JAWAHAR NAVODAYA VIDYALAYA

Entrance Exam (Class 6th)

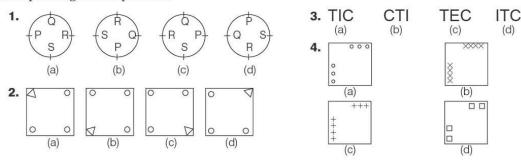
Solved Paper 2021

Exam held on 11/08/2021

SECTION I: Mental Ability Test

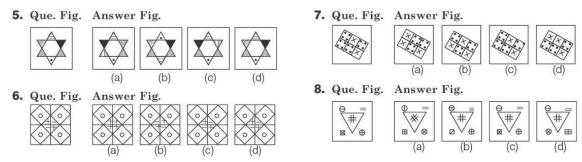
Part I

Directions In Question Nos. 1 to 4 four figures (a), (b), (c) and (d) have been given in each question. Of these four figures, three figures are similar in some way and one figure is different. Select the figure which is different. Darken the circle for answer in the OMR Answer Sheet against the number corresponding to the question.



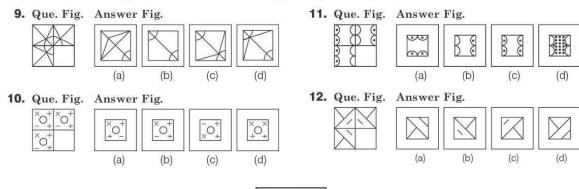
Part II

Directions In Question Nos. 5 to 8, a question figure is given on the left side and four answer figures marked (a), (b), (c) and (d) are given on the right side. Select the answer figure which is exactly the same as the question figure and darken the circle in the OMR Answer Sheet against the number corresponding to the question.



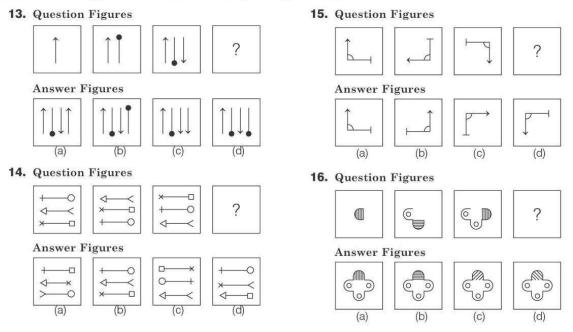
Part III

Directions In Question Nos. 9 to 12, there is a question figure on the left side, a part of which is missing. Observe the answer figure (a), (b), (c) and (d) on the right side and find out the answer figure which, without changing the direction, fits in the missing part of the question figure in order to complete the pattern in the question figure. Indicate your answer by darkening the circle in the OMR Answer Sheet against the number corresponding to the question.



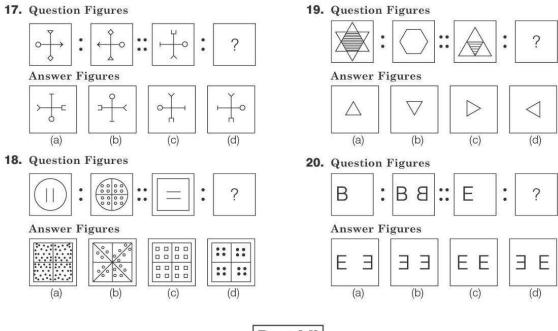
Part IV

Directions In Question Nos. 13 to 16, there are three question figures on the left side and the space for the fourth figure is left blank. The question figures are in a series. Find out one figure from among the answer figures given on the right side which occupies the blank space for the fourth figure on the left side and completes the series. Indicate your answer by darkening the circle in the OMR Answer Sheet against the number corresponding to the question.



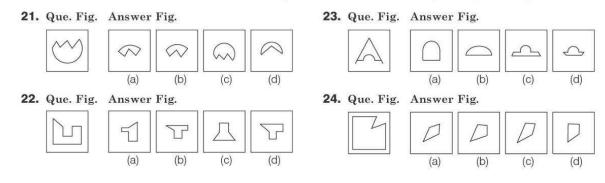
Part V

Directions In Question Nos. 17 to 20, there are two sets of two question figures each. The second set has an interrogation mark (?). There exists a relationship between the first two question figures. Similar relationship should exist between the third and the fourth question figure. Select one of the answer figures which replaces the mark of interrogation. Darken the circle in the OMR Answer Sheet against the number corresponding to the question.



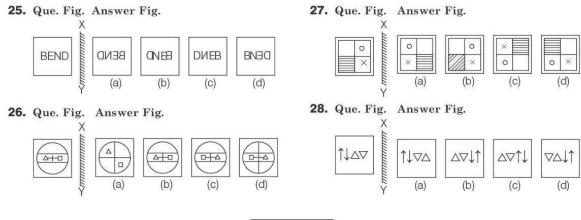
Part VI

Directions In Question Nos. 21 to 24, one part of a geometrical figure (Triangle, Square, Circle) is on the left side as question figure and the other one is among the four answer figures (a), (b), (c) and (d) on the right side. Find the figure on the right side that completes the geometrical figure and darken the circle in the OMR Answer Sheet against the number corresponding to the question.



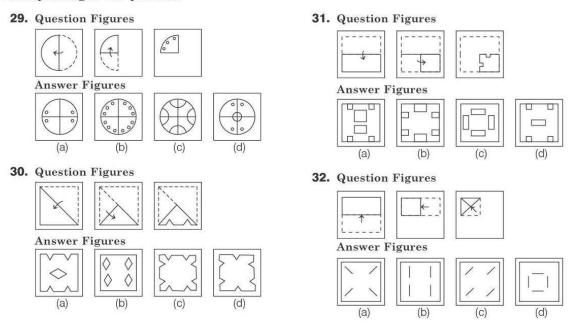
Part VII

Directions In Question Nos. 25 to 28, there is a question figure on the left side and four answer figures marked (a), (b), (c) and (d) are given on the right side. Select the answer figure which is exactly the mirror image of the question figure when the mirror is held at XY. Indicate your answer by darkening the circle in the OMR Answer Sheet against the number corresponding to the question.



Part VIII

Directions In Question Nos. 29 to 32, a piece of paper is folded and punched as shown in question figures on the left side and four answer figures marked (a), (b), (c) and (d) are given on the right side. Select the answer figure which indicates how the paper will appear when opened (unfolded). Indicate your answer by darkening the circle in the OMR Answer Sheet against the number corresponding to the question.



Part IX

Directions In Question Nos. 33 to 36, a question figure is given on the left side and four answer figures marked (a), (b), (c) and (d) are given on the right side. Select the answer figure which can be formed from the cut-out pieces given in the question figure. Darken the circle in the OMR Answer Sheet against the number corresponding to the question.

33. Que. Fig. Answer Fig.











35. Que. Fig. Answer Fig.









Answer Fig. **34.** Que. Fig.



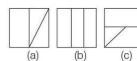






36. Que. Fig. Answer Fig.







Directions In Question Nos. 37 to 40, a question figure is given on the left side and four answer figures marked (a), (b), (c) and (d) are given on the right side. Select the answer figure in which the question figure is hidden/embedded. Darken the circle in the OMR Answer Sheet against the number corresponding to the question.

37. Que. Fig. Answer Fig.











39. Que. Fig. Answer Fig.









38. Que. Fig. Answer Fig.









40. Que. Fig. Answer Fig.











SECTION II: Arithmetic Test

Directions (Q. Nos. 41-60) For every question, four probable answers as (a), (b), (c) and (d) are given. Only one out of these is correct. Choose the correct answer and darken the circle in the OMR Answer Sheet against the number corresponding to the question.

- **41.** Given $154 \times 18 = 2772$, then what is the value of 27.72 ÷ 1.8?
 - (a) 1.54
 - (b) 15.4
 - (c) 154
 - (d) 1540

- **42.** If the two perpendicular sides of right angle triangle are 5 cm and 12 cm, then the perimeter of triangle is
 - (a) 13 cm
- (b) 17 cm
- (c) 27 cm
- (d) 30 cm

3.	If $\frac{x}{25} = \frac{196}{x}$, then		51.	(a) 10 (c) 26	first four prime numbers (b) 11 (d) 17			
4.		(b) 70 (d) 42 double itself in 16 yr at Annual rate will be	52.	Simplify the follow $3(13+6\times7) \div (112)$ (a) 0 (c) 2				
5.	expression.	(b) $6\frac{1}{4}\%$ (d) 16% mate value of the following	53.	The greatest num	aber that divides 270 an emainder in each case is (b) 22 (d) 36			
6.	(a) 17522 (c) 17821	×51 + (632 ÷ 31) (b) 17520 (d) 17521 ne children are boys and the	54.	Which number is number 4, 8 and 6 (a) 396 (c) 696	a multiple of all the thre ?? (b) 664 (d) 5432			
	0	800. The number of boys is (b) 1000 (d) 2000	55.	reached Ajmer at 2	om Delhi at 8 : 15 am an 2:30 pm. The time taken b Ajmer from Delhi is			
	24 innings. How the 25th inning to (a) 1 (c) 35	n average of 28 runs in many runs must he score in o make his average 29? (b) 24 (d) 53	56.	(a) 10 h 45 min (c) 6 h 30 min The decimal equiv (a) 12.625	(b) 12.6025			
3.	match time is tak many minutes do (a) 5 min	or half an hour. $\frac{1}{10}$ of the en up for time out. For how es the time out last? (b) 3 min	57.	(c) 12.0625 (d) 12.0525 On simplification, the approximate value $3.003 \times 15 + 0.0123 + 5.002575$ is (a) 48 (b) 49 (c) 50 (d) 51				
9.	(c) 6 min A buys a radio at it 20% more than	(d) 4 min $\frac{3}{4}$ of its mark price and sells its marked price. What is	58.	The sum of 7.7, 7.6 (a) 98.7807 (c) 98.7877	07, 7.007 and 77.0077 is (b) 98.7847 (d) 98.7777			
	its gain per cent? (a) 30 (c) 60	(b) 45 (d) 75	59.		etween 6 digits smaller its greatest number is (b) 9000 (d) 900001			
J.	An article is purch ₹ 8400. The profit (a) 8% (c) 12%	nased for ₹ 7500 and sold for percentage is (b) 10% (d)10 ⁵ / ₇ %	60.		(d) 900001 akh two thousand is (b) 200200 (d) 22000			

SECTION III : Language Test

Directions (Q. Nos. 61-80) There are four passages in this Section. Each passage is followed by five questions. Read each passage carefully and answer the questions that follow. For each question, four probable answers as (a), (b), (c) and (d) are given. Only one out of these is correct. Choose the correct answer and darken the circle in the OMR Answer Sheet against the number corresponding to the question.

Passage 1

Deepak was excited. He was going on a picnic on Sunday with his uncle and cousins Preet and Ria. He packed his backpack with his swimming kit, snacks and playthings. They started at 6 a.m. in the morning. It was a long drive and they reached the picnic spot at 9 a.m. It was a farmhouse in a village. They walked around the village to see the paddy fields and learnt how the rice is grown. They climbed trees and plucked mangoes and guavas. In the afternoon they sat under a tree and had lunch. When uncle said it was time to guavas in the afternoon they sat under a tree and had lunch. When uncle said it was time to return home they wanted to stay longer because they liked the village so much.

61.	The word 'excited' means	63.	Deepak went or	a picnic with his			
	(a) confident (b) very happy		(a) parents (c) friends	(b) uncle and cousins(d) sister			
	(c) busy (d) depressed	64.	The picnic spot was in a				
62.	Deepak and his cousins		(a) park (c) village	(b) beach(d) swimming pool			
	(a) felt bored in the village(b) enjoyed the picnic	65.	Uncle showed Deepak how				
	(c) wanted to return home (d) could not climb trees		(a) we eat (c) to drive	(b) to swim(d) rice is grown			

Passage 2

Have you played the Tug of War. It is an interesting game. To play this game, we need some open space, a long and strong rope and two teams of players. The game is interesting only if both the teams are strong. A line is drawn between both the teams. The team which gets pulled and made to cross the line in the middle, the team of the game, lost the game. The strongest member of the team, standing at the end of the rope and the team pull the rope in a united manner. The play ground should be cleaned of stones. Otherwise it may take some injuries.

	Tug of War is	68.	The end of the rope is held by the member of the team.					
	(b) a rope (c) a game		(a) tallest(c) strongest	(b) shortest(d) youngest				
	(d) a fight In 'Tug of War' we do (a) boxing (b) hiding	69.	The team which is pulled across the line the middle is					
	(c) rope pulling (d) batting and bowling	70.	The word 'united' means (a) together (b) fight (c) pull (d) winni					

Passage-3

There are only two simple rules to follow to lose weight or to maintain a healthy weight. They are to eat a balanced diet with less fat and sugar and to exercise more. You don't have to starve to lose weight. If you eat less sugar, cakes, biscuits and eat more fruits and vegetables and drink plenty of water, you will lose weight and be healthier. Go for a walk or cycling every day. Be more active instead of watching television or playing video games.

- 71. How can we remain healthy?
 - (a) By eating biscuits only
 - (b) By doing exercise only
 - (c) By eating a balanced diet and doing exercise
 - (d) By eating more fruits
- 72. What do we have to eat more to lose weight?
 - (a) Sugar and cakes
 - (b) Fruits and vegetables
 - (c) Biscuits and sugar
 - (d) Biscuits and fruits

- **73.** What do we have to drink in plenty to remain healthier?
 - (a) Colas
- (b) Fruit juice
- (c) Water (d) Vegetable juice
- 74. Which is a good exercise for all?
 - (a) Walking and cycling (b) Kite flying
 - (c) Playing video games (d) Watching television
- **75.** Which word is opposite in meaning to the word, 'active'?
 - (a) dull
- (b) inactive
- (c) interested
- (d) energetic

Passage-4

Autumn is the season that comes between summer and winter. There are many things are change in this beautiful season. Days become shorter. Leaves of trees turn from green to lively red, yellow and orange. Infact trees need sunlight to keep their leaves green. Without sunlight leaves turn pale. The grass is no longer blanketed with dew but with frost almost every morning, as temperatures reach the freezing point. Animals start storing up a food supply to last through the long winter months. These changes occur as we adjust from the heat of the summer to the chill of the winter.

- **76.** Autumn occurs between summer and
 - (a) January
- (b) Spring
- (c) winter
- (d) solstice
- **77.** Which of the following changes may occur during autumn?
 - (a) Days becomes shorter
 - (b) It becomes very hot
 - (c) Days become longer
 - (d) There is more sunlight
- **78.** Leaves turn pale during autumn because they

- (a) don't get enough oxygen
- (b) don't get enough light
- (c) don't get enough water
- (d) store too much oxygen
- **79.** What do animals begin to do to prepare for the end of autumn?
 - (a) Store food
- (b) Eat less
- (c) Shed fur
- (d) Turn colours
- 80. Another word for 'blanketed' is
 - (a) grass (c) covered
- (b) woollen (d) grew up
- Answers

1	(a)	2	(d)	3	(c)	4	(c)	5	(d)	6	(c)	7	(c)	8	(c)	9	(d)	10	(b)
11	(b)	12	(c)	13	(b)	14	(b)	15	(c)	16	(b)	17	(c)	18	(c)	19	(b)	20	(a)
21	(b)	22	(d)	23	(c)	24	(b)	25	(a)	26	(c)	27	(a)	28	(d)	29	(b)	30	(c)
31	(c)	32	(a)	33	(a)	34	(b)	35	(a)	36	(a)	37	(a)	38	(a)	39	(a)	40	(b)
41	(b)	42	(d)	43	(b)	44	(b)	45	(c)	46	(c)	47	(d)	48	(b)	49	(c)	50	(c)
51	(d)	52	(b)	53	(a)	54	(c)	55	(b)	56	(c)	57	(c)	58	(b)	59	(c)	60	(c)
61	(b)	62	(b)	63	(b)	64	(c)	65	(d)	66	(c)	67	(c)	68	(c)	69	(b)	70	(a)
71	(c)	72	(b)	73	(c)	74	(a)	75	(b)	76	(c)	77	(a)	78	(b)	79	(a)	80	(c)

Hints and Solutions

- **1.** (a) Except option (a), in all other options *P*, *Q*, *R* and *S* moving in anti-clockwise direction but in option (a) they are moving in clockwise direction.
- (d) Except option (d), in all other options figure of (△) are in same direction.
- **3.** (c) Except option (c), in all the other options, letters T, I and C are used but in option (c) letter E is used in place of letter I.
- **4.** (c) Except option (c), in all the other options figures are equal in the both groups.
- **5.** (d) Answer figure (d) is exactly the same as the question figure.





6. (c) Answer figure (c) is exactly the same as the question figure.





7. (c) Answer figure (c) is exactly the same as the question figure.





8. (c) Answer figure (c) is exactly the same as the question figure.





9. (d) Answer figure (d) will complete the pattern of the question figure.



10. (b) Answer figure (b) will complete the pattern of the question figure.



11. (b) Answer figure (b) will complete the pattern of the question figure.



12. (c) Answer figure (c) will complete the pattern of the question figure.



13. (b) In each step, figure (↑) and (↓) appears alternatively and rotates 180°.

Hence, answer figure (b) will complete the given series.



14. (b) From question figure first to second, second to third and third to answer figure, first figure becomes last figure and the remaining figures moves upside.



Hence, answer figure (b) will complete the given series.

 (c) In each step, the given figure is rotating 90° in anti-clockwise direction.

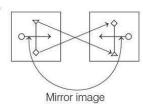


Hence, answer figure (c) will complete the given series.

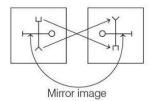


Hence, answer figure (b) will complete the given series.

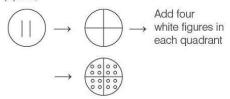
17. (c) As,



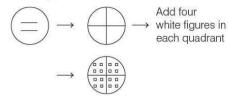
Similarly,



18. (c) As,



Similarly,



19. (b) As, from first figure to the second, shaded portion (becomes ().
Similarly, from third figure to the answer figure,

shaded portion (\triangledown) becomes (∇).

20. (a) As, from first figure to second, mirror image appears



Similarly, from third figure to answer figure, mirror image appears



21. (b) Answer figure (b) will complete the incomplete circle given in question figure.



22. (d) Answer figure (d) will complete the incomplete square given in question figure.



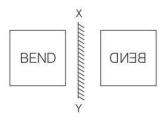
23. (c) Answer figure (c) will complete the incomplete triangle given in question figure.



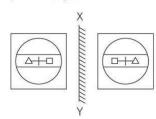
24. (b) Answer figure (b) will complete the incomplete square given in question figure.



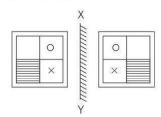
25. (a) Answer figure (a) is the correct mirror image of the question figure.



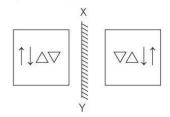
26. (c) Answer figure (c) is the correct mirror image of the question figure.



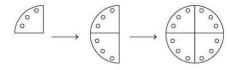
27. (a) Answer figure (a) is the correct mirror image of the question figure.



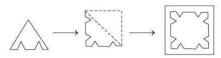
28. (d) Answer figure (d) is the correct mirror image of the question figure.



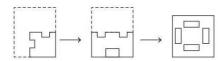
29. (b) After unfolding the folded and punched sheet it will look like as answer figure (b).



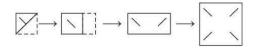
30. (c) After unfolding the folded and punched sheet, it will look like as answer figure (c).



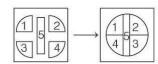
31. (c) After unfolding the folded and punched sheet it will look like as answer figure (c).



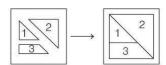
32. (a) After unfolding the folded and punched sheet, it will look like as answer figure (a).



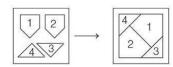
33. (a) Answer figure (a) can be formed from the cut-out pieces given in question figure.



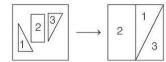
34. (b) Answer figure (b) can be formed from the cut-out pieces given in question figure.



35. (a) Answer figure (a) can be formed from the cut-out pieces given in question figure.



36. (a) Answer figure (a) can be formed from the cut-out process given in question figure.



37. (a) The question figure is embedded in answer figure (a).



38. (a) The question figure is embedded in answer figure (a).



39. (a) The question figure is embedded in answer figure (a).



40. (b) The question figure is embedded in answer figure (b).



41. (b) $154 \times 18 = 2772$

$$\Rightarrow 154 = \frac{2772}{18}$$

$$\Rightarrow 154 = \frac{27.72 \times 100}{1.8 \times 10}$$

$$\Rightarrow 154 = \frac{27.72}{1.8} \times 10$$

$$\Rightarrow \frac{27.72}{1.8} = \frac{154}{10}$$

- **42.** (d) Perpendicular sides of right angle triangle = 5 cm and 12 cm
 - ...Hypotenuse of right angle triangle

$$= \sqrt{(5)^2 + (12)^2}$$
$$= \sqrt{25 + 144}$$
$$= \sqrt{169} = 13 \text{ cm}$$

.. Perimeter of triangle = sum of all three sides

$$= 5 + 12 + 13$$

= 30 cm

43. (b) Given, $\frac{x}{25} = \frac{196}{x}$

$$\Rightarrow$$
 $x^2 = 196 \times 25$

$$\Rightarrow$$
 $x = \sqrt{196 \times 25}$

$$\Rightarrow \qquad x = 14 \times 5$$

$$= 70$$

44. (b) Let, principal = P and rate of interest = R%

Time =
$$16 yr$$
,

$$Amount = 2P$$

$$\therefore SI = 2P - P \qquad [\because SI = A - P]$$

$$\Rightarrow \frac{PRT}{100} = P$$

$$\Rightarrow \frac{R \times 16}{100} = 1$$

$$\therefore R = \frac{100}{16} = \frac{25}{4} = 6\frac{1}{4}\%$$

- **45.** (c) $349 \times 51 + (632 \div 31) = 17799 + 2.3$ = 17821.3 ≈ 17821
- **46.** (c) Let, total number of students = x

∴ Number of boys =
$$\frac{3x}{5}$$

Number of girls =
$$x - \frac{3x}{5}$$

$$\Rightarrow 800 = \frac{2x}{5}$$

$$\Rightarrow \qquad \qquad x = \frac{800 \times 5}{2} = 2000$$

$$\therefore \text{Number of boys} = \frac{3}{5} \times 2000$$
$$= 1200$$

47. (d) Total runs of 24 innings = 24×28

Let the runs scored in 25th inning = x

According to the question,

$$\frac{672 + x}{25} = 29$$

$$\Rightarrow 672 + x = 725$$

$$\Rightarrow x = 725 - 672$$

$$\therefore x = 53$$

48. (b) Time for time-out = $\frac{1}{10} \times \text{half hour}$ = $\frac{1}{10} \times 30 \quad \left[\because \frac{1}{2} \text{ half} = 30 \text{ min}\right]$

$$=3 \, \text{min}$$

- **49.** (c) Let Market Price (MP) of radio = x \therefore Selling Price (SP) of radio = $\frac{3x}{4}$
 - Selling Price (SP) of radio = $x \times \frac{120}{100} = \frac{6x}{5}$

∴Gain per cent =
$$\frac{SP - CP}{CP} \times 100$$

= $\frac{\frac{6x}{5} - \frac{3x}{4}}{\frac{3}{4}x} \times 100$
= $\frac{24 - 15}{15} \times 100$
= $\frac{60\%}{15}$

50. (c) Cost Price (CP) of article = ₹ 7500 Selling Price (SP) of article = ₹ 8400

∴ Profit per cent =
$$\frac{SP - CP}{CP} \times 100$$

= $\frac{8400 - 7500}{7500} \times 100$
= $\frac{900}{75} = 12\%$

51. (d) The sum of first four prime numbers = 2 + 3 + 5 + 7 = 17

52. (b)
$$3(13 + 6 \times 7) \div (11 \times 3) - (12 - 4 \times 2)$$

= $3(13 + 42) \div (33) - (12 - 8)$
= $\frac{3 \times 55}{33} - 4$
= $5 - 4 = 1$

53. (a) Required number

= HCF of
$$(270 - 6)$$
 and $(426 - 6)$
= HCF of 264 and 420
 $264 = 2 \times 2 \times 2 \times 3 \times 11$
 $420 = 2 \times 2 \times 3 \times 5 \times 7$

HCF of 264 and $420 = 2 \times 2 \times 3 = 12$

.. Required number = 12

54. (c) $4=2\times2$, $8=2\times2\times2$, $6=2\times3$ LCM of 4, 8 and $6=2\times2\times2\times3=24$

∴ Required number = $n \times LCM$

{Here n is a positive integer} = $29 \times 24 = 696$

55. (b) Time taken by the train to reach Ajmer from Delhi

[: Time 8: 15 am to 12: 00 pm is 3 h 45 min]

56. (c)
$$12\frac{1}{16} = \frac{193}{16} = 12.0625$$

57. (c) $3.003 \times 15 + 0.0123 + 5.002575$ = 45.045 + 0.0123 + 5.002575= 50.059875= 50

58. (b) The sum of 7.7, 7.07; 7.007 and 77.0077 = 7.7 + 7.07 + 7.007 + 77.0077 = 98.7847

59. (c) 6-digits smallest number = 100000 4-digits greatest number = 9999 ∴Required difference = 100000 − 9999 = 90001

- **60.** (c) Two lakh two thousand = 202000
- 61. (b) The word 'excited' means very happy.
- **62.** (b) Deepak and his cousins enjoyed the picnic.
- **63.** (b) Deepak went on a picnic with his uncle and cousins Preet and Ria.
- 64. (c) The picnic was in a village.
- 65. (d) Uncle showed Deepak how rice is grown.

- 66. (c) Tug of War is a game.
- 67. (c) In 'Tug of War', we do rope pulling.
- **68.** (c) The end of the rope is held by the strongest member of the team.
- **69.** (b) The team which is pulled across the line in the middle, lost the game.
- 70. (a) The word 'united' means together.
- **71.** (c) We can remain healthy by eating a balanced diet and doing exercises.
- **72.** (b) We have to eat more fruits and vegetables to lose weight.
- **73.** (c) We have to drink in plenty of water to remain healthier.

- **74.** (a) Walking and cycling is a good exercise for all.
- **75.** (b) The opposite meaning word of the given word 'active' is 'inactive'.
- 76. (c) Autumns occur between summer and winter.
- 77. (a) During Autumn, days become shorter.
- **78.** (b) Leaves turn pale during autumn because they don't get enough light of Sun.
- **79.** (a) Animals begin to store food for the end of autumn.
- **80.** (c) Blanketed means to cover something completely with a thick layer. So, 'covered with' is its correct meaning.