SSC MOCK TEST - 389 (SOLUTION)

1. (1) As, $1425 \Rightarrow (1 + 4 + 2 + 5)^2 = 144$
    Similarly, $1768 \Rightarrow (1 + 7 + 6 + 8)^2 = 484$

2. (2) Retina is the part of Eye and Pons is the part of brain, while Cochlea is the part of Ear.

3. (4) Start, Begin and Initiative have a similar meaning: to start something. Hurdle means an obstacle or a barrier.

4. (3) (1) $75 + 8 = 83$ (2) $50 + 8 = 58$ (3) $42 + 8 = 50 \neq 49$ (4) $17 + 8 = 25$

5. (3) (1)   (2)
    (3)   (4)

6. (3) $28 \times 1 + 2 = 30$
    $30 \times 2 + 2 =$ **62**
    $62 \times 3 + 2 = 188$
    $188 \times 4 + 2 = 754$
    $754 \times 5 + 2 = 3772$

7. (2)

8. (2) The alphabetical position of M is 13.
    The reverse alphabetical position of N is 41.
    So, $13 \times 41 = 533$
    Similarly,
    Alphabetical position of R is 18.
    The reverse alphabetical position of Y is 52.
    So, $18 \times 52 = 936$

9. (4)

    Hence, Ankur is Ayushman father or uncle.

10. (4) As, MEDICINE $\Rightarrow 13 + 5 + 4 + 9 + 3 + 9 + 14 + 5 = 62 \Rightarrow 6 – 2 = 4$
    And, RETAIL $\Rightarrow 18 + 5 + 20 + 1 + 9 + 12 = 65 \Rightarrow 6 – 5 = 1$
    Similarly, INTERN $\Rightarrow 9 + 14 + 20 + 5 + 18 + 14 = 80 \Rightarrow 8 – 0 = 8$

11. (1) As, $82 \Rightarrow (7 + 2) \times (7 – 2) = 45$
    $45 \Rightarrow (4 + 5) \times (4 – 5) = – 9$
    Similarly, $81 \Rightarrow (8 + 1) \times (8 – 1) = 63$
    $63 \Rightarrow (6 + 3) \times (6 – 3) = 27$

12. (2)

Rectangle Triangle Angle Cone
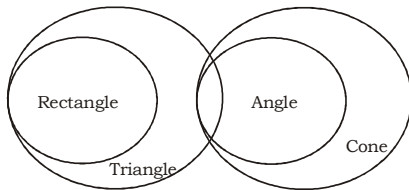
I. False   II. False   III. True

Hence, only conclusions III follows.

13. (4)   14. (1)

15. (4) 8 * 15 * 62 * 154 * 11 = 23

After put the sign

$8 \times 15 - 62 + 154 \div 11 = 23$

$120 - 62 + 14 = 23$
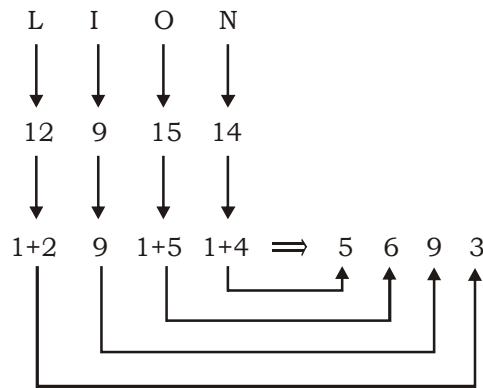
$134 - 62 = 72$

$72 = 72$
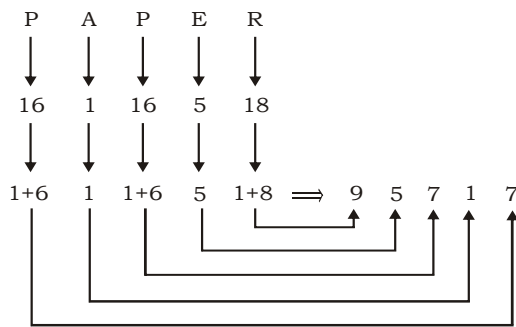
16. (2)

17. (3) As, $[(22 + 3) \times 22] \div 2 = 275$

And, $[(18 + 3) \times 18] \div 2 = 189$
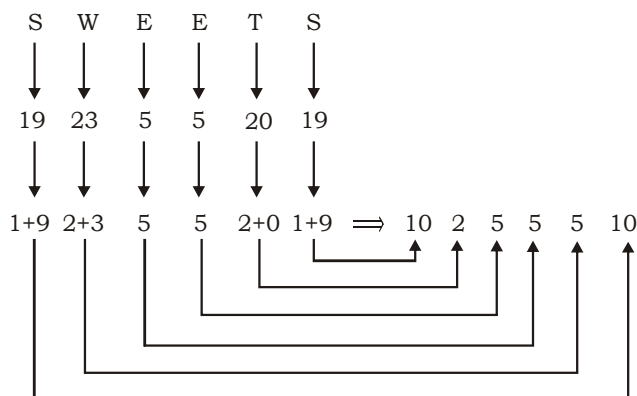
Similarly, $[(11 + 3) \times 11] \div 2 = 77$
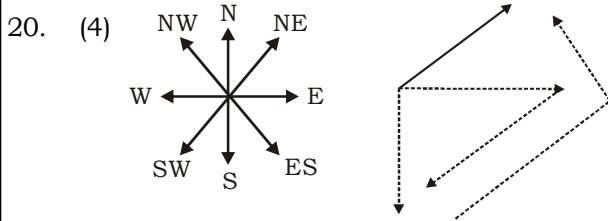
18. (2) As,   And,

Similarly,

19. (3) Clock gain 3 minutes in 1 hour i.e. it shows 63 min when right figure should be 60 minutes. From 12 pm to 10:30 pm it shows 630 minutes, but actually it should indicate 600 minutes i.e. 10:00 pm.

20. (4)

Thus, he is facing North East.

21. (3) 2. Dream $\rightarrow$ 1. Dreamlover $\rightarrow$ 4. Dreamset $\rightarrow$ 5. Dream time $\rightarrow$ 3. Dreamy

22. (1)   23. (4)

24. (3) **In the first row,**

$74 + 26 = 100 \Rightarrow \sqrt{100} = 10$

In the second row,

$92 + 52 = 144 \Rightarrow \sqrt{144} = 12$

In the third row,

$136 + 225 = 361 \Rightarrow \sqrt{361} = 19$

25. (3)

26. (3) Chamba Rumal belongs to Himachal Pradesh.

27. (3) Sangeet Natak Akademi was established in 1953, it was inaugurated by Dr. Rajendra Prasad, the then President of India.

28. (2) Marco polo voyage to india is related to italy.

29. (1) The Kailash Nath Temple at Ellora was built by Rashtrakuta ruler Krishna I. This temple is built in the Dravidian style.

30. (2) The editor of The Tribune was Dyal Singh Majithia, its publication was started from Lahore in the year 1888.

31. (4) Satyashodhak Samaj was founded by Jyotiba Phule in Pune in 1873.

32. (2) Karakoram is called the backbone of high Asia, it is a mountain range of Trans Himalaya.

33. (1) Kangto mountain peak is located in Arunachal Pradesh.

34. (1) Markha Valley is related to Ladakh, it provides route to Hemis National Park.

35. (1) National Highway 44 is the longest National Highway in India which runs from Srinagar to Kanyakumari.

36. (1) Sphygmomanometer is used to measure blood pressure while barometer is used to measure atmospheric pressure.

37. (2) Hydrogen bomb is based on nuclear fusion which is about 1000 times more powerful than atomic bomb.

38. (2) The telescope was built by Galileo in 1609.

39. (2) Gastric juice is acidic in nature due to its pH value being 2. It contains digestive enzymes like pepsin and renin.

40. (1) The Estimates Committee is the largest parliamentary committee with a total of 30 members, all of whom are Lok Sabha members, while the Public Accounts Committee consists of 22 members, including 15 Lok Sabha members and 7 Rajya Sabha members.

41. (1) There were a total of 14 languages in the Eighth Schedule of the original Constitution of India, while at present a total of 22 languages are included.

42. (4) Special provisions have been made in respect of Nagaland under Article 371A of the Constitution while certain special provisions have been made in respect of Maharashtra and Gujarat under Article 371.

43. (3) Under the Directive Principles of State Policy, provision has been made in Article 51 for promotion of international peace and security.

44. (2) National Sports Day is celebrated on 29 August.

45. (2) Project Tiger was started in the year 1973.

46. (2) The Jammu and Kashmir administration's flagship initiative, 'Mission Youth' recently received the Prime Minister's Award for Excellence under the Innovation (state) category.

47. (1) **Ropar:** Ropar is situated in Punjab. The evidence of burying a dog below the human burial is very interesting. This was excavated by Yojna Dutta Sharma In 1953-54. Kalibangan: Kalibangan is situated in Ganganagar district of Rajasthan. This was excavated by A Ghosh in 1953 and termed it as a Sothi-Culture.

    Dholavira: It is situated in Gujarat in Kachcha district. It was discovered by J P Joshi in 1967-68 and excavation carried out by R S Bisht in 1990-91. It is the latest and one of the two largest Harappan settlements in India, the other being Rakhigarhi in Haryana. The other Harappan towns were divided into two parts - Citadel and Lower Town, but Dholavira was divided into three principal divisions, two of which were strongly protected by rectangular fortification.

    Banawali: Banawali is situated in Haryana and it was excavated by R S Bisht in 1973. Like Kalibangan, Amri, Kot Diji and Harappa, Banawali also saw two cultural phases - pre-Harappan and Harappan. Here we find large quantity of barley, sesamum and mustard.

48. (1) Council for the Advancement of People's Action and Rural Technology (CAPART) is an autonomous body under the Ministry of Rural Development Government of India, set up to address specific problems relating to development in the rural areas.

50. (2) World Earth Day is observed every year on 22 April to mark the anniversary of the birth of the modern environmental movement in 1970.

51. (1)
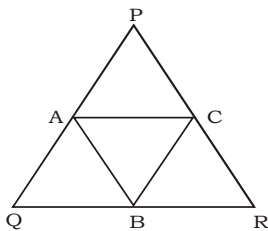
PQR is an equilateral triangle and A, B and C are the mid-points of side PQ, QR and PR respectively.

Side of triangle PQR = 12 cm

We know that,

$ar(\Delta PAC) = ar(\Delta BCR)$

$ar(\Delta AQB) = ar(\Delta ABC)$

Area of $\Delta ABC = \dfrac{1}{4} \times ar.(\Delta PQR)$

$= \dfrac{1}{4} \times \dfrac{\sqrt{3}}{4} \times (12)^2 = \dfrac{1}{4} \times \dfrac{\sqrt{3}}{4} \times 144 = 9\sqrt{3} \text{ cm}^2$

52. (3) $A + B + C = \pi$

$$\frac{A + B}{2} = \frac{\pi}{2} - \frac{C}{2}$$

$$\sin\left(\frac{A + B}{2}\right) = \sin\left(\frac{\pi}{2} - \frac{C}{2}\right) = \cos\frac{C}{2}$$

Similarly,

$$\cos\left(\frac{A + B}{2}\right) = \sin\frac{C}{2}$$

$$\cot\left(\frac{A + B}{2}\right) = \tan\frac{C}{2}$$

$$\tan\left(\frac{A + B}{2}\right) = \cot\frac{C}{2}$$

53. (1) $x = \dfrac{\left(\sqrt{2} + 1\right)}{\left(\sqrt{2} - 1\right)} = \dfrac{\sqrt{2} + 1}{\sqrt{2} - 1} \times \dfrac{\sqrt{2} + 1}{\sqrt{2} + 1}$

$$x = \frac{2 + 1 + 2\sqrt{2}}{2 - 1} = 3 + 2\sqrt{2}$$

$$\frac{1}{x} = \frac{1}{3 + 2\sqrt{2}} = \frac{1}{3 + 2\sqrt{2}} \times \frac{3 - 2\sqrt{2}}{3 - 2\sqrt{2}}$$

$$\frac{1}{x} = \frac{3 - 2\sqrt{2}}{9 - 8} = 3 + 2\sqrt{2}$$

$$x + \frac{1}{x} = 3 + 2\sqrt{2} + 3 - 2\sqrt{2}$$

$$x + \frac{1}{x} = 6$$

$$x^2 + \frac{1}{x^2} + 2 = 36$$

$$x^2 + \frac{1}{x^2} = 34$$

$$\frac{x^5 + x^4 + x^2 + x}{x^3} = x^2 + x + \frac{1}{x} + \frac{1}{x^2}$$

$$= x^2 + \frac{1}{x^2} + x + \frac{1}{x} = 36 + 6 = 40$$

54. **(2)** Volume $= \frac{1}{3}\pi r^2 h = 660$ cm^2

    r = 12 cm

    Radius $= \frac{12}{2} = 6$ cm

    $\frac{1}{3} \times \frac{22}{7} 6^2 \times h = 660$

    $h = \frac{35}{2}$ cm

    Slant height $= \sqrt{h^2 + r^2} = \sqrt{17.5^2 + 6^2}$

    $l = \frac{37}{2}$ cm

    Total S.A. $= \pi r^2 + \pi r l = \pi \times 6^2 + \pi \times 6 \times \frac{37}{2}$

    $= \pi \times 6 \left(6 + \frac{37}{2}\right) = 462$ cm^2

55. **(3)** Let us assume that the average of 100 numbers be 36.

    75% of 100 = 75

    If we assume that the all the numbers are 36.

    ATQ,

    75% of Number is increased by 6

    New number = 36 + 6 = 42

    Also given that

    25% numbers are decreased by 9

    36 – 9 = 27

    New average $= \frac{(42 \times 75) + (27 \times 25)}{100} = \frac{153}{4} = 38.25$

56. **(2)** By alligation method,

    ```
    +25%              −20%
          \          /
           > +8% <
          /          \
    28                 17
    ```
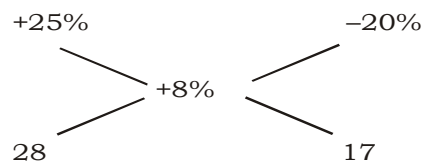
    Ratio = 28 : 17

    Part of rice sold at 20% loss $= \frac{1350}{28 + 17} \times 17 = \frac{1350}{45} \times 17 = 510$ kg

57. (1)
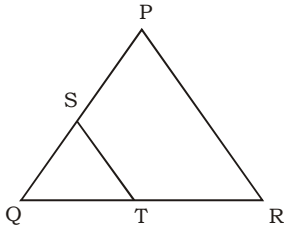
ST ‖ PR

$\Delta PQR \sim \Delta QST$,

$\dfrac{PQ}{QS} = \dfrac{QR}{QT}$

$\dfrac{PQ}{QS} - 1 = \dfrac{QR}{QT} - 1$

$\dfrac{PQ - QS}{QS} = \dfrac{QR - QT}{QT}$

$\dfrac{PS}{QS} = \dfrac{RT}{QT}$

$\dfrac{4}{PQ - PS} = \dfrac{RT}{QT}$

$\dfrac{4}{10 - 4} = \dfrac{RT}{QT}$

$\dfrac{4}{6} = \dfrac{RT}{QT}$

$\dfrac{2}{3} = \dfrac{RT}{QT}$

∴ QT : RT = 3 : 2

58. (2) Area of circle = πr^2

$\pi r^2 = 5544$

$r^2 = \dfrac{5544}{22} \times 7$

$r^2 = 1764$

r = 42 cm

Perimeter of circle = $2\pi r = 2 \times \dfrac{22}{7} \times 42 = 264$ cm

Perimeter of rectangle = $\dfrac{264}{2}$ = 132 cm

2(l + b) = 132

50 + b = 66

b = 66 – 50 = 16 cm

∴ Area of rectangle = 50 × 16 = 800 cm²

59. **(1)** Let the investment of C is x months.

Ratio of annual investment of A, B and C = 25000 × 12 : 30000 × 12 : 40000 × x

= 300 : 360 : 40x = 15 : 18 : 2x

Share of C in the annual profit = $= \dfrac{x}{33 + 2x} \times 260000 = 20000$

$\dfrac{x}{33 + 2x} = \dfrac{1}{13}$

13x = 33 + 2x

11x = 33

x = 3

∴ Required month = 3 months

60. **(1)** $\dfrac{1 + \dfrac{1}{7\frac{3}{5}}}{2 + \dfrac{1}{3 + \dfrac{1}{1 + \frac{1}{4}}}} \div 0.5$ $= \dfrac{1 + \dfrac{5}{38}}{2 + \dfrac{1}{3 + \frac{4}{5}}} \div 0.5$

$= \dfrac{\dfrac{43}{38}}{2 + \dfrac{5}{19}} \div 0.5$ $= \dfrac{\dfrac{43}{38}}{\dfrac{43}{19}} \div 0.5$

$= \dfrac{1}{2} \div 0.5$ $= \dfrac{1}{2} \times \dfrac{1}{0.5} = 1$

61. **(2)** <u>Venn–Diagram of Failed Students</u>

History   Geography

30% (27%) 35%

Percentage of failed students = 30% + 35% – 27% = 38%

Percentage of passed students = 100% – 38% = 62%

Now, Let total number of students be *x*.

62% of *x* = 248

∴ *x* = $248 \times \dfrac{100}{62} = 400$

62. **(4)** Only the option (4) gives the difference of votes between two candidates as 308.

63. (1) Let the first train be X which leaves Delhi at 10:00 AM and second train be Y which leaves Delhi at 10 : 30 AM.

Speed of train A = 110 km/hr

Speed of train B = 150 km/hr

Distance covered by train A in 30 minutes = $110 \times \dfrac{30}{60}$ = 55 km

At 10:30 AM, distance between both the trains = 55 km

Relative speed of train B = 150 – 110 = 40 km/hr

Time taken by train B to meet train A = $\dfrac{55}{40}$ hours = $\dfrac{11}{8}$ hours

Distance covered by train B in $\dfrac{11}{8}$ hours = $\dfrac{11}{8} \times 150$ = 206.25 km

∴ 206.25 km from Delhi will both the trains meet.

64. (3) Simple interest = ₹7650

Time = 3 years

Rate = 6%

$P = \dfrac{7650 \times 100}{3 \times 6}$ = ₹42500

Now, principal = ₹42500

Time = 3 years

Rate = 12%

$A = 42500\left(1 + \dfrac{12}{100}\right)^3$

$= 42500 \times \dfrac{112}{100} \times \dfrac{112}{100} \times \dfrac{112}{100}$ = ₹ 59709.44

∴ Compound interest = 59709.44 – 42500 = ₹17209.44

65. (4) Total work = 6 × 24 = 144

Work done by 6 persons in 4 days = 6 × 4 = 24

Remaining work = 144 – 24 = 120

Required number of persons to complete the work in next 12 days = $\dfrac{120}{12}$ = 10

∴ Number of persons should join the group = 10 – 6 = 4

66. (1) Required number of poles = $\dfrac{\text{Perimeter}}{\text{Distance between any two adjacent poles}}$ = $\dfrac{84}{1.5}$ = 50

67. (3) A makes one complete round of the circular track in $\dfrac{5}{5/2}$ = 2 hours

B in $\dfrac{5}{3}$ hours and C in $\dfrac{5}{2}$ hours,

That is after 2 hours A is at the starting point, B after $\dfrac{5}{3}$ hours and C after $\dfrac{5}{2}$ hours.

Hence the required time = LCM of 2, $\dfrac{5}{3}$ and $\dfrac{5}{2}$ hours = $\dfrac{\text{LCM of } 2,5,5}{\text{HCF of } 3,2} = \dfrac{10}{1}$ = 10 hours

68. (2) Let the B invested capital for x months.

ATQ,

$$\frac{5 \times 8}{6 \times x} = \frac{5}{9}$$

$$x = \frac{5 \times 8 \times 9}{5 \times 6} = 12 \text{ months}$$

69. (1) Perimeter of the largest equilateral triangle = 3 × 24 = 72

Now, triangle formed by joining the mid-points will have perimeter half of that original triangle.

Hence, the required sum = 72 + 36 + 18 + ... upon infinite terms.

This is nothing but an infinite GP, with first term (1) = 72 and common (r) = $\frac{1}{2}$

Hence, the required sum = $\frac{a}{1-r}$ = $\left(\dfrac{75}{1 - \dfrac{1}{2}} \right)$ = 144 cm

70. (4) Let the length and breadth of rectangle be x and y m respectively.

According to the question,

$2(x + y) = 160$

$x + y = \dfrac{160}{2} = 80$ ......(i)

Perimeter of square = 160 m

Side of square = $\dfrac{160}{4}$ = 40 m

Now,

Area of rectangle = xy

Area of square = 40 × 40 = 160 m^2

Then,

$1600 - xy = 100$

$xy = 1600 - 100 = 1500$ ......(ii)

Now,

$(x - y)^2 = (x + y)^2 - 4xy$

$(x - y)^2 = (80)^2 - 4 \times 1500$

$(x - y)^2 = 6400 - 6000 = 400$

$x - y = \sqrt{400} = 20$ ......(iii)

From equations (i) and (iii),

$2x = 100$

$\therefore$ $x = \dfrac{100}{2} = 50$ m

71. (3) Number of qualified candidates in the year 1995 = 900 × $\dfrac{64}{100}$ = 576

Number of male candidates who qualified in the year 1995 = 576 – 176 = 400

$\therefore$ Required ratio = 400 : 176 = 25 : 11

72. (4) Number of qualified candidates in the year 1996 = $700 \times \dfrac{140}{100} \times \dfrac{25}{100}$ = 245

73. (3) Let the appeared candidates in the year 1992 = 500

   Qualified candidates in the year 1992 = 400

   Number of qualified female candidate = $\dfrac{400}{8} \times 3$ = 150

   $\therefore$ Required% = $\left(\dfrac{150}{500} \times 100\right)$% = 30%

74. (4) Number of qualified candidates in the year 1994 = $\left(\dfrac{72}{4} \times 14\right)$ = 252

   $\therefore$ Total number of appeared candidates in the year 1994 = $\left(\dfrac{252}{42} \times 100\right)$% = 600

75. (2) Number of qualified candidates in the year 1993 = $480 \times \dfrac{60}{100}$ = 288

   Number of qualified candidates in the year 1991 = 249 × 2 – 288 = 210

   $\therefore$ Required% = $\left(\dfrac{210}{700} \times 100\right)$% = 30%

MEANINGS IN ALPHABETICAL ORDER

Alimony	a husband's or wife's court-ordered provision for a spouse after separation or divorce	गुजारा–भत्ता
Aromatic	having a pleasant and distinctive smell	सुगन्धित
Assassin	a murderer of an important person in a surprise attack for political or religious reasons	हत्यारा
Befit	be appropriate for	के अनुकूल
Clad	clothed	कपड़े पहने हुए
Commensurate	corresponding in size or degree; in proportion	(किसी वस्तु) के अनुरूप
Condole	express sympathy for (someone)	दुःख में हमदर्दी दिखाना
Console	comfort (someone) at a time of grief or disappointment	सांत्वना देना
Fable	a short story, typically with animals as characters, conveying a moral	जानवरों के किरदारों वाली एक नीति कथा
Fiasco	a complete failure	असफलता
Kleptomaniac	a person who cannot control their desire to steal things, usually because of a medical condition	वह व्यक्ति जो आमतौर पर अपनी चिकित्सीय स्थिति के कारण चीज़ों को चोरी करने की अपनी इच्छा को नियंत्रित नहीं कर सकता हो
Optometrist	A person who has a profession of examining the eyes for visual defects and prescribing corrective lenses	आँखों के लिए लेंस बनाने वाला
Pantheist	one who practice a doctrine that equates God with the forces and laws of the universe	वह ब्रह्मांड की शक्तियों और उसके को भगवान मानता है
Parsimony	extreme unwillingness to spend money or use resources	मितव्ययिता
Pedantic	showing much knowledge	पांडित्य पूर्ण
Perennial	lasting or existing for a long or apparently infinite time	चिरस्थायी
Philanderer	a man who readily or frequently enters into casual sexual relationships with women	स्त्री लोलुप
Rhetoric	the art of effective or persuasive speaking or writing	वाकपटु
Tart	sharp or acid in taste	खट्टा
Verbatim	in exactly the same words	शब्दशः

SSC MOCK TEST - 389 (ANSWER KEY)

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

76. (D) No error

77. (A) 'Bacteria' is a plural noun, hence it is followed by a plural verb. Change 'is' into 'are'.

86. (C) Verb 'prefer' is followed by 'to'.

87. (C) No improvement. 'Taxes' is Third Person Plural Noun, therefore, 'they' should be used for it.

90. (B) The correct spelling of 'Optomatrist' is 'Optometrist'.

91. (B) The correct spelling of 'Perenial' is 'Perennial'.