NATIONAL TALENT SEARCH EXAMINATION (NTSE-2021) STAGE -1

STATE : GUJARAT PAPER : MAT

Date: 14/02/2021

Max. Marks: 100 **SOLUTIONS** **Time allowed: 120 mins**

Instruction : In Question no. 1 to 10 numbers have been organised in a definite number series where one number is missing and a ? is given in its place. Choose the suitable alternative from the given options to find out the missing number.

1. 5, 25, 125, ?

(1) 625 (2) 1225 (3) 3125 (4) 1250

Ans. ***(1)***

Sol. Multiply the number with 5 to get next number. $5\times5=25$, $25\times5=125$, $125\times5=625$.

2. 3, 7, 17, 39, ?

(1) 83 (2) 85 (3) 61 (4) 81

Ans. ***(2)***

Sol. It follows the following pattern,

$3 \times 2 + 1 = 7$

$7 \times 2 + 3 = 17$

$17 \times 2 + 5 = 39$

$39 \times 2 + 7 = 85$

3. 5, 14, 23, ?, 41

(1) 31 (2) 32 (3) 34 (4) 28

Ans. ***(2)***

Sol. Add 9 in each number to get next number of the series. $5+9=14$, $14+9=23$, $23+9=32$.

4. 3, 4, 6, 10, 18, ?

(1) 28 (2) 30 (3) 34 (4) 35

Ans. ***(3)***

Sol. It follows the following pattern,

$3 + 2^0 = 4$

$4 + 2^1 = 6$

$6 + 2^2 = 10$

$10 + 2^3 = 18$

$18 + 2^4 = 34$

5. 1, 2, 5, 26, ?

(1) 78 (2) 136 (3) 376 (4) 677

Ans. ***(4)***

Sol. Previous number square plus 1 is the next number,
$1^2 + 1 = 2, 2^2 + 1 = 5, 5^2+1 = 2^6, 26^2 + 1 = 677$

6. 570, 330, 210, 150, 120, ?

(1) 115 (2) 105 (3) 90 (4) 100

Ans. ***(2)***

Sol. It follows following pattern,

570, 330, 210, 150, 120, 105
– 240 – 120 – 60 – 30 – 15
÷ 2 ÷ 2 ÷ 2 ÷ 2

7. 5, 8, 10, 10, 15, 12, 20, ?

(1) 14 (2) 24 (3) 10 (4) 26

Ans. ***(1)***

Sol. It is an alternate series with alternate number is multiple of 5 and remaining alternate is increasing by 2.

8. 2, 7, 26, 111, ?, 3395

(1) 502 (2) 961 (3) 564 (4) 723

Ans. ***(3)***

Sol. It follows following pattern,

$2 \times 2 + 3 = 7$

$7 \times 3 + 5 = 26$

$26 \times 4 + 7 = 111$

$111 \times 5 + 9 = 564$

$564 \times 6 + 11 = 3395$

9. 2, 9, 28, 65, ?

(1) 119 (2) 126 (3) 109 (4) 129

Ans. ***(2)***

Sol. It follows the pattern of n^3+1

$1^3+1=2, 2^3+1=9, 3^3+1=28, 4^3+1=65, 5^3+1=126$

10. 12, 27, 86, 351, 1764, ?

(1) 5897 (2) 6598 (3) 9721 (4) 10595

Ans. ***(4)***

Sol. It follows following pattern,

$12 \times 2 + 3 = 27$

$27 \times 3 + 5 = 86$

$86 \times 4 + 7 = 351$

$351 \times 5 + 9 = 1764$

$1764 \times 6 + 11=10595$

Instruction : In Question no. 11 to 20, numbers and alphabets are organised in a definite pattern. There is a specific relationship between alphabets and numbers. Identify the given pattern are choose the suitable alternative to fill in the blanks.

11. If 325 = 6410, 372 = 6144, then 523 = _____ .

(1) 1046 (2) 1064 (3) 4046 (4) 6410

Ans. ***(1)***

Sol. Split the digits of the number and double them, 523 i.e. $5\times2=10$, $2\times2=4$, $3\times2=6$. So, 1046

12. If DEEPA = 455161 and MINA = 139141, then RITA = _____ .

(1) 189201 (2) 189191 (3) 45941 (4) 189211

Ans. ***(1)***

Sol. Use place value of the alphabet of the word. R=18, I=9, T=20, A=1. So, RITA=189201.

13. If CAT = 24 then RAT = _____

(1) 39 (2) 29 (3) 25 (4) 31

Ans. ***(1)***

Sol. Add the place value of each alphabet in the word. R=18, A=1, T=20. So, R+A+T = 18+1+20=39.

14. If MITUL = 92573 and EAGLE = 16831, then GEETA = _____

(1) 81176 (2) 81156 (3) 81776 (4) 81165

Ans. ***(2)***

Sol. By observing the code of given alphabet by using direct coding and applying the same for GEETA = 81156.

15. If JMP = LOR, then EKN = _____

(1) GMQ (2) GLP (3) GMP (4) GLQ

Ans. ***(3)***

Sol. Here, J+2=L, M+2=O, P+2=R applying same for EKN, E+2=G, K+2=M, N+2=P.

16. If NTSE = 4732, then SENT = _____

(1) 3247 (2) 3427 (3) 3724 (4) 2347

Ans. ***(1)***

Sol. By observing the code of given alphabet by using direct coding and applying the same for SENT = 3247.

17. In a symbolic language ATUL is written as AUTL, then JUHI will be written as :

(1) JUIH (2) IUHJ (3) JHUI (4) JIHU

Ans. ***(3)***

Sol. In this 2^{nd} and 3^{rd} alphabet of the word swap their place leaving the 1^{st} and 4^{th} as it is.

18. In a symbolic language MARKET is written as AMKRTE then DIVYANSH will be writen in the same code language as :

(1) IDVYANHS (2) IDYVANHS (3) IDYVNAHS (4) IDVYNAHS

Ans. ***(3)***

Sol. Here each pair of alphabet in the word are swapping positions with each other.

19. In a symbolic language PAYAL = LAYAP then MOKSH = _____

(1) HSKMO (2) SHKOM (3) HSOKM (4) HSKOM

Ans. ***(4)***

Sol. Here the word is written in opposite manner.

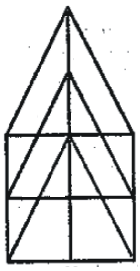
20. In a symbolic language ATULYA is written as AATYUL then GARDEN will be written as:

(1) GNAERD (2) GNEARD (3) GNEADR (4) GNAEDR

Ans. ***(1)***

Sol. Here first and last, second and second last, third and third last letter of word are written simultaneous one after other.

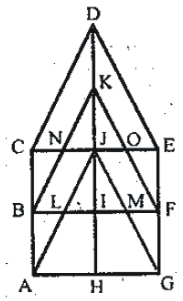
21. How many triangles are there in the given figure?



(1) 21 (2) 18 (3) 16 (4) 20

Ans. ***(1)***

Sol.



Triangles :

The simplest triangles are KJN, KJO, CNB, OEF, JIL, JIM, BLA and MFG i.e. 8 in number.

The triangles composed of two components each are CDJ, EDJ, NKO, JLM, JAH and JGH i.e. 6 in number.

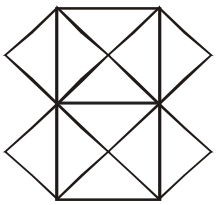
The triangles composed of three components each are BKI, FKI, CJA and EJG Le. 4 in number.

The triangles composed of four components each are CDE and AJG i.e. 2 in number.

The only triangle composed of six components is BKF.

Thus, there are 8 + 6 + 4 + 2 + 1 = 21 triangles in the given figure.

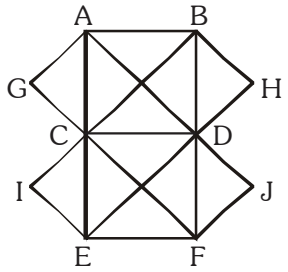
22. How many parallel lines are there in the given figure?



(1) 8 (2) 13 (3) 11 (4) 6

Ans. ***(2)***

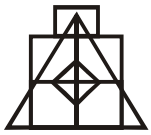
Sol.



Parallel lines are AB, CD, EF, AG, BI, EH, FJ, BH, AJ, GF, EI, AE, BF.

Instruction : Answer question no. 23 and 24 on the basis of the given figure

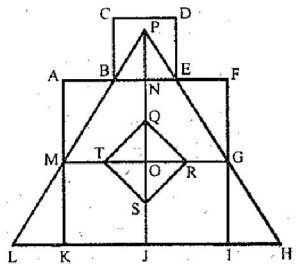
23. How many triangles are there in the given figure?



(1) 18 (2) 16 (3) 21 (4) 24

Ans. ***(3)***

Sol. Triangles :



The simplest triangles are BPN, PNE, ABM, EFG, MLK, GHI, QRO, RSO, STO and QTO i.e. 10 in number.

The triangles composed of two components each are BPE, TQR, QRS, RST and STQ i.e. 5 in number.

The triangles composed of three components each are MPO and GPO i.e. 2 in number.

The triangles composed of six components each are LPJ, HPJ and MPG i.e. 3 in number.

There is only one triangle LPH composed of twelve components.

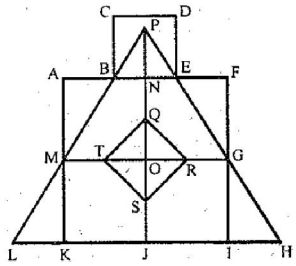
$\therefore$ Total number of triangles in the figure $= 10 + 5 - 2 + 3 + 1 = 21$.

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

(1) 6 (2) 5 (3) 9 (4) 7

Ans. ***(4)***

Sol. Squares :

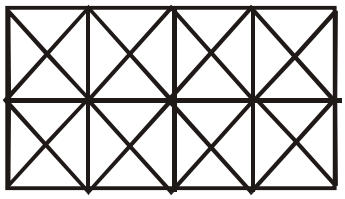


The squares composed of two components each are MGNH, NIOJ and OKPL i.e. 3 in number.

The squares composed of four components each are BGHA, GIJH, IKLJ and KDEL fa, 4 in number.

$\therefore$ Total number of squares in the figure = 3 + 4 = 7.

Instruction : Answer Question no. 25 and 26 on the basis of the given figure :

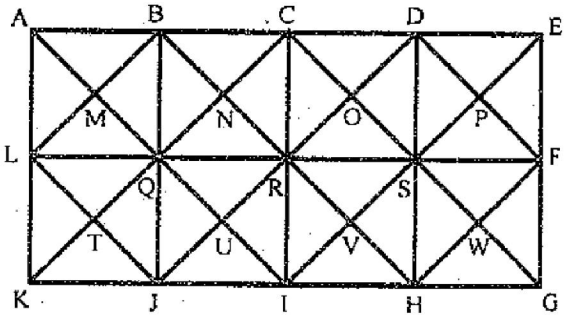


25. How many squares are there in the given figure?

(1) 12 (2) 14 (3) 22 (4) 24

Ans. ***(4)***

Sol.



We shall label the given figure as shown. The squares composed of two components each are BNQM, CORN, DPSO, MQTL, NRUQ, OSVR, PFWS, QUJT, RVIU and SWHV i.e. 10 in number.

The squares composed of four components each are ABQL, BCRQ, CDSR, DEFS, LQJK, QRIJ, RSHI and SFGH i.e. 8 in number.

The squares composed of eight components each are BRJL, CSIQ and DFHR i.e. 3 in number.

The squares composed of sixteen components each are ACIK, BDHJ and CEGI i.e. 3 in number.

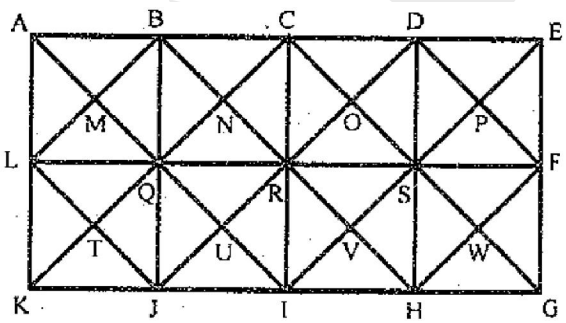
Thus, there are 10 + 8 + 3 + 3 = 24 squares in the figure.

26. How many parallel lines are there in the given figure?

(1) 16 (2) 18 (3) 14 (4) 15

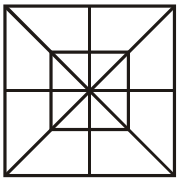
Ans. ***(2)***

Sol.



Parallel lines are AE, LF, KG, AK, BJ, CI, DH, EG, AI, BH, GC, DF, LJ, BL, CK, DJ, EI, FH.

Instruction : Answer Question no. 27 and 28 on the basis of the given figure :

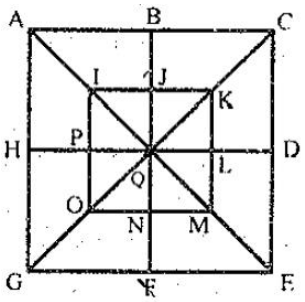


27. How many triangles are there in the given figure?

(1) 16 (2) 24 (3) 32 (4) 34

Ans. ***(3)***

Sol. Triangles :



The simplest triangles are IJQ, JKQ, KLQ, LMQ, MNQ, NOQ, OPQ and PIQ i.e. 8 in number.

The triangles composed of two components each are ABQ, BCQ, CDQ, DEQ, EFQ, FGQ, GHQ, HAQ, IKQ, KMQ, MOQ and OIQ i.e. 12 in number.

The triangles composed of four components each are ACQ, CEQ, EGQ, GAQ, IKM, KMO, MOI and OIK i.e. 8 in number.

The triangles composed of eight components each are ACE, CEG, EGA and GAC i.e. 4 in number.

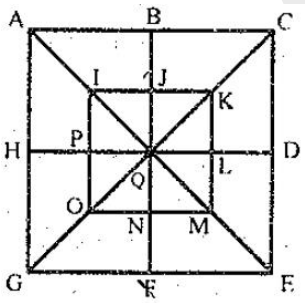
$\therefore$ Total number of triangles in the figure $= 8 + 12 + 8 + 4 = 32$.

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

(1) 16 (2) 12 (3) 14 (4) 10

Ans. ***(4)***

Sol. Squares :



The squares composed of two components each are IJQP, JKLQ, QLMN and PQNO i.e. 4 in number.

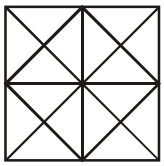
The squares composed of four components each are ABQH, BCDQ, QDEF and HQFG i.e. 4 in number.

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

There is only one square i.e. ACEG composed of sixteen components.

Thus, there are 4 + 4 + 1 + 1 = 10 squares in the given figure.

Instruction : Answer Question no 29 and 30 on the basis of the given figure :

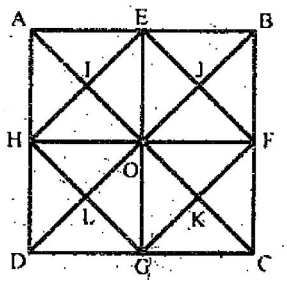


29. How many triangles are there in the given figure ?

(1) 44 (2) 32 (3) 28 (4) 35

Ans. ***(1)***

Sol. Triangles :



The simplest triangles are AEI, EOI, OHI, HAI, EBJ, BFJ, FOJ, OEJ, HOL, OGL, GDL, DHL, OFK, FCK, CGK and GOK i.e, 16 in number.

The triangles composed of two components each are HAE, AEO, EOH, OHA, OEB, EBF, BFO, FOE, DHO, HOG, OGD, GDH, GOF, OFC, FCG and CGO i.e. 16 in number.

The triangles composed of four components each are HEF, EFG, FGH, GHE, ABO, BCO, CDO and DAO i.e. 8 in number.

The triangles composed of eight components each are DAB, ABC, BCD and CDA i.e. 4 in number.

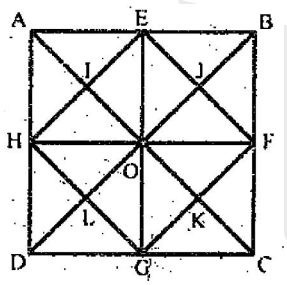
Total number of triangles in the figure = 16 + 16 + 8 + 4 = 44.

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

(1) 12 (2) 14 (3) 8 (4) 10

Ans. ***(4)***

Sol. Squares :



The squares composed of two components are HIOL, IEJO, JFKO and KGLO i.e 4 in number.

The squares composed of four components are AEOH, EBFO, OFGC and HOGD i.e 4 in number.

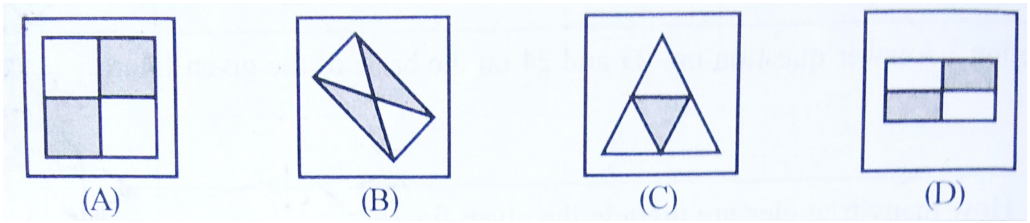
There is only one square EFGH which is composed of eight components.

There is only one square ABCD which is composed of sixteen components.

$\therefore$ Total number of squares in the figure = 4 + 4 + 1 + 1 = 10.

Instruction : There are four figures in Question no. 31 to 40. One of the figures differ from the rest three in every question. Find out the figure which is different from the rest of the figures.

31.

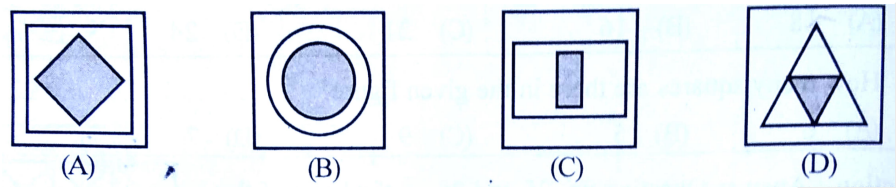


(1) A (2) B (3) C (4) D

Ans. ***(3)***

Sol. The area of shaded region and unshaded region is equal.

32.

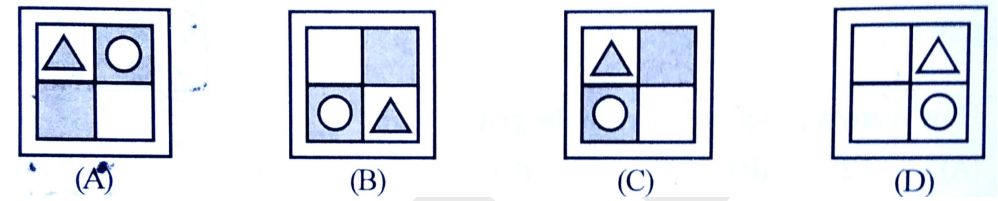


(1) A (2) B (3) C (4) D

Ans. ***(4)***

Sol. Only in this option triangle figure is touching the side of other figure.

33.

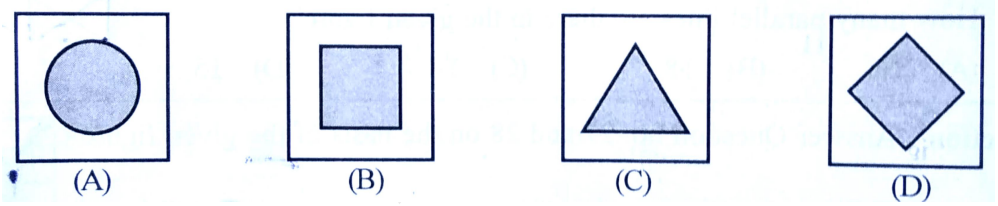


(1) A (2) B (3) C (4) D

Ans. ***(4)***

Sol. By observation.

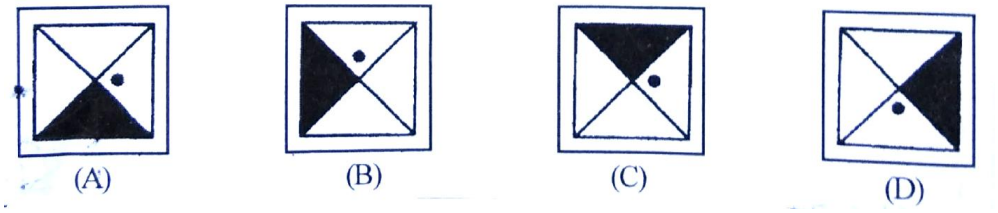
34.



(1) A (2) B (3) C (4) D

Ans. ***(1)***

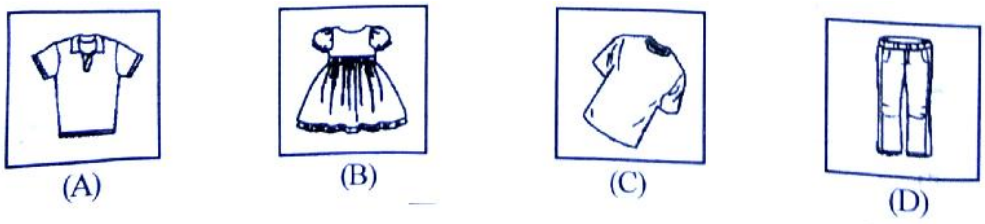
Sol. By observation.

35. 

(1) A (2) B (3) C (4) D

Ans. ***(1)***

Sol. Except option (1), in all other figure dot is appearing on the left side of shaded area.

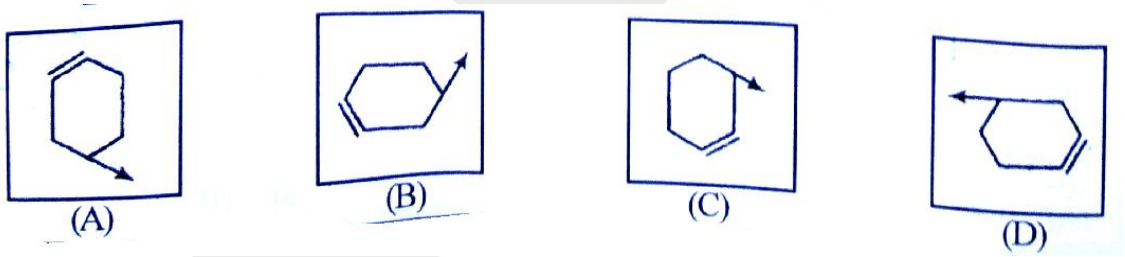
36. 

(1) A (2) B (3) C (4) D

Ans. ***(4 or 3)***

Sol. all image except (3) is tilted.

Except (4), all others are top wear.

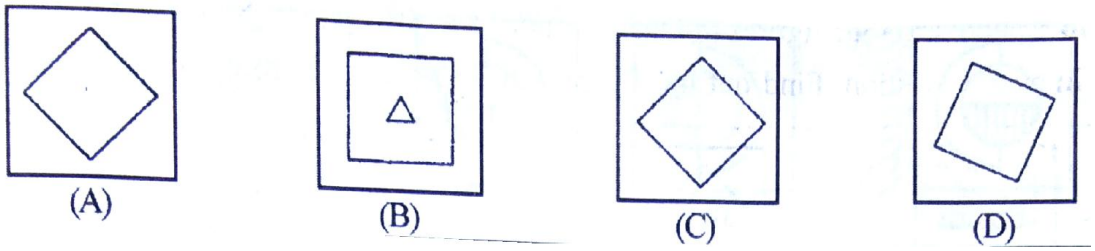
37. 

(1) A (2) B (3) C (4) D

Ans. ***(3)***

Sol. Except (3), in all other figure the rotation according to the given arrow is in clockwise direction.

38.

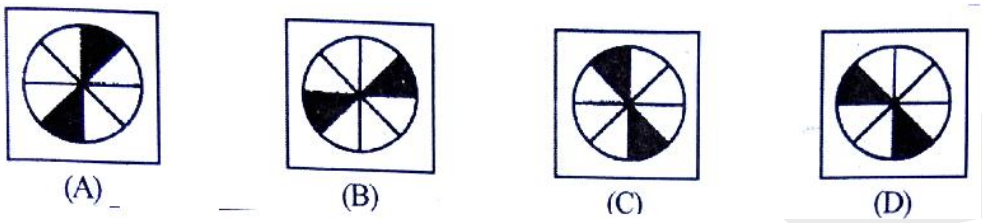


(1) A (2) B (3) C (4) D

Ans. ***(2)***

Sol. By observation.

39.

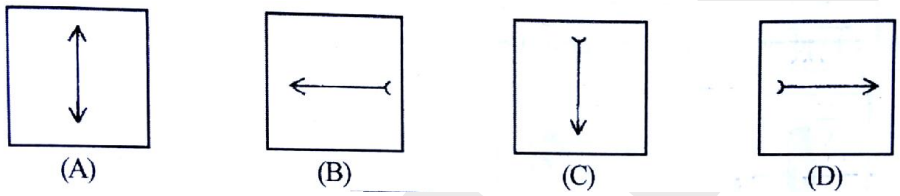


(1) A (2) B (3) C (4) D

Ans. ***(4)***

Sol. Except (4) The shaded portion are opposite to each other.

40.



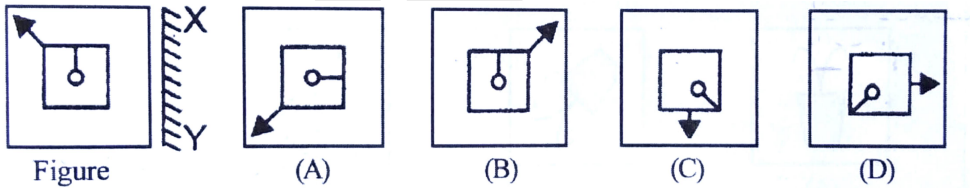
(1) A (2) B (3) C (4) D

Ans. ***(1)***

Sol. By observation.

Instruction : Find out the correct mirror image of the images shown in Question no. 41 to 46.

41.

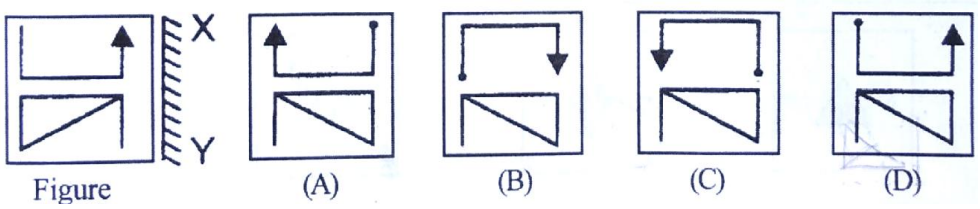


(1) A (2) B (3) C (4) D

Ans. ***(2)***

Sol. By observation.

42.

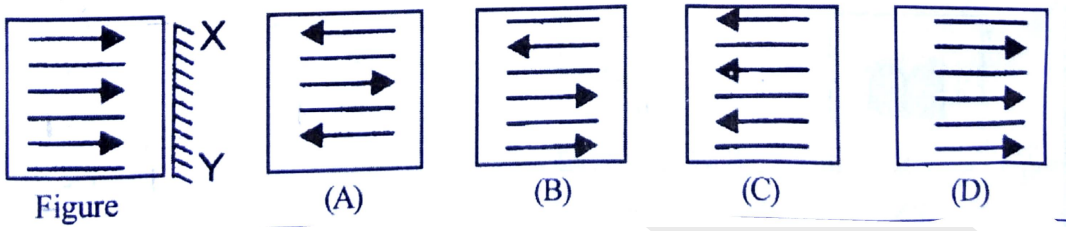


(1) A (2) B (3) C (4) D

Ans. ***(1)***

Sol. By observation. (*most appropriate option)

43.

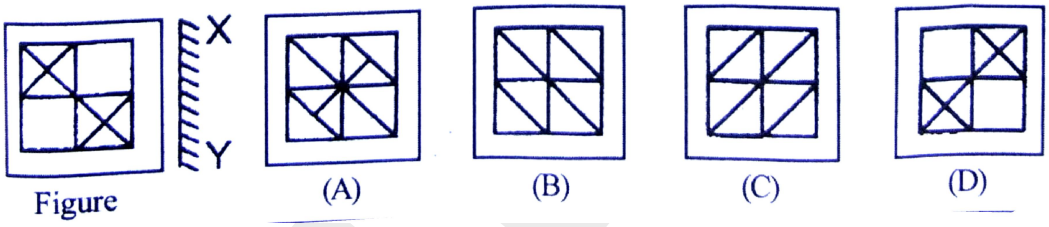


(1) A (2) B (3) C (4) D

Ans. ***(3)***

Sol. By observation.

44.

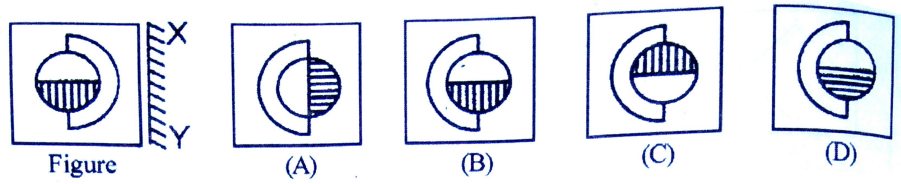


(1) A (2) B (3) C (4) D

Ans. ***(4)***

Sol. By observation.

45.

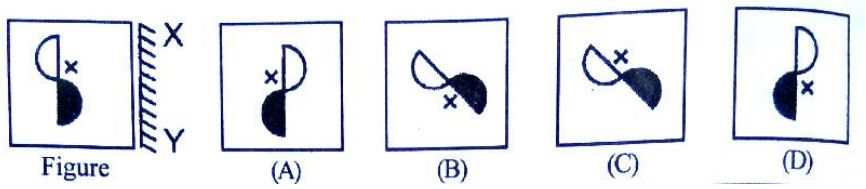


(1) A (2) B (3) C (4) D

Ans. ***(2)***

Sol. By observation.

46.



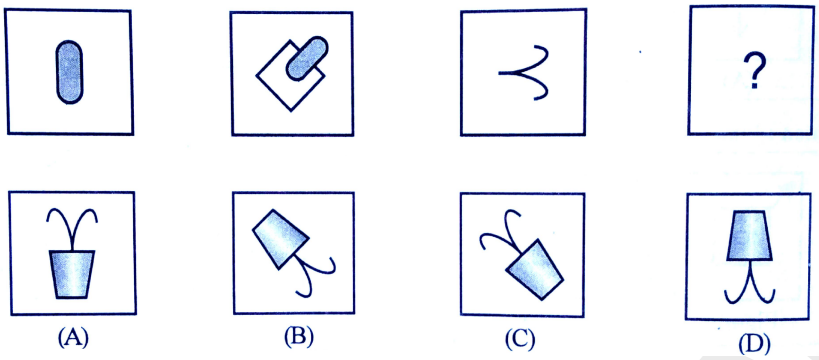
(1) A (2) B (3) C (4) D

Ans. ***(1)***

Sol. By observation.

Instruction : Find out the correct correlation and answer Question no. 47 to 50.

47.

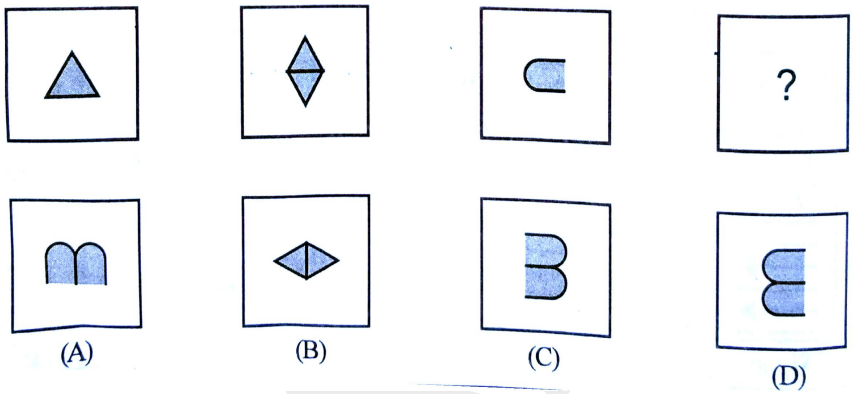


(1) A (2) B (3) C (4) D

Ans. ***(2)***

Sol. A new figure is added in the old figure with the rotation in clockwise direction of 45 degree.

48.



(1) A (2) B (3) C (4) D

Ans. ***(4)***

Sol. Water image is added of the old figure in the new figure.

49. Thermometer : Temperature : : Barometer : ?

(1) Density (2) Intensity of sound (3) Atmospheric Pressure (4) Length

Ans. ***(3)***

Sol. Thermometer is used to measure the temperature. Barometer is used to measure the Atmospheric Pressure.

50. Winter : Sweater : : Rainyseason ?

(1) Umbrella (2) Mud (3) Rain (4) Raincoat

Ans. ***(4)***

Sol. In winter we wear sweater similarly, in Rainy season we wear raincoat.

Instruction : In Question no. 51 to 60. find out the correct code from the given options by converting the given words in a symbolic language as shown in example.

51. If CHAIR = FKDLU then TABLE = ?

(1) UDFOH (B) UDEOH (3) WDEOH (4) VDFOH

Ans. ***(3)***

Sol. Here, the code that follow is $+3,+3,+3,\ldots..$

52. If JUNE = NXPF then STAY = ?

(1) WWCZ (2) WVCZ (3) WWDB (4) VWZC

Ans. ***(1)***

Sol. Here, the code that follow is $+4,+3,+2,+1$

53. If CORONA = DQUSSG then MASK = ?

(1) NBTL (2) NCVO (3) NBWQ (4) NCWQ

Ans. ***(2)***

Sol. Here, the code that follow is $+1,+2,+3,+4,+5,+6$

54. If HELP = 164 then CARE = ?

(1) 108 (2) 132 (3) 140 (4) 122

Ans. ***(1)***

Sol. Here, the code that follow is add the place value of the alphabet and then multiply the answer with total number of alphabets in that word.

55. If OUT = 152120 then IN = ?

(1) 1015 (2) 819 (3) 1813 (4) 914

Ans. ***(4)***

Sol. Here, the code that follow is the place value is directly given as the code.

56. If OATH = TEYL then WORD = ?

(1) BWRH (2) HRWB (3) BSWH (4) CSXI

Ans. ***(3)***

Sol. Here, the code that follow is $+5,+4,+5,+4$

57. If ELECTION = GLGCVIQN then VOTER = ?

(1) XOVET (2) VOXET (3) WPUFU (4) VQTGR

Ans. ***(1)***

Sol. Here, the code that follow is that at Odd number positions code is $+2,+2,+2$ and at even place the alphabet come at its own place.

58. If EXAM = FWZM then MUTE= ?

(1) LTSE (2) LTSF (3) NTSE (4) NTSF

Ans. (3)

Sol. Here, the code that follow is that the last place alphabet the alphabet comes at its own place. And at the first three place code that follows is +1, –1, –1.

59. If LONDON = MPOEPO then ? = IVOHSZ

(1) THIRST (2) HUNGRY (3) GRAPES (4) HUNTER

Ans. (2)

Sol. Here, the code that follow is +1,+1,+1,… so, here we have to find the word from the given code then we will apply there –1,–1,–1,….

60. If RESULT = TCUSNR then MERIT = ?

(1) OCTHV (2) ODUIW (3) OCQHV (4) OCTHR

Ans. (NA)

Sol. Here, the code that follow is +2,-2,+2,-2,….

Instruction : There are four options in Question no. 61 to 70. One of the option is different from rest of the three options. Find it out.

61. (1) Phosphorus (2) Sulphur (3) Carbon (4) Sodium chloride

Ans. (4)

Sol. Except (4), all others are element and (4) is compound.

62. (1) 2197 (2) 2744 (3) 3375 (4) 6859

Ans. (2)

Sol. Except (2), all others are Cube of odd numbers.

63. (1) Flute (2) Shehnai (3) Mouth Organ (4) Drum

Ans. (4)

Sol. Except (4), all others are played by using mouth.

64. (1) Carrot (2) Ginger (3) Radish (4) Beetroot

Ans. (2)

Sol. Except (4), all others are form of root vegetable.

65. (1) Pomegranate (2) Rose (3) Lotus (4) Hibiscus

Ans. (1)

Sol. Except (1), all others are flowers.

66. (1) Essay (2) Ghazal (3) Song (4) Sonnet

Ans. (1)

Sol. Except (1), All others are connected to music.

67. (1) Year (2) Light year (3) Mile (4) Kilometer

Ans. (1)

Sol. Except (1), All others measure of distance.

68. (1) Asia (2) Canada (3) Europe (4) Africa

Ans. ***(2)***

Sol. Except (2), all others are continents.

69. (1) Lal Bahadur Shastri (2) Manmohan Singh (3) Mahatma Gandhi (4) Narendra Modi

Ans. ***(3)***

Sol. Except (3), all others are prime minister of India.

70. (1) Diesel (2) Wheat (3) Rice (4) Paddy

Ans. ***(1)***

Sol. Except (1), all others are crop.

Instruction : In Question no. 71 to 75. Find out the correct option by choosing appropriate logical sequence.

71. 1. Keys 2. Door 3. Lock 4. Corridor
5. Switeh on
(1) 4, 2, 1, 5, 3 (2) 1, 3, 2, 4, 5 (3) 5, 1, ,2 ,4, 3 (4) 1, 2, 3, 5, 4

Ans. ***(2)***

Sol. The correct logical sequence is Key, Lock, Door, Corridor, Switch on.

72. 1. Poverty 2. Over population 3. Death 4. Unemployment
5. Epidemic
(1) 1, 2, 3, 4, 5 (2) 2, 3, 4, 5, 1 (3) 2, 4, 1 ,5, 3 (4) 3, 4, 2, 5, 1

Ans. ***(3)***

Sol. The correct logical sequence is Over Population, Unemployment, poverty, epidemic, death.

73. 1. Elephant 2. Cat 3. Mosquito 4. Tiger
5. Whale
(1) 3, 2, 4, 1, 5 (2) 1, 3, 5, 4, 2 (3) 5, 3, ,1 ,2, 4 (4) 2, 5, 1, 4, 3

Ans. ***(1)***

Sol. The correct logical sequence is Mosquito, Cat, Tiger, Elephant, Whale.

74. 1. Table 2. Tree 3. Wood 4. Seed
5. Sapling
(1) 4, 5, 3, 2, 1 (2) 1, 3, 2, 4, 5 (3) 1, 2, ,3 ,4, 5 (4) 4, 5, 2, 3, 1

Ans. ***(4)***

Sol. The correct logical sequence is Seed, sapling, tree, wood, table.

75. 1. Milky way 2. Sun 3. Moon 4. Earth
5. Stars
(1) 1, 4, 3, 2, 5 (2) 4, 3, 2, 5, 1 (3) 3, 4, ,2, 5, 1 (4) 2, 3, 4, 5, 1

Ans. ***(3)***

Sol. The correct logical sequence is Moon, Earth, Sun, Star, Milky way.

Instruction : In Question no. 76 to 80. follow the instructions to calculate the correct option from the given options.

76. If + means ×, × means –, – means + and ÷ means – then

$25 \times 3 - (6 \times 5) \div 9 = ?$

(1) –26 (2) 26 (3) –14 (4) 14

Ans. ***(4)***

Sol. After given substitution,

$25 - 3 + (6 - 5) - 9 = 22 + 1 - 9 = 23 - 9 = 14$

77. If + means –, – means ×, × means ÷ and ÷ means + then $45 \div 6 \times 2 + 1 = ?$

(1) 24 (2) 46 (3) 45 (4) 47

Ans. ***(4)***

Sol. After given substitution,

$45 + 6 \div 2 - 1 = 45 + 3 - 1 = 48 - 1 = 47$

Instruction : In Question no. 78 to 80. if '+' means '×', '×' means '÷', '÷' means '–' and '–' means '+' then change mathematical symbols according to it to calculate and find out the correct option from the given options.

78. $(8 \times 4) + 3 - 4 \div 5 = ?$

(1) 3 (2) 4 (3) 5 (4) 6

Ans. ***(3)***

Sol. After given substitution

$(8 \div 4) \times 3 + 4 - 5 = 2 \times 3 + 4 - 5 = 6 + 4 - 5 = 10 - 5 = 5$

79. $27 \times 3 - 3 (6 + 5) \div 9 = ?$

(1) 10 (2) 20 (3) 40 (4) 30

Ans. ***(4)***

Sol. After given substitution

$27 \div 3 + (6 \times 5) - 9 = 9 + 30 - 9 = 39 - 9 = 30$

80. $2 + 3 - 6 \times 2 \div 4 = ?$

(1) 2 (2) 3 (3) 4 (4) 5

Ans. ***(4)***

Sol. After given substitution

$2 \times 3 + 6 \div 2 - 4 = 6 + 3 - 4 = 5$

Instruction : Follow the given instructions to choose the correct option from the given options in question no. 81 to 100.

81. If fourth Saturday is on 24^{th} of a month, what will be the date on first Monday of that month ?

(1) 5 (2) 3 (3) 1 (4) 6

Ans. ***(1)***

Sol. 24^{th} is Saturday. 1^{st} Saturday will be 21 days before that, that is on 3^{rd} so, 1^{st} Monday will be 2 days after that so 5^{th}.

82. Today is Sunday. What day will be there after 189 days?

(1) Saturday (2) Sunday (3) Tuesday (4) Thursday

Ans. ***(2)***

Sol. Here when we divide 189 by 7 reminder will be Zero. So the day will be Sunday.

83. 15th August, 2020 was Saturday. What was the day on 15th August, 2019?

(1) Tuesday (2) Saturday (3) Thursday (4) Monday

Ans. ***(3)***

Sol. 15th august 2019 will have 1 year before the given date but it also contains a leap year so answer is Saturday - 2 = Thursday.

84. Which out the following is not a leap year?

(1) 1992 AD (2) 1600 AD (3) 2000 AD (4) 1900 AD

Ans. ***(4)***

Sol. 1900 is a century year and for a century leap year the year should be completely divisible by 400.

85. Yesterday was Saturday. What day will be there after five days?

(1) Wednesday (2) Tuesday (3) Sunday (4) Friday

Ans. ***(4)***

Sol. If yesterday was Saturday then today is Sunday so after five days the day will be Friday.

86. The ratio of current ages of X and Y is 2 : 3. After 6 years the ratio will be 3 : 4. What will be the sum of ages of X and Y ?

(1) 12 year (2) 18 year (3) 24 year (4) 30 year

Ans. ***(4)***

Sol. Let current age of x is 2a

And current age of y is 3a

According to question,

$$\frac{2a \quad 6}{3a \quad 6} \quad \frac{3}{4}$$

$9a + 18 = 8a + 24$

$a = 6$

Sum of ages is $2a + 3a = 5a = 5 \times 6 = 30$

87. The sum of the current ages of Usha and Sandhya is 50 years. Before 5 years the ratio was 5 : 7. What is the difference in their current age?

(1) 5 years (2) 10 years (3) 15 years (4) 30 years

Ans. ***(NA)***

Sol. Let Usha's age is x

Sandhya's age is $50 - x$

According to question

$$\frac{x-5}{50-x-5} \quad \frac{5}{7}$$

$7x - 35 = 250 - 5x - 25$

$12x = 260$

88. The father's age is five times more 2 year than the age of rthe son. Mother's age is 5 years less than that of father's age . If son's age is 5 years then what will be the sum of their ages?

(1) 53 (2) 27 (3) 54 (4) 47

Ans. ***(3)***

Sol. age of son is 5

Father's age $= 5 \times 5 + 2 = 27$

Mother's age $= 27 - 5 = 22$

Sum $= 27 + 22 + 5 = 54$

let dimple's age is x years

Rajesh's age $= 3x - 4$

According to question

$X - 5 + 3X - 4 - 5 = 86$

$4X = 86 + 14$

$X = 100/4 = 25$

Dimple's age after 5 years will be $25 + 5 = 30$ years

89. Rahesh's age is 4 years less than three times of Dimple's age. If 5 year before, the sum of their ages is 86 year then what will be Dimple's age after 5 years?

(1) 20 (2) 25 (3) 30 (4) 10

Ans. ***(3)***

Sol. Let Dimple's age be X.

Rajesh age is $(3X - 4)$

Five years before sum of both of their ages was 86

So, $(x - 5) + (3x - 4 - 5) = 86$

$x - 5 + 3x - 9 = 86$

$4x - 14 = 86$

$x = 25$

Therefore, dimple age after 5 years is $x+5 = 25 +5 =30$

90. Five brothers have difference of two years each in their birth. If sum of ages of a brothers is 40 years, find out the age of the youngest brother.

(1) 4 (2) 6 (3) 8 (4) 10

Ans. ***(1)***

Sol. Let age of younger (1st) brother is x

Age of 2nd brother is $x + 2$

Age of 3rd brother is $x + 2 + 2 = x + 4$

Age of 4th brother is $x + 6$

Age of 5th brother is $x + 8$

According to question

$x + x + 2 + x + 4 + x + 6\ x + 8 = 40$

$5x + 20 = 40$

$5x = 20$

$x = 4$

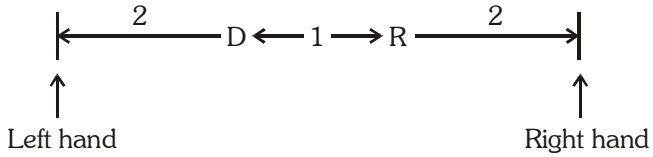
Age of younger brother is 4 years

91. In a straight row, Dhyay is at 3rd position from left then Rashmi is at 3rd position from right. If there is a person between both of them then how many minimum persons must be there in that row?

(1) 7 (2) 5 (3) 4 (4) 3

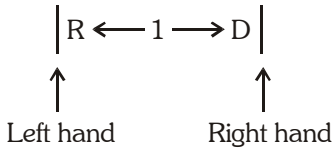
Ans. ***(4)***

Sol. There are two types of arrangements are possible. Case-1 Dhyay is sitting left of Rashmi.



Total number of person = 2 + 1 + 1 + 1 + 2 = 7

Case-2 Dhyay is sitting right of Rashmi.



So here it has asked for minimum person so answer will be 3.

92. In a straight row, Savan is at 7th position from left and at 9th position from right, how many total members are there in that row?

(1) 15 (2) 16 (3) 14 (4) 17

Ans. ***(1)***

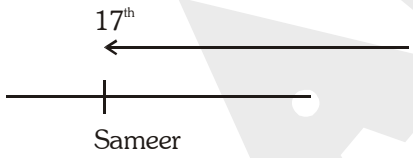
Sol. Total number of persons in the row is 7 + 9 – 1 = 15 persons

93. In a row of 25 persons, Sameer is at 17th position from right. If counting starts from left then what will be his position?

(1) 8th (2) 9th (3) 7th (4) 10th

Ans. ***(2)***

Sol.



By using the formula total number of students = (x + y) –1

$25 = (x + 17) - 1$

$x = 26 - 17$

$x = 9$

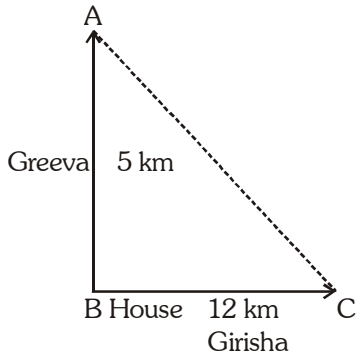
Therefore sameer position from left is 9th.

94. Greeva and Girisha are two sisters, Greeva walks 5 km towards north from her house, while Girisha walks 12 km towards east from her house. What will be the least distance between two of them?

(1) 7 km (2) 17 km (3) 13 km (4) None of these

Ans. ***(3)***

Sol.



Least distance between them is

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

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

$25 + 144 = AC^2$

$AC^2 = 169$

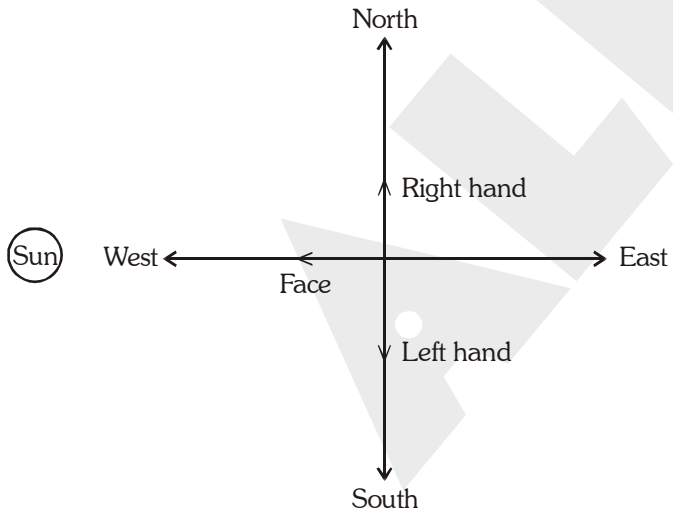
$AC = 13$ km

95. If you are facing sun during sunset your right hand extends in which direction?

(1) North (2) South (3) East (4) None of these

Ans. ***(1)***

Sol.

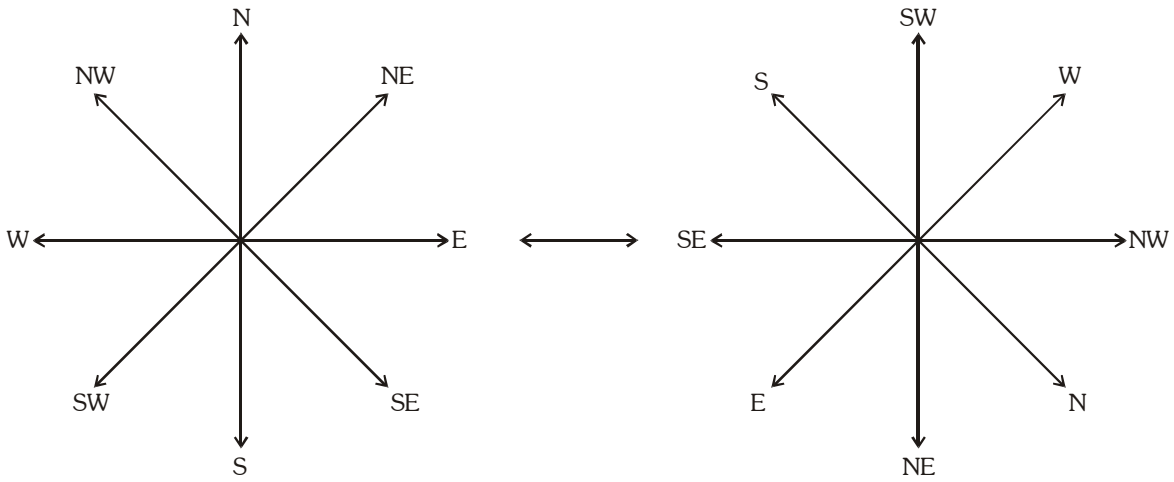


96. If South-east = North, North-east = West then West = ?

(1) South-west (2) South-east (3) South (4) North-west

Ans. ***(2)***

Sol.



So we can see that west = south-east

97. The length of python is greater than snake. The length of Snake is lesser than camel. The length of camel is lesser than giraffe then, who is the shortest of all?

(1) Python (2) Camel (3) Giraffe (4) Snake

Ans. ***(4)***

Sol. Given, P>S, C>S, G>C

Therefore, Snake is shortest of all.

98. Vatsal is taller than Daksh. Dhyay is shorter than Kavan. Kavan is shorter than Daksh, then who is the tallest of all?

(1) Daksh (2) Kavan (3) Vatsal (4) Dhyay

Ans. ***(3)***

Sol. Here the sequence according to their height is

Vatsal > Daksh > Kavan > Dhyay

So tallest of them all is Vatsal.

99. Sita is shorter than Gita. Nita is taller than Sita, then who is the shortest of all?

(1) Gita (2) Sita (3) Nita (4) Can't say

Ans. ***(2)***

Sol. Given, G > S, N > S

Therefore shortest of them is Sita.

100. The names of five brothers are Yudhishtira, Bheem, Arjun, Nakul and Sahadev. Yudhishtira is shorter than Bheem but taller than Sahadev. Arjun is tallest of all. Nakul is shorter than Bheem but slightly taller than Yudhtshtira. If these, all five brothers will stand according to their heights, who will be at the center?

(1) Nakul (2) Bheem (3) Yudhishtira (4) Sahadev

Ans. ***(1)***

Sol. Here the sequence according to their height is

Arjun>Bheem>Nakul>Yudhishtira>Sahdev

So Nakul is at the centre.