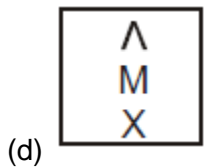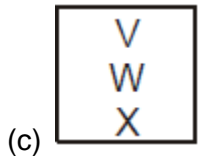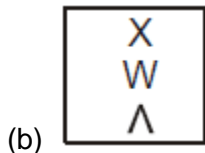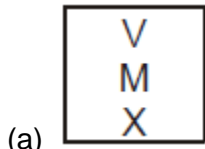Q1. In the following question, choose the correct mirror-image from amongst the four alternatives (1), (2), (3) and (4) given along with it.
The mirror may be represented by a line MN.

Question Figure:

```
       M
 ┌──┐  ▨
 │ V│  ▨
 │ W│  ▨
 │ X│  ▨
 └──┘  ▨
       N
```

Answer Figures:

(a)
```
┌───┐
│ V │
│ M │
│ X │
└───┘
```

(b)
```
┌───┐
│ X │
│ W │
│ Λ │
└───┘
```

(c)
```
┌───┐
│ V │
│ W │
│ X │
└───┘
```

(d)
```
┌───┐
│ Λ │
│ M │
│ X │
└───┘
```
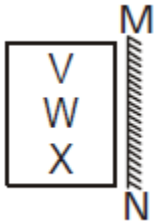
Q2. In each of the following questions, which answer figure will come next in the series of question figures?

Question Figures:

| Δ = * | = * ○ | * ○ → | ? |
| □ → ○ | Δ □ → | = Δ □ | |

Answer Figures:

(a)

(b)

(c)

(d)
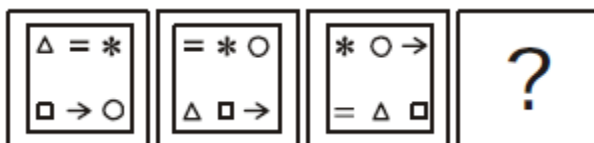
Q3. Which of the following diagrams represents the relationship among

Tall men, Black haired, Indians?

(a)

(b)

(c)

(d)

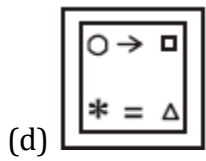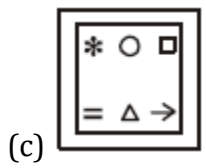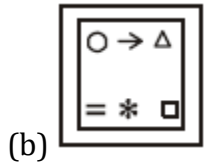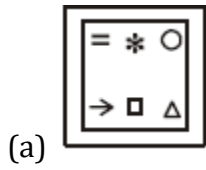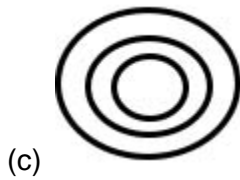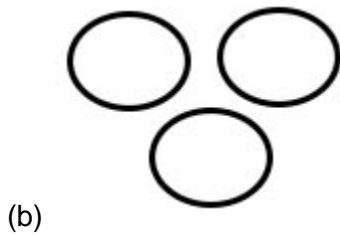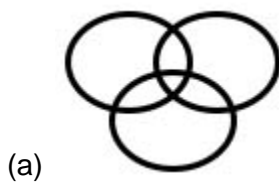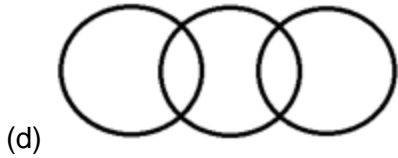Q4. Arrange the following words as per order in the dictionary.

(i) Forge   (ii) Forget   (iii) Forgo   (iv) Forgive   (v) Format

    (a) (v), (ii), (iv), (iii), (i)

    (b) (i), (iv), (iii), (ii), (v)

    (c) (iii), (iv), (v), (ii), (i)

    (d) (i), (ii), (iv), (iii), (v)

Q5. Some equations are solved on the basis of a certain system. On the same basis find out the correct answer for the unsolved equation. $4 - 5 - 1 = 514$, $3 - 5 - 6 = 563$, $0 - 6 - 8 = ?$

    (a) 608

    (b) 680

    (c) 806

    (d) 860

Q6. Select the missing number from the given responses.

25	49	16
36	81	64
11	16	?

    (a) 12

    (b) 20

    (c) 13

    (d) 18

Q7. Choose the correct alternative from the given ones that will complete the series

30, 28, 23, 21, ?

    (a) 15

    (b) 18

    (c) 16

    (d) 20

Q8. In each of the following questions, select the one which is different from other three alternatives.

    (a) 428

    (b) 338

    (c) 313

    (d) 339

Q9. Select the related word from the given alternatives.

King: Palace:: Eskimo : ?

    (a) Caravan

    (b) Asylum

    (c) Monastery

    (d) Igloo

Q10. A and B are brothers. C and D are sisters. A's son is D's brother. How is B related to C?

    (a) Father

    (b) Brother

    (c) Uncle

    (d) Son

Q11. In a certain code language 'PAPER' is written as 'REPAP', how 'WATCH' will be written in that code?

(a) HCTAW

(b) HWCAT

(c) WTHCA

(d) WHACT

Q12. In a certain code language 'TRIPPLE' is written as 'SQHOOKD', how 'DISPOSE', will be written in that code?

(a) ESOPSID

(b) DSOESPI

(c) EJTPTF

(d) CHRONRD

Q13. 'RECOMMENDATION' is written as 'COMMENDATIONER' then how 'REMUNERATION' will be written in that code?

(a) NOITARENUMER

(b) RMNRTONIAEUE

(c) MUNERATIONER

(d) TIONREMUNERA

Q14. In a certain code language 'DEFENCE' is written as 'CDEDMBD', how 'NEED' will be written in that code?

(a) MCDC

(b) MCCD

(c) ULDG

(d) MDDC

Q15. If 'METHOD' is written as LFSINE', how 'DEPOT' will be written in the code?

(a) EFQPU

(b) CFOPS

(c) CDOPS

(d) EUQPU

Q16. If 'MASTER' is coded as 411259, then 'POWER' will be coded as:

(a) 16 15 3 4 18

(b) 7 6 5 5 9

(c) 7 6 5 4 3 9

(d) 7 15 5 4 8

Directions (17-20): **In the following questions find the number which would replace the question mark?**

Q17. 2, 5, 8, ?

(a) 10

(b) 13

(c) 11

(d) 17

Q18. 3, 6, 18, 72, ?

(a) 144

(b) 216

(c) 288

(d) 360

Q19. 5, 8, 14, 26, 50, 98, ?

(a) 126

(b) 194

(c) 212

(d) 296

Q20. 17, 19, 23, 29, ?

(a) 31

(b) 33

(c) 35

(d) 37

Directions (21-22): In the following question, select the related word from the given alternatives.

Q21.   Mass : Kilogram : : Volume : ?
(a) Joule
(b) Litre
(c) Degree
(d) Volt

Q22.   Fox : Vixen : : ? : ?
(a) Butterfly : Caterpillar
(b) Stag : Doe
(c) Colt : Horse
(d) Bee : Drone

Directions (23-24): In the following question, select the related letters from the given alternatives.

Q23.   PQRS : OOQQ : : DEFG : ?
(a) CCDD
(b) CCFF
(c) BBDD
(d) CCEE

Q24.   PQR : MNO : : DEF : ?
(a) ACC
(b) ACB
(c) ABC
(d) BCA

Directions (25-26): In the following question, select the related number from the given alternatives.

Q25.   7 : 343 : : 9 : ?
(a) 529
(b) 629
(c) 729
(d) 1008

Q26.   13 : 167 : : 15 : ?
(a) 223
(b) 224
(c) 225
(d) 227

Q27. Select the related word/letters/ number from the given alternatives.
      Pacific: Ocean:: Nile : ?
(a) Waterfall
(b) River
(c) Mountain
(d) Lake

Q28. A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.
 Inch, Decimeter, Foot, ?
(a) Nanometer
(b) Millimeter
(c) Centimeter
(d) Meter

Directions (29-30); In the following question, select the missing number from the given series.

Q29.   2, 3, 8, 27, ?
(a) 76
(b) 84
(c) 112
(d) 124

Q30.   3, 17, 73, 297, ?
(a) 1087
(b) 1193
(c) 2117
(d) 2197

Q31.Starting from a point, a person travels 3 km towards east and turns left and travels 4 km. Then again he turns to left by 45° and moves straight. Which direction is he facing now?
    (a) North-East
    (b) North-West
    (c) South-East
    (d) South-West

Q32. Arrange the following words as per the order in the dictionary:
   1. RESIGN
   2. REPAIR
   3. RESIDUE
   4. RESEARCH
   5. RESCUE
   (a) 4 5 3 1 2
   (b) 2 5 4 3 1
   (c) 2 5 4 1 3
   (d) 5 4 3 1 2

Q33. A series is given with one term missing, Choose the correct alternative from the given
   ones that will complete the series.
   JAZ, LEX, NIV, PMT, ?
   (a) QUR
   (b) RQR
   (c) SUR
   (d) RUS

Q34. A series is given with one term missing, Choose the correct alternative from the given
   ones that will complete the series.
   19, 28, 39, 52, ?, 84
   (a) 39
   (b) 52
   (c) 67
   (d) 84

Q35. X and Y are brothers. R is the father of Y. T is the sister of S who is maternal uncle of X.
   How is T related to R?
   (a) Mother
   (b) Wife
   (c) Sister
   (d) Brother

Q36. From the given alternative words, select the word which can be formed using the
   letters of the given word.
   SOMNAMBULISM
   (a) NAMES
   (b) BASALT

(c) SOUL

(d) BIOME

Q37. If GOODNESS is coded as HNPCODTR then GREATNESS will be coded as:

(a) HQZFBMFRT

(b) HPFZUMERT

(c) HQEZUMFTR

(d) HQFZUMFRT

Q38. Complete the third equation on the basis of a certain system followed in the first two equations.
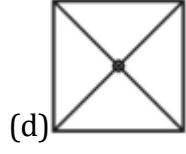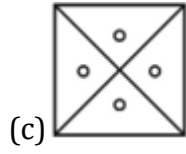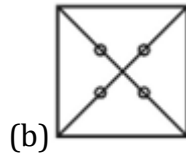
(1) 5*4*2*1 = 1425

(2) 7*8*1*6 = 6817

(3) 9*3*7*5 = ?

(a) 3795

(b) 5397

(c) 5973

(d) 5379

Q39. A piece of paper is folded and cut as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

(a)

(b)

(c)

(d)
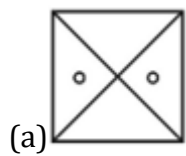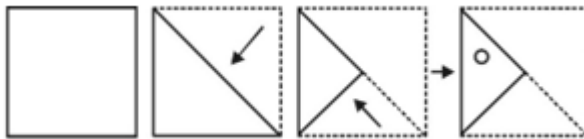
Q40. If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?

(a)

(b)

(c)

(d)
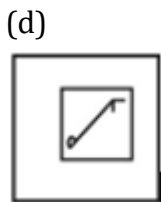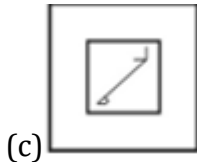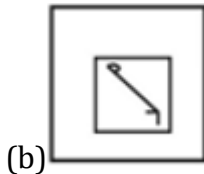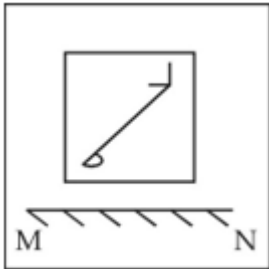
Q41. Select the related number from the given alternatives.
17 : ? :: 145 : 195
(a) 42
(b) 35
(c) 30
(d) 24

Q42. Select the odd number pair from the given alternatives.
(a) 66-56
(b) 101-90
(c) 41-30
(d) 33-22

Q43. A series is given, with one number missing. Choose the correct alternative from the given ones that will complete the series.
3, 15, 35, 63, 99, ?
(a) 141
(b) 143
(c) 151
(d) 169

Q44. Select the missing number from the given responses.
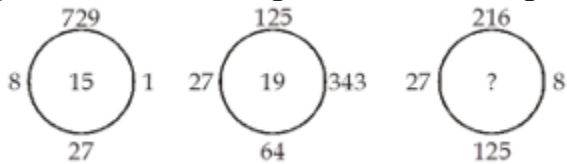
(a) 16
(b) 18
(c) 20
(d) 29

Q45. After interchanging ÷ and ×, 12 and 18, which one of the following equation becomes correct?
(a) (90 × 18) ÷ 12 = 60
(b) (18 × 6) ÷ 12 = 2
(c) (72 ÷ 18) × 12 = 72
(d) (12 × 6) ÷ 18 = 36

Q46. Arrange the following in the meaningful/logical order:
(1) Foundation
(2) Plastering
(3) Building
(4) Painting
(a) 1, 2, 3, 4
(b) 1, 3, 2, 4
(c) 3, 1, 2, 4
(d) 3, 1, 4, 2

Q47.Which number is at opposite of number 6?
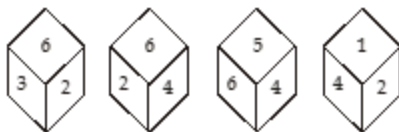
(a) 1

(b) 2
(c) 3
(d) 4

Q48.How many rectangles are there in the given figure?
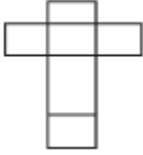
(a) 12
(b) 15
(c) 17
(d) 18

Q49. I am facing east. I turn 100° in the clockwise direction and then 145° in the anticlockwise direction. Which direction am I facing now?
(a) East
(b) North-East
(c) North
(d) South-West

Q50. Introducing man to her husband, a woman said, "His brother's father is the only son of my grandfather." How is the woman related to this man?
(a) Mother
(b) Aunt
(c) Sister
(d) Can't be determined.

Q51. The average marks obtained by 22 candidates in an examination are 45. The average marks of the first 10 candidates are 55 and those of the last eleven are 40. The number of marks obtained by the eleventh candidate is?

(a) 45

(b) 0

(c) 50

(d) 47.5

Q52. $\sqrt{3\sqrt{3\sqrt{3\ldots\ldots\ldots}}}$ Is equal to?

(a) √3

(b) 2√3

(c) 3

(d) 3√3

Q53. The smallest number which should be added to the number 8958 so that the result is a perfect square is?

(a) 67

(b) 69

(c) 77

(d) 79

Q54. If a number is as much greater than 31 as it is less than 75, then the number is?

(a) 106

(b) 44

(c) 74

(d) 53

Q55. The two numbers are in the ratio 2: 3 and their product is 96. The sum of the numbers is?

(a) 4

(b) 20

(c) 101

(d) 5

Q56. Arbind spends 75% of his income and saves the rest. His income is increased by 20% and he increases his expenditure by 10%. Then the increase in savings in percentage is?

(a) 55%

(b) 52%

(c) 50%

(d) 48%

Q57. A dealer sold ¾th of his articles at a gain of 24% and the remaining at the cost price. Percentage of gain in the whole transaction is?

(a) 15%

(b) 18%

(c) 24%

(d) 32%

Q58. Manoj deposited Rs. 29400 for 6 years at a simple interest. He got Rs. 4200 as interest after 6 years. The annual rate of interest was?

(a) $2\frac{8}{21}\%$

(b) $2\frac{7}{20}\%$

(c) $3\frac{8}{21}\%$

(d) $4\frac{8}{21}\%$

Q59. In what time will a train, 60 meter long, running at the rate of 36 km/hr. pass a telegraph post?

(a) 9 sec.

(b) 8 sec.

(c) 7 sec.

(d) 6 sec.

Q60. Each side of an equilateral triangle is 6 cm. Find its area?

(a) $6\sqrt{3}\ cm^2$

(b) $9\sqrt{3} \ cm^2$

(c) $4\sqrt{3} \ cm^2$

(d) $8\sqrt{3} \ cm^2$

Q61. The circumcenter, incentre, orthocenter and the centroid of a triangle are one and the same point. The triangle must be?
    (a) Isosceles triangle
    (b) Right angel triangle
    (c) Right angel isosceles triangle
    (d) Equilateral triangle

Q62. If $a + \frac{1}{a} = 3$, then $(a^4 + \frac{1}{a^4})$ is equal to?
    (a) 77
    (b) 47
    (c) 51
    (d) 81

Q63. If Sec4θ = Cosec (θ + 20°), θ then is equal to?
    (a) 22°
    (b) 18°
    (c) 14°
    (d) 20°

Q64. A train travelling at 44 km/h crosses a man walking with a speed of 8 km/h, in the same direction, in 15 seconds. If the train crosses a woman coming from the opposite direction in 10 seconds, then what is the speed (In km/h) of the woman?
    (a) 10.5 km/hr.
    (b) 10 km/hr.
    (c) 9 km/hr.
    (d) 8.5 km/hr.

Q65. A certain number of persons can complete a work in 34 days working 9 hours a day. If the number of persons is decreased by 40%, then how many hours a day should the remaining persons work to complete the work in 51 days?
    (a) 9
    (b) 8

(c) 12
(d) 10

Q66. The difference between the compound interest and simple interest on Rs x at 8% per annum for 2 years is Rs 19.20. What is the value of x?
    (a) 2,500
    (b) 2,800
    (c) 3,000
    (d) 3,200

Q67. When an article is sold for Rs 355, there is a loss of 29%. To gain 21%, it should be sold for Rs?
    (a) 629.20
    (b) 580.80
    (c) 605
    (d) 635

Q68. The price of a commodity is increased by 36% and the quantity purchased is decreased by 30%. What is the percentage increase/decrease in the amount spent on the commodity?
    (a) 4.8% increase
    (b) 4.8% decrease
    (c) 6% increase
    (d) 6% decrease

Q69. If a: b = 5:7, then (5a - 3b): (4a - 2b) is equal to?
    (a) 2: 3
    (b) 5: 4
    (c) 4: 3
    (d) 3: 2

Q70. The average of the first 101 _____ numbers is equal to 102?
    (a) Odd
    (b) Even
    (c) Natural
    (d)Perfect square

Q71. The average of 100 numbers is 44. The average of these 100 numbers and 4 other new numbers is 50. The average of the four new numbers will be?

(a) 800
(b) 200
(c) 176
(d) 24

Q72. If $\sqrt{3^n}$ = 2187 then the value of n is?
    (a) 16
    (b) 15
    (c) 14
    (d) 13

Q73. The sum of the squares of two numbers is 386. If one of the number is 5, the other will be?
    (a) 15
    (b) 18
    (c) 19
    (d) 20

Q74. Which of the following number is NOT divisible by 18?
    (a) 54036
    (b) 50436
    (c) 34056
    (d) 65043

Q75. Tea worth Rs. 126 per kg and Rs.135 per kg are mixed with a third variety in the ratio 1: 1: 2. If the mixture is worth Rs.153 per kg, the price of the third variety per kg will be?
    (a) Rs. 175.5
    (b)   Rs. 180
    (c) Rs. 169.5
    (d)   Rs. 170

Q76. In a college, 40% of the students were allotted group A, 75% of the remaining were given group B and the remaining 12 students were given group C. Then the number of students who applied for the group is?
    (a) 100
    (b)   60
    (c) 80
    (d)   92

Q77. A, B and C entered into a partnership. A invested Rs. 2,560 and B Rs. 2,000. At the end of the year, they gained Rs. 1,105, out of which A got Rs. 320. C's capital was?

(a) Rs. 4280

(b)   Rs. 2840

(c) Rs. 4820

(d)   Rs. 4028

Q78. A can do a certain job in 12 days. B is 60% more efficient than A. Then B can do the same piece of work in?

(a) 8 days

(b)   7 ½ days

(c) 6 ¼ days

(d)   6 days

Q79. P travels for 6 hours at the rate of 5 km/ hour and for 3 hours at the rate of 6 km/ hour. The average speed of the journey in km/ hour is?

(a) $3\frac{1}{5}$

(b) $5\frac{1}{3}$

(c) $1\frac{2}{9}$

(d) $2\frac{2}{5}$

Q80. The value of cos 1° cos 2° cos 3°....... cos 177° cos 178° cos 179° is?

(a) 0

(b)   1/2

(c) 1

(d)   1/√2

Q81. If sin 3A = cos (A – 26°), where 3A is an acute angle then the value of A is?

(a) 29°

(b) 26°

(c) 23°
(d) 28°

Q82. The diagonal of a cube is $\sqrt{192}$ cm. Its volume (in cm^3) will be?

(a) 216
(b) 432
(c) 512
(d) 624

Q83. If x = 12 and y = 4, then the value of $(x + y)^{\frac{x}{y}}$ is?

(a) 48
(b) 570
(c) 1792
(d) 4096

Q84. On a journey across Kolkata, a taxi averages 50 km per hour for 50% of the distance, 40 km per hour for 40% of it and 20 km per hour for the remaining. The average speed (in km/hour) for the whole journey is?

(a) 42
(b) 40
(c) 35
(d) 45

Q85. A man and a woman working together can do a certain work in 18 days. Their skills in doing the work are in the ratio 3: 2. How many days will the woman take to finish the work alone?

(a) 45 days
(b) 36 days
(c) 27 days
(d) 30 days

Q86. During a month-long annual sale, a shopkeeper sells his goods at a discount of 50%. But in the last week, he offers an additional discount of 40%. If the original price of a shirt is Rs. x, then the price, (in rupees) during the last week of the sale will be?

(a) 90% of x
(b) 70% of x
(c) 30% of x
(d) 10% of x

Q87. A man sold some articles at a gain of 10%. He spent his total sale proceeds to purchase such articles again. This time, while selling them, he incurred a loss of 10%. His loss or gain in the transaction was?

    (a) 1% loss

    (b) 1% gain

    (c) no profit no loss

    (d) 2% loss

Q88. If the annual income of A, B and C are in the ratio 1: 3: 7 and the total annual income of A and C is Rs. 8, 00,000, then the monthly salary of B (in Rs.) is?

    (a)   20,000

    (b)   25,000

    (c)   30,000

    (d)   15,000

Q89. The average of odd numbers upto 100 is?

    (a)   50.5

    (b)   50

    (c)   49.5

    (d)   25

Q90. The value of $\sqrt{40 + \sqrt{9\sqrt{81}}}$ is?

    (a)   7

    (b)   9

    (c)   11

    (d)   3

Q91. 47 is added to the product of 71 and an unknown number. The new number is divisible by 7 giving the quotient 98. The unknown number is a multiple of?

    (a) 3

    (b) 2

    (c) 5

    (d) 7

Q92. If x : y be the ratio of two whole numbers and z be their HCF, then the LCM of those two numbers is?

    (a) $\frac{yz}{}$

    (b) xy

(c) $\dfrac{xy}{z}$

(d) Xyz

Q93. $9 - 1\frac{2}{9}$ of $3\frac{3}{11} \div 5\frac{1}{7}$ of $\frac{7}{9}$ is equal to?

(a) 9

(b) 8

(c) $8\frac{32}{81}$

(d) $\frac{3}{4}$

Q94. Total weekly emoluments of the workers of a factory is Rs. 1534. Average weekly emolument of a worker is Rs. 118. The number of workers in the factory is?
   (a) 16
   (b) 14
   (c) 13
   (d) 12

Q95. If two-third of A is four-fifth of B, then A: B =?
   (a) 5: 6
   (b) 6: 5
   (c) 9: 10
   (d) 10: 9

Q96. What percent of 3.6 kg is 72 gms?
   (a) 32%
   (b) 22%
   (c) 12%
   (d) 2%

Q97. Kalpana purchased a cycle for Rs. 1,000 and sold it for Rs. 1,200. Her gain in percentage is?
   (a) 20%
   (b) 10%

(c) 12%

(d) 40%

Q98. A person purchased a saree for Rs. 7710 after availing a net discount of   Rs. 1285. The percentage of discount, the saree shop offers, is?

(a) $16\frac{2}{3}\%$

(b) $14\frac{1}{7}\%$

(c) $14\frac{2}{7}\%$

(d) $33\frac{1}{3}\%$

Q99. A can do a piece of work in 20 days and B in 30 days. They work together for 7 days and then both leave the work. Then C alone finishes the remaining work in 10 days. In how many days will C finish the full work?
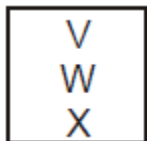
(a) 25 days

(b) 30 days

(c) 24 days

(d) 20 days

Q100. A constable follows a thief who is 200 m ahead of the constable. If the constable and the thief run at speed of 8 km/hour and 7 km/hour respectively, the constable would catch the thief in?

(a) 10 min.

(b) 12 min.

(c) 15 min.

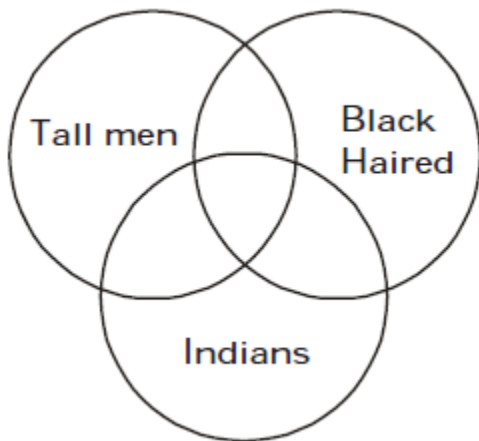(d) 20 min.

Solutions

S1.Ans. (c)

Sol.

S2.Ans. (d)

Sol. In each subsequent figure all the designs move in anticlock wise direction.

S3.Ans. (a)

Sol.

Some tall men are black– haired and vice–versa. Some tall men are Indians and vice–versa. Some black–haired are Indians and vice–versa. Some tall men, who are black– haired are Indians.
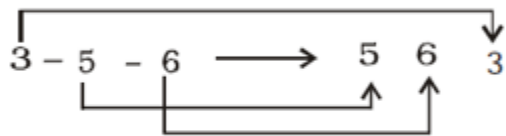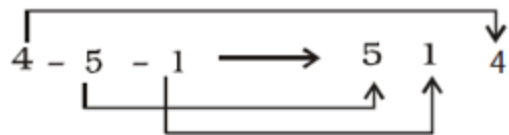
S4.Ans. (d)

Sol.   Arrangement of words as per dictionary

(i)   Forge
         ↓
(ii) Forget
         ↓
(iv) Forgive
         ↓
(iii) Forgo
         ↓
(v)   Format

S5.Ans. (b)

Sol.

$$4 - 5 - 1 \longrightarrow 5 \quad 1 \quad 4$$

$$3 - 5 - 6 \longrightarrow 5 \quad 6 \quad 3$$

Similarly,

$$0 - 6 - 8 \longrightarrow 6 \quad 8 \quad 0$$
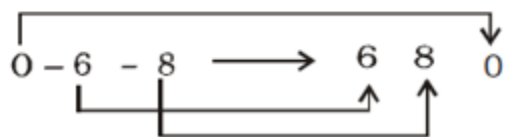
S6.Ans. (a)

Sol.

First Column

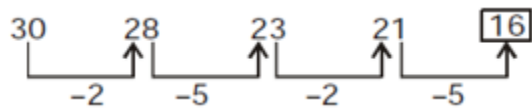$\sqrt{25} + \sqrt{36} \Rightarrow 5 + 6 = 11$

Second Column

$\sqrt{49} + \sqrt{81} \Rightarrow 7 + 9 = 16$

Third Column

$\sqrt{16} + \sqrt{64} \Rightarrow 4 + 8 = 12$

S7.Ans. (c)

Sol.

S8.Ans. (b)

Sol.

428 ➔ 4 × 2 = 8
338 ➔ 3 × 3 = 9
313 ➔ 3 × 1 = 3
339 ➔ 3 × 3 = 9

S9.Ans. (d)

Sol.   Palace is living place of king.
Similarly, Eskimo lives in Igloo.
Igloo is the dome-shaped dwelling unit built of blocks of snow.

S10.Ans. (c)

Sol. A's son is the brother of C and D.
Therefore, C is the daughter of A.
Now, B is the uncle of C.

S11. Ans.(a)

Sol.
P A P E R ↔ R E P A P
Inverse the position of letters i.e. (start from ending)
Hence, W A T C H ↔ H C T A W

S12. Ans.(d)

Sol.
T   R   I   P   P   L   E   subtract 1 in   S   Q   H   O   O   K   D
20 18 9 16 16 12 5   ←the respective→ 19 17 8 15 15 11 4
                           position of letters
Similarly,
D   I   S   P   O   S   E   subtract 1 in   C   H   R   O   N   R   D
4   9 19 16 15 19 5   ←the respective→ 3   8 18 15 14 18 4
                          position of letters

S13. Ans.(c)

Sol.

Start from the third letter and then in the end add first two letters in opposite manner i.e. shuffle them.

R E C O M M E N D A T I O N → C O M M E N D A T I O N E R
Similarly,
R E M U N E R A T I O N → M U N E R A T I O N E R

S14. Ans.(d)

Sol.
D   E   F   E   N   C   E   subtract 1 in   C   D   E   D   M   B   D
4   5   6   5 14   3   5   →the respective 3   4   5   4 13   2   4
                           position of letters

Similarly,

N   E   E   D   subtract 1 in   M   D   D   C
14 5   5   4   →the respective 13 4   4   3
                 position of letters

S15. Ans.(b)

Sol.

Subtract '1' and then add '1' alternatively in the respective position of letters.

```
-1  +1  -1  +1  -1  +1
M   E   T   H   O   D  ⟶  L  F  S  I  N  E
13  5  20   8  15   4      12  6 19  9 14  5
```

S16. Ans.(b)

Add the position number of letters individually

```
1+3   1  1+9  2+0   5  1+8
M     A   S    T    E   R  →  4 1 1 2 5 9
```

```
1+6  1+5  2+3   5  1+8
Sol. P   O    W    E   R  →  7 6 5 5 9
```

S17. Ans.(c)

```
2,  5,  8,  ?
The trick is  2 ___ 5 ___ 8 ___ 11
                 +3    +3    +3
Sol.
```

S18. Ans.(d)

```
3, 6, 18, 72, ?
The trick is
3 × 2 = 6
6 × 3 = 18
18 × 4 = 72
72 × 5 = 360
Sol.
```

S19. Ans.(b)

5, 8, 14, 26, 50, 98, ?

5   8   14   26   50   98 $\boxed{194}$

+3   +6   +12   +24   +48   +96

Sol.   ×2   ×2   ×2   ×2   ×2

S20. Ans.(d)

17, 19, 23, 29, ?

The trick is 17   19   23   29 $\boxed{37}$

Sol.   +2   +4   +6   +8

S21. Ans.(b)
Sol.

Mass – Kilogram ⎤
             ⎬ – Units
Volume – Litre ⎦
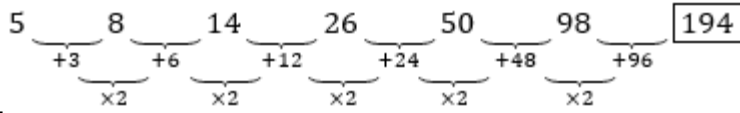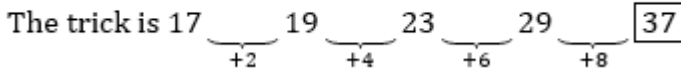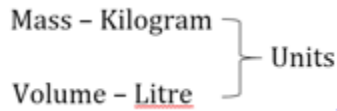
S22. Ans.(b)
Sol.

Male   Female
Fox →   Vixen
Stag→   Doe

S23. Ans.(d)
Sol.

P   Q   R   S   D   E   F   G

−1↓ −2↓ −1↓ −2↓   −1↓ −2↓ −1↓ −2↓

O   O   Q   Q   C   C   E   E

S24. Ans.(c)
Sol. −3 series

S25. Ans.(c)
Sol.

$7^3 = 343$
$9^3 = 729$

S26. Ans.(a)

Sol.

$13^2 - 2 = 167$
$15^2 - 2 = 223$

S27. Ans.(b)

Sol.

Pacific is an ocean

Nile is a river.

S28. Ans.(d)

Sol.

Inch, Decimeter, Foot, meter

S29. Ans.(c)
Sol.
2 × 1 + 1 = 3
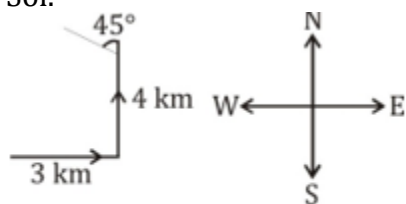3 × 2 + 2 = 8
8 × 3 + 3 = 27
27 × 4 + 4 = 112

S30. Ans.(b)
Sol.
3 × 4 + 5 = 17
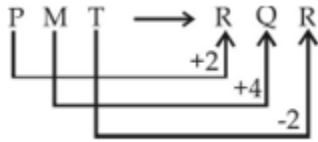17 × 4 + 5 = 73
73 × 4 + 5 = 297
297 × 4 + 5 = 1193

S31. Ans.(b)
Sol.

He was facing so, North – west direction.

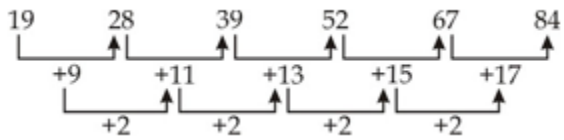S32. Ans.(b)
Sol. REPAIR→ RESCUE→ RESEARCH→ RESIDUE→ RESIGN

S33. Ans.(b)
Sol.

P M T $\longrightarrow$ R Q R
  +2
  +4
  -2

S34. Ans.(c)
Sol.

19   28   39   52   67   84
  +9   +11   +13   +15   +17
     +2   +2   +2   +2

S35. Ans.(b)
Sol.

S^+——T^-══R^+
                |
    X^+——Y^+
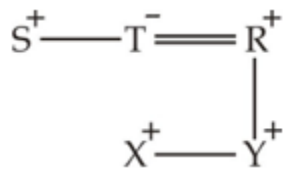
S36. Ans.(c)
Sol. SOUL

S37. Ans.(d)
Sol.

G O O D N E S S
 +1 -1 +1 -1 +1 -1 +1 -1
H N P C O D T R

G R E A T N E S S
 +1 -1 +1 -1 +1 -1 +1 -1 +1
H Q F Z U M F R T

S38. Ans.(d)
Sol. Patten followed: 4th term → 2nd term→ 3rd term→ 1st term

S39. Ans.(c)

S40. Ans.(b)

S41.Ans.(b)

Sol.

$(4)^2 + 1 = 17$

$(6)^2 - 1 = 35$

$(12)^2 + 1 = 145$

$(14)^2 - 1 = 195$

S42.Ans.(a)
Sol.
66 – 56 = 10
101 – 90 =11
41 – 30 = 11
33 – 22 = 11

S43.Ans.(b)
Sol.
The difference between digits are + 12, + 20, + 28, + 36, + 44, so missing term is 99 + 44 = 143.

S44.Ans.(a)
Sol.

In given figure, outside present digits are perfect cube of number add all cube root of given number, so. $\sqrt[3]{216} + \sqrt[3]{8} + \sqrt[3]{27} + \sqrt[3]{125} = 16$

S45.Ans. (d)
Sol.
(18 ÷ 6) × 12 = 36

S46.Ans.(b)
Sol.
Meaningful order of words.
1. Foundation 3. Building 2. Plastering 4. Painting
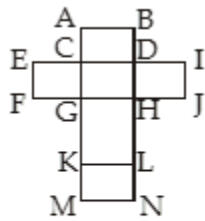
S47.Ans.(a)
Sol.
From the figure (1), (2) and (3) it is clear that numbers adjacent to 6 are 2, 3, 4, 5. Hence number 1 will be opposite to number 6.

S48.Ans.(b)
Sol.

Sol. 15 rectangles

ABCD, ECFG, GCDH, HDIJ, GKLH, KMNL,
EFJI, EFHD, GCIJ, ABNM, ABLK, MNDC,
ABGH, GHNM, CDLK

S49.Ans.(b)
Sol.

As shown in Fig. the man initially faces towards eact i.e., in the direction OA. On moving 100°
clockwise he faces in the direction OB. On further moving 145°clockwise, he faces in the direction
OC. Claearely, OC makes an angle of (145°–100°) i.e. 45° with OA and as such points in the direction
North-east.
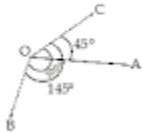
S50.Ans.(d)
Sol.My grandfather's Only son-father, or uncle. If man is the son of father, the woman becomes sister. But if he is uncle, she becomes cousin.

S51.Ans. (b)

Sol.

Marks obtained by eleventh candidate
= 22 × 45 – (10 × 55 + 11 × 40)
= 990 – (550 + 440)
= 990 – 990 = 0

S52.Ans. (c)

Sol.

Let x = $\sqrt{3\sqrt{3\sqrt{3\ldots\ldots\ldots}}}$

Squaring both sides

$x^2 = 3\sqrt{3\sqrt{3\sqrt{3\ldots\ldots\ldots}}}$ ➜ 3x

➜ $x^2 - 3x = 0$

➜ x (x – 3) = 0

∴ x = 3 because x ≠ 0

S53.Ans. (a)

Sol.

```
  9 | 8̅9̅ 5̅8̅ | 94
  9 | 81
184 | × 858
  4 |    736
188 |    122
```

Now, 95 × 95 ➜ 9025
Required number
= 9025 – 8958 = 67

S54.Ans. (d)

Sol.
If the number be x, then
$x - 31 = 75 - x$
$2x = 75 + 31 = 106$
$x = \dfrac{106}{2}$ ➜ 53

S55.Ans. (b)

Sol.
  Let the numbers be $2x$ and $3x$.
  ATQ,
  $2x \times 3x = 96$
  $6x^2 = 96$
  $x^2 = 16$
  $\therefore x = 4$
  $\therefore$ Sum $= 2x + 3x = 5x$
  $= 5 \times 4 = 20$

S56.Ans. (c)

Sol.

Arbind's income = Rs. 100
Expenditure = Rs. 75
Savings = Rs. 25
New income = Rs. 120
Expenditure = 75 + 7.5 = Rs. 82.5
Savings = 120 – 82.5 = Rs. 37.5
Required percentage
$= \frac{37.5 - 25}{25} * 100 = 50\%$

S57.Ans. (b)

Sol.
Let total C.P. = Rs. 100 and number of articles = 100.
∴ Total S.P.
$= Rs. (\frac{75 * 124}{100} + 25)$
= Rs. (93 + 25) → Rs. 118
∴ Gain per cent = 18%

S58.Ans. (a)

Sol.
$$4200 = \frac{29400 \times 6 \times R}{100}$$

$$\Rightarrow R = \frac{4200}{294 \times 6} = \frac{50}{21} = 2\frac{8}{21}\%$$

S59.Ans. (d)

Sol.

Speed of train = 36 kmph

$= \left(\frac{36 \ast 5}{18}\right)$ m/sec.

= 10 m/sec.

∴ Required time $= \frac{length\ of\ train}{speed\ of\ train}$

$= \frac{60}{10}$ = 6 seconds

S60.Ans. (b)

S61.Ans. (d)
Sol.
Equilateral Triangle

S62.Ans. (b)
Sol.
We know that

If $x + \frac{1}{x} = k$, then $= x^2 + \frac{1}{x^2} = k^2 - 2$

Here,

➜ $a + \frac{1}{a} = 3$

$\Rightarrow a^2 + \frac{1}{a^2} = 3^2 - 2 = 7$

$\Rightarrow a^4 + \frac{1}{a^4} = 7^2 - 2 = \mathbf{47}$

S63.Ans. (c)
Sol.
Given, Sec4θ = Cosec (θ + 20°)
Clearly,
(4θ + θ + 20) = 90
5θ = 70
θ = 14°

S64.Ans. (b)
Sol.

Let the speed of the woman = w km/h

$\Rightarrow (44 - 8) \times 15 = (44 + w) \times 10$

$\Rightarrow 540 = 440 + 10w$

$\Rightarrow w = 10$ km/hr.

S65.Ans. (d)

Sol.

Let the number of Person = 100 and
H be the desired number of hours.

$\Rightarrow$ Remaining persons = 60

According to the question

$100 \times 34 \times 9 = 60 \times 51 \times H$

$\Rightarrow$ **H = 10 hours**

S66.Ans. (c)

Sol.

Difference between CI and SI =

$\frac{R^2}{100}$ % of Principal

$\Rightarrow 19.20 = \frac{8^2}{100}$ % of X

$\Rightarrow X = 3000$

S67.Ans. (c)

Sol.

Let the CP = 100 unit

SP of the article = $100 \times \frac{100 - 29}{100}$ = 71 unit

According to the question

71 unit = 355

1 unit = 5

100 unit = 500

Desired Sale price = $500 \times \frac{121}{100}$

= **605**

S68.Ans. (a)

Sol.

```
              Original : New
Price           25    : 34

Quantity        10    : 7
             _____
Expenditure  250   : 238
```

Now, $\frac{250-238}{250} \times 100 = 4.8\%$

S69.Ans. (a)
Sol.

Let $a = 5k$ and $b = 7k$

$(5a - 3b) : (4a - 2b) \Rightarrow$

$\{5(5k)-3(7k)\} : \{4(5k)-2(7k)\}$

$\Rightarrow 4k : 6k$

$\Rightarrow 2:3$

S70.Ans. (b)
Sol. Average of n even numbers is always (n+1).

S71.Ans. (b)
Sol.

Sum of 4 new numbers

$= 50 \times 104 - 100 \times 44$

$= 5200 - 4400 = 800$

$\therefore$ Average $= \frac{800}{4} = 200$

S72.Ans. (c)
Sol.

$\sqrt{3^n} = 2187$

➔ $3^{\frac{n}{2}} = (3)^7$

➔ $\frac{n}{2} = 7$

➔ n = 14

S73.Ans. (c)
Sol.
Let the required number be x. Then,

➔ $x^2 + 5^2 = 386$

➔ $x^2 = 386 - 25$

➔ $x^2 = 361$

➔ $x = 361 = 19$

S74.Ans. (d)
Sol.   A number will be exactly divisible by 18 if it is divisible by 2 and 9 both. Clearly 65043 is not divisible by 2.
∴Required number = 65043

S75.Ans. (a)
Sol.

Price of the third variety = x per kg.
ATQ,
126 + 135 + 2x = 4 × 153
261 + 2x = 612
2x = 612 – 261 = 351
x = Rs. 175.5

S76.Ans. (c)
Sol.

Group A = 40%

Group B = $\frac{60 * 75}{100}$ = 45%

Group C = 15%

If the total number of students be x, then ATQ,

$\frac{x * 15}{100}$ = 12

∴ x = 80

S77.Ans. (a)
Sol.

Ratio of investment of A: B
= 2560: 2000 = 32: 25
Now, A gained = Rs. 320
B gained = Rs. 250
Total Profit = Rs. 110
∴ C gained = Rs. 535
According to question,

$$\frac{250}{535} = \frac{2000}{C's\ Capital}$$

Hence, C's capital

$$= \frac{2000 \times 535}{250} = ₹4280$$

S78.Ans. (b)
Sol.

A can do a work in 12 days.
B is 60% more efficient than A.
∴ Time taken by B

$$= \left(\frac{100}{160} \times 12 \right) \text{ days}$$

$$= \frac{15}{2} = 7\frac{1}{2} \text{ days}$$

S79.Ans. (b)
Sol.
Total distance
= 5 × 6 + 3 × 6
= 30 + 18 = 48 km
Total time = 9 hours
∴ Average speed
= $\frac{48}{9}$ → $5\frac{1}{3}$ kmph

S80.Ans. (a)

S81.Ans. (a)
Sol.
sin 3A = cos (A – 26°)
➔ Cos (90° – 3A) = cos (A – 26°)
➔ 90° – 3A = A – 26°
➔ 90° + 26° = 3A + A
➔ 4A = 116
➔ A = $\frac{116}{4}$ = 29°

S82.Ans. (c)
Sol.

Diagonal of cube = $\sqrt{3}$ × edge

$\sqrt{3}$ × Edge = $\sqrt{192}$

$\sqrt{3}x = \sqrt{64 * 3} = 8\sqrt{3}$

Where x = edge of cube

➔ $x = 8$ cm

∴ Volume of cube

= $(8)^3$ = 512 cu.cm.

S83.Ans. (d)

Sol.

$x = 12$ and $y = 4$ (Given)

∴ $(x + y)^{\frac{x}{y}} = (12 + 4)^{\frac{12}{4}} = (16)^3$

➔ 4096

S84.Ans. (b)

Sol.

Total distance = 100 km.

Total time

= $\dfrac{50}{50} + \dfrac{40}{40} + \dfrac{10}{20}$

= $1 + 1 + \dfrac{1}{2}$ = $\dfrac{5}{2}$ hours

∴ Average speed = $\dfrac{100 \times 2}{5}$

= 40 kmph

S85.Ans. (a)

Sol.

Man: Woman (efficiency) = 3: 2

i.e., Woman completes $\dfrac{2}{5}$ th work in 18 days.

∴ Time taken by the woman to complete the whole work

= $\dfrac{18 * 5}{2}$

= 45 days

S86.Ans. (c)
Sol.
Single equivalent discount

$$= \left(50 + 40 - \frac{50 \times 40}{100}\right)\%$$

= 70%

∴ Required price of shirt

= 30% of x

S87.Ans. (a)
Sol.

Loss% $= \frac{10 * 10}{100} = 1\%$

S88.Ans. (b)
Sol.
Let Annual Income of A, B and C be x, $3x$ and $7x$
ATQ,
$x + 7x = 800000$
$8x = 800000$
$x = 100000$
∴ B's monthly income

$= \frac{100000 * 3}{12}$

= Rs. 25000

S89.Ans. (b)
Sol.
Average of the first n natural odd numbers = n

Number of odd numbers upto 100 $= \frac{100}{2} = 50$

➔ 50 = required average

S90.Ans. (a)

S91.Ans. (a)
Sol.
  Let the unknown number be x.
  ATQ,
  $71 \times x + 47 = 98 \times 7$
  $71x = 686 - 47 = 639$
  $x = \dfrac{639}{71} = 9 = 3 \times 3$

  So, among option the unknown number is multiple of 3.

S92.Ans. (d)
Sol.
  Product of two numbers = HCF × LCM
  ➔ Numbers = zx and zy
  ∴ $zx \times zy = z \times$ LCM
  ➔ LCM = xyz

S93.Ans. (b)
Sol.

$$= 9 - \frac{11}{9} \text{ of } \frac{36}{11} \div \frac{36}{7} \text{ of } \frac{7}{9}$$

$$= 9 - \frac{11}{9} \times \frac{36}{11} \div \frac{36}{7} \times \frac{7}{9}$$

$$= 9 - 4 \div 4$$

$$= 9 - 4 \times \frac{1}{4} = 9 - 1 = 8$$

S94.Ans. (c)
Sol.

Number of workers in the factory

$= \frac{1534}{118} = 13$

S95.Ans. (b)
Sol.

$A \times \frac{2}{3} = B \times \frac{4}{5}$

➜ $\frac{A}{B} = \frac{4}{5} \times \frac{2}{3}$ ➜ 6: 5

S96.Ans. (d)
Sol.

required percentage

➜ $\frac{72}{3.6 * 1000} * 100 = 2\%$

S97.Ans. (a)
Sol.

C.P. of cycle = Rs. 1000
It's S.P. = Rs. 1200
Profit = Rs. (1200 – 1000) = Rs. 200
∴ Profit per cent = $\frac{200}{1000} * 100$
= 20%

S98.Ans. (c)
Sol.

Marked price
= Rs. (7710 + 1285) = Rs. 8995
If discount = x %, then
x % of 8995 = 1285

➔ $\frac{8995 * x}{100}$ = 1285

➔ $x = \frac{1285 * x}{8995} = \frac{100}{7} = 14\frac{2}{7}$ %

S99.Ans. (c)
Sol.

Work done by A and B in 7 days

➔ $\frac{7}{20} + \frac{7}{30} = \frac{35}{60}$ ➔ $\frac{7}{12}$

So, Remaining work

= $1 - \frac{7}{12} = \frac{5}{12}$

∴ Time taken by C

= $\frac{12}{5}$ * 10 = 24 days

S100.Ans. (b)