ALLEN CAREER INSTITUTE KOTA (RAJASTHAN)
BENGALURU, KARNATAKA

NATIONAL TALENT SEARCH EXAMINATION (NTSE-2019) STAGE -1 [PAPER CODE : X]
STATE : TAMIL NADU PAPER : MAT

Date: 04.11.2018

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

Direction : (Question number 1 - 5)

In each question the numbers/letters are arranged in a sequence based on certain principle. Select the answer from the four alternatives given under each sequence for the term marked by ?

1. 19, 24, 31, 42, 55, 72, ___?___

(1) 83 (2) 89 (3) 91 (4) 93

Ans. (3)

Sol. 19, 24, 31, 42, 55, 72, ?
5 7 11 13 17 19

2. 10, 58, 105, ___?___ , 196, 240, ...

(1) 150 (2) 151 (3) 154 (4) 147

Ans. (2)

Sol. 10, 58, 105, ?, 196, 240
48 47 46 45 44

3. Z, W, R, K, ___?___

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

Ans. (1)

Sol. Z, W, R, K

1, 4, 9, 16, (25)

Square no from reverse

4. 1, 4, 13, 40, 121, ___?___

(1) 202 (2) 364 (3) 148 (4) 210

Ans. (2)

Sol. 1, 4, 13, 40, 121, ?

$1\times3+1=4$

$4\times3+1=13$

$121\times3+1=364$

5. 0,1, 2, 3, 6,11, 20, ___?___

(1) 31 (2) 34 (3) 37 (4) 22

Ans. (3)

Sol. 0,1, 2, 3, 6,11, 20, ?

$0 + 1 + 2 = 3$

$1 + 2 + 3 = 6$

$2 + 3 + 6 = 11$

$3 + 6 + 11 = 20$

$6 + 11 + 20 = 37$

Direction : (Question number 6 and 7)

The diagram and the numbers/letters follow certain principle. Select the missing number/ letter mdicated by question mark ?

6. 6, 7, 10, 8, 16, 15, 26, 23, 42, 38, 68, ___?___

(1) 61 (2) 80 (3) 106 (4) 140

Ans. (1)

Sol. 6, 7, 10, 8, 16, 15, 26, 23, 42, 38, 68, ?

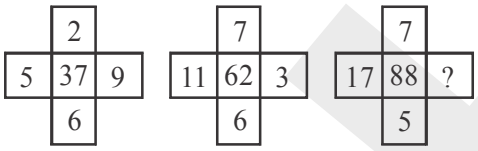
$6 + 10 = 16$ $23 + 38 = 61$

$7 + 8 = 15$

$10 + 16 = 26$

$8 + 15 = 23$

7.



(1) 20 (2) 59 (3) 85 (4) 10

Ans. (4)

Sol. $5 \times 6 + (9 - 2) = 37$

$11 \times 6 + (3 - 7) = 66 - 4 = 62$

$17 \times 5 + (10 - 7) = 88$

Direction : (Question number 8 - 15)

First two terms are connected by some relationship. The same relationship is applicable for the next terms in which one is blank space. Identify the suitable term from the given four alternatives for the blank space.

8. PEN : WRITING : : CYCLE : _____

(1) REPAIRING (2) CAR (3) RIDING (4) ROAD

Ans. (3)

Sol. PEN : WRITING : : CYCLE : RIDING

9. EYE : FACE : : _____

(1) RING : FINGER (2) STEM : ROOT (3) KNOB : DOOR (4) SHOE : FOOT

Ans. (3)

Sol. EYE : FACE : : KNOB : DOOR

10. WING : BEAK : :

(1) BUTTON : SHIRT (2) PLUTO : VENUS

(3) HOUSE : CHIMNEY (4) BIRD : CAGE

Ans. (2)

Sol. WING : BEAK : : PLUTO : VENUS

11. ROOM : HOUSE : : _____

(1) REFRIGERATOR : KITCHEN (2) CHAIR : ROOM

(3) ROOF : BUILDING (4) WHEEL : CHAIR

Ans. (3)

Sol. ROOM : HOUSE : : ROOF : BUILDING

12. 5 : 29 : : ___?___ : 41

(1) 30 (2) 6 (3) 7 (4) 4

Ans. (2)

Sol. $5 \times 6 = 30 - 1 = 29$

$6 \times 7 = 42 - 1 = 41$

13. CANADA : DOLLAR : : GERMANY : _____

(1) YEN (2) DOLLAR

(3) DEUTSCHE MARK (4) RIYAL

Ans. (3)

Sol. CANADA : DOLLAR : : GERMANY : DEUTSCHE MARK

14. CARBOHYDRATE : POTATO : : FAT : _____

(1) CARROT (2) TOMATO (3) WATER (4) GHEE

Ans. (4)

Sol. CARBOHYDRATE : POTATO : : FAT : GHEE

15. DAVIS CUP : LAWN TENNIS : : DEODHAR TROPHY : _____

(1) FOOTBALL (2) CRICKET (3) HOCKEY (4) SHUTTLE COCK

Ans. (2)

Sol. DAVIS CUP : LAWN TENNIS : : DEODHAR TROPHY : CRICKET

16. There are four prime numbers written in ascending order. The product of the first three is 1001 and that of the last three is 2431. The last number is :

(1) 17 (2) 19 (3) 23 (4) 13

Ans. (1)

Sol. $\frac{abc}{bcd}=\frac{1001}{2431}=\frac{a}{d}=\frac{7}{17}$

17. The largest number which divides 62,132 and 237 to leave the same remainder in each case is :

(1) 51 (2) 35 (3) 8 (4) 53

Ans. (2)

Sol. HCF of $(132-62)(237-132)(237-62)$

$\Rightarrow 70,105,175$

$\Rightarrow 2\times\cancel{5}\times\cancel{7}$

$3\times\cancel{5}\times\cancel{7}$

$5\times\cancel{5}\times\cancel{7}$

$\Rightarrow 5\times 7=35$

18. Traffic lights at three different road crossings change after every 48 sec, 72 sec and 108 sec respectively. If they all change simultaneously at 7 : 00 : 00 hours then at what time will they again change simultaneously ?

(1) 7 :14 : 00 Hrs (2) 7 : 14 :12 Hrs (3) 7 : 07 : 12 Hrs (4) 7 : 09 : 12 Hrs

Ans. (3)

Sol. $48\rightarrow 2\times 2\times 2\times 2\times 3$

$72\rightarrow 2\times 2\times 2\times 3\times 3$

$108\rightarrow 2\times 2\times 3\times 3\times 3$

LCM $\Rightarrow 432$

That is after 432 seconds they will change simultaneously 432 seconds $\Rightarrow$ 7 min 12 secs.

7 : 7 : 12 Hrs

19. A student got twice as many sums wrong as he got right. If he attended 60 sums in all, how many did he solve correctly ?

(1) 12 (2) 16 (3) 24 (4) 20

Ans. (4)

Sol. Right Sum = x

Wrong Sum = 2x

$x+2x=60$

$3x=60$

$\boxed{x=20}$

20. $\frac{1}{5\times6}+\frac{1}{6\times7}+\frac{1}{7\times8}+....+\frac{1}{24\times25}=?$

(1) 0.36 (2) 0.16 (3) 0.016 (4) 1.6

Ans. (2)

Sol. $\frac{1}{5\times6}+\frac{1}{6\times7}+\frac{1}{7\times8}+.....+\frac{1}{24\times25}$

$=\frac{1}{5}-\frac{1}{6}+\frac{1}{6}-\frac{1}{7}+\frac{1}{7}-\frac{1}{8}+.....\frac{1}{24}-\frac{1}{25}$

$\frac{1}{5}-\frac{1}{25}=0.16$

21. If $\frac{2x}{1+\frac{1}{1+\frac{x}{1-x}}}=3$ then the value of x is

(1) $\frac{5}{6}$ (2) $\frac{6}{5}$ (3) $\frac{4}{5}$ (4) $\frac{5}{4}$

Ans. (2)

Sol. $\frac{2x}{1+\frac{1}{\frac{1}{1}+\frac{x}{1-x}}}=3$

$\Rightarrow \frac{2x}{1+\frac{1-x}{1}}=3 \qquad \Rightarrow \frac{2x}{2-x}=3$

$\Rightarrow 2x=6-3x$

$5x=6$

$x=\frac{6}{5}$

22. If $\times$ means +, $\div$ means –, – means $\times$ and + means $\div$ then $36+18\div9-3\times26$ is :

(1) – 40 (2) 78 (3) – 1 (4) 1

Ans. (4)

Sol. $36\div18-9\times3+26$

$\Rightarrow 2-9\times3+26$

$\Rightarrow 2-27+26$

$\Rightarrow 28-27$

$\Rightarrow 1$

23. Notebooks were distributed equally among children of a class. The notebooks each child got was one-eighth of the number of children. If the number of children is half, each child would have got 16 notebooks.The total number of notebooks distributed is :

(1) 512 (2) 312 (3) 248 (4) 428

Ans. (1)

Sol. Let the no. of children = x

then, $x \times \frac{1}{8}x = \frac{x}{2} \times 16$

$x = 64$

$\therefore$ No. of Notebooks $\Rightarrow \frac{x^2}{8} = \left(\frac{1}{8} \times 64 \times 64\right)$

$\Rightarrow$ 512

24. If $x = \frac{\sqrt{5}+\sqrt{4}}{\sqrt{5}-\sqrt{4}}$ and $y = \frac{\sqrt{5}-\sqrt{4}}{\sqrt{5}+\sqrt{4}}$ then $x^2 + y^2$ is :

(1) 322 (2) 100 (3) 312 (4) $8\sqrt{5}$

Ans. (1)

$$x = \frac{\sqrt{5}+\sqrt{4}}{\sqrt{5}-\sqrt{4}} \times \frac{\sqrt{5}+\sqrt{4}}{\sqrt{5}+\sqrt{4}} = \frac{\left(\sqrt{5}+\sqrt{4}\right)^2}{1} = 9 + 2\sqrt{20}$$

$$y = \frac{\sqrt{5}-\sqrt{4}}{\sqrt{5}+\sqrt{4}} \times \frac{\sqrt{5}-\sqrt{4}}{\sqrt{5}-\sqrt{4}} = \frac{\left(\sqrt{5}-\sqrt{4}\right)^2}{1} = 9 - 2\sqrt{20}$$

$$x^2 + y^2 = \left(9 + 2\sqrt{20}\right)^2 + \left(9 - 2\sqrt{20}\right)^2$$

$$= 81 + 80 + 81 + 80 = 322$$

25. If $\sqrt{13} = 3.605$ and $\sqrt{130} = 11.40$ find $\sqrt{1.3} + \sqrt{1300} + \sqrt{0.013}$

(1) 37.34 (2) 37.034 (3) 37.0034 (4) 37.304

Ans. (4)

$$\sqrt{1.3} + \sqrt{1300} + \sqrt{0.013}$$

$$= \sqrt{\frac{130}{100}} + \sqrt{13 \times 100} + \sqrt{\frac{130}{10000}}$$

$$= \frac{\sqrt{130}}{10} + \sqrt{13} \times 10 + \frac{\sqrt{130}}{100}$$

$$= \frac{11.40}{10} + 3.605 \times 10 + \frac{11.40}{100}$$

$$= 1.140 + 36.05 + 0.1140 \Rightarrow 37.304$$

26. $\frac{1}{\sqrt{9}-\sqrt{8}}-\frac{1}{\sqrt{8}-\sqrt{7}}+\frac{1}{\sqrt{7}-\sqrt{6}}-\frac{1}{\sqrt{6}-\sqrt{5}}+\frac{1}{\sqrt{5}-\sqrt{4}}=?$

(1) $\sqrt{8}$ (2) 5 (3) 3 (4) –3

Ans. (2)

Sol. $\left(\frac{1}{\sqrt{9}-\sqrt{5}}\times\frac{\sqrt{9}+\sqrt{8}}{\sqrt{9}+\sqrt{8}}\right)-\left(\frac{1}{\sqrt{8}-\sqrt{7}}\times\frac{\sqrt{8}+\sqrt{7}}{\sqrt{8}+\sqrt{7}}\right)+\left(\frac{1}{\sqrt{7}-\sqrt{6}}\times\frac{\sqrt{7}+\sqrt{6}}{\sqrt{7}+\sqrt{6}}\right)$

$-\left(\frac{1}{\sqrt{6}-\sqrt{5}}\times\frac{\sqrt{6}+\sqrt{5}}{\sqrt{6}+\sqrt{5}}\right)+\left(\frac{1}{\sqrt{5}-\sqrt{4}}\times\frac{\sqrt{5}+\sqrt{4}}{\sqrt{5}+\sqrt{4}}\right)$

$\Rightarrow\left(\sqrt{9}+\sqrt{8}\right)-\left(\sqrt{8}+\sqrt{7}\right)+\left(\sqrt{7}+\sqrt{6}\right)-\left(\sqrt{6}+\sqrt{5}\right)+\left(\sqrt{5}+\sqrt{4}\right)$

$\Rightarrow\sqrt{9}+\sqrt{8}-\sqrt{8}-\sqrt{7}+\sqrt{7}+\sqrt{6}-\sqrt{6}-\sqrt{5}+\sqrt{4}$

$\Rightarrow 3+2=5$

27. $\sqrt{\frac{(0.03)^2+(0.21)^2+(0.065)^2}{(0.003)^2+(0.021)^2+(0.0065)^2}}=?$

(1) $\frac{1}{10}$ (2) 100 (3) 10 (4) $\frac{1}{100}$

Ans. (3)

Sol. $\sqrt{\frac{0.009+0.0441+0.004225}{0.00009+0.000441+0.0004221}}$

$\Rightarrow\sqrt{\frac{0.057325}{0.00049225}}=10$

28. A lead pencil is in the shape of right circular cylinder. The pencil is 28 cm long and its radius is 3 mm. If the lead is of radius 1 mm, the volume of the wood used is:

(1) 0.352 cm^3 (2) 7.04 cm^3 (3) 3.52 cm^3 (4) 70.4 cm^3

Ans. (2)

Sol. Volume of wood = Volume of Pencil – Volume of lead

$=\pi(0.3)^2\times 28-\pi(0.1)^2\times 28$

$=\pi\times 28[0.09-0.01]$

$=\frac{22}{7}\times 28\times 0.08$

$=7.04\ cm^3$

29. The difference between a two digit number and the number obtained by interchanging the positions of its digits is 36. The difference between the two digits of that number is:

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

Ans. (1)

Sol. Unit place = x

Ten's place = y

No = 10y + x

After Interchanging

Unit place = y

Ten's place = x

New no = 10x + y

A. T. Q

$$(10y + x) - (10x + y) = 36$$

$$9y - 9x = 36$$

$$y - x = 4$$

30. A and B are two stations 390 km apart. A train starts from A at 10 am and travels towards B at 65 kmph. Another train starts from B at 11 am and travels towards A at 35 kmph. At what time do they meet?

(1) 3.15 pm (2) 2.15 pm (3) 4.15 pm (4) 12.15 pm

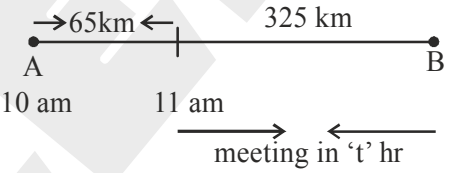
Ans. (2)

Sol. $65t + 35t = 325$

$100t = 325$

$$t = \frac{\cancel{325}^{65}}{\cancel{100}_{2}} \times 6\cancel{0}$$

11 : am + 195 Mm = 2 : 15 PM



31. A cone, a hemisphere and a cylinder have equal bases. If the height of the cone and the cylinder are equal to its common radius, then the ration between their voluems is :

(1) 2 : 3 : 1 (2) 3 : 2 : 1 (3) 1 : 2 : 3 (4) 2 : 1 : 3

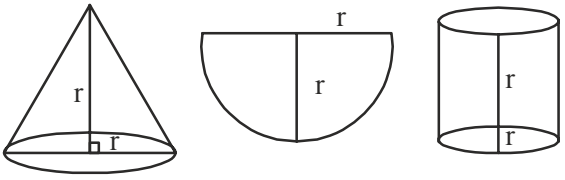
Ans. (3)

Sol. Volume of cone : Volume of Hemisphere : Volume of cylinder

$$\frac{1}{3}\cancel{\pi}r^2 \times r : \frac{2}{3}\cancel{\pi}r^3 : \cancel{\pi}r^2.r$$

$$\Rightarrow \frac{1}{3} : \frac{2}{3} : 1$$

$$\Rightarrow 1 : 2 : 3$$

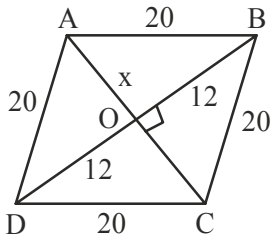


32. One side of a rhombus is 20 cm and one diagonal is 24 cm. Find the area of the rhombus.

(1) 200 cm^2 (2) 384 cm^2 (3) 288 cm^2 (4) 348 cm^2

Ans. (2)

Sol. ΔAOB



$12^2 + x^2 = 20^2$

$x^2 = 16^2$

$x = 16$

$AC = 32$

$\Rightarrow$ Area $= \frac{1}{2} \times 24 \times 32 = 12 \times 32$

$= 384 \text{ cm}^2$

Direction: (Q.No. 33 to Q. No. 37)

If the English alphabets A to Z have numerical value from 0 to 25 respectively denoted by $\gamma(A) = 0; \gamma(B) = 1$, etc. $\gamma(z) = 25$ and sum of alphabets a and b is defined as a + b = c $\gamma(c) \equiv \gamma(a) + \gamma(b)$ then answer the question 33 – 37.

33. E + K = ?

(1) O (2) M (3) N (4) P

Ans. (1)

Sol. $E + K = ?$

$4 + 10 = 14$

$\therefore$ O is the answer

34. B + U = ?

(1) U (2) W (3) V (4) X

Ans. (3)

Sol. $B + U = ?$ $1 + 20 = 21$

$\therefore V = 21$

35. A + C + F = ?

(1) O (2) G (3) H (4) I

Ans. (3)

Sol. $A + C + F = ?$

$0 + 2 + 5 = 7$ $\therefore H = 7$

36. L – S = ?

(1) U (2) T (3) R (4) S

Ans. (2)

Sol. $L - S = ?$

$(26 + 11) - (18) = 19$

$\therefore T = 19$

37. – D – P = ?

(1) I (2) J (3) H (4) K

Ans. (1)

Sol. $-D - P = ?$

$-(D + P)$

$-(3 + 15) = -18 = I$

38. In a certain code GOOD is written as JRRG and JACK is written as MDFN, then FRUIT is written as :

(1) IUYLW (2) IUXLW (3) IUXMW (4) IVXLW

Ans. (2)

Sol. G O O D → J R R G

F R U I T → I U X L W

39. In a certain code JUNGLE is written as JNLEGU then FOREST is written as :

(1) ROFEST (2) FORTSE (3) TSEROF (4) FRSTEO

Ans. (4)

Sol.

J U N G L E
| | | | | |
J N L E G U

F O R E S T
| | | | | |
F R S T E O

40. The 10^{th} consonant from the first consonant of the English alphabet is :

(1) N (2) M (3) Q (4) R

Ans. (2)

Sol. B C D F G H J K L M

41. What letters appear in ECONOMY and not in SECOND ?

(1) MY (2) NM (3) EY (4) CN

Ans. (1)

Sol. ECONOMY
SECOND
By observation

42. Which letter would divide the letters between N and Z into two equal halves ?

(1) V (2) I (3) T (4) W

Ans. (3)

Sol. N O P Q R S T U V W X Y Z

Direction : (Question number 43 - 46)

Pick the odd item from the following sets.

43. (1) Buddhism (2) Jainism (3) Pessimism (4) Hinduism

Ans. (3)

Sol. All others are religion

44. (1) Hunger (2) Cakes (3) Vegetables (4) Pastries

Ans. (1)

Sol. All others are catalles

45. (1) King (2) Queen (3) Princess (4) Labourer

Ans. (4)

Sol. All others are Royals

46. (1) Egypt (2) West Bengal (3) China (4) India

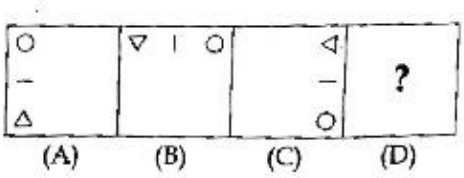
Ans. (2)

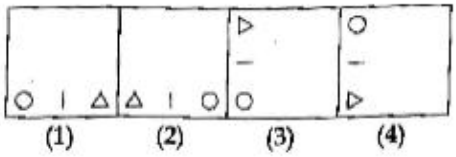
Sol. All others are countries

Direction : (Question number 47 - 54)

Figures A and B are related in some manner. In the same manner figures C and D are related. Choose the figure D in the given four alternatives.

47.





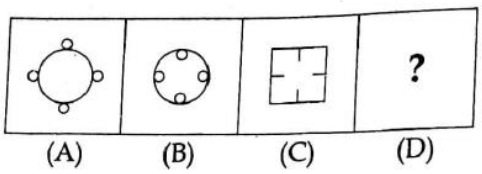
Ans. (1)

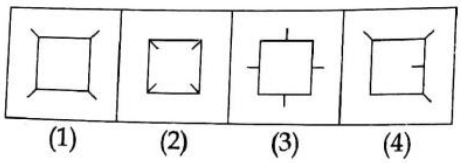
Sol. O moves clockwise (1 side)

| moves clockwise (1 side)

Δ moves clockwise (1 side)

48.

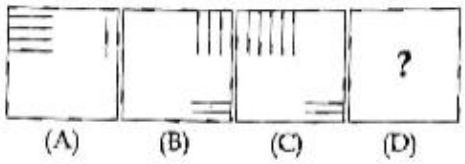


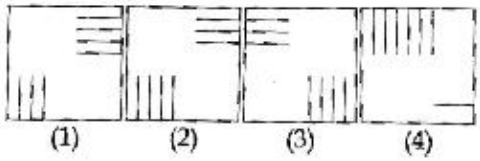


Ans. (3)

Sol. Side line will come cent on mid points.

49.

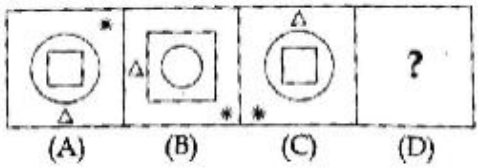


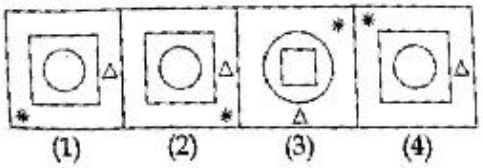


Ans. (2)

Sol. By observation

50.

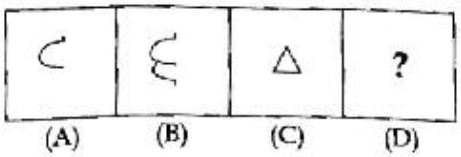


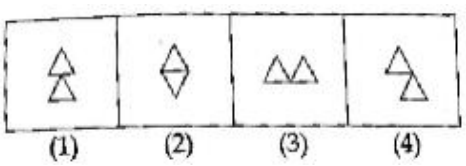


Ans. (4)

Sol. Figure out comes in & Δ & move c/w 1 space side.

51.

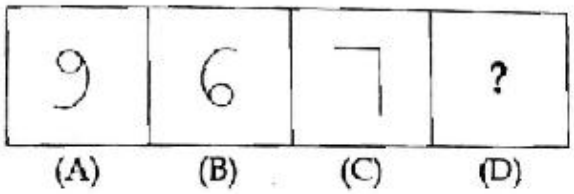


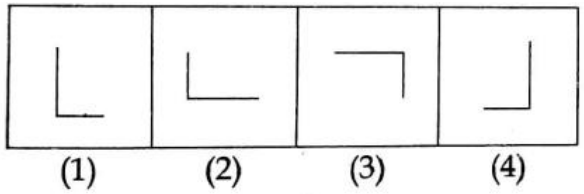


Ans. (2)

Sol. First half gets cut & reversed.

52.

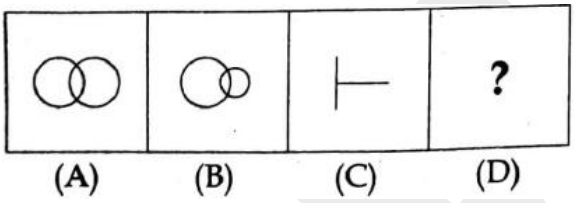


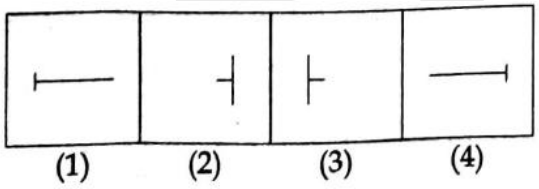


Ans. (1)

Sol. First do miror image & then water image

53.

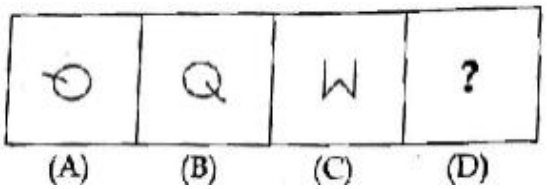


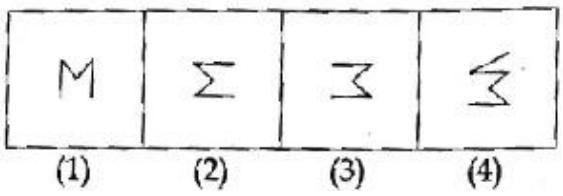


Ans. (3)

Sol. Second figure becomes small.

54.



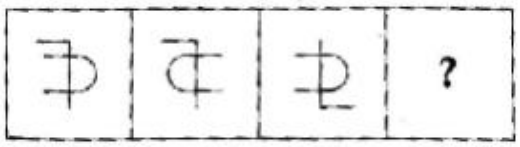


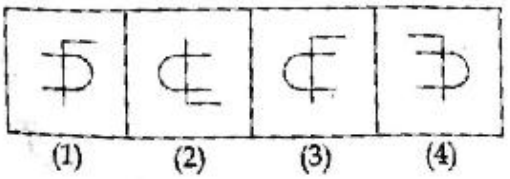
Ans. (2)

Directions: (Questions number 55 - 58)

All the four figures in the set of problem figures have a definite sequence. Discover the sequence and pick-up one figure from answer figures that completes the series

55.

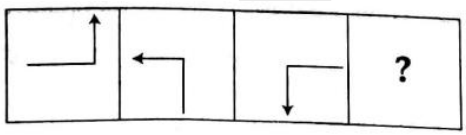


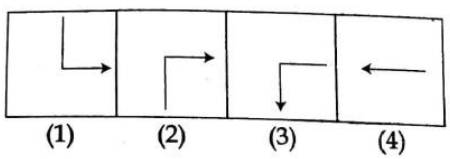


Ans. (2)

Sol. By observation

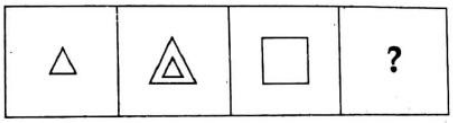
56.

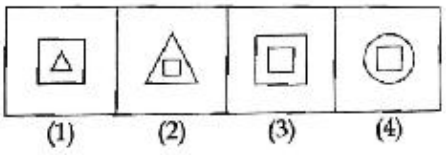




Ans. (1)

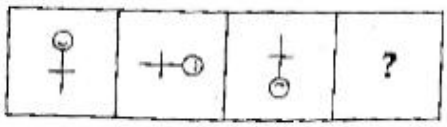
Sol. By observation

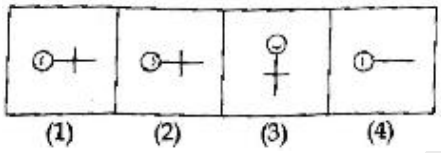
57. 



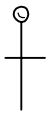
Ans. (3)

Sol. By observation

58. 

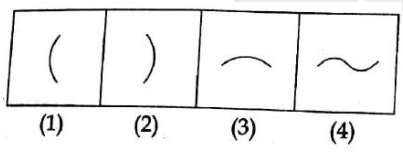


Ans. (1)

Sol.  90° c/w & reverse similarly

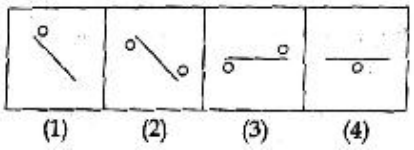
Direction : (Question number 59 and 60)

Pick the figure not in same category.

59. 

Ans. (4)

Sol. By observation

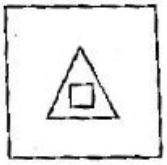
60. 

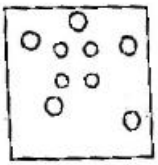
Ans. (4)

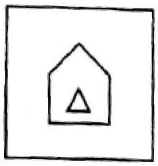
Sol. By observation

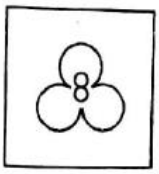
Direction: (Question number 61 - 64)

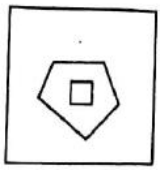
Mathc the following base on common characteristics :

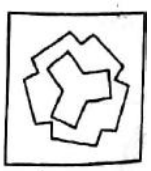
61. 

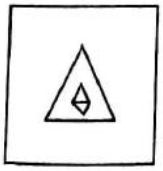
(1) 

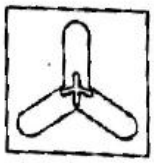
62. 

(2) 

63. 

(3) 

64. 

(4) 

Ans.

61. (4)

62. (3)

63. (1)

64. (2)

Sol. (Check the outside corners and inside diagram corners)

65. First two words are related to each other. Choose the word which bears the same relationship.

Monk : Brotherhood : : letter :

(1) Jumble (2) Gang (3) Album (4) Budget

Ans. (1)

Direction : (Question number 66 - 70)

Read the following information carefully and answer the question.

(i) Five persons J, K, L, M and N participated in a quiz contest.

(ii) One is master of sports, one is master of current events and one is master of art and culture.

(iii) J and M are unmarried ladies and do not hold command in any subject.

(iv) N is the husband in a married couple.

(v) K is the brother of I- and is neither master of current events nor art and culture.

(vi) none of the ladies has command over current events and sports.

66. Who is the master of sports ?

(1) M (2) L (3) J (4) K

Ans. (4)

67. Who is the master of art and culture ?

(1) N (2) L (3) K (4) M

Ans. (2)

68. Who is the master of current events ?

(1) N (2) M (3) J (4) L

Ans. (1)

69. Wife of N is :

(1) K (2) J (3) Data inadequate (4) L

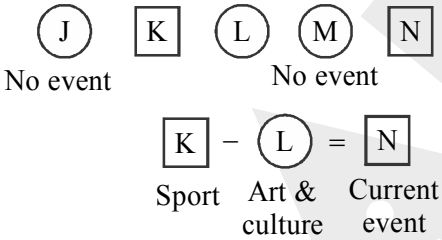
Ans. (4)

70. The three ladies are :

(1) J, K and M (2) J, K and L (3) J, L and M (4) K, L and M

Ans. (3)

Solution to 66 - 70

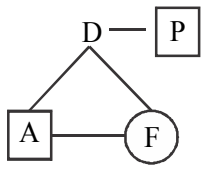


71. If A is brother of F and F is the daughter of D and P is brother of D. How is P related to A ?

(1) Father (2) Uncle (3) Grand-father (4) Co-brother

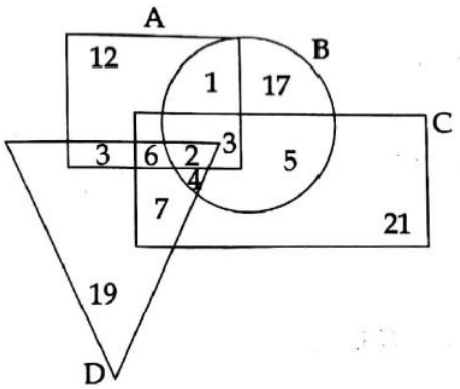
Ans. (2)

Sol.



Direction : (Question number 72 - 75)

Observe the diagram carefully and answer the following questions :



Let A - denote the set of persons who speak Tamil

B - who speak English

C - Who speak Malayalam and

D - Set of people who speak Telugu

72. The number of people who can speak both Tamil and English is :

(1) 12 (2) 4 (3) 1 (4) 6

Ans. (4)

Sol. $1 + 2 + 3 = 6$

73. Find the number of people who can speak English, Malayalam and Telugu.

(1) 4 (2) 9 (3) 6 (4) 82

Ans. (3)

Sol. $4 + 2 = 6$

74. Find the number of people who can speak either English or Malayalam.

(1) 66 (2) 53 (3) 60 (4) 56

Ans. (1)

Sol. $(A \cup B) = A + B - (A \cap B)$

$= 32 + 48 - 14 = 66$

75. If the total population is 100, how many do not speak either language ?

(1) 2 (2) 0 (3) 1 (4) 4

Ans. (2)

Sol. $100 - 100 = 0$

Direction : (Question number 76 and 77)

76. Find the missing terms in the table which follows some pattern.

5	7	x
3	4	12
6	y	18
11	9	99

(1) x = 3, y = 35 (2) x = 35, y = 3 (3) x = 12, y = 12 (4) Data .insufficient

Ans. (2)

Sol. $6y = 18$, $5 \times 7 = x$

$y = 3$, $x = 35$

77.

0	–2	?
2	0	6
5	–6	0

(1) 5 (2) – 5 (3) 4 (4) – 4

Ans. (2)

Sol. $2 - 2 \rightarrow 0$

$6 - 6 \rightarrow 0$

$5 - ? = ? \Rightarrow -5$

78. Select any one alternative whose alphabets when placed at the missing places, complete the series.

a _ aa _ a _ baa _ aaba

(1) bbba (2) bbab (3) bbaa (4) baab

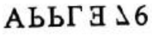
Ans. (2)

Sol. aba aba aba aba aba

Direction : (Question number 79 and 80)

Find the water image of the following questions.

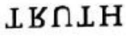
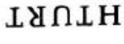
79. The water image of APPLE79 is :

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

Ans. (Bonus)

Sol. (All options are wrong)

80. TRUTH

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

Ans. (1)

Direction : (Question number 81 - 84) Read the relations carefully and answer the questions.

$\square$ is greater than

$\triangle$ is smaller than

$\odot$ is equal to

$\neq$ is not equal to

81. If A $\square$ B; C $\triangle$ B and D $\odot$ C then:

(1) C $\triangle$ A (2) D $\square$ A (3) C $\neq$ A (4) A $\odot$ C

Ans. (1)

Sol. A > B, C < B, D = C

So, A > B > D = C

82. If A $\neq$ C; C Δ B and B $\odot$ A then:

(1) A $\odot$ C (2) A $\triangle$ C (3) B $\square$ A (4) A $\square$ C

Ans. (4)

Sol. $A \neq C, C > B, B = A$

83. If A Δ C, B $\square$ C and B $\odot$ E

(1) A $\square$ E (2) A $\triangle$ E (3) A $\odot$ E (4) A $\odot$ B

Ans. (2)

Sol. $A < C, B < C, B = E$

So, $E = B > C > A$

84. A $\square$ O and AB $\square$ AC then:

(1) (A + B) $\square$ (C + D) (2) (B + D) $\odot$ (C + D)

(3) (B + D) $\square$ (C + D) (4) (B + D) $\triangle$ (C + D)

Ans. (3)

Sol. $A > 0$ and $AB > AC \Rightarrow B > C$

So, $B + \cancel{D} > C + \cancel{D} \Rightarrow B > C$

Direction : (Question number 85 - 89) Read the statements and answer the questions.

(i) A family consists of 6 members P, Q, R, S, TandU.

(ii) The family consists of only two female members.

(iii) S is father of R, who is brother of T.

(iv) T is daughter of U.

(v) Q and P are grandsons of S.

(vi) P is a son of T.

85. The female members of the family are :

(1) Tand R (2) T and U (3) T and P (4) T and S

Ans. (2)

Sol. S + U
R ↔ T
Q P → Grandrons

86. The relationship of S to U is :

(1) Husband (2) Daughter (3) Son (4) Wife

Ans. (1)

Sol. Explanation bove

87. The relationship of P to Q is :

(1) Sister (2) Father (3) Brother (4) Mother

Ans. (3)

Sol. Explanation bove

88. The male members of the family are:

(1) S, R, Q, P (2) P, Q, R, U (3) Q, R, U, T (4) P, R, S, T

Ans. (1)

89. T is a sister of :

(1) U (2) R (3) Q (4) P

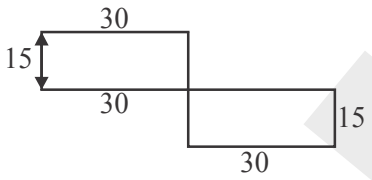
Ans. (2)

90. Mahesh starts walking towards east and after walking 30 m takes right turn and walks again 30 m Then he turns Left and walks 30 m_ Again he takes left turn and after walking 15 m finally turn to his left and walks 60 m. How far and in which direction is Mahesh from the starting point ?

(1) 20 m North (2) 30 m West (3) 30 m South (4) 15 m South

Ans. (4)

Sol.



Direction : (Question number 91 and 92) : Two statements (i) and (ii) are followed by two conclusions numbered (I) and (II). Choose the option which logically follows :

91. Statements :

(i) Some goats are sheeps. (ii) All sheeps are cows.

Conclusions :

(I) All cows are sheeps.

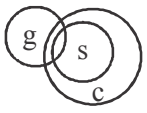
(II) Some goats are cows.

(1) (I) only true (2) (II) only true

(3) (I) and (II) are true (4) Both (I) and (II) are not true

Ans. (2)

Sol.



92. Statements :

(i) All mangoes are apples.

(ii) Some grapes are apples.

Conclusions :

(I) All apples are mangoes.

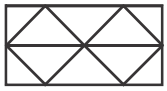
(II) Some apples are mangoes.

(1) (I) only true (2) (I) and (II) are true

(3) (II) only true (4) None of these are true

Ans. (3)

Sol. 

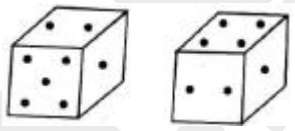
93. The number of triangles in  is:

(1) 10 (2) 4 (3) 6 (4) 12

Ans. (1)

Sol. By observation

94. Two positions of dice are shown below. How many points will appear on the opposite to the face containing 5 ?

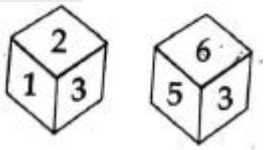


(1) 3 (2) 1 (3) 2 (4) 4

Ans. (4)

Sol. By observation

95. Which digit will appear cm the face opposite to the face with number 4 ?



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

Ans. (1)

Sol. By observation

96. Find the mirror image of "MALAYALAM".

(1) MALAYALAM (2) MALAYALAM (3) MALAYALAM (4) MALAYALAM

Ans. (2)

Sol. By observation

97. Find the mirror image of "EFFECTIVE".

(1) ƎVITƆƎFFƎ (2) EVITCEFFE (3) ƎFFƎƆTIVƎ (4) ƎVITƆƎFƎ

Ans. (1)

Sol. By observation

98. Find me mirror image of "MAGAZINE".

(1) MAGAΣINƎ (2) ƎNIZAGAM (3) MAGAZINƎ (4) ƎNIΣAGAM

Ans. (4)

Sol. By observation

99. If a clock shows 6.45 AM what is the angle between the needles ?

(1) 90^o (2) 45^o (3) 22.5^o (4) 67.5^o

Ans. (4)

Sol. $30\times 6-\frac{11}{2}\times 45 \quad \Rightarrow 180-(45)(5.5)$

$\Rightarrow 180-247.5 \quad \Rightarrow 67.5$

100. A ladder leaning against a vertical wall makes an angle of 60^o with the ground. If the foot of the ladder is 3.5 m away from the wall, the length of the ladder, is:

(1) 7 m (2) 3.5 m (3) 14 m (4) $\frac{7}{\sqrt{3}}$m

Ans. (4)

Sol. $\frac{3.5}{AC}=\frac{\sqrt{3}}{2} \quad \Rightarrow AC=\frac{7}{\sqrt{3}}m$