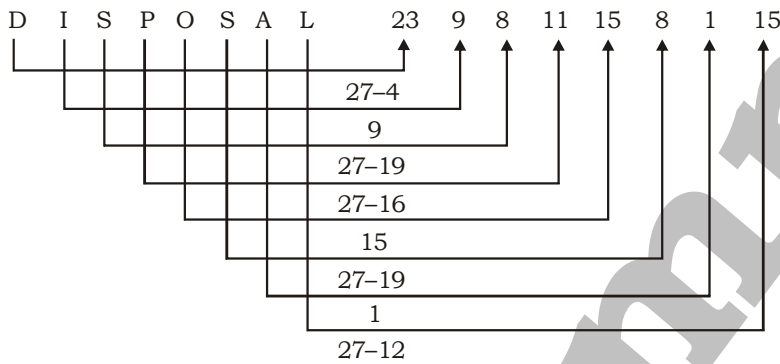
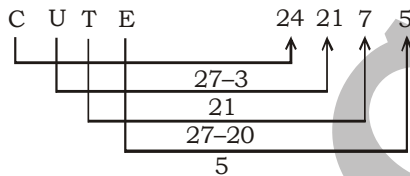


SSC MOCK TEST - 331 (SOLUTION)

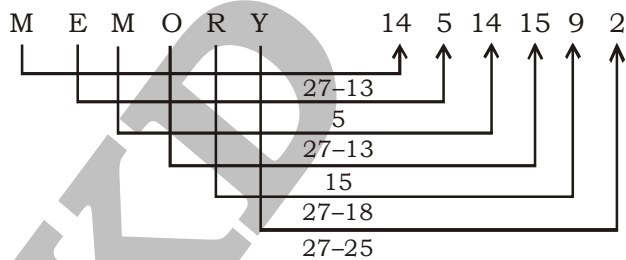
1. (A) As, $875 \Rightarrow 8 + 7 + 5 = 20 \Rightarrow 02$
Similarly, $678 \Rightarrow 6 + 7 + 8 = 21 \Rightarrow 12$
2. (C) Brick is used by Mason, while Colour is used by Painter.
3. (C) Except 439, others are divisible by 19.
4. (D) Except Monitor, others are input device.
5. (B) As,



And,



Similarly,



6. (B) 25 43 65 91 **121**
 $\uparrow \quad \uparrow \quad \uparrow \quad \uparrow \quad \uparrow$
 +18 +22 +26 +30
 $\uparrow \quad \uparrow \quad \uparrow$
 +4 +4 +4

7. (A) L M P U B **K**
 $\uparrow \quad \uparrow \quad \uparrow \quad \uparrow \quad \uparrow$
 +1 +3 +5 +7 +9

8. (A) Suppose B has ₹ x.
So, A will have ₹ 6x and B will have ₹ 4x.
ATQ,
 $x + 6x + 4x = 209$
 $11x = 209$

$$x = \frac{209}{11} = 19$$

So, A get = $6x = 6 \times 19 = ₹ 114$

9. (C) As, $14 + 95 = 109 \Rightarrow 109 \times 2 = 218$
Similarly, $18 + 36 = 54 \Rightarrow 54 \times 2 = 108$

10. (D) derqb/derqb/derqb/derqb

11. (B)

12. (D) **In the first row,**
 $16 + 25 = 41 \Rightarrow 41 \times 3 = 123$

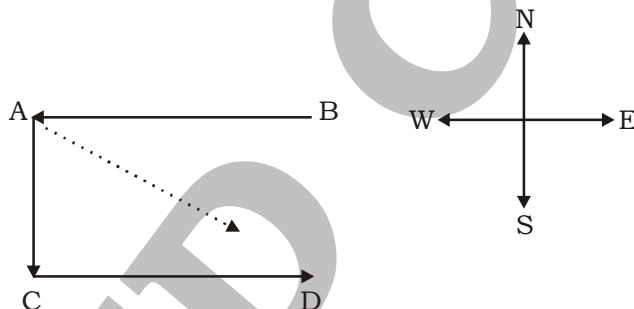
In the second row,
 $18 + 29 = 47 \Rightarrow 47 \times 3 = 141$

In the third row,
 $13 + 22 = 35 \Rightarrow 35 \times 3 = 105$

13. (A) $104 \div 54 \times 5 + 26 - 18 \text{ of } 4 = 2$
After changing 54 and 26,
 $104 \div 26 \times 5 + 54 - 18 \text{ of } 4 = 2$
 $20 + 54 - 72 = 2$
 $74 - 72 = 2$
 $2 = 2$

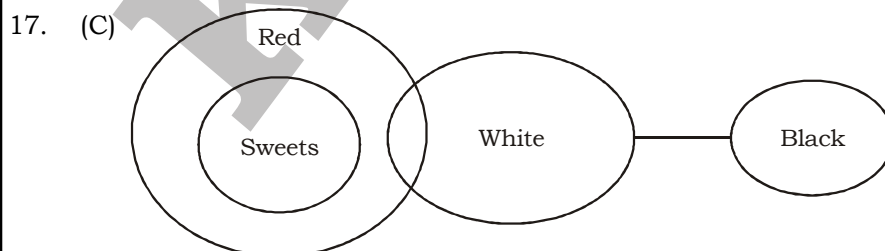
14. (A)

15. (B) Given that A is to the west of B. Then draw C to the south of A and draw D to the east of C as shown in the given figures.



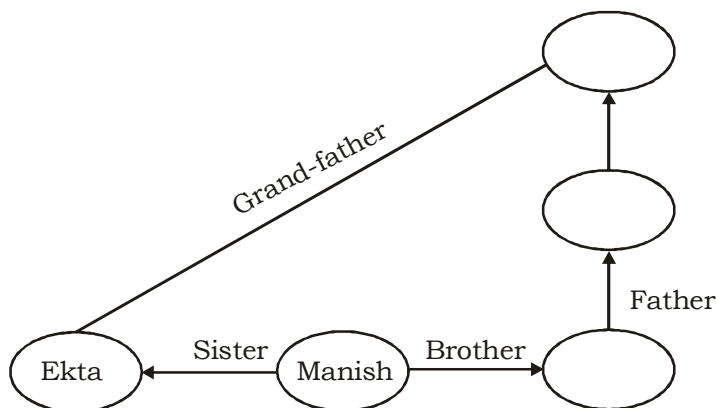
In the figures, we can see that D is towards the South-East of A.

16. (A) 3. Person \rightarrow 5. Market \rightarrow 1. Cloth \rightarrow 4. Purchase \rightarrow 2. Home



I. True II. False III. False
Hence, only conclusion I follows.

18. (C)
19. (C)
20. (A)



Hence, Ekta is sister of Manish.

21. (B) As, $70 + 4^2 = 86$
 $86 + 4^3 = 150$
 Similarly,
 $95 + 4^2 = 111$
 $111 + 4^3 = 175$
22. (C) 23. (A) 24. (C) 25. (A)
27. (D) Buddha traveled through the towns and villages in the kingdoms of Kosala and Magadha teaching his philosophy.
29. (C) Governor of the State ranks highest in a state in the order of precedence.
30. (B) Finance Bill means a Bill ordinarily introduced every year to give effect to the financial proposals of the Government of India for the next following financial year and includes a Bill to give effect to supplementary financial proposals for any period.
32. (B) The 25th New Delhi World Book Fair (NDWBF) will be held at Pragati Maidan, New Delhi from January 7-15, 2017. The 2017 theme is "Manushi - Books Written on and by Women", which will exhibit the rich tradition of women writings from ancient times till present. The focus of the Book Fair is on the 'Culture of Reading'.
33. (D) This year's Life Time Achievement Award was presented to internationally acclaimed cine-visionary Ramesh Prasad, who is said to have created specialized post production facilities and established the Prasad Film Laboratory with advanced equipment.
34. (A) Professor Neena Gupta, a mathematician at the Indian Statistical Institute in Kolkata, was conferred the Ramanujan Prize for Young Mathematicians.
35. (C) The atmosphere is mostly heated by the Radiation process. The air/fluid molecules heated up the atmosphere again and again.
36. (A) The Organisation for Economic Co-operation and Development, abbreviated as OECD and based in Paris (FR), is an international organisation of 36 countries committed to democracy and the market economy.
38. (D) Lithium has the highest specific heat capacity of any solid element. Because of its specific heat capacity, the highest of all solids, lithium metal is often used in coolants for heat transfer applications.
39. (D) Earth orbits the sun at an average of 92,955,807 miles (149,597,870 kilometers). The distance from Earth to the sun is also called an astronomical unit, or AU, which is used to measure distances throughout the solar system.

40. (A) CRR refers to the percentage of deposits banks have to keep as reserve (in cash). This reserve sum is not available for banks for lending and thus if the CRR increases, banks will have less money to lend.
41. (A) The chemical substance present in bones and teeth is Calcium Phosphate or $\text{Ca}_3(\text{PO}_4)_2$. Calcium phosphate is fundamental to the formation of bone and teeth.
42. (B) Indigo is a dye different than any other. ... Rather it is dyed through a living fermentation process. The process "reduces" the Indigo, changing it from blue to yellow. In this state, it dissolves in an alkaline solution.
43. (B) The alluvial soils vary in nature from sandy loam to clay. They are generally rich in potash but poor in phosphorous.
44. (B) Charles Darwin visited these islands during his famous voyage on HMS Beagle (name of his ship) in 1835. The flora and fauna of these islands resemble with those of the South American mainland with which the Galapagos islands were once connected.
46. (C) Dhanvantri is an Avatar of Vishnu from the Hindu tradition. He appears in the Vedas and Puranas as the physician of the gods (devas), and the god of Ayurvedic medicine.
47. (A) Since the birth of the Republic of India on 26 January 1950, 47 judges have served as the Chief Justice of India (CJI). H. J. Kania was the inaugural CJI. The current incumbent is N. V. Ramana who took office of Chief Justice of India on 24 April 2021.
48. (A) The troposphere is the lowest layer of the Earth's atmosphere. ... These layers are the troposphere, stratosphere, mesosphere, and thermosphere. A further region at about 500 km above the Earth's surface is called the exosphere.
49. (B) Seismic sea waves which approach the coasts at greater force are known as. tides. tsunami.
50. (B) The Ministry of Education (MoE) has approved the continuation of the National Means-cum-Merit Scholarship Scheme (NMMSS) till 2025-26.
51. (A) $\frac{2}{3} \div \frac{3}{10}$ of $\frac{4}{9} - \frac{4}{5} \times 1 \frac{1}{9} \div \frac{8}{15} - \frac{3}{4} + \frac{3}{8} \div \frac{1}{2}$
- $$= \frac{2}{3} \times \frac{15}{2} - \frac{4}{5} \times \frac{25}{12} - \frac{3}{4} + \frac{3}{4} = 5 - \frac{5}{3} = \frac{10}{3}$$
52. (B) Quantity of milk = $\frac{120}{5} \times 3 = 72$ litres
- Quantity of water = $\frac{120}{5} \times 2 = 48$ litres
- Hence, required quantity of water is added to make the ratio 1 : 1 = 72 – 48 = 24 litres
53. (D) SP = ₹ 4410
- Loss = 30%
- $$\text{CP} = \frac{4410}{70} \times 100 = ₹ 6300$$
- SP to get a profit of 45% = $6300 \times \frac{145}{100} = ₹ 9135$

54. (B) $\sec^2\theta + \tan^2\theta = \frac{5}{3}$

$$1 + \tan^2\theta + \tan^2\theta = \frac{5}{3}$$

$$2\tan^2\theta = \frac{2}{3}$$

$$\tan\theta = \frac{1}{\sqrt{3}} \text{ it means } \theta = 30^\circ$$

So, $2\theta = 60^\circ$

$$\tan 2\theta = \tan 60^\circ = \sqrt{3}$$

55. (C) CI compounded half yearly for 1 year = $P \left[\left(1 + \frac{r}{200} \right)^2 - 1 \right]$

And SI for 1 year = $\frac{Pr}{100}$

Their difference = ₹ 78

$$P \left[\left(1 + \frac{r}{200} \right)^2 - 1 \right] - \frac{pr}{100} = 78$$

$$P \left[\left(1 + \frac{8}{200} \right)^2 - 1 - \frac{8}{100} \right] = 78$$

$$P \left[\left(\frac{208}{200} \right)^2 - 1 - \frac{2}{25} \right] = 78$$

$$P \left[\left(\frac{26}{25} \right)^2 - 1 - \frac{2}{25} \right] = 78$$

$$P \left[\frac{676 - 625 - 50}{625} \right] = 78$$

$$P = 78 \times 625 = ₹ 48750$$

56. (C) Volume of a cube = $\frac{\text{Volume of Cuboid}}{8} = \frac{18 \times 36 \times 72}{8} = 5832$

Side of a cube = $\sqrt[3]{5832} = 18 \text{ cm}$

Total surface area of cuboid = $2 \times (18 \times 36 + 36 \times 72 + 18 \times 72) = 9072 \text{ cm}^2$

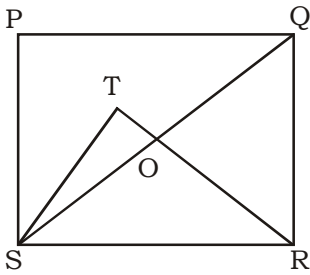
Since, a cube has 4 lateral surfaces.

Then, Lateral Surface Area of all 8 cubes with side length as 18 cm

$$= 8 \times 4 \times 18^2 = 10368 \text{ cm}^2$$

Required ratio = $9072 : 10368 = 7 : 8$

57. (D) P



As the triangle TSR is an equilateral triangle, then $\angle TSR = \angle STR = \angle SRT = 60^\circ$

PQRS is a square so every angle of square is 90° .

SQ is the diagonal of the PQRS.

So, $\angle QSR = \angle SQR = 45^\circ = \angle OSR$

In triangle OSR,

$\angle R = 60^\circ$ and $\angle OSR = 45^\circ$

So, $\angle SOR = 180^\circ - 45^\circ - 60^\circ = 75^\circ$

58. (C) $(x + y)^2 = xy + 1$

$$x^2 + y^2 + 2xy = xy + 1$$

$$x^2 + y^2 + xy = 1$$

$$x^3 - y^3 = 2$$

$$(x - y)(x^2 + y^2 + xy) = 2$$

$$(x - y) \times 1 = 2$$

$$x - y = 2$$

59. (C) A + B finished 60% of the work and B + C finished 70% of the work.

$$A + B = 60\% \quad \dots\dots(i)$$

$$B + C = 70\% \quad \dots\dots(ii)$$

$$\text{And } A + B + C = 100\% \quad \dots\dots(iii)$$

$$\text{Now, } (A + B) + (B + C) - (A + B + C) = B$$

$$B = (60 + 70 - 100)\% = 30\%$$

$$\text{Thus, } A = 30\% \text{ and } C = 40\%$$

\therefore C is most efficient.

60. (B) Time taken by the first train to reach Jaipur from Delhi = 6 hours

And time-taken by the second train to reach Delhi from Jaipur = 5 hours

Let the distance between the two cities be 30 km.

Then their speeds will be 5 km/h ($= \frac{30}{6}$ km/h) and 6 km/hr respectively.

Also, distance travelled by first train in 2 hours till 12 pm = 10 km

So, remaining distance when the second train starts = $30 - 10 = 20$ km

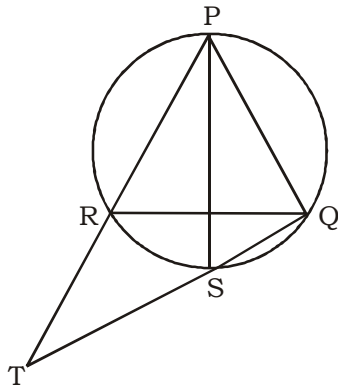
And, relative speed of the trains at 12 pm = $6 + 5 = 11$ km/hr

So, time taken by the trains to meet after 12 pm = $\frac{20}{11} = 1$ hour 49 minutes

Thus, the trains will meet at 1 : 49 pm approximately.

61. (B) $(\sin\theta + \operatorname{cosec}\theta)^2 + (\cos\theta + \sec\theta)^2 = k + \tan^2\theta + \cot^2\theta$
 $\sin^2\theta + \operatorname{cosec}^2\theta + 2\sin\theta \cdot \operatorname{cosec}\theta + \cos^2\theta + \sec^2\theta + 2\cos\theta \cdot \sec\theta = k + \tan^2\theta + \cot^2\theta$
 $\sin^2\theta + \cos^2\theta + 1 + \cot^2\theta + 2 + 1 + \tan^2\theta + 2 = k + \tan^2\theta + \cot^2\theta$
 $1 + 1 + 2 + 1 + 2 = k$
 $k = 7$

62. (B)



Since PQR is an equilateral triangle.

Also, $\angle RPQ = 60^\circ$

$\angle PQT = 90^\circ$ (\because PS is a diameter and it makes 90° angles at each point on the circumference of the circle)

In triangle PTQ,

$\angle QTP = 30^\circ$ (other two angles 60° and 90°)

Now, in triangle RTQ

Since, $\angle RTQ = \angle RQT$

$RT = RQ$

Thus, $RT : RQ = 1 : 1$

63. (C) Let the present age of A and B be $4x$ years and $7x$ years.
 ATQ,

$$\frac{4x + 5}{7x + 5} = \frac{5}{8}$$

$$32x + 40 = 35x + 25$$

$$3x = 15$$

$$x = 15 \text{ years}$$

\therefore Present age of A = $4x = 4 \times 15 = 60$ years

64. (A) $a(a + b + c) = 45$
 $a^2 + ab + ac = 45$ (i)
 $b(a + b + c) = 75$
 $ab + b^2 + bc = 75$ (ii)
 $c(a + b + c) = 105$
 $ac + bc + c^2 = 105$ (iii)

Adding these three equations, we get

$$a^2 + b^2 + c^2 + 2ab + 2bc + 2ca = 45 + 75 + 105$$

$$(a + b + c)^2 = 225$$

$\therefore (a + b + c) = 15$

65. (D) We know that $72 = 9 \times 8$

Therefore, the given number must be divisible by 9 and 8.

First, divisibility rule of 8: Last three digits of the number must be divisible by 8.

Therefore, the last three digits are 78y.

In addition, $y = 4$. (since we have to calculate least value)

Now, divisibility rule of 9: Digital sum of the number must be divisible by 9.

Now, digital sum of 785x36784 = $7 + 8 + 5 + x + 3 + 6 + 7 + 8 + 4 = 48 + x$

The next multiple of 9 after 48 is 54.

Therefore, $x = 54 - 48 = 6$

Now, required $x - y = 6 - 4 = 2$

66. (D) Let the distance travelled on foot is x km.

Distance travelled on bicycle = $(90 - x)$ km

ATQ,

$$\frac{x}{6} + \frac{90 - x}{12} = 8$$

$$\frac{2x + 90 - x}{12} = 8$$

$$x = 96 - 90$$

$$x = 6 \text{ km}$$

67. (D) Let the number be x .

ATQ,

$$\frac{55 + x}{100 + x} = \frac{65 + x}{116 + x}$$

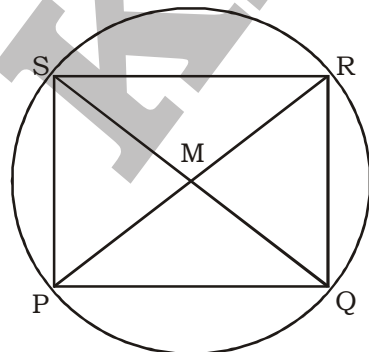
$$6380 + 55x + 116x + x^2 = 6500 + 65x + 100x + x^2$$

$$6380 + 171x = 6500 + 165x$$

$$6x = 120$$

$$x = 20$$

68. (A)



PQ = x cm, QR = 16.8 cm, RS = 14 cm, PS = 25.2 cm

As,

$$\Delta PMS \sim \Delta QMR$$

Hence,

$$\frac{MS}{MR} = \frac{25.2}{16.8} \quad \dots\dots(i)$$

Now, $\Delta PQM \sim \Delta SRM$

Hence,

$$\frac{x}{14} = \frac{MS}{MR} \quad \dots\dots(ii)$$

From (i) and (ii),

$$\frac{x}{14} = \frac{25.2}{16.8}$$

$$\therefore x = 21 \text{ cm}$$

69. (B) For 2 years, R = 10%

For $\frac{1}{3}$ year, R = $\frac{10}{3}$ %

$$CI = P \left(1 + \frac{R}{100} \right)^T - P$$

$$1351.80 = P \left[\left(1 + \frac{10}{100} \right)^2 \left(1 + \frac{10}{3 \times 100} \right) - 1 \right]$$

$$1351.80 = P \left(\frac{121}{100} \times \frac{310}{300} - 1 \right)$$

$$1351.80 = P \left(\frac{751}{3000} \right)$$

$$\therefore P = \frac{1351.80 \times 3000}{751} = ₹ 5400$$

70. (D) a = BC = $\sqrt{0^2 + (12-0)^2} = 12$

$$b = AC = \sqrt{(0-8)^2 + (6-0)^2} = 10$$

$$c = AB = \sqrt{8^2 + 6^2} = 10$$

$$\text{Incentre} = \left(\frac{ax_1 + bx_2 + cx_3}{a+b+c}, \frac{ay_1 + by_2 + cy_3}{a+b+c} \right)$$

$$= \left(\frac{12 \times 0 + 10 \times 8 + 10 \times 8}{12+10+10}, \frac{12 \times 6 + 10 \times 12 + 10 \times 0}{12+10+10} \right)$$

$$= \left(\frac{160}{32}, \frac{192}{32} \right) = 5, 6$$

71. (B) Total amount spent on telephone and medicine in a month = $25000 \times \frac{23}{100} = ₹ 5750$
∴ Amount spent in a year = $5750 \times 12 = ₹ 69000$
72. (B) Required % = $\left(\frac{14}{32} \times 100\right)\% = 43.75\%$
73. (C) Required ratio = $14 : 26 = 7 : 13$
74. (A) Amount of saving initially = $25000 \times \frac{13}{100} = ₹ 3250$
∴ Amount of saving after = $25000 \times \frac{14.48}{100} = ₹ 3620$
75. (D) Required angle = $\left(\frac{15}{100} \times 360^\circ\right) = 54^\circ$

MEANINGS IN ALPHABETICAL ORDER

Acquit	free (someone) from a criminal charge by a	बरी करना
Connoisseur	an expert judge in matters of taste	विशेषज्ञ
Convict	declare (someone) to be guilty of a criminal offense	अपराधी
Critic	a person who expresses an unfavourable opinion of something	समीक्षक
Deferred	put off (an action or event) to a later time; postpone	स्थगित
Denounced	publicly declare to be wrong or evil	आरोप लगा देना
Depressed	(of a person) in a state of general unhappiness or despondency	उदास
Liberated	(of a person) showing freedom from social conventions or traditional ideas, especially with regard to sexual roles	मुक्त
Migrate	(of an animal, typically a bird or fish) move from one region or habitat to another according to the seasons	विस्थापित
Pardoned	forgive or excuse (a person, error, or offense)	माफ
Proficient	competent or skilled in doing or using something	प्रवीण
Proselyte	a person who has converted from one opinion, religion, or party to another	फुसलाना
Rehabilitate	restore (someone) to health or normal life by training and therapy after imprisonment, addiction, or illness	पुर्नवास
Renegade	a person who deserts and betrays an organization, country, or set of principles	पाखण्डी

SSC MOCK TEST - 331 (ANSWER KEY)

- | | | | |
|---------|---------|---------|----------|
| 1. (A) | 26. (C) | 51. (A) | 76. (B) |
| 2. (C) | 27. (D) | 52. (B) | 77. (C) |
| 3. (C) | 28. (A) | 53. (D) | 78. (D) |
| 4. (D) | 29. (C) | 54. (B) | 79. (D) |
| 5. (B) | 30. (B) | 55. (C) | 80. (A) |
| 6. (B) | 31. (B) | 56. (C) | 81. (B) |
| 7. (A) | 32. (B) | 57. (D) | 82. (A) |
| 8. (A) | 33. (D) | 58. (C) | 83. (A) |
| 9. (C) | 34. (A) | 59. (C) | 84. (A) |
| 10. (D) | 35. (C) | 60. (B) | 85. (B) |
| 11. (B) | 36. (A) | 61. (B) | 86. (B) |
| 12. (D) | 37. (C) | 62. (B) | 87. (C) |
| 13. (A) | 38. (D) | 63. (C) | 88. (C) |
| 14. (A) | 39. (D) | 64. (A) | 89. (B) |
| 15. (B) | 40. (A) | 65. (D) | 90. (C) |
| 16. (A) | 41. (A) | 66. (D) | 91. (C) |
| 17. (C) | 42. (B) | 67. (D) | 92. (D) |
| 18. (C) | 43. (B) | 68. (A) | 93. (A) |
| 19. (C) | 44. (B) | 69. (B) | 94. (C) |
| 20. (A) | 45. (C) | 70. (D) | 95. (B) |
| 21. (B) | 46. (C) | 71. (B) | 96. (C) |
| 22. (C) | 47. (A) | 72. (B) | 97. (C) |
| 23. (A) | 48. (A) | 73. (C) | 98. (B) |
| 24. (C) | 49. (B) | 74. (A) | 99. (A) |
| 25. (A) | 50. (B) | 75. (D) | 100. (A) |