

SSC MOCK TEST - 420 (SOLUTION)

1. (1) Angioplasty is used to treat Heart problem, while Dialysis is used to treat Kidney problem.

2. (2) As, $5^3 + 1 = 126$

And, $10^3 + 1 = 1001$

Similarly, $7^3 + 1 = 344$

3. (3) Except Cotton, others are food crops.

4. (3) (1) $81 + (8 + 1) = 90$

(2) $84 + (8 + 4) = 96$

(3) $75 + (7 + 5) = 87 \neq 84$

(4) $64 + (6 + 4) = 74$

5. (4) As,

And,

14	15	9	19	5
N	O	I	S	E
↓	↓	↓	↓	↓
1+4	1+5	9	1+9	5
↓	↓	↓	↓	↓
5	6	9	10	5
↓	↓	↓	↓	↓
5	6	9	1	5

19	15	21	18	3	5
S	O	U	R	C	E
↓	↓	↓	↓	↓	↓
1+9	1+5	2+1	1+8	↓	↓
↓	↓	↓	↓	↓	↓
10	6	3	9	3	5
↓	↓	↓	↓	↓	↓
1	6	3	9	3	5

⇒ 56915

⇒ 163935

Similarly,

13	15	14	4	1	25
M	O	N	D	A	Y
↓	↓	↓	↓	↓	↓
1+3	1+5	1+4	↓	↓	2+5
↓	↓	↓	↓	↓	↓
4	6	5	4	1	7

⇒ 465417

6. (3) $18 \times \frac{3}{2} = 27$

$27 \times \frac{4}{2} = 54$

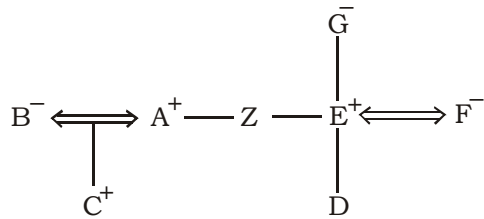
$54 \times \frac{5}{2} = 135$

$135 \times \frac{6}{2} = 405$

7. (1)

A	Z	B	Y	C	X	D	W	E	V
↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
	+1		+1		+1		+1		+1
	↓		↓		↓		↓		↓
	-1		-1		-1		-1		-1

8. (3)



Hence, G is the mother of Z.

9. (3)

As, $18 + (1 + 8) = 27$

$27 \times (2 + 7) = 243$

Similarly, $24 + (2 + 4) = 30$

$30 \times (3 + 0) = 90$

10. (2)

l m j q r / l m j q r / l m j q r

11. (4)

12. (2)

In the first row,

$(18 + 13) \times (18 - 13) = 155$

In the second row,

$(29 + 22) \times (29 - 22) = 357$

In the third row,

$(46 + 44) \times (46 - 44) = 180$

13. (1)

$225 \times 5 + 4 \div 2 - 18 = 35$

Change \times and \div ,

$225 \div 5 + 4 \times 2 - 18 = 35$

$45 + 8 - 18 = 35$

$53 - 18 = 35$

$35 = 35$

14. (1)

At 6'o clock the hour hand is at 6 and minute hand is at 12, so they are 30 min apart.

Now to be together minute hand has to gain minutes over the hour hand.

Time taken to gain 55 minutes = 60 minutes

Time taken to gain 1 minute = $\frac{60}{55}$ minutes

Time taken to gain 30 min = $\frac{60}{55} \times 30 = \frac{360}{11}$ minutes

So, the hands will coincide at $32\frac{8}{11}$ min past 6

15. (4)

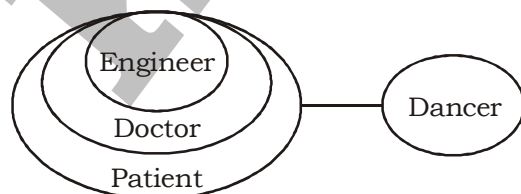
2. Seed \rightarrow 3. Sprout \rightarrow 5. Sapling \rightarrow 1. Plant \rightarrow 4. Tree

16. (2)

$T > S > R > Q > P$

Hence, T is the tallest among them.

17. (3)



I. True

II. True

III. True

Hence, all the conclusions follow.

18. (3)

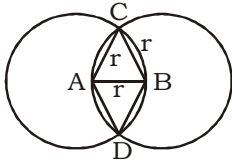
19. (4)

20. (1) As, $(17 - 8) \times 8 = 72$
Similarly, $(25 - 11) \times 11 = 154$
21. (3) As, RETAILER → Alphabetical order → AEEILRRT
And, SPEAKER → Alphabetical order → AEEKPRS
Similarly, VEGETABLE → Alphabetical order → ABEEEGLTV
22. (2) 23. (1) 24. (1) 25. (3)
26. (2) Tide clocks are popular clocks are used by surfers, sailors, and anyone else who is concerned with the tidal cycle. They run on a 12 hour and 25 or 26 minute cycle, which is the time it taken for the high tide to ebb and flow back to high tide again.
27. (2) Nawabganj Bird Sanctuary, renamed in 2015 Shahid Chandra Shekhar Azad Bird Sanctuary, is a bird sanctuary located in Unnao district on the Kanpur-Lucknow highway in Uttar Pradesh, India consisting of a lake and the surrounding environment.
28. (1) Article 3 of the Indian Constitution deals with formation of new States of the Indian Union can be re-organized of their boundaries altered by an executive order of the Union government with the consent of the concerned state government by a simple majority in the ordinary process of legislation.
29. (2) In the S.R. Bommai Case in Union of India (1994) Justice Sawant and Kuldeep Singh observed that Federalism and secularism was an essential feature of our Constitution and were a part of basic structure. In this case, the Supreme Court discussed at length provisions of Article 356 of the Constitution of India.
30. (2) Celebrity chef Amrita Raichand is the Health Ambassador for the Salaam Bombay Foundation's Preventive Health Education Programme. Raichand works with the program to educate adolescents about the importance of proper nutrition and fitness.
31. (1)

Rank	Country	Uranium Reserves
1.	Australia	1,706,100
2.	Kazakhstan	679,300
3.	Russian Fed	505,900
4.	Canada	493,900
32. (4) When heated from 0° to 10° C volume of a given mass of water will first decrease and then increase. If the word "ice" or "solid" is not mentioned, the word "water" means liquid water. Water vapour can be produced from the evaporation or boiling of liquid water. So the volume first decreases and then increases again when water droplets form the vapours due to stoppage of heat.
34. (3) Sound is sequence of waves of pressure that propagates through compressible media such as air or water. Sound that is perceptible by humans has frequencies from about 20 Hz to 20,000 Hz. In air at standard temperature and pressure, the corresponding wavelengths of sound waves can be reflected, refracted, or attenuated by the medium. Now if we consider these cases, then the train arriving has whistles of higher pitch because it propagates through a medium which is coming towards us but the train which is leaving propagating through a medium moving further away from the listener and thus produces whistle of lower pitch.
35. (4) India's earliest contact with Islam came through Arab merchants of the Malabar coast.
36. (4) After publishing a series of books and articles arguing that Buddhism was the only way for the untouchables to gain equality, Ambedkar publicly converted on October 14, 1956. After receiving ordination Ambedkar gave dhamma diksha to his followers. On 16th October, 1956, Ambedkar performed another mass religious conversion ceremony at Chanda.
37. (1) Chandragiri Fort is a historical fort, built in the 11th century located in Chandragiri, Tirupati in Andhra Pradesh, India. Chandragiri was under the rule of Yadava Naidus for about three centuries and came into control of Vijayanagar rulers in 1367.
39. (3) Penicillin is produced from the genus of fungi "Penicillin". All penicillin are alactam antibiotics and are used in the treatment of bacterial infections caused by susceptible, usually gram-positive, organisms.
40. (4) The Modi script was used to write the Marathi language spoken in the Indian state of Maharashtra. It originated as a cursive variant of the script during the 17th century CE. Modi was used until the 1950's when Devanagari replaced it as the written medium of the Marathi language.

43. (2) The Standing Committee on Labour, Textiles and Skill Development chaired by Bhartruhari Mahtab submitted its report on 'Implementation of Pradhan Mantri Kaushal Vikas Yojana (PMKVY)'.
44. (4) Upanayana is one of the traditional Samskaras (rites of passage) that marked the acceptance of a student by a guru (teacher) and an individual's entrance to a school in Hinduism. The tradition is widely discussed in ancient Sanskrit texts of India and varies regionally.
46. (3) A cricketer lowers his hands while taking a catch to decrease the rate of momentum. Cricketers increase the time by pulling their hand's backward with ball while taking a catch. Linear momentum or translational momentum is the product of the mass and velocity of an object.
47. (4) The hepatic portal vein is a blood vessel that carries blood from the gastrointestinal tract and spleen to the liver. This blood is rich in nutrients that have been extracted from food.
48. (1) Tansen studied music for eleven years with Swami Haridas. He was the one who created Raga Miyan Ki Malhar.
49. (4) Edward Teller, Stanislaw M. Ulam, and other American scientists developed the first hydrogen bomb, which was tested at Enewetak atoll on November 1, 1952.
50. (3) India's debutant Sai Sudharsan was awarded the 'Impact Fielder of the Series' medal by India's fielding coach Ajay Ratra after the KL Rahul-led side clinched the 3-match ODI series against South Africa 2-1.

51. (3)



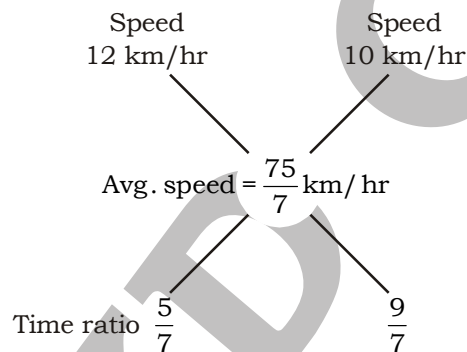
ΔABC and ΔABD are equilateral triangles.

$$AB = AC = BC = BD = AD = r$$

$$\angle DBC = \angle CBA + \angle DBA$$

$$= 60^\circ + 60^\circ = 120^\circ$$

52. (1)



So, ratio = 5 : 9

$$(5 + 9) \text{ unit} = 7 \text{ hours}$$

$$14 \text{ unit} = 7 \text{ hours}$$

$$1 \text{ unit} = \frac{7}{14} \text{ hour}$$

$$5 \text{ unit} = \frac{7}{14} \times 5 = \frac{35}{14} \text{ hours}$$

$$\text{Total distance cover at } 12 \text{ km/hr} = 12 \times \frac{35}{14} = 30 \text{ km}$$

53. (1) $(a^2 + 2a)^2 + 12(a^2 + 2a) - 45$

Let $(a^2 + 2a) = x$

$= x^2 + 12x - 45$

$= x^2 + 15x - 3x - 45$

$= x(x + 15) - 3(x + 15)$

$= (x - 3)(x + 15)$

Put the value of x ,

$(a^2 + 2a - 3)(a^2 + 2a + 15)$

$= (a^2 + 3a - a - 3)(a^2 + 2a + 15)$

$= \{a(a + 3) - 1(a + 3)\}(a^2 + 2a + 15)$

$= (a - 1)(a + 3)(a^2 + 2a + 15)$

54. (2) $A : B = 5 : 4$

Total profit is 100%, but 90% profit is shared between them as 10% goes to charity.

5 unit = 7500

9 unit = $\frac{7500}{5} \times 9$

9 unit = 90%

As, 90% = $\frac{7500}{5} \times 9$

100% = $\frac{7500}{5 \times 90} \times 9 \times 100 = ₹15000$

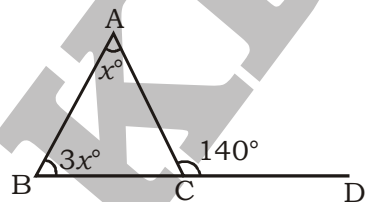
55. (1) Upstream speed, $U = \frac{2}{2} = 1 \text{ km/hr}$

Downstream speed, $D = \frac{1}{\frac{1}{3}} = 3 \text{ km/hr}$

Speed of boat in still water = $\frac{D+U}{2} = \frac{3+1}{2} = 2 \text{ km/hr}$

So, required time = $\frac{5}{2}$ hours = 2 hours 30 minutes

56. (3)



$\angle A + \angle B = 140^\circ$

$x + 3x = 140^\circ$

$4x = 140^\circ$

$x = 35^\circ$

$\angle A = 35^\circ$

57. (2) Let the time taken be x hours.

ATQ,

$$3 \times 8 \times 2 = 4 \times x \times 1$$

$$x = 12 \text{ hours}$$

58. (4) L.C.M of 3, 5, 7, 8 = 840

$$840) 28523 (34$$

$$\underline{2520}$$

$$3323$$

$$\underline{3360}$$

$$- 37$$

So, 37 is the least number which should be added.

59. (1) Let the amount A be ₹ x .

$$\text{Amount B} = ₹(36000 - x)$$

ATQ,

$$\frac{x \times 15 \times 4}{100} = \frac{(36000 - x) \times 15 \times 6}{100}$$

$$2x = 108000 - 3x$$

$$5x = 108000$$

$$x = \frac{108000}{5} = ₹21600$$

$$\text{Amount B} = 36000 - 21600 = ₹14400$$

$$\therefore \text{Total interest received} = \frac{21600 \times 15 \times 4}{100} + \frac{14400 \times 15 \times 6}{100}$$

$$= 12960 + 12960 = ₹25920$$

60. (2)
$$\frac{\sin(A+B) - 2\sin A + \sin(A-B)}{\cos(A+B) - 2\cos A + \cos(A-B)}$$

$$= \frac{\sin A \cos B + \cos A \sin B + \sin A \cos B - \cos A \sin B - 2\sin A}{\cos A \cos B - \sin A \sin B + \cos A \cos B + \sin A \sin B - 2\cos A}$$

$$= \frac{2\sin A \cos B - 2\sin A}{2\cos A \cos B - 2\cos A} = \frac{2\sin A(\cos B - 1)}{2\cos A(\cos B - 1)} = \frac{\sin A}{\cos A} = \tan A$$

61. (4) Let the speed of man in still water be x km/hr.

$$\text{Speed of stream} = 3 \text{ km/hr}$$

$$\text{Speed of man in upstream} = (x - 3) \text{ km/hr}$$

$$\text{Speed of man in downstream} = (x + 3) \text{ km/hr}$$

ATQ,

$$\frac{D}{x-3} = 9 \quad \dots\dots(i)$$

$$\frac{D}{x+3} = 6 \quad \dots\dots(ii)$$

Dividing equation (i) by (ii), we get

$$\frac{x+3}{x-3} = \frac{9}{6}$$

$$6x + 18 = 9x - 27$$

$$3x = 45$$

$$x = \frac{45}{3} = 15 \text{ km/hr}$$

62. (3) To get 25% profit quantity of water mixed in one litre of milk = $1 \times \frac{25}{100} = \frac{1}{4}$

63. (1) Part of the cistern filled in 3 minutes = $\frac{3}{12} + \frac{3}{16} = \frac{21}{48} = \frac{7}{16}$

Remaining part = $1 - \frac{7}{16} = \frac{9}{16}$ part

Let remaining $\frac{9}{16}$ part was filled in x minutes.

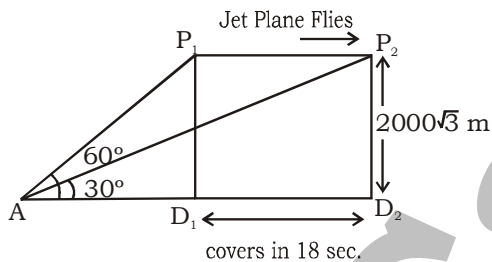
ATQ,

$$\frac{x}{12} \times \frac{7}{8} + \frac{x}{16} \times \frac{5}{6} = \frac{9}{16}$$

$$= x \left(\frac{7+5}{96} \right) = \frac{9}{16}$$

$$x = \frac{9}{16} \times \frac{96}{12} = 4.5 \text{ minutes}$$

64. (1)



In $\triangle AP_1D_1$,

$$\tan 60^\circ = \frac{P_1D_1}{AD_1} = \frac{2000\sqrt{3}}{AD_1}$$

$$\sqrt{3} = \frac{2000\sqrt{3}}{AD_1}$$

$$AD_1 = 2000 \text{ m}$$

In $\triangle AP_2D_2$,

$$\tan 30^\circ = \frac{P_2D_2}{AD_2} = \frac{2000\sqrt{3}}{AD_2}$$

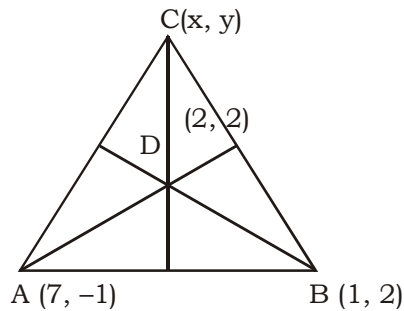
$$\frac{1}{\sqrt{3}} = \frac{2000\sqrt{3}}{AD_2}$$

$$AD_2 = 6000 \text{ m}$$

$$D_1D_2 = 6000 - 2000 = 4000 \text{ m}$$

$$\text{Speed of the Jet} = \frac{4000}{18} \times \frac{18}{5} = 800 \text{ km/h}$$

65. (1)



Let co-ordinate of vertex C be (x, y).

$$2 = \frac{7+1+x}{3}$$

$$6 = 8 + x$$

$$x = -2$$

$$2 = \frac{-1+2+y}{3}$$

$$6 = 1 + y$$

$$y = 5$$

$$\therefore (x, y) = (-2, 5)$$

66. (4)
$$\frac{8x}{3} + \frac{7\left(5 - \frac{2x}{3}\right)}{2} = \frac{1}{2}$$

$$\frac{8x}{3} + \frac{35 - \frac{14}{3}x}{2} = \frac{1}{2}$$

$$\frac{8x}{3} + \frac{105 - 14x}{6} = \frac{1}{2}$$

$$\frac{16x + 105 - 14x}{6} = \frac{1}{2}$$

$$2x + 105 = 3$$

$$2x = 3 - 105$$

$$2x = -102$$

$$x = -\frac{102}{2}$$

$$x = -51$$

67. (3) Number of diagonals = $\left[\frac{n \times (n-1)}{2} - n \right]$

$$= \left[\frac{8 \times (8-1)}{2} - 8 \right] = 20$$

68. (4) Let the number of red balls = 100
Number of white balls = 160

$$\text{Number of green balls} = 160 \times \frac{87.5}{100} = 140$$

$$\text{Ratio of red, white and green balls} = 100 : 160 : 140 = 5 : 8 : 7$$

$$\therefore \text{Number of green balls} = \frac{120}{20} \times 7 = 42$$

69. (3) 45082K is divisible by 3.
So, $(4 + 5 + 0 + 8 + 2 + K)$ is also divisible by 3.
 $(19 + K)$ is divisible by 3.
The greatest value of $K = 8$
The smallest value of $K = 2$

$$\therefore \text{Required sum} = 8^2 + 2^2 = 68$$

70. (1) $\left(\frac{7}{16} \div \frac{1}{2} \text{ of } \frac{1}{5}\right) \times \frac{4}{5} - \frac{1}{3} \times \frac{5}{8} \div \frac{1}{2} + \frac{3}{4}$

$$= \frac{7}{16} \times \frac{10}{1} \times \frac{4}{5} - \frac{1}{3} \times \frac{5}{8} \times \frac{2}{1} + \frac{3}{4}$$

$$= \frac{7}{2} - \frac{5}{12} + \frac{3}{4} = \frac{42 - 5 + 9}{12} = \frac{46}{12} = \frac{23}{6}$$

71. (4) $2 \cos^2 \theta - 5 \cos \theta + 2 = 0$
 $2 \cos^2 \theta - 4 \cos \theta - \cos \theta + 2 = 0$
 $2 \cos \theta (\cos \theta - 2) - 1(\cos \theta - 2) = 0$
 $(2 \cos \theta - 1)(\cos \theta - 2) = 0$

$$\cos \theta = \frac{1}{2}, 2$$

$$\cos \theta = \cos 60^\circ \text{ (2 can't be taken as } 0^\circ < \theta < 90^\circ)$$

$$\theta = 60^\circ$$

$$\therefore \sec \theta + \sin \theta = \sec 60^\circ + \sin 60^\circ = 2 + \frac{\sqrt{3}}{2} = \frac{4 + \sqrt{3}}{2}$$

72. (3) Number of students who use bus = 150

$$\therefore \text{Required percentage} = \frac{150}{660} \times 100 = \frac{250}{11} = 22\frac{8}{11}\%$$

73. (3) Total numbers of males in Banking and Medical professions

$$= 25000 \times \frac{20}{100} \times \frac{60}{100} + 25000 \times \frac{10}{100} \times \frac{40}{100}$$

$$= 3000 + 1000 = 4000$$

$$\text{The total number of females in Medical and Banking profession} = 10\% \text{ of } 60\% \text{ of } 25000 + 20\% \text{ of } 40\% \text{ of } 25000 = 1500 + 2000 = 3500$$

$$\therefore \text{Required ratio} = \frac{4000}{3500} = \frac{8}{7} = 8 : 7$$

74. (1) Required average = $\frac{3.34 + 5.83 + 1.69}{3} = \frac{10.86}{3} = ₹3.62 \text{ lakh}$

75. (3) Total_M = $7000000 \times \frac{10.6}{100} = 742000$

Males are 53.2%,

So females = $100 - 53.2 = 46.8\%$

Difference = $53.2\% - 46.8\% = 6.4\%$

Required difference = $742000 \times \frac{6.4}{100} = 47488$

KD

Campus

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 चीजों 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 - 420 (ANSWER KEY)

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

76. (4) No error
77. (1) 'Bacteria' is a plural noun, hence it is followed by a plural verb. Change 'is' into 'are'.
86. (3) Verb 'prefer' is followed by 'to'.
87. (3) No improvement. 'Taxes' is Third Person Plural Noun, therefore, 'they' should be used for it.
90. (2) The correct spelling of 'Optomatrist' is 'Optometrist'.
91. (2) The correct spelling of 'Perenial' is 'Perennial'.