MAT(PAPER WITH SOLUTION)

1. "Angle" is related to 'Degree' In the same way as 'Rain' is related to
(1) Rain gauge   (2) Flood   (3) Monsoon   (4) Centimetre

Ans. **[4]**

2. 44 is related to 21 in the same way as 64 is related to
(1) 31   (2) 32   (3) 33   (4) 34

Ans. **[1]**

Sol. (1) 31 $\frac{44}{2} - 1 = 21$ Similarly

Questions (3-4)
Directions : In question Nos. 3 and 4 except one alternative other alternatives are alike in a certain way. Select the odd alternative in Question Nos. 3 and 4.

3. (1) Grapes   (2) Orange   (3) Turnip   (4) Guava

Ans. **[3]**
Sol. Turnip [as other are fruits]

4. (1) JMLK   (2) CGFE   (3) PSRQ   (4) VYXW

Ans. **[2]**
Sol.

CGFE

J	M	L	K		P	S	R	Q		V	Y	X	W
10	13	12	11		16	19	18	17		22	25	24	23

[Letters are in a fixed pattern]

C	G	F	E
3	7	6	5

[Pattern is not same as others]

5. 501, 500, 492, ? , 401, 276, 60
(1) 467   (2) 465   (3) 456   (4) 476

Ans. **[2]**
Sol. 501   500   492   ?   401   276   60

1   8   27   125   216
(1)³   (2)³   (3)³   (4³)   (5³)   (6)³
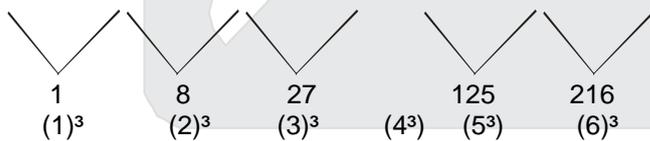
Hence correct answer is   492 – 27 = 465

6. YAK, VDI, SGG, PJE, ___?___
(1) MMC   (2) MNC   (3) MLC   (D) MMD

Ans. **[1] MMC**

Sol.

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STSE-1
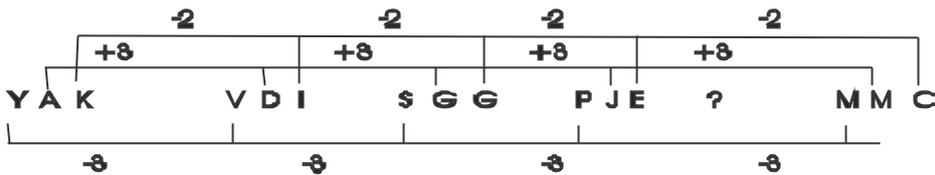
7. In a certain code, DARK is written as HVXD. How will NOTE be written in that code?
(1) RKZX   (2) RJZX   (3) RJZZ   (4) RTZW

Ans. **[4]**

8. If SYSTEM is coded as 131625, TERMS may be coded as
(1) 62251   (2) 62415   (3) 62451   (4) 64251

Ans. **[4]**

9. Ram said, "This girl is wife of the grandson of my mother. "How is ram related to the girl?
(1) Father   (2) Father-in-law   (3) Grandfather   (4) Husband

Ans. **[2] Father in law**
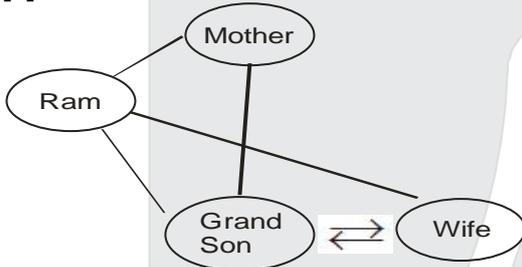
Sol.

10. B is mother of D and C is brother of D. D is wife of E. How is E related to C?
(1) Brother-in-law   (2) Father-in-law   (3) Uncle   (4) Brother

Ans. **[1] Brother in Law**
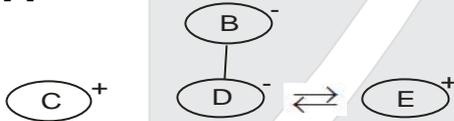
Sol.

C,D are brother and sister, so E is brother in law of C.

11. There are 36 students in a class. The number of boys is twice the number of girls. Sarita's position is 19th and 13 boys are forward to her position. How many girls are backward from Sarita's position?
(1) 5   (2) 7   (3) 9   (4) 6

Ans. **[4]**

Sol.

Male	Female
x	**y**

13 Boys + 5 Girls.

Sarita   Girl.   (19th position)

So   12 - 6 = 6   girls are Bakwards from Sarita
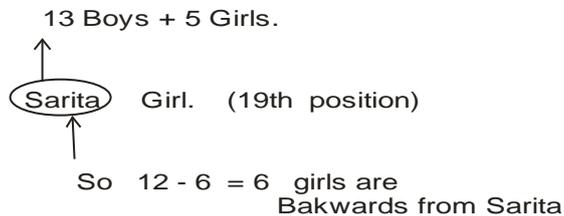
x = 2y
x + y = 36
So   2y + y = 36

y = 12   x = 24

12. A is taller than B but shorter than C. D is shorter than B but not as short as E. Who among them is the tallest?
(1) D   (2) B   (3) C   (4) E

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STSE-2

Ans. **[3] C**
Sol. C > A > B > D > E   So C is Tallest

13. Amit walks 30 metres towards south, then turning to his right he walks 30 metres. Then turning to his left he walks 20 metres. Again turning to his left he walks 30 metres. How far is he from his starting position?
(1) 30 metres   (2) 20 metres   (3) 10 metres   (4) 50 metres

Ans. **[4] 50 Meter Amit (Starting point)**
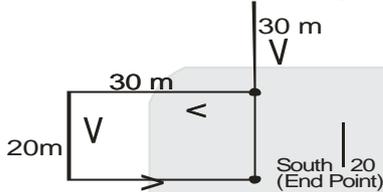
Sol. So total distance 50 M

14. At the time of sunrise, Reena's shadow is right side to he. Which direction will be Reena's mouth?
(1) East   (2) West   (3) North   (4) South
Ans. **[4]**

15. Which of the following Venn-diagrams represents Teacher, Gents, Writer?
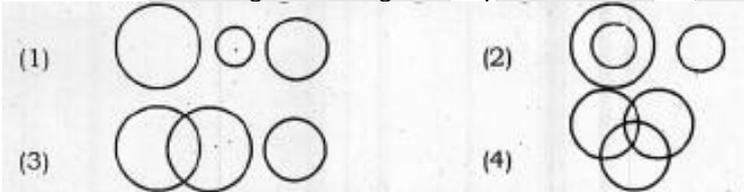
Ans. **[4]**

16. In the Venn-diagram, numbers represent the persons reading the newspapers. The diagram is based on surveying 50 persons in a population of 5000. How many persons can be expected to read at least two newspapers?
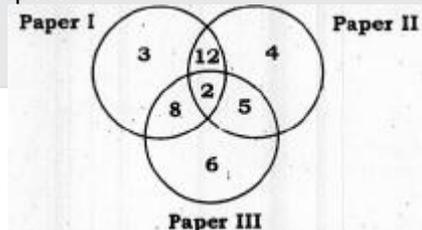
(1) 2500   (2) 2700   (3) 3000   (4) 3125

Ans. **[2]**

17. Which letter is exactly in the middle of 20th letter from the right and 11th letter from left in English alphabet?
(1) I   (2) J   (3) H   (4) O

Ans. **[4]**

18. Which one of the following words can be formed from the letters of the word 'REVERENCE'?
(1) NEAR   (2) SEER   (3) PEER   (4) NEVER
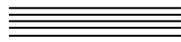
Ans. **[4]**

19. $3 \div 5 \times 8 + 2 - 10 = 13$
(1) + and -   (2) × and ÷   (3) + and -   (4) ÷ and +

Ans. **[4] ÷ and +**

Sol. $3 \div 5 \times 8 + 2 - 10 = 13$
(÷ and +) $3 + 5 \times 8 \div 2 - 10$
$\Rightarrow 3 + 5 \times 4 - 10$
$\Rightarrow 3 + 20 - 10 = 13$ **Ans.**

20. In the equation 4× 6 □ 6 □ 2 = 20, which mathematical sign is to be used for □ symbol to correct the value of the equation?
(1) – and +   (2) - and ÷   (3) + and -   (4) ÷ and ×

Ans. **[1] - and +**
Sol. $4 \times 6 \,\square\, 6 \,\square\, 2 = 20$
$4 \times 6 - 6 + 2 = 20$
$24 - 4 = 20$ Ans.

21. Choose the correct alternative from the following words in a logical sequence :
      a. Tree
      b. Furniture
      c. Plant
      d. Seed
      e. Wood
(1) d,b,e,a,c   (2) b,d,e,a,c   (3) b,d,a,e,c   (4) d,c,a,e,b

Ans. **[4] d,c,a,e,b**
Sol. Seed, Plant, Tree, Wood, Furniture

22. Arrange the following in a logical order :
      a. Square
      b. Line
      c. Angle
      d. Triangle.
(1) b,c,d,a   (2) a,c,d,b   (3) c,b,d,a   (4) a,d,c,b

Ans. **[1] b,c,d,a**
Sol. Live, Angle, Triangle, Square

23. After 10 years A's age will be twice as old as B was 10 years before. If at present A is 9 years older than B, the present age of B is
(1) 19 years   (2) 29 years   (3) 39 years   (4) 49 years

Ans. **[2]**
Sol. Let the present Age of B is = years.
According to question present age of A is = (x + 9) years
A's age after ten years = (x + 9 + 10) = (+ 19) years
B's age before ten years = (x – 10) years
According to the question = (x + 19)= 2 (x – 10)
$\Rightarrow$ x + 19 = 2x - 20
x = 39 yers   option (B)

24. There are 50 students admitted to a class. Some students can speak only English and some can speak only Hindi. 10 students can speak both English and Hindi. If the number of students who
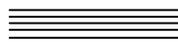
can speak English is 21 then how many student can speak Hindi, how many can speak only Hindi and how many can speak only English?

(1) 39,29,11   (2) 37,27,13   (3) 28,18,22   (4) 21,11,29

Ans. **[1]**
Sol.
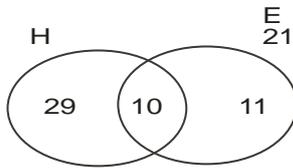
$50 - 21 \Rightarrow 29$

Only hindi = 29
Hindi = 29 + 10 = 39
     Only English = 11

Option (1) 39, 29, 11

25. In the following question, which number will come in place of question mark (?) sign?
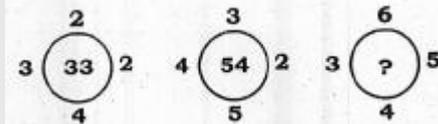
(1) 78   (2) 82   (3) 86   (4) 94

Ans. **[3] 86**
Sol. $3^2 + 2^2 + 2^2 + 4^2 = 33$
$4^2 + 3^2 + 2^2 + 5^2 = 54$
$3^2 + 6^2 + 4^2 + 5^2 = 86$

26. In the following figures digits follow a certain pattern. What will replace question mark (?) Sign?
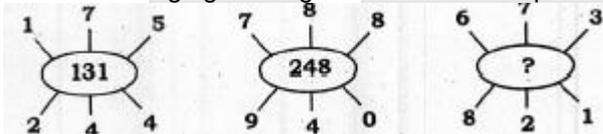
(1) 152   (2) 252   (3) 452   (4) 652

Ans. **[2] 252**
Sol. $2 - 1 = 1$ $9 - 7 = 2$ $8 - 6 = 2$
$7 - 4 = 3$ $8 - 4 = 4$ $7 - 2 = 5$
$5 - 4 = 1$ $8 - 0 = 8$ $3 - 1 = 2$

27. 864 : 981 :: ? : ?
(1) 749 **:** 648   (2) 636 : 625   (3) 636 : 749   (4) 525 : 625

Ans. **[3] 636 : 749**
Sol.   864 : 981 :: 636 : 749
No. Written with 8 is 8^2 Hence only option (3) satisfy the above Rule.
No. Written with 9 is 9^2

Questions(28 – 30)
Direction : Read the following information carefully and answer the question given blow it :
     Following are the criteria for short listing candidates for interview in a company :
The candidate must –
i)   have passed secondary with at least 70% marks.
ii)   Have passed Higher secondary with at least 60% marks.
iii)   Have passed Graduate in any stream with at least 50% marks.

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STSE-5

iv)   Have. Knowledge of computer.
In the following questions, answers should be given based on above details.

28. Rahul has secured 72% marks in Secondary. He completed his graduation with 68% marks. He has now enrolled in PG degree.
(1) eligible under (i) only   (2) eligible under (ii) only
(3) eligible under (iii) only   (4) eligible under (i) and (iii)

Ans. [4]
Sol. In the given statement Rahul is eligible under (i) & (iii) only

29. Maya has completed post graduate examination after passing graduation exam with 60% marks. She has secured 75% marks in secondary and 66% marks in Higher Secondary.
(1)   eligible under (i), (ii) and (iii)   (2)   eligible under (i), (ii) and (iv)
(3)   eligible under (ii), (iii) and (iv)   (4)   eligible under (i) and (iii).

Ans. [1]
Sol. In the given statement Maya is eligible under (i), (ii) & (iii) .

30. Rohit has secured 55% marks in Computer Science in graduation. He has passed his Secondary Examination with 65% marks and Highter Secondary Examination with 60% marks.
(1)   eligible under (i) and (ii)
(2)   eligible under (i), (ii) and (iv)
(3)   eligible under (ii), (iii) and (iv)
(4)   eligible under (i), (ii), (iii) and (iv).

Ans. [3]
Sol. In the given statement Rohit is eligible under (ii), (iii) & (iv)

Questions(31 – 32)
Direction : In Question Nos. 31 and 32 there are two sets on figures. One set contains problem-figures while the other has answer-figures. There is a sequence according to which the problem-figures are arranged. You have to select one figure from the set of answer-figures which can be placed in sequence after the set of problem-figures. Find out the correct figure.

31.

Ans. [4]
Sol. In the series in moving one step ahead in anticlockwise direction & parabola is changing upward to downward in first step at same place & moving ahead in next step. So follow the rule & get answer(4)

32.

Ans. [1]
Sol. Dark place is moving two box in clockwise direction & then there box in same direction or moving 90º clockwise in one step & 135º clockwise in next step.

33. Two sets of the figures are given in the question. Figures A, B, C, and D are problem-figures and figures 1,2,3 and 4 are answer-figures. There is a definite relationship between figures A and B. Establish a similar relationship between C and D by choosing a figure D from the answer-figures.

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STSE-6
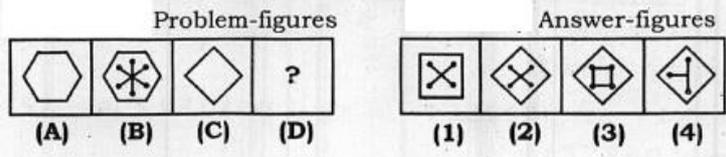
Ans. **[2]**
Sol. Inner lines are in the middle of outer boundary.

34. In the question there are four figures given. One of them does not correlate with the rest of the figures. Find out the odd figure.
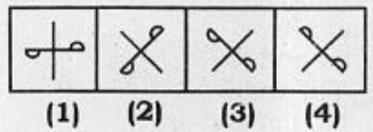
Ans. **[4]**
Sol. Semi circles are in same direction in option.

35. How many triangles are there in the diagram given below?
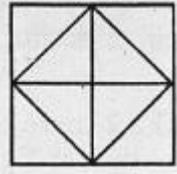
(1) 8   (2) 10   (3) 12   (4) 14

Ans. **[3]**

36. How many squares are there in the diagram given below?
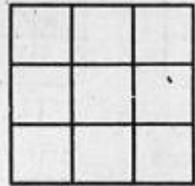
(1) 14   (2) 13   (3) 10   (4) 9

Ans. **[1]**

37. Mirror image of **PROPER** is

(1) ꟼƧOꟼЯ   (2) ЯƎꟼOЯꟼ   (3) ᑭᖇOᑭᕮᖇ   (4) ᖇƎꟼOᖇꟼ

Ans. **[2]**

38. The mirror image of the given figure (X) from the following four alternatives is
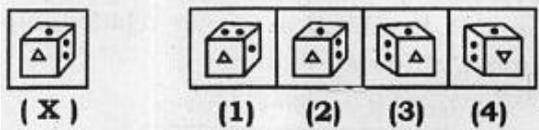
Ans. **[3]**

39. Water image of **D6Z7F4** is

(1) D6Z7F4 (2) D6Z7F4 (3) D6Z7F4 (4) D6Z7F4

Ans. **[3]**

40. The water image of the given figure(X) from the four following alternatives is

(X) (1) (2) (3) (4)
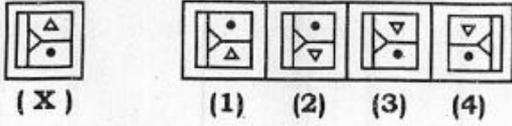
Ans. **[2]**

41. Which is the alternative that completes the figure matrix?

↑↑	↑↓	↓↑
↑→	↑←	↓→
↑↓	?	↓↓

| ↑↑ | ↓↑ | ↑↓ | ↑→ |
| (1) | (2) | (3) | (4) |
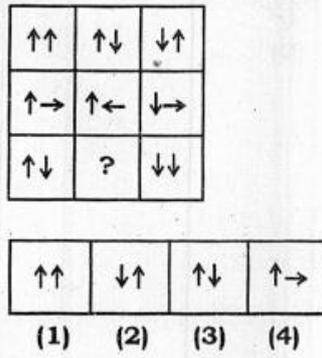
Ans. **[1]**
Sol. When we observe the figure colomn wise, we get find arrow is constant through column & next is moving in clock wise direction at 90⁰.

42. Which is the alternative that completes the figure matrix?

⊡	⊡	⊡
⊡	⊡	⊡
⊡	⊡	?

| ⊡ | ⊡ | ⊡ | ▢ |
| (1) | (2) | (3) | (4) |
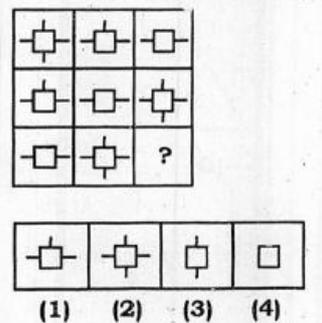
Ans. **[1]**
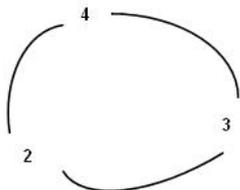
Sol.

Observe the figure column wise & count the outer line in cycle order.

43. A cube is painted on all of its surfaces and then divided into 64 equal smaller cubes. How many smaller cubes will not have been coloured on all the surfaces?

(1) 24 (2) 16 (3) 8 (4) 0

Ans. **[3]**
Sol. There are only 8 cubs which are not painted at all.

**44.** Choose from alternatives, the box that will be formed when figure (X) is folded :
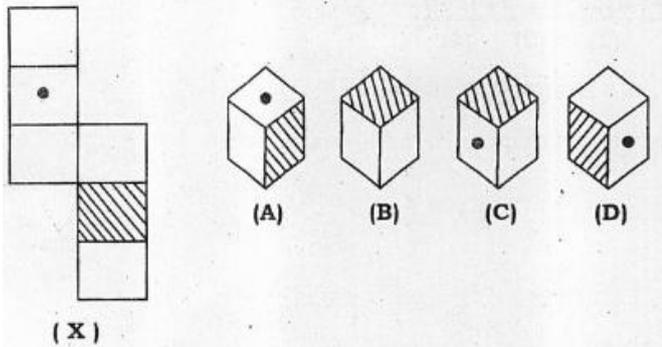
Ans. **[3]**

Sol. By options only option 3 fits the solutions' X.

**45.** Four figures A, B, C and D are given in the question. Which of the three figures will form a triangle?
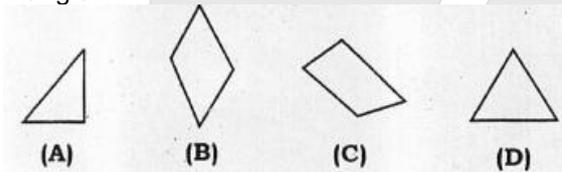
(1) ABD   (2) ABC   (3) BCD   (4) ACD

Ans. **[1]**

Sol. Join the figure ABD as
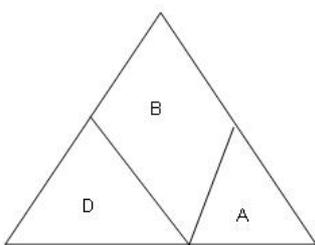
46. Four figures A, B, C and D are given in the question. Which of the three figures will form a square?

(1) ABC   (2) ABD   (3) BCD   (4) ACD

Ans. **[3]**

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STSE-9
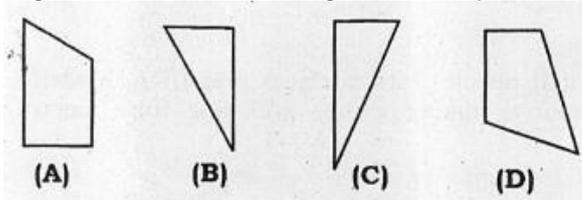
Sol.
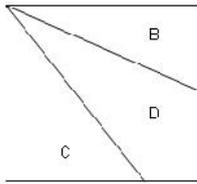
**47.** In the given figure X, the position in which dot is placed can appear in the same pattern in which of the following answer-figures?
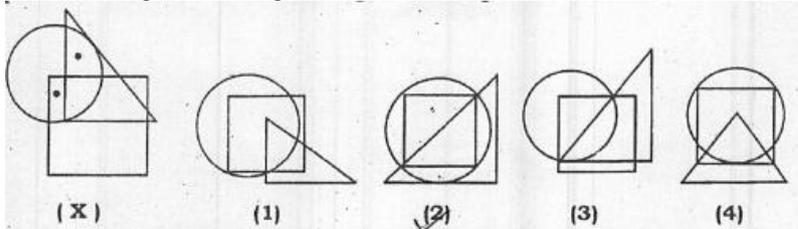
Ans. **[2]**

**48.** Which correct answer-figure will be formed by joining the parts of the figure X?
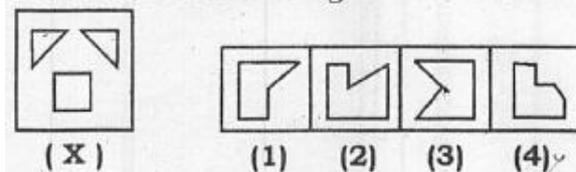
Ans. **[3]**

49. Which of the following alternatives represents group of similar figure?
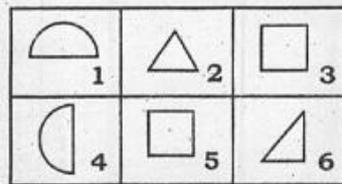
(1) 1,4;2,6;3,5   (2) 1,2;,3,4;5,6   (3) 1,4;2,5;3,6   (4) 1,6;2,4;3,5

Ans. **[1]**

50. Choose right alternative of the following if total sum of numbers of opposite faces of a dice always remains 7 :

(1)   (2)   (3)   (4)
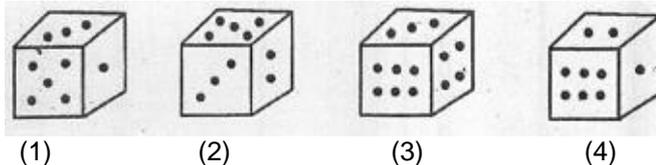
Ans. **[1]**

Sol. Rest have no. of dots on their ad Jaent faces whose some is (7) hence only option (1) is correct.

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