

Jawahar Navodaya Vidyalaya

Entrance Exam Class 9

SOLVED PAPER 2020

Part I हिन्दी

1. 'स्वतन्त्र' का विलोम है
(a) गुलाम (b) परतन्त्र (c) आजाद (d) अधीन
2. नीचे दिए गए शब्दों में से कौन-सा शब्द अनेकार्थी है?
(a) घर (b) तन (c) साँझ (d) कल
3. नीचे दिए गए शब्दों में से कौन-सा शब्द 'आँख' का पर्यायवाची नहीं है?
(a) नैन (b) चक्षु (c) नयन (d) मीन
4. 'विचार' शब्द में 'इक' जोड़ने पर शब्द बनेगा
(a) विचारिक (b) वैचरिक
(c) वैचारिक (d) विचारीक
5. 'ईमानदारी' शब्द संज्ञा है।
(a) भाववाचक (b) गुणवाचक
(c) समूहवाचक (d) जातिवाचक
6. 'रोजी-रोटी' शब्द है
(a) संज्ञा (b) सर्वनाम (c) शब्द-युग्म (d) विशेषण
7. 'फल' शब्द का बहुवचन है
(a) फल (b) फलों (c) फलन (d) फलां
8. 'ढाँढस बँधाना' का अर्थ है
(a) आशीर्वाद देना (b) तसल्ली देना
(c) आज्ञा देना (d) निवेदन करना
9. 'आग लगने पर कुआँ खोदना' मुहावरे का अर्थ है
(a) अवसरवादी होना
(b) पाखंडी होना
(c) पहले से सावधान न होना
(d) समय देखकर तत्पर होना
10. शुद्ध रूप छाँटिए।
(a) सहीष्णुता (b) सहिष्णुता
(c) सहीस्नुता (d) सहिष्णुता

निर्देश (प्र.सं. 11-15) निम्नलिखित अनुच्छेद को ध्यानपूर्वक पढ़कर दिए गए प्रश्नों के उत्तर के लिए सही विकल्प का चयन कीजिए।

साँझ होने लगी थी, धूप की सुनहरी परछाइयाँ सिन्दूरी साँझ की बाँहों में समा गई। मैं इस साँझ को अपने तन की आँखों से देखता हूँ और मन की आँखों से उस दादी की छवि को जो मानस पटल पर उभर आई। तन की आँख सिर्फ आज देखती हैं जबकि मन की आँख तमाम बीते हुए कल। मन की इसी आँख ने मुझे अपनी दिवंगत दादी की याद दिला दी जो बचपन में हमें साँझ के समय घर के बाहर जाने से रोकती थी। कहती थी 'संजा बिरयां घर के बाहर नयी जानो बेटा, दीया बत्ती के टेम घर रेनो।' तर्क देती थी कि गोधूलि बेला में जब गायें भी अपने घर लौटती हैं अपने बछड़े के पास, तो फिर तुम क्यों घर के बाहर जाते हो? वह कहती रहती थी और हम थोड़ी देर उनकी गोद में बैठकर घर लौटती गायों को देखते, उनकी आँख बचाकर घर के बाहर भाग जाया करते थे। यह सिलसिला बचपन में चलता रहा। बचपन की दहलीज लाँघी, जीवन संघर्ष में यौवन उलझा और अब वार्धक्य में स्मृतियों के भँवर में घूम रहे हैं। इस सांध्य बेला में साँझ खूब याद आती है। ऐसी जाने कितनी साँझे याद आयी और बीत गई लेकिन दादी की 'संजा बिरयां' बीतती नहीं। सोचता हूँ तो बार-बार लगता है कि वह संध्या के समय के बाहर न जाने की मनुहार करते जब गायों के गोधूलि बेला में अपने-अपने घर लौटने का उदाहरण देती थी तो क्या यह उनकी समझ थी या उनका संस्कार?

11. अनुच्छेद में साँझ को सिन्दूरी इसलिए कहा गया है, क्योंकि

- (a) साँझ बहुत गहरे लाल रंग की होती है
- (b) शाम के समय आकाश में लालिमा होती है
- (c) शाम को लोग जी भरकर मौज-मस्ती करते हैं
- (d) साँझ के समय लोग लाल रंग का प्रयोग करते हैं

12. “... लेकिन दादी की ‘संज्ञा बिरयां’ ‘बीतती ही नहीं’ का अर्थ है
 (a) दादी के जीवन में साँझ हमेशा रही।
 (b) दादी की साँझ वाली बात कभी खत्म नहीं होती।
 (c) दादी की साँझ वाली बात हमेशा याद रहती है।
 (d) दादी की साँझ वाली बात का अर्थ आज समझ आया।
13. मन की आँखों को पुल का पर्याय क्यों कहा गया है?
 (a) वे अतीत और भविष्य को जोड़ती हैं
 (b) वे अतीत और भविष्य को डूबने से बचाती हैं
 (c) वे आजकल आज को ही देखती हैं
 (d) वे पुल की तरह दिखती हैं

14. इस अनुच्छेद में ‘सांध्य बेला’ का अर्थ है
 (a) शाम का समय
 (b) उम्र का एक पड़ाव
 (c) सुखद समय
 (d) दुखद समय
15. अनुच्छेद में लेखक ने के बहाने दादी, बचपन, गोधूलि से जुड़ी यादों को साझा किया है।
 (a) मन
 (b) आँखों
 (c) साँझ
 (d) गायों

Part II English

Directions (Q.Nos. 16-19) Choose the appropriate option to complete the passage/sentence.

Man.....(16)..... is believed to have evolved from apes,.....(17)..... a curious mixture of varied motives. He is not only.....(18)..... subjects of needs(19)..... also their creator. He also seeks to satisfy his needs and caters to his desires.

16. (a) which (b) when (c) while (d) who
 17. (a) am (b) are (c) is (d) has
 18. (a) to (b) the (c) a (d) an
 19. (a) but (b) and (c) to (d) the

20. Convert into Passive voice.

‘We must face the new situations with a creative mind.’

- (a) New situations need faced by us with a creative mind
 (b) New situations must face us with a creative mind
 (c) New situations must be faced by us with a creative mind
 (d) Everyone should face the new situations with a creative mind

21. Give a word most similar in meaning to the word ‘exhorting’?

- (a) urging (b) supporting
 (c) demanding (d) clarifying

22. Opposite meaning of the word ‘seeks’ is

- (a) deplores (b) avoids
 (c) vanishes (d) approaches

Directions (Q.Nos.23-25) Which option fits best in the blanks.

23. I..... we should accept the offer.

- (a) think (b) will think
 (c) should think (d) would think

24. Neither he nor his servant.....

- (a) leave (b) have left (c) has left (d) is left

25. My sister is than I am.

- (a) more stronger (b) most stronger
 (c) stronger (d) strong

Direction (Q.No. 26) Give one word for the following phrase.

26. One who eats everything

- (a) omnipotent (b) insolvent
 (c) irresistible (d) omnivorous

Direction (Q. No. 27) Select the alternative which best expresses the same sentence in Indirect speech.

27. He said, “can you sing ?” and I said, “no.”

- (a) He asked me that could I sing and I refused.
 (b) He asked me if I could sing and I replied that I could not.
 (c) I denied, when he asked me if you could sing.
 (d) He asked me if I could sing and I said no.

Passage

Directions (Q.Nos. 28-30) Read the following passage carefully and answer the questions that follows.

The Aryans were keen hunters and caught lions and hunted bears with dogs. But their favourite sport was racing in chariots drawn by swift horses. After the races, they had open-air dancing and singing. Like other ancient people, they worshipped at first many Gods of the storms. For a long time their chief God was Indra. As centuries passed and the Aryans settled and developed their farming and trade in the conquered lands, the people became divided into four main castes, the Brahmans, the Kshatriyas, the Vaishyas and the

Shudras. The duties of these four groups were described in ancient laws called the 'Manu Samhita' or the Laws of Manu.

28. The favourite sport of the Aryans was

- (a) hunting (b) chariot race
(c) horse race (d) dancing and singing

29. For a long time, the chief God of the Aryans was

- (a) Sun God (b) the God of storms
(c) Indra (d) God of sky

30. Who helped the Aryans in hunting?

- (a) Lions (b) Dogs
(c) Bears (d) Their God

Part III Mathematics

Directions (Q.Nos. 31-65) For each question, four possible choices have been given, out of which only one is correct. You are to select the correct answer and fill in the OMR sheet.

31. Which of the following is not true?

- (a) $\frac{8}{7} + \frac{3}{8} = \frac{3}{7} + \frac{8}{8}$ (b) $\frac{8}{7} \times \frac{3}{8} = \frac{3}{8} \times \frac{8}{7}$
(c) $\frac{8}{7} \div \frac{3}{8} = \frac{8}{7} \times \frac{8}{3}$ (d) $\frac{8}{7} - \frac{3}{8} = \frac{3}{8} - \frac{8}{7}$

32. The product of a non-zero rational number and its reciprocal is

- (a) 1
(b) 0
(c) rational number itself
(d) reciprocal of rational number

33. Square of which of the following number will have 6 at its unit place?

- (a) 38 (b) 24 (c) 32 (d) 45

34. How many natural numbers exist between the squares of 28 and 29?

- (a) 30 (b) 58 (c) 56 (d) 60

35. The value of $\sqrt{256} + \sqrt{81}$ is

- (a) 5 (b) 6
(c) 7 (d) 8

36. Which one of the following will have cube root ending with 3?

- (a) 35937 (b) 46656
(c) 39304 (d) 50653

37. $0.04 \times 0.04 \times 0.04 = ?$

- (a) 0.064 (b) 0.00064
(c) 0.0064 (d) 0.000064

38. The least number by which 81 be divided to make a perfect cube is.....

- (a) 1 (b) 3 (c) 2 (d) 4

39. The standard form of 12300000 is

- (a) 1.23×10^8 (b) 12.3×10^8
(c) 1.23×10^7 (d) 1.23×10^9

40. $Z \times (Z^2)^{-4} = ?$

- (a) Z^{-7} (b) Z^7 (c) Z^{-8} (d) Z^8

41. If a family of 10 persons purchases ration for 15 days and five guests join the family from the first day. How long will the ration last?

- (a) 15 days (b) 12 days (c) 10 days (d) 8 days

42. If the distance travelled by a rickshaw in one hour is 10 km, the distance covered by the same rickshaw with the same speed in one minute will be

- (a) $\frac{250}{9}$ m (b) $\frac{500}{9}$ m (c) 1000 m (d) $\frac{500}{3}$ m

43. If Nidhi purchases a book of ₹ 500 and GST is 12 per cent. She will pay ₹

- (a) 60 (b) 560 (c) 640 (d) 660

44. If a number is increased by 30% and then decreased by 30%, the net increase/decrease percentage will be

- (a) 9 (b) 4 (c) 16 (d) 1

45. The compound interest on ₹ 10 at the rate of 10% per annum for two years will be

- (a) ₹ 2 (b) ₹ 2.10
(c) ₹ 2.20 (d) ₹ 2.30

46. Which of the following is like $32z^2y^2x^2$?

- (a) $8z^2 \times 3y^2 \times x^2$ (b) $6z^2 \times 6x^2 \times y^2$
(c) $8y^2 \times 4x^2 \times z^2$ (d) $6z^2 \times 3x^2 \times y^2$

47. The irreducible factorisation of $63z^2y^3x$ is.....

- (a) $9z^2y^3x$ (b) $9z^2 \times 7y^2 \times 2x$
(c) $9z^2 \times 7x \times y^2$ (d) $3z^2 \times 7x \times 3y^3$

48. $\left(\frac{3a}{5} + \frac{2b}{3}\right)\left(\frac{3a}{5} - \frac{2b}{3}\right) = ?$

- (a) $\frac{3a^2}{5} - \frac{2b^2}{3}$ (b) $\frac{9a^2}{5} - \frac{4b^2}{9}$
(c) $\frac{9a^2}{25} - \frac{4b^2}{9}$ (d) $\frac{9a^2}{25} - \frac{4b^2}{3}$

49. $(2005)^2 - (1995)^2 = ?$

- (a) 40000 (b) 4000 (c) 4025 (d) 40225

50. The area of a square is $9x^2 + 24xy + 16y^2$. Its side will be

- (a) $3x - 4y^2$ (b) $3x - 4y$ (c) $3x + 4y^2$ (d) $3x + 4y$

51. If $3x - 4(64 - x) = 10$, then $x = ?$
 (a) 133 (b) 38 (c) -286 (d) 66.5
52. The present age of the father is three times than that of his son. After three years the age of the father will be 7 yr more than twice the age of the son. The present age of the son is yr.
 (a) 8 (b) 9 (c) 10 (d) 11
53. The sum of five consecutive multiples of 6 is 2040. Find the largest multiple.
 (a) 420 (b) 528 (c) 456 (d) 450
54. 15 added to the product of y and 13 give us 54. The value of y is
 (a) 2 (b) $\frac{69}{13}$ (c) 3 (d) 4
55. The four angles of a quadrilateral are in the ratio of 3 : 4 : 5 : 6. The largest angle is
 (a) 160° (b) 80° (c) 100° (d) 120°
56. In a quadrilateral $ABCD$, $AB = 6$ cm, $CD = 8$ cm and sum of angles A and D is 180° . This is
 (a) parallelogram (b) trapezium
 (c) rhombus (d) square
57. One of the diagonals of a rhombus is equal to its side. Its larger angle is
 (a) 120° (b) 90°
 (c) 60° (d) 160°
58. The diagonals of a rhombus are 5 cm and 7 cm. Its area will be cm^2 .
 (a) 12 (b) 17.5 (c) 35 (d) 70
59. The area of the largest triangle that can be fitted into a rectangle of the length L units and width B units will be units².
 (a) $\frac{LB}{3}$ (b) $\frac{LB}{6}$ (c) $\frac{LB}{4}$ (d) $\frac{LB}{2}$
60. 360 m^3 water is used to irrigate rectangular field of length 40m and width 18m. The height of the water level in the field will be m.
 (a) 0.5 (b) 1 (c) 1.5 (d) 0.2
61. If the side of a cube is increased to three times, its volume will become..... times.
 (a) 6 (b) 9 (c) 21 (d) 27
62. The radii of two cylinders are in the ratio of 1 : 2 and heights are in ratio of 2 : 5. The ratio of their volume will be
 (a) 1 : 10 (b) 1 : 8
 (c) 1 : 5 (d) 2 : 9
63. How many cubic metres of earth must be dug to construct a 7 m deep well and diameter is 2 m?
 (a) 35 (b) 32
 (c) 22 (d) 14
64. A dice is thrown two times. The sum of numbers appearing on the dice can be outcomes.
 (a) 5 (b) 6
 (c) 11 (d) 18
65. The range of the following data is
 $-6, -8, 3, 2, 1, 4, 2, 5$
 (a) 10 (b) 13
 (c) 11 (d) 8

Part IV General Science

Directions (Q. Nos. 66-100) *For each question four possible choices have been given, out of which only one is correct. You are to select the correct answer and fill in OMR sheet.*

66. *Lactobacillus* is a/an
 (a) bacteria (b) algae
 (c) protozoan (d) fungus
67. is used in sowing.
 (a) Sickle (b) Hoe
 (c) Seed drill (d) Sprinkler
68. Influenza is caused in human beings by
 (a) bacteria (b) virus
 (c) *Amoeba* (d) fungus
69. Smallpox vaccine was discovered by.....
 (a) Louis Pasteur (b) Robert Koch
 (c) Edward Jenner (d) Fleming
70. Which one of the following is a thermosetting plastic?
 (a) Nylon (b) PVC
 (c) Rubber (d) Bakelite
71. Which one of the following reacts vigorously with cold water?
 (a) Sodium (b) Carbon
 (c) Aluminium (d) Magnesium
72. Which property of copper is used for making electric wires?
 (a) Ductility (b) Good conductor
 (c) Insulation (d) Being solid
73. Which of the following is not a constituent of petroleum?
 (a) Paraffin wax (b) Lubricating oil
 (c) Coke (d) Petrol

74. Which one of the following is not a natural resource?
 (a) Water (b) Minerals
 (c) Soil (d) Rayon
75. The black thick liquid with unpleasant smell is known as
 (a) kerosene (b) coal-tar
 (c) petrol (d) coke
76. Species is found exclusively in a specific habitat
 (a) Endemic (b) Extinct
 (c) Endangered (d) Fauna
77. The environmental impact of clearing large patches of forests for cultivation of crops is
 (a) soil pollution (b) soil fertility
 (c) soil erosion (d) soil conservation
78. The leaves are green due to.....
 (a) ribosome (b) mitochondria
 (c) chloroplast (d) chlorophyll
79. Which one of the following is found in cells of plants, animals as well as bacteria?
 (a) Chloroplast (b) Cell membrane
 (c) Nucleus (d) Cell wall
80. Hen.....
 (a) undergoes external fertilisation
 (b) is oviparous
 (c) is viviparous
 (d) undergoes internal fertilisation
81. In *Amoeba*, reproduction takes place by
 (a) external fertilisation (b) internal fertilisation
 (c) budding (d) binary fission
82. Insufficient production of in the tadpoles leads to their incomplete development.
 (a) thyroxine (b) insulin
 (c) nutrients (d) ducts
83. At the onset of puberty is released by testes.
 (a) thyroxine (b) insulin
 (c) testosterone (d) adrenaline
84. A gas filled balloon moves up because.....
 (a) gravity force does not act on the balloon
 (b) there is no frictional force on the balloon
 (c) upward force on the balloon is more than gravitational force
 (d) upward force on the balloon is more than frictional force
85. Two thermocol balls held close to each other move away because of force.
 (a) magnetic (b) electrostatic
 (c) gravitational (d) frictional
86. Wearing of cartilage in the body..... friction.
 (a) increases
 (b) decreases
 (c) does not effect
 (d) may increase or decrease
87. The handle of a cricket bat is usually rough to
 (a) get more run (b) get ball on bat
 (c) decrease friction (d) increase friction
88. If we increase the vibration in an object the time period will.....
 (a) increase in same proportion
 (b) increase in inverse proportion
 (c) decrease in same proportion
 (d) decrease in inverse proportion
89. Ultrasound has frequency of vibration.
 (a) 20 Hz
 (b) between 20 to 20000 Hz
 (c) above 20000 Hz
 (d) less than 20 Hz
90. Iron is painted to
 (a) give shiny appearance
 (b) keep it for long
 (c) save it from corrosion
 (d) save it from electric current
91. of the following is not good conductor of electricity.
 (a) Tap water (b) Vegetable oil
 (c) Vinegar (d) Lemon juice
92. Earthquakes can cause.....
 (a) Tsunami, Floods, Landslide
 (b) Tsunami, Lightening, Floods
 (c) Tsunami, Lightening, Landslide
 (d) Floods, Lightening, Landslide
93. When you rub the back of a plastic pen in your hair and bring it near a small piece of paper it attracts paper due to.....
 (a) electrostatic force (b) friction
 (c) magnetic force (d) gravity
94. If the object is 5 cm away from the plane mirror, the image formed by it and the object will be cm apart.
 (a) 2.5 (b) 5
 (c) 10 (d) 15
95. A ray of light can reflected times by two plane mirrors placed parallel and facing each other.
 (a) 2 (b) 4
 (c) 8 (d) infinite
96. Planet venus is also known as
 (a) Pole star (b) Morning star
 (c) Star sirius (d) Jupiter

97. A star is fifteen light years away from earth. The light emitted by it today will be seen after years.

- (a) 5 (b) 10
(c) 15 (d) 30

98. Tree plantation month of July/August every year is known as.....

- (a) van mahotsav
(b) plantation month
(c) forest conservation month
(d) wildlife month

99. is responsible for acid rain.

- (a) Carbon dioxide
(b) Sulphur dioxide
(c) Carbon monoxide
(d) Chlorofluorocarbons

100. Which of the following groups contains all synthetic substances?

- (a) Nylon, terylene, wool
(b) Cotton, polycot, rayon
(c) PVC, polythene, bakelite
(d) Acrylic, silk, wool

Answers

- | | | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|
| 1. (b) | 2. (d) | 3. (d) | 4. (c) | 5. (a) | 6. (c) | 7. (a) | 8. (b) | 9. (c) | 10. (d) |
| 11. (b) | 12. (c) | 13. (a) | 14. (a) | 15. (c) | 16. (d) | 17. (c) | 18. (c) | 19. (a) | 20. (c) |
| 21. (a) | 22. (b) | 23. (a) | 24. (c) | 25. (c) | 26. (d) | 27. (b) | 28. (b) | 29. (c) | 30. (b) |
| 31. (d) | 32. (a) | 33. (b) | 34. (c) | 35. (a) | 36. (a) | 37. (d) | 38. (b) | 39. (c) | 40. (a) |
| 41. (c) | 42. (d) | 43. (b) | 44. (a) | 45. (b) | 46. (c) | 47. (d) | 48. (c) | 49. (a) | 50. (d) |
| 51. (b) | 52. (c) | 53. (a) | 54. (c) | 55. (d) | 56. (b) | 57. (a) | 58. (b) | 59. (d) | 60. (a) |
| 61. (d) | 62. (a) | 63. (c) | 64. (d) | 65. (b) | 66. (a) | 67. (c) | 68. (b) | 69. (c) | 70. (d) |
| 71. (a) | 72. (b) | 73. (b) | 74. (d) | 75. (b) | 76. (a) | 77. (c) | 78. (d) | 79. (b) | 80. (b,d) |
| 81. (d) | 82. (a) | 83. (c) | 84. (c) | 85. (b) | 86. (a) | 87. (d) | 88. (c) | 89. (c) | 90. (c) |
| 91. (b) | 92. (a) | 93. (a) | 94. (c) | 95. (d) | 96. (b) | 97. (c) | 98. (a) | 99. (b) | 100. (c) |

Hints and Solutions

- (b) 'स्वतन्त्र' का विलोम परतन्त्र है क्योंकि स्वतन्त्र का अर्थ है जो दूसरे के अधीन न हो तथा परतन्त्र का अर्थ है जो दूसरे के अधीन या वश में हो। इस प्रकार ये दोनों शब्द एक-दूसरे के विपरीत या उल्टे हैं। अतः ये विलोमार्थक शब्द हैं। अन्य विकल्पों में, गुलाम-आजाद का तथा अधीन-स्वाधीन का विलोम शब्द है।
- (d) जिन शब्दों के एक से अधिक अर्थ होते हैं, उन्हें अनेकार्थी शब्द कहते हैं जैसे- 'कल'-बीता हुआ कल, आने वाला कल, मशीन, मधुर, आराम, सुख आदि। अतः विकल्प (d) सही उत्तर है।
- (d) दिए गए विकल्पों में से मीन, 'आँख' का पर्यायवाची नहीं है, क्योंकि यह मछली का पर्यायवाची है। इसके अन्य पर्यायवाची मत्स्य, मकर, शफरी, जलजीवन, झख, इष आदि हैं। अतः विकल्प (d) सही उत्तर है।
- (c) 'विचार' शब्द में 'इक' प्रत्यय जोड़ने से वैचारिक शब्द बनेगा। 'इक' प्रत्यय से बने अन्य शब्द इस प्रकार हैं- सामाजिक, वैज्ञानिक, धार्मिक, सांस्कृतिक, साहित्यिक आदि। अतः विकल्प (c) सही उत्तर है।
- (a) जो संज्ञा शब्द, गुण, भाव, दशा, अवस्था, कर्म आदि का बोध कराते हैं, उन्हें भाववाचक संज्ञा कहते हैं जैसे- भूख, थकावट, घृणा, सुन्दरता आदि। 'ईमानदार' शब्द में 'ई' प्रत्यय जोड़ने से ईमानदारी भाववाचक संज्ञा शब्द बना है। अतः विकल्प (a) सही उत्तर है।
- (c) 'रोजी-रोटी' शब्द प्रतिनिधि शब्द-युग्म है। इन दोनों शब्दों का प्रयोग काम-धन्या तथा भोजन की व्यवस्था करने के सन्दर्भ में किया जाता है। अतः विकल्प (c) सही उत्तर है।
- (a) शब्द के जिस रूप से उसके एक से अधिक होने का बोध होता है, वह बहुवचन कहलाता है जैसे- घोड़े, नदियाँ, गाड़ियाँ आदि। कुछ शब्द ऐसे होते हैं जो एकवचन तथा बहुवचन में समान रहते हैं जैसे- फल, राजा, जनता, घर, दूध आदि। अतः विकल्प (a) सही उत्तर है।
- (b) 'ढाँढस बँधाना' मुहावरे का अर्थ है-तसल्ली देना। जैसे-परीक्षा में अनुत्तीर्ण होने पर अमित ने अपने मित्र अर्जुन को ढाँढस बँधाया। अतः विकल्प (b) सही उत्तर है।

9. (c) 'आग लगने पर कुआँ खोदना' मुहावरे का अर्थ है संकट आने पर प्रतिकार का उपाय ढूँढ़ना या पहले से कोई उपाय न करना। दिए गए विकल्पों में, पहले से सावधान न होना इसी अर्थ में प्रयुक्त होता है। अतः विकल्प (c) सही उत्तर है।
10. (d) दिए गए विकल्पों में से 'सहिष्णुता' शुद्ध वर्तनी वाला शब्द है जिसका अर्थ है- सहन करना। अतः विकल्प (d) सही उत्तर है।
11. (b) अनुच्छेद में साँझ को सिंदूरी इसलिए कहा गया है, क्योंकि शाम के समय आकाश में लालिमा होती है। यह लालिमा सिंदूर के रंग के समान लगती है। अतः विकल्प (b) सही उत्तर है।
12. (c) "..... लेकिन दादी की 'संजा बिरयां' बीतती ही नहीं" का अर्थ है कि दादी की साँझ वाली बात लेखक को हमेशा याद रहती है। अतः विकल्प (c) सही उत्तर है।
13. (a) मन की आँखों को पुल का पर्याय इसलिए कहा गया है, क्योंकि वे अतीत और भविष्य को जोड़ती हैं। अतः विकल्प (a) सही उत्तर है।
14. (a) इस अनुच्छेद में 'सांध्य बेला' का अर्थ शाम का समय है। शाम का समय बहुत रमणीय होता है जिसका वर्णन लेखक ने इस अनुच्छेद में किया है। अतः विकल्प (a) सही उत्तर है।
15. (c) अनुच्छेद में लेखक ने साँझ यानी शाम के बहाने दादी, बचपन, गोधूलि से जुड़ी यादों को साझा किया है। अतः विकल्प (c) सही उत्तर है।
16. (d) With a person, pronoun 'who' is appropriately used. Hence, option (d) is the correct answer.
17. (c) Since, the subject is singular (species of man). So, with singular subject, singular verb 'is' would be used. Hence, option (c) is the correct answer.
18. (c) 'He' refers to the complete human species. Hence, article 'a' is the appropriate filler.
19. (a) Certain conjunctions come in pairs. In the sentence, not only has been used. 'Not only' always comes in pair with 'but also'. Hence, option (a) is the correct answer.
20. (c) While converting an active voice sentence into passive voice, then the verb takes the third form as the sentence has the modal verb. Therefore, 'face' become 'faced'. Hence, option (c) is the correct answer.
21. (a) The word 'exhorting' means to strongly encourage or urge someone to do something. Hence, option (a) is the correct option.
22. (b) The word 'seeks' means try to find or discover by searching or questioning. From the given options, option (b) 'avoids' (meaning to keep oneself away from finding something) is its correct antonym.
23. (a) As the sentence is in present tense, so option (a) 'think' is the correct option.
24. (c) When two subjects are connected by either or, neither ... nor, not only but also the verb is used according to the subject that is closest to the verb (Here his servant). Hence, option (c) 'has left' is the correct answer.
25. (c) In the given sentence, there is a comparison between 'sister' and 'I'. Therefore, comparative form of adjective 'stronger' would be used, since, stronger is the comparative adjective.
Hence, option (c) is the correct answer.
26. (d) One who eats everything is called omnivorous.
27. (b) In the given Direct speech, a question is asked. Hence, said would be replaced by 'asked' and the question would start with 'if'. Further, there is also a reply. Hence, 'replied' would be used with 'that'. Therefore, option (b) is its correct answer.
28. (b) According to the given passage, the Aryans were hunter who also enjoyed dancing and singing. But their favourite sport was chariot races run by horses.
29. (c) For a long time, the chief God of the Aryans was 'Indra'.
30. (b) In the given passage, it is stated that the Aryans hunted with their dogs.
31. (d) Option (a), $\frac{8}{7} + \frac{3}{8} = \frac{3}{8} + \frac{8}{7}$ it is true.
[∵ the sum of two fractions be commutative]
Option (b), $\frac{8}{7} \times \frac{3}{8} = \frac{3}{8} \times \frac{8}{7}$, it is true.
[∵ multiply of two fractions be commutative]
Option (c), $\frac{8}{7} \div \frac{3}{8} = \frac{8}{7} \times \frac{8}{3}$, it is true. $\left[\because \frac{1}{\frac{a}{b}} = \frac{b}{a} \right]$
Option (d), $\frac{8}{7} - \frac{3}{8} = \frac{3}{8} - \frac{8}{7}$, it is not true.
[∵ the difference of two fractions is not be commutative]

32. (a) The product of a non-zero rational number and its reciprocal be 1.

For example a is any non-zero rational number, then

Reciprocal number of $a = \frac{1}{a}$

$$\therefore \text{Both product} = a \times \frac{1}{a} = 1$$

33. (b) Option (a), unit digit in square of $38 = 4$

$$[\because 8 \times 8 = 64]$$

Option (b), unit digit in square of $24 = 6$

$$[\because 4 \times 4 = 16]$$

Option (c), unit digit in square of $32 = 4$

$$[\because 2 \times 2 = 4]$$

Option (d), unit digit in square of $45 = 5$

$$[\because 5 \times 5 = 25]$$

Hence, option (b) is correct answer.

34. (c) Square of $28 = (28)^2 = 784$

$$\text{Square of } 29 = (29)^2 = 841$$

\therefore Total number of natural numbers between of 784 and 841 = $841 - 784 - 1 = 56$

35. (a) Given expression = $\sqrt{\sqrt{256} + \sqrt{81}}$

$$= \sqrt{\sqrt{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2} + \sqrt{3 \times 3 \times 3 \times 3}}$$

$$= \sqrt{2 \times 2 \times 2 \times 2 + 3 \times 3} = \sqrt{16 + 9} = \sqrt{25} = \sqrt{5 \times 5} = 5$$

Alternate Method

$$\text{Given expression} = \sqrt{\sqrt{256} + \sqrt{81}}$$

$$= \sqrt{16 + 9} \quad [\because \sqrt{256} = 16, \sqrt{81} = 9]$$

$$= \sqrt{25} = 5$$

36. (a) Given, Unit digit of cube of number = 3

$$\begin{aligned} \therefore \text{Unit digit of number} &= \text{unit digit of } (3 \times 3 \times 3) \\ &= \text{unit digit of } 27 \\ &= 7 \end{aligned}$$

Hence, unit digit 3 will be cube root of 35937.

\therefore Option (a) is correct answer.

37. (d) $? = 0.04 \times 0.04 \times 0.04$

$$= \frac{4}{100} \times \frac{4}{100} \times \frac{4}{100} = \frac{64}{1000000}$$

$$= 0.000064$$

[here, the number of zero in denominator is 6, so the decimal in numerator before 6 digit from last digit]

38. (b) Prime factors of 81

$$81 = 3 \times 3 \times 3 \times 3$$

\therefore In perfect cube numbers, the group formed of three-three factors of prime factors.

\therefore To divide of 81 by 3, will be get a perfect cube number.

Hence, option (b) is correct answer.

39. (c) The standard form of

$$12300000 = 1.23 \times 10^7$$

[\because only one digit before decimal is standard form of any number and to write the sum of all zero in power of 10 and also to remove of all zero]

40. (a) $Z \times (Z^2)^{-4} = ?$

$$\Rightarrow ? = Z \times (Z)^{-8} \quad [\because (a^m)^n = (a)^{mn}]$$

$$\Rightarrow ? = (Z)^{1-8} \quad [\because a^m \cdot a^n = a^{m+n}]$$

$$\Rightarrow ? = Z^{-7}$$

41. (c) Let x days will the ration last to come five guests.

$$\begin{array}{ccc} \text{Persons} & & \text{Days} \\ 10 & \downarrow & 15 \\ 15 & x & \uparrow \end{array} \quad (\text{Reciprocal ratio})$$

$$\therefore \frac{10}{15} = \frac{x}{15} \Rightarrow x = 10$$

Hence, the ration will last in 10 days.

42. (d) Cover distance in 1 h by rickshaw = 10 km

or cover distance in 60 min by rickshaw = 10 km

$$[\because 1 \text{ h} = 60 \text{ min}]$$

\therefore Cover distance in 1 min by rickshaw = $\frac{10}{60}$ km

$$\begin{aligned} &= \frac{10 \times 1000}{60} \text{ m} \quad [\because 1 \text{ km} = 1000 \text{ m}] \\ &= \frac{500}{3} \text{ m} \end{aligned}$$

43. (b) Cost of book = ₹ 500

$$\text{GST} = 12\%$$

\therefore GST for book = 12% of ₹ 500

$$= 500 \times \frac{12}{100} = 5 \times 12 = ₹ 60$$

\therefore Pay by Nidhi = Cost of book + GST for book

$$= 500 + 60 = ₹ 560$$

44. (a) Let the number be 100.

Number to increasing of 30% in number

$$= 100 + 30\% \text{ of } 100$$

$$= 100 + 100 \times \frac{30}{100}$$

$$= 100 + 30 = 130$$

Now, number to decreasing of 30% in number

$$= 130 - 30\% \text{ of } 130$$

$$= 130 - 130 \times \frac{30}{100}$$

$$= 130 - 39 = 91$$

\therefore Decrease percentage in number will be

$$= \frac{100 - 91}{100} \times 100\%$$

$$= 9\%$$

Alternate Method

If a number $r\%$ increase and then $r\%$ decrease,
then always net decrease $= \left(\frac{r}{10}\right)^2\%$

$$\therefore \text{Net decrease percentage in number} \\ = \left(\frac{30}{10}\right)^2\% = 9\%$$

45. (b) Principal = ₹10,

Interest rate = 10% per annum

Time = 2 yr

$$\therefore \text{Compound amount} = \text{Principal} \left(1 + \frac{\text{rate}}{100}\right)^{\text{Time}} \\ = 10 \left(1 + \frac{10}{100}\right)^2 \\ = 10 \times \frac{11}{10} \times \frac{11}{10} = \frac{121}{10} = 12.10$$

$$\therefore \text{Compound interest} = \text{Compound Amount} \\ - \text{Principal} \\ = 12.10 - 10 \\ = ₹ 2.10$$

46. (c) Like term of $32z^2y^2x^2 = 8 \times 4 \times z^2 \times y^2 \times x^2$
 $= 8y^2 \times 4x^2 \times z^2$

47. (d) Irreducible factorisation of $63z^2y^3x$
 $= 3 \times 3 \times 7 \times z^2 \times y^3 \times x$
 $= 3z^2 \times 7x \times 3y^3$

48. (c) $? = \left(\frac{3a}{5} + \frac{2b}{3}\right) \left(\frac{3a}{5} - \frac{2b}{3}\right)$
 $= \left(\frac{3a}{5}\right)^2 - \left(\frac{2b}{3}\right)^2$ [$\because (a+b)(a-b) = a^2 - b^2$]
 $= \frac{9a^2}{25} - \frac{4b^2}{9}$

49. (a) $? = (2005)^2 - (1995)^2$
 $= (2005 + 1995)(2005 - 1995)$
[$\because a^2 - b^2 = (a+b)(a-b)$]
 $= 4000 \times 10$
 $= 40000$

50. (d) Area of square $= 9x^2 + 24xy + 16y^2$
 $\Rightarrow (\text{side})^2 = (3x)^2 + 2 \cdot (3x) \cdot (4y) + (4y)^2$
 $\Rightarrow (\text{side})^2 = (3x + 4y)^2$ [$\because a^2 + 2ab + b^2 = (a+b)^2$]
 $\Rightarrow \text{side} = 3x + 4y$

51. (b) $3x - 4(64 - x) = 10$
 $\Rightarrow 3x - 256 + 4x = 10 \Rightarrow 7x = 10 + 256$
 $\Rightarrow x = \frac{266}{7} \Rightarrow x = 38$

52. (c) Let present age of son be x yr.

\therefore Present age of father $= 3x$

According to the question,

Father's age after three years

$$= 2[\text{son's age after three years} + 7]$$

$$\Rightarrow 3x + 3 = 2(x + 3) + 7$$

$$\Rightarrow 3x + 3 = 2x + 6 + 7$$

$$\Rightarrow 3x - 2x = 13 - 3 \Rightarrow x = 10$$

Hence, the present age of son is 10 yr.

53. (a) Let five consecutive multiples of 6 be $6x, 6(x+1), 6(x+2), 6(x+3)$ and $6(x+4)$, respectively.

According to the question,

Sum of five consecutive multiples of 6 = 2040

$$\Rightarrow 6x + 6(x+1) + 6(x+2) + 6(x+3) + 6(x+4) = 2040$$

$$\Rightarrow 30x + 60 = 2040$$

$$\Rightarrow 30x = 2040 - 60 \Rightarrow 30x = 1980 \Rightarrow x = \frac{1980}{30} = 66$$

$$\therefore \text{The largest multiple} = 6(x+4) \\ = 6(66+4) = 6 \times 70 = 420$$

54. (c) According to the question, $y \times 13 + 15 = 54$

$$\Rightarrow 13y = 54 - 15 \Rightarrow 13y = 39 \Rightarrow y = \frac{39}{13} \Rightarrow y = 3$$

55. (d) Let four angles of a quadrilateral be $3x, 4x, 5x$ and $6x$ respectively.

\therefore Sum of four angles of a quadrilateral $= 360^\circ$

$$\Rightarrow 3x + 4x + 5x + 6x = 360^\circ$$

$$\Rightarrow 18x = 360^\circ$$

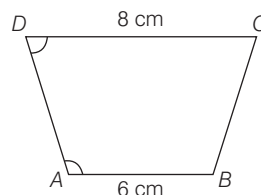
$$\Rightarrow x = \frac{360^\circ}{18} = 20^\circ$$

$$\therefore \text{The largest angle} = 6x = 6 \times 20^\circ = 120^\circ$$

56. (b) Given, in quadrilateral ABCD

AB = 6 cm, CD = 8 cm

and $\angle A + \angle D = 180^\circ$



$$\therefore \angle A + \angle D = 180^\circ$$

$$\therefore AB \parallel CD$$

and

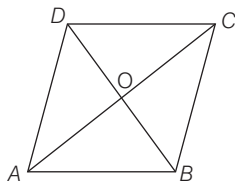
$$AB = 6 \text{ cm,}$$

$$CD = 8 \text{ cm}$$

\therefore ABCD will not be a square, parallelogram and rhombus.

Hence, ABCD is a trapezium.

57. (a) Let in rhombus ABCD, diagonal BD is equal of side.



Then, in $\triangle ABD$, $AB = AD = BD$

$\therefore \triangle ABD$ is an equilateral triangle.

Then, $\angle DBA = 60^\circ$

and $\angle ABC = 2 \times \angle DBA = 2 \times 60^\circ = 120^\circ$

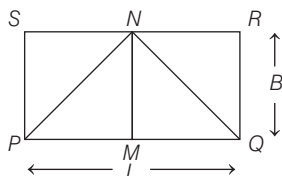
In $\triangle ABC$, side AC will be the largest, then $\angle ABC$ will be the largest.

Hence, the largest angle $= 120^\circ$

58. (b) Given, the diagonals of a rhombus are 5 cm and 7 cm.

$$\begin{aligned} \therefore \text{Area of rhombus} &= \frac{1}{2} \times \text{product of diagonals} \\ &= \frac{1}{2} \times 5 \times 7 = \frac{35}{2} = 17.5 \text{ cm}^2 \end{aligned}$$

59. (d) Given, length of rectangle = L unit
breadth = B unit



In rectangle PQRS,

$$PQ = SR = L \text{ and } QR = PS = B$$

In triangle to be fitted into rectangle PQRS,

$$\text{Base} = PQ \text{ or } SR = L \text{ unit}$$

and height $= NM = PS = QR = B \text{ unit}$

$$\begin{aligned} \therefore \text{Area of the largest triangle} &= \frac{1}{2} \times \text{base} \times \text{height} \\ &= \frac{1}{2} \times L \times B = \frac{LB}{2} \end{aligned}$$

60. (a) Given, length of rectangular field = 40 m
Breadth = 18 m

Let height of water level in field be h m.

\therefore Volume of water in field

$$= \text{length} \times \text{breadth} \times \text{height}$$

$$\Rightarrow 360 = 40 \times 18 \times h$$

$$\Rightarrow h = \frac{360}{40 \times 18} = \frac{1}{2} \text{ m}$$

$$\Rightarrow h = 0.5 \text{ m}$$

61. (d) Let side of cube be a, then

$$\text{volume of first cube} = a^3$$

New side of cube to increased to three times of side of cube $= 3a$

$$\therefore \text{New volume of cube} = (3a)^3$$

$$= 27a^3$$

$$= 27 \times \text{volume of first cube}$$

Hence, volume will be 27 times of first cube.

62. (a) Given, the ratio of radii of two Cylinders is 1 : 2
and heights is 2 : 5.

Let radii of cylinders are r_1, r_2 and heights h_1, h_2 , then

$$\frac{r_1}{r_2} = \frac{1}{2} \text{ and } \frac{h_1}{h_2} = \frac{2}{5}$$

$$\begin{aligned} \therefore \frac{\text{Volume of first cylinder}}{\text{Volume of second cylinder}} &= \frac{\pi r_1^2 h_1}{\pi r_2^2 h_2} \\ &= \left(\frac{r_1}{r_2}\right)^2 \times \left(\frac{h_1}{h_2}\right) \\ &= \left(\frac{1}{2}\right)^2 \times \frac{2}{5} = \frac{1}{4} \times \frac{2}{5} = \frac{1}{10} \end{aligned}$$

Hence, the ratio of volumes of cylinders is 1 : 10.

63. (c) Given, deep of well, $h = 7 \text{ m}$

Diameter of well, $d = 2 \text{ m}$

$$\therefore \text{Radius of well, } r = \frac{d}{2} = \frac{2}{2} = 1 \text{ m}$$

$$\begin{aligned} \therefore \text{Volume of mud for dug the well} &= \text{Volume of well} \\ &= \pi r^2 h \end{aligned}$$

[\because the shape of a well is same as a cylinder]

$$= \frac{22}{7} \times (1)^2 \times 7 = 22 \text{ cubic metres}$$

64. (d) Total number of possible outcomes of a throw of a dice = 6

$$\text{Total number of possible outcomes of two throw of a dice} = 6 \times 6 = 36$$

The sum of numbers to come on throw two times of a dice will be equal in two-two position i.e (2, 3) or (3, 2).

$$\therefore \text{Required possible outcomes} = \frac{1}{2} \times 36 = 18$$

65. (b) Given data,

$$-6, -8, 3, 2, 1, 4, 2, 5$$

Ascending order of data

$$-8, -6, 1, 2, 2, 3, 4, 5$$

$$\therefore \text{Range} = 5 - (-8)$$

[\because range = value of the largest data – value of the smallest data]

$$= 5 + 8 = 13$$

66. (a) *Lactobacillus* is a rod-shaped and gram positive bacteria. It mainly grows in milk and convert it into curd. During its growth, it utilises milk sugar called lactose and convert it into lactic acid through the process of fermentation. Thus, it is commonly known as Lactic Acid Bacteria (LAB).
67. (c) Seed drill is used in sowing. It is an agriculture equipment that sows the seeds precisely in the soil at proper depth and distance. It improves the ratio of crop yield.
68. (b) Influenza, commonly known as 'flu' is an infectious disease caused by *Orthomyxo virus* in human beings. The most common symptoms this disease include high fever, sore throat, sneezing, cough, headaches, fatigue, muscles aches, etc. Amantadine is used for the treatment of influenza.
69. (c) Smallpox vaccine was discovered by Edward Jenner in 1796. Smallpox is caused by infection of *Variola* virus. This virus is transmitted directly from person to person through airborne respiratory droplets produced by coughs and sneezes, saliva, skin to skin contact, etc. symptoms first appear 10 to 14 days after infection. The most common symptoms include fever, headache, severe fatigue, vomiting, rashes, blisters, etc.
70. (d) Bakelite is a thermosetting plastic. Thermosetting plastic is a polymer irreversible becomes rigid when heated. Due to its high resistance to electricity and heat, is used in automotive components and industrial applications like kitchenware products.
71. (a) Sodium react vigorously with cold water and produce sodium hydroxide and hydrogen. The reaction is exothermic.
- $$2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$$
72. (b) Copper is a good conductor, it is used for making electric wires. Copper is a soft malleable and ductile metal with very high thermal and electrical conductivity.
73. (b) Lubricating oil is not a constituent of petroleum. It is used to reduce the friction, heat and wear between mechanical components that are in contact with each other, and remaining other are constituent of petroleum like paraffin wax, petrol, coke.
74. (d) Rayon is not a natural resource. Rayon is a man-made redeveloped cellulose fiber. It is made from natural sources such as wood and agricultural products. Rayon fiber is a synthetic textile material.
75. (b) Coal-tar is black thick liquid with unpleasant smell. It is by-product of the production of coke and coal gas from coal. It is distillation yield compounds, as benzene, anthracene and phenol.
76. (a) Endemic species are those species of plants and animals which are only found exclusively in a specific habitat. For example-Kangaroos are only found in Australia and Asiatic lions also known as the Indian lions are only found in Gir National Park of Gujarat in India.
77. (c) The environmental impact of clearing large patches of forests for cultivation of crops is soil erosion. It is the removal of top fertile layer of the soil, which most amount of organic nutrient rich materials. When trees are cut down, the roots of plants are bind to the soil particles and prevent them from being carried away by strong wind or water.
78. (d) The leaves are green due to the presence of chlorophyll. It is a green colour pigment found in the thylakoid membranes of the chloroplast in the leaves. It absorbs deep blue and red light and reflects green colour. It absorbs the light energy from the sun, which is important for plants to make their food through photosynthesis.
79. (b) Cell membrane or plasma membrane is found in cells of plants, animals as well as bacteria. It is outermost living, and delicate covering of cell. It separates the contents of the cell from its external environment. It helps to maintain the shape of the cell and acts as a mechanical barrier.
80. (b, d) Hen is an oviparous bird which lays eggs. In all birds, internal fertilisation takes place. Thus, the development of embryo occurs outside the body. Hence, option (b) and (d) both are correct.
81. (d) *Amoeba* is an unicellular protozoan organism, in which the reproduction mainly takes place by binary fission in favourable conditions. It is a mode of asexual reproduction. In this process the parent cell divides into two daughter cells of equal size. These are genetically identical to each other.
82. (a) Insufficient production of thyroxine leads to incomplete development of tadpole larva into adult (metamorphism). Iodine is required for the production of thyroxine. If the water body in which larva is present lacks sufficient iodine, then it will also affect the metamorphism of tadpole.

83. (c) At the onset of puberty in males, (sex hormone) testosterone is released by testes. It helps in the production of sperms in testes and development of secondary sexual characters like deeper voices, growth of facial hair, growth in height, etc.
84. (c) A gas filled balloon moves up because upward force on the balloon is more than gravitational force, only then the balloon will be able to go up against this force.
85. (b) Two thermocol balls held close to each other move away because of electrostatic force. The balls have similar charges. They move away due to repulsion between similar charges.
86. (a) Wearing of cartilage in the body increases friction between bones. It is a connective tissue, which reduces friction and acts as a cushion between joints and helps to provide support and flexibility to the body. When it is present in nose, ear, trachea and larynx, it does not effect friction.
87. (d) The handle of a cricket bat is usually rough to increase friction to have a better grip, therefore it doesn't slip out in the hand of the cricketer while batting.
88. (c) If we increase the vibration in an object, the time period will decrease in same proportion. Since, a time period is the time taken for one complete cycle of vibration, i.e.
- $$\text{Time period} = \frac{1}{\text{Frequency}}$$
- Where, frequency is the number of vibrations that occur per second.
89. (c) Ultrasound has frequency of vibration above 20000 Hz. It cannot be heard by human being. Dogs can hear ultrasound of frequency upto 50000 Hz.
90. (c) Iron is painted to save it from corrosion. After painting, iron surface does not come in contact with moisture and air, which causes corrosion.
91. (b) Vegetable oil is not good conductor of electricity because it does not contain ions. While lemon juice contains citric ion which conducts electricity. Tap water solution is a good conductor of electricity due to presence of dissolved salts in it. Vinegar when dissolved in water, it breaks into acetate ions which conduct electricity.
92. (a) Earthquake can cause Tsunami, Floods and Landslide. When the lithospheric plates moves, the surface of the earth vibrates. The vibrations can travel all round the earth. These vibrations are called earthquake.
93. (a) When you rub the back of a plastic pen in your hair and bring it near a small piece of paper, it attracts paper due to electrostatic force. After rubbing, when you bring the pen near a small piece of paper, the excess electrons on pen attract charges on the piece of paper and when positive and negative charges come close, they attract each other and piece of paper sticks to the pen.
94. (c) Distance of object to plane mirror = 5 cm
Then, the distance of image to plane mirror = 5 cm
∴ The distance of object to image
= distance of object to plane mirror
+ distance of image to plane mirror
= (5 + 5) cm = 10 cm
So distance of object to image = 10 cm.
95. (d) A ray of light can be reflected infinite times by two plane mirrors placed parallel and facing each other because each reflected ray would be the incident ray for the other mirror.
96. (b) Planet Venus is also known as morning star or an evening star because sometimes it appears in the eastern sky before sunrise. Sometimes, it appears in Western sky just after sunset. It is the brightest planet in the night sky.
97. (c) Light year is the unit of measurement of distance. One light year is equal to the distance travelled by light in one year. Therefore, if a star is fifteen light year away from earth, then the light emitted by it today will be seen after 15 years.
98. (a) Tree plantation month as July/August every year is known as Van Mahotsav. It is a special program of afforestation that takes place in various state of India during the first week July/August of monsoon.
99. (b) Sulphur dioxide (SO₂) and nitrogen oxide (NO₂) are responsible for acid rain. Acid rain results when sulphur dioxide (SO₂) and nitrogen oxide (NO₂) are emitted into the atmosphere and transported by wind and air currents. SO₂ and NO₂ react with water, oxygen and other chemicals to form sulphuric acid and nitric acids, then mix with water and other materials before falling to the ground.
100. (c) PVC, polythene, bakelite are synthetic substances. **PVC** is a synthetic leather, PVC leather fabric is made by combining polyvinylchloride and lubricants and then applying to a base material. **Polythene** is a type of plastic made into thin sheets or bags. **Bakelite** due to its high resistance to electricity and heat is used in industrial applications.