SSC MOCK TEST - 336 (SOLUTION)

1. (A) As, $325 \Rightarrow 3^2 \times 5 = 45$

    Similarly, $624 \Rightarrow 6^2 \times 4 = 144$

2. (C) A. R. Rahman is a Musician, while Shakuntala Devi is Mathematician.

3. (C) Except F, others have the same mirror image.

4. (C) (A) $1745 \Rightarrow 1 + 7 + 4 - 5 = 7 \Rightarrow 7^2 = 49$

    (B) $2348 \Rightarrow 2 + 3 + 4 - 8 = 1 \Rightarrow 1^2 = 1$

    (C) $6543 \Rightarrow 6 + 5 + 4 - 3 = 12 \Rightarrow 12^2 = 144 \neq 169$

    (D) $8324 \Rightarrow 8 + 3 + 2 - 4 = 9 \Rightarrow 9^2 = 81$

5. (C) As,

    B   A   N   K   I   N   G

    $2 + 1 + 14 + 11 + 9 + 14 + 7 = 58 \Rightarrow 5 \times 8 = 40$

    And,

    R   O   U   N   D

    $18 + 15 + 21 + 14 + 4 = 72 \Rightarrow 7 \times 2 = 14$

    Similarly,

    R   E   M   O   T   E

    $18 + 5 + 13 + 15 + 20 + 5 = 76 \Rightarrow 7 \times 6 = 42$
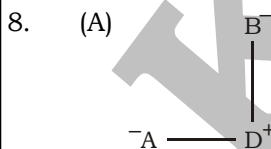
6. (D) $4 \times 0.5 + 4 = 6$

    $6 \times 1 + 3 = 9$

    $9 \times 2 + 2 = 20$

    $20 \times 4 + 1 = 81$

7. (B) D   I   M   P   R   **S**

    +5   +4   +3   +2   +1

8. (A)

    Hence, A is the daughter of B.

9. (B) As,

    $84 - 77 = 7 \Rightarrow 7 \times 18 = 126$
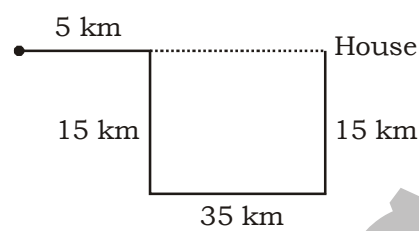
    Similarly,

    $98 - 66 = 32 \Rightarrow 32 \times 18 = 576$

10. (D) ac**b**d/c**b**da/b**d**ac/da**c**b

11. (B) **In the first column,**

    $16 + 14 + 25 = 55 \Rightarrow 55 \times 3 = 165$

    In the second column,

    $18 + 14 + 19 = 51 \Rightarrow 51 \times 3 = 153$

    In the third column,

    $25 + 69 + 75 = 169 \Rightarrow 169 \times 3 = 507$
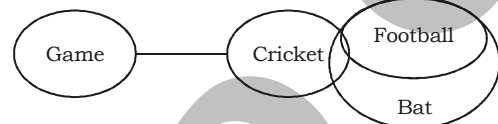
12. (C)

13. (A) $64 \div 4 \times 25 + 8 - 26 + 14 = 192$

    After changing 8 and 4,

    $64 \div 8 \times 25 + 4 - 26 + 14 = 192$

    $8 \times 25 + 4 - 26 + 14 = 192$

    $204 + 14 - 26 = 192$

    $192 = 192$

14. (B) Each row contains 36 plants.

    There are 35 gaps between the two corner trees i.e. $(35 \times 3 = 105)$ meters and 4 metrer is left on each side.

    Length of the garden = $105 + 4 \times 2 = 113$ m

15. (C)

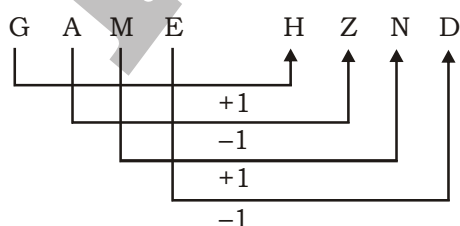 $\therefore$ Required distance = $35 + 5 = 40$ km

16. (D) 2. Subtle $\rightarrow$ 4. Sucres $\rightarrow$ 3. Sudoku $\rightarrow$ 1. Sugary $\rightarrow$ 5. Suller

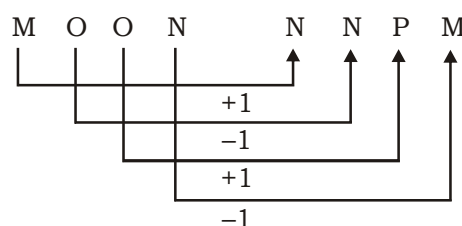17. (D)

    I. False   II. False   III. True

    Hence, only conclusion III follows.

18. (D)   19. (C)

20. (A) As, $4 \times 4 + 7 \times 8 = 72$

    Similarly, $7 \times 2 + 8 \times 4 = 46$

21. (B) As,   Similarly,

22. (A)   23. (B)   24. (A)   25. (D)

26. (C) The Indian Coast Guard (ICR) has commissioned ICGS 'Saksham', the fifth Coast Guard Ship in the series of 105 M-Class offshore patrol vessels.

27. (B) The Indian Council of Medical Research (ICMR) is the apex body in India for the formulation, coordination and promotion of biomedical research. It is in news because ICMR has recently signed a MoU with Indian Council of Agricultural Research (ICAR) for cooperation in the area of Zoonoses, antimicrobial resistance, nutrition and pesticide residues. This MoU will strengthen the ties between the two organizations and energize environment of mutual cooperation and collaboration. The headquarters of ICMR is located in New Delhi.

28. (A) Ninth Schedule was added by First Amendment Act of 1951, which relates to Land Reforms.

29. (A) Project Elephant was launched in 1992 by the Government of India Ministry of Environment and Forests to provide financial and technical support of wildlife management efforts by states for their free ranging populations of wild Asian Elephants.

31. (B) Nagara, Dravida and Vesara are three main styles of Indian temple architecture.

32. (A) India's first and Asia's longest cycle highway has been opened in Uttar Pradesh. The 207-km-long cycle highway runs between Etawah and Agra. It was inaugurated by state Chief Minister Akhilesh Yadav. It is about 7-feet-wide and is separated by a divider from main highway which ensures the safety of cyclists.

33. (C) Mahatma Gandhi undertook fast unto death in 1932, against Ramsay Macdonald's Announcement of the Communal Award.

34. (C) The National Pollution Control Day (NPCD) is celebrated every year on December 2 in India with an aim to make aware the people and industries about the need of Pollution Control Acts. This day is observed in the memory of those who lost their lives in 1984 due to the Bhopal gas tragedy and   who was left severely affected due to leakage of poisonous gas "Methyl Isocyanate (MIC)" from Union Carbide plant in Bhopal. This catastrophe was the worst in the world's industrial history and people there still continue to witness physical and mental disabilities.

35. (D) O. Schmidt in 1943 gave Inter-Slellar Dust Hypothesis for the origin of the earth and solar system.

37. (B) The Palk Strait separates India and Srilanka. It lies between the Gulf of Mannar and the Bay of Bengal.

39. (D) Survey of India, The National Survey and Mapping Organization of the country under the Department of Science and Technology, is the oldest scientific department of the Govt. of India. It was set up in 1767.

41. (D) PN Bhagwati was CJI during July 1985- Dec 1986. During his tenure as CJI, PIL was introduced to the Indian judicial system.

43. (D) Through Corbett National Park Ramganga flows (not Ganga) which is a tributary of Ganges. Through Silent Valley National Park River Bhavani flows which is a tributary of Kaveri. Kaziranga and Manas are both national parks.

49. (B) In financial accounting, a balance sheet or statement of financial position is a summary of the financial status of an organisation which can be a sole proprietorship, a business partnership or a company. Assets, liabilities and ownership of equity are listed as on a specific date, which is normally the end of the financial year. A balance sheet is the "snapshot of a company's financial condition".

51. (B) Let the two numbers be A and B.

$A + B = 18$

$A^2 + B^2 = 256$

$(A + B)^2 = A^2 + B^2 + 2AB$

$(18)^2 = 256 + 2AB$

$324 = 256 + 2AB$

$2AB = 68$

$AB = 34$

∴ The product of two numbers = 34

52. (A) Let r be the radius $4\pi(r + 2)^2 - 4\pi r^2 = 792$

$$(r + 2)^2 - r^2 = \frac{792}{4\pi}$$

$$r^2 + 4r + 4 - r^2 = \frac{792 \times 7}{4 \times 22} = 63$$

$$4r = 63 - 4 = 59$$

$$r = 14.75 \text{ m}$$

∴ Required radius = 14.75 m

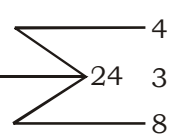53. (C) $\sin 3A = \cos(A - 56°)$

$\cos(90° - 3A) = \cos(A - 56°)$

$90° - 3A = A - 56°$

$90° + 56° = 3A + A$

$4A = 146°$

$A = \dfrac{146}{4} = 36.5°$

54. (D) Ist person $\longrightarrow$ 6 ⎯⎯⎯⎯ 4

IInd person $\longrightarrow$ 8 ⎯⎯⎯ 24 ⎯⎯ 3

I + II + Boy $\longrightarrow$ 3 ⎯⎯⎯⎯ 8

∴ Share of Boy = $\dfrac{1}{8}$ × 5000 = ₹ 625

55. (B) Let the sum be P.

$$\left[CI = P\left[\left(1 + \frac{r}{100}\right)^n - 1 \right] \right]$$

$$1015 = P\left[\left(1 + \frac{3}{100}\right)^2 - 1 \right]$$

$$1015 = P\left[\left(\frac{103}{100}\right)^2 - 1 \right]$$

$$1015 = P\left(\frac{10609 - 10000}{10000} \right)$$

$$P = ₹ \frac{10150000}{609}$$

$$SI = \frac{10150000 \times 2 \times 3}{609 \times 100} = ₹ 1000$$

56. **(C)** We know that,

$$l = a + (n - 1)d \longrightarrow \text{common Diff.}$$

last term   first term   no. of terms

Here,

l = 7875 (The number near to 8000 which is divisible by 225)

a = 1125 (The number near to 1000 which is divisible by 225)

d = 225

ATQ,

7875 = 1125 + (n – 1)225

(7875 – 1125) = (n – 1)225

$$(n - 1) = \frac{6750}{225}$$

(n – 1) = 30

n = 30 + 1 = 31

∴ Required answer = 31

57. **(A)** Let x be the maximum marks

Then, pass marks = 24% of x + 12 = 30% of x + 6 $\Rightarrow$ 6% of x = 6

x = 100

Maximum marks x = 100

Pass marks = $\frac{30}{100} \times 100 + 6 = 36$

58. **(D)** Here, 12 – 2 = 10

16 – 6 = 10, 24 – 14 = 10

Now, LCM of 12, 16 and 24 = 48

The lowest 4-digit number exactly divisible by 48 = 1008

∴ Required number = 1008 – 10 + 48 = 1046

59. **(B)** $\dfrac{\sqrt{24} + \sqrt{600}}{\sqrt{216}} = \dfrac{2\sqrt{6} + 10\sqrt{6}}{6\sqrt{6}} = \dfrac{12\sqrt{6}}{6\sqrt{6}} = 2$

60. **(C)** Let the required number of extra days = D – 4

ATQ,

300 × 31 = 27 × 300 + 120 × D

4 × 300 = 120 × D

D = 10 days

∴ Extra number of days = (10 – 4) = 6 days

61. **(C)** Downstream speed (u) = $\dfrac{D}{T} = \dfrac{8}{40} \times 60 = 12$ km/h

Upstream speed (v) = $\dfrac{D}{T} = \dfrac{3}{30} \times 60 = 6$ km/h

Speed of boat in still water = $\dfrac{1}{2}(u + v) = \dfrac{1}{2}(12 + 6) = 9$ km/h

Speed of stream = $\dfrac{1}{2}(u - v) = \dfrac{1}{2}(12 - 6) = 3$ km/h

62. (C) Let the original number of students in two classes be 2x and 3x respectively.

ATQ,

$$\frac{2x + 20}{3x + 20} = \frac{4}{5}$$

10x + 100 = 12x + 80

12x – 10x = 100 – 80

2x = 20

$$x = \frac{20}{2} = 10$$

Total number of students originally = 2x + 3x = 5x = 5 × 10 = 50

63. (D) $4 \sin^2\theta + 5 \cos^2\theta$

$= 4 \sin^2\theta + 4 \cos^2\theta + 5 \cos^2\theta$

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

$= 4 \cos^2\theta$ $[\because \sin^2\theta + \cos^2\theta = 1]$

Minimum value of $\cos\theta = -1$

But $\cos^2\theta \geq 0$, when $\theta = 90°$

$[\cos 0° = 1, \cos 90° = 0]$

$\therefore$ Required minimum value = 4 + 0 = 4

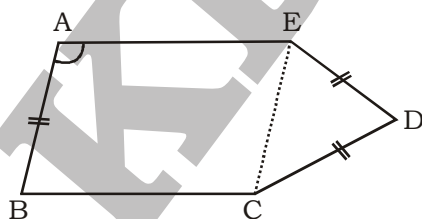64. (B) $x = 3 + 2\sqrt{2}$

$$\frac{1}{x} = 3 \times 2\sqrt{2}$$

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

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

$$\sqrt{x} - \frac{1}{\sqrt{x}} = 2$$

$$3\left(\sqrt{x} - \frac{1}{\sqrt{x}}\right) = 3 \times 2 = 6$$

65. (C)

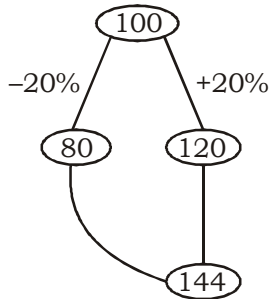$\angle BCD = 94°$, AB = CD = ED (Given)

CD = ED = CE $[\because AB = CE]$

ΔECD is an equilateral triangle.

$\angle ECD = 60°$

$\angle BCD = 94° + 60° = 154°$

66. (D) Let the cost price of an article = ₹ 100

ATQ,

Original Profit = 20%

New profit = $\dfrac{64}{80} \times 100 = 80\%$

Change in profit percent = $\dfrac{(80 - 20)}{20} \times 100 = 300\%$

67. (C) $\tan^2\alpha = 1 + 2\tan^2\beta$

$\sec^2\alpha - 1 = 1 + 2(\sec^2\beta - 1)$

$\sec^2\alpha - 1 = 2\sec^2\beta - 1$

$\dfrac{1}{\cos^2\alpha} = \dfrac{1}{2\cos^2\beta}$

$\sqrt{2}\cos\alpha = \cos\beta$

∴ $\sqrt{2}\cos\alpha - \cos\beta = 0$
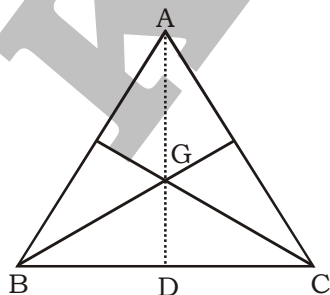
68. (B) x = 7

$x^5 - 8x^4 + 8x^3 - 8x^2 + 8x - 2$

$= x^5 - (7 + 1)x^4 + (7 + 1)x^3 - (7 + 1)x^2 + (7 + 1)x - 2$

$= x^5 - 7x^4 - x^5 + 7x^3 + x^3 - 7x^2 - x^2 + 7x + x - 2$

When x = 7,

$= 7^5 - 7^5 - 7^4 + 7^4 + 7^3 - 7^3 - 7^2 + 7^2 + 7 - 2 = 5$

69. (C)

Area of $\triangle ABC = 6 \times ar(\triangle BGD) = 6 \times 9 = 54\ cm^2$

70. (D) By componendo and dividendo,

$$\frac{\left(x^3 + 3x\right) + \left(3x^2 + 1\right)}{\left(x^3 + 3x\right) - \left(3x^2 + 1\right)} = \frac{234 + 109}{234 - 109}$$

$$\frac{(x+1)^3}{(x-1)^3} = \frac{343}{125}$$

$$\left(\frac{x+1}{x-1}\right)^3 = \frac{343}{125}$$

$$\left(\frac{x+1}{x-1}\right)^3 = \left(\frac{7}{5}\right)^3$$

$$\frac{x+1}{x-1} = \left(\frac{7}{5}\right)$$

5x + 5 = 7x – 7

x = 6

71. (B) Let the original volume of cylinder be 100

Volume after change = $100 \times \dfrac{150}{100} \times \dfrac{150}{100} \times \dfrac{40}{100} = 90$

Hence, percent decrease = 100 – 90 = 10%

72. (C) $1 \times 3 \times 5 \times 7 \times .... \times 99 \times 2^8$.

For calculating number of zeros we have to find the combination of 2 and 5.

Here number of 2's is 8.

So the max possible number of zeros is 8.

73. (D) Percentage of students failed in 2016 = $\dfrac{35}{200} \times 100$ = 17.5%

74. (A) Total passed students = 140 + 150 + 165 = 455

Total students = 170 + 195 + 200 = 565

∴ Required percentage = $\dfrac{455}{565} \times 100 = \dfrac{9100}{113} = 80\dfrac{60}{113}\%$

75. (B) Required percentage = $\dfrac{20}{170} \times 100 = \dfrac{200}{17} = 11\dfrac{13}{17}\%$

MEANINGS IN ALPHABETICAL ORDER

Battalion	a large body of troops ready for battle, especially an infantry unit forming part of a brigade typically commanded by a lieutenant colonel	बटालियन
Contemporary	living or occurring at the same time	समकालीन
Determination	firmness of purpose; resoluteness	दृढ़ निश्चय
Devout	having or showing deep religious feeling or commitment	धार्मिक
Instability	lack of stability; the state of being unstable	अस्थिरता
Motive	a reason for doing something, especially one that is hidden or not obvious	प्रेरणा
Passive	accepting or allowing what happens or what others do, without active response or resistance	निष्क्रिय
Perseverance	persistence in doing something despite difficulty or delay in achieving success	दृढ़ता
Persistence	firm or obstinate continuance in a course of action in spite of difficulty or opposition	हठ
Pleased	feeling or showing pleasure and satisfaction, especially at an event or a situation	प्रसन्न
Proficient	competent or skilled in doing or using something	प्रवीण
Profound	(of a state, quality, or emotion) very great or intense	गहन
Reluctant	unwilling and hesitant; disinclined	अनिच्छुक
Scanty	small or insufficient in quantity or amount	अल्प
Steady	firmly fixed, supported, or balanced; not shaking or moving	नियमित
Trivial	of little value or importance	तुच्छ

SSC MOCK TEST - 336 (ANSWER KEY)

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

76. (C) 'to be performed' (passive) replace 'to perform' (Active)

77. (A) 'to make' replace with 'make'.

90. (B) The correct spelling is 'Contemporary'.

91. (A) The correct spelling is 'Battalion'.