

SSC MOCK TEST - 401 (SOLUTION)

1. (1) As, $94 \Rightarrow 9^2 + 4^2 = 97$

Similarly,

$75 \Rightarrow 7^2 + 5^2 = 74$

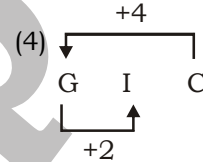
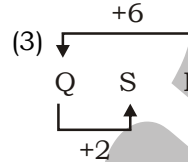
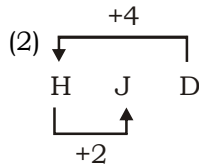
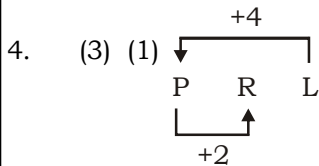
2. (2) Ranchi is capital of Jharkhand, while Chennai is the capital of Tamin Nadu.

3. (4) (1) $132 \Rightarrow 3 - 1 = 2$

(2) $561 \Rightarrow 6 - 5 = 1$

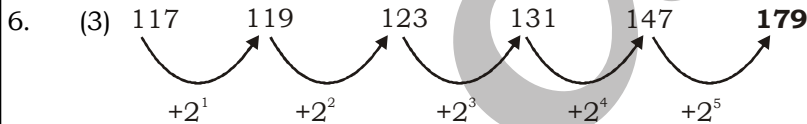
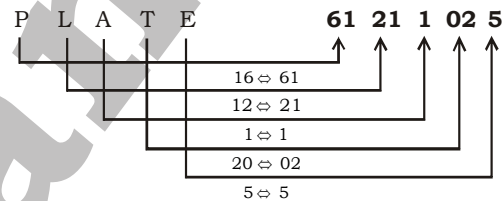
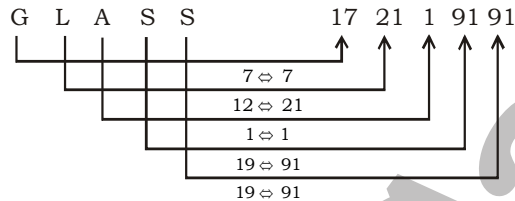
(3) $374 \Rightarrow 7 - 3 = 4$

(4) $673 \Rightarrow 7 - 6 = 1 \neq 3$



5. (2) As,

Similarly,



8. (1) Percentage of passengers from city D = $100 - (44 + 20 + 26) = 10\%$

\therefore Number of passangers in city B = $\frac{80}{10} \times 20 = 160$

9. (2) As, $(18 + 16) \times (18 - 16) = 78$

Similarly, $(27 + 23) \times (27 - 23) = 200$

10. (1) dkrjp/dkrjp/dkrjp

11. (1)

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

$981 - 436 = 545$

In the second row,

$768 - 134 = 634$

In the third row,

$459 - 435 = 24$

13. (3) $16 - 18 \div 3 + 4 \times 5 = 2$

After changing the sign,

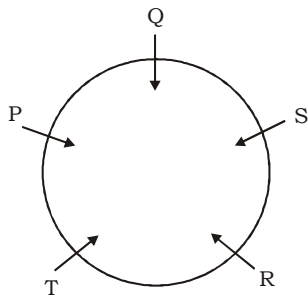
$$16 + 18 \div 3 - 4 \times 5 = 2$$

$$16 + 6 - 20 = 2$$

$$22 - 20 = 2$$

$$2 = 2$$

14. (2)



P is second to the left of R.

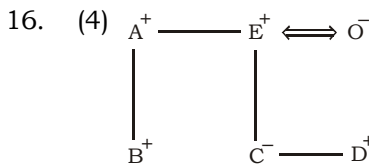
S is an immediate neighbour of R.

R is an immediate right to T.

S and Q is an immediate neighbour to each other.

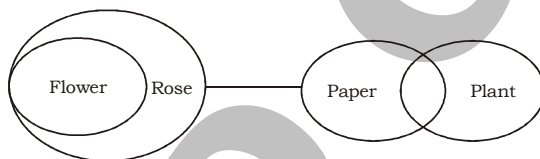
S sits second to the right of T.

15. (3) 2. Morning \rightarrow 5. Market \rightarrow 4. Fish \rightarrow 1. Cook \rightarrow 6. Dish \rightarrow 3. Lunch



Hence, B is the Nephew of C's father.

17. (1)



I. False II. False III. True

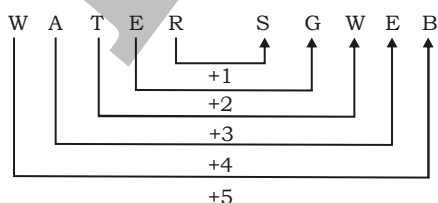
Hence, only conclusion III follows.

18. (3) 19. (3)

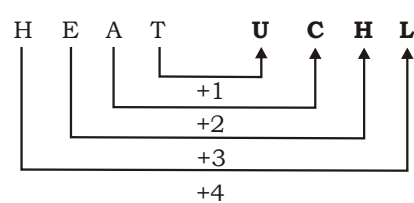
20. (3) As, $370 - 180 = 190$

Similarly, $450 - 220 = 230$

21. (2) As,



Similarly,



22. (3)

23. (1)

24. (1)

25. (4)

27. (4) According to Article 58 of the Constitution, no person shall be eligible for election as President unless he is a citizen of India, has completed the age of thirty-five years and is qualified for election as a member of the House of the People.
28. (3) The cattle in general and cow in particular was the main medium of exchange during the Rig Vedic period. The economy was based upon agriculture.
29. (1) The Hare quota (also known as the simple quota) is a formula used under some forms of the Single Transferable Vote (STV) system and the largest remainder method of party-list proportional representation.
30. (2) we can say that the jet engine works on the principle of conservation of momentum
31. (4) The drain theory was given by Dadabhai Naoroji in his book 'Poverty and Un-British Rule in India'.
33. (3) B12 deficiency manifests as macrocytic anemia, and thus, the presenting symptoms often include signs of anemia, such as fatigue and pallor. Due to the increased hemolysis caused by impaired red blood cell formation, jaundice may also be a presenting symptom.
34. (1) The Human Genome Project (HGP) was the international, collaborative research program whose goal was the complete mapping and understanding of all the genes of human beings. All our genes together are known as our "genome."
35. (2) Punjab Agricultural University (PAU) has come up with a new wheat variety called PBW RS1, which contains high levels of amylose starch. RS stands resistant starch.
36. (3) The Vedic Aryans first settled in the region of Saptasindhu.
38. (2) The Moortidevi Award is an annual literary award in India presented by the Bharatiya Jnanpith organisation for a work which emphasises Indian philosophy and culture.
40. (1) Industrial use of Danube waters is made at Vienna, Budapest, Belgrade, and Ruse. The main irrigated areas are along the river in Slovakia, Hungary, Serbia, and Bulgaria.
41. (1) Arundhati Roy is the author of a number of books, including The God of Small Things, which won the Booker Prize in 1997 and has been translated into more than forty languages.
44. (1) Brine, salt water, particularly a highly concentrated water solution of common salt (sodium chloride). Natural brines occur underground, in salt lakes, or as seawater and are commercially important sources of common salt and other salts, such as chlorides and sulfates of magnesium and potassium.
47. (4) The fertile Nile River valley and delta in Egypt, supplied with water from the Nile River, is an example of this type of large oasis. At 22,000 square kilometers, it might be the largest oasis in the world. The palm trees of this oasis signal the presence of water in the middle of the Sahara.
48. (1) To achieve the goal of 'complete independence', Gandhi launched a civil disobedience movement. Along with 78 followers, Gandhi started his famous march from Sabarmati Ashram on march 12, 1930 for the small village Dandi (Navsari District) to break the Salt Law. Gandhi covered a distance of 240 miles in 24 days (March 12-April 5).
50. (1) The International Telecommunication Union, an agency of the United Nations, hosted the AI for Good global summit in Geneva from 4 to 7 July.

51. (2) $\left(2\frac{6}{7} \text{ of } 4\frac{1}{5} \div \frac{2}{3}\right) \times 1\frac{1}{9} \div \left(\frac{3}{4} \times 2\frac{2}{3} \text{ of } \frac{1}{2} \div \frac{1}{4}\right)$

$$= \left(\frac{20}{7} \text{ of } \frac{21}{5} \div \frac{2}{3}\right) \times \frac{10}{9} \div \left(\frac{3}{4} \times \frac{8}{3} \text{ of } \frac{1}{2} \div \frac{1}{4}\right)$$

$$= \left(12 \times \frac{3}{2}\right) \times \frac{10}{9} \div \left(\frac{3}{4} \times \frac{8}{6} \times \frac{4}{1}\right)$$

$$= 18 \times \frac{10}{9} \div 4 = 18 \times \frac{10}{9} \times \frac{1}{4} = 5$$

52. (1) $\frac{\tan 5\theta + \tan 3\theta}{4 \cos 4\theta (\tan 5\theta - \tan 3\theta)}$

$$= \frac{\frac{\sin 5\theta}{\cos 5\theta} + \frac{\sin 3\theta}{\cos 3\theta}}{4 \cos 4\theta \left(\frac{\sin 5\theta}{\cos 5\theta} - \frac{\sin 3\theta}{\cos 3\theta} \right)}$$

$$= \frac{\frac{\sin 5\theta \cdot \cos 3\theta + \sin 3\theta \cdot \cos 5\theta}{\cos 5\theta \cdot \cos 3\theta}}{\frac{4 \cos 4\theta (\sin 5\theta \cdot \cos 3\theta - \sin 3\theta \cdot \cos 5\theta)}{\cos 5\theta \cdot \cos 3\theta}}$$

$$= \frac{\sin 2 \times 4\theta}{4 \cos 4\theta \cdot \cos 2\theta}$$

$$= \frac{2 \sin 4\theta \cdot \cos 4\theta}{4 \cos 4\theta \cdot \sin 2\theta} = \frac{2 \times 2 \sin 2\theta \cdot \cos 2\theta}{4 \sin 2\theta} = \cos 2\theta$$

53. (4) Distance = 500 km

Usual speed of car = 50 km/hr

Usual time to cover 250 km = $\frac{250}{50} = 5$ hours

Speed of car after breakdown = $50 \times \frac{2}{5} = 40$ km/hr

Time taken to cover next 250 km = $\frac{250}{40} = 6.25$ hours

Total time taken = 5 + 6.25 = 11.25 hours

Actual time taken to cover that breakdown = $\frac{500}{50} = 10$ hours

Additional time = 11.25 - 10 = 1.25 hours = 1 hour 15 minutes

54. (2) Let B invested ₹ 2x in the beginning A invested = 2x × 4 = ₹ 8x

C invested = ₹ 2x × $\frac{1}{2}$ = ₹ x

Ratio of their share at the end of 1 year = 2x × 12 : 8x × 7 : 1 × 8 = 24 : 56 : 8 = 3 : 7 : 1

∴ Share of C = $\frac{19800}{11} \times 1 = ₹ 1800$

55. (3) Let the first and second number be 4x and 5x respectively and the third and fourth number be 7y and 11y respectively.

ATQ,

$$4x + 5x + 7y + 11xy = 270$$

$$9x + 18y = 270$$

$$x + 2y = 30$$

$$x = 30 - 2y \quad \dots\dots(i)$$

Also,

$$11y - 5x = 60$$

$$11y - 5(30 - 2y) = 60$$

$$11y - 150 + 10y = 60$$

$$21y = 40 + 150 = 210$$

$$y = \frac{210}{21} = 10$$

Put the value of y in equation (i),

$$x = 30 - 2 \times 10 = 10$$

$$\text{First number} = 10 \times 4 = 40$$

$$\text{Third number} = 10 \times 7 = 70$$

$$\therefore \text{Required average} = \frac{40 + 70}{2} = 55$$

56. (3) Exterior angle of regular polygon = $\frac{360}{\text{Number of sides}}$

ATQ,

$$\frac{360^\circ}{n} - \frac{360^\circ}{n+1} = 12$$

$$360^\circ(n+1) - 360^\circ \times n = 12n(n+1)$$

$$360^\circ(n+1-n) = 12n(n+1)$$

$$30 = n^2 + n$$

$$n^2 + n - 30 = 0$$

$$n^2 + 6n - 5n - 30 = 0$$

$$n(n+6) - 5(n+6) = 0$$

$$(n-5)(n+6) = 0$$

$$n = 5, \text{ or } -6$$

Hence, $n = 5$ (ignore the negative value of n)

57. (4) $x^3 + y^3 = (x+y)^3 - 3xy(x+y)$

$$18 = (6)^3 - 3xy \times 6$$

$$18 = 216 - 18xy$$

$$18xy = 198$$

$$xy = \frac{198}{18} = 11 \quad \dots\dots(i)$$

Also,

$$(x+y)^2 = x^2 + y^2 + 2xy$$

$$6^2 = x^2 + y^2 + 2 \times 11 \quad [\text{From (i)}]$$

$$x^2 + y^2 = 36 - 22 = 14$$

Now,

$$x^4 + y^4 = (x^2 + y^2)^2 - 2x^2y^2$$

$$= (14)^2 - 2 \times (11)^2$$

$$= 196 - 242 = -46$$

58. (1)

| | Sita | Neeta | Ramesh |
|--------------------|-------------------|-------------------|--------------------|
| For 1st 6 months | 45000×6 | | |
| For next 6 months | 45000×6 | 80000×6 | |
| For next 12 months | 45000×12 | 80000×12 | 120000×12 |
| | 270 | | |
| | 270 | 480 | |
| | <u>540</u> | <u>960</u> | <u>1440</u> |
| | 1080 | 1440 | 1440 |
| | 3 | 4 | 4 |

59. (4) Let the number of first class tickets = x

Number of 2nd class tickets = $18 - x$

ATQ,

$$10x + 4(18 - x) = 110$$

$$x = 8$$

2nd class tickets = 10

$$\text{New cost} = 10 \times 10 + 3 \times 38 = ₹ 124$$

60. (4) Let $2^{32} = x$ and Let $(2^{32} + 1) = (x + 1)$ be divisible by a number n .

$$\text{Then, } (2^{96} + 1) = (x^3 + 1) = (x + 1)(x^2 - x + 1)$$

Which is clearly divisible by n as $(x + 1)$ is divisible by n .

61. (2) By alligation:-

$$\begin{array}{ccc} 90 & & 18 \\ & \searrow & \swarrow \\ & 42 & \\ & \swarrow & \searrow \\ 24 & & 48 \\ 1 & : & 2 \end{array}$$

$$\text{Amount of 18\%} = \frac{2}{3}$$

$$\text{Amount of 90\%} = \frac{1}{3}$$

$$\therefore \text{Number of quartz which should be replaced} = \frac{1}{3} \times 27 = 9$$

62. (4) Value of ₹ 6440 due 8 months = $\frac{6440 \times 100}{100 + 18 \times \frac{8}{12}}$

$$= \frac{6440 \times 100}{112} = ₹ 5750$$

Clearly, ₹ 10000 in cash is better offer.

63. (2) Here,

$$R_1 = 7\%, R_3 = 10\%$$

$$\frac{1}{x} = \frac{1}{3}, \frac{1}{y} = \frac{1}{4}, I = ₹ 510$$

$$\frac{1}{z} = \left[1 - \left(\frac{1}{3} + \frac{1}{4} \right) \right] = \frac{5}{12}$$

According to the formula,

$$P = \frac{I \times 100}{\frac{R_1}{x} + \frac{R_2}{y} + \frac{R_3}{z}} = \frac{510 \times 100}{\frac{7}{3} + \frac{8}{4} + \frac{50}{12}}$$

$$= \frac{5100}{\frac{7}{3} + 2 + \frac{25}{6}} = \frac{51000}{51} \times 6 = ₹ 6000$$

64. (3) Since $\frac{2}{5}$ th of the work is completed in the 25 days, remaining $\frac{3}{5}$ th of the work is to be completed in 25 days.

Let x men work in for 25 days to complete $\frac{3}{5}$ th of the work.

$$\frac{M_1 D_1 H_1}{W_1} = \frac{M_2 D_2 H_2}{W_2}$$

$$\frac{25 \times 105 \times 8 \times 5}{2} = \frac{x \times 25 \times 9 \times 5}{3}$$

$$\frac{105 \times 8}{2 \times 3} = 140$$

∴ Additional men employed = 140 - 105 = 35

65. (2) ATQ,

$$\frac{L+4}{B+4} = \frac{4}{3}$$

$$3L + 12 = 4B + 16$$

$$3L - 4B = 4 \quad \dots\dots (i)$$

$$\text{and } \frac{L-4}{B-4} = \frac{2}{1}$$

$$L - 4 = 2B - 8$$

$$L - 2B = -4 \quad \dots\dots (ii)$$

Solving Equation (i) and (ii), we get

$$L = 12 \text{ m and } B = 8 \text{ m}$$

66. (1) Here, $a = 5$, $b = p + q + r$,

$$c = pqr = \frac{-(p+q+r)}{5}$$

$$p + q + r = 0$$

According to the formula,

$$a^2 + b^2 + c^2 = 3abc,$$

$$\text{If } a + b + c = 0$$

We get,

$$p^2 + q^2 + r^2 = 3pqr \quad (\text{Since } p + q + r = 0)$$

67. (3) Whole surface area of prism = $S = 2A + P_b \times h$ (i)

Lateral surface area = Area of ends

$$2A = P_b h$$

$$49\sqrt{3} = 4A$$

$$49\sqrt{3} = 4 \times \frac{\sqrt{3}}{4} a^2 \quad [\text{since base is equilateral triangle of side } a]$$

$$a = 7\text{m}$$

$$P_b = 3a = 21\text{ m}$$

Now,

$$2A = P_b h$$

$$2 \times \frac{\sqrt{3}}{4} \times 7^2 = 3 \times 7 \times h$$

$$h = 2.02\text{ m}$$

68. (2) Volume of the water flown = $\left(7 \times 4 \times \frac{9}{2}\right) = 7 \times 18 = 126\text{ m}^3$

Let speed of the water be $x\text{ km/h}$.

$$\text{Time} = \left(6 + \frac{17}{60}\right)\text{ hour} = 6.28\text{ hour} = 6.3\text{ hour}$$

According to the question,

$$\left(x \times 1000 \times \frac{63}{10}\right) \times \frac{5}{100} \times \frac{4}{100} = 126$$

$$63x = 126 \times 5$$

$$x = \frac{5 \times 126}{63} = 10\text{ km/h}$$

69. (1) We know that y co-ordinate of any point on x -axis is zero.

$$y = \frac{m_1 y_2 + m_2 y_1}{m_1 + m_2}$$

$$0 = \frac{m_1(2) + m_2(-3)}{m_1 + m_2}$$

$$2m_1 - 3m_2 = 0$$

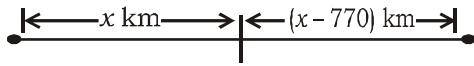
$$\frac{m_1}{m_2} = \frac{3}{2} = 3 : 2$$

70. (2) **Note:** Read 500 km/h in place of 550 km/h in this question.

Let the plane covers x km with 440 km/h and $(x - 770)$ km at a speed of 660 km/h.

Hence, it covers a total distance of

$(2x - 770)$ km at a speed of 500 km/h.



$$\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$$

$$500 = \frac{2x - 770}{\frac{4}{440} + \frac{x - 770}{660}}$$

$$\frac{2x - 770}{500} = \frac{x}{440} + \frac{x - 770}{660}$$

$$x = 1760$$

$$\text{Total distance covered} = 2x - 770 = 2 \times 1760 - 770 = 2750 \text{ km}$$

71. (4) Let the distance between A and B be x km.

Given,

Speed of boat in still water = 9 km/h

and speed of current = 3 km/h

Upward speed = $(9 - 3) = 6$ km/h and

Downward speed = $(9 + 3) = 12$ km/h

$$\frac{x}{6} + \frac{x}{12} = 3$$

$$x = 12 \text{ km}$$

72. (3) Annual average of the total production = $\frac{74 + 71 + 75 + 90 + 80 + 86}{6} = 79.33 \approx 80$

Clearly, this is the production of all types of cars in 2003

73. (4) From the table the production of car S has been continuously increasing during the period 1999 to 2004.

74. (3) **In 2003**

$$P + Q = 21 + 12 = 33$$

$$R + S = 13 + 20 = 33$$

75. (4) Given,

Total no of all types of cars = 80

$$25\% \text{ of } 80 = 25 \times \frac{80}{100} = 20$$

Clearly, It is of S type.

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 - 401 (ANSWER KEY)

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