SSC MOCK TEST - 361 (SOLUTION)

1. (A) As,

    B   O   R   E

    $2 + 15 + 18 + 5 = 40$

    $40 \div 4 = 10$

    Similarly,

    H   O   T   E   L

    $8 + 15 + 20 + 5 + 12 = 60$

    $60 \div 5 = 12$

2. (C) As 'indolence' and 'Work' are opposite to each other, in the same way 'Taciturn' and 'Talkative' are opposite to each other.

3. (D) Except 9873, in all other numbers the sum of the digits is 28.

4. (D) Except STUW, other groups contain four consecutive letters.

5. (A)

    (N)
    Playground

    Crossing

    (W) Hospital ← | → House (E)

    ↓

    Theatre (E)

    Hence, playground is in North direction.

6. (C) $7\dfrac{1}{7} = \dfrac{50}{7}$, $8\dfrac{2}{6} = \dfrac{50}{6}$, $9\dfrac{5}{5} = \dfrac{50}{5}$, $12\dfrac{2}{4} = \dfrac{50}{4}$, $16\dfrac{2}{3} = \dfrac{50}{3}$

    The denominator is decreasing by 1, but the numerator remains constant therefore next

    number is $\dfrac{50}{2}$.

7. (D) D A C G W H J S M M O R **P K W**

    +3   +3   +3   +3

    –4   –4   –4   –4

    +5   +5   +5   +5

8. (C) As, $5 \times 14 \times 5 = 350$

    Similarly, $7 \times 9 \times 7 = 441$

9. (D) d**l**jx**r**b/d**l**jxrb/dljx**r**b/**d**ijxrb

10. (D)

    $U^- \Longleftrightarrow L^+$

    |

    $Y^+ \Longleftrightarrow M^- \text{------} T^- \text{------} Z^+$

    Hence, U is the Mother-in-law of Y.

11. (A)

12. (B) **In the first figure,**
$(6 \times 7) + (8 + 4) = 42 + 12 = 54$
In the first figure,
$(8 \times 4) + (12 + 7) = 32 + 19 = 51$
In the first figure,
$(9 \times 5) + (14 + 9) = 45 + 23 =$ **68**

13. (D) $12 \times 3 + 6 = 30$
After changing,
$12 + 6 \times 3 = 30$
$12 + 18 = 30$
$30 = 30$

14. (A) 1. Country $\rightarrow$ 3. Forest $\rightarrow$ 5. Tree $\rightarrow$ 4. Wood $\rightarrow$ 2. Furniture

15. (B) Let Sunita's present age = x years
Then, Reena present age = $2x$ years
ATQ,
$(2x - 3) = 3(x - 3)$
$2x - 3 = 3x - 9$
$x = 6$
Reena's age = $2x = 2 \times 6 = 12$ years

16. (B) As, REMOTE $\Rightarrow$ $18 + 5 + 13 + 15 + 20 + 5 = 76 \Rightarrow 76 + 67 = 143$
And, BOX $\Rightarrow$ $2 + 15 + 24 = 41 \Rightarrow 41 + 14 = 55$
Similarly, CHARGE $\Rightarrow$ $3 + 8 + 1 + 18 + 7 + 5 = 42 \Rightarrow 42 + 24 = 66$

17. (D)
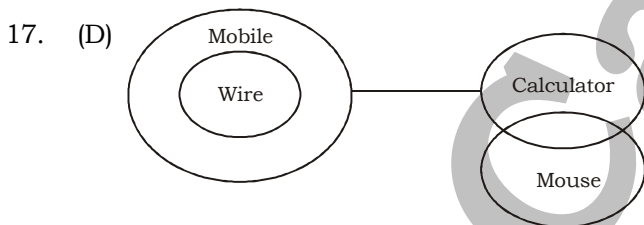
I. True   II. False   III. False
Hence, only conclusion I follows.

18. (A) Paddy is a kharif crop, while Wheat is a Rabi-Crop.

19. (B)   20. (C)

21. (C) As, $25 \times 3 = 75$
$75 \times 2 = 150$
Similarly, $36 \times 3 = 108$
$108 \times 2 = 216$

22. (B)

23. (C) As,

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A  U  D  I  T  O  R  Y    2   42  8  18  40  30  36  50
                              1×2
                              21×2
                              4×2
                              9×2
                              20×2
                              15×2
                              18×2
                              25×2
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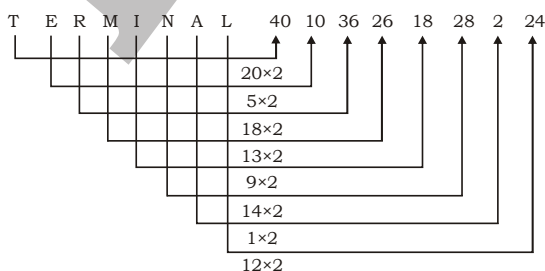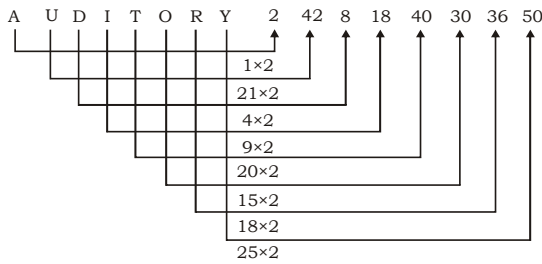
24. (A)   25. (A)

26. (C) Indian Constitution empowers the President of India to convene the session of Parliament such that there should not be more than six months gap between two consecutive Parliament sessions.

29. (A) All India Khilafat Conference : In November 1919, a joint conference of the Muslims and Hindus was called at Delhi in pursuance of the Muslim League President Fazl-ul-Haq . Gandhi ji suggested to start the non–cooperation movement which was opposed by Jinnah. In December 1919, the Khilafat Conference held its second session. The third Khilafat Conference was held in February 1920 at Bombay .

30. (B) The book "Ringside with Vijender" has been authored by Rudraneil Sengupta, the deputy editor of Lounge (the weekly feature magazine of Mint). The book throws light on the Beijing Olympics bronze medallist boxer Vijender Singh's sudden decision to turn pro just a year ahead of the 2016 Rio Olympics. It also portrays the moment when Vijendra was awarded India's highest sporting honour Rajiv Gandhi Khel Ratna Award. Beside this, it also contains his struggles, changes in his boxing style, training and his personal life.

31. (C) Union Environment Ministry has set a new target of 40 percent reduction in particulate matter concentration in cities covered under the National Clean Air Programme (NCAP) by 2026.

32. (D) Galacto Oligosaccharides (GOS), also known as oligogalactose, belong to the group of prebiotics.It is naturally found in soybeans and can be synthesized from lactose. GOS occurs in commercial available products such as food for both infants and adults.

33. (B) World's largest temple is Angkor Wat, located in Angkor, Cambodia. This temple was built by Khmer King Suryavarman II in 12th century as his state temple and capital city.

35. (D) Pipavav Shipyard was established in 1997 at west coast of Saurashtra, Gujarat and it is one of the largest and leading shipbuilding company in India that is spread over 500 acres. It was the first corporate shipyard to be granted clearance to build 5 warships per year and currently it is executing a naval offshore patrol vessel.

36. (B) The Tamirapani River originates from the Pothigai hills of the Western Ghats in Tirunelveli district of Tamil Nadu.

39. (B) Tilaiya project is a 3,960 Megawatt (MW) Ultra Mega Power Project (UMPP) in Jharkhand. It was to be commissioned in 2012 but got delayed due to array of reasons.

40. (C) The Rhine, which flows in Switzerland, Liechtenstein, Austria, Germany, France and Netherlands, is the most important and busiest waterway in Europe. Other busy waterways include Seine and Loire rivers of France, Danube river of eastern Europe and Volga river of Russia.

44. (A) World Milk Day, established by the Food and Agriculture Organization (FAO) of the United Nations is observed annually on 1st June to recognise the importance of milk as a global food. It has been observed on June 1st each year since 2001. In India, the National Milk Day is observed on November 26th.

45. (A) Turgid : Hypotonic solution has lower solute concentration than cell cytoplasm, so by osmosis water will enter inside the cell.

46. (B) The Pahlavi dynasty was the ruling dynasty of Iran from 1925 to 1979.

50. (C) The BIFR was established under the Sick Industrial Companies (Special Provisions) Act, 1985 (SICA). The board was set up in January 1987 and became functional on 15th May 1987.

51. (C) Let ₹ x and ₹ y be the cost price of two goats.

64% of x = 144% of y

$$\frac{x}{y} = \frac{144}{64} = \frac{9}{4}$$

$x : y = 9 : 4$

∴ Cost price of first goat = ₹ $\left(\frac{9}{13} \times 728\right)$ = ₹ 504

52. (B) If distance is same, then speed is inversly proportion to time taken.

So, Ratio between speed in upstream and downstream = 4 : 7

Let the speed of boat in upstream and downstream be 4x and 7x respectively.

Speed of stream = $\dfrac{7x - 4x}{2}$

$12 = \dfrac{3x}{2}$

x = $\dfrac{24}{3}$ = 8 km/hr

Downstream speed = 8 × 7 = 56 km/hr

Required time to cover 224 km in downstream = $\dfrac{224}{56}$ = 4 hours

53. (C) $\sqrt{3}$ = 1.73

$4\sqrt{3} + \dfrac{\left(2+\sqrt{3}\right)\left(2+\sqrt{3}\right)}{\left(2-\sqrt{3}\right)\left(2+\sqrt{3}\right)} + \dfrac{\sqrt{3}+2}{\left(\sqrt{3}-2\right)\left(\sqrt{3}+2\right)}$

$= 4\sqrt{3} + \dfrac{\left(2+\sqrt{3}\right)^2}{4-3} + \dfrac{\sqrt{3}+2}{-1}$

$= 4\sqrt{3} + (4 + 3 + 4\sqrt{3}) - (\sqrt{3} + 2)$

$= 7\sqrt{3} + 5$ = 7 × 1.73 + 5 = 12.11 + 5 = 17.11

54. (C) Difference in percentage of votes = (54 – 46)% = 8%

8% of total votes = 14400

54% of total votes = $\dfrac{14400 \times 54}{8}$ = 97200

55. (D) $1818 = 2 \times 3^2 \times 101$

$2952 = 2^3 \times 3^2 \times 41$

LCM of 1818, 2952 and K is $3^2 \times 2^4 \times 7 \times 101 \times 41$

HCF of 1818, 2952 and K is $3^2 \times 2$, so K must contain $3^2 \times 2$.

We know that, in the LCM of the numbers we take highest power.

In LCM of given number highest power of 2, 3, 7, 101 and 41 is 4, 2, 1, 1 and 1 respectively.
So, K must contain $2^4 \times 3 \times 7$.

Value of K may be $(2^4 \times 3 \times 7)$, $(2^4 \times 3^2 \times 7)$, $(2^4 \times 3 \times 7 \times 101 \times 41)$, $(2^4 \times 3^2 \times 7 \times 101)$ etc.

56. (B) Let the number of males in town be x.

Number of females in town = (10000 – x)

ATQ,

$$x \times \frac{115}{100} + (10,000 - x) \times \frac{120}{100} = 11700$$

115x – 120x + 1200000 = 1170000

– 5x = – 30000

∴ $x = \frac{30000}{5} = 6000$

57. (A) Let the radius and height of cone be r and h respectively.

Volume of cone = $\frac{1}{3}\pi r^2 h$

Curved surface area of cone = π rl

Total surface area of cone = π r (l + r)

Ratio of curved surface area and volume = $\pi rl : \frac{1}{3}\pi r^2 h = 3l : rh$

ATQ,

$$\frac{3\sqrt{r^2 + h^2}}{rh} = \frac{5}{28}$$

Ratio of total surface area and volume = $\pi r(l + r) : \frac{1}{3}\pi r^2 h$

= $3(l + r) : rh$

$$\frac{3\sqrt{r^2 + n^2} + 3r}{rh} = \frac{2}{7}$$

$$\frac{3\sqrt{r^2 + n^2}}{rh} + \frac{3r}{rh} = \frac{2}{7}$$

$$\frac{5}{28} + \frac{3}{h} = \frac{2}{7}$$

$$\frac{3}{h} = \frac{2}{7} - \frac{5}{28}$$

$$\frac{3}{h} = \frac{8 - 5}{28} = \frac{3}{28}$$

h = 28

Putting the value of h is equation (i),

$$\frac{3\sqrt{r^2 + 28^2}}{28r} = \frac{5}{28}$$

r² + 784 = $\frac{25}{9}r^2$

$$\frac{25}{9}r^2 - r^2 = 784$$

$$\frac{16r^2}{9} = 784$$

$$r^2 = \frac{784 \times 9}{16}$$

$$r = \sqrt{\frac{784 \times 9}{16}} = \frac{28 \times 3}{4} = 21 cm$$

∴ Required ratio = 21 : 28 = 3 : 4

58. (C) In first bottle, ratio of spirit and water = (3 : 1) × 7 = 21 : 7

In second bottle, ratio of spirit and water = (5 : 2) × 4 = 20 : 8

In third bottle, ratio of spirit and water = (11 : 17) ×1 = 11 : 17

In new mixture, ratio of spirit and water = (21 + 20 +11) : (7 + 8 + 17)

= 52 : 32 = 13 : 8

∴ Required % = $\left(\frac{13}{13+8} \times 100\right)\%$ = 61.9% ≈ 62%

59. (D) After 3 years amount = ₹12000

∴ Required amount after 4th year = $P\left(1 + \frac{R}{100}\right) = 12000\left(1 + \frac{12}{100}\right)$

$= \frac{12000 \times 112}{100}$ = ₹ 13440

60. (A) Distance travelled by car when they meet = 168 km

Time taken by car = $\frac{Distance}{Time}$

$= \frac{168}{2 \text{ hours } 40 \text{ minute}}$

$= \left(\frac{168 \times 3}{8}\right)$ = 63 km/hr

Speed of bus = (63 × 2) = 126 km/hr

Distance travelled by bus when they meet = 126 × (5 : 40 – 4)

$= 126 \times 1\frac{2}{3} = 126 \times \frac{5}{3}$ = 210 km

Total distance between A and B = (210 + 168) = 378 km

61. (C) Let the two positive number be x and y respectively.

According to question,

x + y = 72   ....(i)

x – y = 16   ....(ii)

Adding equation (i) and (ii)

2x = 88

    x = 44

    y = 72 – x = 72 – 44 = 28

    $x^2 - y^2 = (44)^2 - (28)^2 = 1936 - 784 = 1152$

62.   (B) $a^3 + b^3 = (a + b)(a^2 + b^2 - ab)$

    $$\frac{(0.63 + 0.37)[(0.63)^2 + (0.37)^2 - 0.63 \times 0.37)]}{(0.63)^2 + (0.37)^2 - 0.63 \times 0.37}$$

    = 0.63 + 0.37 = 1

63.   (C) $\cos(A - B) = \dfrac{\sqrt{3}}{2}$

    $\cos(A - B) = \cos 30°$

    $A - B = 30°$ .....(i)

    $\cot(A + B) = \dfrac{1}{\sqrt{3}}$

    $\cot(A + B) = \cot 60°$

    $A + B = 60°$ .....(ii)

    Adding equation (i) and (ii),

    2A = 90°

    A = 45°

    Put the value of A in equation (i),

    45 – B = 30°

    B = 15°

  ∴ $2A - 3B = 2 \times 45 - 3 \times 15° = 90° - 45° = 45°$

64.   (B) Three years ago, the average age of P and Q = x years

    Total age = 2x years

    Present age of P and Q = (2x + 6) years

    Total age of P, Q and R = 16 × 3 = 48 years

    ATQ,

    2x + 6 + 18 = 48

    2x = 48 – 24

    x = $\dfrac{24}{2}$ = 12 years

    Total age of P and Q, three years ago = 12 × 2 = 24 years

    P's age = (y + 2) years

    ATQ,

    y + y + 2 = 24

    2y = 22 years

    y = $\dfrac{22}{2}$ = 11 years

  ∴ Age of Q, three year ago = 11 years

65. (C) Let the length of track be x m when they meet, distance travelled by Deep is $\dfrac{4x}{10}$ km and distance travelled by Jatin is $\dfrac{6x}{10}$ km.

Time taken by both is same so, the ratio of distance = ratio of speed

Ratio of speed of Deep and Jatin = $\left(\dfrac{4x}{10} : \dfrac{6x}{10}\right)$ = 2 : 3

Let the speed of Deep and Jatin be 2y m/s and 3y m/s respectively.

$\dfrac{6x}{10 \times 2y}$ = 27 × 60

$\dfrac{3x}{y}$ = 16200

x = $\dfrac{16200y}{3}$ = 5400y
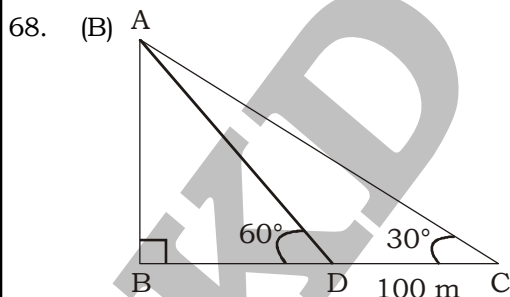
40% of x = $\dfrac{40}{100} \times 5400y$ = 2160y

Time taken by Jatin to cover 40% distance of track = $\dfrac{2160y}{3y} = 720$ Second = 12 minutes

∴ Required time = (1: 00 pm + 12 minutes) = 1 : 12 pm

66. (D) Required number of days = $\dfrac{12 \times 10}{16 - 10}$ = 20 days

67. (B) Cost price of Monu = 12 × 10 = ₹ 120

Selling price of Monu = 10 × 10 = ₹ 100

Loss % = $\left(\dfrac{120 - 100}{120} \times 100\right)$% = $16\dfrac{2}{3}$%

68. (B)

Let AB is the height of tower.

CD = 100 m

Let BD = x m

In ΔABD,

$\tan 60° = \dfrac{AB}{BD}$

$$\sqrt{3} = \frac{AB}{x}$$

$$AB = \sqrt{3}\,x \text{ m} \qquad .....(i)$$

In ΔABC,

$$\tan 30° = \frac{AB}{BC}$$

$$\frac{1}{\sqrt{3}} = \frac{AB}{x + 100}$$

$$AB = \frac{x + 100}{\sqrt{3}} \text{ m} \qquad ......(ii)$$

Comparing equation (i) and (ii),

$$\sqrt{3}\,x = \frac{x + 100}{\sqrt{3}}$$

$$3x = 100 + x$$

$$x = \frac{100}{2} = 50 \text{ m}$$

$\therefore$ Height of tower = $\sqrt{3}\,x = \sqrt{3} \times 50 = 50\sqrt{3}$ m

69. (A)

A(2, 5)　　　　C　　　　B(0, 7)

Let line AB perpendicularly bisects line joining A(2, –5) and B (0, 7) at C, thus C is the midpoint of AB.

Coordinates of C = $\left(\dfrac{2 + 0}{2}, \dfrac{-5 + 7}{2}\right) = \left(\dfrac{2}{2}, \dfrac{2}{2}\right) = (1, 1)$

Now, slope of AB = $\dfrac{y_2 - y_1}{x_2 - x_1} = \dfrac{(7 + 5)}{(0 - 2)} = \dfrac{12}{-2} = -6$

Let slope of line AB = m

Product of slopes of two perpendicular lines = –1

$$m \times -6 = -1$$

$$m = \frac{1}{6}$$

Equation of a line passing through point (x_1, y_2) and having slope m is $(y - y_1) = m(x - x_1)$

Equation of line AB = $(y - 1) = \dfrac{1}{6}(x - 1)$

$$6y - 6 = x - 1$$

$$x - 6y = 1 - 6 = -5$$

$$x - 6y = -5$$

70. (C) $\dfrac{\csc\theta + \cot\theta}{\csc\theta - \cot\theta} = 7$

$7\csc\theta - 2\cot\theta$

$\csc\theta + \cot\theta$

$6\csc\theta = 8\cot\theta$

$\dfrac{6}{\sin\theta} = \dfrac{8\cos\theta}{\sin\theta}$

$\cos\theta = \dfrac{6}{8} = \dfrac{3}{4}$

$\cos^2\theta = \dfrac{9}{16}$
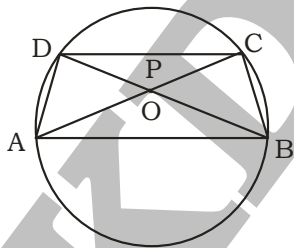
$1 - \sin^2\theta = \dfrac{9}{16}$

$\sin^2\theta = 1 + \dfrac{9}{16} = \dfrac{7}{16}$

$\dfrac{4\sin^2\theta - 1}{4\sin^2\theta + 5} = \dfrac{4 \times \dfrac{7}{16} - 1}{4 \times \dfrac{7}{16} + 5}$

$= \dfrac{\dfrac{7}{4} - 1}{\dfrac{7}{4} + 5} = \dfrac{3}{4} \times \dfrac{4}{27} = \dfrac{1}{9}$

71. (B)

$\angle ABC = 34°$

$\angle ACB = 90°$ (Angle in semi-circle)

In $\triangle ABC$,

$\angle ACB + \angle ABC + \angle BAC = 180° - 90° - 37° = 56°$

$\angle DCA = \angle BAC = 56°$

$\angle DBC = 28°$

72. (A) Miscellaneous charges = $\dfrac{1800}{10} \times 9$ = ₹ 1620

73. (D) 100% = 360°

    1% = 3.6%

    Angle for designing charges = 12 × 3.6 = 43.2°

74. (C) Required ratio = 30 : 29

75. (C) $\dfrac{30}{100}$ × total cost = ₹ 9600

    Total cost = ₹ $\dfrac{96 \times 100 \times 100}{300}$ = ₹ 32000

    Cost of transport = 10% of total cost = $\dfrac{10}{100} \times 32000$ = ₹ 3200

MEANINGS IN ALPHABETICAL ORDER

Benediction	the utterance or bestowing of a blessing, especially at the end of a religious service	आर्शीवाद
Benevolence	the quality of being well meaning; kindness	भलाई
Besmirch	damage the reputation of (someone or something) in the opinion of others	गंदा करना
Commemorate	recall and show respect for (someone or something)	मनाना
Complicity	the state of being involved with others in an illegal activity or wrongdoing	सहापराध
Condemnation	the expression of very strong disapproval; censure	निंदा
Derision	contemptuous ridicule or mockery	उपहास
Dispassionate	not influenced by strong emotion, and so able to be rational and impartial	आवेगहीन
Enduring	continuing or long-lasting	टिकाऊ
Ethnology	the study of the characteristics of various peoples and the differences and relationships between them	मानव जाति विज्ञान
Fervent	having or displaying a passionate intensity	उत्सुक
Genealogy	a line of descent traced continuously from an ancestor	वंशावली
Impudent	not showing due respect for another person; impertinent	दिलेर
Manoeuvre	a movement or series of moves requiring skill and care	पैंतरेबाज़ी
Stratagem	a plan or scheme, especially one used to outwit an opponent or achieve an end	कपट
Subdued	(of a person or their manner) quiet and rather reflective or depressed	मातहत
Subterfuge	deceit used in order to achieve one's goal	छल
Trite	(of a remark, opinion, or idea) overused and consequently of little import; lacking originality or freshness	घिसे-पिटे
Vagueness	lack of certainty or distinctness	अस्पष्टता

SSC MOCK TEST - 361 (ANSWER KEY)

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

76. (B) If two events happen to be in past one after another, the first action is written in Past Perfect Tense. Change 'have' into 'had'.

77. (B) Replace 'so' by 'as'. 'As ...... as' is a correct phrase.

86. (D) The subject of the sentence, a highly improved variety is singular.

87. (A) 'Ask' is used to took for an answer, explanations, etc.