**Direction (1 – 5) :** Study the following information and answer the question.

10 people are sitting opposite each other in two parallel rows (not necessarily in the same order). M, N, O, P and Q are facing towards north and A, B, C, D and E are facing towards south. Two people sit between M and P. M sits at one of the extreme ends. Immediate neighbour of P faces B. Two people sit between B and D. A and C are immediate neighbours of each other. C does not sit opposite to P. E sits third to the left of A. Q sits second to the right of N.

1. Who among the following is the immediate neighbour of Q?
A. D
B. E
C. O
D. B
E. None of the above

2. How many people are sitting to the right of D?
A. 1
B. 2
C. 3
D. 4
E. 5

3. Who is facing P?
A. A
B. C
C. D
D. E
E. None of the above

4. As many people are sitting to the right of A as sitting to the right of ?
A. N
B. Q
C. M
D. O
E. None of the above

5. Find the odd one out?
A. BP
B. PC
C. QD
D. MA
E. AN

6. In a certain code language, 'he will say' is coded as '1 3 9', 'say to him' is coded as '3 5 2' and 'he may do' is coded as '8 7 9'. Then, what is the definite code for 'will'? [
A. 9
B. 7
C. 1
D. 5
E. None of These

7. Four of the following five are alike in a certain way as per the English alphabetical order and thus form a group. Which of the following does not belong to the given group?
A. HKJI
B. PSRQ
C. ADCB
D. MONL
E. VYXW

**Direction (8 – 11) :** In the following questions assuming the given statement to be true, find which of the conclusion(s) among given conclusions is/are definitely true and then give your answers accordingly.

**8. Statements:**
P ≥ E ≥ Z; R ≤ E
**Conclusions:**
I. R = P
II. P > R
A. Only conclusion I is true
B. Only conclusion II is true
C. Either conclusion I or conclusion II is true
D. Neither conclusion I nor conclusion II is true
E. Both conclusion I and II are true

**9. Statement:**
S < V > A > T > Y
**Conclusions:**
I. Y < V
II. A > S
A. Only conclusion I is true
B. Only conclusion II is true
C. Either conclusion I or conclusion II is true
D. Neither conclusion I nor conclusion II is true
E. Both conclusion I and II are true

**10. Statements:**
K ≤ Q < F ≥ N; R ≥ F
**Conclusions:**
I. N < K
II. R > Q
A. Only conclusion I is true
B. Only conclusion II is true
C. Either conclusion I or conclusion II is true
D. Neither conclusion I nor conclusion II is true
E. Both conclusion I and II are true

**11. Statement:**
E ≥ B = J ≥ K > D
**Conclusions:**
I. K ≤ E
II. D > B
A. Only conclusion I is true
B. Only conclusion II is true
C. Either conclusion I or conclusion II is true
D. Neither conclusion I nor conclusion II is true
E. Both conclusion I and II are true

12. How many such pairs of letters are there in the word 'MINUTE' each of which has as many letters between them in the word as in the English alphabet (both forward and backward)?
A. Two
B. Three
C. One
D. More than three
E. None

**Direction (13 – 17) :** Study the following information and answer the question.
Seven people A, B, C, D, E, F and G live in a 7-floor building where the topmost floor is numbered 7 and the bottommost floor is numbered 1. Two people are living between B and C. B lives just above A. Not more than three-people are living above A. D is living on an even-numbered floor and lives immediately above G. F is not living on floor number 5. F is living above E.

13. Who is living above B?

A. F
B. G
C. C
D. F and G
E. None one

14. How many people are living between A and D?
A. 1
B. 2
C. 3
D. 4
E. None one

15. As many people are living above E as living below____?
A. F
B. B
C. D
D. G
E. E

16. Find the odd one out?
A. FB
B. AE
C. AB
D. DE
E. None of the above

17. Who is living immediately below C?
A. F
B. A
C. D
D. E
E. None of the above

**Direction (18 – 20) :** In each of the questions below are given few statements followed by two conclusions. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read both the conclusions and then decide which of the given conclusions logically follow from the given statements disregarding commonly known facts.
**18. Statements:**
Only a few lamps are bottles.
No bottle is ship.
**Conclusions:**
(I) Some ships are definitely not lamps.
(II) All lamps can never be ships.
A. If conclusion I follows

B. If conclusion II follows
C. Either conclusion I or conclusion II is true
D. Neither conclusion I nor conclusion II is true
E. Both conclusion I and II are true

**19. Statements:**
Only a few wells are mats.
All pillows are mats.
**Conclusions:**
(I) Atleast some pillows are wells.
(II) All wells can never be pillow.
A. If conclusion I follows
B. If conclusion II follows
C. Either conclusion I or conclusion II is true
D. Neither conclusion I nor conclusion II is true
E. Both conclusion I and II are true

**20. Statements:**
All bamboos are sticks.
No bamboo is a dish.
**Conclusions:**
(I) No stick is a dish.
(II )Some sticks are dishes.
A. If conclusion I follows
B. If conclusion II follows
C. Either conclusion I or conclusion II is true
D. Neither conclusion I nor conclusion II is true
E. Both conclusion I and II are true

**Direction (21 – 23)** : Study the information given below and answer the questions based on it.
A is the brother of B. C is the brother of R, who is married to S. R is the only daughter of B. T is the son of R.

21. Which of the following statements is definitely incorrect?
A. C is the brother- in -law of S
B. S is the mother of T
C. T is the grandson of B
D. A is the uncle of R
E. C is the maternal uncle of T

22. How many male members are there in the family if B is male?
A. Two

B. Three
C. Four
D. Five
E. Either Four or Five

23. How is S related to B?
A. Son-in-law
B. Son
C. Daughter
D. Brother
E. None of these

**Direction (24 – 28) :** Study the following information and answer the question.
Seven people are sitting around a circular table facing the centre with equal distance between adjacent persons. P sits to the immediate right of Q. Only one person sits between P and S (either from the left or the right side). U sits third to the right of S. T is an immediate neighbour of U. R sits second to the left of V.

24. Four of the following five are alike in a certain way and form a group. Which one does not belong to that group?
A. PV
B. VQ
C. UR
D. TP
E. ST

25. How many people sit between U and Q when counted from the right of U?
A. Two
B. One
C. None
D. More than three
E. Three

26. If all the people are made to sit as per the English alphabetical order in an anticlockwise direction starting from P, then the position of how many will remain unchanged (excluding P)?
A. Three
B. More than three
C. None
D. One
E. Two

27. Who sits second to the left of R?
A. Q
B. T
C. P
D. S
E. U

28. As many people sit between T and V when counted from the left of T as between R and_____ when counted from the left of R.
A. S
B. U
C. Q
D. T
E. P

**Direction (29 – 33) :** Study the information given below and answer the questions based on it.
In a certain code language,
'left of hope clarity' is written as 'la na ka ta'.
'cause of and home' is written as 'di re sa la'.
'and clarity left in city' is written as 'ka na di zo fi'.
'home inside and city' is written as 'ha di fi re'.
'all home create clarity' is written as 'ka re da fu'.

29. Which of the following means 'home' in that code language?
A. la
B. na
C. di
D. re
E. ka

30. Which may be the possible code for 'cause of clarity'?
A. na fi sa
B. ka sa la
C. la ta di
D. sa zo la
E. sa la ha

31. If 'city create clarity' means 'fi ka da', then what is the code for 'create'?
A. da
B. ka
C. fi

D. Either da and ka
E. None of these

32. If the code for 'all home create clarity inside and city' is 'ka da fu re ha di fi' then what could be the code for 'hope create clarity'?
A. ka re da
B. ka na di
C. ha di fi
D. ta ka fu
E. None of these

33. 'sa zo ha re' is the code for which of the following sentence in the given language?
A. cause in inside hope
B. the clarity left in
C. cause in inside home
D. create in and city
E. None of these

**Direction (34 – 35) :** Read the following information carefully and answer the questions which follow:
Meghna started from Point A, walked 7 m towards the West, took a left turn, walked 2 m and reached Point C. She, then, took a right turn and walked 4 m to reach Point D. She, then, took a right turn, walked 2 m before taking a final right turn and walked 3 m before stopping at Point B.

34. How far and in which direction is Point A from Point B?
A. 6 m towards West
B. 8 m towards east
C. 10 m towards East
D. 10 m towards West
E. Cannot be determined

35. If Meghna walks 2 m towards South from Point A and reaches Point E, which of the following points (including E) would fall in a straight line ?
A. A, B
B. A, D
C. B, C
D. C, D
E. None of these

**Direction (36 – 40) :** Study the following information and answer the following questions.

A certain number of people are sitting in a straight line facing north with equal distance between adjacent persons. B sits fifth to the left of E. Only two people sit between B and D. D sits second from one of the extreme ends of the line. Only five people sit between D and F. S sits eight to the right of F. As many people sit between E and S as between C and S. Only two people sit to the right of C.

36. How many people are sitting in the linear arrangement?
A. 22
B. 24
C. 20
D. 26
E. None of These

37. If G sits second to the right of S, then what is the position of G from the right end?
A. 6
B. 7
C. 8
D. 9
E. None of These

38. What is the position of F with respect to E?
A. Immediate left
B. Immediate right
C. 2nd to the left
D. 2nd to the right
E. None of These

39. How many people are sitting between B and F?
A. No One
B. 1
C. 2
D. 3
E. None of These

40. What is the position of D with respect to the F?
A. Second to the right
B. Third to the left
C. Sixth to the right
D. Sixth to the left

E. None of the above

**Direction (41 – 52)** : What should come in place of the question mark (?) in the following questions?

41. (? − 0.5) ÷ 0.2 = 120 ÷ 2
A. 16.5
B. 10.5
C. 12.5
D. 8.5
E. 14.5

42. 80% of (1.5 × 4 + ?) = 24
A. 27
B. 24
C. 34
D. 25
E. 14

43. 60% of ? − $\sqrt{324}$ = 222
A. 500
B. 600
C. 200
D. 400
E. 300

44. $\left(2\dfrac{1}{4}+4\right)\times 8 = ?\times 10$
A. 15
B. 4
C. 10
D. 5
E. 3

45. $2^3 \times 3^2 \div (90 \div ?) = \sqrt{64}$
A. 5
B. 3
C. 10
D. 9
E. 30

46. 22.5 ÷ 2.5 × 8 − 12 = ?
A. 72
B. 40
C. 120
D. 48
E. 60

47. 18 × ? = 15 × 2 × 3
A. 9

B. 5
C. 15
D. 6
E. 3

48. $36 + 25 \div 0.5 = ? \times 43$
A. 1.5
B. 1
C. 3
D. 2.5
E. 2

49. $\sqrt{? \times 4} = \dfrac{1}{4}$ of $8^2$
A. 8
B. 64
C. 32
D. 24
E. 16

50. $16\dfrac{1}{2} - 2\dfrac{1}{2} + 4^3 = ?$
A. 76
B. 78
C. 72
D. 66
E. 74

51. $221 \times 3 = ?^2 - \sqrt{169}$
A. 44
B. 36
C. 34
D. 26
E. 24

52. $12 \times ? + 225 = 105 \times 5$
A. 45
B. 15
C. 25
D. 50
E. 35

**Direction (53 – 57)** : Study the table carefully and solve the following questions.
In the table, number of phones serviced by four different service centres-A, B, C and D in 4 months-May, June, July and August is given.

| Months | Service Centre | | | |
| --- | --- | --- | --- | --- |
|  | A | B | C | D |
| May | 120 | 137 | 143 | 135 |
| June | 116 | 134 | 102 | 158 |
| July | 129 | 143 | 65 | 153 |
| August | 145 | 128 | 118 | 146 |

53. If centre C charges Rs. 2000 as servicing fee of each phone, what was the amount collected by centre C in July (in lakhs)?
A. 6.5
B. 3.9
C. 1.3
D. 2.6
E. 1.2

54. Out of the number of phones serviced by service centre D in June and July, 64 and 68 respectively were of brand X. What is the difference between the number of phones serviced by service centre D of brands other than brand X in June and July?
A. 171
B. 117
C. 179
D. 181
E. none of these

55. Out of the total number of phones serviced by centre B and C together in May, 25% were done for female customers, what is the total number of phones serviced by centre B & C together in May for male customers?
A. 195
B. 240
C. 210
D. 180
E. 225

56. What is the total number of phones serviced by centre B in June, July and August together?
A. 425
B. 385
C. 415
D. 405
E. 335

57. What is the respective ratio between the number of phones serviced by centre A in June and that in August?
A. 4 : 5
B. 2 : 7
C. 5 : 7
D. 2 : 5
E. 3 : 7

**Direction (58 – 63)** : Two equations I and II are given below in each question. You have to solve these equations and give answer

58. $x^2 - 17x + 72 = 0$
$y^2 - 17y + 70 = 0$
A. if x < y
B. if x > y
C. if x ≤ y
D. if x ≥ y
E.  if x = y or no relation can be established

59. $x^2 - x - 42 = 0$
$y^2 + y - 30 = 0$
A. if x < y
B. if x > y
C. if x ≤ y
D. if x ≥ y
E.  if x = y or no relation can be established

60. $x^2 + 14x + 48 = 0$
$y^2 + 16y + 63 = 0$
A. if x < y
B. if x > y
C. if x ≤ y
D. if x ≥ y
E.  if x = y or no relation can be established

61. $2x^2 - 7x + 3 = 0$
$y^2 - 7y + 12 = 0$
A. if x < y
B. if x > y
C. if x ≤ y
D. if x ≥ y
E.  if x = y or no relation can be established

62. $x^2 - 9x + 20 = 0$
$y^2 - 15y + 54 = 0$
A. if x < y

B. if x > y
C. if x ≤ y
D. if x ≥ y
E.  if x = y or no relation can be established

63. $x^2 - 3x = 10$
$y^2 + 7y = -10$
A. if x < y
B. if x > y
C. if x ≤ y
D. if x ≥ y
E.  if x = y or no relation can be established

**Direction:** Find the wrong term in the given series:
64. 1, 2, 5, 16, 65, 328, 1957
A. 65
B. 16
C. 5
D. 2
E. 328

**Direction:** Find the wrong term in the given series:
65. 4, 11, 25, 46, 74, 129, 151
A. 74
B. 25
C. 129
D. 11
E. 46

**Direction:** Find the wrong term in the given series:
66. 84, 96, 83, 95, 80, 94, 81
A. 96
B. 94
C. 95
D. 83
E. 80

**Direction:** Find the wrong term in the given series:
67. 3, 5, 8, 17, 33, 58, 94
A. 39
B. 17
C. 58
D. 5
E. 8

**Direction:** Find the wrong term in the given series:

68. 2, 4, 11, 38, 102, 227, 443
A. 2
B. 4
C. 11
D. 38
E. 227

**Direction:** Find the wrong term in the given series:
69. 5, 4, 7, 20, 79, 396, 2363
A. 4
B. 7
C. 79
D. 396
E. 2363

**Direction:** Find the wrong term in the given series:
70. 2.1, 1.5, 2.7, 0.9, 3.5, 0.3, 3.9
A. 2.1
B. 1.5
C. 2.7
D. 3.5
E. 0.3

**Direction:** Find the wrong term in the given series:
71. 4, 7, 11, 17, 26, 41, 57
A. 7
B. 11
C. 26
D. 41
E. 57

72. The ratio of the salary of a male and a female is 6 : 5. Salary of the male increases by 20% and the salary of the female increases by 4%. If the salary of the male becomes Rs. 216, then salary of the female will become?
A. Rs. 132
B. Rs. 156
C. Rs. 208
D. Rs. 178
E. None of these

73. Sum of the price of x pens and (x – 2) pencils is Rs. 328. If price of a pen is Rs. 20 and the price of a pencil is Rs. 4, then what will be the price of (x – 3) pens and x pencils?

A. Rs. 256
B. Rs. 264
C. Rs. 312
D. Rs. 276
E. None of these

74. The discount offered on a product is 20% and the profit earned on that product is 27.5%. If the marked price of that product is Rs. 637.50, then what is the cost price of that product?
A. Rs. 360
B. Rs. 400
C. Rs. 420
D. Rs. 440
E. None of these

75. A boat covers 36 km upstream in 2 hours and 66 km downstream in 3 hours. What is the speed of the boat in still water?
A. 18 km/hr
B. 19 km/hr
C. 20 km/hr
D. 21 km/hr
E. None of these

76. The marked price of a product is Rs. 250 more than the cost price. If 15% discount offered on the marked price and the profit percent on that product is 27.5%, then find the cost price of the product.
A. Rs. 480
B. Rs. 500
C. Rs. 560
D. Rs. 600
E. None of these

77. A train is going in the north direction at a speed of 18 m/s from a point while another train is going in the south direction at a speed of 12 m/s from the same point at the same time. In how much time the distance between both the trains be 367.2 km?
A. 2.4 hours
B. 2.8 hours
C. 3.4 hours
D. 3.6 hours
E. None of these

78. A is 6 year younger than B. The ratio between B's present age and C's present age is 12 : 5 respectively. If A's present age is twice C's present age, what is B's present age (in years)?
A. 30
B. 36
C. 42
D. 15
E. 24

79. The circumference of circle (A) is 110 cm and that of circle (B) is 132 cm, what is the difference between the radii of the two circles (in cm)?
A. 7
B. 3.5
C. 17.5
D. 14
E. 2.1

80. Inlets A and B can fill an empty tank in 36 hours and 60 hours respectively. In how much time will they together fill 1/6$^{th}$ of the tank?

A. $3\frac{1}{2}$

B. $3\frac{3}{4}$

C. $3\frac{1}{4}$

D. $3\frac{1}{5}$

E. 3

###ANSWERS###

**1. Ans. C.**

| South Facing | B | A | C | D | E |
|---|---|---|---|---|---|
| North Facing | N | P | Q | O | M |

**2. Ans. C.**

| South Facing | B | A | C | D | E |
|---|---|---|---|---|---|
| North Facing | N | P | Q | O | M |

**3. Ans. A.**

| South Facing | B | A | C | D | E |
|---|---|---|---|---|---|
| North Facing | N | P | Q | O | M |

**4. Ans. D.**

| South Facing | B | A | C | D | E |
|---|---|---|---|---|---|
| North Facing | N | P | Q | O | M |

**5. Ans. D.**

| South Facing | B | A | C | D | E |
|---|---|---|---|---|---|
| North Facing | N | P | Q | O | M |

**6. Ans. C.**
From 1 and 2 -- Say - 3
From 1 and 3 -- He - 9
So, will be coded as 1

**7. Ans. D.**
H (+3) K (-1) J (-1) I
P (+3) S (-1) R (-1) Q
A (+3) D (-1) C (-1) B
M (+2) O (-1) N (-2) L
V (+3) Y (-1) X (-1) W

**8. Ans. C.**
$R \le E \le P$
(I) R = P -- False
(II) P > R -- False
They make a complimentary pair.
Hence, Either conclusion I or conclusion II is true.

**9. Ans. A.**
$V > A > T > Y$
(I) Y < V
Thus, It's true.
$S < V > A$
(II) A > S
Thus, It's false.
Hence, Only conclusion I is true.

**10. Ans. B.**
$K \le Q < F \ge N$
(I) N < K

Thus, It's false
$Q < F \le R$
(II) R > Q
Thus, It's True.
Hence, Only conclusion II is true.

**11. Ans. A.**
$E \ge B = J \ge K$
(I) K ≤ E
Thus, It's true.
$B = J \ge K > D$
(II) D > B
Thus, It's false

**12. Ans. A.**
M I N U T E -- TU, EI

**13. Ans. A.**

| Floor No | Name |
|---|---|
| 7 | F |
| 6 | B |
| 5 | A |
| 4 | E |
| 3 | C |
| 2 | D |
| 1 | G |

**14. Ans. B.**

| Floor No | Name |
|---|---|
| 7 | F |
| 6 | B |
| 5 | A |
| 4 | E |
| 3 | C |
| 2 | D |
| 1 | G |

**15. Ans. E.**

| Floor No | Name |
|---|---|
| 7 | F |
| 6 | B |
| 5 | A |
| 4 | E |
| 3 | C |
| 2 | D |
| 1 | G |

**16. Ans. D.**

| Floor No | Name |
|----------|------|
| 7 | F |
| 6 | B |
| 5 | A |
| 4 | E |
| 3 | C |
| 2 | D |
| 1 | G |

**17. Ans. C.**

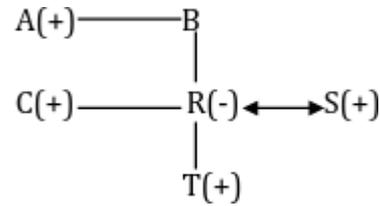| Floor No | Name |
|----------|------|
| 7 | F |
| 6 | B |
| 5 | A |
| 4 | E |
| 3 | C |
| 2 | D |
| 1 | G |

**18. Ans. B.**
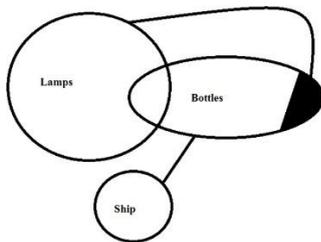


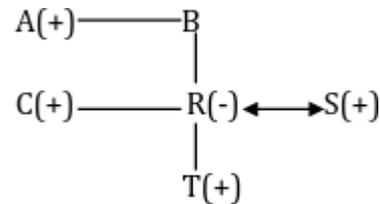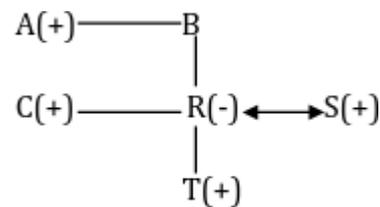**19. Ans. B.**
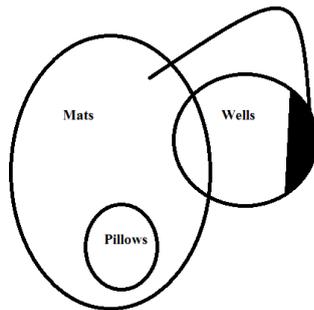


**20. Ans. C.**
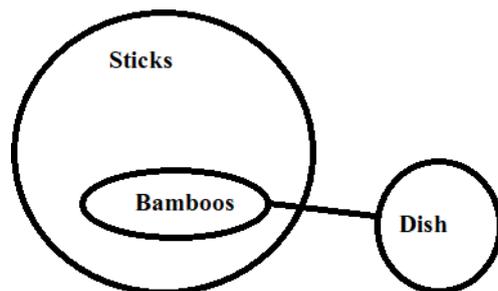


**21. Ans. B.**



**22. Ans. D.**
There are 5 male members in the family if B is male..
A, B, C, S & T



**23. Ans. A.**
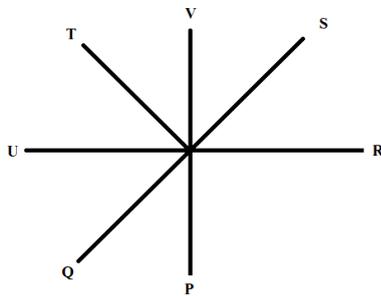S is the husband of R and R is the only daughter of B. So, S is the son-in-law of B.



**24. Ans. E.**
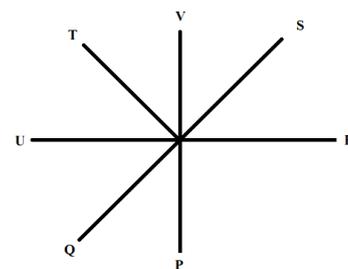


**25. Ans. C.**
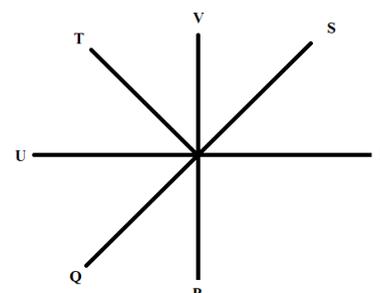


**26. Ans. E.**
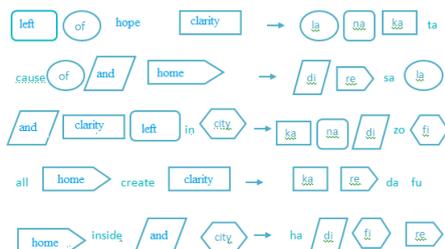
**27. Ans. A.**
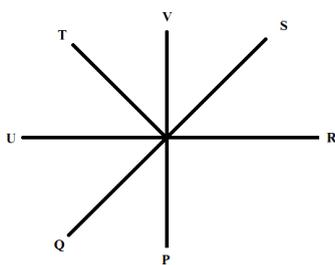


**28. Ans. E.**
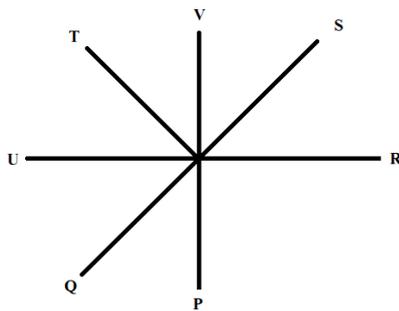


**29. Ans. D.**
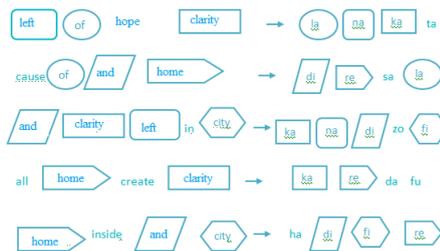


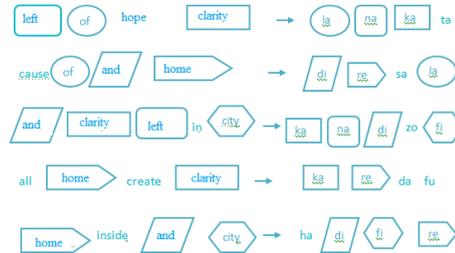Hence, code for 'home' is 're'.

**30. Ans. B.**



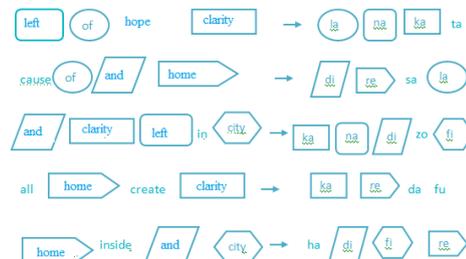Code for 'cause' is 'sa',
Code for 'of' is 'la',

Code for 'clarity' is 'ka',
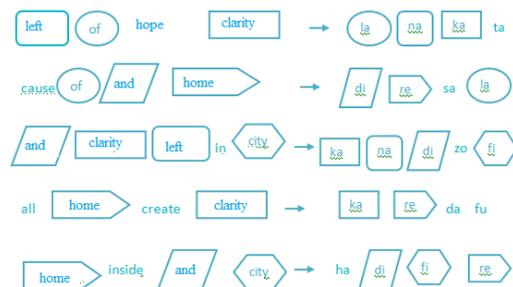Hence, possible answer is 'sa la ka'.

**31. Ans. A.**



Code for 'city' is 'fi',
Code for 'clarity' is 'ka',
Hence, code for 'create' is 'da'.
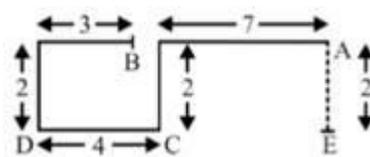
**32. Ans. D.**



Code for ' inside and city' is 'ha di fi'
Code for 'create home' is 're fu'
Code for 'clarity' is 'ka'
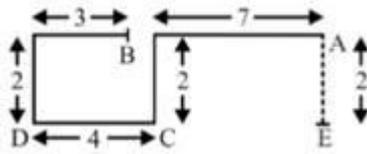Hence, code for 'hope create clarity' is 'ta ka fu'.

**33. Ans. C.**



Code for 'sa' is 'cause',
Code for 'zo' is 'in',
Code for 'ha' is 'inside',
Code for 're' is 'home,'
Hence, code for 'sa zo ha re' is 'cause in inside home'.

**34. Ans. B.**



**35. Ans. D.**

**36. Ans. B.**



**37. Ans. B.**



**38. Ans. C.**



**39. Ans. C.**



**40. Ans. D.**



**41. Ans. C.**

(? − 0.5) ÷ 0.2 = 120 ÷ 2

$$\frac{(? - 0.5)}{0.2} = \frac{120}{2}$$

$$? - 0.5 = 60 \times 0.2$$

$$? - \frac{1}{2} = 12$$

$$? = 12 + \frac{1}{2}$$

$$? = \frac{25}{2}$$

$$? = 12.5$$

**42. Ans. B.**

80% of (1.5 × 4 + ?) = 24

$$\frac{80}{100} \times (6 + ?) = 24$$

$$(6 + ?) = 24 \times \frac{5}{4}$$

$$(6 + ?) = 30$$

$$? = 24$$

**43. Ans. D.**

60% of ? − $\sqrt{324}$ = 222

$$\frac{60}{100} \times ? = 240$$

$$? = 240 \times \frac{5}{3}$$

$$? = 80 \times 5$$

$$? = 400$$

**44. Ans. D.**

$$\left(2\frac{1}{4} + 4\right) \times 8 = ? \times 10$$

$$(\frac{9}{4} + 4) \times 8 = ? \times 10$$

$$(\frac{25}{4}) \times 8 = ? \times 10$$

$$? \times 10 = 50$$

$$? = 5$$

**45. Ans. C.**

$$2^3 \times 3^2 \div (90 \div ?) = \sqrt{64}$$

$$\frac{8 \times 9}{(90 \div ?)} = 8$$

$$90 \div ? = 9$$

$$\frac{90}{?} = 9$$

$$? = 10$$

**46. Ans. E.**

$$? = 22.5 \div 2.5 \times 8 - 12$$

$$? = \frac{225}{10} \times \frac{10}{25} \times 8 - 12$$

$$? = 9 \times 8 - 12$$

$$? = 72 - 12$$

$$? = 60$$

**47. Ans. B.**

18 × ? = 15 × 2 × 3

$18 \times ? = 15 \times 2 \times 3$

$18 \times ? = 90$

$? = 5$

**48. Ans. E.**

$? \times 43 = 36 + 25 \div 0.5$

$? \times 43 = 36 + \dfrac{250}{5}$

$? \times 43 = 36 + 50$

$? \times 43 = 86$

$? = \dfrac{86}{43}$

$? = 2$

**49. Ans. B.**

$\sqrt{? \times 4} = \dfrac{1}{4} \times 64$

$\sqrt{? \times 4} = 16$

On squiring both side,

$? \times 4 = 256$

$? = 64$

**50. Ans. B.**

$16\dfrac{1}{2} - 2\dfrac{1}{2} + 4^3 = ?$

$? = \dfrac{33}{2} - \dfrac{5}{2} + 64$

$? = \dfrac{33 - 5 + 128}{2}$

$? = \dfrac{156}{2}$

$? = 78$

**51. Ans. D.**

$?^2 - \sqrt{169} = 221 \times 3$

$?^2 - 13 = 663$

$?^2 = 676$

$? = 26$

**52. Ans. C.**

$12 \times ? + 225 = 105 \times 5$

$12 \times ? + 225 = 105 \times 5$

$12 \times ? + 225 = 525$

$12 \times ? = 300$

$? = \dfrac{300}{12}$

$? = 25$

**53. Ans. C.**

Total no. of phone serviced by centre C in july = 65

Total amount collected = 65 * 2000 = Rs.1,30,000 or Rs. 1.3 lakhs

**54. Ans. C.**

No. of phones serviced by centre D in June = 158

No. of phones serviced by centre D in July = 153

No. of phones of brand X serviced by centre D in June = 64

No. of phones of brand X serviced by centre D in July = 68

therefore,

No. of phones of brand other than brand X serviced by centre D in June and July = (158 + 153) - (64 + 68) = 179

**55. Ans. C.**

The total number of phones serviced by centre B and C together in May = 137 + 143 = 280

25% were done for female customers, means 280/4 = 70

Hence, the total number of phones serviced by centre B & C together in May for male customers = 280 - 70 = 210

**56. Ans. D.**

The total number of phones serviced by centre B in June, July and August together = 134 + 143 + 128 = 405

**57. Ans. A.**

Required ratio = 116 : 145 or, 4 : 5

58. Ans. E.

$x^2 - 17x + 72 = 0$

$=> x^2 - 9x - 8x + 72 = 0$

$=> x(x - 9) - 8(x - 9)$

$=> (x - 8) (x - 9)$

$=> x = 8 , 9$

$y^2 - 17y + 70 = 0$

$=> y^2 - 10y - 7y + 70 = 0$

$=> y(y - 10) - 7(y - 10)$

$=> (y - 7) (y - 10)$

$=> y = 7 , 10$

hence, no relationship can be established between x and y.

59. Ans. E.

$x^2 - x - 42 = 0$

$=> x^2 - 7x + 6x - 42 = 0$

$=> x(x - 7) + 6(x - 7) = 0$

$=> (x + 6) (x - 7) = 0$

$=> x = 7, -6$

$y^2 + y - 30 = 0$

$=> y^2 + 6y - 5y - 30 = 0$

$=> y(y + 6) - 5(y + 6) = 0$

$=> (y - 5) (y + 6) = 0$

$=> y = 5 , -6$

60. Ans. E.

$x^2 + 14x + 48 = 0$

$=> x^2 + 8x + 6x + 48 = 0$

$=> x(x + 8) + 6(x + 8) = 0$

$=> (x + 6) (x + 8) = 0$

$x = -6, -8$

$y^2 + 16y + 63 = 0$

$=> y^2 + 9y + 7y + 63 = 0$

$=> y(y + 9) + 7(y + 9) = 0$

$=> (y + 7) (Y + 9) = 0$

$y = -7 , -9$

61. Ans. C.

$2x^2 - 7x + 3 = 0$

$=> 2x^2 - 6x - x + 3 = 0$

$=> 2x(x - 3) - 1(x - 3) = 0$

$=> (2x - 1) (x - 3) = 0$

$x = 1/2 , 3$

$y^2 - 7y + 12 = 0$

$=> y^2 - 3y - 4y + 12 = 0$

$=> y(y - 3) - 4(y - 3) = 0$

$=> (y - 3) (y - 4) = 0$

$y = 3 , 4$

$x \le y$

62. Ans. A.

$x^2 - 9x + 20 = 0$

$=> x^2 - 5x - 4x + 20 = 0$

$=> x(x - 5) - 4(x - 5) = 0$

$=> (x -4) (x - 5) = 0$

$x = 4 , 5$

$y^2 - 15y + 54 = 0$

$=> y^2 - 9y - 6y + 54 = 0$

$=> y(y - 9) - 6(y - 9) = 0$

$=> (y - 6) (y - 9) = 0$

$y = 6 , 9$

63. Ans. D.

$x^2 - 3x - 10 = 0$

$=> x^2 - 5x + 2x - 10 = 0$

$=> x(x - 5) + 2(x - 5) = 0$

$=> (x + 2) (x - 5) = 0$

$x = 5 , -2$

$y^2 + 7y + 10 = 0$

$=> y^2 + 5y + 2y + 10 = 0$

$=> y(y + 5) + 2(y + 5) = 0$

$=> (y + 2) (y + 5) = 0$

$y = -2, -5$

64. Ans. E.

sol.

$1 \times 1 + 1 = 2$

$2 \times 2 + 1 = 5$

$5 \times 3 + 1 = 16$

$16 \times 4 + 1 = 65$

$65 \times 5 + 1 = 326$

$326 \times 6 + 1 = 1957$

65. Ans. C.

the pattern of series :

$11 - 4 = 7$

$25 - 11 = 14$

$46 - 25 = 21$

$74 - 46 = 28$

$109 - 74 = 35$

$151 - 109 = 42$

66. Ans. E.

The given series is an alternate series:

$84 - 1 = 83$

$83 - 1 = 82$

$82 - 1 = 81$

And

$96 - 1 = 95$

$95 - 1 = 94$

67. Ans. D.

The pattern of the series is:

$3 + 1^2 = 4$

$4 + 2^2 = 8$

$8 + 3^2 = 17$

$17 + 4^2 = 33$

$33 + 5^2 = 58$

$58 + 6^2 = 94$

68. Ans. B.

pattern of the series is:

$3 - 2 = 1^3$
$11 - 3 = 2^3$
$38 - 11 = 3^3$
$102 - 38 = 4^3$
$227 - 102 = 5^3$
$443 - 227 = 6^3$

**69. Ans. D.**
$5*1-1=4$
$4*2-1 = 7$
$7*3-1 = 20$
$20*4-1 = 79$
$79*5-1 = 394$ not 396
$394*6-1= 2363$

**70. Ans. D.**



**71. Ans. D.**
sol. the correct series is
4, 7, 11, 17, 26, 39, 57

4 7 11 17 26 39 57

 3 4 6 9 13 18

 1 2 3 4 5

**72. Ans. B.**



M : F
6X : 5X
(increases by 20%) $6X \times \frac{120}{100}$ : $5X \times \frac{104}{100}$ (increases by 4%)
18X : 13X

According to the question:
$18X = 216$
$X = 12$
Then salary of the female will become:
$13X = 13 \times 12 = 156$

**73. Ans. D.**
Price of pen = Rs. 20
Price of pencil = Rs. 4
ATQ-
$20x + 4(x - 2) = 328$
$=> 24x - 8 = 328$
$=> 24x = 336$
$=> x = 336 / 24$
$=> x = 14$
Therefore, the price of (x – 3) pens and x pencils =
$20 * (14 - 3) + 4 * 14 = 220 + 56 = $ Rs.276

**74. Ans. B.**
The marked price of the product is Rs. 637.50

selling price of that product after 20% discount = 0.8 * 637.50 = Rs. 510
profit earned = 27.5%
cost price of article = (510 / 127.5) * 100 = Rs. 400

**75. Ans. C.**
speed of boat in upstream = 36 / 2 = 18 kmph
speed of boat in downstream = 66 / 3 = 22 kmph
speed of boat in still water = (18 + 22) / 2 = 20kmph

**76. Ans. B.**
Let the cost price of product be x
the marked price of product = x + 250
ATQ-

$$\Rightarrow \frac{(x + 250) \times 85}{100} = \frac{127.5}{100} \times x$$

$$\Rightarrow 250 \times 85 = 127.5x - 85x$$

$$\Rightarrow x = \frac{250 \times 85}{42.5} = 500$$

**77. Ans. C.**
Since, both the train starts from same point and going in exact opposite direction. So, the relative speed of train = (18 + 12) = 30 m/s
the time taken by which both train separated by 367.2 km = 367200 / 30 = 12240 sec
i.e. 3.4 hours

**78. Ans. B.**
Let the present age of B and C be 12X and 5X respectively.
A = 2C (Given)
A = 10X
According to the question:
A = B - 6 …….. (Given)
10X = 12X - 6
X = 3
B's present age:
B = 12X = 12 × 3 = 36 years

**79. Ans. B.**
let radius of circle A be $r_1$
let radius of circle B be $r_2$
ATQ -
$=> 2\pi r_1 - 2\pi r_2 = 132 - 110$
$=> 2\pi(r_1 - r_2) = 22$
$=> 2 * 22 / 7 * (r_1 - r_2) = 22$
$=> (r_1 - r_2) = 7 / 2 = 3.5$ cm

80. Ans. B.
Inlets A and B can fill empty tank together
in = 1 / (1 / 36 + 1 / 60)
= 45 / 2 hours
Time required to fill 1/6th of the tank =
(45 / 2) * (1 / 6) = 15 / 4

i.e. $3\frac{3}{4}$ hours