

**SSC MOCK TEST - 451 (SOLUTION)**

1. (4) 'Father' is related to 'Parents', similarly 'Sister' is related to 'Sibling'.

2. (4) As,

A N Y T H I N G  
 $\swarrow \quad \searrow \quad \swarrow \quad \searrow$   
 N A T Y I H G N

Similarly,

G R O U N D  
 $\swarrow \quad \searrow \quad \swarrow \quad \searrow$   
 R G U O D N

3. (2)  $33 : 10 :: 54 : 21$   
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$   
 $(3 \times 3) + 1 \uparrow \quad (5 \times 4) + 1 \uparrow$

4. (4)  $24 \ 20 \Rightarrow 2^2 + 4^2 = 20$

$35 \ 34 \Rightarrow 3^2 + 5^2 = 34$

$56 \ 61 \Rightarrow 5^2 + 6^2 = 61$

$67 \ 83 \Rightarrow 6^2 + 7^2 = 85 \neq 83$

5. (2) Except Scold, others are related to each other.

(1) A G  
 $1 + 7 = 8$

(2) C E  
 $3 + 5 = 8$

(3) B F  
 $2 + 6 = 8$

(4) G I  
 $7 + 9 = 16 \neq 8$

7. (2) 4. Pabloism  $\rightarrow$  2. Pacable  $\rightarrow$  3. Pachometer  $\rightarrow$  5. Pachytenes  $\rightarrow$  1. Parliamentarian

8. (3)  $60, \quad 80, \quad 95, \quad 105, \quad 110$   
 $\uparrow \quad \uparrow \quad \uparrow \quad \uparrow \quad \uparrow$   
 $+20 \quad +15 \quad +10 \quad +5$

9. (4) AB, EFG, KLMN, **STUVW**  
 $\uparrow \quad \uparrow \quad \uparrow$   
 $+3 \quad +4 \quad +5$

10. (3)  $5 \ \& \ 8 \Rightarrow (5 - 1) \times 8 = 32$

$9 \ \& \ 6 \Rightarrow (9 - 1) \times 6 = 48$

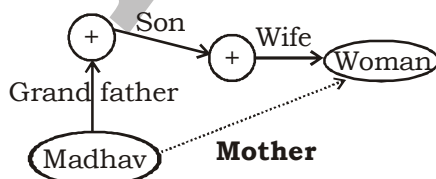
$7 \ \& \ 9 \Rightarrow (7 - 1) \times 9 = 54$

11. (2)  $14^2 \times 4 = 784$

$16^2 \times 5 = 1280$

$12^2 \times 6 = 864$

12. (3)



Hence, the Woman is Mother of Madhav.

13. (4)  $M > K > L$

$K > P$

$M > K > L/P > P/L > Q$

Hence, M has the maximum income.

14. (2) As,

Similarly,

A	D	U	L	T
+1	+2	+3	+4	+5
↓	↓	↓	↓	↓
B	F	X	P	Y

R	I	V	E	R
+1	+2	+3	+4	+5
↓	↓	↓	↓	↓
S	K	Y	I	W

15. (2)  $96 \div 4 \times 6 + 11 \div 9$

After changing the signs as per the given details,

$$96 \div 4 - 6 + 11 \times 9$$

$$= 24 - 6 + 11 \times 9$$

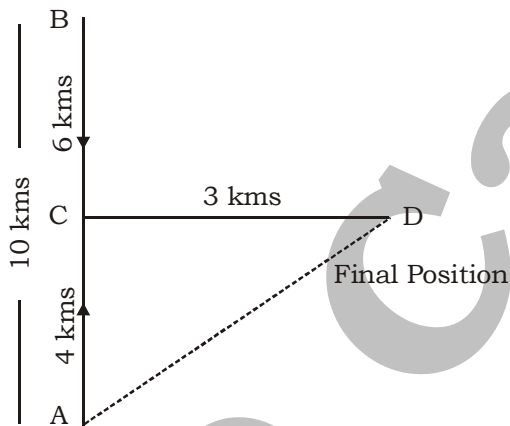
$$= 24 - 6 + 99 = \mathbf{117}$$

16. (1)

17. (3) The word 'SOLVE' cannot be formed using the letters of the given word because the word 'ABSOLUTE' does not have letter 'V'.

18. (2) The number of girls in the row =  $18 + 18 - 1 = 35$

19. (2)



Initial Position

$$AB = 10 \text{ km}$$

$$AC = 10 - 6 = 4 \text{ km}$$

$$CD = 3 \text{ km}$$

In  $\triangle ACD$ ,

$$AD^2 = AC^2 + CD^2$$

$$AD^2 = 4^2 + 3^2$$

$$AD = \sqrt{25} = 5 \text{ km}$$

Kusum is 5 km in North-East direction with respect to initial point.

20. (3) ~~ptxp~~/~~ptxp~~/~~ptxp~~/~~ptxp~~

21. (2)

22. (1)

23. (1)

24. (3)

25. (3)

From the statement of Amar, his sister's birthday is on 20 or 21 or 22 June.

From the statement of Amar's brother, his sister's birthday is on 20 or 21 June.

26. (1) Direct demand- Commodities or services which satisfy our wants directly are said to have direct demand.
27. (3) University Grants Commission was formally established in 1956 by UGC Act.
28. (1) Mithun is a cattle breed is found in Arunanchal Pradesh. Mithun is also known as 'Cattle of Mountain'.
30. (1) India's Ministry of External Affairs and the Confederation of Indian Industries hosts the 1st BIMSTEC Business Summit in New Delhi from August 6-8, 2024.
32. (1) A contact force is any force that requires contact to occur. When surfaces in contact move relative to each other, the friction between the two surfaces arises. So, it can be said that contact force is another name for frictional force.
33. (4) Wajid Ali Shah was the tenth and last Nawab of Awadh, holding the position for 9 years, from 13 February 1847 to 11 February 1856.
35. (1) Haryana's Chief Minister announced the state's procurement of all crops at Minimum Support Price (MSP), making it the first in India to do so. Additionally, he waived Rs 133 crore in irrigation charges and promised Rs 137 crore in pending compensation for crop damage due to natural calamities.
36. (2) Kandyan dance is folk dance of Sri Lanka. It is native to Central hills region on Sri Lanka which is known as Udarata.
37. (3) It's in Mitochondria that pyruvic acid is broken down into carbon dioxide, water and energy.
38. (2) In chemistry, neutralization or neutralisation is a chemical reaction in which an acid and a base react quantitatively with each other.
39. (1) Bishnoi is the movement for saving trees. this movement was started by the Environmentalist Amrita Devi and other village men in 1730 to save the villages sacred trees and protect the forest from deforestation.
41. (2) The ozone layer or ozone shield is a region of Earth's stratosphere that absorbs most of the Sun's ultraviolet radiation.
42. (2) Kolkata Port is the oldest operating port in India built by the British East India Company. It was established in 1870. It is a riverine port. In the 19th century, this Port was the premier port in British India.
46. (1) Light year is the measure of distance and not that of time. It actually means the distance which the light can cover in a year. Based on the definition, one light year equals to  $95 \times 10^{11}$  Kilometers.
47. (3) Governor is the constitutional head of each state appointed by the president for a term of 5 years. To become a governor a person should be a citizen of India, be at least 35 years of age, should not be a member of the either house of the parliament or house of the state legislature and he should not hold any other office of profit.
49. (1) In oxidation there is gain of oxygen atoms and loss of hydrogen atoms. Example during rusting iron oxide is converted to iron hydroxide due to gain of oxygen atom.

51. (4)
- |       | Let total capacity |  | Efficiency                 |
|-------|--------------------|--|----------------------------|
| A → 8 |                    |  | 3                          |
| B → 4 | 24                 |  | 6                          |
| C → 6 |                    |  | -4 (as C is emptying pipe) |

Now (A + B + C) 1 hour work = (3 + 6 - 4) = 5 unit

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

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

53. (1) Let income of B = 100

A's income = 75

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

A      B      C

75    100    87

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

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

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

$F(-3) = 0$

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

$-27 + 27 - 6 + K = 0$

$\therefore K = 6$

55. (2)  $20W \times 16 = 16M \times 15$

$\frac{M}{W} = \frac{20}{15}$

$\frac{M}{W} = \frac{4}{3} = 4 : 3$

56. (2)  $x + \frac{1}{x} = \sqrt{3}$

Cubing both sides,

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

$x^6 + 1 = 0$

$\therefore x^{60} + x^{54} + x^{47} + x^{41} + 1$

$= x^{54}(x^6 + 1) + x^{41}(x^6 + 1) + 1 = 1$

57. (4) Speed of Sound =  $\frac{1700}{25} = 68 \text{ m/s}$

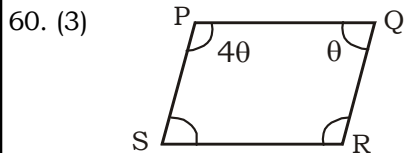
58. (2)  $\frac{3000 \times 12 \times T}{100} = 1080$

$12T = 36$

$T = 3 \text{ years}$

$$59. (2) \quad \frac{3\sqrt{8} - 2\sqrt{12} + \sqrt{20}}{3\sqrt{18} - 2\sqrt{27} + \sqrt{45}} = \frac{6\sqrt{2} - 4\sqrt{3} + 2\sqrt{5}}{9\sqrt{2} - 6\sqrt{3} + 3\sqrt{5}}$$

$$= \frac{2(3\sqrt{2} - 2\sqrt{3} + \sqrt{5})}{3(3\sqrt{2} - 2\sqrt{3} + \sqrt{5})} = \frac{2}{3}$$



Let  $\angle Q$  be  $\theta$ .

Then,  $\theta + 40 = 180^\circ$

$$50 = 180^\circ$$

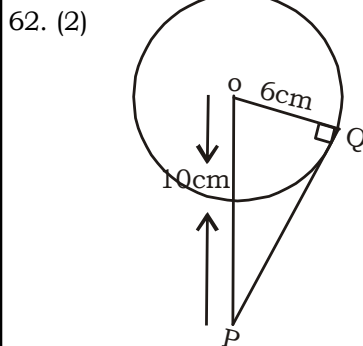
$$\theta = 36^\circ$$

$$\angle Q = 36^\circ$$

$\angle Q + \angle R = 180^\circ$  (Pairs of Adjacent angles of  $\parallel$  gm are supplementary)

$$\angle R = 180 - 36 = 144^\circ$$

61. (1) Weight of the new man =  $42 + 15 \times 1.6$   
 $= 42 + 24 = 66$  kg



$$PQ = \sqrt{10^2 - 6^2} = \sqrt{100 - 36}$$

$$= \sqrt{64} = 8 \text{ cm}$$

63. (3)  $\frac{\cos^2 45^\circ}{\sin^2 60^\circ} + \frac{\cos^2 60^\circ}{\sin^2 45^\circ} - \frac{\tan^2 30^\circ}{\cot^2 45^\circ} - \frac{\sin^2 30^\circ}{\cot^2 30^\circ}$

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

$$= \frac{2}{3} + \frac{1}{2} - \frac{1}{3} - \frac{1}{4} = \frac{8+6-4-1}{12}$$

$$= \frac{14-5}{12} = \frac{9}{12} = \frac{3}{4}$$

64. (4) If equations have no solution,  
then,

$$\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$$

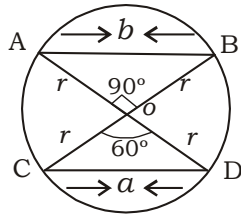
$$\frac{2}{6} = \frac{-k}{-12} \neq \frac{7}{15}$$

$$6k = 24$$

$$\therefore k = 4$$

65. (3) Required time =  $\frac{4 \times \frac{165}{60}}{16.5}$  hours =  $\frac{4 \times 165}{16.5 \times 60} \times 60 = 40$  minutes

66. (2)



$\triangle COD$  is an equilateral triangle.

$$a = r$$

$\triangle AOB$  is an isosceles triangle.

$$\text{So, } \angle OBA = 45^\circ$$

$$\sin 45^\circ = \frac{r}{b}$$

$$\frac{1}{\sqrt{2}} = \frac{r}{b}$$

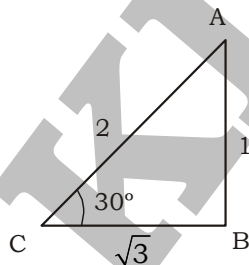
$$b = \sqrt{2} r \text{ or } \sqrt{2} a$$

67. (2) Arithmetic mean of first  $n$  natural number =  $\frac{n+1}{2}$

68. (1) One side of cube =  $\frac{20}{4}$  cm = 5 cm

$$\therefore \text{Area of cube} = 5^3 \text{ cm}^3 = 125 \text{ cm}^3$$

69. (3)



ATQ,

$$\sqrt{3} \text{ units} = 129$$

$$1 \text{ unit} = \frac{129}{\sqrt{3}} = 43\sqrt{3}$$

$$\therefore \text{Height of the cliff} = 43\sqrt{3} \text{ m}$$

70. (3) ATQ,

$$\frac{22}{7} \times (81 - r^2) \times 14 = 748$$

$$(81 - r^2) \times 4 = 68$$

$$81 - r^2 = 17$$

$$r^2 = 81 - 17$$

$$r^2 = 8$$

∴ Thickness = 9 - 8 = 1 cm

71. (3)  $\tan \theta = \frac{8}{15}$

$$\sin \theta = \frac{8}{\sqrt{15^2 + 8^2}} = \frac{8}{17}$$

$$\therefore \frac{\sqrt{1 - \sin \theta}}{\sqrt{1 + \sin \theta}} = \frac{\sqrt{1 - \frac{8}{17}}}{\sqrt{1 + \frac{8}{17}}} = \sqrt{\frac{9}{25}} = \frac{3}{5}$$

72. (2) Let the principal be P and rate of interest be r%. Then, principal (when difference between C.I. and SI is for 2 years) is given by

$$P = \frac{20 \times (100)^2}{r^2} \dots\dots(i)$$

Difference between CI and SI is for 3 years is given by

$$P = \frac{61 \times 10^6}{r^2 (300 + r)} \dots\dots(ii)$$

From eqs. (i) and (ii),

$$\frac{20 \times 10^4}{r^2} = \frac{61 \times 10^6}{r^2 (300 + r)}$$

$$r = 305 - 300 = 5\%$$

$$\text{From eq. (i), } P = \frac{20 \times 10^4}{25} = ₹ 8000$$

73. (3) Average production =  $\frac{260 + 540 + 360 + 120 + 200 + 320}{6} = 300$

74. (2) Number of HP computers sold in July =  $90000 \times \frac{17}{100} \times \frac{8}{15} = 8160$

Number of HP computers sold in December =  $90000 \times \frac{16}{100} \times \frac{7}{16} = 6300$

∴ Required ratio = 8160 : 6300 = 136 : 105

75. (3) Number of HP computers sold in November were sold at a without discount

$$= 90000 \times \frac{12}{100} \times \frac{7}{15} \times \frac{45}{100} = 2268$$

## MEANINGS IN ALPHABETICAL ORDER

Autonomy	the right or condition of self-government	स्वयं शासन
Blatant	(of bad behavior) done openly and unashamedly	मुखर
Broad	having an ample distance from side to side; wide	विस्तृत
Calligrapher	someone skilled in penmanship	सुंदर लिखावट वाला व्यक्ति
Cannibalism	act of feeding on human flesh	नरमांस-भक्षण
Cartographer	a person who draws or produces maps.	वह व्यक्ति जो मानचित्र बनाता हो
Concede	admit that something is true or valid	स्वीकार करना
Confer	grant or bestow (a title, degree, benefit, or right)	उपाधि प्रदान करना
Confide	tell someone about a secret or private matter	गुप्त बात कहना
Confined	limited to a certain extent	सीमित
Connoisseur	A critical judge of any art and craft	विशेषज्ञ
Constituent	a component part of something	घटक
Contemporaries	Persons living at the same time	समकालीन
Convalescent	One who is recovering health after illness	स्वास्थ्य प्रदान करने वाला व्यक्ति
Cynosure	One who is a centre of attraction	आकर्षण बिंदु
Debonair	A person having a sophisticated charm	सुशील व्यक्ति
Demagogue	A leader who sways his followers by his oratory	वाक-चातुर्य जननेता
Denominator	a divisor	भाजक
Dilettante	A dabbler (not serious) in art, science and literature	(कला, विज्ञान और साहित्य आदि के मामले में) शौकिया, अनाड़ी
Exaggerated	regarded or represented as larger, better, or worse than in reality	अतिशयोक्तिपूर्ण
Exemplary	serving as a desirable model	अनुकरणीय
Futile	incapable of producing any useful result	व्यर्थ
Magnitude	the great size or extent of something	परिमाण, मात्रा
Parity	the state or condition of being equal	समता
Valour	great courage in the face of danger	साहस
Vociferously	in a loud and forceful manner	तेज आवाज में





## K D Campus Pvt. Ltd

1997, GROUND FLOOR OPPOSITE MUKHERJEE NAGAR POLICE STATION, OUTRAM LINES, GTB NAGAR, NEW DELHI – 09

### SSC MOCK TEST - 451 (ANSWER KEY)

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

76. (2) Since the indirect speech is in past tense, 'is' should be changed into 'was'.
77. (3) 'is' should be changed into 'are', as the subject is plural.
87. (2) 'A few' is used with countable nouns. e.g- rats.
90. (2) The correct spelling of 'Convelescent' is 'Convalescent'.
91. (2) The correct spelling of 'Demogogue' is 'Demagogue'.