determining zone
Select the correct answer using the codes given below:
(a) Only 1   (b) 1, 2 and 3
(c) 2 and 3   (d) 2 and 4

78. Dengue virus is known to cause low platelet count in blood of patient by
1. interfering in the process of platelet production in bone marrow
2. infecting endothelial cells
3. binding with platelets
4. accumulating platelets in intestine
Select the correct answer using the codes given below:
(a) 1 and 2   (b) 1 and 3
(c) 3 and 4   (d) 1, 2 and 3

79. Plants contain a variety of sterols like stigmasterol, ergosterol, sitosterol, etc., which very closely resemble cholesterol. These plant sterols are referred as
(a) phytosterols
(b) calciferols
(c) ergocalciferols
(d) lumisterols

80. **In Artificial Insemination (AI) process, which of the following is/are introduced into the uterus of the female?**
    (a) Only egg
    (b) Fertilised egg
    (c) Only sperms
    (d) Egg and sperm

81. **Genetically Modified (GM) crops contain modified genetic material due to**
    1. introduction of new DNA
    2. removal of existing DNA
    3. introduction of RNA
    4. introduction of new traits
    Select the correct answer using the codes given below:
    (a) 1 and 2   (b) 1, 2 and 3
    (c) 3 and 4   (d) 1, 2 and 4

82. **Which one of the following vitamins has a role in blood clotting?**
    (a) Vitamin-A   (b) Vitamin-B
    (c) Vitamin-D   (d) Vitamin-K

83. **The image of a distant coloured object formed in a pinhole camera is always :**
    (a) virtual, erect, coloured and diminished
    (b) real, erect, coloured and diminished
    (c) real, inverted , black and white and diminished
    (d) real, inverted, coloured and diminished.

84. **Anil is able to answer all questions orally, but commits mistakes while writing the solutions of problems. The best remedial strategy to remove errors in his writing is**
    (a) giving him an assignment of 10 problems everyday
    (b) calling him out to solve a problem on the blackboard
    (c) providing him with a worksheet with partially solved problems to complete the missing gaps
    (d) giving him practice test after school hours, continously for one month.

85. **Which one of the following is most suited to the development of scientific skills in students?**
    (a) Conducting science olympiads
    (b) Performing laboratory work
    (c) Conducting Science quiz
    (d) Organising a field visit

86. **A Science teacher is interested to focus more on acquisition of process skills by the learners. Which of the following combination of methods of teaching should be prefered by her to achieve the objectives?**
    (a) Project-cum-laboratory method
    (b) Lecture-cum-demonstration method
    (c) Assignment-cum-questioning method
    (d) Lecture-cum-discussion method

87. **Constructvist approach in teaching Science refers to :**
    (a) providing more and more reading material to students
    (b) providing additional academic help to weak students
    (c) applying different academic help to weak students
    (d) providing experimential learning to students

88. **Which one of the following is the key feature of Formative Assessment in Science?**
    (a) It is aimed at developing scientific temper in the students
    (b) It is aimed at enhancing practical skills
    (c) It is conducted at the end of the year
    (d) It is diagnostic in nature.

89. **Project method in teaching of Science is suited most to :**
    (a) strengthen reasoning skill of students
    (b) promote scientific method of working
    (c) promote understanding of basic concepts in Science
    (d) enhance numerical abilities of students.

90. **Practical work in Science may be given due emphasis in order to :**
    (a) keep proper check on punctuality and regularity of students
    (b) help the students verify the theoretical concepts
    (c) improve the percentage of marks obtained by the students
    (d) help the students develop the habit of maintaining written records

PART-III : LANGUAGE-I (ENGLISH)

Directions (Q Nos. 91-97): Read the passage carefully and answer the questions that follow by choosing the best alternative—

In these times of worldwide skyrocketing energy costs, experts are turning to perhaps the only energy source that is still immune to price fluctuating: the Sun. Economic necessity appears to be largely responsible for the rapidly growing acceptance of solar heat as an alternative source. Electricity has been a clean and versatile form of energy that continues to grow in importance for lighting, heating and cooking, and for powering our increasingly automated and computerised society. The demand for electricity is expected to grow more in future than the average trend to past. A mix of energy sources is required as hedge against shortages in any one area, and the electricity supply companies are taking a second look at renewable generating technologies, particularly those based in the Sun.

Every 15 minutes, the sun delivers to Earth radiant energy to meet all mankind's power needs for a full year. But harnessing this energy is complicated by two properties of sunlight: its diffuseness and it's variability with time of day, seasons and weather conditions. These factors pose formidable technical

challenges for the efficient conversion of solar radiation into bulk, utility grade electric power. Nevertheless, solar technologies are attractive to utilities because they are environment-friendly and offer a lower regulatory risk, limited capital risk and less lead time.

91. Why are experts, according to the passage, looking at the Sun as an energy source?
(a) Due to depletion of other sources of energy
(b) As other energy forms pollute the environment
(c) Increasing costs of other sources
(d) All of the above

92. What is the major difficulty in employing solar energy?
(a) Fluctuations in weather
(b) By nature sunlight is diffuse
(c) Sunlights varies from time to time
(d) All of the above

93. Experts are impressed with the solar energy technologies because—
(a) of them being good for the environment
(b) they require less investment
(c) they can be employed in quick time
(d) All of the above

94. Why are power generating companies looking at mix energy options?
(a) The sources of energy are getting scarce but demand is increasing
(b) Government is controlling price of electricity
(c) Alternative sources of energy are available free and without regulations
(d) All of the above

95. Why is Sun such an important source of alternative energy?
(a) It is available free of cost.
(b) It is available everywhere in the world.

(c) It can satisfy human energy requirements.
(d) All of the above.

96. Identify the word closest in meaning to the word "Versatile"—
(a) Limited   (b) Resourceful
(c) Permanent (d) Invariable

97. Identify the word opposite in meaning to the word 'Formidable'—
(a) Alarming   (b) Frightening
(c) Terrible   (d) Insignificant

Directions (Q Nos. 98-105): Read the passage carefully and answer the questions that follow by choosing the best alternative—

The political system always dominates the entire social scene: and hence those who manipulate them to their power generally able to control all the different social sub-systems and manipulate them to their own advantage. The social groups in power therefore have always manipulated the education systems. Especially when these happen to depend upon the state for their very existence to strengthen and perpetuate their own privileged position. But herein lies a contradiction. For the very realization of their selfish ends, the social groups in power were compelled to extend the benefits of these educational system to the underprivileged groups also. The inevitable task is generally performed with three precautions abundantly taken care of; One the privileged groups continue to be the principal beneficiaries of the educational system, dominate the higher stages of education or the lead core of prestigious and quality institution or the most useful of courses, so as to safeguard their dominant position of leadership in all walks of life; Second, the system is so operated that under privileged groups can utilize it only marginally in real terms and the bulk of them becomes either dropouts or pushouts and get reconciled to their own interior status in society; Third the few from the weaker section, that survive and succeed in spite of all the handicaps are generally co-opted within the system to prevent dissatisfaction.

98. Who according to the passage, can manipulate the systems to their advantage?
(a) Social activists
(b) Popular people
(c) Politically powerful people
(d) All of the above

99. How do socially powerful people try to maintain their privileged position?
(a) By maintaining control over political system
(b) By maintaining control over social system
(c) By maintaining control over education system
(d) All of the above

100. Which is the best experience as to why the few from the weaker section that survive and succeed in spite of all the handicaps are generally co-opted within the system?
(a) To prevent the revolt in the society
(b) To satisfy their instinct
(c) To argument the position of the privileged class
(d) All of the above

101. Why underprivileged sections have to reconcile to their inferior status?
(a) They are unable to effectively utilize the education system.
(b) They have no interest in the system.
(c) They are illiterate.
(d) All of the above.

102. Which system, according to the passage, dominates the social system?
(a) Political system
(b) Education system
(c) Caste system
(d) Monetary system

103. What is the major idea reflected in the passage?

(a) Powerful people are unable to fully control the system

(b) Major benefits have been snatched by the underprivileged

(c) Both (a) and (b)

(d) Neither (a) nor (b)

104. Identify the word closest in meaning to the word 'perpetuate'—

(a) abort   (b) ruin

(c) continue   (d) omit

105. Identify the word opposite in meaning to the word 'Prestigious'—

(a) Obscure   (b) Influential

(c) Esteemed   (d) Impressive

106. While writing a notice, the writer should prefer—

(a) active voice

(b) passive voice

(c) any voice

(d) None of these

107. Where will you add disclosures in a letter?

(a) Below the signature and the right side margin

(b) Below the signature and the left side margin

(c) Above the signature and the right side margin

(d) All of the above

108. /m/ sound in the word 'make' is—

(a) labio-dental

(b) dental

(c) bilabial

(d) alveolar

109. 'Register' is—

(a) variety of language according to region in a particular country

(b) variety of language according to countries

(c) Both (a) and (b)

(d) Neither (a) nor (b)

110. Study of meaning in language is known as—

(a) syntax

(b) semantics

(c) morphology

(d) linguistics

111. Learning a language is—

(a) gradual process

(b) fast process

(c) instant process

(d) all inclusive process

112. 'Phonetics' is basically associated with—

(a) sounds

(b) sentences

(c) grammar

(d) All of the above.

113. Remedial teaching—

(a) fills the gap that creeps into a pupil's learning

(b) rectifies the concepts which have been misunder-stood

(c) helps in retaining homogeneity in the class

(d) All of the above

114. Which of the following organs of speech is also known as 'Velum'?

(a) Hard palate

(b) Voice box

(c) Alveolar ridge

(d) Soft palate

115. Find the word opposite in meaning to 'Insipid'—

(a) Implantable

(b) Bland

(c) Tame

(d) Savory

116. The major difference between an 'Article' and 'Speech' is—

(a) speech is more formal

(b) speech is more informal

(c) speech is more descriptive

(d) All of the above

117. Identify the correct passive voice of the sentence:

Obey me.

(a) I should be obeyed.

(b) Let I be obeyed.

(c) Both (a) and (b)

(d) None of the above

118. Communicative Language Teaching replace basically—

(a) Natural Language Processing

(b) Structural Teaching

(c) Situational Language Teaching

(d) Motivational Teaching

119. Find the appropriate preposition to fill in the sentence :

She lives ...... Mumbai.

(a) at   (b) in

(c) into   (d) on

120. Find the word nearest in meaning to 'Remorse'—

(a) Obdurate

(b) Hard

(c) Penitent

(d) None of these

भाग IV : भाषा-II (हिन्दी)

निर्देश (121-125) : निम्नलिखित गद्यांश का ध्यानपूर्वक अध्ययन करके इस पर आधारित प्रश्नों के उत्तर दीजिए–

वैज्ञानिक प्रयोग की सफलता ने मनुष्य की बुद्धि का अपूर्व विकास कर दिया है। द्वितीय महायुद्ध में एटमबम की शक्ति ने फ्रांस आदि सभी देशों को ऐसे शस्त्रास्त्रों के निर्माण की प्रेरणा दी कि सभी भयंकर और सर्वविनाशकारी शस्त्र बनाने लगे। अब सेना को पराजित करने तथा शत्रु देश का पैदल सेना द्वारा आक्रमण करने के लिए शस्त्र निर्माण के स्थान पर देश के विनाश करने की दिशा में शस्त्रास्त्र बनाने लगे हैं। इन हथियारों का प्रयोग होने पर शत्रु देशों की अधिकांश जनता और सम्पत्ति थोड़े समय में ही नष्ट की जा सकेगी। चूँकि ऐसे शस्त्रास्त्र प्रायः सभी स्वतन्त्र देशों के संग्रहालयों में कुछ-न-कुछ आ गए हैं, अतः युद्ध की स्थिति में उनका प्रयोग भी अनिवार्य हो जाएगा जिससे बड़ी जनसंख्या प्रभावित हो सकती है। इसलिए

नि:शस्त्रीकरण की योजनाएँ बन रही हैं। शस्त्रास्त्रों के निर्माण की जो प्रक्रिया अपनाई गई, उसी के कारण आज इतने उन्नत शस्त्रास्त्र बन गए हैं, जिनके प्रयोग से व्यापक विनाश आसन्न दिखाई पड़ता है। अब भी परीक्षणों की रोकथाम तथा बने शस्त्रों का प्रयोग रोकने के मार्ग खोजे जा रहे हैं। इन प्रयासों के मूल में एक भयंकर आतंक और विश्व विनाश का भय कार्य कर रहा है।

121. इस गद्यांश का मूल कथन क्या है?
(a) आतंक और सर्वनाश का भय
(b) विश्व में शस्त्रास्त्रों की होड़
(c) द्वितीय विश्वयुद्ध की विभीषिका
(d) नि:शस्त्रीकरण और विश्व शांति

122. आधुनिक युद्ध भयंकर व विनाशकारी होते हैं क्योंकि-
(a) दोनों देशों के शस्त्रास्त्र इन युद्धों में समाप्त हो जाते हैं
(b) अधिकांश जनता और उनकी सम्पत्ति नष्ट हो जाती है
(c) दोनों देशों में महामारी और भुखमरी फैल जाती है
(d) दोनों देशों की सेनाएँ इन युद्धों में मारी जाती हैं

123. बड़े-बड़े देश आधुनिक विनाशकारी शस्त्रास्त्र क्यों बना रहे हैं?
(a) अपनी-अपनी सेनाओं में कमी करने के उद्देश्य से
(b) अपने संसाधनों का प्रयोग करने के उद्देश्य से
(c) अपना-अपना सामरिक व्यापार बढ़ाने के उद्देश्य से
(d) पारस्परिक भय के कारण

124. एटम बम की अपार शक्ति का प्रथम अनुभव कैसे हुआ?
(a) जापान में हुई भयंकर विनाशलीला से
(b) जापान में अजेय शक्ति की पराजय से
(c) अमेरिका, रूस, ब्रिटेन और फ्रांस की प्रतिस्पर्द्धा से
(d) अमेरिका की विजय से

125. भयंकर विनाशकारी आधुनिक शस्त्रास्त्रों को बनाने की प्रेरणा किसने दी?
(a) अमेरिका ने
(b) अमेरिका की विजय ने
(c) जापान पर गिराए गए 'अणु बम' ने
(d) बड़े देशों की पारस्परिक प्रतिस्पर्द्धा ने

126. प्रायः निर्दलीय, सत्तारूढ़ दल में सम्मिलित होकर लाभ उठा लेते हैं
उपरोक्त वाक्य के लिए सार्वजनिक उपयुक्त मुहावरा होगा-
(a) बहती गंगा में हाथ धोना
(b) पाँव जमीन पर न रखना
(c) नहले-पे-दहला मारना
(d) दो नावों पर पाँव रखना

127. रामधारी सिंह 'दिनकर' की रचना नहीं है?
(a) उर्वशी   (b) रेणुका
(c) रश्मिरथी   (d) स्वर्ण धूलि

128. धातु में प्रत्यय जोड़ने से बने शब्द कहलाते हैं?
(a) विशेषण   (b) कृदन्त
(c) क्रिया   (d) तद्धितान्त

129. 'चाँद का मुँह टेढ़ा है' के लेखक हैं-
(a) यशपाल
(b) नागार्जुन
(c) गजानन माधव मुक्तिबोध
(d) अमृतराय

130. 'अनुरोध-आग्रह' शब्द युग्म में अनुरोध का अर्थ होता है विनयपूर्वक याचना करना, तो 'आग्रह' का आशय होगा-
(a) अधिकार-भावना से उद्भूत याचना
(b) अधिकार-भावना से सहृदय याचना करना।
(c) अधिकार-भावना को स्वीकार करना
(d) अधिकार-भावना की कदापि उपेक्षा न करना

131. निम्नलिखित विकल्पों में से 'तद्भव' शब्द है-
(a) अगम   (b) आश्रय
(c) अवगुण   (d) स्नेह

132. निम्न में तत्पुरुष समास का उदाहरण है-
(a) एकतरफा   (b) धनंजय
(c) आत्मनिर्भर   (d) वक्रतुण्ड

133. 'हरियाली' है-
(a) जातिवाचक संज्ञा
(b) समूहवाचक संज्ञा
(c) भाववाचक संज्ञा
(d) विशेषण

134. निम्नलिखित विकल्पों में से 'तत्सम' शब्द है-
(a) नारियल   (b) उपरोक्त
(c) तुरन्त   (d) आलस्य

135. निम्नलिखित में 'पुल्लिंग' शब्द है-
(a) बुढ़ापा   (b) जड़ता
(c) घटना   (d) दया

136. 'जो किसी बात या उक्ति को तुरंत सोच ले' के लिए एक शब्द होगा-
(a) प्रतिभाशाली   (b) कुशाग्रबुद्धि
(c) प्रत्युत्पन्नमति   (d) बुद्धिमान

137. कौन-सा शब्द 'अव्यय' नहीं है?
(a) आज   (b) कल
(c) इधर   (d) किसे

138. 'प्रागैतिहासिक का अर्थ है-
(a) सभ्यता के विकास का इतिहास
(b) आदि मानव की संस्कृति
(c) लिखित इतिहास के बाद का
(d) लिखित इतिहास के पहले का

139. रीतिवाचक 'क्रिया-विशेषण' है-
(a) अत्यन्त   (b) आजकल
(c) कदाचित्   (d) बाहर

140. निम्नलिखित में से किस शब्द का निर्माण उपसर्ग से नहीं हुआ है?
(a) अवसाद   (b) उन्नति
(c) सज्जन   (d) प्रहार

141. 'गुडाकेश' का सन्धि-विच्छेद है?
(a) गुडा + केश
(b) गुडाके + ईश
(c) गुडाका + ईश
(d) गुड + आकेश

142. निम्नलिखित में लोकोक्ति कौन-सी है?
(a) आसमान पर थूकना
(b) उल्टा चोर कोतवाल को डाँटे
(c) गूलर का फूल होना
(d) कोढ़ में खाज होना

143. निम्नलिखित में प्रत्यय युक्त शब्द है-
(a) बोली   (b) पिपासा
(c) भाषा   (d) अंकुर

144. 'निर्विवाद' में समास है-
(a) कर्मधारय   (b) अव्ययीभाव
(c) तत्पुरुष   (d) बहुब्रीहि

145. निम्नलिखित में प्रत्यय युक्त शब्द है?
(a) सादर   (b) सावधान
(c) स्वभाव   (d) समझदार

146. निम्नलिखित शब्द की सही वर्तनी कौन-सी है?
(a) ज्योत्सना   (b) ज्योत्स्ना
(c) ज्योतस्ना   (d) ज्योस्तना

147. निम्नलिखित में से कौन-सा शब्द 'रात्रि' का पर्यायवाची नहीं है?

(a) क्षपा
(b) शशक
(c) शर्वरी
(d) यामिनी

148. निम्नलिखित वाक्यों में से कौन-सा सर्वाधिक सही है?

(a) यद्यपि तुम अजनबी हो, परन्तु मैं तुम्हें अपना मानता हूँ

(b) यद्यपि तुम अजनबी हो, मैं तुम्हें ही अपना मानता हूँ

(c) यद्यपि तुम अजनबी हो, किन्तु मैं तुमको ही अपना मानता हूँ

(d) यद्यपि तुम अजनबी हो, तथापि मैं तुम्हें अपना मानता हूँ

149. 'निषिद्ध' शब्द का विलोम है-

(a) विहित
(b) संदिग्ध
(c) अनुपयोगी
(d) प्रतिबन्धित

150. निम्नलिखित शब्दों में से 'अग्नि' का पर्यायवाची है-

(a) पीयूष
(b) पावक
(c) अम्बर
(d) मयंक

ANSWERS AND EXPLANATIONS

1. (b) Teachers need to improve knowledge of their subject matter to students. This goes beyond simply stating the knowledge that they have gained through their own education. Instead, teachers must possess an aptitude to teach the material through different methods based on the needs of the students. Many teachers who are finishing up their degree do not see much more than this as their main responsibility.

2. (c) The noted Swiss psychologist, Jean Piaget believed that thought not only determines language, but also precedes it.

3. (c) One of the easiest ways to bring on discipline issues is to bore your students. If your lessons are unclear, disorganized, or not engaging enough for your students, they may lose attention. Keep students engaged and focused by delivering lessons that elicit interest.

4. (d) **5.** (b) **6.** (c) **7.** (b) **8.** (b)

9. (d) Science and Art exhibitions, music and dance shows and bringing out school magazines, are meant to provide creative channel for learners.

10. (c) Inclusive education happens when children with and without disabilities participate and learn together in the same classes. Inclusion focuses on equity and fairness and on the inclusion of all students regardless of disability, gender, ethnicity or other disadvantage.

11. (b)

12. (a) Skinner defined reinforcement as the change in response strength (response rate) rather than to more subjective criteria, such as what is pleasurable or valuable to someone.

13. (c)

14. (c) 'The phrase, Comprehensive Enaluation' in Continuous and Comprehensive Evaluation (CCE) includes assessment of holistic development of the learner including cognitive, affective and psychomotor domains. The term also includes use of a variety of tools and techniques for assessment of the learners.

15. (a) Positive transfer is when knowledge or skills about a previous topic help a student learn a new skill or learn about a new topic.

16. (d) Behaviorally, adolescence is a period of emotional upheaval, behavioral contradictions, and particular vulnerability to regression and psychopathology. Only one line of Hall's massive two volumes can be interpreted as a definition of adolescence.

17. (a)

18. (d) Jean Piaget viewed intellectual growth as a process of adaptation (adjustment) to the 'world'. This happens through: Assimilation— Which is using an existing schema to deal with a new object or situation.

Accommodation—This happens when the existing schema (knowledge) does not work, and needs to be changed to deal with a new object or situation.

Equilibration — This is the force which moves development along.

19. (d)

20. (a) The SCERTs were set up to provide academic leadership within the state and acts as the hub of academic research innovation, inspiration and motivation. These institutions were to be a symbol of quality and provide philosophical and sociological insights into education for transformation of society. Although the responsibilities of SCERTs vary across states, in most states they are responsible mainly for designing the curriculum, production of textbooks, supervision of DIETs and teacher training.

21. (c) If the higher caste children will stop eating mid-day meals when they are in line with the lower caste students then, a teacher will convince them to sit together and have meal.

22. (c) As children, they receive some small form of encouragement in one subject over another, and as they grow up the difference in skill between the two subjects becomes much, much greater.

23. (c)

24. (c) The pre-conventional level of moral reasoning is especially common in children, although adult can also exhibits this level of reasoning. Reasoners at this level judge the morality of an action by its direct consequences. A child with pre-conventional morality has not yet adopted or internalized society's conventions regarding what is right or wrong but instead focuses largely on external consequences that certain actions may bring.

25. (c)

26. (c) Create an interactive collage on a bulletin board in the classroom. Assign creative writing projects on the topic, encouraging students to explore it. How would they define

trustworthiness, respect, or integrity? Focusing on a great way to raise awareness of the character trait they can strive to build in themselves. Students could also read a book that you feel embodies the trait, or come up with their own personal slogan about it.

27. (a) Social and emotional competence is the ability to understand, manage, and express the social and emotional aspects of one's life in ways that enable the successful management of life tasks such as learning, forming relationships, solving everyday problems, and adapting to the complex demands of growth and development. It also includes self-awareness, control of impulsivity, working cooperatively, and caring about oneself and others.

28. (d) Creativity is the freest form of self-expression. There is nothing more staisfying and fulfilling for children than to be able to express themselves openly and without judgement. A creative ability is to create something from personal feelings and experiences and can reflect and nurture the children's emotional health.

29. (a) Activity method is a technique adopted by a teacher to emphasize his or her method of teaching through acitivty in which the students participate rigorously and bring about efficient learning experiences.

30. (b) When a classroom operates with student-centered education, students and teacher share the focus. Instead of listening to the teacher exclusively, students and teachers interact equally. Group work is encouraged, and students learn to collaborate and communicate with one another.

31. (a) Let the number be x

$$\frac{9}{4} \text{ of } \frac{7}{2} \text{ of } x = 126$$

$$\frac{9}{4} \times \frac{7}{2} x = 126$$

$$\frac{63}{8} x = 126$$

$$x = \frac{126 \times 8}{63} = \frac{14 \times 8}{7} = 16$$

$$\frac{7}{2} x = \frac{7}{2} \times 16 = 56$$

32. (d) $5 \times [-0.6(2.8 + 1.2)] \text{ of } 0.3$
$$= 5 \times [-0.6 \times 4] \times 0.3$$
$$= -12.0 \times 0.3 = -3.6$$

33. (c) Total weight of 21 girls
$$= 56 \times 21$$
$$= 1176 \text{ kg}$$
Total weight of full class $= 62.875 \times 56$
$$= 3521 \text{ kg}$$
Total weight of $(56 - 21) = 35$ boys
$$= 3521 - 1176 = 2345 \text{ kg}$$
Average weight of 35 boys
$$= \frac{2345}{35} = 67 \text{ kg}$$

34. (b) Let the number be x.

$$\% \text{ error} = \frac{\frac{13}{11} x - \frac{11}{13} x}{\frac{13}{11} x} \times 100\%$$

$$= \frac{\frac{48}{11 \times 13} x}{\frac{13}{11} x} \times 100\%$$

$$= \frac{48 x \times 11}{11 \times 13 \times 13} \times 100\%$$

$$= \frac{4800}{169} \% = 28.4\%$$

35. (a) S.P. of 1 item $= 800 \times \frac{85}{100}$
$$= ₹680$$

S.P. of 4 items $= 3200 \times \frac{100 - 38}{100}$

$$= 3200 \times \frac{62}{100} = 1984$$

S.P. of 5 items $= ₹4000$
$\therefore$ effective discount %

$$= \frac{4000 - (1984 + 680)}{4000} \times 100$$

$$= \frac{4000 - 2664}{4000} \times 100 = 33.4\%$$

36. (a) It is given that
$a : b = 5 : 8 \Rightarrow a/b = 5/8$

Now $\dfrac{6a - 5b}{a + 2b} = \dfrac{6\frac{a}{b} - 5}{\frac{a}{b} + 2}$

$$= \frac{6 \times \frac{5}{8} - 5}{\frac{5}{8} + 2} = \frac{(30 - 40)/8}{(5 + 16)/8} = \frac{10}{21}$$

Hence, ratio is 10/21

37. (c) A cupboard built in 1 hour

$$= \frac{1}{48} \text{ parts}$$

In 12 hours it is built

$$= \frac{12}{48} \text{ part} = \frac{1}{4} \text{ part}$$

Left part of cupboard

$$= 1 - \frac{1}{4} = \frac{3}{4} = 0.75$$

38. (c) Speed of missile
$$= 1116 \text{ km/h}$$

$$= \frac{1116 \times 1000}{3600}$$

$$= 1116 \times \frac{5}{18} = \frac{124 \times 5}{2}$$

$$= 62 \times 5 = 310 \text{ metres/sec.}$$

Missile will travel 310 metres in 1 second.

39. (c)

$$A = P\left(1 + \frac{R}{100}\right) + \left(\frac{P \times 10 \times 1}{2 \times 100}\right)$$

$$A = 3200\left(1 + \frac{5}{100}\right)^2 + \frac{3200 \times 10 \times 1}{100 \times 2}$$

$$= 3200 \times \frac{21}{20} \times \frac{21}{20} + 160$$
$$= 8 \times 441 + 160$$
$$= 3528 + 160 = 3688$$
Interest $= 3688 - 3200 = ₹488$

40. (d) It is given that $r = 14$ cm

Volume of hemisphere $= \frac{2}{3} \pi r^3$

$$= \frac{2}{3} \times \frac{22}{7} \times 14 \times 14 \times 14$$

$= \dfrac{44}{3} \times 2 \times 196$

$= 5749.33$ cubic cm

41. (b) $x^2 - 8x + 15 = 0$

$\Rightarrow \qquad x^2 - 5x - 3x + 15 = 0$

$\Rightarrow \qquad (x-3)(x-5) = 0$

$\Rightarrow \qquad\qquad\qquad x = 3$ or 5

Again,

$\qquad\qquad y^2 + 2y - 35 = 0$

$\Rightarrow \qquad y^2 + 7y - 5y - 35 = 0$

$\qquad y(y+5) - 5(y+7) = 0$

$\Rightarrow \qquad (y-5)(y+7) = 0$

$\Rightarrow \qquad\qquad\qquad y = 5$ or -7

$\therefore$ Required difference $= (5^3 - 5^2)$

$\qquad\qquad = (125 - 25) = 100$

42. (d) Rate of interest $= 20\%$ per half year

Equivalent rate for 1 year

$= \left(20 + 20 + \dfrac{20 \times 20}{100} \right)\% = 44\%$

$\therefore$ C. I. $= \dfrac{20000 \times 44}{100} = ₹\, 8800$

43. (d) Speed of first train 150 metre long $= 40$ kmph

Speed of second train $= x$ *kmph*

Total length of both trains

$= (100 + 150)$ metre

$= 250$ metre $= \dfrac{1}{4}$ km.

According to the question,

$\dfrac{\text{Total length of trains}}{\text{Relative speed}} = \text{Time}$

$\Rightarrow \quad \dfrac{\frac{1}{4}}{x+40} = \dfrac{9}{3600} = \dfrac{1}{400}$

$\Rightarrow \quad 4(x+40) = 400$

$\Rightarrow \quad x + 40 = 100$

$\Rightarrow \quad x = 100 - 40 = 60$ kmph.

44. (a) The population of city two years ago

$= \dfrac{P}{\left(1 + \dfrac{R}{100} \right)^2}$

$= \dfrac{26010}{\left(1 + \dfrac{2}{100} \right)^2} = \dfrac{26010}{\left(1 + \dfrac{1}{50} \right)^2}$

$= \dfrac{26010}{\left(\dfrac{51}{50} \right)^2} = \dfrac{26010 \times 50 \times 50}{51 \times 51} = 25000$

45. (c) C.P. of aticle $= ₹ \left(\dfrac{100}{50} \times 18450 \right)$

$= ₹\, 36900$

To gain 50%, S.P. of article

$= ₹\, \dfrac{(36900 \times 150)}{100} = ₹\, 55350$

46. (c) New average will increase by 5.
i.e., New average $= A + 5$

Illustration :

$\dfrac{2+4+6}{3} = \dfrac{12}{3} = 4 \,;$

$\dfrac{2+4+6+8}{4} = \dfrac{20}{4} = 5 \,;$

$\dfrac{2+4+6+8+10}{5} = \dfrac{30}{5} = 6.$

47. (d) Let each son's share be $= ₹\, x$

Each daughter's share $= ₹\, 1.5\, x$

Wife's share $= ₹\, (x - 600)$

According to the question,

$3x + (2 \times 1.5x) + (x - 600) = 19000$

$\Rightarrow 3x + 3x + x = 19000 + 600 = 19600$

$\Rightarrow \quad 7x = 19600$

$\Rightarrow \quad x = \dfrac{19600}{7} = ₹\, 2800$

$\therefore$ Total share of three sons

$= ₹\, (3 \times 2800) = ₹\, 8400$

48. (c) Let the marked price of book be $= ₹\, x$

According to the question,

$x \times (100 - 18)\% = 1599$

$\Rightarrow \quad \dfrac{x \times 82}{100} = 1599$

$\Rightarrow \quad x = \dfrac{1599 \times 100}{82} = ₹\, 1950$

49. (c) Area of land in the shape of trapezium

$= \dfrac{1}{2}$ (sum of parallel sides) $\times$

perpendicular distance

$= \dfrac{1}{2} (2.56 + 3.44) \times 1.44$ sq.yards

$= \dfrac{1}{2} \times 6 \times 1.44$ sq. yards

$= 4.32$ sq. yards

$\therefore$ Expenditure on ploughing

$= ₹\, (4.32 \times 1800) = ₹\, 7776$

50. (d) Let S work for x days.

$\therefore$ T worked for $(x - 2)$ days.

U worked for $(x - 5)$ days.

According to the question,

$\dfrac{x}{40} + \dfrac{x-2}{48} + \dfrac{x-5}{60} = 1$

$\Rightarrow \quad \dfrac{6x + (5x - 10) + (4x - 20)}{240} = 1$

$\Rightarrow \qquad\qquad 15x - 30 = 240$

$\Rightarrow \qquad 15x = 240 + 30 = 270$

$\Rightarrow \qquad\qquad x = \dfrac{270}{15} = 18$ days

$\therefore$ S's share $= ₹ \left(\dfrac{10800}{40} \times 18 \right) = ₹\, 4860$

51. (b) Given Expression

$= \dfrac{12}{\sqrt{5} + \sqrt{3}} + \dfrac{18}{\sqrt{5} - \sqrt{3}}$

$= \dfrac{12(\sqrt{5} - \sqrt{3})}{(\sqrt{5} + \sqrt{3})(\sqrt{5} - \sqrt{3})}$

$\qquad\qquad + \dfrac{18(\sqrt{5} + \sqrt{3})}{(\sqrt{5} + \sqrt{3})(\sqrt{5} - \sqrt{3})}$

$= \dfrac{12(\sqrt{5} - \sqrt{3})}{5 - 3} + \dfrac{18(\sqrt{5} + \sqrt{3})}{5 - 3}$

$= \dfrac{12(\sqrt{5} - \sqrt{3})}{2} + \dfrac{18(\sqrt{5} + \sqrt{3})}{2}$

$= 6(\sqrt{5} - \sqrt{3}) + 9(\sqrt{5} + \sqrt{3})$

$= 6\sqrt{5} - 6\sqrt{3} + 9\sqrt{5} + 9\sqrt{3}$

$= 15\sqrt{5} + 3\sqrt{3} = 3(5\sqrt{5} + \sqrt{3})$

52. (c) Let, $a = 18$ cm,

$b = 24$ cm, $c = 30$ cm,

semi-perimeter $= s = \dfrac{a + b + c}{2}$

$$= \frac{18 + 24 + 30}{2} = \frac{72}{2} = 36$$

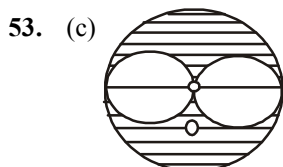$\therefore$ Area of Δ ABC

$$= \frac{4}{3} \sqrt{s(s-a)(s-b)(s-c)}$$

$$= \frac{4}{3} \sqrt{36(36-18)(36-24)(36-30)}$$

$$= \frac{4}{3} \sqrt{36 \times 18 \times 12 \times 6}$$

$$= \frac{4}{3} \sqrt{6 \times 6 \times 6 \times 3 \times 6 \times 3 \times 2 \times 2}$$

$$= \frac{4}{3} \times 6 \times 6 \times 3 \times 2 = 288 \text{ sq. cm}$$

53. (c)

Area of larger circle $= \pi R^2$

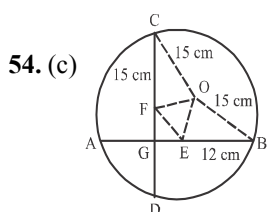$$= \frac{22}{7} \times 14 \times 14 \text{ sq.cm} = 616 \text{ sq.cm}$$

Area of a smaller circle

$$= \frac{22}{7} \times 7 \times 7 \text{ sq. cm} = 154 \text{ sq.cm}$$

$\therefore$ Area of the shaded region

$$= (616 - 154 \times 2) \text{ sq.cm}$$

$$= (616 - 308) \text{ sq.cm} = 308 \text{ sq.cm}$$

54. (c)

$$AB = 20 \text{ cm.}$$

$\therefore \quad OE \perp AB$

$\therefore \quad AE = EB = 10 \text{ cm.}$

In ΔOAE,

$$OE = \sqrt{OA^2 - AE^2}$$

$$=$$

$$\sqrt{15^2 - 10^2} = \sqrt{225 - 100}$$

$$= \sqrt{125} \text{ cm.}$$

$$OF \perp CD$$

$\therefore \quad CF = FD = 12 \text{ cm.}$

$\therefore \Delta OCF,$

$$OF = \sqrt{OC^2 - CF^2}$$

$$=$$

$$\sqrt{15^2 - 12^2} = \sqrt{225 - 144}$$

$$= \sqrt{81} \text{ cm.} = GE$$

$\therefore$ In ΔOCF,

$$OG = \sqrt{GE^2 + EO^2}$$

$$= \sqrt{81 + 125}$$

$$= \sqrt{206} \text{ cm.}$$

55. (a)   **56.** (d)   **57.** (c)   **58.** (a)

59. (b)   **60.** (d)

61. (c) According to the statement of Newton's second law,

$$F_{ext} = \frac{dp}{dt} = ma$$

where, F_{ext} = Resultant force on the body

$\frac{dp}{dt}$ = Rate of change of momentum

m = Mass of the body

a = Acceleration of the body

Therefore, the rate of change of momentum of a body is equal to the resultant force acting on the body,

62. (a) The sum of kinetic energy and potential energy is called mechanical energy. So, SI unit of mechanical energy is Joule.

63. (c) Two systems are said to be in thermal equilibrium, if there is no flow of heat between them when they are brought into thermal contact. If there is a temperature difference between them, then the flow of heat will be there, till it reaches to the same temperature.

64. (d) The velocity of sound depends upon the nature of media. The speeds of sound in air, water and steel at 0°C are

Medium	Speed (m/s)
Air	331
Water	1450
Steel	5000

Therefore, velocity of sound is maximum in solids and minimum in gases.

65. (b) Longitudinal waves involve change in the density of the medium but transverse waves involve change in the shape of the medium. The shape of gases can be changed easily, but it does not try to come back in its original shape. Hence, a transverse wave cannot be produced in gas.

Sound waves of frequency less than 20 Hz is known as infrasonic sound or infrasound. Sound wave of frequency greater than 20 kHz is known as ultrasonic sound or ultrasound.

66. (d) Myopia is the defect of human eye by virtue of which eye cannot see clearly far-off object. It can see only the object at near point.

Remedy : Using concave lens.

Power of lens (P) $= \frac{1}{f}$

Here, P $= -1.25$ D

$$\therefore P = \frac{12}{f} \Rightarrow f = \frac{1}{P} = \frac{-1}{1.25} = \frac{4}{5} \text{ m}$$

$$\Rightarrow f = -\frac{4}{5} \times 100 \text{ cm} = -80 \text{ cm}$$

or $f = -80$ cm

Since, focal length of the lens is negative, so the lens is concave in nature.

67. (a) People sprinkle water on the roof because when this water gets evaporated they take up some of the heat from the roof for the process of evaporation. As some of the heat gets released, the roof becomes cooler making the rooms also cool.

68. (d) Bakelite is a type of plastic (i.e. polythene) once moulded, does not melt in the presence of heat. It is used for making electrical appliances, handles of crockery etc.

69. (d) Methyl Isocyanate (MIC) gas was used as a precursor for the formation of pesticides in UCIL (Bhopal). The toxic substance made its way into and around the towns located near the plant.

70. (c) German silver is an alloy of copper, zinc and nickel. It is called so as it appears like silver.

71. (c) Vitamin-B_{12} is also called as cobalamin and contain Co^{3+} ion. Its deficiency in diet causes pernicious anaemia. It is an autoimmune disorder that can lead to serious complications. It occurs when the body cannot absorb enough vitamin B_{12}.

72. (c) Latent heat is the amount of heat required per unit mass during the change of phase of a substance.

SI unit Jkg^{-1}

Latent heat (L)

$$= \frac{\text{Quantity of heat (Q)}}{\text{Mass (m)}}$$
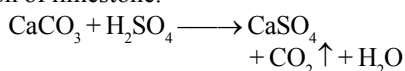
Here, $m = 100g$ of ice

$L = 333.6$ J/g
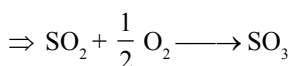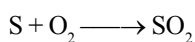
So, amount of heat (Q)

$= m \times L = 100 \times 333.6$

$Q = 33360$ J

73. (a) Chemical change involves change in chemical composition of matter. During magnetisation of iron, dissolution of sugar in water and preparation of ice from water, the chemical compositions do not alter hence they are physical change. While burning of paper results in formation of carbon dioxide and water vapours, which have new chemical composition, hence it is called chemical change.
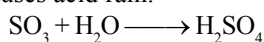
74. (a) • Acid rain causes decomposition of limestone.

$CaCO_3 + H_2SO_4 \longrightarrow CaSO_4$
$+ CO_2\uparrow + H_2O$

• Burning of sulphur along with coal results in formation of oxides of sulphur as

$S + O_2 \longrightarrow SO_2$

$\Rightarrow SO_2 + \frac{1}{2} O_2 \longrightarrow SO_3$

When sulphur trioxide (SO_3) reacts with water (of clouds) it forms acid, hence causes acid rain.

$SO_3 + H_2O \longrightarrow H_2SO_4$

• Eutrophication is the excessive increase of nutrients in an ecosystem (like ponds) which results abnormal growth of population of dependent organism (like algal bloom in pond). Hence, it can cause pollution instead of controlling it.

75. (a) HDL is also known as 'good cholesterol' present in our body because they can transport fat molecules out of artery walls and help in reducing the cardio-vascular diseases.

76. (b) Deficiency of vitamin-B1 causes beri-beri disease, which affects peripheral nervous system and cardio-vascular system. Deficiency of vitamin-C causes scurvy. Vitamin-C helps in synthesis of collagen fibre. Bleeding gums are caused due to its deficiency. Deficiency of vitamin-A causes night-blindness whereas rickets is caused due to the deficiency of vitamin-D.

77. (c) The germplasm includes the collection of genetic resources for further breeding and research programmes in plants and animals. It is a collection of seeds and tissues in case of plants, egg and sperms in case of animals.

78. (d) The platelet count in dengue fever decreases because virus infects vascular endothelial cells, suppresses the platelet production in bone marrow and also gets attached to the platelet cells individually.

79. (a) All sterols derived from plants are referred as phytosterols. Vitamin-D is also known as chole-calciferol or ergocalciferol. It is important for absorption of calcium from stomach. Ergocalciferol is used to treat hypoparathyroidism. Lumisterol is a stereoisomer of ergosterol. It is produced when sterol is exposed to ultraviolet radiations.

80. (c) In artificial insemination, only the sperms are introduced in the female genital track to induce fertilisation process.

81. (d) Genetically modified crops contain segments of foreign DNA that bring a new trait in the existing genome of the organism. It might involve the removal of some part of existing DNA too. It does not involve introduction of RNA.

82. (d) Vitamin-K is involved in the blood clotting phenomenon. It induces the production of certain protein molecules, which- act as precursors for blood clotting enzymes. Vitamin-A is required for synthesis of visual pigments such as rhodopsin and iodopsin, essential for reproduction and have anticancerous property. Vitamin-D is synthesised in skin by UV rays of light. It is important for bone and teeth. Vitamin-B is a complex of many vitamins, soluble in water.

83. (d)   **84.** (c)   **85.** (b)   **86.** (a)
87. (d)   **88.** (d)   **89.** (b)   **90.** (b)

91. (c) In the given passage, experts are looking at the sun as an energy source due to increasing costs of other sources like coal or petrol.

92. (d) Sun is a vital source of clean energy but there is major difficulty in employing solar energy becasue of fluctuations in weather, diffused sunlight etc. It also varies from time to time.

93. (d) Experts are impressed with the solar energy technologies because they are good for the environment and requires less investment.

94. (a) The power generating companies are looking at mix energy options because the traditional sources of energy are getting scarce and the demand of energy is increasing rapidly.

95. (c) Sun is an important source of alternative energy because it can satisfy human energy requirements alone, if tapped properly in comparison to other energy sources.

96. (b) The word closest in meaning to the word 'Versatile' is 'Resourceful'.

97. (d) The word opposite in meaning to the word 'Formidable' is 'Insignificant' which means without importance.

98. (c) Politically powerful people can manipulate the systems to their own advantage.

99. (c) By maintaining control over education system, socially powerful people try to maintain their privileged position.

100. (a) To prevent the revolt or dissatisfaction in the society is the best experience as to why the few from the weaker section that survive and succeed in spite of all the handicaps are generally co-opted within the system.

101. (a) The underprivileged sections are unable to effectively utilize the education system. Due to this character these sections have to reconcile to their inferior status.

102. (a) Political system dominates the social system because who wield political power, are generally able to control all the different social sub-systems and can manipulate them to their own advantage.

103. (d)

104. (c) The word closest in meaning to the word 'Perpetuate' is 'Continue' which refers to prolong or to let remain.

105. (a) The word opposite in meaning to the word 'Prestigious' is 'Obscure' which means unknown to fame.

106. (b) During writing a notice, the writer should prefer passive voice because it helps reader to understand easily the related matter.

107. (b) The proper place of adding disclosures in a letter is below the signature and the left side margin.

108. (c) When we pronounce the /m/ sound in the word 'make', our lips (upper and lower) touches each other. So, it is bilabial.

109. (d)

110. (b) Study of meaning in a language is known as semantics.

111. (d) Learning a language is all inclusive process.

112. (a) 'Phonetics' is basically associated with sounds, word is used to represent vocal sounds.

113. (d) Remedial teaching fills the gap that creeps into pupil's learning. It rectifies the concepts which have been misunderstood and it also helps in retaining homogeneity in the class.

114. (d) Soft palate is the organ of speech which is also known as 'Velum'.

115. (d) The word opposite in meaning to 'Insipid' is 'Savory' which carries the sense of taste, flavour, smell or suspicion.

116. (a) 'Speech' is more formal than 'Article'.

117. (c) The correct passive voice of the sentence 'Obey me' is I should be obeyed or Let me obeyed. So, both the passive voice are correct.

118. (c)

119. (b) The appropriate preposition to fill in the sentence: "She lives.... Mumbai" is 'in' because it connects a noun to another noun and shows relation between She and Mumbai.

120. (c) The nearest meaning to 'Remorse' is 'Penitent' which means one who repents.

121. (d) गद्यांश का मूल कथानक निःशस्त्रीकरण और विश्व शांति पर आधारित है।

122. (b) आधुनिक युद्ध भयंकर एवं विनाशकारी होते हैं क्योंकि युद्ध में अधिकांश जनता और उनकी सम्पत्ति नष्ट हो जाती है।

123. (d) एक-दूसरे के प्रति पारस्परिक भय के कारण बड़े-बड़े देश आधुनिक विनाशकारी शस्त्रास्त्र बनाने लगे।

124. (b) एटम बम की अपार शक्ति का अनुभव तब हुआ जब जापान पर अमेरिका द्वारा परमाणु बम बरसाए गए तथा तत्कालीन समय में जापान जैसी अजेय शक्ति को पराजित करने में सफलता मिली।

125. (b) भयंकर विनाशकारी आधुनिक शस्त्रास्त्रों को बनाने की प्रेरणा जापान पर अमेरिका की विजय के कारण अन्य देशों को मिली।

126. (a) ''प्रायः निर्दलीय सत्तारूढ़ दल में सम्मिलित होकर लाभ उठाते हैं।'' इस वाक्य के लिए सर्वाधिक उपयुक्त मुहावरा है 'बहती गंगा में हाथ धोना'। इसका शाब्दिक अर्थ होता है अवसर का लाभ उठाना।

127. (c) रामधारी सिंह 'दिनकर' की रचनाएँ हैं- उर्वशी, रेणुका, स्वर्णधूलि आदि। रश्मिरथी उनके द्वारा रचित नहीं है।

128. (b) धातु में प्रत्यय जोड़ने से बनने वाले शब्द को 'कृदन्त' कहते हैं। यह क्रिया विशेषण का एक भेद होता है।

129. (c) 'चाँद का मुँह टेढ़ा है' के लेखक गजानन माधव मुक्तिबोध हैं।

130. (b) 'आग्रह' शब्द का अर्थ है अधिकार भावना से सहृदय याचना करना।

131. (a) 'तद्भव' शब्द अगम है। इसका तत्सम अगम्य होता है।

132. (c) आत्मनिर्भर अर्थात् जो अपने आप पर निर्भर हो। इस शब्द में तत्पुरुष समास है।

133. (c) 'हरियाली' भाववाचक संज्ञा का उदाहरण है। भाववाचक संज्ञा वह होती है जिसमें गुण, धर्म, दशा का बोध होता है।

134. (d) आलस्य 'तत्सम' शब्द है। इसका तद्भव आलस होता है।

135. (a) बुढ़ापा एक 'पुल्लिंग' शब्द है।

136. (c) 'जो किसी बात या उक्ति को तुरन्त सोच ले' के लिए एक शब्द प्रत्युत्पन्नमति होता है।

137. (d) किसे 'अव्यय' नहीं है। आज, कल कालवाचक अव्यय तथा इधर स्थानवाचक अव्यय है।

138. (d) 'प्रागैतिहासिक का अर्थ है लिखित इतिहास के पहले का इतिहास अर्थात् इस काल को कोई लिखित साक्ष्य नहीं मिलता।

139. (c) रीतिवाचक 'क्रिया-विशेषण' होते हैं धीरे-धीरे, अचानक शायद, कदाचित्, यथाशक्ति आदि।

140. (b) उन्नति एक पूर्ण शब्द है। इसके निर्माण में उपसर्ग का प्रयोग नहीं हुआ है।

141. (c) 'गुडाकेश' का सन्धि-विच्छेद गुडाका + ईश होता है।
यह गुण सन्धि का उदाहरण है।

142. (b) 'उल्टा चोर कोतवाल को डांटे' एक लोकोक्ति या कहावत है। इसका शाब्दिक अर्थ होता है दोषी व्यक्ति द्वारा निर्दोष पर दोष लगाना।

143. (a)

144. (b) 'निर्विवाद' में अव्ययी भाव समास है।

145. (d) समझ शब्द में दार प्रत्यय लगाकर समझदार शब्द बनाया गया है।

146. (b) सही वर्तनी वाला शब्द ज्योत्स्ना है।

147. (b) शशक खरगोश का पर्यायवाची शब्द है क्षपा, शर्वरी यामिनी, 'रात्रि' के पर्यायवाची हैं।

148. (d) यद्यपि के साथ तथापि (तद्यपि) का प्रयोग होता है इसलिए 'यद्यपि' तुम अजनबी हो' तथापि मैं तुम्हें अपना मानता हूँ। वाक्य सही है।

149. (a) 'निषिद्ध' शब्द का विलोम 'विहित' होता है।

150. (b) अग्नि का पर्यायवाची 'पावक' है। पीयूष-अमृत का, अम्बर- आकाश का तथा मयंक-चन्द्रमा का पर्यायवाची है।

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