SSC MOCK TEST - 335 (SOLUTION)

1. (A) Honey is related to Bee, while Larva is related to Bug.

2. (C) As,

    $9^2 + 9 \rightarrow 90$

    Similarly,

    $20^2 + 20 \rightarrow \textbf{420}$

3. (D) Smoke cause Pollution, while War cause Destruction.

4. (C) (A) $15 \xrightarrow{+20} 35, \overset{\frown{\text{square}}}{400}$

    (B) $16 \xrightarrow{+8} 24, \overset{\frown{\text{square}}}{64}$

    (C) $25 \xrightarrow{+5} 30, 25 \neq \textbf{900}$

    (D) $28 \xrightarrow{+10} 38, \overset{\frown{\text{square}}}{100}$

5. (D) Plash, Lotus and Red Jasmine are State flower of Uttar Pradesh, Haryana and Goa respectively, but Lily is not a state flower of any state of India.

6. (C) (A) $D \xleftrightarrow{\text{opposite}} W$

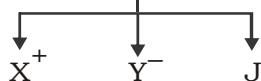 $C \xleftrightarrow{\text{opposite}} X$

    (B) $I \xleftrightarrow{\text{opposite}} R$

    $H \xleftrightarrow{\text{opposite}} S$

    (C) $D \xleftrightarrow{\text{opposite}} \textbf{W} \neq \textbf{T}$

    $Q \xleftrightarrow{\text{opposite}} \textbf{J} \neq \textbf{T}$

    (D) $V \xleftrightarrow{\text{opposite}} E$

    $U \xleftrightarrow{\text{opposite}} F$

7. (C) 2. Anniversary $\rightarrow$ 1. Annoy $\rightarrow$ 3. Annually $\rightarrow$ 5. Another $\rightarrow$ 4. Anxious

8. (D) $P^- \Longleftrightarrow T^+$

    $X^+ \quad Y^- \quad J$

    Here the gender of J is not known.

9. (C)

43   50   55   65   **76**

+(4+3)   +(5+0)   +(5+5)   +(6+5)

10. (D)

XXI	XX	XIX	XVIII	XVII	**XVI**
21	20	19	18	17	16

11. (D)

$\% \xleftrightarrow{\text{opposite}} \#$

$\& \xleftrightarrow{\text{opposite}} ?$

$© \xleftrightarrow{\text{opposite}} @$

12. (B) **From Ist figure,**

$5^2 = 25 \xrightarrow{2+5} 7$

From IInd figure,

$7^2 = 49 \xrightarrow{4+9} 13$

From IIIrd figure,

$9^2 = 81 \xrightarrow{8+1} \mathbf{9}$

13. (D)

+2   +4   +6   +8

H   E   **J**   **G**   N   K   T   Q   B   Y

+2   +4   +6   +8

14. (D) As,

$16 \times 4 \Rightarrow 64 + 16 = 80$

Similarly,

$13 \times 5 \Rightarrow 65 + 13 = 78$

15. (C) As,

C   R   O   C   O   D   I   L   E

O   R   C   D   O   C   E   L   I

Similarly,

T   O   C   H   O   F   I   L   E

C   O   T   F   O   H   E   L   I

16. (C)

17. (C) **w v**ut/**v u**ts/u**t**s**r**

18. (B)
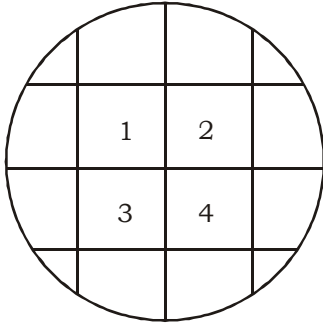
Total number of rectangle = 1, 2, 3, 4, (1 and 2), (3 and 4), (1 and 3), (2 and 3) (1, 2, 3 and 4)

∴ Total number of triangles = 9

19. (A)
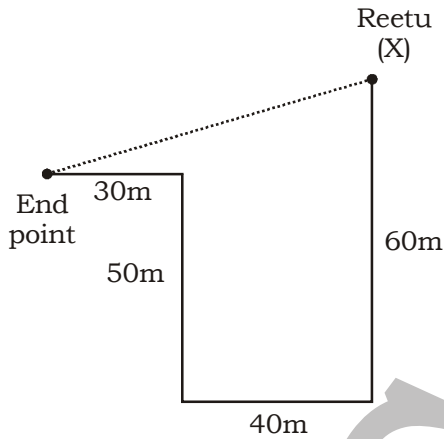
Hence, she is in South-west direction with respect to point.

20. (B) The day on 15 August 2020 was Saturday and also year 2020 a is leap year.

Odd day in 2020 = 2

Odd day in 2019 = 1

Odd day in 2018 = 1

∴ Saturday – 4 days = Wednesday

21. (B) $731 ÷ 13 + 450 – 25 × 43 = 142$

After changing the signs, we have

$731 ÷ 43 + 450 – 25 × 13 = 142$

$17 + 450 – 325 = 142$

$467 – 325 = 142$

$142 = 142$

22. (A)

Similarly,

S A N D L E **U D R I R L**

+2 +3 +4 +5 +6 +7

23. (C)   24. (C)   25. (C)

26. (D) The rivers are arranged in the descending order of their erosional activity.

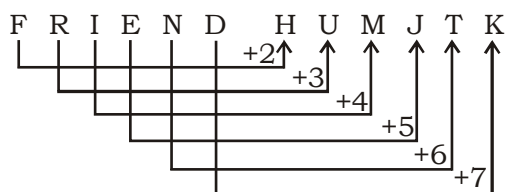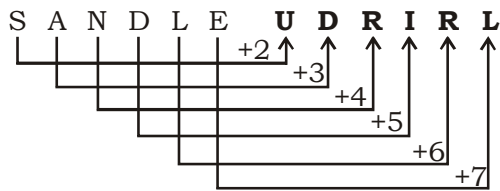27. (C) Atala Mosque by Shiriquis of Jaunpur, Bara Sona Mosque by Khaljis of Bengal, Quwat-ul-Islam Mosque by Khalji's of Delhi.

28. (B) Weight is mass g Since mass is constant and g is only th of that on the earth. The weight on the moon is only th oi that on the earth. Therefore 2N ie (B) is the answer.

30. (A) At Equator one can see stars rising perpendicular to the horizon.

33. (A) Bhangra is a form of Indian folk dance. It originated in Sialkot, Punjab. It is associated with the harvest festival of Baisakhi celebrated in the region. Note - Chhau of Mayurbhanj is a form of martial dance.

34. (A) Alauddin Hasan Bahaman Shah (1347-58 AD) was also known as Hasan Gangu and whose original name was Ismail Mukh, founded the Bahmani Kingdom with its capital at Gulbarga (first capital).

38. (B) The United Nations (UN) has six main organs. Five of them - the General Assembly, the Security Council, the Economic and Social Council, the Trusteeship Council and the Secretariat - are based at UN Headquarters in New York. The sixth, the International Court of Justice, is located at The Hague in the Netherlands.

39. (C) UNESCO has 195 Members and 8 Associate Members and is governed by the General Conference and the Executive Board. The Secretariat, headed by the Director-General, implements the decisions of these two bodies. The Organization has more th 50 field offices around the world and its headquarters are located in Paris.

41. (D) Sulphuric acid is called the King of Chemicals because it is used in the preparation of a very large number of other useful chemicals such as hydrochloric acid, nitric acid, dyes, drugs etc. In fact the annual production of sulphuric acid in a country is a measure of the economy of the country.

42. (C) The Barrah dacoity was the first major venture of the revolutionary terrorists of the freedom movement in 1908, in Dhaka district of East Bengal. Pulin Behari Das organized the dacoity which was conducted in the day light, when revolutionaries attacked the residence of the Zamindar of Barrah.

43. (B) NIF scouts, supports and spawns' grassroots innovations developed by individuals and local communities in any technological field, helping in human survival without any help from formal sector.

46. (A) Gold Mines in India are located mainly in Kolar. It had produced tonnes and tonnes of gold. It includes the township of the same name, viz. K.G.F, where reside mainly the families of the employees of Bharat Gold Mines Limited (BGML) and BEML (formerly Bharat Earth Movers Limited).

47. (A) The duration of the day and night is always equal at the Equator. The equator receives equal day and night throughout the year because it does not tilt in relation to the sun's location. Since the equator stays in the same place relative to the sun, the level of sunlight received throughout the year is nearly constant.

51. **(D)**

	Let total capacity	Efficiency
A → 8		3
B → 4	24	6
C → 6		–4 (as C is emptying pipe)

Now (A + B + C) 1 hr work = (3 + 6 – 4) = 5 unit

Required time to fill the tank by all the pipes together = $\dfrac{24}{5}$ hr = 4 hr 48 min

52. **(A)** HCF of $\dfrac{12}{7}, \dfrac{15}{16}, \dfrac{21}{4}$ = $\dfrac{\text{HCF of} (12, 15, 21)}{\text{LCM of} (7, 16, 4)} = \dfrac{3}{112}$

53. **(A)** Let income of B = 100

A's income = 75

C's income = $75 \times \dfrac{116}{100} = 87$

A	B	C
75	100	87

C's income is more than A's income.

∴ Required more percentage = $\dfrac{87 - 75}{75} \times 100 = \dfrac{12 \times 100}{75} = 16\%$ more

54. **(B)** As (x + 3) is a father of F(x) = $x^3 + 3x^2 + 2x + K$

F(–3) = 0

F(–3) = $(-3)^3 + 3(-3)^2 + 2(-3) + K = 0$

–27 + 27 – 6 + K = 0

K = 6

55. **(B)** $x^2 - 2x + 1 = 0$

$x^2 + 1 = 2x$

Dividing both side by x,

$\left(x + \dfrac{1}{x}\right) = 2$ ....(i)

Now, $(x^2 + x^{-2})(x^3 + x^{-3})$

$\left(x^2 + \dfrac{1}{x^2}\right)\left(x^3 + \dfrac{1}{x^3}\right)$

Squaring both side of equation (i),

$x^2 + \dfrac{1}{x^2} + 2 \times x \times \dfrac{1}{x} = 4$

$x^2 + \dfrac{1}{x^2} = 4 - 2 = 2$

Cubing both sides of equation (i) we get,

$x^3 + \dfrac{1}{x^3} + 3 \times x \times \dfrac{1}{x}\left(x + \dfrac{1}{x}\right) = 8$

$$x^3 + \frac{1}{x^3} + 6 = 8$$

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

$$\therefore \left(x^2 + \frac{1}{x^2}\right)\left(x^3 + \frac{1}{x^3}\right) = 2 \times 2 = 4$$

56. (B) Let C.P fo article = ₹ x
        According to question,

$$\frac{x - 36}{x} \times 100 = \frac{84 - x}{x} \times 100$$

        100x - 3600 = 8400 - 100x
        200x = 8400 + 3600
        200x = 12000
        x = 60

    ∴   C.P = ₹ 60
        S.P = ₹ 36

        Loss% = $\frac{24}{60} \times 100 = 40\%$

57. (A) $\frac{P}{SI} = \frac{12}{5}$
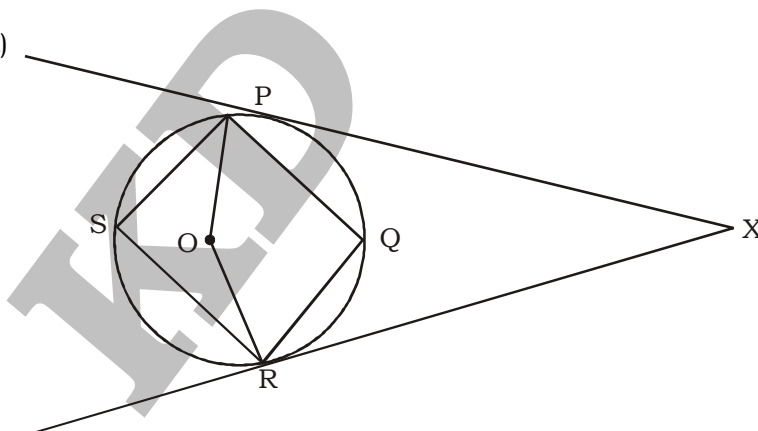
        Let principle = 12
        S.I for 5 years = 5

        S.I for 1 years = $\frac{5}{5} = 1$

        Rate = $\frac{S.I}{Principle} \times 100 = \frac{1}{12} \times 100 = \frac{25}{3}\% = 8\frac{1}{3}\%$

58. (A)

        Let O be the centre of circle

        $\angle PQR = 106°$
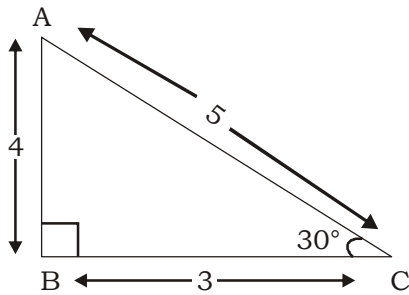
        $\angle PQR + \angle PSR = 180°$

$\angle PSR = 180° - 106° = 74°$

$\angle POR = 2\angle PSR$

$\angle POR = 2 \times 74 = 148°$

$\angle POR + \angle PXR = 180°$

$\angle P \times R = 180° - 148° = 32°$

59. **(D)**

$\sin\theta = 0.8 = \dfrac{8}{10} = \dfrac{4}{5} = \dfrac{P}{H}$

According to question,

P = 4, H = 5, B = 3

$B = \sqrt{(H)^2 - (P)^2} = \sqrt{(5)^2 - (4)^2} = \sqrt{25 - 16} = \sqrt{9} = 3$

$\dfrac{8\cosec\theta - 5\cos\theta + 1}{\sin\theta + \cos\theta - 1} = \dfrac{8 \times \dfrac{5}{4} - 5 \times \dfrac{3}{5} + 1}{\dfrac{4}{5} + \dfrac{3}{5} - 1}$

$= \dfrac{10 - 3 + 1}{\dfrac{4 + 3 - 5}{5}} = \dfrac{8}{\dfrac{2}{5}} = \dfrac{8 \times 5}{2} = 20$

60. **(C)** 95 + 93 + 91 + 89 + ...+1

After 1, next term will be -1, -3, -5 and so on. So, it will decrease the sum.

1 + 3 + 5 + ...+ 89 + 91 + 93 + 95

It is sum of odd number up to 95.

Sum of odd numbers = n^2

$t_n = a + (n - 1) \times d$

$95 = 1 + (n - 1) \times 2$

$\dfrac{94}{2} = n - 1$

n = 48

Sum of first 48 odd numbers = 48^2 = 2304

Alternate method:

$S_n = \dfrac{n}{2}\left[2a + (n - 1) \times d\right]$

$= \dfrac{48}{2}\left[2 \times 1 + (48 - 1) \times 2\right] = 24 \times 96 = 2304$

61. (C) Let the maximum marks of each subject be 100.

Total maximum marks of 4 subjects = $(4 \times 100) = 400$

The marks obtained by the student = 70% of 400 = 280

Marks obtained by student in Ist subject $= 280 \times \dfrac{5}{5 + 4 + 3 + 2} = 100$

Marks obtained by student in 2nd subject $= 280 \times \dfrac{4}{5 + 4 + 3 + 2} = 80$

Marks obtained by student in 3rd subject $= 280 \times \dfrac{3}{5 + 4 + 3 + 2} = 60$

Marks obtained by student in 4th subject $= 280 \times \dfrac{2}{5 + 4 + 3 + 2} = 40$

Passing marks of each subject = 42% of 100 = 42

Hence, he pass the examination in 3 subjects.

62. (B) Let the number be x, y and z respectively.

ATQ,

$\dfrac{x + y}{2} + z = 186$ ....(i)

$\dfrac{y + z}{2} + x = 158$ ....(ii)

$\dfrac{x + z}{2} + y = 160$ ....(iii)

Adding equation (i), (ii) and (iii),

$\dfrac{x + z}{2} + z + \dfrac{y + z}{2} + x + \dfrac{z + x}{2} + y = 186 + 158 + 160$

$2(x + y + z) = 504$

$x + y + z = 252$

Average of x, y and z $= \dfrac{x + y + z}{3} = \dfrac{252}{3} = 84$

63. (C) Speed of train = 45 km/h

$= 45 \times \dfrac{5}{18} = \dfrac{25}{2} \, m/s$

Total distance travelled by train = (212 + 188) = 400 m

$\text{Time} = \dfrac{\text{Distance}}{\text{Speed}} = \dfrac{400 \times 2}{25}$ = 32 seconds

64. (C) Let the sum be ₹ x.

$\text{S.I} = \dfrac{P \times R \times T}{100} = \dfrac{x \times 4 \times 1}{100} = ₹ \dfrac{x}{25}$

When interest is compounded half yearly

Rate = 6% p.a = $\dfrac{6}{2}\%$ half yearly = 3% half yearly

Time = 1 year = (1 × 2)half year = 2 half year

$$C.I = P\left[\left(1+\frac{R}{100}\right)^t - 1\right]$$

$$= x\left[\left(1+\frac{3}{100}\right)^2 - 1\right]$$

$$= x\left[\frac{10609}{10000} - 1\right] = ₹\frac{609x}{10000}$$

ATQ,

$$\frac{609x}{10000} - \frac{x}{25} = 104.50$$

$$\frac{209x}{10000} = 104.50$$

$$x = \frac{10450 \times 100}{209} = ₹5000$$

Short trick:

When interest is compounded half yealry, then effective rate of interest

$$= \left(\frac{6}{2} + \frac{6}{2} - \frac{\frac{6}{2} \times \frac{6}{2}}{100}\right)\% = 6.09\%$$

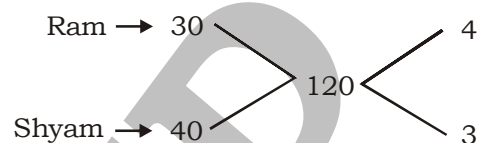Difference of rate of interest = (6.09 – 4)% = 2.09%

∵   2.09% = ₹ 104.50

∴ $100\% = \frac{104.50}{2.09} \times 100 = ₹5000$

65. (C)

	Days	**Total work**	**Efficiency**
Ram →	30		4
		120	
Shyam →	40		3

12.5 days work of Ram = (12.5 × 4) = 50

Remaining work = 120 – 50 = 70

Combined efficiency of Ram and Shyam = (4 + 3) = 7

Time taken by Ram and Shyam to complete 70 works = $\frac{70}{7} = 10$ days

Hence, Shyam worked for 10 days.

66. (B) Let the x liters of water should be added.

In 30 litres mixture,

Quantity of milk = $30 \times \frac{7}{7+3} = 21$ litres

Quantity of water = (30 – 21) = 9 litres

ATQ,

$$\frac{21}{9+x} = \frac{3}{7}$$

147 = 27 + 3x

3x = 120

∴ x = 40 litres

Short trick:

	Milk	:	Water	Milk	:	Water
Firstly	(7	:	3)×3	21	:	9
After mixing	(3	:	7)×7	21	:	49

+40

(21 + 9) units = 30 litres

$$40 \text{ units} = \left(\frac{30}{3} \times 40\right) \text{litres} = 40 \text{ litres}$$

67. (A) We know that,

a + b + c = 0, then $a^3 + b^3 + c^3 = 3abc$ or $a^3 + b^3 + c^3 - 3abc = 0$

x + y + z = 3.4125 - 5.6236 + 2.2111 = 5.6236 - 5.6236 = 0

Then,

$x^3 + y^3 + z^3 - 3xyz = 0$

68. (B) $\dfrac{\cos\theta}{1-\sin\theta} + \dfrac{\cos\theta}{1+\sin\theta} = 4$

$$\cos\theta\left[\frac{1-\sin\theta+1+\sin\theta}{1-\sin^2\theta}\right] = 4$$

$$\frac{\cos\theta \times 2}{\cos^2\theta} = 4$$

$$\frac{2}{\cos\theta} = 4$$

$$\cos\theta = \frac{1}{2} = \cos 60°$$

$$\theta = 60°$$

$$\tan\theta + \text{cosec }\theta = \tan 60° + \text{cosec } 60° = \left(\sqrt{3} + \frac{2}{\sqrt{3}}\right)$$

$$= \left(\frac{3+2}{\sqrt{3}}\right) = \frac{5}{\sqrt{3}} = \frac{5 \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}} = \frac{5\sqrt{3}}{3}$$

69. (B) Number of sphere = $\dfrac{\text{Volume of bigger sphere}}{\text{Volume of smaller sphere}} = \dfrac{\frac{4}{3}\pi \times 8 \times 8 \times 8}{\frac{4}{3}\pi \times 4 \times 4 \times 4} = 8$

70. (B) Difference between SI and CI for 2 years = $P \times \left(\dfrac{R}{100}\right)^2$

$$18 = A\left(\dfrac{12}{100}\right)^2$$

$$18 = \dfrac{9A}{625}$$

$$A = \dfrac{18 \times 625}{9} = ₹\ 1250$$

71. (A) Length of cuboid = (6 × 5) = 30 cm

Breadth of cuboid = 6 cm

Height of cuboid = 6 cm

Total surface area of cuboid = 2(lb + lh + bh)

= 2(30 × 6 + 30 × 6 + 6 × 6) cm²

= 2(180 + 180 + 36) cm²

= 2 × (396)cm²

= 792 cm²

72. (A) Percentage of students in EC = 19%

Ratio = boys and girls = 9 : 10

Percentage of boys in EC = $\left(19 \times \dfrac{9}{19}\right)\% = 9\%$

Percentage of girls in EC = $\left(19 \times \dfrac{10}{19}\right)\% = 10\%$

Difference in percentage = $\left(\dfrac{10-9}{19} \times 100\right)\% = 5.26\%$

Percentage of students in CS = 18%

Ratio of boys and girls = 4 : 5

Percentage of boys in CS = $\left(18 \times \dfrac{4}{9}\right)\% = 8\%$

Percentage of girls in CS = $\left(18 \times \dfrac{5}{9}\right)\% = 10\%$

Difference in percentage = $\left(\dfrac{10-8}{18} \times 100\right)\% = 11.11\%$

Percentage of students in IT = 21%

Ratio of boys and girls = 3 : 4

Percentage of boys in IT = $\left(21 \times \dfrac{3}{7}\right)\% = 9\%$

Percentage of girls in IT = $\left(21 \times \dfrac{4}{7}\right)\% = 12\%$

Difference in percentage = $\left(\dfrac{12-9}{21} \times 100\right)\% = 14.28\%$

Percentage of students in ME = 22%

Ratio of boys and girls = 6 : 5

Percentage of boys in ME = $\left(22 \times \dfrac{6}{6+5}\right)\% = 12\%$

Percentage of girls in ME = $\left(22 \times \dfrac{5}{6+5}\right)\% = 10\%$

Difference in percentage = $\left(\dfrac{12-10}{22} \times 100\right)\% = 9.09\%$

Hence difference in the percentage of boys and girls in EC is minimum.

73. (C) **From above solution:**

Percentage of boys in EC = 9%

Percentage of girls in EC = 10%

Percentage of boys in CS = 8%

Percentage of girls in CS = 10%

Percentage of boys in IT = 9%

Percentage of girls in IT = 12%

Percentage of boys in ME = 12%

Percentage of girls in ME = 10%

Percentage of boys in CE = $20\% \times \dfrac{3}{3+2} = 12\%$

Percentage of girls in CE = 20% – 12% = 8%

Total percentage of boys in college = 9% + 8% + 9% + 12% + 12% = 50%

Total percentage of girls in college = (100 - 50)% = 50%

Required ratio = 50% : 50% = 1 : 1

74. (C) **From above solution:**

Percentage of girls in college = 50%

Percentage of girls in ME = 10%

Required central angle = $\left(\dfrac{10\%}{50\%} \times 360°\right) = 72°$

75. (C) Percentage of students studying in CS = 18%

Percentage of students studying in IT = 21%

Ratio of student studying CS and IT = 18% : 21% = 6 : 7

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MEANINGS IN ALPHABETICAL ORDER

Apathy	lack of interest, enthusiasm, or concern	उदासीनता
Complacent	self-satisfied	आत्मसंतुष्ट
Discrete	individually separate and distinct	अलग
Gloomy	dark or poorly lit	अंधेरा
Grim	forbidding or uninviting	निष्ठुर
Illicit	forbidden by law, rules, or custom	अवैध
Jubilant	feeling or expressing great happiness	प्रसन्नचित
Laudable	(of an action, idea, or goal) deserving praise and commendation	प्रशंसनीय
Paucity	the presence of something only in small or insufficient quantities	कमी
Prodigious	great in extent, size, or degree	बहुत बड़ा
Rectify	put (something) right	संशोधन करना
Reiterate	repeat or say again	दोहराना
Serenity	the state of being calm, peaceful, and untroubled	शांति
Severity	the fact or condition of being severe	तीव्रता
Superiority	the state of being superior	श्रेष्ठता
Vitality	the state of being strong and active	जीवन-शक्ति
Zeal	great energy or enthusiasm in pursuit of a cause or an objective	उत्साह

SSC MOCK TEST - 335 (ANSWER KEY)

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