

Date: 03/11/2019

Max. Marks: 100

SOLUTIONS

Time allowed: 120 mins

In each of the following question, numbers have been organized in a definite number series wherein one number is missing and a question mark (?) is given in its place. Find out the number by choosing the correct option. (Q.No. 1 to 10)

1. 1, 4, 13, 40, ?

- (A) 94 (B) 120 (C) 111 (D) 121

Ans. (D)

Sol. Here pattern follows: +3, +9, +27, +81,

2. 1, 10, 19, 28, ?, 46

- (A) 33 (B) 37 (C) 34 (D) 38

Ans. (B)

Sol. Here, pattern follows: +9, +9, +9,.....

3. 12, 144, 1728, ?

- (A) 20, 736 (B) 20, 216 (C) 20, 466 (D) 20, 376

Ans. (A)

Sol. Here, pattern follows: $\times 12$, $\times 12$, $\times 12$,

4. 786, 514, 378, 310, 276, ?

- (A) 249 (B) 260 (C) 259 (D) 250

Ans. (C)

Sol. $786 - 272 = 514$

$$514 - 136 = 378$$

$$378 - 68 = 310$$

$$310 - 34 = 276$$

$$276 - 17 = 259$$

5. 2, 13, 67, 271, ?, 1639

- (A) 1067 (B) 1177 (C) 817 (D) 1371

Ans. (C)

Sol. Pattern follows

$$2 \times 6 + 1 = 13$$

$$13 \times 5 + 2 = 67$$

$$67 \times 4 + 3 = 271$$

$$271 \times 3 + 4 = 817$$

$$817 \times 2 + 5 = 1639$$

6. 3, 8, 20, 46, ?

- (A) 261 (B) 140 (C) 189 (D) 100

Ans. (D)

Sol. Pattern follows

$3 \times 2 = 2 + 8$
 $8 \times 2 = 4 + 20$
 $20 \times 2 = 6 + 46$
 $46 \times 2 = 8 + 100$

7. 12, 6, 14, 12, 16, 18, 18, ?, ?
 (A) 22, 20 (B) 24, 20 (C) 20, 22 (D) 20, 24

Ans. (B)

Sol. Pattern follows

Odd placed terms are increased by 2

Even placed terms are increased by 6

8. 1728, 2744, 4096, 5832, ?, 10648
 (A) 9261 (B) 8000 (C) 6859 (D) 6400

Ans. (B)

Sol. Terms are cubes of even numbers starting from 12

$12^3, 14^3, 16^3, 18^3, 20^3, 22^3$

9. 79, 84, 81, 82, 83, ?, ?
 (A) 80, 85 (B) 84, 85 (C) 85, 84 (D) 85, 80

Ans. (A)

Sol. Odd placed terms are increased by 2

Even placed terms are decreased by 2

10. 88, 64, 24, ?
 (A) 10 (B) 12 (C) 8 (D) 14

Ans. (C)

Sol. Multiplication of digits gives next term

$8 \times 8 = 64$

$6 \times 4 = 24$

$2 \times 4 = 8$

Instruction : In each of the following question, English alphabets and / or numbers have been organized in a definite number series wherein an alphabet or a group of alphabets is missing and a question mark (?) is given in its place. Find out the missing term by choosing the correct option (Q.No. 11 to 20)

11. A, F, K, P, U, Z, E, J, O, ?
 (A) R (B) S (C) T (D) Q

Ans. (C)

Sol. Position of letter is increased by 5

12. AB, DE, GH, JK, ?
 (A) LM (B) NO (C) MN (D) PQ

Ans. (C)

Sol. First letter of each term is increased by 3

Second letter of each term is increased by 3

13. AA, fff, KK, ppp, U, ?
 (A) UU (B) U (C) V (D) vv

Ans. (B)

Sol. The letters in each term is increased by 5. Also, number of letters follows the pattern in a group of 2 and 3.

14. PDZ, ?, RBX, SAW
 (A) QCY (B) OCY (C) QCV (D) QYD

Ans. (A)

Sol. Pattern follows:

$$P \xrightarrow{1} \boxed{Q} \xrightarrow{1} R \xrightarrow{1} S$$

$$D \xrightarrow{-1} \boxed{C} \xrightarrow{-1} B \xrightarrow{-1} A$$

$$Z \xrightarrow{-1} \boxed{Y} \xrightarrow{-1} X \xrightarrow{-1} W$$

15. D, H, Y, E, Y, Y, E, Y, H, ?

- (A) J (B) I (C) E (D) D

Ans. (D)

Sol. D, H, Y, E, Y is written in reverse order Y, E, Y, H, \boxed{D}

Answer is D

16. A, D, I, P, Y, J, ?

- (A) Q (B) T (C) W (D) R

Ans. (C)

Sol. Pattern follows

$$A \xrightarrow{3} D \xrightarrow{5} I \xrightarrow{7} P \xrightarrow{9} Y \xrightarrow{11} J \xrightarrow{13} \boxed{W}$$

17. $\frac{B}{2}, \frac{E}{5}, \frac{I}{9}, \frac{N}{14}, ?$

- (A) $\frac{S}{19}$ (B) $\frac{R}{18}$ (C) $\frac{I}{20}$ (D) $\frac{U}{21}$

Ans. (C)

Sol. Numerator is increased by +3, +4, +5,....

Denominator is increased by +3, +4, +5,....

So, answer must be $\frac{T}{20}$

Remark : But observing only denominator, most appropriate answer is option (C)

18. AB, I, BC, 6, DC, 12, DE, ?

- (A) 16 (B) 14 (C) 18 (D) 20

Ans. (D)

Sol. Remark : 2nd term is not correct

By observing last 4 terms of series

$$B \times C = 2 \times 3 = 6$$

$$C \times D = 3 \times 4 = 12$$

$$D \times E = 4 \times 5 = \boxed{20}$$

19. O, T, T, F, F, S, S, E, N, ?

- (A) O (B) T (C) F (D) S

Ans. (B)

Sol. These are first letter of numbers

One, Two, Three, Four, Five, Six, Seven, Eight, Nine, \boxed{Ten}

20. J, F, M, A, M, J, J, ?

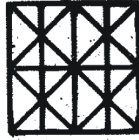
- (A) J (B) F (C) M (D) A

Ans. (D)

Sol. These are the first letters of months

January, February, March, April, May, June, July, \boxed{August}

21. How many line segments are there in the given figure ?



- (A) 11 (B) 14 (C) 16 (D) 17

Ans. (B)

Sol. The figure may be labelled as shown.

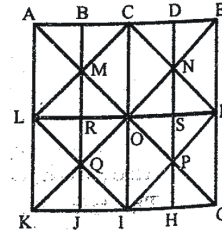
The horizontal lines are AK, BJ, CI, DH and EG i.e. 5 in number.

The vertical lines are AE, LF and KG i.e. 3 in number.

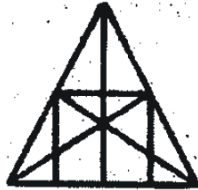
The slanting lines are LC, CF, FI, LI, EK and AG i.e.

6 in number.

Thus, there are $5 + 3 + 6 = 14$ straight lines in the figure.



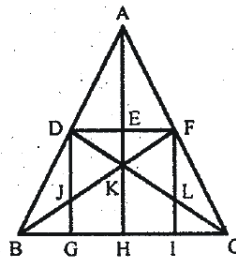
22. How many line segments are there in the given figure ?



- (A) 8 (B) 9 (C) 10 (D) 11

Ans. (B)

Sol. The figure may be labelled as shown. The Horizontal lines are DF and BC i.e. 2 in number. The Vertical lines are DG, AH and FI i.e. 3 in number. The Slanting lines are AB, AC, BF and DC i.e. 4 in number. Thus, there are $2 + 3 + 4 = 9$ straight lines in the figure.



23. How many triangles are there in the given figure ?



- (A) 11 (B) 13 (C) 15 (D) 16

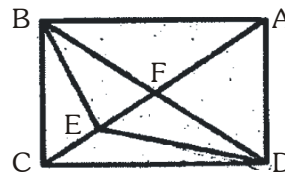
Ans. (C)

Sol. We may label the figure as shown.

The simplest triangles are AFB, FEB, EBC, DEC, DFE and AFD i.e. 6 in number.

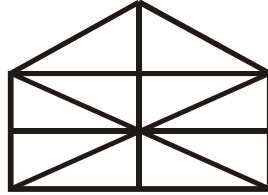
The triangles composed of two components each are AEB, FBC, DFC, ADE, DBE and ABD i.e. 6 in number.

The triangles composed of three components each are ADC and ABC i.e. 2 in number.



There is only one triangle i.e. DBC which is composed of four components.
Thus, there are $6 + 6 + 2 + 1 = 15$ triangles in the figure.

24. How many triangles are there in the given figure ?



(A) 10

(B) 19

(C) 21

(D) 23

Ans. (C)

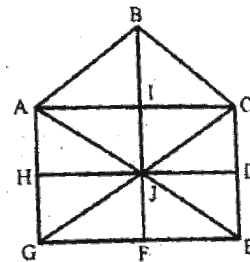
Sol. The figure may be labelled as shown.

The simplest triangles are ABI, BIC, AM, CIJ, AHJ, CDJ, JHG, JDE, GJF and EJF Le. 10 in number.

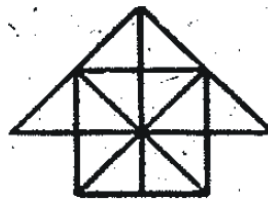
The triangles composed of two components each are ABC, BCJ, ACJ, BAJ, AJG, CJE and GJE Le. 7 in number.

The triangles composed of four components each are ACG, ACE, CGE and AGE le. 4 in number.

∴ Total number of triangles in the figure = $10 + 7 + 4 = 21$.



25. How many squares are there in the given figure ?



(A) 4

(B) 5

(C) 6

(D) 7

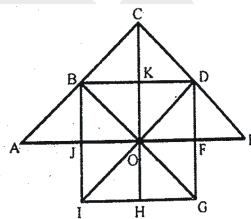
Ans. (C)

Sol. The squares composed of two components each are BKOJ, KDFO, OFGH and JOHI i.e. 4 in number.

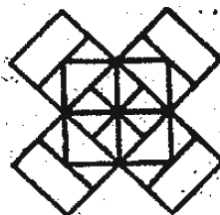
There is only one square i.e. CDOB composed of four components.

There is only one square i.e. BDGI composed of eight components.

Thus, there are $4 + 1 + 1 = 6$ squares in the given figure.



26. How many squares are there in the given figure ?



(A) 18

(B) 14

(C) 20

(D) 22

Ans. (A)

Sol. The figure may be labelled as shown.

The squares composed of two components each are
BJMI, CKMJ, DLMK and AIML i.e. 4 in number.

The squares composed of three components each are EBMA, BFCM, MCGD and AMDH i.e. 4 in number.

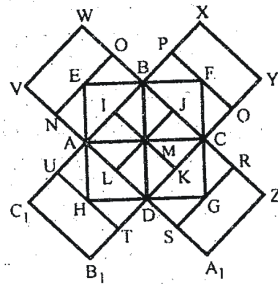
The squares composed of four components each are VWBA, XYCB, ZA₁DC and B₁C₁AD i.e. 4 in number.

The squares composed of seven components each are NOJL, PQKI, RSU and TUIK i.e. 4 in number.

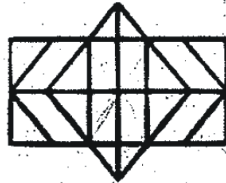
There is only one square i.e. ABCD composed of eight components.

There is only one square i.e. EFGH composed of twelve components. ;

Total number of squares in the figure = 4 + 4 + 4 + 4 + 1 + 1 = 18.



27. How many rectangles are there in the given figure ?



(A) 28

(B) 32

(C) 14

(D) 30

Ans. (D)

Sol. The simplest rectangles are CVSR, VETS, RSWM and STKW i.e. 4 in number.

The rectangles composed of two components each are CETR, VEKW, RTKM and CVWM i.e. 4 in number.

The rectangles composed of three components each are ACRP, PRMO, EGHT and THIK i.e. 4 in number.

The rectangles composed of four components each are CEKM, AVSP, TSWO, VGHS and SHIW i.e. 5 in number.

The rectangles composed of five components each are AETP, PTKO, CGHR and RHIM i.e. 4 in number.

The rectangles composed of six components each are ACMO and EGIK i.e. 2 in number.

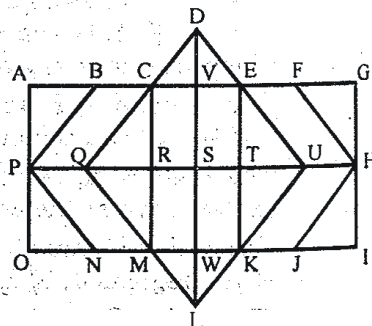
The rectangles composed of eight components each are AGHP, PHIO, AVWO and VGIW i.e. 4 in number.

The rectangles composed of ten components each are AEKO and CGIM i.e. 2 in number.

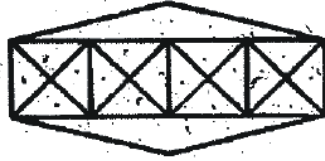
AGIO is the only rectangle having sixteen components.

∴ Total number of rectangles in the given figure

= 4 + 4 + 4 + 5 + 4 + 2 + 4 + 2 + 1 = 30.



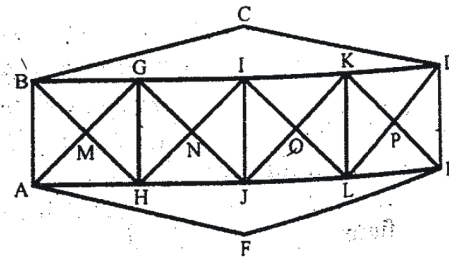
Instruction : (Question No. 28 to 30) Answer the questions on the basis of given figure.



28. How many line segments are there in the given figure ?
 (A) 18 (B) 19 (C) 17 (D) 20

Ans. (B)

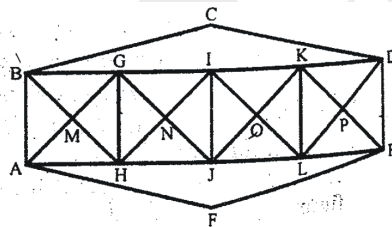
Sol. The simplest line segments are,
 BD, BC, CD, AF, EF, AE, BH, GA, GJ, HI, IL, JK, KE, LD, BA, GH, IJ, KL, DE.



29. How many triangles are there in the given figure ?
 (A) 40 (B) 36 (C) 38 (D) 42

Ans. (A)

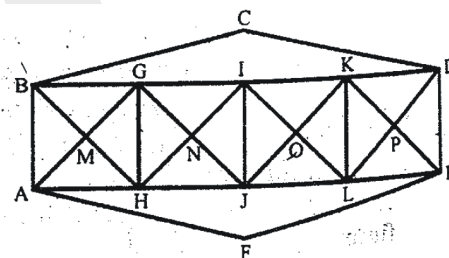
Sol. The simplest triangles are BGM, GHM, HAM, ABM, GIN, IJN, JHN, HGN, IKO, KLO, LJO, JIO, KDP, DEP, ELP, LKP, BCD and AFE i.e. 18 in number.
 The triangles composed of two components each are ABG, BGH, GHA, HAB, HGI, GIJ, IJH, JHG, JIK, IKL, KLJ, LJI, LKD, KDE, DEL and ELK i.e. 16 in number.
 The triangles composed of four components each are BHI, GJK, ILD, AGJ, HIL and JKE i.e. 6 in number.
 \therefore Total number of triangles in the figure = $18 + 16 + 6 = 40$;



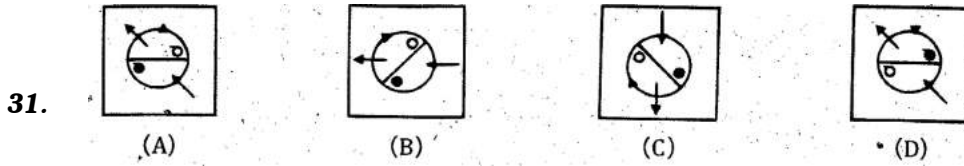
30. How many squares are there in the given figure ?
 (A) 5 (B) 9 (C) 8 (D) 7

Ans. (D)

Sol. The squares composed of two components each are MGNH, NIOJ and OKPL i.e. 3 in number.
 The squares composed of four components each are BGHA, GIJH, IKLJ and KDEL i.e. 4 in number.
 \therefore Total number of squares in the figure = $3 + 4 = 7$.

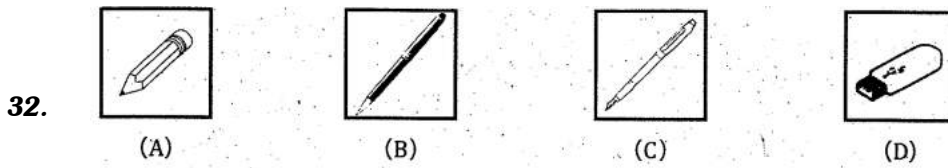


Instruction : (Question No.31 to 40) Four figures are given in question no. 31 to 40. One of the figures differ from the rest. Find out the figure which is different from the rest of the figures.



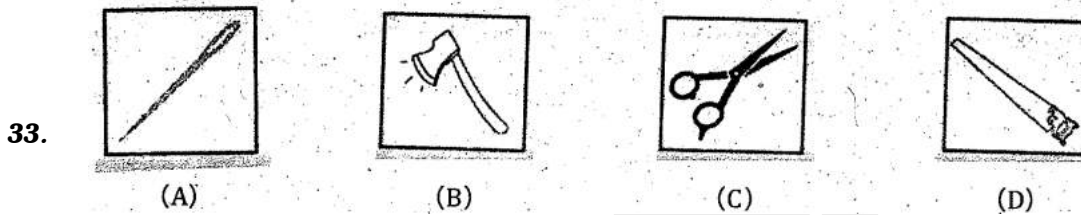
Ans. (D)

Sol. Except, (D) in all other figures the arrow on the circle moves in clockwise direction.



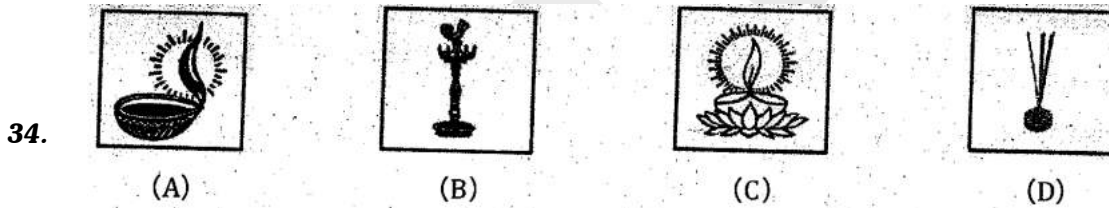
Ans. (D)

Sol. Except, (D) all others are used to write something.



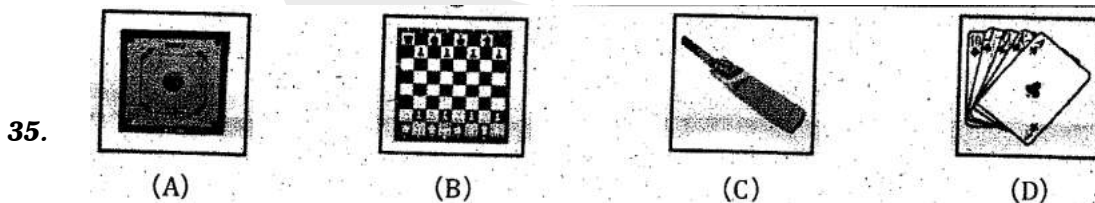
Ans. (A)

Sol. Except, (A) all others are used to cut things.



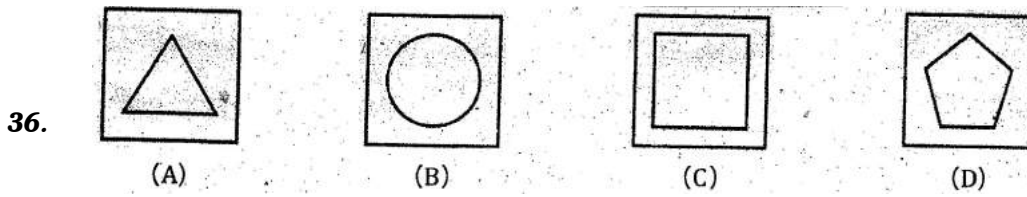
Ans. (D)

Sol. Except, (D) all others are the source of light.



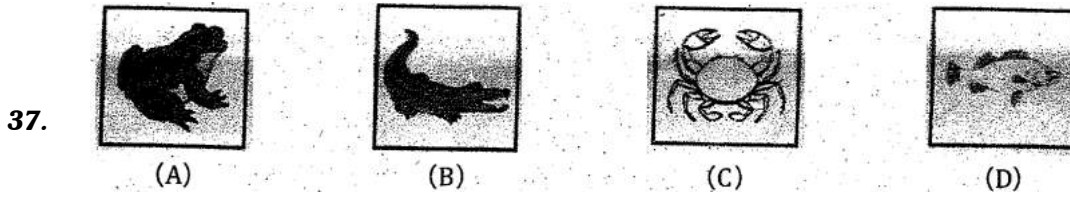
Ans. (C)

Sol. Except, (C) all others are indoor games.



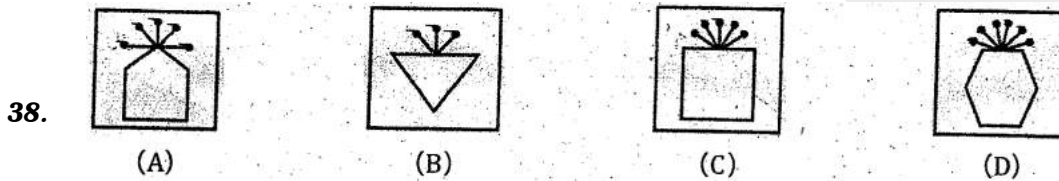
Ans. (B)

Sol. Except, (B) all others are polygons.



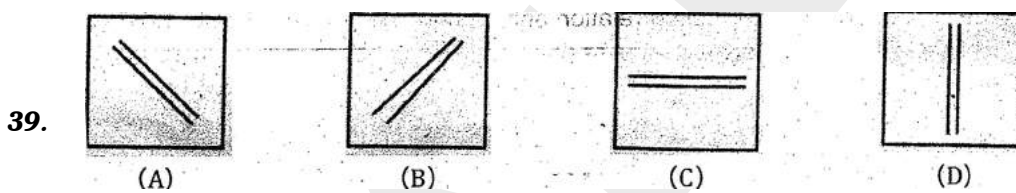
Ans. (D)

Sol. Except, (D) all others are amphibians.



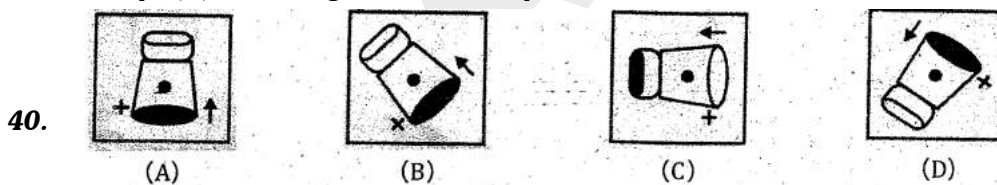
Ans. (A, C)

Sol. Both A, C are possible as (i) Except, (A) all nodes are emerging from one of the side of that figure, And (ii) except (C) number of nodes are equal to number of lines in that figure.



Ans. (B)

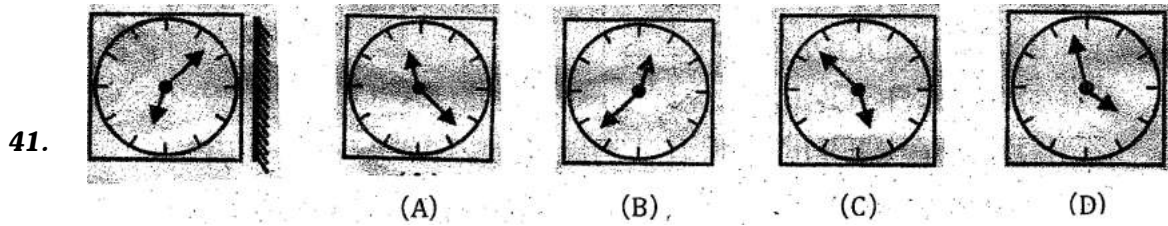
Sol. Except, (B) all other figures has a set of parallel lines.



Ans. (C)

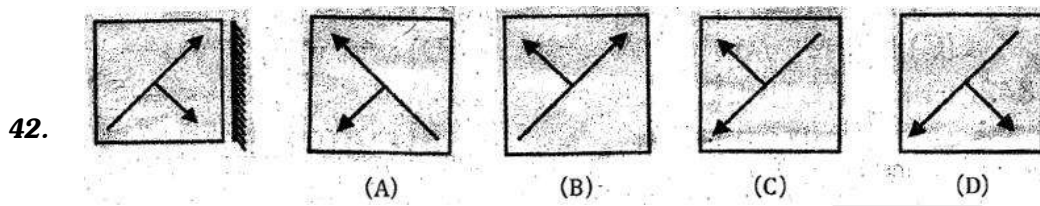
Sol. Except, (C) in all other figures the dark portion is on the larger side.

Instruction : Find out the correct mirror image of the image shown in question no. 41 to 45.



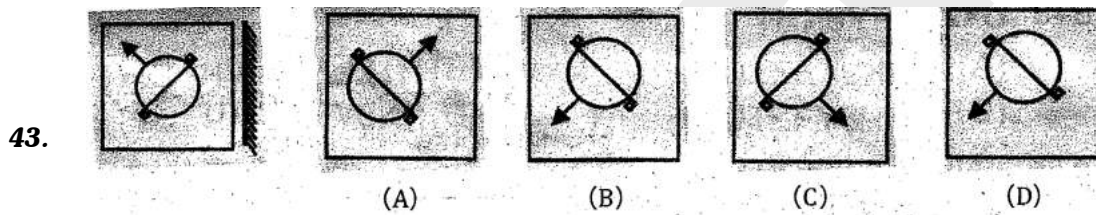
Ans. (C)

Sol. By observation.



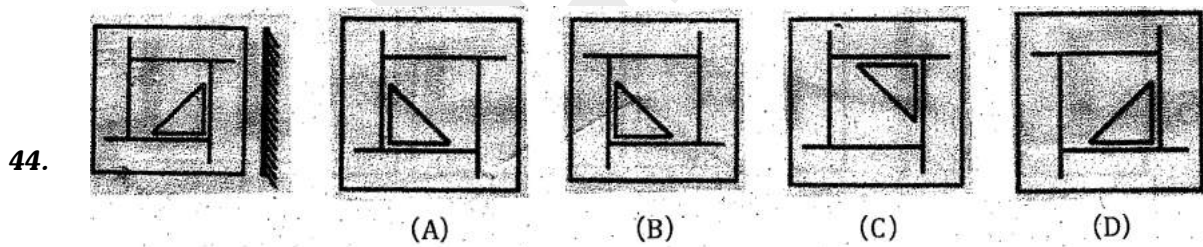
Ans. (A)

Sol. By observation.



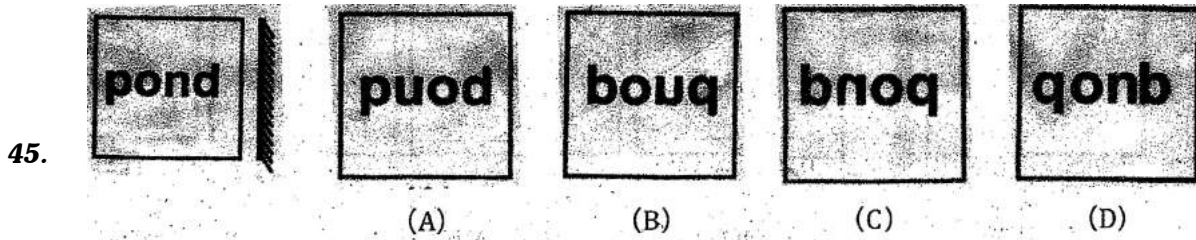
Ans. (A)

Sol. By observation.



Ans. (B)

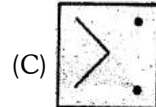
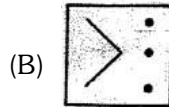
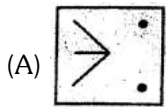
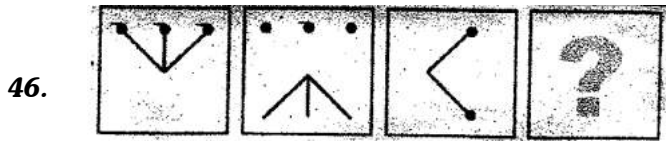
Sol. By observation.



Ans. (C)

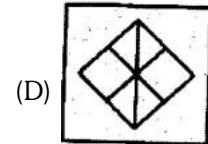
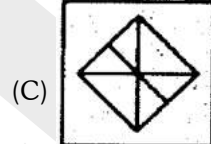
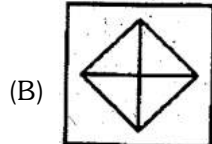
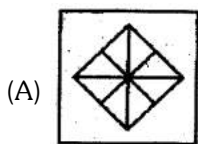
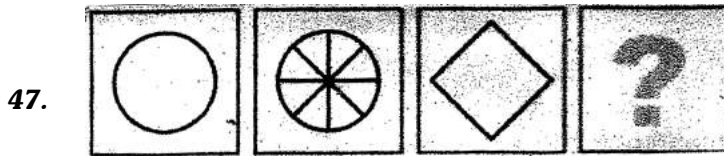
Sol. By observation.

Instruction : Find out the correct correlation and answer the question no. 46 to 47.



Ans. (C)

Sol. By observation.



Ans. (A)

Sol. By observation.

48. Delhi : Haryana, Orissa ?

- (A) Jammu & Kashmir (B) Andhra Pradesh (C) Tamil Nadu (D) Nagaland

Ans. (B)

Sol. Haryana is the neighbour state of Delhi. So, Andhra Pradesh is the neighbouring state of Orissa.

49. Horse : Grass, Vehicles : ?

- (A) Smoke (B) Petrol (C) Lubricating Oil (D) Crude Oil

Ans. (B)

Sol. As Horse eats grass for living, Car uses petrol to run.

50. Boat : Unship, Balloon : ?

- (A) Rubber (B) Nylon (C) Rope (D) Hot Air

Ans. (D)

Sol. Remark : Question should be Boat : Sails, Balloon : ? according to gujarati medium paper.

Instruction : Answer question no. 51 to 60 as shown in example and find out the correct code from the given option by converting the given words in a symbolic language.

51. If FACE = GBDF then BADE = ?

- (A) CBEF (B) CEBF (C) CFBE (D) CBFE

Ans. (A)

Sol. The word is coded by moving each of the letter one step forward.

So, B is coded as C; A is coded as B ; D is coded as E; E is coded as F.

52. If RESULT = 798206 then LET = ?

- (A) 096 (B) 680 (C) 092 (D) 086

Ans. (A)

Sol. By direct coding, the code for L is 0, E is 9 and T is 6.

53. If ACE = ZXV then ? = YZW

- (A) BAD (B) ABD (C) EAC (D) SAD

Ans. (A)

Sol. By using reverse place value A is opposite to Z, C is opposite to X and E is opposite to V. Similarly, B is opposite to Y, A is opposite to Z and D is opposite to W.

54. If LITTLE = MHUSMD then ? = NTUD

- (A) MUTE (B) MOVE (C) MITE (D) MATE

Ans. (A)

Sol. The first letter is coded by moving the letter one step forward and then the second letter is coded by moving the second letter one step backward and so on. Then, MUTE will be the code for NTUD.

55. If COUNTRY = EMWLVPA then ELECTORATE = ?

- (A) CJCEVQPYWC (B) GJQERQTYVG (C) CNCERQPCRG (D) GJGAMTYVC

Ans. (D)

Sol. Here the code follows the pattern +2,-2,+2,-2,....

Therefore, the code for ELECTORATE is GJGAVMTYVC.

56. If PORTUGESE = ESEGUTROP then MALAYALAM = ?

- (A) MALAYALAM (B) MALAYALAM (C) MALAYALM (D) MALAYLAM

Ans. (A,B)

Sol. Here we get the code by reversing the given word. So, the code for MALAYALAM is MALAYALAM. option (A) & (B) are same.

57. If MUSK = 146816 then ZERO = ?

- (A) 113811 (B) 122912 (C) 15915 (D) 2651815

Ans. (B)

Sol. Here the code is written by writing the reverse place value of each letter together. So, the code for ZERO is 122912.

58. If MOTHERLAND = 9501623748 then DREAM = ?

- (A) 82697 (B) 86297 (C) 82769 (D) 82679

Ans. (D)

Sol. By direct coding, the code for D is 8, R is 2, E is 6, A is 7 and M is 9.

59. If SCIENTIST = ICSTNETSI then AMBULANCE = ?

- (A) MBUALNCEA (B) BMAALUECN (C) MAUBALCNE (D) UBMLAECNA

Ans. (B)

Sol. The word is divided into group of three letters each and the letters in each group are reversed.

60. If BOMBAY = GLRYFV then MADRAS = ?

- (A) RXIOFP (B) RIXOIP (C) RXIOXP (D) RXIOGQ

Ans. (A)

Sol. Here the code follows the pattern +5,-3,+5,-3,....
Therefore, the code for MADRAS is RXIOFP.

Instruction : Four options are given in question no. 61 to 70. One of the options is different from the rest of the three options. Find it out.

61. (A) Sodium (B) Potassium (C) Gallium (D) Calcium Sulfate

Ans. (D)

Sol. Here, (D) is only compound. Other three are metals.

62. (A) 1331 (B) 1728 (C) 4096 (D) 5832

Ans. (A)

Sol. Except, (A) all others are cube of even number.

63. (A) Tabla (B) Drum (C) Pakhavaj (D) Santoor

Ans. (D)

Sol. Except, (D) all others are not string instruments.

64. (A) Mars (B) Mercury (C) Jupiter (D) Pluto

Ans. (D)

Sol. Except, (D) all others are planets.

65. (A) Cone (B) Circle (C) Triangle (D) Rectangle

Ans. (A)

Sol. Except, (A) all others are 2-D figures.

66. (A) Kite (B) Bird (C) Radar (D) Aeroplane

Ans. (C)

Sol. Except, (C) all others can fly.

67. (A) Palm (B) Shoulder (C) Knee (D) Elbow

Ans. (A)

Sol. Except, (A) all others are joints.

68. (A) Rabbit (B) Crocodile (C) Sluggish (D) Snails

Ans. (C)

Sol. Except, (C) all others are living beings.

69. (A) Short Vision (B) Spondylitis (C) Glaucoma (D) Conjunctivitis

Ans. (B)

Sol. Except, (B) all others are eye related disease.

70. (A) Amsterdam (B) Europe (C) Antarctica (D) Australia

Ans. (A)

Sol. Except, (A) all others are continents.

Instruction : Find out the correct option by choosing logically appropriate sequence.

71. 1. Gujarat 2. Earth 3. Somnath 4. Universe 5. India
(A) 32154 (B) 24135 (C) 15243 (D) 31524

Ans. (D)

Sol. The required logical sequence is Somnath, Gujarat, India, Earth, Universe.

72. 1. Mother 2. Child 3. Milk 4. Crying 5. Smile
(A) 23145 (B) 12435 (C) 24135 (D) 15243

Ans. (C)

Sol. The required logical sequence is Child, Crying, Mother, Milk, Smile.

73. 1. Rainbow 2. Rain 3. Sun 4. Happy 5. Child
(A) 42351 (B) 45123 (C) 21435 (D) 23154

Ans. (D)

Sol. The required logical sequence is Rain, Sun, Rainbow, Child, Happy.

74. 1. Table 2. Tree 3. Wood 4. Seed 5. Plant
 (A) 13245 (B) 45231 (C) 45321 (D) 12345

Ans. (B)

Sol. The required logical sequence is Seed, Plant, Tree, Wood, Table.

75. 1. Snake 2. Grass 3. Eagle 4. Frog 5. Insect
 (A) 32145 (B) 52143 (C) 25413 (D) 24531

Ans. (C)

Sol. The required logical sequence is Grass, Insect, Frog, Snake, Eagle.

Instruction : Follow the instruction and choose the correct option. (Q. No. 76 to 80)

76. If + means \div , \div means $-$, $-$ means \times and \times means $+$ then $10 \div 2 - 15 + 3 \times 5 = ?$
 (A) 10 (B) 15 (C) 25 (D) 5

Ans. (D)

Sol. $10 \div 2 - 15 + 3 \times 5$

After substitution

$$10 - 2 \times 15 \div 3 + 5$$

$$= 10 - 2 \times 5 + 5$$

$$= 10 - 10 + 5$$

$$= 5$$

77. If Δ means $+$, \square means $-$, \bigcirc means \div and \star means \times then

$$13 \Delta 5 \star 20 \bigcirc 10 \square 9 = ?$$

- (A) 26 (B) 14 (C) 37 (D) 55

Ans. (B)

Sol. After substitution then the equation will be

$$13 + 5 \times 20 \div 10 - 9$$

$$13 + 5 \times 2 - 9$$

$$13 + 10 - 9$$

$$= 23 - 9$$

$$14$$

78. If A means $+$, B means $-$, C means \div and D means \times then $10 D 2 A 5 B 5 = ?$

- (A) 15 (B) 12 (C) 20 (D) 10

Ans. (C)

Sol. After substitution then the equation will be

$$10 \times 2 + 5 - 5$$

$$20 + 5 - 5$$

$$= 25 - 5$$

$$20$$

79. If P = 6, J = 4, L = 8, M = 24 then $M \times J \div L + J = ?$

- (A) 8 (B) 36 (C) 52 (D) 16

Ans. (D)

Sol. After substitution then the equation will be

$$24 \times 4 \div 8 + 4$$

$$= 24 \times 0.5 + 4$$

$$12 + 4$$

$$16$$

80. If Δ means $>$, \square means $<$, O means $=$ and $\#$ means \neq and $A O B$, $C \Delta D$ as well as $D \square A$, then which of the following is true ?

- (A) $C \# A$ (B) $B \Delta D$ (C) $B \square D$ (D) $A \square D$

Ans. (B)

Sol. After substitution then the equation will be

$C \Delta D \ A \ B$

Therefore, only option (B) satisfies the condition.

Instruction : Follow the instruction and choose the correct option. (Q. No. 81 to 100)

81. If fourth Wednesday is on 25th of a month, what will be the date of Second Sunday of the same month?

- (A) 8 (B) 14 (C) 12 (D) 10

Ans. (A)

Sol. Given that 25th is fourth Wednesday, then 1st of that month is Sunday. So, second Sunday will be on 8.

82. Today is Sunday. What day will be there after 112 days?

- (A) Friday (B) Sunday (C) Wednesday (D) Monday

Ans. (B)

Sol. Given that today is Sunday. And after 112 days there will be 0 odd days. So, it will be Sunday.

83. 15th August, 2019 was Thursday. What day will be there on 15th August, 2020?

- (A) Wednesday (B) Friday (C) Saturday (D) Thursday

Ans. (C)

Sol. As 2020 is a leap year, odd days will be two. So, two days after Thursday is Saturday.

84. Which of the following is a Leap Year?

- (A) 1900 AD (B) 2100 AD (C) 1990 AD (D) 2000 AD

Ans. (D)

Sol. As the year given in all the options are century year so for the year to be the leap year it should be divisible by 400. So, the leap year is 2000 AD.

85. A box has 4 white, 5 green and 6 yellow balls in it. By how many ways can 3 balls be selected randomly from the box?

- (A) 455 (B) 120 (C) 20 (D) 12

Ans. (A)

Sol. White balls - 4 green balls - 5 yellow balls - 6

$$\text{Number of ways to select three balls} = {}^{15}C_3 = \frac{15!}{12! \times 3!} = \frac{15 \times 14 \times 13}{3 \times 2 \times 1} = 455$$

86. If 40 persons shake their hands with one another, what will be the total number of shaking hands?

- (A) 820 (B) 780 (C) 80 (D) 512

Ans. (B)

Sol. Number of handshakes are: $\frac{n(n-1)}{2} = \frac{40 \times 39}{2} = 780$

87. Proportion ratio of the current age of A and B is 4 : 5. After 4 years, it will be 8 : 9. What will be the sum of the age of both A and B ?

- (A) 18 years (B) 17 years (C) 9 years (D) 27 years

Ans. (C)

Sol. Let age of A = 4x and age of B = 5x

$$\text{According to question, } \frac{4x}{5x} = \frac{4}{9}$$

$$36x - 36 = 40x - 32$$

$$\therefore 4x = 4$$

$$\therefore x = 1$$

Age of A = 4 years and age of B = 5 years
 Sum of ages of A and B is $4 + 5 = 9$ years

- 88.** Sum of the current age of Jay and Vijay is 40 years. After 7 years, the proportion ratio of their age will be 4 : 5. What will be the current age difference of both Jay and Vijay?
 (A) 5 (B) 9 (C) 13 (D) 6

Ans. (D)

Sol. Let age of Jay is x and age of Vijay is $40 - x$
 According to question,

$$\frac{x + 7}{40 - x + 7} = \frac{4}{5}$$

$$5x + 35 = 188 - 4x$$

$$9x = 153$$

$$x = 17$$

Age of Jay is 17 years
 Age of Vijay is $40 - x = 23$ years
 Difference is $23 - 17 = 6$

- 89.** Father's age is four times more plus 3 years than son's age. Mother's age is 4 years more than father's age. If son's age is 5 years, what will be the age of mother?
 (A) 19 years (B) 23 years (C) 27 years (D) 21 years

Ans. (C)

Sol. Age of Father is $4 \times 5 + 3 = 23$ years
 Age of Mother is $23 + 4 = 27$ years

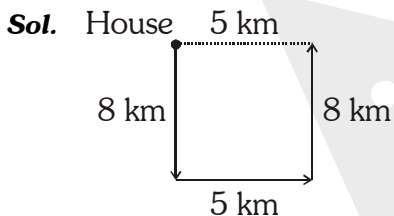
- 90.** What is your relationship with your uncle's wife's one and only sister - in-law's daughter?
 (A) Paternal Aunty (B) Maternal Aunty (C) Niece (D) Sister

Ans. (D)

Sol. Uncle's wife is aunty. Aunty's sister-in-law's will be your mother. Daughter of your mother will be your sister.

- 91.** Tanvi walks 8 km in the south from her house. Then she turns left and walks 5 km. Again, she turns left and walks 8 km. How far is she from her house?
 (A) 3 km (B) 8 km (C) 5 km (D) 13 km

Ans. (C)

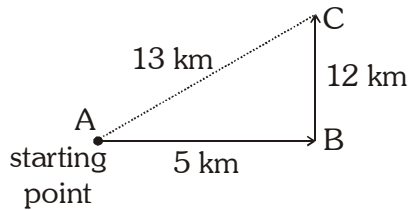


She is 5 km far away from her house.

- 92.** Rehan walks 5 km in the east. Then, he turns perpendicularly left and walks 12 km. Now, at least how many kilometres will he have to walk to come back to the starting point?
 (A) 7 km (B) 17 km (C) 8.5 km (D) 13 km

Ans. (D)

Sol.



By using Pythagoras theorem

$$AB^2 + BC^2 = AC^2$$

$$5^2 + 12^2 = AC^2$$

$$25 + 144 = AC^2$$

$$169 = AC^2$$

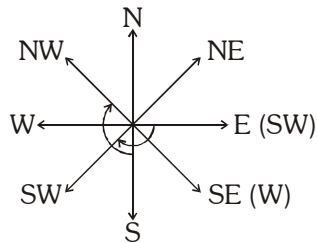
Therefore, $AC = 13$ km

93. If East = South West and South East = West, then South = ?

- (A) North West (B) North East (C) North (D) None of these

Ans. (A)

Sol.



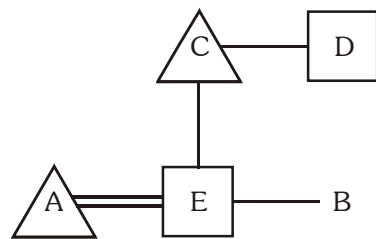
By observation.

94. 'A' is the sister - in - law of 'B' and daughter - in - law of 'C'. 'D' is the father of 'E' and 'E' is the one and only brother of 'B'. Then, what is the relation of 'A' with 'E'?

- (A) Sister - in - law (B) Wife (C) Mother (D) Aunty

Ans. (B)

Sol.



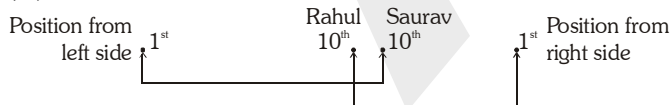
Here, we can clearly see that A is the wife of E.

95. In a row, Saurav is at 10th position from the left side. In the same row, Rahul is at the 10th position from the right side. If both are beside each other, how many persons will be there in that row ?

- (A) 28 (B) 19 (C) 18 (D) None of the three

Ans. (C)

Sol.



So total number of person in that row is 18.

96. In a row of 37 students, Yogesh is at 17th position from the left side. Then, what will be his position from the right side?

- (A) 18th (B) 19th (C) 20th (D) 21st

Ans. (D)

Sol. Total number of students = $(x + y) - 1$

$$37 = (17 + y) - 1$$

$$38 = 17 + y$$

$$y = 21$$

97. In a row, Joseph is at 15th position from the left side and at 13th position from the right side. How many boys will be there in that row?

(A) 29

(B) 28

(C) 25

(D) 27

Ans. (D)

Sol. Total number of students = $(x + y) - 1$

$$\text{Total students} = (15 + 13) - 1$$

$$\text{Total students} = 28 - 1$$

$$\text{Total students} = 27$$

98. Basil is taller than Arbutus. Pomegranate is shorter than Hibiscus. Basil is taller than Pomegranate. If Arbutus is taller than Pomegranate, which will be the shortest plant?

(A) Pomegranate

(B) Basil

(C) Hibiscus

(D) Arbutus

Ans. (A)

Sol. $B > A, H > P, B > P, A > P$

Therefore, Pomegranate is the shortest plant.

99. 'M' is bigger than 'P'. 'R' is smaller than 'K'. If 'K' is smaller than 'M', then, who is the biggest among all?

(A) K

(B) M

(C) P

(D) R

Ans. (B)

Sol. $M > P, K > R, M > K$

Therefore, M is the biggest among all.

100. The Rajdhani is longer than the Shatabdi. The Deccan is longer than the Memu. The Shatabdi is longer than the Memu. Which train has the least length?

(A) Memu

(B) Shatabdi

(C) Rajdhani

(D) Deccan

Ans. (A)

Sol. $R > S, D > M, S > M$

Therefore, Memu has the least length.