

**SSC MOCK TEST - 319 (SOLUTION)**

1. (B) As,

$$78 \Rightarrow (7 + 8)^3 - (7 + 8)^2 = 3150$$

Similarly,

$$52 \Rightarrow (5 + 2)^3 - (5 + 2)^2 = 294$$

2. (A) Waiter is related to serve, while mechanic is related to Repair.

3. (D) Except 1991, others are divisible by 3.

4. (D) (A) B D F  
(2) (4)  $\Rightarrow 2 + 6 = (6)$

(B) L M Y  
(12) (13)  $\Rightarrow 12 + 13 = (25)$

(C) I J S  
(9) (10)  $\Rightarrow 9 + 10 = (19)$

(D) G K M  
(7) (11)  $\Rightarrow 7 + 11 \neq (13)$

5. (C) 6 14 23 35 52 76 109 153 210  
 $\uparrow \uparrow \uparrow \uparrow \uparrow \uparrow \uparrow \uparrow \uparrow$   
 +8 +9 +12 +17 +24 +33 +44 +57  
 $\uparrow \uparrow \uparrow \uparrow \uparrow \uparrow \uparrow \uparrow$   
 +2 +2 +2 +2 +2 +2 +2

6. (A) B E G J L O  
 $\uparrow \uparrow \uparrow \uparrow \uparrow$   
 +3 +2 +3 +2 +3

7. (B) As,

$$13 + 9 + 28 = 50$$

Similarly,

$$15 + 25 + 10 = 50$$

8. (C) bbcefk/bbcefk/bbcefk/bbcefk

9. (B) **In first row,**

$$18 \times 2 = 36 \Rightarrow 36 - 1 = 35$$

$$35 \times 2 = 70 \Rightarrow 70 - 1 = 69$$

**In second row,**

$$25 \times 2 = 50 \Rightarrow 50 - 1 = 49$$

$$49 \times 2 = 98 \Rightarrow 98 - 1 = 97$$

**In third row,**

$$23 \times 2 = 46 \Rightarrow 46 - 1 = \mathbf{45}$$

$$45 \times 2 = 90 \Rightarrow 90 - 1 = 89$$

10. (A)  $78 \div 48 \times 8 + (26 \times 7) - 39 + (45 + 20) = 215$

After changing the numbers 48 and 39 to each other

$$78 \div 39 \times 8 + (26 \times 7) + 48 + (45 + 20) = 215$$

$$2 \times 8 + 182 - 48 + 65 = 215$$

$$198 + 65 - 48 = 215$$

$$215 = 215$$

11. (D)      12. (A)      13. (C)

14. (D) 28 May 2006 = (2005 years + Period from 1.1.2006 to 28.5.2006)

Odd days in 1600 years = 0

Odd days in 400 years = 0

5 years = (4 ordinary years + 1 leap year) =  $(4 \times 1 + 1 \times 2) = 6$  odd days

January + February + March + April + May =  $(31 + 28 + 31 + 30 + 28) = 148$  days

148 days = (21 weeks + 1 day) = 1 odd day

Total number of odd days =  $(0 + 0 + 6 + 1) = 0$  odd days

Given day is Sunday.

15. (B) As,

P	E	R	M	I	T
X		X		X	
E	P	M	R	T	I

Similarly,

S	U	N	D	A	Y
X		X		X	
<b>U</b>	<b>S</b>	<b>D</b>	<b>N</b>	<b>Y</b>	<b>A</b>

16. (A)

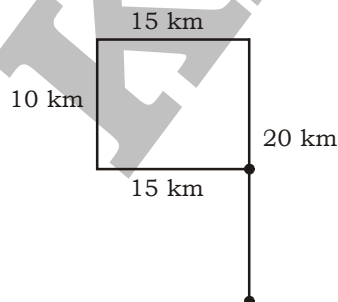
17. (D) As,

TAPEREORDER → !#&@^@?%^+@^

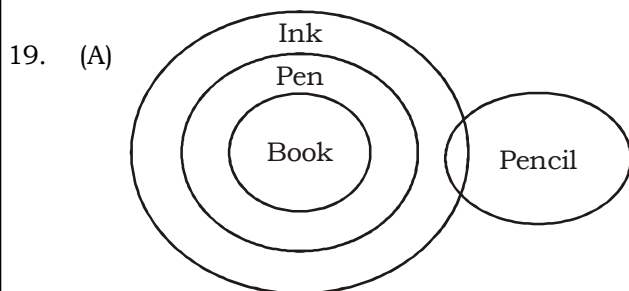
Similarly,

REPORTER → ^@&%^!

18. (B)



Therefore, he is in North from his house.



I. False      II. True      III. False

Hence, only conclusions II follows.

20. (C)

21. (C) Opposite faces of given cubes:

% → #

@ → +

& → \*

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

26. (D) Wheat kind of bread was their staple, perhaps baked in ovens or cooked over fire. In some places, particularly Gujarat, they also cultivated some native millets; and possibly rice does not become an important crop until Post-Harappan times.

28. (D) International Literacy Day is observed on 8 September every year to make people aware of the importance of literacy which no doubt is a matter of dignity and human rights.

30. (C) Plant cells have a cell wall, a large central vacuole, and plastids such as chloroplasts. The cell wall is a rigid layer that is found outside the cell membrane and surrounds the cell, providing structural support and protection.

31. (D) For emergency transfusions, blood group type O negative blood is the variety of blood that has the lowest risk of causing serious reactions for most people who receive it. Because of this, it's sometimes called the universal blood donor type.

32. (A) The food crops like rice, maize and wheat are consumed by humans.

33. (B) The territorial jurisdiction encompasses territorial waters up to 12 nautical miles from the closest baseline point; the Contiguous Zone stretches up to 24 nautical miles beyond the territorial waters; and the Exclusive Economic Zone of India extends up to 200 nautical miles beyond that.

34. (D) A ribosome functions as a micro-machine for making proteins. Ribosomes are composed of special proteins and nucleic acids. The TRANSLATION of information and the Linking of AMINO ACIDS are at the heart of the protein production process.

35. (C) Chhattisgarh govt to provide ₹6,000 annually to 12 lakh landless labourers. The Chhattisgarh government has launched the 'Rajiv Gandhi Grameen Bhumihin Majdur Nyay Yojana', with the provision of ₹200 crores benefiting 12 lakh landless families.

38. (D) A transistor computer, now often called a second generation computer, is a computer which uses discrete transistors instead of vacuum tubes. the first generation of electronic computers used vacuum tubes, which generated large amounts of heat, were bulky and unreliable.

41. (D) In 1953, Francis Crick and James Watson first described the molecular structure of DNA, which they called a "double helix," in the journal Nature.

44. (C) China and India are the two neighbouring countries in Asia. India shares 3488 km of border with China that runs along the states of Jammu and Kashmir, Himachal Pradesh, Sikkim, Uttarakhand and Arunachal Pradesh. Also, the Tibet Autonomous region of China touched border with India.

46. (A) On 1st November 1956, the state reorganization commission came into effect. The states reorganization act of 1956 reduced the number of states in the country from 27 to 14.
47. (D) Balban introduced the famous Persian festival of Nowruz in India to impress the nobles and people with his wealth and power. The festival is a New Year celebration of Spring Equinox.
49. (C) The Chalukyas of Kalyani were the main rivals of the Cholas dynasty in Southern India.

51. (C)  $(3m + 700) \times 5 = (4m \times 600) \times 4$

$$15m + 3500 = 2400m + 2400$$

$$15m = 2400 - 3500$$

$$\text{Now, } 3m + 700$$

$$= 3300 + 700 = 4000$$

$$\therefore \text{ Required number of days} = \frac{4000}{200} = 20 \text{ days}$$

52. (D) Let the speed of train be  $x$  km/hr and length of train be  $y$  m.

ATQ,

$$\frac{y}{(x - 4) \times \frac{5}{18}} = 15$$

$$18y = 75x - 300 \quad \dots\dots(i)$$

$$\text{And, } \frac{y}{(x - 6) \times \frac{5}{18}} = 20$$

$$18y = 100x - 600 \quad \dots\dots(ii)$$

Compare the equation (i) and (ii),

$$75x - 300 = 100x - 600$$

$$100x - 75x = 600 - 300$$

$$25x = 300$$

$$x = \frac{300}{25} = 12 \text{ km/hr}$$

53. (B) Upstream speed = 25 km/hr  
Downstream speed = 35 km/hr

$$\therefore \text{ Required time} = \frac{175}{25} + \frac{175}{35} = 7 + 5 = 12 \text{ hours}$$

54. (A) Quantity of low quality rice =  $450 \times \frac{20}{100} = 90$  kg

Let  $x$  units of good quantity of rice should be added to mixture.

ATQ,

$$\frac{90}{450 + x} = \frac{8}{100}$$

$$8x + 3600 = 9000$$

$$8x = 5400$$

$$x = \frac{5400}{8} = 675 \text{ kg}$$

55. (A) Let the male and female employees in KD Live be  $6x$  and  $11x$  respectively.

ATQ,

$$\frac{6x + 24}{11x} = \frac{8}{11}$$

$$66x + 264 = 88x$$

$$22x = 264$$

$$x = \frac{264}{22} = 12$$

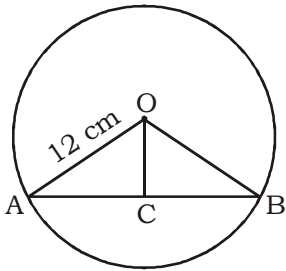
$\therefore$  Required number of male employees initially =  $12 \times 6 = 72$

56. (C)  $20 \div 5$  of  $8 \times [9 \div 6 \times (6 - 3)] - (10 \div 2$  of  $20)$

$$= 20 \div 40 \times [9 \div 6 \times (6 - 3)] - (10 \div 40)$$

$$= \frac{1}{2} \times \frac{9}{2} - \frac{1}{4} = \frac{8}{4} = 2$$

57. (D)



Diameter of circle = 24 cm

$$\text{Radius} = \frac{24}{2} = 12 \text{ cm}$$

Chord AB = 20 cm

$$AC = BC = \frac{20}{2} = 10 \text{ cm} \quad (\text{OC bisects AB})$$

Now, In  $\Delta AOC$ ,

$$\begin{aligned} OC &= \sqrt{OA^2 - AC^2} \\ &= \sqrt{12^2 - 10^2} = \sqrt{144 - 100} \\ &= \sqrt{44} = 2\sqrt{11} \text{ cm} \end{aligned}$$

58. (C)  $\frac{\cos^2 \theta}{\cot^2 \theta + \sin^2 \theta - 1} = 3$

$$\frac{\cos^2 \theta}{\cot^2 \theta - (1 - \sin^2 \theta)} = 3$$

$$\frac{\cos^2 \theta}{\cot^2 \theta - \cos^2 \theta} = 3$$

$$\frac{\cot^2 \theta - \cos^2 \theta}{\cos^2 \theta} = \frac{1}{3}$$

$$\frac{\cot^2 \theta}{\cos^2 \theta} - \frac{\cos^2 \theta}{\cos^2 \theta} = \frac{1}{3}$$

$$\frac{\cot^2 \theta}{\cos^2 \theta} = 1 + \frac{1}{3}$$

$$\frac{\cot^2 \theta}{\cos^2 \theta} = \frac{4}{3}$$

$$\frac{\cos^2 \theta}{\sin^2 \theta \cdot \cos^2 \theta} = \frac{4}{3}$$

$$\frac{1}{\sin^2 \theta} = \frac{4}{3}$$

$$\sin^2 \theta = \frac{3}{4}$$

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

$$\sin \theta = \sin 60^\circ$$

$$\theta = 60^\circ$$

$$\therefore \cot \theta + \sec \theta = \cot 60^\circ + \sec 60^\circ$$

$$= \frac{1}{\sqrt{3}} + 2 = \frac{1 + 2\sqrt{3}}{\sqrt{3}}$$

59. (C)  $(19 - x) : (28 - x) :: (55 - x) : (97 - x)$

$$\frac{19 - x}{28 - x} = \frac{55 - x}{91 - x}$$

$$1729 - 19x - 91x + x^2 = 1540 - 28x - 55x + x^2$$

$$110 - 83x = 1729 - 1540$$

$$27x = 189$$

$$\therefore x = \frac{189}{27} = 7$$

60. (D) Let the marked price be ₹ 100.

$$\text{Selling price} = 100 \times \frac{75}{100} = ₹ 75$$

$$\text{Cost price} = \frac{75}{125} \times 100 = ₹ 60$$

$$\therefore \text{Required ratio} = 60 : 75 = 4 : 5$$

61. (A) Total number of cars sold by dealer B in January, March and May together =  $600 + 635 + 450 = 1685$

Total number of cars sold by dealer C in February, April and June together =  $635 + 540 + 740 = 1915$

$$\therefore \text{Required ratio} = 1685 : 1915 = 337 : 383$$

62. (C) Total number of cars sold in April by all the dealers together =  $635 + 580 + 540 + 740 + 740 = 3235$

63. (D) Total number of cars sold by dealer B in all the months together =  $600 + 642 + 635 + 580 + 450 + 620 = 3527$

Total number of cars sold by dealer C in all the months together =  $640 + 635 + 640 + 540 + 625 + 740 = 3820$

$$\therefore \text{Required less\%} = \left( \frac{3820 - 3527}{3820} \times 100 \right) \% = 7.67\% \approx 8\%$$

64. (A) Total number of cars sold by dealer A in January, February and March together =  $620 + 640 + 628 = 1888$

Total number of cars sold by dealer E in April, May and June together =  $740 + 650 + 800 = 2190$

$$\therefore \text{Required difference} = 2190 - 1888 = 302$$

65. (B) Let the cost price of TV be ₹ 100.

$$\text{Marked price} = 100 \times \frac{130}{100} = ₹ 130$$

$$\text{Selling price} = 130 \times \frac{75}{100} = ₹ 97.50$$

$$\text{Loss} = 100 - 97.50 = ₹ 2.50$$

$$\therefore \text{Loss\%} = \left( \frac{2.50}{100} \times 100 \right) \% = 2.5\%$$

66. (D) Perimeter of rectangular plot =  $2 \times (40 + 25) = 2 \times 65 = 130$  m

Perimeter of square plot =  $4 \times \text{side}$

$$4 \times \text{side} = 130$$

$$\therefore \text{Side} = \frac{130}{4} = 32.5 \text{ m}$$

67. (A) If  $x^4 + x^2y^2 + y^4 = 21$  and  $x^2 + xy + y^2 = 7$

**Formula used:**

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

Calculation:

$$x^4 + x^2y^2 + y^4 = 21 \text{ and } x^2 + xy + y^2 = 7 \quad \dots(i)$$

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

$$21 = (x^2 - xy + y^2) \times 7$$

$$(x^2 - xy + y^2) = \frac{21}{7}$$

$$(x^2 - xy + y^2) = 3 \quad \dots(2)$$

Equation (1) from equation (2),

$$2xy = 4$$

$$xy = 2$$

$$(xy)^2 = 4$$

From equation (1)

$$x^2 + y^2 = 7 - 2$$

$$x^2 + y^2 = 5$$

Now,

$$\left(\frac{1}{x^2} + \frac{1}{y^2}\right)$$

$$\frac{(x^2 + y^2)}{(xy^2)} = \frac{5}{4}$$

68. (B) Let the number of clerks be x.

ATQ,

$$(15000 \times 60) + (x + 8000) = (x + 60) \times 12000$$

$$900000 + 8000x = 12000x + 720000$$

$$4000x = 180000$$

$$x = \frac{180000}{4000} = 45$$

∴ Number of clerks = 45

69. (B) Portion of the tank filled in 5 minutes =  $5\left(\frac{1}{20} + \frac{1}{30} + \frac{1}{40}\right) = \frac{13}{24}$

$$\text{Portion of the tank filled by B and C in the next 6 minutes} = 6\left(\frac{1}{30} + \frac{1}{40}\right) = \frac{7}{20}$$

$$\text{Portion of the tank which is yet to be filled} = 1 - \left(\frac{13}{24} + \frac{7}{20}\right) = \frac{13}{120}$$

Time taken by C fill the tank taking into consideration the leak as well

$$= \frac{\frac{13}{120}}{\left(\frac{1}{40} - \frac{1}{60}\right)} = \frac{13}{120} \times 120 = 13 \text{ minutes}$$

∴ Total time taken = 5 + 6 + 13 = 24 minutes

70. (D) Given,

$$\begin{aligned}
 &(1!)^{99} + (2!)^{98} + (3!)^{97} + \dots + (99!)^1 \\
 &= 1^{99} + 2^{98} + 6^{97} + 24^{96} + 120^{95} + 720^{94} + \dots \\
 &= 1 + 4 + 6 + 6 + 0 + 0 + \dots \\
 &= 7 \text{ (unit digit)}
 \end{aligned}$$

71. (C) Total of 6 number =  $136 \times 6 = 816$

Let the 6<sup>th</sup> number be x.

$$\text{Sum of the first 5 number} = 7x$$

ATQ,

$$7x + x = 816$$

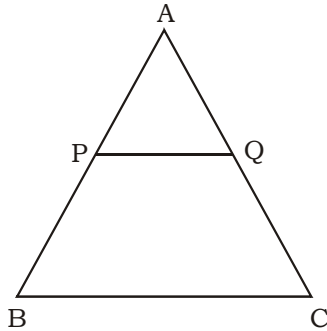
$$8x = 816$$

$$\therefore x = \frac{816}{8} = 102$$



72. (A)  $1005x4$  is divided by 8.  
Put the value of  $x = 0$   
Now,  $100504$  is completely divisible by 8.  
 $\therefore$  Required integer = 0

73. (C)



Area of quadrilateral PBCQ =  $120 \text{ cm}^2$

AP : PB = 3 : 4

Now,

$$\frac{\text{Area of } \triangle APB}{\text{Area of } \triangle ABC} = \left(\frac{AP}{AB}\right)^2$$

$$\frac{\text{Area of } \triangle APB}{\text{Area of } \triangle ABC} = \left(\frac{3}{7}\right)^2$$

$$= \frac{\text{Area of } \triangle APB}{\text{Area of quadrilateral PBCQ} - \text{Area of } \triangle APB} = \frac{9}{49}$$

(The ratio of area of two similar AB is equal to the square of the ratio of any pair of corresponding sides of similar ...).

$$\frac{\text{Area of quadrilateral PBCQ} - \text{Area}(\triangle APB)}{\text{Area of } (\triangle APB)} = \frac{49}{9}$$

$$\frac{\text{Area of quadrilateral PBCQ}}{\text{Area}(\triangle APB)} - \frac{\text{Area}(\triangle APB)}{\text{Area}(\triangle APB)} = \frac{49}{9}$$

$$\frac{\text{Area of quadrilateral PBCQ}}{\text{Area}(\triangle APB)} = \frac{49}{9} + 1$$

$$\frac{120}{\text{Area}(\triangle APB)} = \frac{40}{9}$$

$$\therefore \text{Area}(\triangle APB) = \frac{120 \times 9}{40} = 27 \text{ cm}^2$$

74. (A) Volume of wall =  $(2500 \times 800 \times 50) \text{ cm}^3$   
Volume of a brick =  $(25 \times 15 \times 12) \text{ cm}^3$

$$\therefore \text{Required number of bricks} = \frac{90}{100} \times \frac{2500 \times 800 \times 50}{25 \times 15 \times 12} = 20000$$

75. (C) 
$$\frac{8 \sin \theta + 5 \cos \theta}{\sin^3 \theta + 2 \cos^3 \theta + 3 \cos \theta}$$

Dividing numerator and denominator by  $\cos \theta$ ,

$$\frac{\frac{8 \sin \theta}{\cos \theta} + \frac{5 \cos \theta}{\cos \theta}}{\frac{\sin^3 \theta}{\cos \theta} + \frac{2 \cos^3 \theta}{\cos \theta} + \frac{3 \cos \theta}{\cos \theta}}$$

$$\frac{8 \tan \theta + 5}{2 \sin^2 \theta + 2 \cos^2 \theta + 3}$$

$$\frac{8 \tan \theta + 5}{2(\sin^2 \theta + 2 \cos^2 \theta) + 3}$$

$$= \frac{8 \times 2 + 5}{2 \times 1 + 3} = \frac{21}{5}$$

KD

Campus

**MEANINGS IN ALPHABETICAL ORDER**

Allegory	a story, poem, or picture that can be interpreted to reveal a hidden meaning, typically a moral or political one	रूपक
Aristocratic	of, belonging to, or typical of the aristocracy	भव्य
Comply	(of a person or group) act in accordance with a wish or command	पालन करना
Conservative	averse to change or innovation and holding traditional values	अपरिवर्तनवादी
Contagious	(of a disease) spread from one person or organism to another by direct or indirect contact	संक्रामक
Dire	(of a situation or event) extremely serious or urgent	भयानक
Enmity	the state or feeling of being actively opposed or hostile to someone or something	शत्रुता
Fable	a short story, typically with animals as characters, conveying a moral	कल्पित कहानी
Fatal	causing death	घातक
Grim	forbidding or uninviting	विकट
Hostility	hostile behavior; unfriendliness or opposition	शत्रुता
Invigorate	give strength or energy to	मजबूत करना
Lethargic	affected by lethargy; sluggish and apathetic	सुस्त
Ominous	giving the impression that something bad or unpleasant is going to happen; threatening; inauspicious	अमंगल
Parable	a simple story used to illustrate a moral or spiritual lesson, as told by Jesus in the Gospels	दृष्टांत
Presumptuous	(of a person or their behavior) failing to observe the limits of what is permitted or appropriate	अभिमान
Sympathy	feelings of pity and sorrow for someone else's misfortune	सहानुभूति

**SSC MOCK TEST - 319 (ANSWER KEY)**

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