SSC MOCK TEST – 183 (SOLUTION)

1. (B) $4 : 27 :: \mathbf{16} : 125$

   $2^2 \quad 3^3 \quad 4^2 \quad 5^3$

   $+1 \qquad +1$

2. (A) As, Typist types with typewriter.

   Similarly, Writer writes with **pen**.

3. (C) As, $\underline{C\,F\,I} \quad \underline{L\,O\,R}$

   $+9$

   Similarly, $\underline{A\,D\,G} \quad \mathbf{J\,M\,P}$

   $+9$

4. (D) Except **91,** others are prime number.

5. (C) $\underset{\text{Reverse}}{\underline{D \quad W}} \quad \underset{\text{Reverse}}{\underline{J \quad Q}} \quad \underset{\neq\textbf{Reverse}}{\underline{\mathbf{S} \quad \mathbf{I}}} \quad \underset{\text{Reverse}}{\underline{L \quad O}}$

6. (D) Except **Thermodynamics**, other are topic of mathematics.

7. (A) **4, 2, 3, 1, 5**

8. (A) $\underset{+9}{\underline{17}}, \underset{+11}{\underline{26}}, \underset{+13}{\underline{37}}, \underset{+15}{\underline{\mathbf{50}}}, \underset{+17}{\underline{65}}, \underline{82}$

9. (B) $\underset{+7}{\underline{CL}}, \underset{+7}{\underline{JS}}, \underset{+7}{\underline{QZ}}, \underline{\mathbf{XG}}$

10. (A)
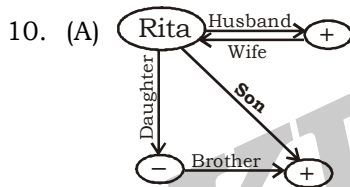
    Hence, the man is son of Rita.

11. (A) **Chandan** > Amit > Balaraj > Dheeraj > Pardeep

12. (C) **ROYALTY**

13. (D) As, E C
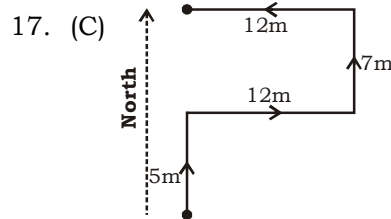
    $5 + 3 = 8 \Rightarrow \sqrt[3]{8} = 2$

    and, B U R D E N

    $2+21+18+4+5+14 = 64 \Rightarrow \sqrt[3]{64} = 4$

    Similarly, C H A F E D

    $3+8+1+6+5+4 = 27 \Rightarrow \sqrt[3]{27} = \mathbf{3}$
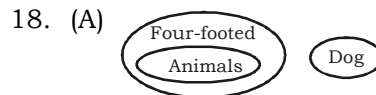
14. (B) $5 - 4 + 20 \times 5 \div 15$

    After interchanging the signs as per given details,

    $5 \times 4 - 20 \div 5 + 15$

    $= 5 \times 4 - 4 + 15$

    $= 20 - 4 + 15$

    $= \mathbf{31}$

15. (C) Required number of squares = **20**

16. (A) As, $17 + 13 + 5 = 35$

    and, $18 + 11 + 6 = 35$

    Similarly, $\mathbf{12} + 20 + 3 = 35$
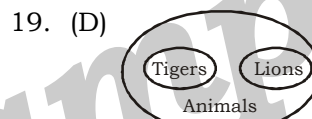
17. (C)

    ∴ He is present in **north** direction with reference to his starting point.

18. (A)

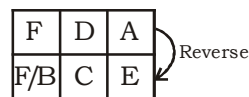   I. ✔   II. ✖

    ∴ Only **conclusion I** follows.

19. (D)

20. (B)

    ∴ **"B"** alphabet will appear opposite to the face heaving alphabet "F".

21. (D)

22. (B)

23. (C)

24. (B)

25. (B) **L   E   N   D**

    ↓   ↓   ↓   ↓

    10,   31,   77,   99

26. (B) Directive Principles of state policy aim to create social and economic conditions under which the citizens can lead a good life. They also aim to establish social and economic democracy through a welfare state.

27. (D) The words Satyameva Jayate come from Mundaka Upanishad, meaning.

28. (D) The Areal of Andhra Pradesh is 160,250 sq. km.
Area of Gujrat is. 196,024sq. km.
Area of Karnataka is 191,791 sq. km.
Area of Tamil Nadhu is 130,058 sq. km.

31. (B) Pneumoconiosis is a respiratory disease caused by the inhaling various types of dust, such as coal dust, silica dust, asbestos dust etc.

32. (C) An amphoteric oxide is a molecule or ion that can react as an acid as well as a base.
Many Metals such as zinc, tin, lead, aluminium, beryllium and most metalloids from amphoteric oxides or hydroxides.

33. (D) Haemophilia is a sex-linked recessive disorder. Dotting of Blood is abnormally delayed in such a way that even a simple or small cut will result non stop bleeding unaffected individual.

42. (A) Corporate Tax is a levy placed on the profit of a firm, with different rates used for different levels of profits. Corporate taxes are taxes against profits earned by businesses during a given taxable period.

46. (D) Antigen is a foreign molecule, which invade the body of an organism, and induce immune response to stimulate antibody.

48. (D) 49th Parallel line — USA and canada.
Mason-Dixon Line — Border dispute involving Maryland, Pennsylvania and Delaware in colonial America.

51. (C)
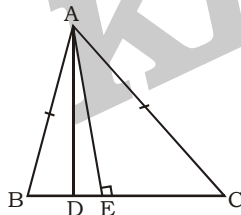
$\because$ AB = AC
BE = CE   (Property of isosceles Δ)
Now, AB² – AD² = (AE² + BE²) – (AE² + DE²)
= BE² – DE²
= (BE + DE) (BE – DE)
= (CE + DE) BD = CD.BD

52. (B) ATQ,

$$\sec\theta = a + \frac{1}{4a}$$

and, $\tan\theta = \sqrt{\sec^2\theta - 1} = \sqrt{\left(a + \frac{1}{4a}\right)^2 - 1}$

$= \sqrt{\left(a^2 + \frac{1}{16a^2} + \frac{1}{2}\right) - 1} = \sqrt{a^2 + \frac{1}{16a^2} - \frac{1}{2}}$

$= \sqrt{\left(a - \frac{1}{4a}\right)^2}$

$= a - \frac{1}{4a}$

Now, $\frac{1}{\cos\theta} + \tan\theta$

$= \sec\theta + \tan\theta = a + \frac{1}{4a} + a - \frac{1}{4a} = 2a$
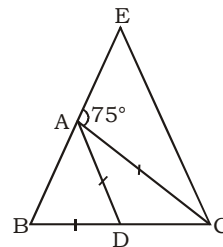
53. (D) ATQ.,
29tanθ = 31

$\Rightarrow \tan\theta = \frac{31}{29}$

Now, $\frac{1 + 2\sin\theta.\cos\theta}{1 - 2\sin\theta.\cos\theta} = \frac{1 + \sin 2\theta}{1 - \sin 2\theta} = \frac{1 + \frac{2\tan\theta}{1 + \tan^2\theta}}{1 - \frac{2\tan\theta}{1 + \tan^2\theta}}$

$= \left(\frac{\tan\theta + 1}{\tan\theta - 1}\right)^2$

$= \left(\frac{\frac{31}{29} + 1}{\frac{31}{29} - 1}\right)^2 = \left(\frac{60}{2}\right)^2 = 900$

54. (C)

Let $\angle$ ADC = $2x$

$\therefore$ $\angle$ ACD = $2x$ [$\because$ AD = AC]
Here, AD = BD

$\therefore$ $\angle$ DAB = $\angle$ DBA = $\frac{\angle ADC}{2}$ = x

[$\because$ Exterior opp. angle of triangle is equal to the sum of opp. interior angles]

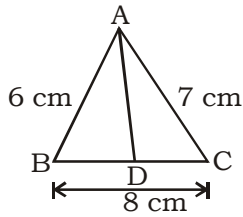Now, In ΔABC,
$\angle$EAC = $\angle$ABC + $\angle$ACD
$\Rightarrow$ 75° = x + $2x$
$\Rightarrow$ 3x = 75°
$\Rightarrow$ x = 25°
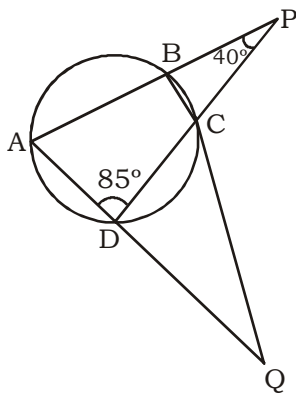Then, $\angle$ACD = $2x$ = 2 × 25 = 50°

55. (B) ATQ.,

As we know,

$(AB)^2 + (AC)^2 = 2[(AD)^2 + (BD)^2]$

$\Rightarrow$ $6^2 + 7^2 = 2(AD^2 + 4^2)$

$\Rightarrow$ $AD^2 = \dfrac{85}{2} - 16$

$\Rightarrow$ $AD = \sqrt{\dfrac{53}{2}}$ cm

56. (A) ATQ.,

$\angle QDC = 180° - 85° = 95°$

and, $\angle PBC = \angle ADC = 85°$

[$\because$ Exterior opp. angle of cyclic quadrilateral]

Now, $\angle BCP = 180° - 85° - 40° = 55°$

and, $\angle DCQ = 55°$

In $\triangle DQC$,

$\angle CQD = 180° - 95° - 55° = 30°$

57. (D) ATQ.,

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

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

Taking cube both sides,

$x^3 - 8 - 6x(x-2) = 4 + 2 + 3 \times 2(2^{\frac{2}{3}} + 2^{\frac{1}{3}})$

$\Rightarrow$ $x^3 - 8 - 6x^2 + 12x = 6 + 6(x-2) = 6 + 6x - 12$

$\Rightarrow$ $x^3 - 6x^2 + 6x = 2$

58. (B) $(ab + bc + ca)^2$

$= a^2b^2 + b^2c^2 + c^2a^2 + 2(ab \times bc + bc \times ca + ca \times ab)$

$= a^2b^2 + b^2c^2 + c^2a^2 + 2abc(a + b + c)$

$= a^2b^2 + b^2c^2 + c^2a^2 + 2abc \times 0$

$= a^2b^2 + b^2c^2 + c^2a^2$

59. (B) ATQ.,

$\dfrac{2\pi r^2}{6a^2} = \dfrac{11}{42}$

$\Rightarrow$ $\dfrac{r}{a} = \sqrt{\dfrac{1}{4}} = \dfrac{1}{2}$

$\therefore$ Radius of Hemisphere = $21 \times \dfrac{1}{3} = 7$ cm.

$\therefore$ Required volume = $\dfrac{2}{3} \pi r^3 + a^3$

$= \dfrac{2}{3} \times \dfrac{22}{7} \times 7 \times 7 \times 7 + 14^3$

$= 3462.67$ cm³

60. (B) $\cos^2\theta + \cos^4\theta = 1$

$\Rightarrow$ $\cos^4\theta = 1 - \cos^2\theta$

$\Rightarrow$ $\cos^4\theta = \sin^2\theta$

$\Rightarrow$ $\cos^2\theta \cdot \cos^2\theta = \sin^2\theta$

$\Rightarrow$ $\cos^2\theta = \tan^2\theta$ ...(i)

and, $\cos^4\theta = \tan^4\theta$ ...(ii)

$\therefore$ $\tan^2\theta + \tan^4\theta$

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

$= 1$

61. (A) $\dfrac{1}{15} + \dfrac{1}{35} + \dfrac{1}{63} + \dfrac{1}{99} + \dfrac{1}{143}$

$= \dfrac{1}{3 \times 5} + \dfrac{1}{5 \times 7} + \dfrac{1}{7 \times 9} + \dfrac{1}{9 \times 11} + \dfrac{1}{11 \times 13}$

$= \dfrac{1}{2}\left[\dfrac{1}{3} - \dfrac{1}{5} + \dfrac{1}{5} - \dfrac{1}{7} + \dfrac{1}{7} - \dfrac{1}{9} + \dfrac{1}{9} - \dfrac{1}{11} + \dfrac{1}{11} - \dfrac{1}{13}\right]$

$= \dfrac{1}{2}\left[\dfrac{1}{3} - \dfrac{1}{13}\right] = \dfrac{5}{39}$

62. (A) $6^{333} \times 7^{222} \times 8^{111}$

$= 2^{333} \times 3^{333} \times 7^{222} \times (2^3)^{111}$

$= 2^{666} \times 3^{333} \times 7^{222}$

Total number of factors

$= 666 + 333 + 222$

$= 1221$

63. (B) ATQ.,

$(a^2 + b^2)^3 = (a^3 + b^3)^2$

$\Rightarrow$ $a^6 + b^6 + 3a^4b^2 + 3a^2b^4 = a^6 + b^6 + 2a^3b^3$

$\Rightarrow$ $3a^4b^2 + 3a^2b^4 = 2a^3b^3$

$\Rightarrow$ $a^2b^2(3a^2 + 3b^2) = 2a^3b^3$

$\Rightarrow$ $3a^2 + 3b^2 = 2ab$

$\Rightarrow$ $\dfrac{a^2 + b^2}{ab} = \dfrac{2}{3} \Rightarrow \dfrac{a}{b} + \dfrac{b}{a} = \dfrac{2}{3}$

64. (C) $\cos^2\theta = \dfrac{(x+y)^2}{4xy}$

Maximum of $\cos^2\theta = 1$

$1 = \dfrac{(x+y)^2}{4xy}$

$\Rightarrow\ 4xy = (x+y)^2$

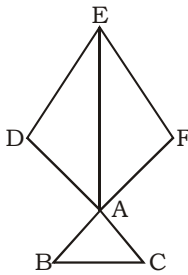$\Rightarrow\ 4xy = x^2 + y^2 + 2xy$

$\Rightarrow\ x^2 + y^2 - 2xy = 0$

$\Rightarrow\ (x-y)^2 = 0$

$\Rightarrow\ x - y = 0$

$\Rightarrow\ x = y$

65. (C)

Diagonal = 32 cm

Area of square = $\dfrac{1}{2} \times 32 \times 32 = 16 \times 32$

$= 512 cm^2$

Area of triangle = $\dfrac{\sqrt{3}}{4} \times 8 \times 8 = 16\sqrt{3}\ cm^2$

Now, Required area = $512 + 16\sqrt{3}$

$= 512 + 27.712$

$= 539.712\ cm^2$

66. (C) Let weight of new box = x kg

ATQ.,

$12 \times 1.8 + x = 13 \times 1.75$

$\Rightarrow\ 21.6 + x = 22.75$

$\Rightarrow\ x = 1.15$ kg

67. (B) Let total amount = 6

Net rate of intrest

$= \dfrac{(3 \times 10\%) + (2 \times 9\%) + (1 \times 12\%)}{6}$

$= \dfrac{(30 + 18 + 12)\%}{6} = 10\%$

68. (D) On y-axis $\quad x = 0$

$\therefore\quad x + 2y = 3 \qquad$ and, $3x - 2y = 1$

$\Rightarrow\ 2y = 3 \qquad\qquad \Rightarrow\ -2y = 1$

$\Rightarrow\ y = \dfrac{3}{2} \qquad\qquad \Rightarrow\ y = -\dfrac{1}{2}$

Points on y-axis are $(0, \dfrac{3}{2})$ and $(0, -\dfrac{1}{2})$

$\therefore$ Required distance = $\sqrt{(0-0)^2 + \left(\dfrac{3}{2} + \dfrac{1}{2}\right)^2}$

$= \sqrt{0+4}\ $ = 2 units

69. (D) Let the speed of train= x m/sec.

ATQ.,

$(x-a)b = (x-a-1)(b+1)$

$\Rightarrow\ bx - ab = bx - ab - b + x - a - 1$

$\Rightarrow\ x = (a + b + 1) m/s.$

70. (B) Let CP of article = x

ATQ.,

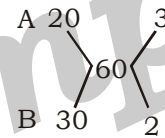$\dfrac{\dfrac{6x}{5} - 120 - x + 120}{x - 120} \times 100 = 24$

$\Rightarrow\ 100x = 120x - 1440$

$\Rightarrow\ x = 720$

$\therefore$ Required profit % = $\dfrac{800 - 720}{720} \times 100$

$= \dfrac{100}{9} = 11\dfrac{1}{9}\%$

71. (C) ATQ.,

Work done by A and B in 7 days

$= (2 + 3) \times 7 = 35$ units

Remaining work done by C in 10 days

$= (60 - 35) = 25$ units

Efficiency of C = $\dfrac{25}{10} = 2.5$

$\therefore$ Required time period = $\dfrac{60}{2.5} = 24$ days

72. (B) Required ratio = $\dfrac{1}{3} : \dfrac{1}{6} = 2 : 1$

73. (B) Weight of protein in skin = $\left(\dfrac{1}{10} \times 16\right)\%$

$= 1.6\%$

74. (A) Required quantity of water = 70% of 50 kg

$= \dfrac{70}{100} \times 50 = 35$ kg

75. (A) Required part = $1 - \left(\dfrac{1}{3} + \dfrac{1}{10} + \dfrac{1}{6}\right) = \dfrac{2}{5}$

MEANINGS IN ALPHABETICAL ORDER

| Word	Meaning in English	Meaning in Hindi
Dissociate	the state of being disconnected	पृथक्करण
Diminish	decrease, to make something smaller	घटाना
Corrode	to become weak or to be destroyed by chemical action	क्षय
Despise	dislike, unworthy of one's notice or consideration	तिरस्कार करना
Cumbersome	large or heavy, difficult to carry	भारी-भरकम
Diatribe	a bitter and abusive speech or piece of writing	कठोर समालोचना
Uxorious	a person who shows a great or excessive fondness for one's wife	पत्नीपरायण
Emigrant	a person who leaves their own country in order to settle permanently in another	प्रवासी
Recluse	a person who lives a solitary life and tend to avoid other people	एकान्तवासी
Numismatist	someone who studies or collects coins, paper money, or medals	मुद्रा शास्त्र
Shoal	a large number of fish swimming together	मछलियों का समुदाय
Perpetual	never ending or changing	निरंतर
Honorary	conferred as an honour	संमानित
Indefatigable	persisting tirelessly	न थकने वाला
Debonair	confident, stylish, charming	सुशील मनुष्य
Cynosure	a person or thing that is the centre of attention or admiration	आकर्षण-बिंदु
Cannibal	a person who eats the flesh of other human beings	आदमखोर
Anarchy	Absence of government	अराजकता
Prudence	The ability to govern and discipline oneself by the use of reason	सावधानी
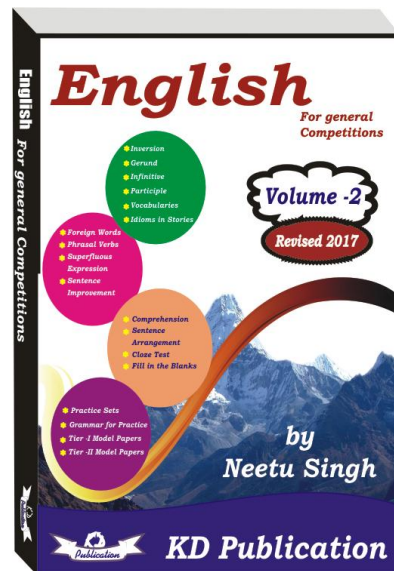
SSC MOCK TEST - 183 (ANSWER KEY)

1.	(B)	26.	(B)	51.	(C)	76.	(C)
2.	(A)	27.	(D)	52.	(B)	77.	(C)
3.	(C)	28.	(D)	53.	(D)	78.	(B)
4.	(D)	29.	(A)	54.	(C)	79.	(A)
5.	(C)	30.	(B)	55.	(B)	80.	(B)
6.	(D)	31.	(B)	56.	(A)	81.	(D)
7.	(A)	32.	(C)	57.	(D)	82.	(A)
8.	(A)	33.	(D)	58.	(B)	83.	(C)
9.	(B)	34.	(B)	59.	(B)	84.	(B)
10.	(A)	35.	(A)	60.	(B)	85.	(A)
11.	(A)	36.	(A)	61.	(A)	86.	(D)
12.	(C)	37.	(B)	62.	(A)	87.	(C)
13.	(D)	38.	(B)	63.	(B)	88.	(D)
14.	(B)	39.	(D)	64.	(C)	89.	(B)
15.	(C)	40.	(A)	65.	(C)	90.	(A)
16.	(A)	41.	(B)	66.	(C)	91.	(C)
17.	(C)	42.	(A)	67.	(B)	92.	(D)
18.	(A)	43.	(C)	68.	(D)	93.	(A)
19.	(D)	44.	(C)	69.	(D)	94.	(B)
20.	(B)	45.	(D)	70.	(B)	95.	(D)
21.	(D)	46.	(D)	71.	(C)	96.	(A)
22.	(B)	47.	(D)	72.	(B)	97.	(C)
23.	(C)	48.	(D)	73.	(B)	98.	(D)
24.	(B)	49.	(B)	74.	(A)	99.	(C)
25.	(B)	50.	(B)	75.	(A)	100.	(A)
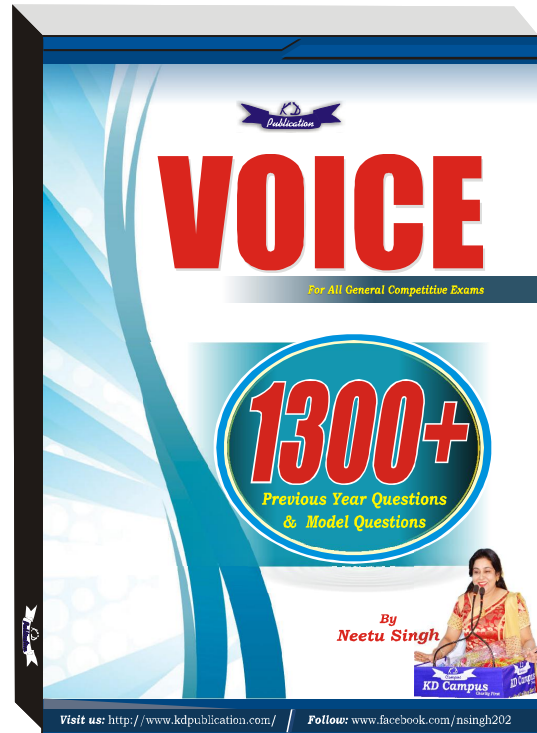
76. (C) With 'we' use of 'need' is right. 'We needs' is wrong. 'we' is plural, so don't use 's' with need.

77. (C) It is 'from the decision' and not 'of the decision'.

78. (B) 'having pushed' is the right expression not the 'having push'.

89. (B) 'we have a tendency' is the correct expression.
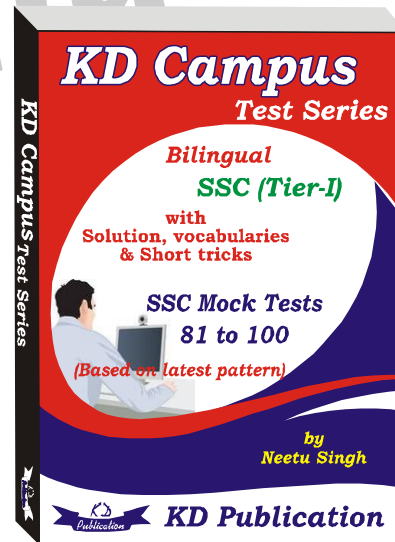
Note:- If your opinion differs regarding any answer, please message the mock test and question number to 8860330003

Note:- Whatsapp with Mock Test No. and Question No. at 7053606571 for any of the doubts. Join the group and you may also share your suggestions and experience of Sunday Mock Test.

Note:- If you face any problem regarding result or marks scored, please contact 9313111777