SSC MOCK TEST - 453 (SOLUTION)

1. (3) Dwelling place of Horse is stable, while dwelling place of Rabbit is Burrow.

2. (1) As, $365 \Rightarrow 3 + 6 + 5 = 14 \Rightarrow (14)^2 = 196$

   Similarly, $876 \Rightarrow 8 + 7 + 6 = 21 \Rightarrow (21)^2 = 441$

3. (1) Except Chicken, others live both land and water.

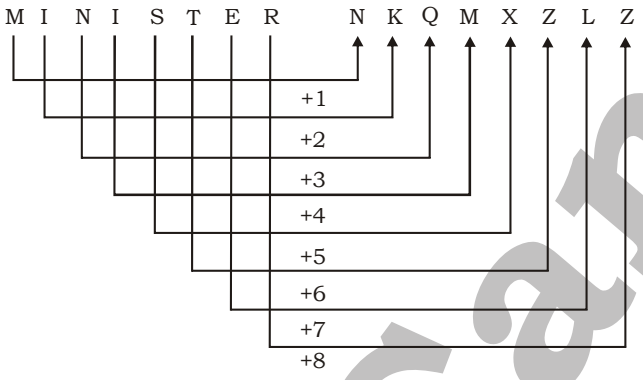
4. (4) (1) $16 \Rightarrow 1 + 6 = 7 \Rightarrow (7)^2 = 49$

   (2) $81 \Rightarrow 8 + 1 = 9 \Rightarrow (9)^2 = 81$

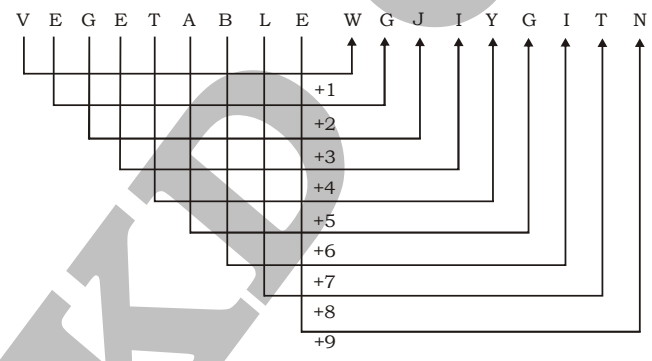
   (3) $28 \Rightarrow 2 + 8 = 10 \Rightarrow (10)^2 = 100$

   (4) $65 \Rightarrow 6 + 5 = 11 \Rightarrow (11)^2 = 121 \neq 144$

5. (2) As,



Similarly,



6. (2) 126 190 239 275 300 316

   $+8^2$ $+7^2$ $+6^2$ $+5^2$ $+4^2$

7. (3) L N Q U Z

   +2 +3 +4 +5

8. (2) Total number of students = 50

Number of boys = $50 \times \frac{3}{5} = 30$

Number of girls = 50 – 30 = 20

Total number of passed students = $30 \times \frac{50}{100} + 20 \times \frac{75}{100} = 15 + 12 = 27$

∴ Number of students below Ramendra = 27 – 9 = 18

9. (3) As, 65 + 36 = 101 ⇒ 101 × 3 = 303

Similarly, 45 + 24 = 69 ⇒ 69 × 3 = 207

10. (4) **b** d l k **r** / b **d** l k r / b **d** l **k** r

11. (3)

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

$7 + 5 = 12 \Rightarrow (21)^2 = 441$

In the second column,

$13 + 6 = 19 \Rightarrow (91)^2 = 8281$

In the third column,

$8 + 3 = 11 \Rightarrow (11)^2 = 121$

13. (2) $78 + 6 \times 4 \div 2 + 12 - 25 = 41$

After changing 6 and 4,

$78 \div 6 \times 4 + 2 + 12 - 25 = 41$

$13 \times 4 + 2 + 12 - 25 = 41$

$66 - 25 = 41$

$41 = 41$

14. (4) When the hours' value is equal to 5 or less than 5 then we subtract 5 and when hours value is greater than 5 then we subtract 17. In minute value is equal to 30 or less than 30 then we subtract 30 and when a minute value is greater than 30 then we subtract 90.

In this question, hours value is 12 which is greater than 5 means we subtract 17 and minute value is 30 which is equal to 30 means subtract 30.

Now we subtract given value 12:30 from new value 17 : 30 we get = 17 : 30 – 12 : 30

= 05 : 00

So water image is 05 : 00.

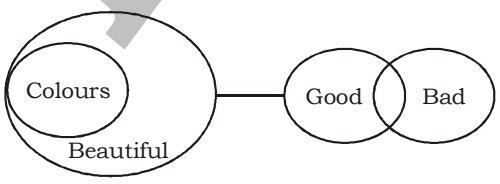
15. (3) P^+ — C ⟺ A

S^+ — B^+ D^-

Hence, D is the sister of B.

16. (3) 4. Biology → 3. Bizzard → 2. Boastful → 1. Brides → 5. Brilliant

17. (3)



I. False II. True III. True

Hence, only conclusions II and III follow.

18. (3) 19. (1)

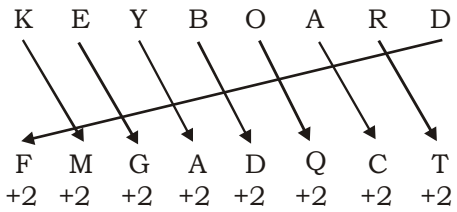
20. (2) As, 70 × 2 = 140

140 × 4 = 560

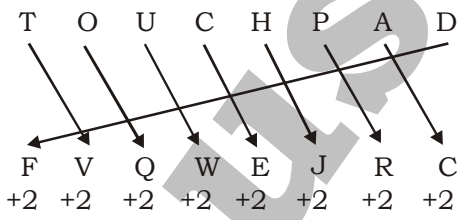
Similarly, 68 × 2 = 136

136 × 4 = 544

21. (3) As,



Similarly,



22. (3) 23. (1) 24. (3) 25. (3)

27. (1) Narinder Batra has become the first Indian to be elected the President of the International Hockey Federation (FIH). He succeeds Spaniard Leandro Negre, who has been the FIH chief since 2008. Batra, who is the president of Hockey India, has become the 12th FIH President and the first Asian to grab the post.

30. (1) Idukki is a hydro-electric project of Kerala. So, the '1' option is not correct. The Idukki Dam is a double curvature arch dam constructed across the Periyar River in a narrow gorge between two granite hills Kuravan and Kurathi in Kerala, India. At 167.68 metres, it is one of the highest arch dams in Asia. It was constructed and is owned by the Kerala State Electricity Board. It supports a 780 MW hydroelectric power station in Moolamattom, which started generating power on 4 October 1975.

31. (2) About 50% of the world population is concentrated between latitude of 20°N and 40°N, because most populous countries like Asia, U.S.A, Europe lie within this latitude.

32. (4) Benguela is a cold current flows from south to north along the west coast of Africa. Guinea current is a warm current flowing east of Guinea along the west coast of Africa.

33. (4) According Article 355, it shall be the duty of the Union to protect every State against external aggression and internal disturbance and to ensure that the government of every State is carried on in accordance with the provisions of this Constitution.

34. (4) The EU and India's external affairs ministry are organizing a regional conference in New Delhi on August 21-22 to address online radicalization.

35. (2) Narasimham Committee for Financial Sector Reforms (1991) has suggested reduction in SLR, CRR and priority sector financing reducing it from 40% to 10%. Most of the suggestions of the committee were not implemented.

37. (3) Mongols under Chengiz Khan (died in 1227) invaded India during the reign of Iltutmish (1211-36) but did not enter deep in India as Iltutmish refused to give shelter to the Persian king, Khwarizm Shah, whom Chengiz Khan was chasing.

38. (2) Seller's market is a market which has more buyers than sellers. High prices result from this excess of demand over supply. The opposite of the seller's market is the buyer's market, where supply greatly exceeds demand.

39. (3) The Saraswati Samman is an annual award for outstanding prose or poetry literary works in any of the 22 languages of India listed in Schedule VIII of the Constitution of India. It is named after an Indian goddess of knowledge and is considered to be among the highest literary awards in India.

40. (3) Chief Justice of India, Union Cabinet Minister, Chief Election Commissioner and Cabinet Secretary is the correct order of precedence.

41. (1) An international group has proposed a lunar time standard to address time discrepancies on the Moon due to its unique gravity. Atomic clocks, crucial for precision in GPS, telecom, and research, are the most accurate timekeeping devices. These clocks measure time using the stable resonant frequencies of atoms like cesium-133.

43. (1) The preamble of the Constitution of India is a brief introductory statement that set out the guiding purpose and principles of the document. As originally enacted the preamble described the state as a 'sovereign democratic republic'. In 1976 the Forty second Amendment changed this to read 'sovereign socialist secular democratic republic'.

46. (1) The book "SRK - 25 Years of a Life" has been authored by writer and filmmaker Samar Khan. The book traces the journey of the Bollywood superstar Shah Rukh Khan through all his directors' eyes. The thought behind the book was to show why his directors thought of such iconic characters for Shah Rukh.

49. (2) Both the statements are true but do not explain each other.

50. (3) Aryan is in fact a linguistic term indicating a speech group of Indo-European origin, and is not an ethnic term.

51. (2) Sum of square of first n natural number = $\frac{n(n+1)(2n+1)}{6}$

$\therefore$ Average of sum of square of first 20 natural numbers = $\frac{20(20+1)(2\times 20+1)}{6\times 20}$

$= \frac{20\times 21\times 41}{6\times 20} = 143.5$

52. (3) Let the CP of 1 shirt be ₹ 100.

CP of 3 shirts = ₹ 300

Marked Price = CP of 3 shirts = ₹ 300

Customer pays CP of one shirt = ₹ 100

Effective Discount = 300 – 100 = ₹ 200

$\therefore$ Discount % = $\left(\frac{200}{300}\right)$ × 100 = 66.67%

53. (2) Let the marks of one student be x.

Then, the marks of another student will be x + 35.

ATQ,

$x + 35 = \frac{60}{100} \times (x + 35 + x)$

$5x + 175 = 6x + 105$

$x = 175 – 105$

$x = 70$

So, the marks of other student = 70 + 35 = 105

$\therefore$ Total marks obtained by both of them = 70 + 105 = 175

54. (3) $(2^{51} + 2^{52} + 2^{53} + 2^{54} + 2^{55})$

$= 2^{51}(1 + 2^1 + 2^2 + 2^3 + 2^4)$

$= 2^{51}(1 + 2 + 4 + 8 + 16)$

$= 2^{51}(31)$

Hence, above series is divisible by a number which is multiple of 2 or 31 or both.

$= 2^{49} \times 4 \times 31$

$= 2^{49} \times 124$, i.e. 124

55. (1) Since, the average of 36 number = 0

Let the first 35 number be 1 and last number = x

$$\text{Average} = \frac{\text{Total sum}}{\text{Total terms}}$$

$$= \frac{1+1+1+---35\text{ times} + x}{36}$$

$$0 = \frac{35+x}{36}$$

$x = 35$

Hence, we can take only 35 numbers which is greater than 0.

56. (1) Let the age of Raman and Sameer be 7x and 5x years.

ATQ,

$$\frac{7x+9}{5x+9} = \frac{4}{3}$$

$21x + 27 = 20x + 36$

$x = 9$

$\therefore$ Age of Raman = $7 \times 9 = 63$ years

57. (2) 1 to 9.....9 numbers = 9 digits

10 to 99.....90 numbers = $90 \times 2 = 180$ digits

100 to 968.....867 numbers = $867 \times 3 = 2601$

Hence, total digits = 9 + 180 + 2601 = 2790

58. (3) Let speed of man = x km/hr

ATQ,

$$60x - 60\left(x - \frac{x}{15}\right) = 20$$

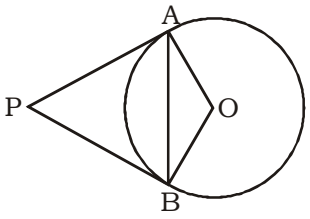
$$60\left(x - x + \frac{x}{15}\right) = 20$$

$$\frac{x}{15} = \frac{20}{60}$$

$$\frac{x}{15} = \frac{1}{3}$$

$\therefore$ $x = \frac{15}{3}$ = 5 km/hr

59. (4)



Given,

$\angle APB = 108°$

Now,

$\angle APB = 108° - \angle APB = 180° - 108° = 72°$

In ΔOAB,

OA = OB = radius

Therefore,

$$\angle OAB = \angle OBA = \frac{180° - \angle AOB}{2}$$

$$\frac{180° - 72°}{2} = \frac{108°}{2} = 54°$$

60. (3) Let the first, the second and the third number be x, y and z respectively.

Sum of three numbers = 12 × 3 = 36

Given, $x = \frac{(y+z)}{2} - 6$

$2x = y + z - 12$

Adding x both sides,

$3x = x + y + z - 12$

$3x = 36 - 12$

$x = 8$

Now, given,

$$z = \frac{(x+y)}{2} + 6$$

$2z = x + y + 12$

Adding z in both sides,

$3z = x + y + z + 12$

$3z = 36 + 12$

$z = 16$

So, the required difference = z – x = 16 – 8 = 8

61. (2) According to the question,

Principal = ₹ S

Rate = 2 r% p.a

Time = 3 years

$\therefore \quad A = P\left(1 + \frac{R}{100}\right)^T$

$$A = S\left(1 + \frac{2r}{100}\right)^3$$

$$A = S\left(1 + \frac{r}{50}\right)^3$$

62. (2) Let the HCF of the two numbers be x.

LCM of the numbers be12x.

$$\text{Second number} = \frac{\text{LCM} \times \text{HCF}}{\text{One number}} = \frac{12\,x \times x}{93}$$

ATQ,

$12x + x = 403$

$13x = 403$

$$x = \frac{403}{13}$$

$x = 31$

$$\therefore \quad \text{Second number} = \frac{12 \times 31 \times 31}{93} = 124$$

63. (4) Since,

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

$$\text{And, } (a^2 + ab + b^2) = \frac{a^3 - b^3}{a + b}$$

Also,

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

$$\text{And, } (a^2 - ab + b^2) = \frac{a^3 + b^3}{a + b}$$

Then,

$$= \frac{\left((4.6)^2\right)^2 + \left((5.4)^2\right)^2 + (24.84)^2}{(4.6)^2 + (5.4)^2 + 24.84}$$

$$= \frac{(4.6)^4 + (5.4)^4 + (24.84)^2}{(4.6)^4 + (5.4)^4 + (24.84)^2} = \frac{\left(4.6^6 - 5.4^6\right)}{\left(4.6^2 - 5.4^2\right)} \Big/ \frac{\left(4.6^3 - 5.4^3\right)}{(4.6 - 5.4)}$$

$$= \frac{\left(4.6^3 - 5.4^3\right)\left(4.6^3 + 5.4^3\right)}{(4.6 - 5.4)(4.6 + 5.4)} \times \frac{(4.6 - 5.4)}{\left(4.6^3 - 5.4^3\right)}$$

$$= \frac{\left(4.6^3 + 5.4^3\right)}{(4.6 + 5.4)} = 4.6^2 - 4.6 \times 5.4 + 5.4^2 = 25.48$$

64. (1) $\frac{\sin\theta}{1+\cos\theta}+\frac{1+\cos\theta}{\sin\theta}=\frac{4}{\sqrt{3}}$

$$\frac{\sin^2\theta+1+\cos^2\theta+2\cos\theta}{\sin\theta(1+\cos\theta)}=\frac{4}{\sqrt{3}}$$

$$\frac{1+1+2\cos\theta}{\sin\theta(1+\cos\theta)}=\frac{4}{\sqrt{3}}$$

$$\frac{2(1+\cos\theta)}{\sin\theta(1+\cos\theta)}=\frac{4}{\sqrt{3}}$$

$$\sin\theta=\frac{\sqrt{3}}{2}$$

$\sin\theta = \sin 60°$

$\theta = 60°$

Then, $(\tan\theta + \sec\theta)^{-1} = (\tan 60° + \sec 60°)^{-1}$

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

$$=\frac{2-\sqrt{3}}{4-3}=2-\sqrt{3}$$

65. (3) Let x be the required number and a be its first part.

So, $(x-a)$ will be its second part.

ATQ,

$0.8a = 0.6\,(x-a) + 3$

$0.8a + 0.6a = 0.6x + 3$

$1.4a = 0.6x + 3$

$$a=\frac{0.6x+3}{1.4} \qquad \text{.....(i)}$$

Also,

$0.9a + 6 = 0.8\,(x-a)$

$0.9a + 0.8a = 0.8\,x - 6$

$1.7a = 0.8x - 6$

$$a=\frac{0.8x-6}{1.7} \qquad \text{.....(ii)}$$

From (i) & (ii) ,

$$\frac{0.6x+3}{1.4}=\frac{0.8x-6}{1.7}$$

$1.02x + 5.1 = 1.12x - 8.4$

$0.1x = 13.5$

$\therefore \quad x=\frac{13.5}{0.1}=135$

66. (1) Let the two digit number be $10y + x$, where $x > y$.

ATQ,

$10x + y - 10y - x = 63$

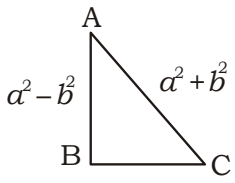
$9x - 9y = 63$

$x - y = 7$

$x = 7, 8, 9$ and $y = 0, 1, 2$

$\therefore$ Possible values of x are 7, 8, 9.

67. (1)



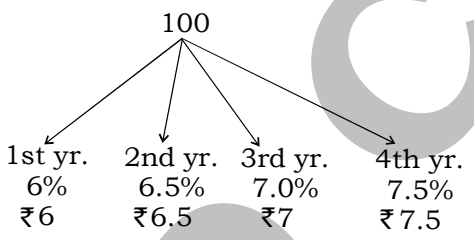
$BC = \sqrt{(a^2+b^2)^2 - (a^2-b^2)^2}$

$= \sqrt{a^4 + b^4 + 2a^2b^2 - (a^4 + b^4 - 2a^2b^2)}$

$= \sqrt{2a^2b^2 + 2a^2b^2} = \sqrt{4a^2b^2} = 2ab$

$\tan\theta = \dfrac{a^2 - b^2}{2ab}$

68. (1) Let the principal be = ₹ 100



Total S.I. = ₹ (6 + 6.5 + 7+ 7.5) = ₹ 27 (derived) = 27 × 125 = ₹ 3375 (given)

P = ₹ 100 × 125 = ₹ 12500 (actual)

$\therefore$ The amount taken as a loan by her = ₹ 12500

69. (1) Distance between A and B = $\dfrac{150}{(75-60)}$ × (75 + 60) = 2025 km

70. (1) Area = $\dfrac{1}{2}$ × height × (sum of parallel sides)

$250 = \dfrac{1}{2}$ × height × (15 + 10)

Height = $\dfrac{250 \times 2}{25}$ = 20 m

71. (2) Let the length of diagonal be d cm and 2d cm and each side be a cm.

Area = $\frac{1}{2} \times 2d \times d$

$160 = \frac{1}{2} \times 2d^2$

$d = 4\sqrt{10}$ cm

Now, $a = \frac{1}{2}\sqrt{\left(4\sqrt{10}\right)^2 + \left(8\sqrt{10}\right)^2} = \frac{1}{2}\sqrt{160+640} = \frac{1}{2}\sqrt{800}$

$= \frac{1}{2} \times 10 \times 2\sqrt{2} = 10\sqrt{2}$ cm

72. (4) The slope of line passing through (– 4, – 2) and (8, – 6)

$= \frac{y_2 - y_1}{x_2 - x_1} = \frac{-6-(-2)}{8-(-4)} = \frac{-4}{12} = \frac{-1}{3}$

We know that product of slope of perpendicular lines is –1

$m_1 \times m_2 = -1$

$\frac{-1}{3} \times m_2 = -1$

$m_2 = 3$

73. (2) Total import in 2011 and 2012 = (450 + 450) = 900

Total export in 2012 and 2014 = (600 + 100) = 700

∴ Required ratio = 900 : 700 = 9 : 7

74. (2) Import of aluminium in 2010, 2011 and 2012 = 300 + 450 + 450 = 1200

Export of aluminium in 2012, 2013, and 2014 = (600 + 300 + 100) = 1000

∴ Required percentage = $\left(\frac{1200}{1000} \times 100\right)\% = 120\%$

75. (2) Total import of aluminium 2010 to 2014 = 300 + 450 + 450 + 400 + 200 = 1800

∴ Required central angle = $\left(\frac{200}{1800} \times 360\right) = 40°$

MEANINGS IN ALPHABETICAL ORDER

Abjure/Renounce	To reject formally	छोड़ देना
Auspicious	Prosperous, favourable	शुभ, मंगल
Batten	Long flat squared timber/metal for fastening	फट्टा]
Boisterous	Noisy, lacking in discipline	हुल्लड़बाज
Catastrophe	Disaster, event causing	प्रलय
Contagious	Capable of transmission by touch	संक्रामक
Contemporary	Occurring at the same time	समकालीन
Deist	One who advocates natural religion	प्रकृतिवादी/प्रत्यक्षवादी
Epitomize	A perfect example of	प्रतीक होना
Fastidious	Very attentive to accuracy and detail / hard to please	दुराध्य/नखरेबाज
Hatches	A small opening	निकास
Hireling	A person employed to do menial work	निम्न कार्य करने वाला
Irrelevant	Having no connection with subject	बेमतलब
Loquacious	Talkative	बातूनी
Mime	Communication by gestured facing expressions (especially without words)	मूक अभिनय
Mobilize	Make moveable or capable of movement	इस्तेमाल करना
Nirvana	Place of complete bliss/delight	स्वर्ग
Officious	Intrusively offensive in offering help or advice	जबरदस्ती दखल देने वाला
Proliferation	Rapid increase in numbers	बहुजनन/संख्या में बढ़ना
Rationalist	Who believes in practical reason & knowledge	तार्किक
Respectably	In a decent & reputable manner	सम्माननीय ढंग से
Serenity	Absence of mental stress	शांतचित्तता
Tangent	Diverging from the original purpose	अलग रास्ते में चले जाना
Underneath	On the lower side	नीचे
Venal	Motivated by bribery, corrupt	बिकाऊ
Volunteer	A person freely offering to do something	स्वयंसेवक

SSC MOCK TEST - 453 (ANSWER KEY)

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

76. (1) Change 'a' into 'an' . 'Earth quake' starts with vowel sound.

77. (1) Change 'does' into 'do'. 'Parents' is a plural noun.

90. (3) The correct spelling is 'Conscience'.

91. (1) The correct spelling is 'Nirvana'.