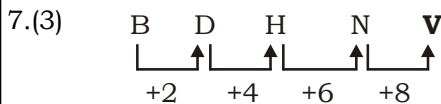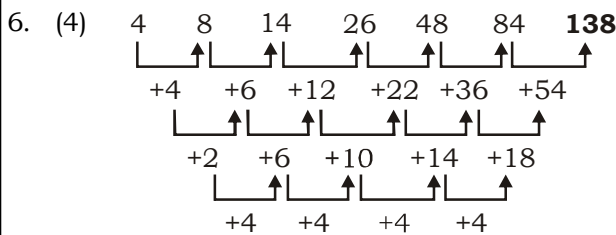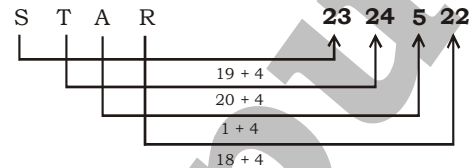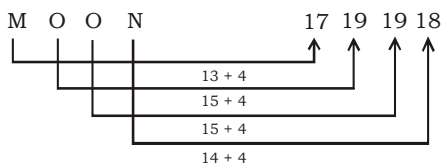## SSC MOCK TEST - 426 (SOLUTION)

1. (1) As, $6^5 = 7776$

   Similarly, $8^5 = 32768$

2. (1) Green Revolution is related to Agriculture, while Blue Revolution is related to Fisheries.

3. (1) Except 1261, others are divisible by 37.

4. (3) Except Slavery, others are related to each other.
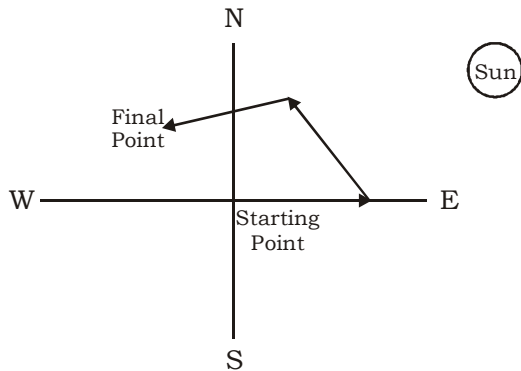
5. (3) As,   Similarly,

   M O O N   17 19 19 18   S T A R   **23 24 5 22**

   13 + 4   19 + 4
   15 + 4   20 + 4
   15 + 4   1 + 4
   14 + 4   18 + 4

6. (4) 4   8   14   26   48   84   **138**

   +4   +6   +12   +22   +36   +54

   +2   +6   +10   +14   +18

   +4   +4   +4   +4

7. (3) B   D   H   N   **V**

   +2   +4   +6   +8

8. (3)

   Rajan
   Only Son ↓   Daughter-in-law
   Rajesh$^{(+)}$ Ankita$^{(-)}$
   │   │
   Preeti$^{(-)}$ Amit$^{(+)}$
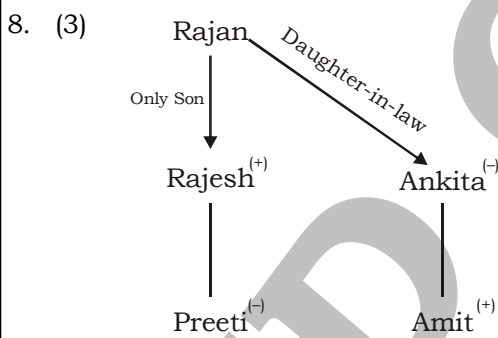
   Hence, Priti is the sister of Amit.

9. (1) As, $(3 + 2 + 4) \times (6 + 7 + 3) = 144$

   Similarly, $(8 + 3 + 4) \times (1 + 2 + 3) = 90$

10. (4) l**d**k**m**r/l**d**km**r**/ldk**m**r

11. (1) 5 is opposite to 6.

12. (4) **In the first column,**

    $18 + 125 = 143 \Rightarrow 1 \times 4 \times 3 = 12$

    In the second column,

    $19 + 134 = 153 \Rightarrow 1 \times 5 \times 3 = 15$

    In the third column,

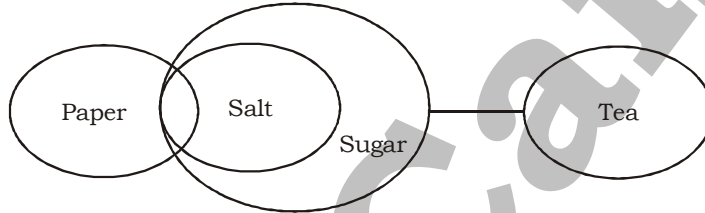 $24 + 216 = 240 \Rightarrow 2 \times 4 \times 0 = 0$

13. (1) $25 + 32 – 18 ÷ 6 × 4 + 5 = 46$
After changing 4 and 5,
$25 + 32 – 18 ÷ 6 × 5 + 4 = 46$
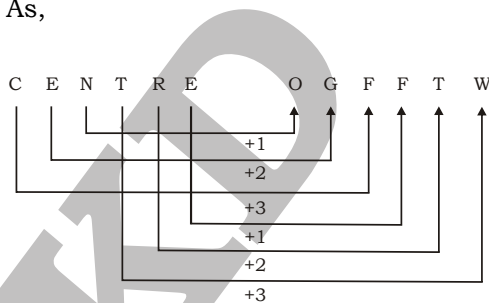$25 + 32 – 3 × 5 + 4 = 46$
$61 – 15 = 46$
$46 = 46$

14. (2)

Hence, he is facing South-West direction now.

15. (1)   4. Egg $\to$ 2. Larva $\to$ 1. Pupa $\to$ 3. Moth

16. (2)

17. (4)

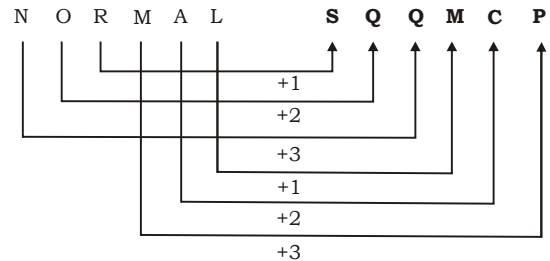
I. False   II. False   III. True
Hence, only conclusion III follows.

18. (4)   19. (4)

20. (3)   As,   Similarly,

21. (4)   As, $162 – 126 = 36 \Rightarrow \sqrt{36} = 6$

Similarly, $164 – 115 = \sqrt{49} = 7$

22. (1)

23. (2)   As, $(28 – 3)^2 + 1 = 626$
And, $(31 – 3)^2 + 1 = \mathbf{785}$
Similarly, $(23 – 3)^2 + 1 = 401$

24. (2)   25. (3)

26. (3) Buddha travelled through the towns and villages in the kingdoms of Kosala and Magadha teaching his philosophy.

28. (2) 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.

30. (3) The Government enacted the Panchayat Extension to Scheduled Areas (PESA) Act in 1996. Which one of the following is not identified as its objective? PESA doesn't deal with creation of autonomous regions in tribal areas

31. (3) The atmosphere is mostly heated by the Radiation process. The air/fluid molecules heated up the atmosphere again and again.

32. (1) 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.

33. (3) Babur established the Timurid dynasty in India. Hence statement 3 is correct. Babur was a descendant of Timurid dynasty or clan of Turco-Mongol lineage, descended from the warlord Timur and led to the establishment of Timurid dynasty in the region.

34. (4) 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.

35. (1) Union Culture Minister G. Kishan Reddy inaugurated the foundation stone for India's digital National Museum of Epigraphy at the Salar Jung Museum, Hyderabad. Managed by the Archaeological Survey of India, the museum aims to digitize one lakh ancient inscriptions from various periods and languages, aligning with the Bharat Shared Repository of Inscriptions initiative.

36. (4) 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.

37. (1) 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.

39. (2) 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.

40. (4) The alluvial soils vary in nature from sandy loam to clay. They are generally rich in potash but poor in phosphorous.

42. (3) Religious and Linguistic minorities.

43. (3) 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.

44. (3) The Mera Gaon Meri Dharohar (MGMD) program, initiated by the Ministry of Culture, aims to culturally map India's 6.5 lakh villages, encompassing 29 States and 7 Union Territories. Launched on July 27, 2023, under the National Mission on Cultural Mapping, it compiles information on seven categories, from arts and crafts to historical and ecological aspects.

45. (1) Troposphere, The troposphere is the lowest layer of the Earth's atmosphere. The air is very well mixed and the temperature decreases with altitude.

48. (1) World Health Organisation (WHO) was formed in the year 1948. Its main purpose is to promote health care, provide technical support and monitor health trends. Its headquarters is in Geneva, Switzerland.

49. (1) Random-Access memory (RAM) and cache memory are common examples of primary storage devices.

50. (2) New maps reveal a hidden hydrothermal system under Lake Rotorua, at a dormant volcano's heart in New Zealand. Hydrothermal systems, common near convergent plate boundaries and mid-ocean ridges, need fluids, heat, and permeability.

51. (1)   Distance moved by A in 1 hour = 20 km

Then, distance between A and B at 12 pm = 110 – 20 = 90 km

Relative speed of A and B after 12 pm = 20 – 15 (Since B is moving away from A) = 5 km/hr

Now, time taken by A to meet B = $\dfrac{90}{5}$ = 18 hour

Therefore, they will meet the next day at 6 am.

52. (3)   A's one day's work = $\dfrac{1}{12}$

A's three day's work = $\dfrac{3}{12} = \dfrac{1}{4}$

Remaining work = $1 - \dfrac{1}{4} = \dfrac{3}{4}$

(A + B) complete the $\dfrac{3}{4}$ th work in 3 days.

(A + B) complete the work in $3 \times \dfrac{4}{3}$ = 4 days

∴   B's one day's work = $\dfrac{1}{4} - \dfrac{1}{12} = \dfrac{3-1}{12} = \dfrac{2}{12} = \dfrac{1}{6}$

Hence, B can complete the work in 6 days.

53. (2)   Let 'X' be the number of pen that a shopman bought.

CP of 1 pen = $\dfrac{10}{7}$

Profit = 40%

Hence, SP of one pen $= \dfrac{10}{7} + \dfrac{\left\{40 \times \left(\dfrac{10}{7}\right)\right\}}{100} = \dfrac{10}{7} + \dfrac{4}{7} = \dfrac{14}{7}$ = ₹2

Hence, number of pen that a customer gets for ₹10 = $\dfrac{10}{2}$ = 5

54. (1) $2\sin^2\theta + 5\cos\theta - 4 = 0$

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

$2\cos^2\theta - 5\cos\theta + 2 = 0$

$2\cos^2\theta - 4\cos\theta - \cos\theta + 2 = 0$

$(2\cos\theta - 1)(\cos\theta - 2) = 0$

Hence, $\cos\theta = \dfrac{1}{2}$

$\theta = 60°$

Hence, $\cos\theta + \mathrm{cosec}\theta = \cot 60° + \mathrm{cosec}\,60°$

$= \dfrac{1}{\sqrt{3}} + \dfrac{2}{\sqrt{3}} = \dfrac{3}{\sqrt{3}} = \sqrt{3}$

55. (4) The simple interest on a sum of money for 3 years at an interest rate of 6% p.a. is ₹6750.

$$SI = \frac{P \times R \times T}{100}$$

$$6750 = \frac{P \times 6 \times 3}{100}$$

$$P = \frac{675000}{18} = 37500$$

Now, we will find compound interest on ₹37500 for 3 years at an interest rate of 6% p.a.

$$CI = P\left(1 + \frac{R}{100}\right)^T - P = 37500\left(1 + \frac{6}{100}\right)^3 - 37500$$

$$= \left(37500 \times \frac{106}{100} \times \frac{106}{100} \times \frac{106}{100}\right) - 37500$$

$$= 44663.1 - 37500 = ₹7163.1$$

56. (4) Given that length, breadth and height of a cuboidal box are in the ratio 7 : 5 : 3.

Let length of a cuboidal box = 7x

Breadth of a cuboidal box = 5x

Height of a cuboidal box = 3x

Total surface area of cuboidal box = 2(lb + bh + hl)

2(lb + bh + hl) = 27832

$2(35x^2 + 15x^2 + 21x^2) = 27832$

$14x^2 = 27832$

$x^2 = 196$

x = 14

So, volume of cuboidal box = l × b × h

l × b × h = (7 × 14) × (5 × 14) × (3 × 14) = 288120 cm³

57. (1) Required number = LCM (4, 6, 8, 12, 16) + 2 = 48 + 2 = 50

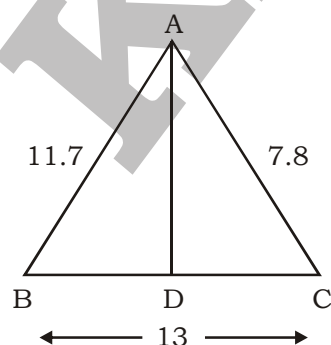58. (1) If $a^2 + b^2 + 1 = 2a$

$a^2 + b^2 + 1 - 2a = 0$

$(a^2 - 2a + 1) + b^2 = 0$

$(a - 1)^2 + b^2 = 0$

a = 1 and b = 0, because for any other value, it will not be equal to 0.

So, $a^4 + b^6 = 1^4 + 0^6 = 1 + 0 = 1$

59. (4)

From angle bisector theorem,

$$\frac{AB}{AC} = \frac{BD}{DC}$$

$$\frac{BD}{DC} = \frac{11.7}{7.8}$$

Let BD = 11.7x

DC = 7.8x

BD + DC = BC

19.5x = 13

Then x = $\dfrac{13}{19.5}$

$\therefore$ Required DC = 7.8x = 7.8 × $\dfrac{13}{19.5}$ = 5.2 cm

60. (3) Consider $(2^{24} – 1)$ is divided by 7.

$2^{24} – 1 = (2^3)^8 – 1^8 = 8^8 – 1^8$

We know that $a^n – b^n$ is exactly divisible by $(a – b)$.

Hence, $8^8 – 1^8$ will be exactly divisible by $(8 – 1)$.

$8^8 – 1^8$ will be exactly divisible by (7).

$(2^{24} – 1)$ will be exactly divisible by 7.

Therefore, Required remainder = 0

61. (4) Total present age of husband, wife and child = 27 × 3 + 3 × 3 = 81 + 9 = 90 years

Present age of wife and child = 20 × 2 + 5 × 2 = 40 + 10 = 50 years

$\therefore$ Present age of the husband will be = 90 – 50 = 40 years

62. (1) $31\dfrac{2}{5} \div \left[168 \div \dfrac{3}{7} \text{ of } 28 \div \left(33 \div \dfrac{5}{2}\right) + \left(7\dfrac{3}{5} - 3\dfrac{2}{5}\right)\right]$

$\dfrac{157}{5} \div \left[168 \div \dfrac{3}{7} \text{ of } 28 \div \left(33 \div \dfrac{5}{2}\right) + \left(\dfrac{38}{5} - \dfrac{17}{5}\right)\right]$
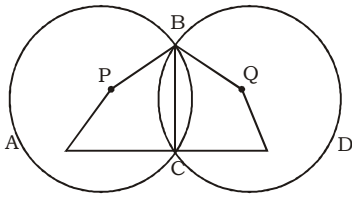
$\dfrac{157}{5} \div \left[168 \div 12 + \left(\dfrac{66}{5}\right) + \left(\dfrac{38}{5} - \dfrac{17}{5}\right)\right]$

$\dfrac{157}{5} \div \left[14 + \left(\dfrac{66}{5}\right) + \left(\dfrac{21}{5}\right)\right]$

$\dfrac{157}{5} \div \left[14 + \dfrac{87}{5}\right]$

$\dfrac{157}{5} \div \left[\dfrac{157}{5}\right] = 1$

63. (2)

∠APB = 130°

$\angle BCA = \dfrac{130°}{2} = 65°$

∠BCD = 180° – 65° = 115°   (Straight angle)

External ∠BQD = 2 × 115° = 230°

∴   ∠BQD = 360° – 230° = 130°

64. (1) $\dfrac{2\sin\theta - \cos\theta}{\cos\theta + \sin\theta} = 1$

Dividing numerator and denominator by sinθ,

$$\dfrac{\dfrac{2\sin\theta - \cos\theta}{\sin\theta}}{\dfrac{\cos\theta + \sin\theta}{\sin\theta}} = 1$$

$\dfrac{2 - \cot\theta}{\cot\theta + 1} = 1$

2 – cot θ = cotθ + 1

2 cot θ = 1

∴   cot θ = $\dfrac{1}{2}$

65. (4)
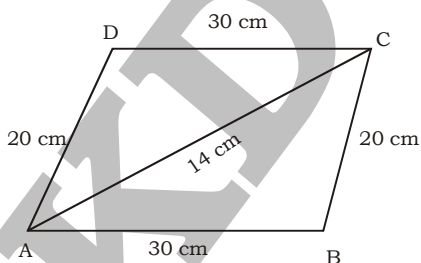
In parallelogram, diagonal bisects the area in two equal parts.

Now, Area of △ADC = Area of △ABC

In △ADC,

Semi – perimeter. $s = \dfrac{20 + 30 + 44}{2} = \dfrac{94}{2} = 47$ cm

Area of $\triangle$ADC $= \sqrt{s(s-a)(s-b)(s-c)}$

$= \sqrt{47(47-20)(47-30)(47-44)}$

$= \sqrt{47 \times 27 \times 17 \times 3}$

$= \sqrt{47 \times 3 \times 3 \times 3 \times 17 \times 3} = 9\sqrt{799}\,\text{cm}^2$

$\therefore$ Area of parallelogram ABCD $= 2 \times 9\sqrt{799}\,\text{cm}^2 = 18\sqrt{799}\,\text{cm}^2$

66. (2) On dividing the given number by 340, then Let K be the quotient and 47 as remainder
number = 342 k × 47
= 19 × 18k + 19 × 2 + 9
= 19 (18 k + 2) + 9
The given number when divide by 19, gives (18k + 2) as quotient and 9 as remainder.

67. (3) Total bananas = 100
Remaining bananas = 100 – 21 = 79
Selling price of 79 bananas = 79 × 4.50 = ₹355.50

Cost price of 100 bananas = $\dfrac{355.50}{120} \times 100$ = ₹296.25

68. (4) Let the number of sides be n.

Each interior angle of a regular polygon $= 180° \left(\dfrac{n-2}{n}\right) - \dfrac{360°}{n} = 132°$

180n – 360 – 360° = 132n
180n – 132n = 720
48n = 720

$\therefore$ n = $\dfrac{720}{48}$ = 15

69. (3) CP of machine = 5400 + 800 = ₹6200

MP of machine $= 6200 \times \dfrac{124}{100}$ = ₹7688

Discount = 7688 – 7380.48 = ₹307.50

$\therefore$ Discount% $= \left(\dfrac{307.52 \times 100}{7688}\right)\%$ = 4%

70. (2) Total of 50 numbers = 50 × 38 = 1900

$\therefore$ Correct average $= \dfrac{1900 - 84 + 48}{50} = \dfrac{1864}{50}$ = 37.28

71. (4) Length of first and second train

$= (90 + 72) \times \dfrac{5}{18} \times 18$ = 810 meter

Ratio between length of second and first train = 2 : 1

$\therefore$ length of first train

$= \dfrac{810}{3} \times 1$ = 270 meter

$\therefore$ Required time $= \dfrac{270 + 135}{72 \times \dfrac{5}{18}} = \dfrac{405}{20}$ = 20.25 sec

72. (2) Average of five consecutive odd numbers = 27

Third number = 27

Numbers are = 23, 25, 27, 29, 31

New average = $\dfrac{(23+2)+(25-3)+(27+2)+(29-3)+(31+2)}{5}$

$= \dfrac{25+22+29+26+33}{5} = \dfrac{135}{5} = 27$

73. (1) Total number of students in school A in the given years

= 640 + 800 + 500 + 700 + 900 + 750 = 4290

Total number of students in school B in the given years

= 550 + 820 + 600 + 750 + 500 + 480 = 3700

∴ Required ratio = 4290 : 3700 = 429 : 370

74. (1) Average number of candidates qualified from Haryana and UP together

$= \dfrac{3250+1500}{2} = 2375$

Average number of candidates appeared from Haryana and UP together

$= \dfrac{3750+2500}{2} = 3125$

∴ Required% $= \left(\dfrac{2375}{3125}\times100\right)\% = 76\%$

75. (4) Average monthly income of D in all the years together

$= \dfrac{23000+24500+26100+27000+29300+31200}{6} = \dfrac{161100}{6} = ₹26850$

∴ Required difference = 44000 – 26850 = ₹17150

MEANINGS IN ALPHABETICAL ORDER

Appalling	causing shock or dismay; horrific	भय उत्पन्न करने वाला
Avid	having or showing a keen interest in or enthusiasm for something	उत्सुक
Carnivore	an animal that feeds on flesh	मांसभक्षी
Courageous	not deterred by danger or pain; brave	साहसिक
Delicious	highly pleasant to the taste	स्वादिष्ट
Delinquent	(typically of a young person or that person's behavior) showing or characterized by a tendency to commit crime, particularly minor crime	अपराधी
Despairing	showing the loss of all hope	निराश
Dictator	a ruler with total power over a country, typically one who has obtained control by force	तानाशाह
Disburse	pay out (money from a fund)	चुकाना
Disperse	distribute or spread over a wide area	फैलाना
Erratic	not even or regular in pattern or movement; unpredictable	अनियमित
Formidable	inspiring fear or respect through being impressively large, powerful, intense, or capable	दुर्जेय
Herbivore	an animal that feeds on plants	शाकाहारी
Identical	similar in every detail; exactly alike	समान
Immense	extremely large or great, especially in scale or degree	अत्यधिक
Indistinguishable	not able to be identified as different or distinct	अविवेच्य
Insectivore	an insectivorous animal or plant	कीटभक्षी
Irradiate	expose to radiation	चमकाना
Irreverent	showing a lack of respect for people or things that are generally taken seriously	बेअदब
Offending	causing problems or displeasure	हमलावर
Omnivore	an animal or person that eats food of both plant and animal origin	सर्वाहारी
Prodigious	remarkably or impressively great in extent, size, or degree	विलक्षण
Protector	a person or thing that protects someone or something	रक्षा करने वाला
Scary	frightening; causing fear	भयानक
Traitor	a person who betrays a friend, country, principle, etc	गद्दार
Trivial	of little value or importance	तुच्छ
Vicious	deliberately cruel or violent	शातिर

SSC MOCK TEST - 426 (ANSWER KEY)

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

76. (2) 'has' replace with 'had'.

77. (4) No error

90. (1) The correct spelling of 'Irradicate' is 'Irradiate'.

91. (4) The correct spelling of 'Deliceous' is 'Delicious'.