



JAWAHAR NAVODAYA VIDYALAYA

ENTRANCE EXAM 2023

Conducted by Navodaya
Vidyalaya Samiti

Complete Coverage...

- ✓ Mental Ability Test
- ✓ Arithmetic Test
- ✓ Language Test

with Solved Paper 2022

Exam Held on 30/04/2022

**Class
6**

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Complied & Edited by
Arihant 'Expert Team'



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Distribution of Marks and Examination Time

The selection examination is of two hours. The question paper is divided into three parts and all the questions are of objective type. For 80 questions, the full marks allotted are 100.

Section	Questions	Marks
Mental Ability Test	40	50
Arithmetic Test	20	25
Language Ability Test	20	25
Total	80	100

Jawahar Navodaya Vidyalaya
Class 6

TREND ANALYSIS

MENTAL ABILITY TEST

SN	Chapter Name	2022	2021	2020	2019	2018	2017
1	Odd - Man Out	4	4	4	4	5	5
2	Figure Matching	4	4	4	4	5	5
3	Pattern Completion	4	4	4	4	5	5
4	Figure Series Completion	4	4	4	4	5	5
5	Analogy	4	4	4	4	5	5
6	Geometrical Figure Completion	4	4	4	4	5	5
7	Mirror Image	4	4	4	4	5	5
8	Punched Hole Pattern	4	4	4	4	5	5
9	Space Visualization	4	4	4	4	5	5
10	Embedded Figure	4	4	4	4	5	5
	Total	40	40	40	40	50	50

ARITHMETIC TEST

SN	Chapter Name	2022	2021	2020	2019	2018	2017
1	Number & Numeric System	1	1	-	2	1	-
2	Four Fundamental Operations on Whole Numbers	1	1	3	2	5	-
3	Fractional Number & Fundamental Operations	1	2	1	1	-	1
4	Factors & Multiples Including Their Properties	2	1	1	1	1	-
5	LCM & HCF of Numbers	2	1	1	1	2	1
6	Decimal & Fundamental Operations on Them	3	3	2	-	4	1
7	Square-Square Root & Cube-Cube Root	-	1	-	-	-	1

8	Measurement	-	2	1	2	2	1
9	Approximation of Expressions	-	2	1	-	-	-
10	Simplification of Numerical Expressions	3	1	3	2	-	1
11	Average	-	1	-	-	-	3
12	Percentage & Its Applications	1	-	2	1	1	4
13	Profit, Loss & Discount	-	2	1	2	1	2
14	Simple Interest	2	1	1	1	1	1
15	Ratio & Proportion	-	-	-	-	-	2
16	Speed, Distance & Time	1	-	1	2	1	2
17	Area, Perimeter & Volume	3	1	2	3	2	2
18	Pattern	-	-	-	-	1	3
19	Data Interpretation	-	-	-	-	2	-
		20	20	20	20	25	25

LANGUAGE TEST (English)

SN	Chapter Name	2022	2021	2020	2019	2018	2017
1	Reading Comprehension	20*	20*	20*	20*	20*	20*

**Questions related to the synonyms, antonyms, word meaning and parts of speech etc. have been asked with in the Reading Comprehension.*

2022

Synonyms = 4 Questions

Word Meaning = 1 Questions

Parts of Speech = 1 Questions

Jawahar Navodaya Vidyalaya

Entrance Exam (Class-VIth)

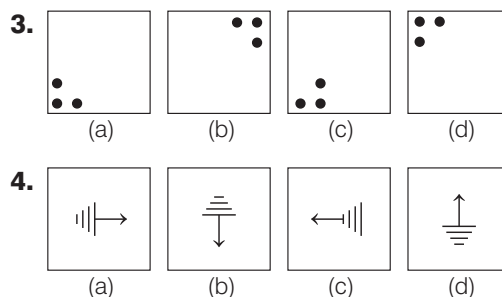
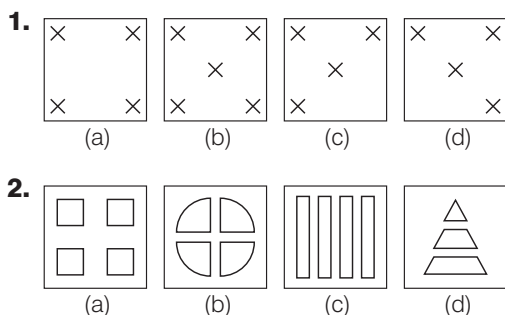
Solved Paper 2022

Exam held on 30/04/2022

SECTION I : Mental Ability Test

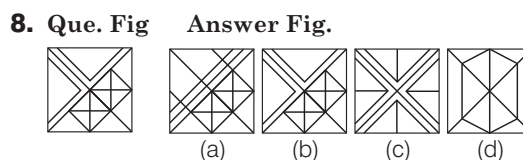
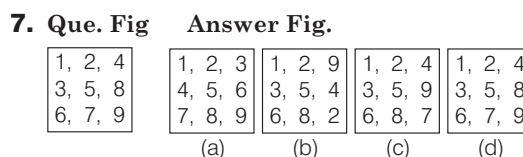
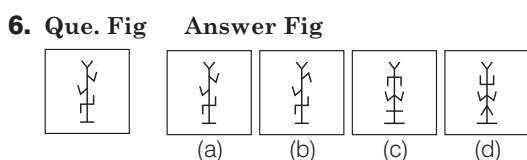
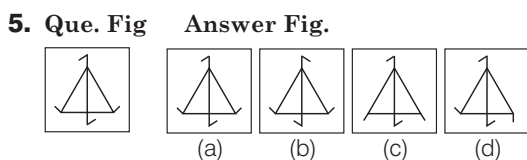
Part I

Directions (Q. Nos. 1-4) In the given questions 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 the answer in the OMR Answer Sheet against the number corresponding to the question.



Part II

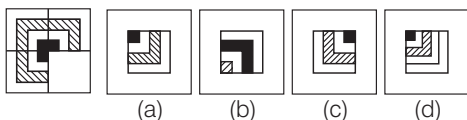
Directions (Q. Nos. 5-8) In these questions, a question figure is given on the left side and four answer figures marked (a), (b), (c) and (d) are given on the right side. Select the answer figure which is exactly the same as the question figure. Darken the circle for the answer in the OMR Answer Sheet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



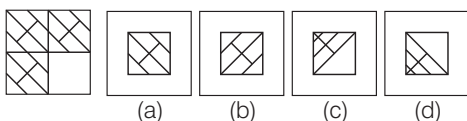
Part III

Directions (Q. Nos. 9-12) In these questions, there is a question figure on the left side, a part of which is missing. Observe the answer figures (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. Darken the circle for the answer in the OMR Answer Sheet against the number corresponding to the question.

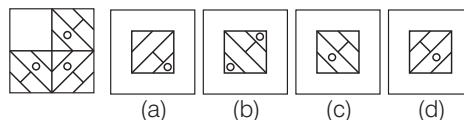
9. Que. Fig Answer Fig.



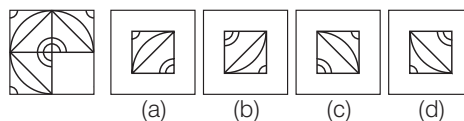
10. Que. Fig Answer Fig.



11. Que. Fig Answer Fig.



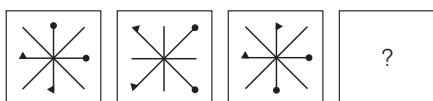
12. Que. Fig Answer Fig.



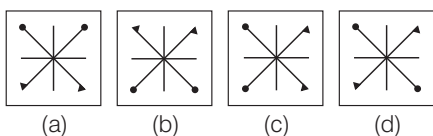
Part IV

Directions (Q. Nos. 13-16) In these questions, 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. Darken the circle for the answer in the OMR Answer Sheet against the number corresponding to the question.

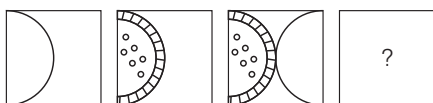
13. Question Figures



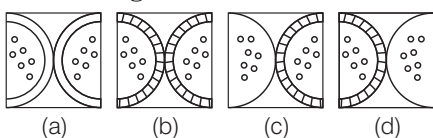
Answer Figures



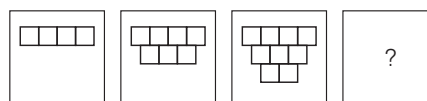
14. Question Figures



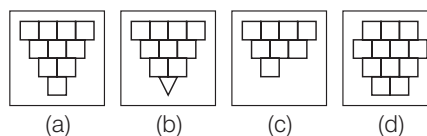
Answer Figures



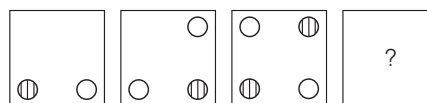
15. Question Figures



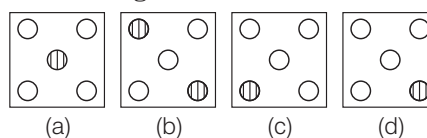
Answer Figures



16. Question Figures



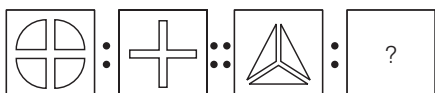
Answer Figures



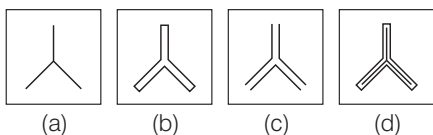
Part V

Directions (Q. Nos. 17-20) In these questions, 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 for the answer in the OMR Answer Sheet against the number corresponding to the question.

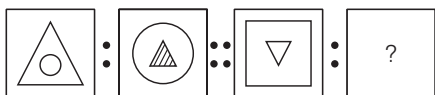
17. Question Figures



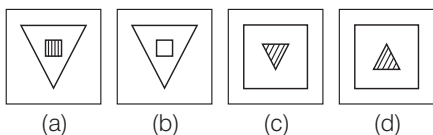
Answer Figures



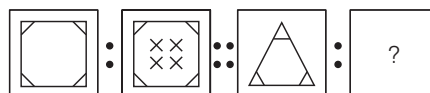
18. Question Figures



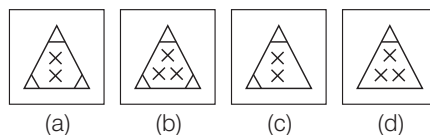
Answer Figures



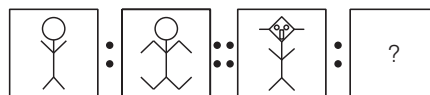
19. Question Figures



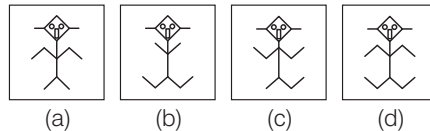
Answer Figures



20. Question Figures



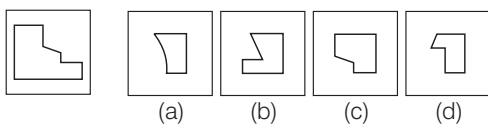
Answer Figures



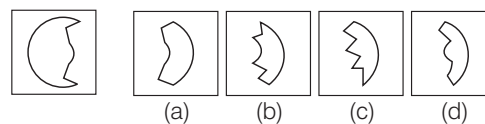
Part VI

Directions (Q. Nos. 21-24) In these questions, 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. Darken the circle for the answer in the OMR Answer Sheet against the number corresponding to the question.

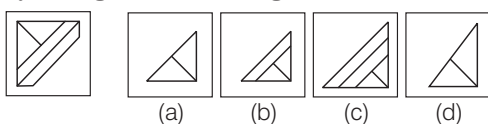
21. Que. Fig Answer Fig.



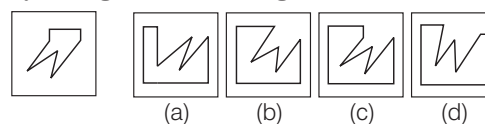
23. Que. Fig Answer Fig.



22. Que. Fig Answer Fig.



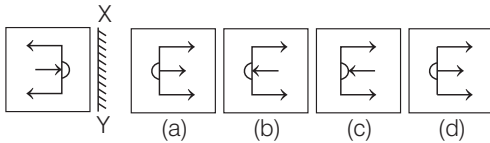
24. Que. Fig Answer Fig.



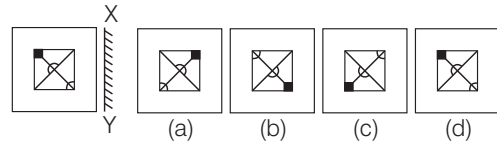
Part VII

Directions (Q. Nos. 25-28) In these questions, 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. Darken the circle for the answer in the OMR Answer Sheet against the number corresponding to the question.

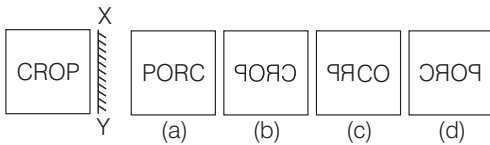
25. Que. Fig **Answer Fig.**



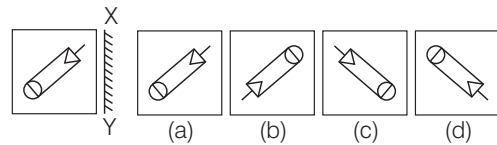
27. Que. Fig **Answer Fig.**



26. Que. Fig **Answer Fig.**



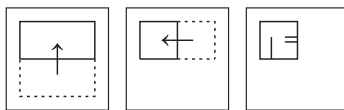
28. Que. Fig **Answer Fig.**



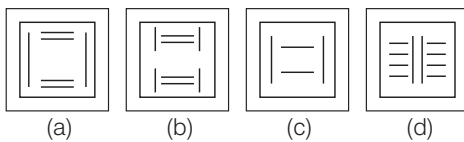
Part VIII

Directions (Q. Nos. 29-32) In these questions, a piece of paper is folded and punched as shown in the question figures and four answer figures marked (a), (b), (c) and (d) are given. Select the answer figure which indicates how the paper will appear when opened (unfolded). Darken the circle for the answer in the OMR Answer Sheet against the number corresponding to the question.

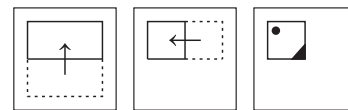
29. Question Figures



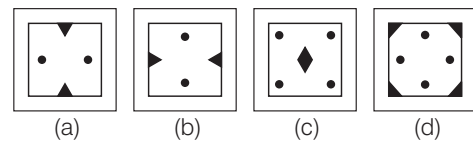
Answer Figures



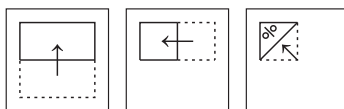
31. Question Figures



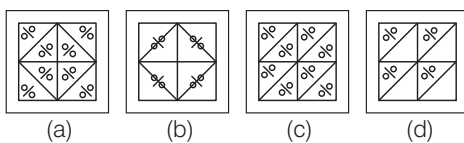
Answer Figures



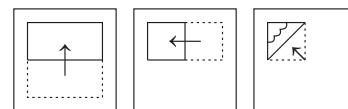
30. Question Figures



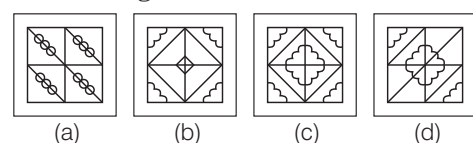
Answer Figures



32. Question Figures



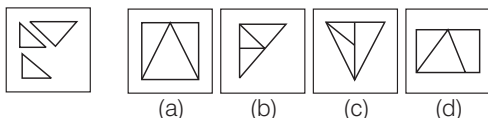
Answer Figures



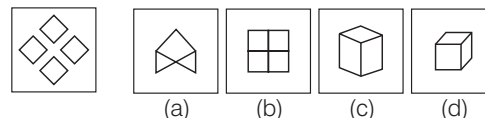
Part IX

Directions (Q. Nos. 33-36) In these questions, 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 for the answer in the OMR Answer Sheet against the number corresponding to the question.

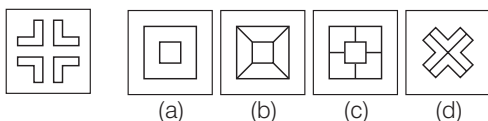
33. Que. Fig **Answer Fig.**



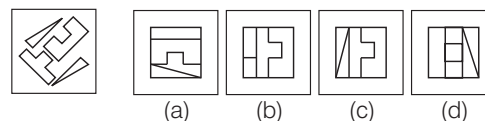
Que. Fig **Answer Fig.**



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



36. Que. Fig **Answer Fig.**

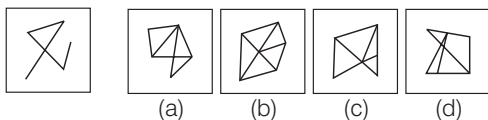


35.

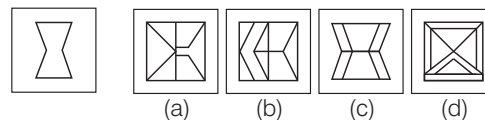
Part X

Directions (Q. Nos. 37-40) In these questions, 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 for the answer in the OMR Answer Sheet against the number corresponding to the question.

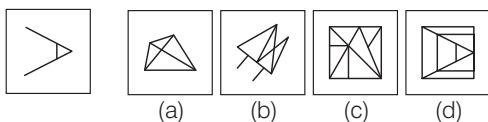
37. Que. Fig **Answer Fig.**



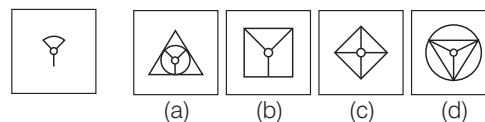
39. Que. Fig **Answer Fig.**



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. Darken the circle for the answer in the OMR Answer Sheet against the number corresponding to the question.

- 41.** The simplification of the following gives the result
 $2\frac{1}{17} \div \frac{7}{10} \times 1\frac{1}{33}$
 (a) $3\frac{1}{33}$ (b) $2\frac{1}{33}$ (c) $4\frac{1}{22}$ (d) $\frac{100}{17}$
- 42.** Writing 0.0725 in simplest fraction form gives the result
 (a) $\frac{29}{4000}$ (b) $\frac{29}{400}$ (c) $\frac{29}{40}$ (d) $\frac{129}{400}$
- 43.** If the HCF of 72 and 180 is 36, then their LCM is
 (a) 180 (b) 360 (c) 540 (d) 720
- 44.** The sum of the digits of a number is subtracted from the number. The resulting number is always divisible by
 (a) 2 (b) 5 (c) 8 (d) 9
- 45.** The number of two digit natural numbers is
 (a) 89 (b) 90 (c) 91 (d) 99
- 46.** A decrease of 20% in the price of a cycle, increases its demand by 20%. The effect on the sale of shop is
 (a) 4% decrease (b) 4% increase
 (c) 10% decrease (d) 10% increase
- 47.** A cube of lead with edge 6 cm each is melted to form 27 equal cubes. The length of the edge of each small cube is
 (a) 1.5 cm (b) 2.0 cm (c) 3.0 cm (d) 4.0 cm
- 48.** In how many years will ₹ 1500 amount to ₹ 1800 at 8% per annum simple interest?
 (a) $1\frac{1}{2}$ yr (b) 2 yr (c) $2\frac{1}{2}$ yr (d) 3 yr
- 49.** The prime factorisation of 2100 is
 (a) $2 \times 2 \times 7 \times 15 \times 5$ (b) $2 \times 2 \times 3 \times 5 \times 35$
 (c) $2 \times 2 \times 3 \times 5 \times 5 \times 7$ (d) $4 \times 3 \times 5 \times 5 \times 7$
- 50.** A sum of ₹ 600 amounts to ₹ 720 in 4 yr at simple interest. What will it become in 4 yr if the rate of interest is increased by 2%?
 (a) ₹ 648 (b) ₹ 768 (c) ₹ 668 (d) ₹ 968
- 51.** The smallest 4-digit number when expressed as a product of primes is
 (a) $5 \times 5 \times 5 \times 8$ (b) $5 \times 5 \times 5 \times 4 \times 2$
 (c) $5 \times 5 \times 5 \times 2 \times 2 \times 2$ (d) $10 \times 10 \times 10$
- 52.** The LCM of 25, 45 and 75 is
 (a) 450 (b) 125 (c) 175 (d) 225
- 53.** What is the sum of 6.6, 6.06, 6.006 and 66.6006?
 (a) 74.2666 (b) 85.2666
 (c) 84.0606 (d) 84.0666
- 54.** A train starts at 2:15 pm from a station at a speed of 72 km/h. At what time will it reach the other station 90 km away?
 (a) 3:00 pm (b) 3:30 pm
 (c) 4:00 pm (d) 4:30 pm
- 55.** The difference between the length and breadth of a hall is 23 m (length > breadth). If the perimeter of the floor of the hall is 206 m, then area of the floor of the hall (in sq m) is
 (a) 2420 (b) 2520
 (c) 2640 (d) 2760
- 56.** The value of
 $(20 \div 5) \div 2 + (16 \div 8) \times 2 + (10 \div 5) \times (3 + 2)$
 is
 (a) 12 (b) 15
 (c) 16 (d) 18
- 57.** The decimal equivalent of $12\frac{1}{16}$ is
 (a) 12.625 (b) 12.6025
 (c) 12.0625 (d) 12.0525
- 58.** If a room 15 m long requires 7500 tiles, each 15 cm × 12 cm to cover the entire floor, then the breadth of the room is
 (a) 9 m (b) 10 m
 (c) 12 m (d) 10.5 m
- 59.** Simplification of
 $\frac{1}{13} [7 + 2 \times 5 \times 11 + 2 \times 13]$ equals
 (a) 13 (b) 9
 (c) 11 (d) 12
- 60.** A piece of wire $2\frac{3}{4}$ m long broke into two pieces. One piece is $\frac{5}{8}$ m longer than the other. The length of the longer wire is
 (a) $1\frac{11}{16}$ m (b) $1\frac{1}{16}$ m
 (c) 2 m (d) $\frac{3}{4}$ m

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. Darken the circle for the answer in the OMR Answer Sheet against the number corresponding to the question.*

Passage 1

Once we visited a village where many families were selling clay products made by them. What attracted us most were artificial fruits and vegetables made by a certain family. We saw apples, oranges and tomatoes of such fine shapes and colours that we could hardly distinguish them from the real ones. They received much praise from all and sundry.

61. A certain family made of clay.
(a) tables and chairs (b) fruits and vegetables
(c) toys and pots (d) piggy bank and balls
62. We could hardly distinguish the fruits from the real ones.
(a) natural (b) artificial (c) original (d) actual
63. The word 'such' is a/an
- (a) verb (b) adverb
(c) adjective (d) conjunction
64. is the synonym of 'differentiate'.
(a) Distinguish (b) Mix-up
(c) Confuse (d) Mistake
65. means the same as 'all and sundry'.
(a) Specific (b) Exact (c) Everyone (d) Few

Passage 2

Milk is the best food. It has water, sugar, fat, vitamins and proteins. People drink milk from different animals. In England and many other cold countries there are cows. In hot dry places like Arabia and the middle of Asia there are camels. In India there are cows as well as buffaloes. At many places there are goats. If people keep cows or other animals they get a lot of milk. From milk they can make butter and cheese. It is essential that the milk we use should be pure and germ-free. Impure milk does more harm than good to the human body.

66. People drink milk from animals.
(a) same (b) different
(c) like (d) alike
67. In places there are camels.
(a) cool (b) frozen (c) hot (d) cold
68. If people keep animals like cows, they get of milk.
(a) little (b) less
(c) small (d) plenty
69. It is that the milk we use should be pure.
(a) necessary
(b) inessential
(c) unneeded
(d) needless
70. 'Harm' means the same as
(a) benefit (b) repair
(c) damage (d) fixed

Passage 3

Snakes belong to a class of animals called reptiles. This group also includes crocodiles, lizards and turtles. Snakes are found almost everywhere, in forests, deserts and lakes. They cannot survive in places where the ground is frozen all through the year. The snake has very poor eyesight. It uses its other senses to escape damage and find food. Some snakes smell with their noses but most of them smell with their tongues. The body of a snake is covered with scales made up of layers of cells. A few times every year a snake sheds the outer layer of dead skin. The cells underneath at once form the outer layer which is a protective covering for the snake.

- 71.** Snakes are called
 (a) lizards (b) scales (c) reptiles (d) turtles
- 72.** Snakes cannot survive in
 (a) frozen places (b) deserts
 (c) forests (d) lakes
- 73.** Snakes have poor
 (a) sense of smell (b) hearing
 (c) sense of touch (d) eyesight
- 74.** protect/protects the snake from injury.
 (a) Tongue (b) Scales
 (c) Dead skin (d) Nose
- 75.** The word 'survive' means
 (a) live (b) move
 (c) escape (d) belong

Passage 4

It was a Sunday. Harish was playing in the park with his friends. There was a pond nearby. Harish wanted to swim. He jumped into the pond with a splash. At the other end of the pond there were a few ducks in the water. Harish swam happily enjoying the mild sun and the cold water. Suddenly he heard a loud noise and the water splashed. He looked all around to see if someone had dived into the pond. He could see no one.

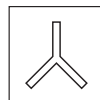
- 76.** Harish was playing in the park with his
 (a) brothers (b) classfellows
 (c) friends (d) team
- 77.** Harish jumped into the pond
 (a) to swim
 (b) to catch fish
 (c) to chase the ducks
 (d) to have a bath
- 78.** The weather was
 (a) very hot (b) just warm
 (c) very cold (d) cool with rain
- 79.** Who else was there in the pond?
 (a) A few ducks (b) Two boys
 (c) Harish's friends (d) Fishermen
- 80.** The word 'dived' means the same as
 (a) slipped (b) fell
 (c) jumped (d) climbed

Answers

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

Hints and Solutions

1. (b) Except option (b), all other figures have 4 symbols (X).
2. (d) Except option (d), all other figures are divide in four equal parts.
3. (c) Except option (c), in all other figures positional order of shaded circles are same.
4. (c) Except option (c), in all other figures horizontal lines shown in descending order.
5. (a) Figure shown in option (a) is similar to question figure.
6. (a) Figure shown in option (a) is similar to question figure.
7. (d) Figure shown in option (d) is similar to question figure.
8. (b) Figure shown in option (b) is similar to question figure.
9. (a) Figure shown in option (a) will complete the given pattern.
10. (a) Figure shown in option (a) will complete the given pattern.
11. (d) Figure shown in option (d) will complete the given pattern.
12. (b) Figure shown in option (b) will complete the given pattern.
13. (b) In each step, figure rotates 45° in clockwise direction.
14. (b) In option (b), right side figure is mirror image of left side figure.
15. (a) In step (1) to (2), three squares increased.
In step (2) to (3), two squares increased.
In step (3) to (4), one square increased.
16. (b) In each step one circle will be added. From step (1) to (2) and (3) to (4) number of shaded circle will be same.
17. (b) From question figure (1) to (2), outer image will removed and only middle image remains. Hence, option (b) is correct.



18. (a) From question figure (1) to (2), the inner figure becomes outer figure, outer figure becomes inner figure and being shaded. Hence, option (a) is correct.



19. (b) From question figure (1) to (2), similar to the side of the figure, symbol (x) are added.



20. (d) From question figure (1) to (2), number of symbols (v) like question will be doubled and inverted.



21. (c) Figure shown in option (c) will complete the question figure.



Question Figure



Answer Figure (c)

22. (a) Figure shown in option (a) will complete the question figure.



Question Figure



Answer Figure (a)

23. (a) Figure shown in option (a) will complete the question figure.



Question Figure



Answer Figure (a)

24. (c) Figure shown in option (c) will complete the question figure.

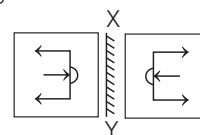


Question Figure

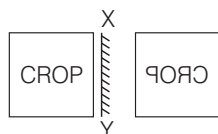


Answer Figure (c)

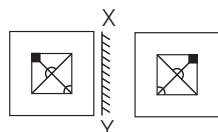
25. (b) Figure shown in option (b) will be the correct mirror image.



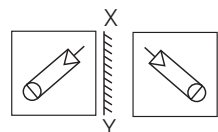
26. (b) Figure shown in option (b) will be the correct mirror image.



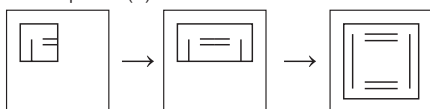
27. (a) Figure shown in option (a) will be the correct mirror image.



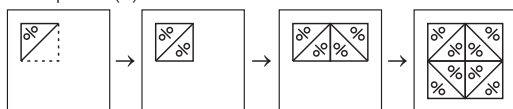
28. (c) Figure shown in option (c) will be the correct mirror image.



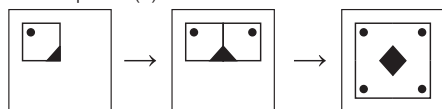
29. (a) After unfolding the last fold the paper will look as given in option (a).



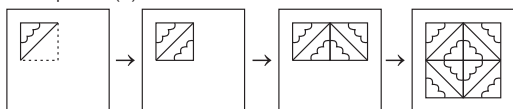
30. (a) After unfolding the last fold the paper will look as given in option (a).



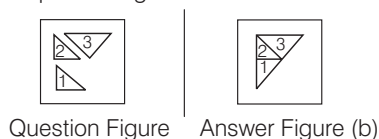
31. (c) After unfolding the last fold the paper will look as given in option (c).



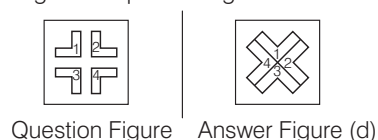
32. (c) After unfolding the last fold the paper will look as given in option (c).



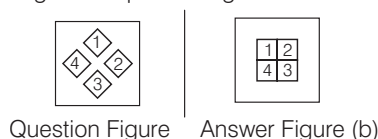
33. (b) Figure shown in option (b) will be made by cut-out piece given in question figure.



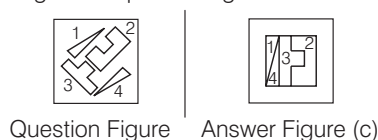
34. (d) Figure shown in option (d) will be made by cut-out piece given in question figure.



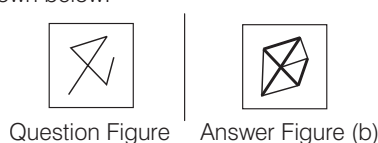
35. (b) Figure shown in option (b) will be made by cut-out piece given in question figure.



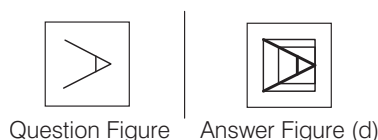
36. (c) Figure shown in option (c) will be made by cut-out piece given in question figure.



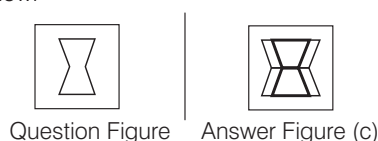
37. (b) By careful observation, we find that the question figure is embedded in option figure (b) as shown below.



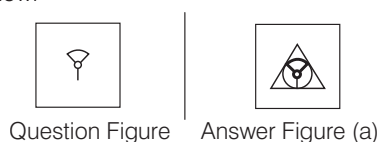
38. (d) By careful observation, we find that the question figure is embedded in option figure (d) as shown below.



39. (c) By careful observation, we find that the question figure is embedded in option figure (c) as shown below.



40. (a) By careful observation, we find that the question figure is embedded in option figure (a) as shown below.



$$41. (a) 2\frac{1}{17} \div \frac{7}{10} \times 1\frac{1}{33} = \frac{35}{17} \times \frac{10}{7} \times \frac{34}{33}$$

$$= \frac{100}{33} = 3\frac{1}{33}$$

$$42. (b) 0.0725 = \frac{725}{10000} = \frac{25 \times 29}{25 \times 400} = \frac{29}{400}$$

$$43. (b) \text{ First number} = 72$$

$$\text{Second number} = 180$$

$$\text{HCF} = 36$$

$$\therefore \text{Required LCM} = \frac{\text{First number} \times \text{Second number}}{\text{HCF}}$$

$$= \frac{72 \times 180}{36} = 360$$

44. (d) If the sum of digits of a number is subtracted from the number, then the resulting number is always divisible by 9.

For example Let $10x + y$ is a two digit number.

Then, $10x + y - (x + y) = 9x$, it is divisible by 9 and let

$100x + 10y + z$ is a three digit number, then

$100x + 10y + z - (x + y + z) = 99x + 9y$ or

$9(11x + y)$, it is divisible by 9.

45. (b) Two digit natural numbers are 10, 11, 12, ... 99.

$$\therefore \text{The number of two digit natural numbers}$$

$$= 99 - 9 = 90$$

46. (a) Let real price of cycle be x and demand of cycle be y .

$$\therefore \text{Total sale} = xy$$

$$\text{New price of cycle} = x \times \frac{80}{100} = \frac{4}{5}x$$

$$\text{New demand} = y \times \frac{120}{100} = \frac{6}{5}y$$

$$\text{New sale} = \frac{4x}{5} \times \frac{6}{5}y = \frac{24}{25}xy$$

$$\therefore \text{Decrease in sale} = \frac{xy - \frac{24}{25}xy}{xy} \times 100$$

$$= \frac{25 - 24}{25} \times 100 = 4\%$$

Alternate Method

$$\text{Required effect on sale of shop} = x + y + \frac{xy}{100}$$

$$= -20 + 20 + \frac{(-20)(20)}{100}$$

$$= 0 - \frac{400}{100} = -4\% \text{ (decrease)}$$

Here, (+) and (-) sign show increase and decrease respectively.

47. (b) Let edge of small cube be x cm.

According to the question,

$27 \times \text{volume of small cube} = \text{volume of big cube}$

$$\Rightarrow 27x^3 = (6)^3 \quad [\because \text{Volume of cube} = (\text{side})^3]$$

$$\Rightarrow x^3 = \frac{216}{27} \Rightarrow x^3 = 8 \Rightarrow x = 2 \text{ cm}$$

48. (c) Given, $P = ₹ 1500$, $r = 8\%$ and $A = ₹ 1800$

Let time period be t yr.

$$SI = A - P$$

$$\Rightarrow \frac{Prt}{100} = 1800 - 1500 \Rightarrow \frac{1500 \times 8 \times t}{100} = 300$$

$$\Rightarrow t = \frac{300 \times 100}{1500 \times 8} = \frac{5}{2} = 2\frac{1}{2} \text{ yr}$$

49. (c) According to the question,

2	2100
2	1050
3	525
5	175
5	35
7	7
	1

$\therefore$ The prime factorisation of 2100

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

50. (b) Given, $P = ₹ 600$, $A = ₹ 720$ and $t = 4$ yr

Let rate of interest be $r\%$.

$$\therefore SI = A - P$$

$$\Rightarrow \frac{Prt}{100} = 720 - 600$$

$$\Rightarrow \frac{600 \times r \times 4}{100} = 120$$

$$\Rightarrow r = \frac{120 \times 100}{600 \times 4} = 5\%$$

Now, new rate of interest = $5 + 2 = 7\%$

$$\therefore A = P + \frac{Prt}{100} = 600 + \frac{600 \times 7 \times 4}{100}$$

$$= 600 + 168 = ₹ 768$$

51. (c) The smallest 4-digit number = 1000

2	1000
2	500
2	250
5	125
5	25
5	5
	1

$\therefore$ Product of 1000 = $2 \times 2 \times 2 \times 5 \times 5 \times 5$

or $5 \times 5 \times 5 \times 2 \times 2 \times 2$

52. (d) $25 = 5 \times 5 = 5^2$

$$45 = 3 \times 3 \times 5 = 3^2 \times 5$$

$$75 = 3 \times 5 \times 5 = 3 \times 5^2$$

$$\therefore \text{LCM of } 25, 45 \text{ and } 75 = 3^2 \times 5^2$$

$$= 9 \times 25 = 225$$

$$\begin{aligned} 53. (b) \text{ Required sum} &= 6.6 + 6.06 + 6.006 + 66.6006 \\ &= 6.6000 + 6.0600 + 6.0060 + 66.6006 \\ &= 85.2666 \end{aligned}$$

$$54. (b) \text{ Time taken to cover of } 90 \text{ km} = \frac{90}{72}$$

$$\left[\because \text{Time} = \frac{\text{Distance}}{\text{Speed}} \right]$$

$$= \frac{5}{4} \text{ h} = 1 \text{ h } 15 \text{ min}$$

$$\therefore \text{Required time} = 2 : 15 + 1 : 15 = 3 : 30 \text{ p.m.}$$

$$55. (b) \text{ Let the length and breadth of a hall be } l \text{ m and } b \text{ m.}$$

According to the question,

$$l - b = 23 \quad \dots (i)$$

Perimeter of the floor of the hall = $2(l + b)$

$$\Rightarrow 206 = 2(l + b)$$

$$\Rightarrow l + b = 103 \quad \dots (ii)$$

From Eqs. (i) and (ii), $2l = 126 \Rightarrow l = 63 \text{ m}$
and $b = 40 \text{ m}$.

$$\therefore \text{Area of the hall} = l \times b$$

$$= 63 \times 40 = 2520 \text{ sq m}$$

$$56. (c) (20 \div 5) \div 2 + (16 \div 8) \times 2 + (10 \div 5) \times (3 + 2)$$

$$= 4 \div 2 + 2 \times 2 + 2 \times 5$$

$$= 2 + 2 \times 2 + 2 \times 5$$

$$= 2 + 4 + 10 = 16$$

$$57. (c) 12 \frac{1}{16} = \frac{12 \times 16 + 1}{16} = \frac{192 + 1}{16} = \frac{193}{16}$$

$$16 \mid 193 \quad (12.0625)$$

$$\begin{array}{r} 16 \\ 33 \\ 32 \\ \hline 100 \\ 96 \\ \hline 40 \\ 32 \\ \hline 80 \\ 80 \\ \hline \times \end{array}$$

$$= 12.0625$$

$$58. (a) \text{ Let the breadth of room be } x \text{ m.}$$

According to the question,

$$\text{Area of room} = 7500 \times \text{Area of one tile}$$

$$\Rightarrow 15 \times x = 7500 \times \frac{15}{100} \times \frac{12}{100}$$

$$\Rightarrow x = \frac{7500 \times 15 \times 12}{15 \times 100 \times 100} \text{ m} = 9 \text{ m}$$

$$59. (c) \frac{1}{13} [7 + 2 \times 5 \times 11 + 2 \times 13]$$

$$= \frac{1}{13} [7 + 110 + 26] = \frac{1}{13} \times 143$$

$$= 11$$

$$60. (a) \text{ Let the length of longer wire be } x \text{ m.}$$

$$\therefore \text{Then, length of shorter wire} = \left(x - \frac{5}{8} \right) \text{ m.}$$

According to the question,

$$x + x - \frac{5}{8} = 2 \frac{3}{4} \Rightarrow 2x = \frac{11}{4} + \frac{5}{8}$$

$$\Rightarrow 2x = \frac{22 + 5}{8} \Rightarrow x = \frac{27}{16} = 1 \frac{11}{16} \text{ m}$$

$$61. (b) \text{ A certain family made fruits and vegetables of clay.}$$

$$62. (b) \text{ We could hardly distinguish the artificial fruits from the real ones.}$$

$$63. (c) \text{ The word 'such' is an adjective.}$$

$$64. (a) \text{ Distinguish is the synonym of 'differentiate'. Differentiate means recognise or ascertain what makes (someone or something) different.}$$

$$65. (c) \text{ 'Everyone' means the same as 'all and sundry'.$$

$$66. (b) \text{ People drink milk from different animals.}$$

$$67. (c) \text{ In hot places there are camels.}$$

$$68. (d) \text{ If people keep animals like cows, they get plenty of milk.}$$

$$69. (a) \text{ It is necessary that the milk we use should be pure.}$$

$$70. (c) \text{ 'Harm' means damage.}$$

$$71. (c) \text{ Snakes are called reptiles.}$$

$$72. (a) \text{ Snakes cannot survive in frozen places.}$$

$$73. (d) \text{ Snakes have poor eyesight.}$$

$$74. (b) \text{ The body of a snake is covered with scales made up of layers of cells. So, scales protect the snake from 'injury'.$$

$$75. (a) \text{ The word 'survive' means 'live'.$$

$$76. (c) \text{ Harish was playing in the park with his friends.}$$

$$77. (a) \text{ Harish jumped into the pond to swim.}$$

$$78. (b) \text{ The weather was just warm.}$$

$$79. (a) \text{ At the other end of the pond, there were a few ducks in the water.}$$

$$80. (c) \text{ The word 'dived' means the same as 'jumped'.$$

JAWAHAR NAVODAYA VIDYALAYA

Entrance Exam (Class 6th)

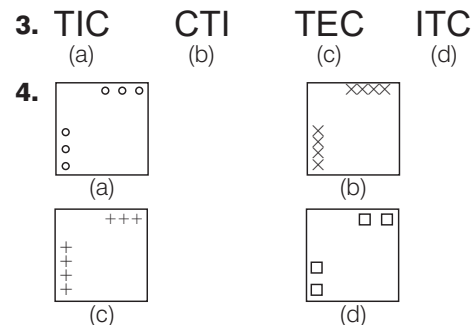
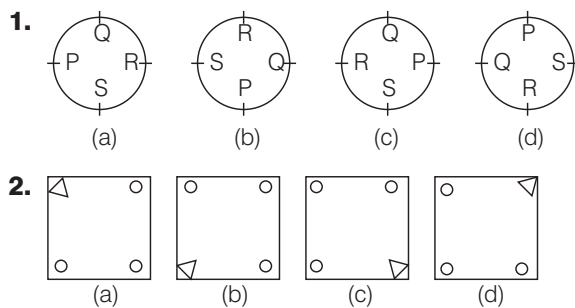
Solved Paper 2021

Exam held on 11/08/2021

SECTION I : Mental Ability Test

Part I

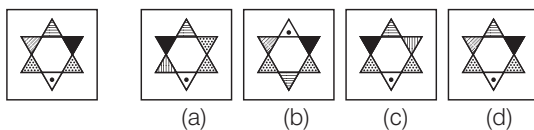
Directions In Question Nos. 1 to 4 four figures (a), (b), (c) and (d) have been given in each question. Of these four figures, three figures are similar in some way and one figure is different. Select the figure which is different. Darken the circle for answer in the OMR Answer Sheet against the number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



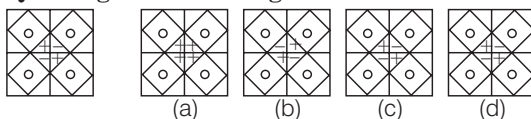
Part II

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.

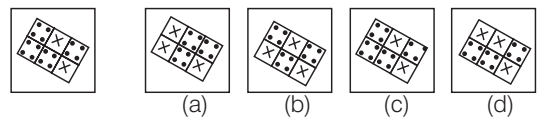
5. Que. Fig. Answer Fig.



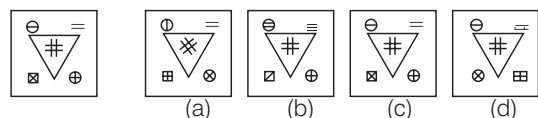
6. Que. Fig. Answer Fig.



7. Que. Fig. Answer Fig.



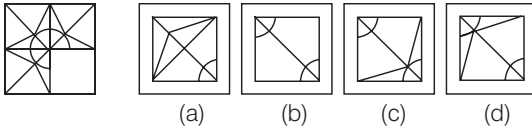
8. Que. Fig. Answer Fig.



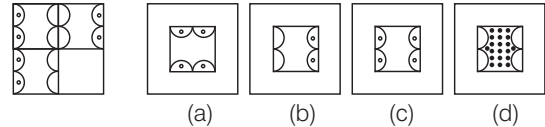
Part III

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.

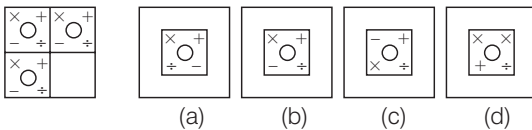
9. Que. Fig. Answer Fig.



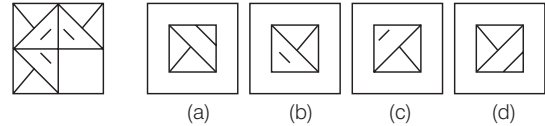
11. Que. Fig. Answer Fig.



10. Que. Fig. Answer Fig.



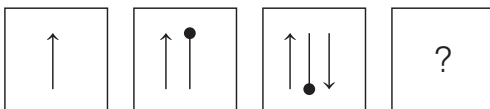
12. Que. Fig. Answer Fig.



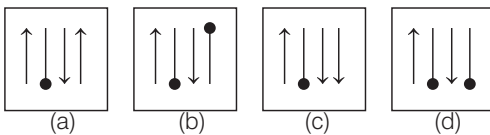
Part IV

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.

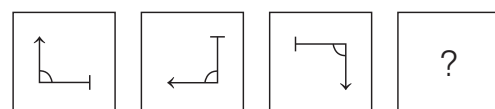
13. Question Figures



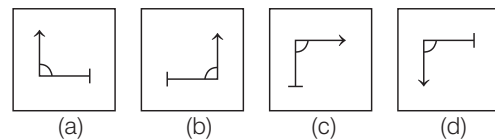
Answer Figures



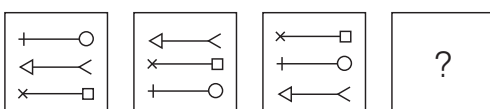
15. Question Figures



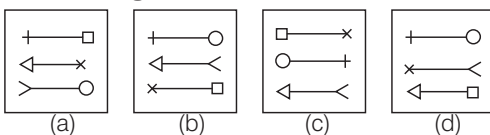
Answer Figures



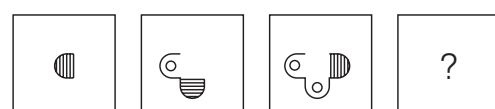
14. Question Figures



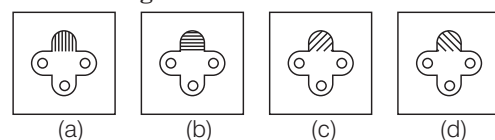
Answer Figures



16. Question Figures



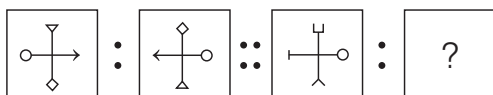
Answer Figures



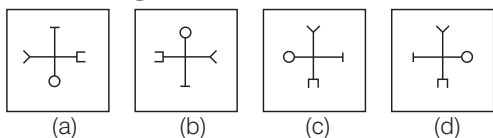
Part V

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.

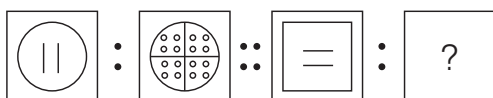
17. Question Figures



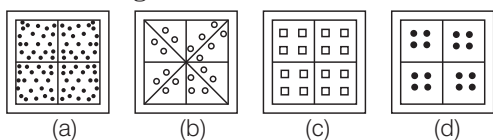
Answer Figures



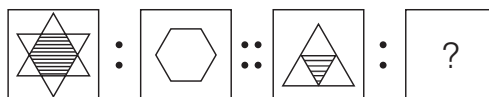
18. Question Figures



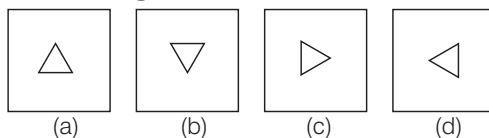
Answer Figures



19. Question Figures



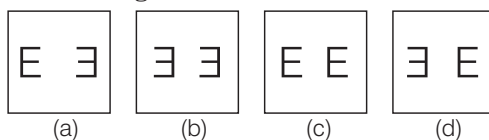
Answer Figures



20. Question Figures



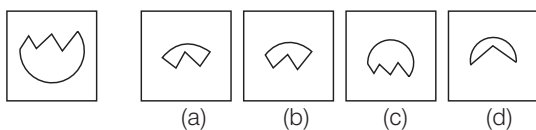
Answer Figures



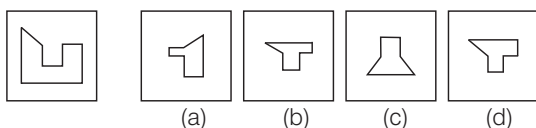
Part VI

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.

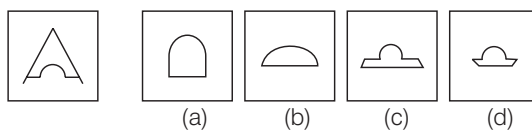
21. Que. Fig. Answer Fig.



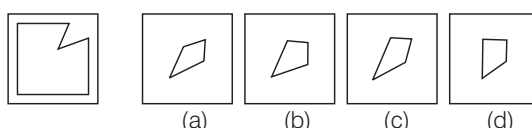
22. Que. Fig. Answer Fig.



23. Que. Fig. Answer Fig.



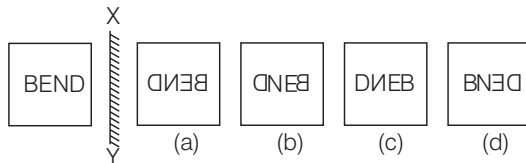
24. Que. Fig. Answer Fig.



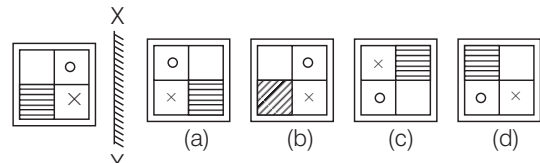
Part VII

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.

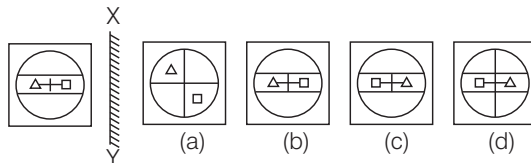
25. Que. Fig. Answer Fig.



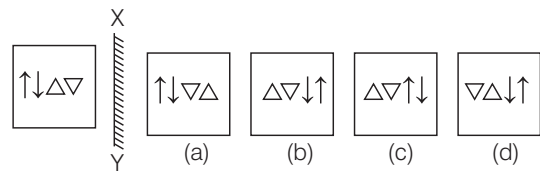
27. Que. Fig. Answer Fig.



26. Que. Fig. Answer Fig.



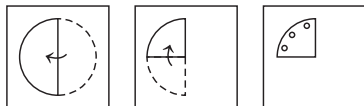
28. Que. Fig. Answer Fig.



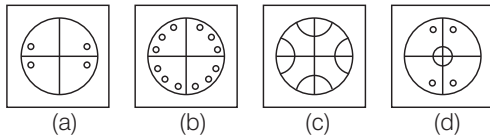
Part VIII

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.

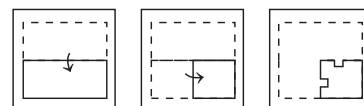
29. Question Figures



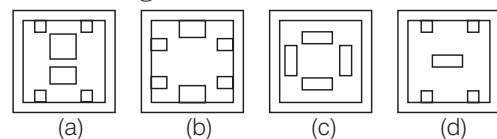
Answer Figures



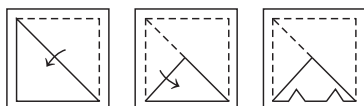
31. Question Figures



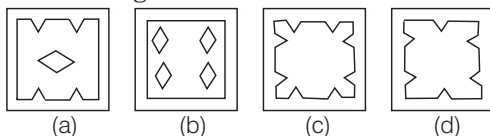
Answer Figures



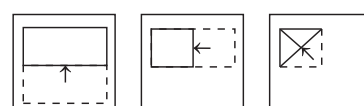
30. Question Figures



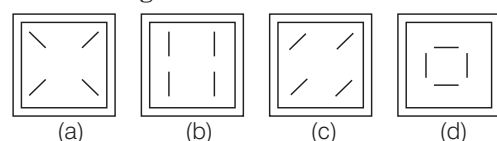
Answer Figures



32. Question Figures



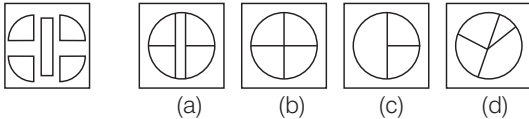
Answer Figures



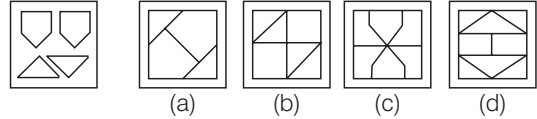
Part IX

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.

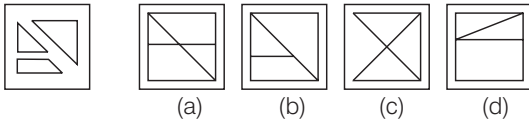
33. Que. Fig. Answer Fig.



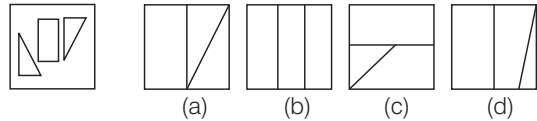
35. Que. Fig. Answer Fig.



34. Que. Fig. Answer Fig.



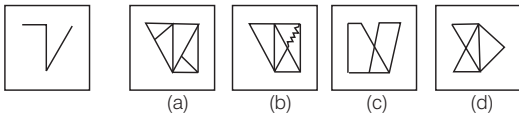
36. Que. Fig. Answer Fig.



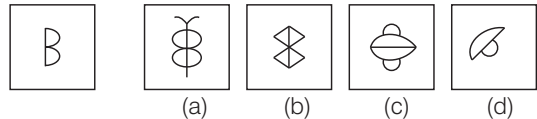
Part X

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.

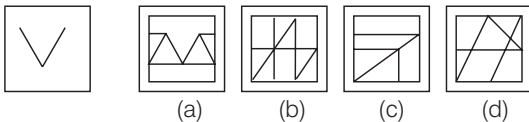
37. Que. Fig. Answer Fig.



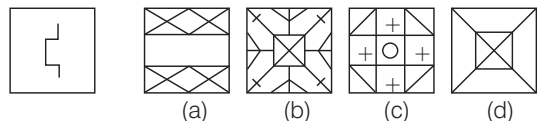
39. Que. Fig. Answer Fig.



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 $27.72 \div 1.8$?

- (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

43. If $\frac{x}{25} = \frac{196}{x}$, then x is equal to
 (a) 56 (b) 70
 (c) 84 (d) 42
44. A sum of money double itself in 16 yr at simple interest. Annual rate will be
 (a) 10% (b) $6\frac{1}{4}\%$
 (c) 8% (d) 16%
45. Find the approximate value of the following expression.
 $349 \times 51 + (632 \div 31)$
 (a) 17522 (b) 17520
 (c) 17821 (d) 17521
46. In a school, $\frac{3}{5}$ of the children are boys and the number of girls is 800. The number of boys is
 (a) 800 (b) 1000
 (c) 1200 (d) 2000
47. A cricketer has an average of 28 runs in 24 innings. How many runs must he score in the 25th inning to make his average 29?
 (a) 1 (b) 24
 (c) 35 (d) 53
48. A match lasts for half an hour. $\frac{1}{10}$ of the match time is taken up for time out. For how many minutes does the time out last?
 (a) 5 min (b) 3 min
 (c) 6 min (d) 4 min
49. A buys a radio at $\frac{3}{4}$ of its mark price and sells it 20% more than its marked price. What is its gain per cent?
 (a) 30 (b) 45
 (c) 60 (d) 75
50. An article is purchased for ₹ 7500 and sold for ₹ 8400. The profit percentage is
 (a) 8% (b) 10%
 (c) 12% (d) $10\frac{5}{7}\%$
51. What is the sum of first four prime numbers?
 (a) 10 (b) 11
 (c) 26 (d) 17
52. Simplify the following
 $3(13 + 6 \times 7) \div (11 \times 3) - (12 - 4 \times 2)$
 (a) 0 (b) 1
 (c) 2 (d) 9
53. The greatest number that divides 270 and 426 leaving 6 as remainder in each case is
 (a) 12 (b) 22
 (c) 30 (d) 36
54. Which number is a multiple of all the three number 4, 8 and 6?
 (a) 396 (b) 664
 (c) 696 (d) 5432
55. A train started from Delhi at 8 : 15 am and reached Ajmer at 2:30 pm. The time taken by the train to reach Ajmer from Delhi is
 (a) 10 h 45 min (b) 6 h 15 min
 (c) 6 h 30 min (d) 6 h
56. The decimal equivalent of $12\frac{1}{16}$ is
 (a) 12.625 (b) 12.6025
 (c) 12.0625 (d) 12.0525
57. On simplification, the approximate value of $3.003 \times 15 + 0.0123 + 5.002575$ is
 (a) 48 (b) 49
 (c) 50 (d) 51
58. The sum of 7.7, 7.07, 7.007 and 77.0077 is
 (a) 98.7807 (b) 98.7847
 (c) 98.7877 (d) 98.7777
59. The difference between 6 digits smallest number and 4 digits greatest number is
 (a) 1 (b) 9000
 (c) 90001 (d) 900001
60. Numeral for two lakh two thousand is
 (a) 20200 (b) 200200
 (c) 202000 (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
(a) confident
(b) very happy
(c) busy
(d) depressed
- 62.** Deepak and his cousins
(a) felt bored in the village
(b) enjoyed the picnic
(c) wanted to return home
(d) could not climb trees
- 63.** Deepak went on a picnic with his
(a) parents
(b) uncle and cousins
(c) friends
(d) sister
- 64.** The picnic spot was in a
(a) park
(b) beach
(c) village
(d) swimming pool
- 65.** Uncle showed Deepak how
(a) we eat
(b) to swim
(c) to drive
(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.

- 66.** Tug of War is
(a) a war
(b) a rope
(c) a game
(d) a fight
- 67.** In 'Tug of War' we do
(a) boxing
(b) hiding
(c) rope pulling
(d) batting and bowling
- 68.** The end of the rope is held by the member of the team.
(a) tallest
(b) shortest
(c) strongest
(d) youngest
- 69.** The team which is pulled across the line in the middle is
(a) the winner
(b) the loser
(c) successful
(d) given another chance
- 70.** The word 'united' means
(a) together (b) fight (c) pull (d) winning

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.

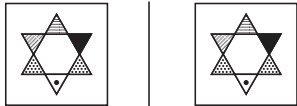
- 76.** Autumn occurs between summer and
 (a) January (b) Spring
 (c) winter (d) solstice
- 77.** Which of the following changes may occur during autumn?
 (a) Days becomes shorter
 (b) It becomes very hot
 (c) Days become longer
 (d) There is more sunlight
- 78.** Leaves turn pale during autumn because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

Answers

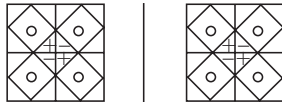
1 (a)	2 (d)	3 (c)	4 (c)	5 (d)	6 (c)	7 (c)	8 (c)	9 (d)	10 (b)
11 (b)	12 (c)	13 (b)	14 (b)	15 (c)	16 (b)	17 (c)	18 (c)	19 (b)	20 (a)
21 (b)	22 (d)	23 (c)	24 (b)	25 (a)	26 (c)	27 (a)	28 (d)	29 (b)	30 (c)
31 (c)	32 (a)	33 (a)	34 (b)	35 (a)	36 (a)	37 (a)	38 (a)	39 (a)	40 (b)
41 (b)	42 (d)	43 (b)	44 (b)	45 (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

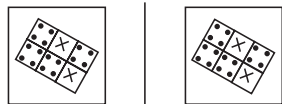
1. (a) Except option (a), in all other options *P*, *Q*, *R* and *S* moving in anti-clockwise direction but in option (a) they are moving in clockwise direction.
2. (d) Except option (d), in all other options figure of (Δ) are in same direction.
3. (c) Except option (c), in all the other options, letters *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.



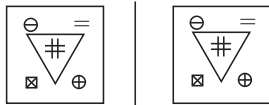
6. (c) Answer figure (c) is exactly the same as the question figure.



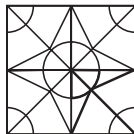
7. (c) Answer figure (c) is exactly the same as the question figure.



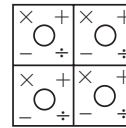
8. (c) Answer figure (c) is exactly the same as the question figure.



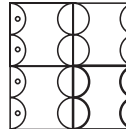
9. (d) Answer figure (d) will complete the pattern of the question figure.



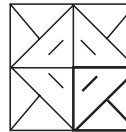
10. (b) Answer figure (b) will complete the pattern of the question figure.



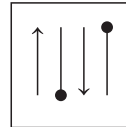
11. (b) Answer figure (b) will complete the pattern of the question figure.



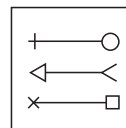
12. (c) Answer figure (c) will complete the pattern of the question figure.



13. (b) In each step, figure ($\uparrow$) and ($\downarrow$) appears alternatively and rotates 180° . Hence, answer figure (b) will complete the given series.

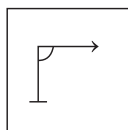


14. (b) From question figure first to second, second to third and third to answer figure, first figure becomes last figure and the remaining figures moves upside.



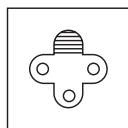
Hence, answer figure (b) will complete the given series.

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



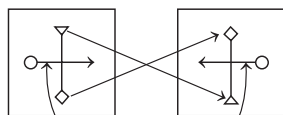
Hence, answer figure (c) will complete the given series.

16. (b) Figure () is rotating 90° in anti-clockwise direction and figure () is increasing consecutively.



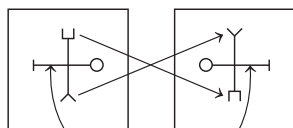
Hence, answer figure (b) will complete the given series.

17. (c) As,



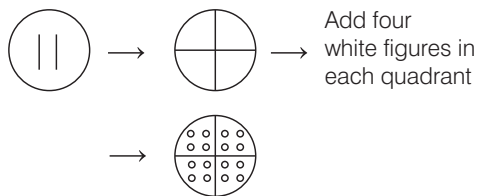
Mirror image

Similarly,

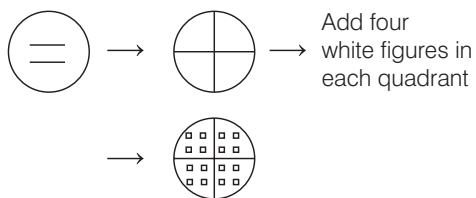


Mirror image

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 () becomes ().

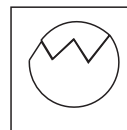
20. (a) As, from first figure to second, mirror image appears



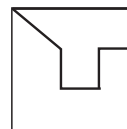
Similarly, from third figure to answer figure, mirror image appears



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



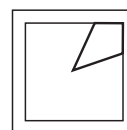
22. (d) Answer figure (d) will complete the incomplete square given in question figure.



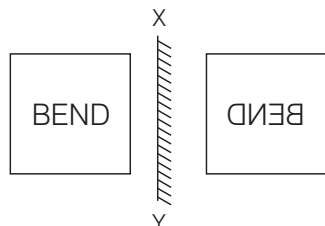
23. (c) Answer figure (c) will complete the incomplete triangle given in question figure.



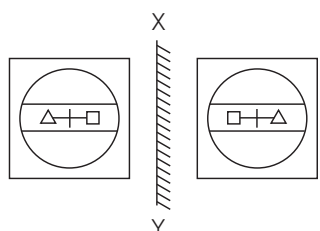
24. (b) Answer figure (b) will complete the incomplete square given in question figure.



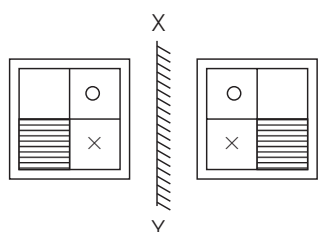
25. (a) Answer figure (a) is the correct mirror image of the question figure.



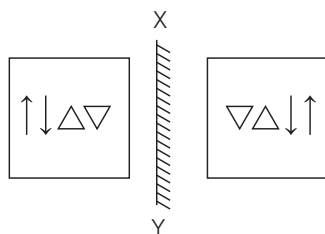
26. (c) Answer figure (c) is the correct mirror image of the question figure.



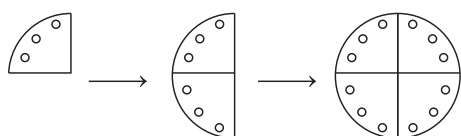
27. (a) Answer figure (a) is the correct mirror image of the question figure.



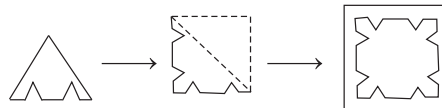
28. (d) Answer figure (d) is the correct mirror image of the question figure.



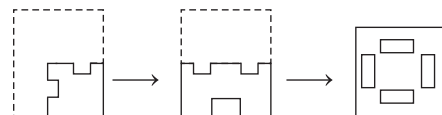
29. (b) After unfolding the folded and punched sheet it will look like as answer figure (b).



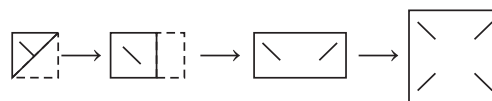
30. (c) After unfolding the folded and punched sheet, it will look like as answer figure (c).



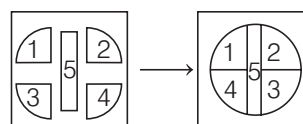
31. (c) After unfolding the folded and punched sheet it will look like as answer figure (c).



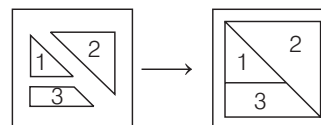
32. (a) After unfolding the folded and punched sheet, it will look like as answer figure (a).



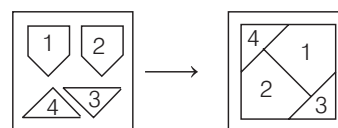
33. (a) Answer figure (a) can be formed from the cut-out pieces given in question figure.



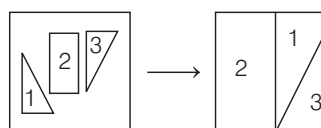
34. (b) Answer figure (b) can be formed from the cut-out pieces given in question figure.



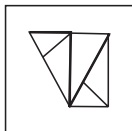
35. (a) Answer figure (a) can be formed from the cut-out pieces given in question figure.



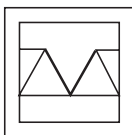
36. (a) Answer figure (a) can be formed from the cut-out process given in question figure.



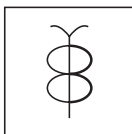
37. (a) The question figure is embedded in answer figure (a).



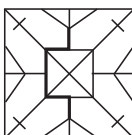
38. (a) The question figure is embedded in answer figure (a).



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



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



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

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

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

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

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

$$\Rightarrow 27.72 \div 1.8 = 15.4$$

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

$\therefore$ Hypotenuse of right angle triangle

$$= \sqrt{(5)^2 + (12)^2}$$

$$= \sqrt{25 + 144}$$

$$= \sqrt{169} = 13 \text{ cm}$$

$\therefore$ Perimeter of triangle = sum of all three sides

$$= 5 + 12 + 13$$

$$= 30 \text{ cm}$$

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

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

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

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

$$= 70$$

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

$$\text{Time} = 16 \text{ yr,}$$

$$\text{Amount} = 2P$$

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

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

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

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

45. (c) $349 \times 51 + (632 \div 31) = 17799 + 2.3$
 $= 17821.3$
 ≈ 17821

46. (c) Let, total number of students = x

$$\therefore \text{Number of boys} = \frac{3x}{5}$$

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

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

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

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

$$= 1200$$

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

$$\left\{ \because \text{Average} = \frac{\text{Sum of terms}}{\text{Number of terms}} \right\}$$

$$= 672$$

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 = $\frac{1}{10} \times \text{half hour}$

$$= \frac{1}{10} \times 30 \left[\because \frac{1}{2} \text{ half} = 30 \text{ min} \right]$$

$$= 3 \text{ min}$$

49. (c) Let Market Price (MP) of radio = x

$$\therefore \text{Selling Price (SP) of radio} = \frac{3x}{4}$$

$$\text{Selling Price (SP) of radio} = x \times \frac{120}{100} = \frac{6x}{5}$$

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

$$= \frac{\frac{6x}{5} - \frac{3x}{4}}{\frac{3x}{4}} \times 100$$

$$= \frac{24 - 15}{15} \times 100$$

$$= 60\%$$

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

$$\text{Selling Price (SP) of article} = ₹ 8400$$

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

$$= \frac{8400 - 7500}{7500} \times 100$$

$$= \frac{900}{75} = 12\%$$

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

$$= \text{HCF of } (270 - 6) \text{ and } (426 - 6)$$

$$= \text{HCF of } 264 \text{ and } 420$$

$$264 = 2 \times 2 \times 2 \times 3 \times 11$$

$$420 = 2 \times 2 \times 3 \times 5 \times 7$$

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

$$\therefore \text{Required number} = 12$$

54. (c) $4 = 2 \times 2$, $8 = 2 \times 2 \times 2$, $6 = 2 \times 3$

$$\text{LCM of } 4, 8 \text{ and } 6 = 2 \times 2 \times 2 \times 3 = 24$$

$$\therefore \text{Required number} = n \times \text{LCM}$$

$$\{\text{Here } n \text{ is a positive integer}\}$$

$$= 29 \times 24 = 696$$

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

$$= 2 : 30 \text{ pm} - 8 : 15 \text{ am}$$

$$= 6 \text{ h } 15 \text{ min}$$

$$[\because \text{Time } 8 : 15 \text{ am to } 12 : 00 \text{ pm is } 3 \text{ h } 45 \text{ min}]$$

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

57. (c) $3.003 \times 15 + 0.0123 + 5.002575$

$$= 45.045 + 0.0123 + 5.002575$$

$$= 50.059875$$

$$\approx 50$$

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

$$4\text{-digits greatest number} = 9999$$

$$\therefore \text{Required difference} = 100000 - 9999$$

$$= 90001$$

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.

**Jawahar Navodaya
Vidyalaya**

**SOLVED PAPER
2020**

Jawahar Navodaya Vidyalaya

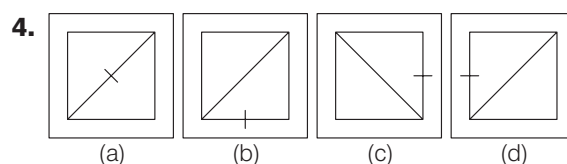
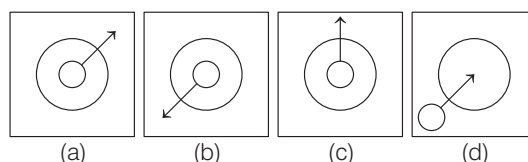
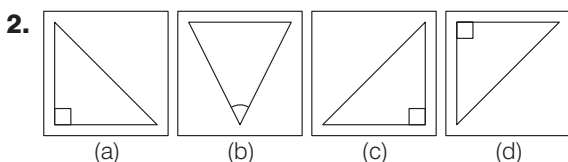
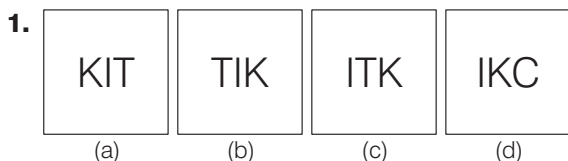
Entrance Exam (Class-VIth)

Solved Paper 2020

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.

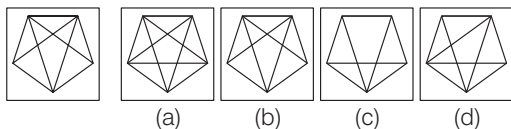


3.

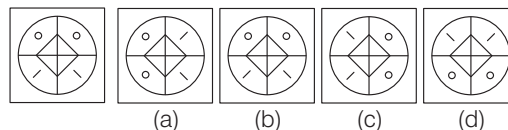
Part II

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.

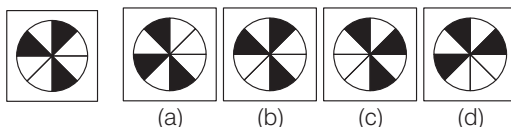
5. Que. Fig. Answer Fig.



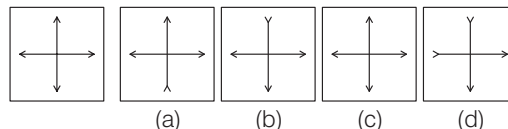
7. Que. Fig. Answer Fig.



6. Que. Fig. Answer Fig.



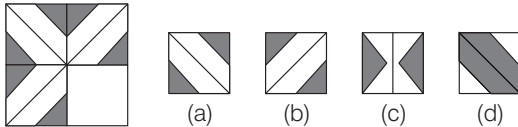
8. Que. Fig. Answer Fig.



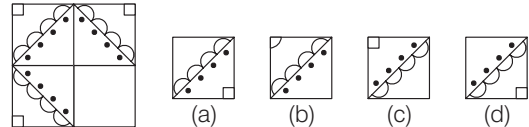
Part III

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.

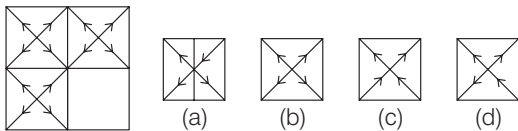
9. Que. Fig Answer Fig.



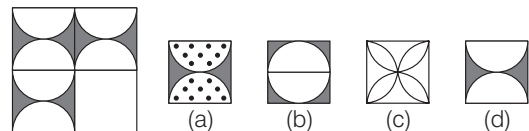
11. Que. Fig Answer Fig.



10. Que. Fig Answer Fig.



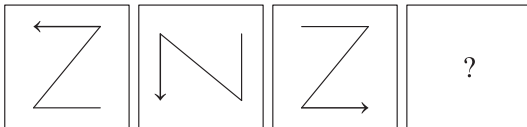
12. Que. Fig Answer Fig.



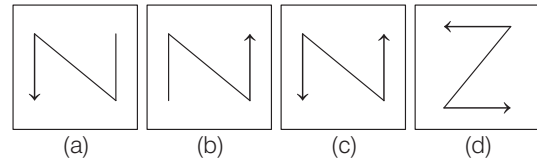
Part IV

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.

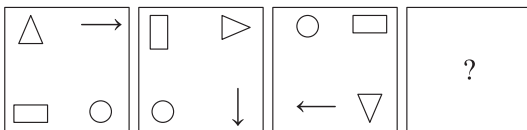
13. Question Figures



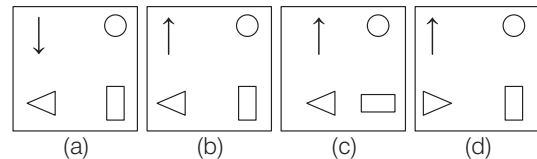
Answer Figures



14. Question Figures



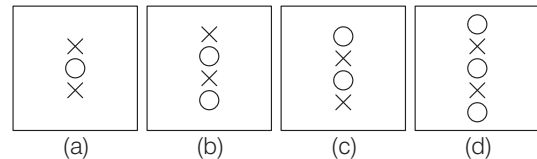
Answer Figures

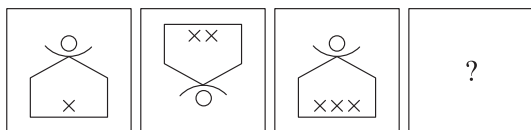
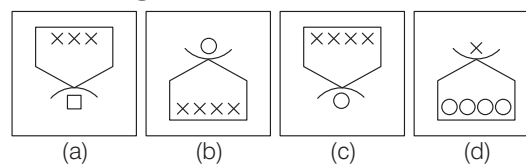


15. Question Figures

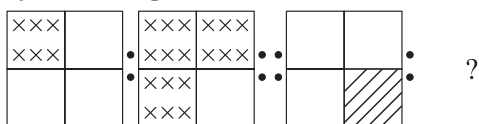
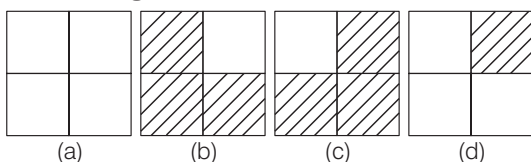
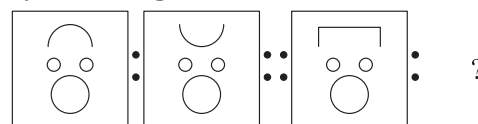
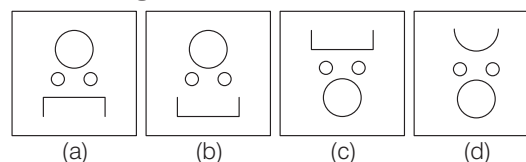
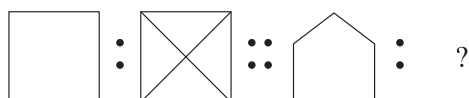
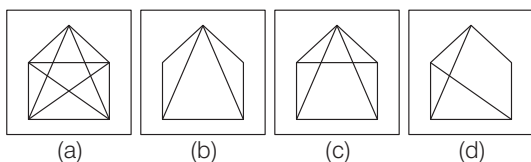
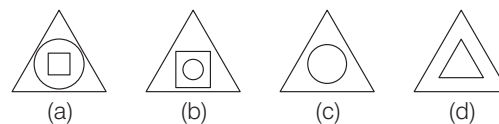


Answer Figures



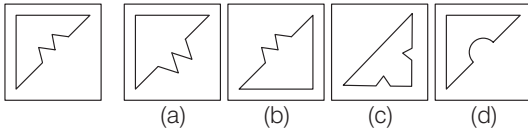
16. Question Figures**Answer Figures****Part V**

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.

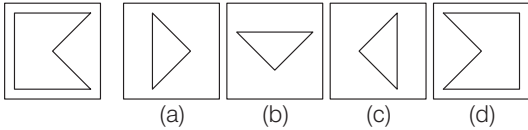
17. Question Figures**Answer Figures****19. Question Figures****Answer Figures****18. Question Figures****Answer Figures****20. Question Figures****Answer Figures****Part VI**

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.

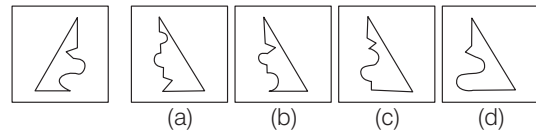
21. Que. Fig. Answer Fig.



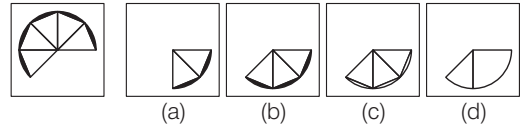
22. Que. Fig. Answer Fig.



23. Que. Fig. Answer Fig.



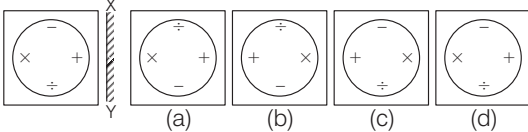
24. Que. Fig. Answer Fig.



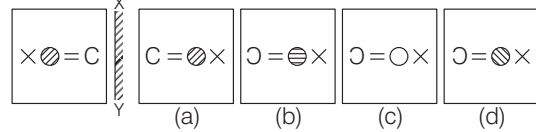
Part VII

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.

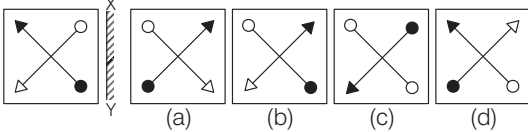
25. Que. Fig. Answer Fig.



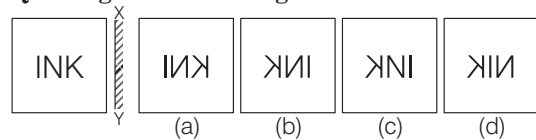
27. Que. Fig. Answer Fig.



26. Que. Fig. Answer Fig.



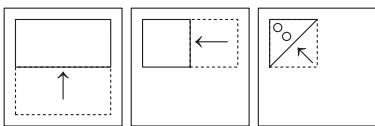
28. Que. Fig. Answer Fig.



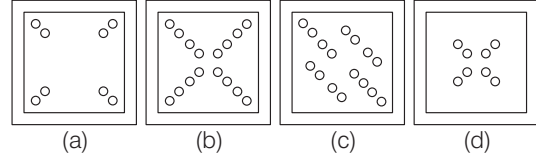
Part VIII

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.

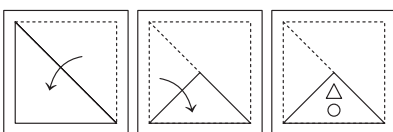
29. Question Figures



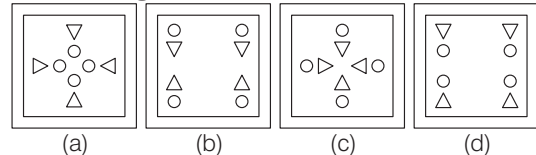
Answer Figures



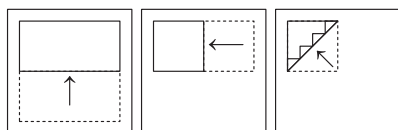
30. Question Figures



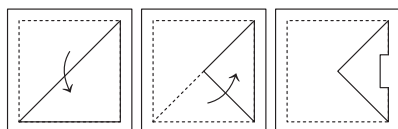
Answer Figures



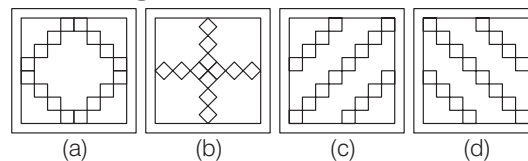
Question Figures



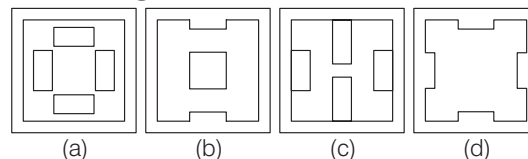
32. Question Figures



Answer Figures



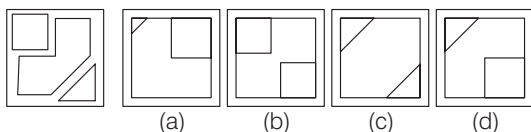
Answer Figures



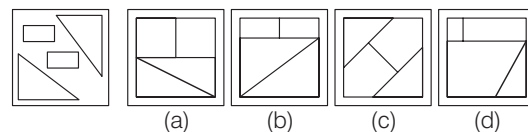
Part IX

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.

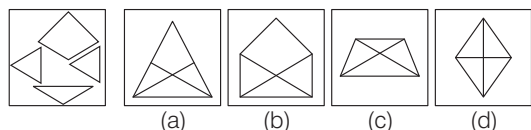
33. Que. Fig Answer Fig.



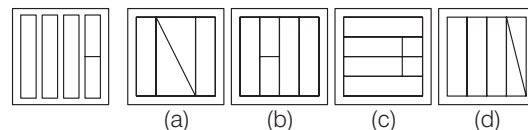
35. Que. Fig Answer Fig.



34. Que. Fig Answer Fig.



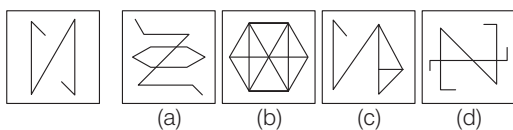
36. Que. Fig Answer Fig.



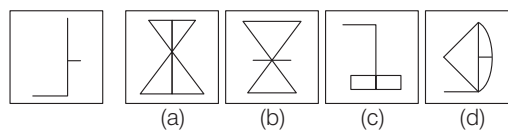
Part X

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.

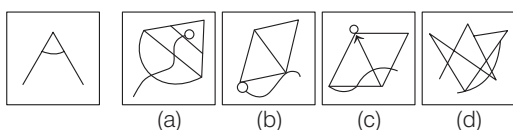
37. Que. Fig Answer Fig.



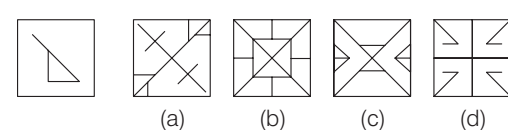
39. Que. Fig Answer Fig.



38. Que. Fig Answer Fig.



40. Que. Fig Answer Fig.



SECTION II : Arithmetic Test

Directions 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. What is the difference between the greatest 7-digit number and the smallest 4-digit number?
(a) 9990999 (b) 9993999
(c) 9996999 (d) 9998999
42. What will be the difference between the greatest 6-digit number and the greatest 5-digit number?
(a) 100000 (b) 100001
(c) 99999 (d) 900000
43. Which of the following is not equal to 25?
(a) $50 - (100 \div 4)$
(b) $20 + (20 \div 4)$
(c) $10 + (5 \times 2) + (10 - 5)$
(d) $24 + (2 \times 1)$
44. The value of x which makes the following statement true is $\left(3\frac{7}{11} \times \frac{11}{5}\right) \div \left(\frac{3}{7} \times x\right) = \frac{4}{3}$
(a) $\frac{7}{2}$ (b) 14 (c) 7 (d) 28
45. The sum of HCF and LCM of 45, 60 and 75 is
(a) 330 (b) 960 (c) 915 (d) 630
46. $\frac{3}{8} \div \left(\frac{5}{3} - \frac{1}{6}\right) + \frac{5}{8}$ is equal to
(a) $\frac{3}{8}$ (b) $2\frac{5}{8}$ (c) $\frac{7}{8}$ (d) $1\frac{1}{8}$
47. If $15 - 15 \div 15 \times 6 = x$, then the value of x is
(a) 6 (b) 0 (c) 9 (d) 84
48. The value of $0.9 \div (0.3 \times 0.3)$ is
(a) 0.01 (b) 0.1 (c) 1 (d) 10
49. If the number B is 10% less than another number C and C is 5% more than 150, then B is equal to
(a) 157.85 (b) 153.85
(c) 151.75 (d) 141.75
50. 5% of 10% of 175 grams is equal to
(a) 8.75 gm (b) 0.5 gm
(c) 0.875 gm (d) 17.5 gm
51. Find the approximate result of the following expression (in whole numbers).
 $49.6 \times 10.2 - 7.1 \times 29.7 - 5.1 \times 20.1$
(a) 390 (b) 290
(c) 209 (d) 190
52. A park is 1500 m long and 750 m wide. A cyclist has to take four rounds of this park. How much time will he take at the speed of 4.5 km/h?
(a) 40 h (b) 20 h (c) 10 h (d) 4 h
53. One-fourth of birds of a flock are at a river bank and one-fifth of that flock are in their nest. Remaining 22 birds are wandering in search of food. What is the number of birds which are in their nest?
(a) 40 (b) 18 (c) 10 (d) 8
54. Amit bought a table for ₹ 1200 and spent ₹ 200 on its repair. He sold it for ₹ 1680. His profit or loss per cent is
(a) 12% profit (b) $16\frac{2}{3}\%$ profit
(c) 20% loss (d) 20% profit
55. A square and a rectangle have the same perimeter. If the side of the square is 16 m and the length of the rectangle is 18 m, the breadth of the rectangle is
(a) 14 m (b) 15 m (c) 16 m (d) 17 m
56. How many bricks will be required for a wall 8 m long, 6 m high and 22.5 cm thick, if each brick measures 25 cm $\times$ 11.25 cm $\times$ 6 cm?
(a) 640 (b) 1380 (c) 6400 (d) 7600
57. We reached our destination at 2:45 pm after travelling for $4\frac{1}{2}$ h. When did we start?
(a) 9 : 00 am (b) 10 : 00 am
(c) 10 : 15 am (d) 8 : 15 am
58. The prime factorisation of 640 is
(a) $2 \times 2 \times 2 \times 2 \times 2 \times 5$
(b) $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 5$
(c) $2 \times 2 \times 2 \times 2 \times 2 \times 5 \times 5$
(d) $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 5$
59. In how many years does the sum of ₹ 1200 become ₹ 1800 at the rate of simple interest of 5% per annum?
(a) 10 (b) 20
(c) 15 (d) 25
60. 140.75×0.01 is equal to
(a) 140.75 (b) 14000.75
(c) 1.4075 (d) 0.14075

SECTION III : Language Test

Directions *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

Travelling is both recreational and educative. It has always been regarded as an important part of education. In Europe, a young man is considered fully educated only when he has travelled through many countries of Europe. In ancient India also, our sages understood the great value of travelling. They made it a pious duty to visit various pilgrim centres situated in different parts of India. This encouraged the feeling of oneness among Indians.

61. It is important to if one wants to get real education.
(a) study (b) work
(c) travel (d) meditate
62. Which one of the following words is a synonym of "recreational"?
(a) educational (b) thrilling
(c) tiring (d) sight-seeing
63. Visiting the centres was considered holy in ancient India.
(a) training (b) pilgrim
(c) city (d) business
64. People have a feeling of oneness with others if they a lot.
(a) travel (b) talk
(c) play (d) question
65. A sage is a person who is
(a) learned (b) smart
(c) free (d) wicked

Passage 2

Fire is to blame for the loss of countless lives and billions of rupees each and every year. Firefighters help protect people and their property from injury and damage. They put their lives on the line every time they respond to a call.

While on duty, firefighters must be ready to respond in a matter of minutes to just about any disaster that may occur. At every fire scene, a superior fire officer takes command and directs the jobs of all the people at the scene. Some firemen connect the hose lines to hydrants. Others manually operate the pumps to send water to the hoses. Teams of firefighters also operate ladders used to reach distances high in the air.

66. Which is not true about the firefighters?
(a) They are brave
(b) They often put their lives in danger
(c) They never put their lives in danger
(d) They are highly trained.
67. A firefighter has to prepare to extinguish a fire in
(a) minutes (b) hours
(c) days (d) weeks
68. Firefighters put their lives on the line means
(a) they stand in a line
(b) they fight fire
(c) they put their lives in danger
(d) they connect the hose line to hydrant
69. To 'operate manually' means to
(a) make a man work
(b) work with their hands
(c) use a machine
(d) use one's body
70. The word 'occur' means the same as
(a) come
(b) happen
(c) call
(d) fire

Passage 3

Hema lay on her bed staring at the stars stuck on the ceiling of her room. She was upset as none of the clothes seemed to fit her. She wore them again one by one but they were either too tight or too short. A cupboard full of clothes and she could not wear any of them. She then had a bright idea, her eyes lit up and she ran to her mother's room. "Ma, I need new clothes," she said, "but only after I donate all my old clothes to charity. No more amassing of clothes". Her mother smiled and hugged her. She did have a kind daughter!

- 71.** Hema lay on her bed because she
- (a) was tired
 - (b) liked looking at the stars
 - (c) was wondering what to wear
 - (d) was a lazy girl
- 72.** She could not wear any of her clothes because
- (a) they were not fashionable
 - (b) they were too colourful
 - (c) she did not know what to choose
 - (d) none of them fitted her
- 73.** The synonym of the word, 'amassing' is
- (a) collecting
 - (b) distributing
 - (c) sharing
 - (d) gifting
- 74.** Hema is
- (a) greedy
 - (b) charitable
 - (c) selfish
 - (d) miserly
- 75.** The opposite of the word 'donate' is
- (a) give
 - (b) receive
 - (c) distribute
 - (d) spend

Passage 4

To be fit and healthy, you need to be physically active. Regular physical activity protects you from serious diseases such as obesity, heart disease, cancer, mental illness, diabetes and arthritis. Riding a bicycle regularly is one of the best ways to reduce your risk of health problems associated with a sedentary lifestyle. Cycling is a healthy, low-impact exercise that can be enjoyed by people of all ages, from young children to older adults. It is also fun, cheap and good for the environment. Riding to work or the shop is one of the most time-efficient ways to combine regular exercise with everyday routine. An estimated one billion people ride bicycles every day for transport, recreation and sport. Cycling is a good way to reduce weight as it builds muscle and burns body fat. Research suggests that by cycling for half an hour everyday we can shed at least five kilos of weight in a year.

- 76.** The main focus of the passage is to tell us the advantages of
- (a) keeping fit
 - (b) cycling
 - (c) exercising
 - (d) reducing weight
- 77.** When the writer says "Cycling is good for the environment", which of the following is not correct?
- (a) It does not emit any unhealthy gas
 - (b) It can be run without petrol or diesel
 - (c) It does not pollute air
 - (d) It can be ridden by all age groups
- 78.** The word which means the opposite of the word 'sedentary' is
- (a) active
 - (b) lazy
 - (c) inactive
 - (d) deskbound
- 79.** A low-impact exercise is one which is
- (a) not tiring
 - (b) not costly
 - (c) not efficient
 - (d) not boring
- 80.** Regular cycling helps us in all of the following except to
- (a) reduce fat and strengthen muscles
 - (b) combine fun with work
 - (c) prevent serious accidents
 - (d) remain healthy

Answers

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

Hints and Solutions

- (d) Except option (d), in all the other options, letters 'K', 'I' and 'T' are used but in option (d) letter 'C' is used in place of letter 'T'.
- (b) Except figure (b), in all the other figures, an angle of 90° is marked within the triangle.
- (d) Except figure (d), all the other figures are same and can be obtained by rotating the other figure.
- (a) Except figure (a), in all the other figures, a small line is intersecting the side of the square but in figure (a), the small line is intersecting the diagonal inside the square.
- (b) Answer figure (b) is exactly the same as the question figure.



Question Figure



Answer Figure (b)

- (b) Answer figure (b) is exactly the same as the question figure.

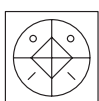


Question Figure

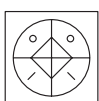


Answer Figure (b)

- (b) Answer figure (b) is exactly the same as the question figure.

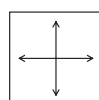


Question Figure

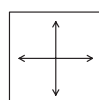


Answer Figure (b)

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

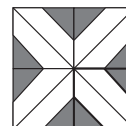


Question Figure

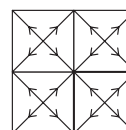


Answer Figure (c)

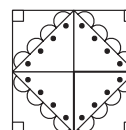
- (a) Answer figure (a) will complete the pattern of the question figure.



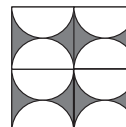
- (b) Answer figure (b) will complete the pattern of the question figure.



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



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



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

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

- (b) In each step all the four designs are moving from one corner to the other in clockwise direction. Also, each design is rotating 90° in clockwise direction. Hence, answer figure (b) will complete the given series.

- (c) A sign of multiplication ($\times$) and a sign of circle (O) is increasing alternatively. Hence, answer figure (c) will complete the given series.

16. (c) In each step, the main figure is inverted and also a sign of cross (×) is increasing within the main figure. Hence, answer figure (c) will complete the given series.

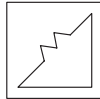
17. (c) In second figure the design  appeared in all the blocks except the block which is diagonally opposite to the block which has design  in first figure. Following the same pattern from figure third to fourth answer figure (c) will replace the question mark.

18. (a) From the first figure to the second, lines meeting all the corners with each other are drawn within the figure. Similarly, in third figure on drawing the lines from one corner to the others, we get answer figure (a).

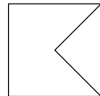
19. (c) The topmost curved line in first figure is inverted in second figure. Similarly, the topmost design (—) in third figure will be inverted in fourth figure as shown in answer figure (c).

20. (b) From first figure to second figure, the lower design within the circle is placed inside the upper design. Similarly, from third figure to fourth the lower designed i.e. circle within the triangle will be placed inside the upper design i.e. square as shown in answer figure (b).

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



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



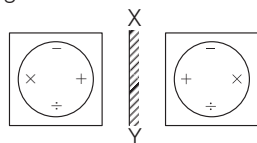
23. (d) Answer figure (d) will complete the incomplete triangle given in question figure.



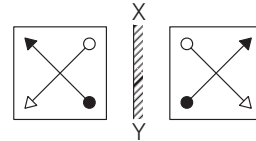
24. (b) Answer figure (b) will complete the incomplete circle given in question figure.



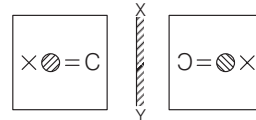
25. (c) Answer figure (c) is the correct mirror image of the question figure.



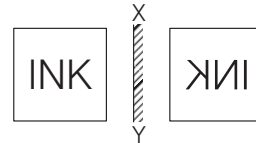
26. (a) Answer figure (a) is the correct mirror image of the question figure.



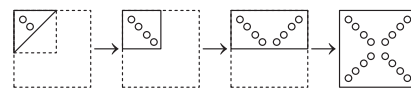
27. (d) Answer figure (d) is the correct mirror image of the question figure.



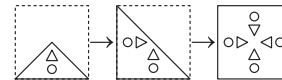
28. (b) Answer figure (b) is the correct mirror of the question figure.



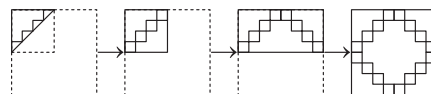
29. (b) After unfolding the folded and punched sheet it will look like as answer figure (b).



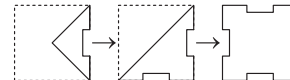
30. (c) After unfolding the folded and punched sheet it will look like as answer figure (c).



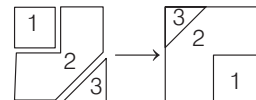
31. (a) After unfolding the folded and punched sheet it will look like as answer figure (a).



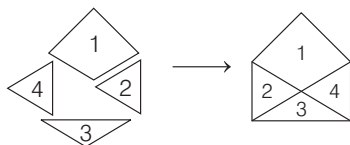
32. (d) After unfolding the folded and punched sheet it will look like as answer figure (d).



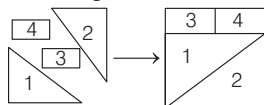
33. (d) Answer figure (d) can be formed from the cut-out pieces given in question figure.



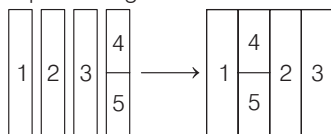
34. (b) Answer figure (b) can be formed from the cut pieces given in question figure.



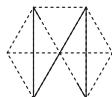
35. (b) Answer figure (b) can be formed from the cut pieces given in question figure.



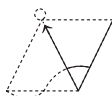
36. (b) Answer figure (b) can be formed from the cut pieces given in question figure.



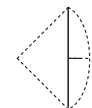
37. (b) The question figure is embedded in answer figure (b).



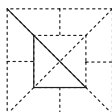
38. (c) The question figure is embedded in answer figure (c).



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



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



41. (d) The greatest 7-digit number = 9999999
The smallest 4-digit number = 1000
∴ Required difference (difference of these both numbers) = 9999999 - 1000 = 9998999
42. (d) The greatest 6-digit number = 999999
The greatest 5-digit number = 99999
∴ Required difference (difference of these both number) = 999999 - 99999 = 900000
43. (d) Option (a), $50 - (100 \div 4) = 50 - 25 = 25$, this option is not the answer.

option (b), $20 + (20 \div 4) = 20 + 5 = 25$, this option is not the answer.

option (c), $10 + (5 \times 2) + (10 - 5) = 10 + 10 + 5 = 25$, this option is not the answer.

Option (d), $24 + (2 \times 1) = 24 + 2 = 26 \neq 25$, this option is the answer.

$$\begin{aligned}
 44. \quad (b) \quad & \left(3\frac{7}{11} \times \frac{11}{5}\right) \div \left(\frac{3}{7} \times x\right) = \frac{4}{3} \\
 \Rightarrow & \left(\frac{40}{11} \times \frac{11}{5}\right) \div \left(\frac{3x}{7}\right) = \frac{4}{3} \\
 \Rightarrow & 8 \times \frac{7}{3x} = \frac{4}{3} \\
 \Rightarrow & 12x = 8 \times 7 \times 3 \\
 \Rightarrow & x = \frac{8 \times 7 \times 3}{12} = 14
 \end{aligned}$$

45. (c) Prime factors of 45, 60 and 75

$$45 = 3 \times 3 \times 5; 60 = 2 \times 2 \times 3 \times 5; 75 = 3 \times 5 \times 5$$

$$\therefore \text{HCF} = 3 \times 5 \quad [\text{to take common factors}] = 15$$

$$\text{LCM} = 2 \times 2 \times 3 \times 3 \times 5 \times 5$$

$$(\text{to take the highest power of prime factor}) = 900$$

$$\therefore \text{Sum of HCF and LCM} = 15 + 900 = 915$$

$$\begin{aligned}
 46. \quad (c) \quad & \frac{3}{8} \div \left(\frac{5}{3} - \frac{1}{6}\right) + \frac{5}{8} = \frac{3}{8} \div \left(\frac{10-1}{6}\right) + \frac{5}{8} \\
 & = \frac{3}{8} \times \frac{6}{9} + \frac{5}{8} = \frac{1}{4} + \frac{5}{8} \\
 & = \frac{2+5}{8} = \frac{7}{8}
 \end{aligned}$$

47. (c) $15 - 15 \div 15 \times 6 = x$

$$\Rightarrow 15 - 15 \times \frac{1}{15} \times 6 = x$$

$$\Rightarrow 15 - 1 \times 6 = x$$

$$\Rightarrow 15 - 6 = x \Rightarrow x = 9$$

48. (d) $0.9 \div (0.3 \times 0.3)$

$$\begin{aligned}
 & = 0.9 \div (0.09) \\
 & = \frac{0.9}{0.09} = \frac{90}{9} = 10
 \end{aligned}$$

49. (d) According to the question,

$$C = 5\% \text{ more than } 150$$

$$= 150 + 150 \times \frac{5}{100}$$

$$= 150 + 7.5 = 157.5$$

$$\text{and } B = 10\% \text{ less than } C = 157.5 - 157.5 \times \frac{10}{100}$$

$$[\because C = 157.5]$$

$$= 157.5 - 15.75$$

$$= 141.75$$

50. (c) 5% of 10% of 175 g

$$= 175 \times \frac{10}{100} \times \frac{5}{100}$$

$$= \frac{175 \times 5}{1000} = \frac{875}{1000} = 0.875 \text{ g}$$

51. (d) $49.6 \times 10.2 - 7.1 \times 29.7 - 5.1 \times 20.1$

$$= 50 \times 10 - 7 \times 30 - 5 \times 20$$

[to take value in nearest integer]

$$= 500 - 210 - 100$$

$$= 500 - 310 = 190$$

52. (d) Length of park = 1500 m

Breadth of park = 750 m

$$\text{Cover distance in 1 round of park} = \text{Perimeter of park}$$

$$= 2 (\text{Length} + \text{Breadth})$$

$$= 2(1500 + 750)$$

$$= 2 \times 2250 = 4500 \text{ m}$$

$\therefore$ Cover distance in 4 rounds = $4 \times$ cover distance in 1 round = $4 \times 4500 = 18000 \text{ m}$

$$= \frac{18000}{1000} \text{ km} \quad [\because 1 \text{ km} = 1000 \text{ m}]$$

$$= 18 \text{ km}$$

To take time in complete 4 rounds of park of cyclist

$$= \frac{\text{Distance}}{\text{Speed}} = \frac{18}{4.5} = \frac{180}{45} = 4 \text{ h}$$

53. (d) Let total number of birds be x ,

According to the question,

$$\frac{x}{4} + \frac{x}{5} + 22 = x$$

$$\Rightarrow \frac{5x + 4x}{20} + 22 = x$$

$$\Rightarrow x - \frac{9x}{20} = 22$$

$$\Rightarrow \frac{20x - 9x}{20} = 22$$

$$\Rightarrow \frac{11x}{20} = 22$$

$$\Rightarrow x = \frac{22 \times 20}{11} = 40$$

Hence, total number of birds are 40.

Number of birds in their nest = $\frac{1}{5} \times x$

$$= \frac{1}{5} \times 40 = 8$$

Hence, the birds in their nest are 8.

54. (d) Amit bought a table = ₹ 1200

Spent on its repair = ₹ 200

$\therefore$ Total cost price of table = ₹ (1200 + 200) = ₹ 1400

Selling price of table = ₹ 1680

$\therefore$ Profit = Selling price – Cost price [$\because SP > CP$]

$$= 1680 - 1400 = ₹ 280$$

$\therefore$ Profit per cent

$$= \frac{\text{Profit}}{\text{Total cost price}} \times 100$$

$$= \frac{280}{1400} \times 100 = 20\%$$

55. (a) Given, side of square = 16 m

Length of rectangle = 18 m

According to the question,

Perimeter of rectangle = Perimeter of square

$$\Rightarrow 2 (\text{Length} + \text{Breadth}) = 4 \times \text{side}$$

$$\Rightarrow 2 (18 + \text{Breadth}) = 4 \times 16$$

$$18 + \text{Breadth} = \frac{4 \times 16}{2}$$

$$\Rightarrow \text{Breadth} = 32 - 18 = 14 \text{ m}$$

56. (c) Length of wall = 8 m = 800 cm [$\because 1 \text{ m} = 100 \text{ cm}$]

Breadth of wall = 6 m = 600 cm

Height of wall = 22.5 cm

$\therefore$ Volume of wall = Length $\times$ Breadth $\times$ Height

$$= 800 \times 600 \times 22.5 \text{ cm}^3$$

Volume of 1 brick = $25 \times 11.25 \times 6 \text{ cm}^3$

$\therefore$ Required number of bricks of wall

$$= \frac{\text{Volume of wall}}{\text{Volume of 1 brick}}$$

$$= \frac{800 \times 600 \times 22.5}{25 \times 11.25 \times 6}$$

$$= 6400 \text{ bricks}$$

57. (c) Time for travel begin

$$= \text{Time for reaching place} - 4\frac{1}{2} \text{ h}$$

$$= 2 : 45 \text{ pm} - 4 : 30$$

$$= 14 : 45 - 4 : 30$$

$$= 10 : 15 \text{ am}$$

58. (d) Prime factorisation of 640

2	640
2	320
2	160
2	80
2	40
2	20
2	10
5	5
	1

$$\therefore 640 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 5$$

59. (a) Principal = ₹ 1200, Rate = 5% per annum (rate of SI)

Amount = ₹ 1800

$\therefore$ Simple interest = Amount – Principal

$$\Rightarrow \frac{P \times r \times t}{100} = 1800 - 1200$$

$$\Rightarrow 1200 \times 5 \times t = 600 \times 100$$

$$\Rightarrow t = \frac{600 \times 100}{1200 \times 5} = 10 \text{ yr}$$

60. (c) $140.75 \times 0.01 = 1.4075$

[decimal in product is the sum of digits after decimal in both numbers]

61. (c) According to the passage, it is important to travel if one wants to get real education. So, option (c) 'travel' is the correct choice.
62. (b) 'Recreational' means 'connected with ways of enjoying oneself when one is not working'. So, its correct synonym will be 'thrilling', which means 'causing excitement and pleasure'.
63. (b) 'Pilgrim' is the suitable word to fill the blank as visiting the pilgrim centres was considered holy in ancient India.
64. (a) According to the passage, people have a feeling of oneness with others if they travel a lot. So, option (a) 'travel' is the correct choice.
65. (a) A sage is a person who is learned and wise. So, option (a) is the correct choice.
66. (c) Fire fighters are brave and highly trained persons who often put their lives in danger. So, option (c) 'They never put their lives in danger' is not true about the fire fighters.
67. (a) A fire fighter has to prepare to extinguish a fire in minutes. So, option (a) is the correct choice.
68. (c) Idiom 'Put life on line' means 'to put one's life in danger'. So, firefighters put their lives on the line means that they put their lives in danger.
69. (b) To 'operate manually' means 'to work or operate with one's hands'. So, option (b) is the correct choice.
70. (b) The word 'occur' means 'happen or take place'. So, option (b) 'happen' is the correct choice.

71. (c) Hema lay on her bed because she was wondering what to wear.
72. (d) Hema could not wear any of her clothes because none of them fitted her and were either too tight or too short for her.
73. (a) 'Amassing' means 'to gather or collect something in large amount'. So, option (a) 'collecting' is the correct synonym of the given word.
74. (b) Hema is a charitable person as she wanted to donate all her old clothes.
75. (b) The word 'donate' means 'to give something like money or goods to some cause such as charity'. So, option (b), 'receive' is its correct antonym which means 'to take or accept something'.
76. (b) The main focus of the passage is to tell us the advantages of cycling. In the passage, the author tells about the benefits of cycling and how it helps in reducing the health related problems.
77. (d) When the writer says that "Cycling is good for the environment". He means that it does not emit any unhealthy gas, can be run without petrol or diesel and does not pollute air. So, option (d) "It can be ridden by all age groups" is not correct in the context of the given statement.
78. (a) 'Sedentary' means 'involving' little exercise or physical activity'. So, option (a) 'active' is its correct antonym which means 'involving physical effort and action'.
79. (a) A low-impact exercise is one which is not tiring. Cycling is one of the best example of low-impact exercises that can be enjoyed by people of all ages.
80. (b) Regular cycling helps us to reduce fat and strengthen then muscles and remain healthy and preventing serious accidents. It does not help in combine fun with work, so option (b) is the correct choice.