## SSC MOCK TEST - 289 (SOLUTION)
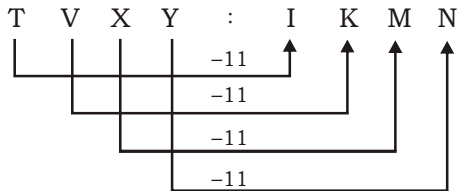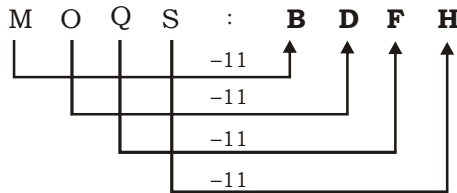
1.  (C) Guava is a Fruit, while Jasmine is a Flower.

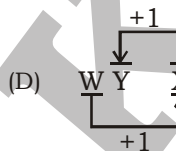2.  (B) As,

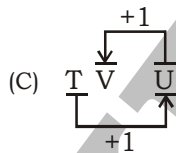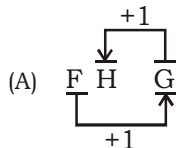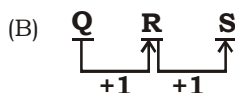    T   V   X   Y   :   I   K   M   N
    –11, –11, –11, –11

    Similarly,

    M   O   Q   S   :   **B   D   F   H**
    –11, –11, –11, –11

3.  (C) $\underset{37^2 - 37}{\underline{37} \quad : \quad \underline{1332}} \quad :: \quad \underset{39^2 - 39}{\underline{39} \quad : \quad \textbf{1482}}$

4.  (D) 84, 24 $\Rightarrow$ 24 × 2 = 48 $\Rightarrow$ 84
    23, 16 $\Rightarrow$ 16 × 2 = 32 $\Rightarrow$ 23
    63, 18 $\Rightarrow$ 18 × 2 = 36 $\Rightarrow$ 63
    **38, 30** $\Rightarrow$ 30 × 2 = 60 $\Rightarrow$ 06 $\neq$ 38

5.  (B)

    (A)  F   H   G
         +1 (top), +1 (bottom)

    (C)  T   V   U
         +1 (top), +1 (bottom)

    (D)  W   Y   X
         +1 (top), +1 (bottom)

    But,

    (B)  **Q   R   S**
         **+1   +1**

6.  (C) Except, others are hill stations.

7.  (B) 1. Geography $\rightarrow$ 5. Gerrothorax $\rightarrow$ 4. Ghost $\rightarrow$ 3. Grotesque $\rightarrow$ 2. Group

8.  (C)  11   19   46   110   235   **451**

$+2^3$   $+3^3$   $+4^3$   $+5^3$   $+6^3$

9.  (C)

$+4$   $+5$   $+6$   $+7$

I N,   N R,   T W,   A C,   **I J**

$+5$   $+6$   $+7$   $+8$
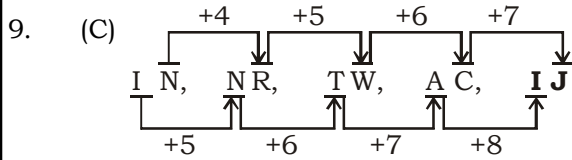
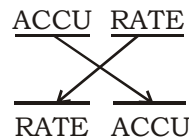10. (B)  $24 + 5 + 9 = 38$

$30 + 7 + 1 = 38$

$19 + 18 + \mathbf{1} = 38$

11. (D)  $(6 \times 7) + (8 + 4) = 42 + 12 = 54$

$(8 \times 4) + (12 + 7) = 32 + 19 = 51$

$(9 \times 5) + (14 + 9) = 45 + 23 = \mathbf{68}$

12. (C)  As,

ACCU   RATE

RATE   ACCU

Similarly,

REME   MBER

**MBER   REME**

13. (C)

| Raghav | Gopal | Amit | Deepa |
|--------|-------|------|-------|
| $2x + 3$ | $2x + 2$ | $2x$ | $x$ |

According to the question,

$x = 25$

And, $2x + 3 = 2 \times 25 + 3 = 53$

∴ Age of Raghav = 53 years

14. (A)

15. (A)  Ramesh$^{(+)}$ ⟺ Gaurvi$^{(-)}$

Murli$^{(+)}$ —— Hema$^{(-)}$ —— Prema$^{(-)}$
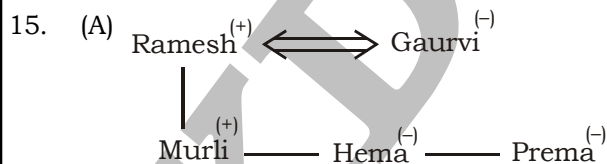
Hence, Ramesh is the father of Hema.

16. (A)
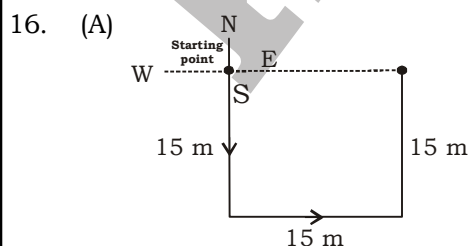
Now, Poonam is in 15 m. East from her starting point.

17. (B) Total number of books in the row = 16 + 6 + 12 – 1 = 34 – 1 = 33

18. (C) 15_3_4_20

From option (3),

15 ÷ 3 × 4 = 20

5 × 4 = 20

20 = 20

19. (B)

20. (B) From positions X and Y we conclude that 1, 5, 6 and 3 lie adjacent to 4. Therefore, 2 must lie opposite 4. From positions Y and Z we conclude that 4, 3, 2 and 5 lie adjacent to 6. Therefore, 1 must lie opposite 6. Thus, 2 lies opposite 4, 1 lies opposite 6 and consequently 5 lies opposite 3.

As analysed above, the number on the face opposite 4 is 2. In position Y, since 4 lies on the top, therefore 2 must lie at the bottom face.

21. (B)    22. (A)    23. (C)    24. (B)    25. (B)

27. (C) Deepika Padukone to receive Crystal Award by the World Economic Forum, for spreading mental health awareness.

28. (A) Monsoon forest, also called dry forest or tropical deciduous forest, open woodland in tropical areas that have a long dry season followed by a season of heavy rainfall.

29. (D) Tungabhadra Project: It is a joint undertaking of Andhra Pradesh and Karnataka. The project comprises a 2441 metres long and 50 metres high straight gravity masonry dam across the Tungabhadra (a tributary of Krishna river) at Mallapur in Bellary district of Karnataka, two irrigation canals and power houses on both sides of the dam.

30. (B) The Dashavatara Temple is one of the earliest known temples in North India and is dedicated to Lord Vishnu. The Dashavatara Temple or Vishnu Temple also called the Gupta temple is at Deogarh. It was built during the Gupta period.

31. (A) The judgement left Parliament with no power to curtail Fundamental Rights. To abrogate the ruling, the government intended to amend article 368 to provide expressly that Parliament has power to amend any provision of the Constitution, thereby bringing Fundamental Rights within the scope of its amending procedure.

33. (D) Tin is a chemical element with the symbol Sn (from Latin: stannum) and atomic number 50. Tin is a silvery metal that characteristically has a faint yellow hue.

36. (B) Commonly known as Rongali Bihu, it is celebrated in Assam during the middle of the month of April. This festival celebrates the onset of the Assamese New Year (around April 15) and the coming of Spring.

37. (B) Earth's gravity is what keeps you on the ground and what makes things fall.

38. (A) In August 1942, Gandhiji started the 'Quit India Movement' and decided to launch a mass civil disobedience movement 'Do or Die' call to force the British to leave India.

39. (A) The Garo Hills are part of the Garo-Khasi range in Meghalaya, India. They are inhabited mainly by tribal dwellers, the majority of whom are Garo people.

41. (D) Cinnabar is a toxic ore of mercury, composed of mercury sulfide (HgS).

42. (B) Rajendra I was the first to venture to the banks of Ganges. He was popularly called the Victor of the Ganges. His new empire capital was called the Gangaikondacholapuram where he received the title of 'Gangaikonda'.

45. (C) University of Delhi (B.A.) Kaushik Basu (born 9 January 1952) is an Indian economist who was Chief Economist of the World Bank from 2012 to 2016.

48. (A) Ram Nath Kovind (born 1 October 1945) is an Indian politician. Kovind became the 14th President of India upon winning the 2017 presidential election in July 2017.

50. (A) In 1917, the Britsh planters had forced the peasants of Champaran in Bihar to cultivate indigo. Gandhiji did a satyagraha to resist this exploitation and secured justice for the peasants.

51. (A) $x = 3 - 2\sqrt{2}$

$xy = 1$

$y = \dfrac{1}{3 - 2\sqrt{2}} \times \dfrac{3 + 2\sqrt{2}}{3 + 2\sqrt{2}} = 3 + 2\sqrt{2}$

Now, $x + y = 3 - 2\sqrt{2} + 3 + 2\sqrt{2} = 6$

$\dfrac{x^2 + 3xy + y^2}{x^2 - 3xy + y^2} = \dfrac{(x + y)^2 + xy}{(x + y)^2 - 5xy}$

$= \dfrac{6^2 + 1}{6^2 - 5 \times 1} = \dfrac{37}{31}$

52. (C) $\sin^2\theta + \cos^2\theta + \sec^2\theta + \csc^2\theta + \tan^2\theta + \cot^2\theta$

$= 1 + \sec^2\theta - \tan^2\theta + \csc^2\theta - \cot^2\theta + 2(\tan^2\theta + \cot^2\theta)$

$= 3 + 2\,[(\tan\theta - \cot\theta)^2 + 2] > 7$, because $(\tan\theta - \cot\theta)^2 > 0$

53. (D) Let the speed of going = x km/hr

Speed of return = (x + 15) km/hr

ATQ,

$\dfrac{400}{x} - \dfrac{400}{x + 15} = 6$

$\dfrac{400(x + 15) - 400x}{x(x + 15)} = 6$

$\dfrac{400x + 6000 - 400x}{x^2 + 15x} = 6$

$\dfrac{6000}{x^2 + 15x} = 6$

$6x^2 + 90x - 6000 = 0$

$x^2 + 15x - 1000 = 0$

$x^2 + 40x - 25x - 1000 = 0$

$x(x + 40) - 25(x + 40) = 0$

$(x - 25)(x + 40) = 0$

$x = 25, - 40$        ($\because - 40$ is not possible)

Speed of going = 25 km/hr

Speed of return = 25 + 15 = 40 km/hr
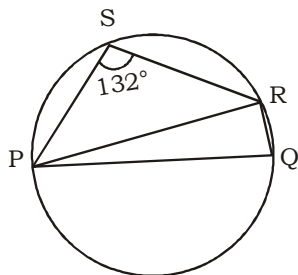
$\therefore$ Average speed of whole journey = $\dfrac{\text{Total distance}}{\text{Total time}}$

$= \dfrac{400 + 400}{\dfrac{400}{25} + \dfrac{400}{40}} = \dfrac{800}{16 + 10}$

$= \dfrac{800}{26} = 30\dfrac{10}{13}$ km/hr

54. (B) Side of cube = 8 cm

Volume of cube = $(8)^3$ = 512 cm$^3$

Dimensions of cuboid = 28 cm × 16 cm × 8 cm

Volume of cuboid = 28 × 16 × 8 = 3584 cm$^2$

Total volume of new cube = 3584 + 512 = 4096 cm$^2$

Side of new cube = $\sqrt[3]{4096}$ = 16 cm

∴ Total surface area of new cube = 6 × $(16)^2$ = 1536 cm$^2$

55. (C)



Given that:

PQ is a diameter.

∠PRQ = 90° (Angle made by diameter to the circumference of circle is right angle).

∠PSR + ∠PQR = 180° (Sum of opposite angles of cyclic quadrilateral is 180°)

132° + ∠PQR = 180°

∠PQR = 180° – 132° = 48°

In right ΔPQR,

∠PQR + ∠PRQ + ∠QPR = 180°

48° + 90° + ∠QPR = 180°

∠QPR = 180° – 138° = 42°

56. (B) P and Q complete a piece of work in 32 days.

Q and R complete the same work in 40 days.

P and R complete the same work in 60 days.

Let the total work = 480

(P + Q)'s 1 day work = $\dfrac{480}{32} = 15$

(Q + R)'s 1 day work = $\dfrac{480}{40} = 12$

(P + R)'s 1 day work = $\dfrac{480}{60} = 8$

2(P + Q + R)'s 1 day work = 15 + 12 + 8 = 35

(P + Q + R)'s 1 day work = $\dfrac{35}{2}$

Q's 1 day work = $\dfrac{35}{2} - 8 = \dfrac{19}{2}$

∴ Q take complete the work alone = $\dfrac{480}{19} \times 2 = \dfrac{960}{19}$ days $= 50\dfrac{10}{19}$ days

57. (B) Let the third number is 100.

First number = $100 \times \dfrac{130}{100} = 130$

Second number = $100 \times \dfrac{140}{100} = 140$

∴ Required % = $\left(\dfrac{130}{140} \times 100\right)\% = 92\dfrac{6}{7}\%$

58. (C) When X gets 100 paise, Y gets 90 paise.

When Y gets 100 paise, Z gets 110 paise.

When Y gets 90 paise, Z gets = $\dfrac{110}{100} \times 90$ = 99 paise

Now, X : Y : Z = 100 : 90 : 99

∴ Share of Y = $\dfrac{90}{289} \times 72250$ = ₹ 22500

59. (A) Let the cricketer's average of runs for his 54 innings = x

Total number of runs in 54 innings = 54 × x = 54x

ATQ,

$\dfrac{54x + 0}{55} = x - 2$

54x = 55x – 110

x = 110

∴ New average = 110 – 2 = 108

60. (B) $\dfrac{\dfrac{1}{3} + \dfrac{1}{4}\left(\dfrac{2}{5} - \dfrac{1}{2}\right)}{1\dfrac{2}{3} \text{ of } \dfrac{3}{4} - \dfrac{3}{4} \text{ of } \dfrac{4}{5}}$

$= \dfrac{\dfrac{1}{3} + \dfrac{1}{4}\left(\dfrac{4-5}{10}\right)}{\dfrac{5}{3} \times \dfrac{3}{4} - \dfrac{3}{4} \times \dfrac{4}{5}} = \dfrac{\dfrac{1}{3} + \dfrac{1}{4} \times \dfrac{-1}{10}}{\dfrac{5}{4} - \dfrac{3}{5}}$

$= \dfrac{\dfrac{1}{3} - \dfrac{1}{40}}{\dfrac{25-12}{20}} = \dfrac{\dfrac{40-3}{120}}{\dfrac{13}{20}}$

$= \dfrac{37}{120} \times \dfrac{20}{13} = \dfrac{37}{78}$

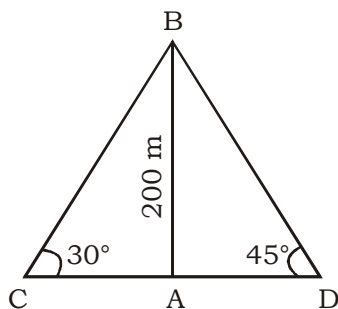61. (B) $A = P\left(1 + \dfrac{R}{100}\right)^T$

$4 = 1\left(1 + \dfrac{R}{100}\right)^4$

On squaring both sides,

$16 = 1\left(1 + \dfrac{R}{100}\right)^8$

$\therefore$ Required time = 8 years

62. (A)



Let AB be the lighthouse and C and D be the positions of the ships.

Then, AB = 200 m, $\angle ACB = 30°$ and $\angle ADB = 45°$

In $\triangle$ABC,

$\dfrac{AB}{AC} = \tan 30° = \dfrac{1}{\sqrt{3}}$

$AC = AB \times \sqrt{3} = 200\sqrt{3}$ m

In $\triangle$ABD,

$\dfrac{AB}{AD} = \tan 45° = 1$

AD = AB = 200 m

CD = (AC + AD) = $\left(200\sqrt{3} + 200\right)$ m

= $200\left(\sqrt{3} + 1\right)$ = 200 (1.73 + 1)

= 200 × 2.73 = 546 m

63. (C) Amount invested by A, B and C are ₹ 6875, ₹ 8125 and ₹ 9375 respectively.

Ratio of their profit = 6875 : 8125 : 9375 = 11 : 13 : 15

Profit of B = ₹ 2600

$\therefore$ Required difference of profit earned by A and C = $\dfrac{2600}{13} \times (15 - 11)$

= $\dfrac{2600}{13} \times 4$ = ₹ 800

64. (A) Let the age of P and Q seven years ago be 4x and 5x respectively.

Present age of P = (4x + 7) years

Present age of Q = (5x + 7) years

After 8 years,

Age of P = (4x + 7 + 8) years

Age of Q = (5x + 7 + 8) years

ATQ,

$$\frac{4x+15}{5x+15} = \frac{9}{10}$$

40x + 150 = 45x + 135

5x = 15

x = 3

∴ Total present ages of P and Q = (4x + 7) + (5x + 7)

(4 × 3 + 7) + (5 × 3 + 7) = 19 + 22 = 41 years

65. (A)
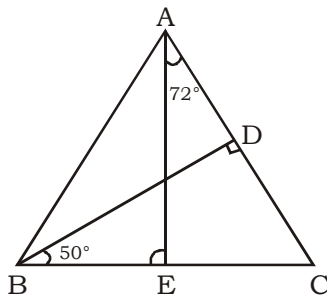


Given that:

$BD \perp AC$, then

$\angle BDC = 90°$

In $\Delta BDC$,

$\angle BDC + \angle DBC + \angle BCD = 180°$

$90° + 50° + \angle BCD = 180°$

$\angle BCD = 180° - 140° = 40°$

Now,

$\angle BEA = \angle ECA + \angle EAC$ (An exterior angle of a triangle is equal to the sum of the two opposite interior angles)

$\angle BEA = 40° + 72° = 112°$

66. (B)



Radius of cylinder = 14 cm

Volume of cylinder = 6160 cm$^3$

$\pi r^2 h = 6160$

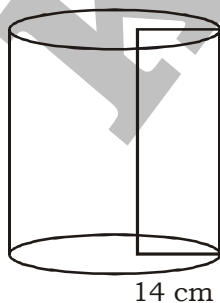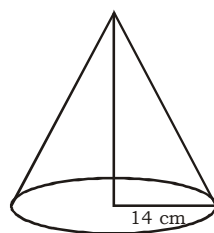$\dfrac{22}{7} \times 14 \times 14 \times h = 6160$

$h = \dfrac{6160 \times 7}{22 \times 14 \times 14} = 10\,\text{cm}$

Now, height of cone = $\dfrac{10}{2}$ = 5 cm

Radius of cone = 14 cm

Then, slant height of the cone = $\sqrt{14^2 + 5^2}$

$= \sqrt{196 + 25} = \sqrt{221}\,\text{cm}$

$\therefore$ Curved surface area of cone = $\pi r l$

$= \dfrac{22}{7} \times 14 \times \sqrt{221}$ $= 44\sqrt{221}\,\text{cm}^2$

67. (B) Slope of line AB = $\dfrac{y_2 - y_1}{x_2 - x_1}$

$= \dfrac{5 - 6}{8 - 9} = \dfrac{-1}{-1} = 1$

68. (D) CP of A = ₹ 1600

SP of A = $1600 \times \dfrac{110}{100}$ = ₹ 1760

CP of B = ₹ 1760

SP of B = $1760 \times \dfrac{107.5}{100}$ = ₹ 1892

CP of C = ₹ 1892

SP of C = $1892 \times \dfrac{75}{100}$ = ₹ 1419

$\therefore$ CP of D = ₹ 1419

69. (B) $x^4 + x^{-4} = 194$

$x^4 + \dfrac{1}{x^4} = 194$

$\left( x^2 + \dfrac{1}{x^2} \right)^2 = x^4 + \dfrac{1}{x^4} + 2$

$\left( x^2 + \dfrac{1}{x^2} \right)^2 = 194 + 2$

$x^2 + \dfrac{1}{x^2} = 14$

Now,

$$\left(x + \frac{1}{x}\right)^2 = x^2 + \frac{1}{x^2} + 2$$

$$\left(x + \frac{1}{x}\right)^2 = 14 + 2$$

$$x + \frac{1}{x} = 4$$

$$\therefore \quad x + x^{-1} + 3$$

$$= x + \frac{1}{x} + 3 = 4 + 3 = 7$$

70. (C) P = ₹ 2400
    A = ₹ 3264
    T = 4 years
    SI = 3264 – 2400 = ₹ 864

    $$R = \frac{864 \times 100}{2400 \times 4} = 9\%$$

    Now, Rate = (9 – 1)% = 8%
    P = ₹ 2400
    T = 4 years

    $$SI = \frac{2400 \times 4 \times 8}{100} = ₹ 768$$

    $\therefore$ Amount = 2400 + 768 = ₹ 3168

71. (A) 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
    $\therefore$ Required ratio = 4290 : 3700 = 429 : 370

72. (B) Total number of students in school A and school B together in the year 2009
    = 800 + 820 = 1620
    Total number of students in school B in the year 2008 and 2011 together
    = 550 + 750 = 1300

    $\therefore$ Required % = $\left(\frac{1620}{1300} \times 100\right)\% = 124\frac{8}{13}\%$

73. (D) Required average = $\dfrac{800 + 820 + 900 + 500 + 750 + 480}{6}$

    $$= \frac{4250}{6} = 708.33 \approx 708$$

74. (C) Total number of students in school A and school B together in the year 2014

    $$= (750 + 480) \times \frac{120}{100}$$

    $$= 1230 \times \frac{120}{100} = 1476$$

75. (B) Required percentage = $\left(\dfrac{750 - 500}{750} \times 100\right)\%$

    $$= \left(\frac{250}{750} \times 100\right)\% = 33\frac{1}{3}\%$$

# 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 - 289 (ANSWER KEY)

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

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

77. (D) No error

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

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