

**SSC MOCK TEST - 283 (SOLUTION)**

1. (A) Bullet is related to Gun. Similarly Smoke is related to Fire.

2. (D)  $\text{ERASE} : \text{FSBTF} :: \text{MAGIC} : \text{NBHJD}$

3. (A)  $63 : 9 :: 86 : 14$

4. (C) Bat is a mammal, whereas others are birds.

5. (D)

6. (B)  $156 = 12^2 + 12$   
 $182 = 13^2 + 13$   
 $240 = 15^2 + 15$   
**200**  $\neq 14^2 + 14$

7. (D) 4. Harangue → 1. Harmony → 2. Harness → 3. Honey

8. (D)

9. (B)  $3 \times 4 = 12$   
 $4 \times 12 = 48$   
 $12 \times 48 = 576$

10. (D) WXYZ/WXYZ/WXYZ

11. (B) ENCOUNTER

12. (D)

13. (B)  $50 + 10 = 30 + 10 + 20$   
 $58 + 30 = 62 + 18 + 8$   
 Similarly,  
 $60 + 22 = 50 + 2 + x$   
 $82 = 52 + x$   
 $\therefore x = 82 - 52 = 30$

14. (B) As,

N A R G R U E D → G R A N D E U R  
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓     ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓  
 1 2 3 4 5 6 7 8     4 3 2 1 8 7 6 5

Similarly,

S E R P E V R E → P R E S E R V E  
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓     ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓  
 1 2 3 4 5 6 7 8     4 3 2 1 8 7 6 5

15. (D) G I V E and B A T

↓ ↓ ↓ ↓     ↓ ↓ ↓  
 5 1 3 7     9 2 4

Then,

G A T E  
 ↓ ↓ ↓ ↓  
 5 2 4 7

16. (A)  $15 * 4 * 7 * 62 * 5$

After change the sign,

$$15 \times 4 + 7 - 62 = 5$$

$$60 + 7 - 62 = 5$$

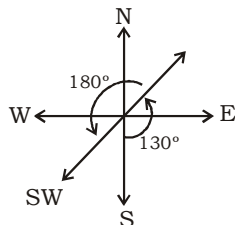
$$67 - 62 = 5$$

$$5 = 5$$

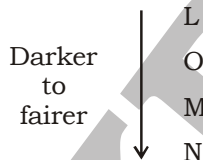
17. (B) 

18. (C)

19. (C)



20. (D)



21. (D)

22. (A)

23. (A)

24. (A)

25. (A)

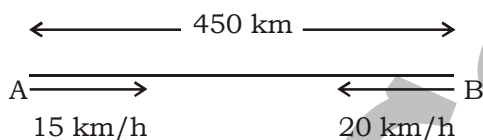
26. (B) It was after the fifth year plan that rolling plan was implemented. The time period of such plan was from 1978-80 and were implemented by the Janata party government by terminating the fifth five year plan and started new plan for the year 1978-83.

28. (B) Root cap is derived from Calyptrogen. Calyptrogen is a layer of rapidly dividing cells at the tip of a plant root, from which the root cap is formed.

29. (A) Dry Ice is the common name for solid carbon dioxide (CO<sub>2</sub>). It gets this name because it does not melt into a liquid when heated; instead, it changes directly into a gas (This process is known as sublimation).

31. (D) The Chairman of PAC is appointed by the Speaker of Lok Sabha. Since 1967, the chairman of the committee is selected from the opposition earlier it was headed by the member of ruling Party.

32. (D) The sun is composed of of the sun is 75 percent hydrogen and 25 percent helium by mass.
35. (B) A variable cost is a corporate expense that changes in proportion to production output.
37. (D) Bast fibre (also called phloem fibre or skin fibre) is plant fibre collected from the phloem (the "inner bark", sometimes called "skin") or bast surrounding the stem of certain dicotyledonous plants.
38. (A) A change in which no new substances are formed is called physical Change. A physical change involves a change in physical properties.
40. (B) Anti-defection law is mentioned under 10th schedule of the Indian Constitution and was a 52nd amendment.
41. (C) The reflection formed by the plane mirror is lateral inversion. Due to lateral inversion left side appear right and vice versa.
45. (B) The Micro, Small and Medium Enterprises Development Act was passed in 2006.
46. (D) Mycoplasma is the smallest bacteria which does not have cell wall around their cell membrane and can survive without oxygen and have various shapes.
47. (C) Potassium cannot be beaten into sheets as it is highly reactive and non malleable. At the same time it is very soft as it can be cut even with a knife.
49. (A) When a ball is thrown vertically upwards, energy remains constant during its motion since it is a scalar unit and is independent as the potential energy gets converted into kinetic energy while the velocity and acceleration due to gravity increases.
50. (A) Phenol is also known as carbolic acid and is a corrosive poisonous crystalline acidic compound. It is obtained from coal tar and wood, and under dilute form is used as a disinfectant.
51. (A) Let the time of meet =  $t$  h

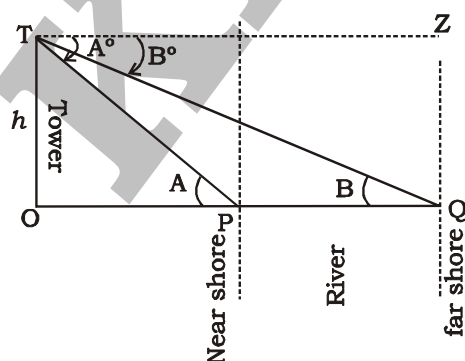


$$\text{Now, } 15\left(t - \frac{20}{60}\right) + 20t = 450$$

$$t = 13 \text{ h}$$

$$\text{Distance from A} = 15\left(13 - \frac{1}{3}\right) = 190 \text{ km}$$

52. (D) Let OT = height of tower =  $h$  metres  
PQ = width of the river





# K D Campus Pvt. Ltd

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

Where,

P = point of the near shore to tower.

Q = point of the far shore to the tower.

$\angle ZTA = A^\circ$  (angle of depression)

$\angle ZTQ = B^\circ$  (angle of depression)

Then,

$\angle ZTA = \angle TPO = A^\circ$

$\angle ZTQ = \angle TQO = B^\circ$

Now,

In  $\triangle TOP$ ,  $\tan A = \frac{h}{OP}$

$OP = h \cot A$  ..... (i)

In  $\triangle TQO$ ,  $\tan B = \frac{h}{OQ} = \frac{h}{OP + OQ}$  .....(ii)

From (i) and (ii),

$PQ = h(\cot B - \cot A)$

53. (C)

A B C

3 : 2 : 6

2 : 3 : 1

Efficiency

Number of days

Number of days taken by A = 12

Number of days taken by B = 18

Number of days taken by C = 6

1 day's work of (A + B) =  $\frac{5}{36}$

1 day's work of (B + C) =  $\frac{8}{36}$

1 day's work (C + A) =  $\frac{9}{36}$

Day	1	2	3	4	5	6
	5/36	8/36	9/36	5/36	8/36	1/36
	┌──────────────────┐					
	35/36					

In 5 days total work done =  $\frac{35}{36}$

Now, the rest of work (i.e.  $\frac{1}{36}$ ) is done by AC.

Number of days taken by AC for the rest of the work =  $\frac{\frac{1}{36}}{\frac{1}{36}}$

Therefore, total time taken to complete the work =  $5 + \frac{1}{9} = 5\frac{1}{9}$  days

54. (A) Let number of persons buying the tickets on the three days are  $2x$ ,  $5x$ ,  $13x$  respectively.  
 Number of total tickets bought =  $20x$   
 Then from question,  
 Total cost of tickets =  $15 \times 2x + 7.5 \times 5x + 2.5 \times 13x$   
 =  $(30 + 37.5 + 32.5)x$   
 =  $100 \times x = ₹ 100x$

$$\therefore \text{Average cost of ticket per person} = \frac{100x}{20x} = ₹ 5$$

55. (D) Let the age's of three children be  $x_1$ ,  $x_2$  and  $x_3$  years.  
 Then,

$$\frac{x_1 + x_2 + x_3}{3} = \frac{20}{100} \left( \frac{26 + x_3}{2} \right)$$

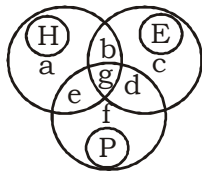
$$\frac{x_1 + x_2 + x_3}{3} = \frac{26 + x_3}{10} \quad \dots\dots (i)$$

Also,

$$M + x_1 = 39 \quad \dots\dots (ii)$$

From Equation (i) and (ii), we cannot determine the value of  $x_2$ .

56. (D) Given,  $b + c + d + g = 23 \quad \dots\dots (i)$



$$a + b + g + e = 15 \quad \dots\dots(ii)$$

$$e + f + g + d = 18 \quad \dots\dots(iii)$$

$$\text{and } a + b + c + d + e + f + g = 50 \quad \dots\dots (iv)$$

Solving Equation (i), (ii), (iii) and (iv)

$$b = 3, f = 6, d = 6, c = 9 \text{ and } g = 5$$

57. (C) Let the price of sugar be ₹  $x$  per kg.

$$\text{Initial expenditure} = ₹ 30x$$

$$\text{New expenditure} = ₹ 33x$$

$$\text{New monthly consumption} = \frac{33x}{1.32x} = 25 \text{ kg}$$

58. (A) **Amount remaining after**

$$1 \text{ year} = 4000 \left( 1 + \frac{7.5}{100} \right) - 1500 = ₹ 2800$$

$$2 \text{ years} = 2800 \left( 1 + \frac{7.5}{100} \right) - 1500 = ₹ 1510$$

$$3 \text{ years} = 1510 \left( 1 + \frac{7.5}{100} \right) - 1500 = ₹ 123.25$$

59. (B) Let the work be finished in  $x$  days.

Then,

$$1 = \frac{x}{8} + \frac{(x-1)}{16} + \frac{2}{24}$$

$$\frac{11}{12} = \frac{2x + x - 1}{16}$$

$$3x - 1 = \frac{16 \times 11}{12}$$

$$x = \frac{47}{3} = 15 \frac{2}{3} \text{ days}$$

60. (C) Work done by both the pipes in 4 min =  $4 \left( \frac{1}{15} + \frac{1}{10} \right) = \frac{2}{3}$  work

When all the pipes working together, then Work done =  $\frac{1}{15} + \frac{1}{10} - \frac{1}{5} = \frac{-1}{30}$

=  $\frac{-1}{30}$  part of the tank is emptied in 1 min

$\therefore \frac{2}{3}$  of the tank can be emptied in  $\frac{2 \times 30}{3} = 20$  min

61. (B)  $PQ \parallel BC$  & also P is the mid point of AC.

Q is the mid point of AB.

Now,

$$PB^2 = PQ^2 + QB^2$$

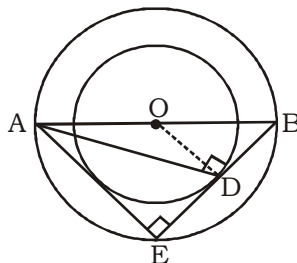
$$= \left( \frac{1}{2} BC \right)^2 + \left( \frac{1}{2} AB \right)^2$$

$$\left[ \because PQ = \frac{1}{2} BC \right]$$

$$= \frac{1}{4} [BC^2 + AB^2] = \frac{1}{4} AC^2$$

$\therefore PB = \frac{1}{2} AC$

62. (B)  $OD = 8$  cm  
 $OB = 13$  cm  
 $BD^2 + OD^2 = OB^2$   
 [ BD is a tangent]  
 $BD^2 = 13^2 - 8^2$   
 $= 169 - 64$   
 $BD^2 = 105 = DE^2$



$\therefore OD \perp BE$  and  $AE \perp BE$

$OD \parallel AE$ , also 'O' is the mid point of AB.

$$OD = \frac{1}{2} AE$$

$$8 = \frac{1}{2} AE$$

$$AE = 16 \text{ cm}$$

In  $\triangle AED$ ,

$$AD^2 = AE^2 + DE^2$$

$$AD^2 = 16^2 + 105$$

$$AD^2 = 256 + 105 = 361$$

$$AD = 19 \text{ cm}$$

63. (A)  $\operatorname{cosec} \theta - \sin \theta = m$

$$\frac{1}{\sin \theta} - \sin \theta = m$$

$$\frac{1 - \sin^2 \theta}{\sin \theta} = m$$

$$\frac{\cos^2 \theta}{\sin \theta} = m$$

$$m = \cot \theta \cdot \cos \theta$$

$$\sec \theta - \cos \theta = n$$

$$\frac{1}{\cos \theta} - \cos \theta = n$$

$$\frac{\sin^2 \theta}{\cos \theta} = n$$

$$n = \tan \theta \cdot \sin \theta \left[ mn^2 \right]^{\frac{2}{3}} + \left[ m^2 n \right]^{\frac{2}{3}}$$

$$\left[ (\cot \theta \cdot \cos \theta) \cdot (\tan \theta \cdot \sin \theta)^2 \right]^{\frac{2}{3}} + \left[ (\cot \theta \cdot \cos \theta)^2 \cdot (\tan \theta \cdot \sin \theta) \right]^{\frac{2}{3}}$$

$$\left[ (\cot \theta \cdot \tan \theta \cdot \sin^2) \right]^{\frac{2}{3}} + \left[ (\cot \theta \cdot \sin \theta \cdot \cos^2) \right]^{\frac{2}{3}}$$

$$\left[ \cos \theta \cdot \frac{\sin \theta}{\cos \theta} \cdot \sin^2 \theta \right]^{\frac{2}{3}} + \left[ \frac{\cos \theta}{\sin \theta} \cdot \sin \theta \cdot \cos^2 \theta \right]^{\frac{2}{3}}$$

$$\left[ \sin^3 \theta \right]^{\frac{2}{3}} + \left[ \cos^3 \theta \right]^{\frac{2}{3}}$$

$$\sin^2 \theta + \cos^2 \theta = 1$$

64. (D) Base of the ice cream cup,  $2\pi r = 28 \text{ cm}$

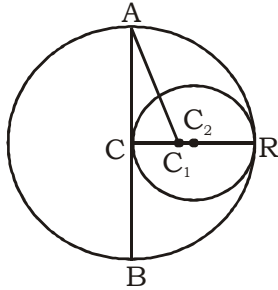
$$2 \times \frac{22}{7} \times r = 28 \text{ cm}$$

$$r = \frac{28 \times 7}{2 \times 22} = 4.4545 \text{ cm}$$

$$\text{Now, height of cup, } h = \sqrt{l^2 - r^2} = \sqrt{14^2 - (4.4545)^2}$$

$$= \sqrt{196 - 19.8429} = \sqrt{176.1570} = 13.12 \text{ cm (approx.)}$$

65. (D)



$$RC = 4 \text{ cm}$$

$$C_1R = 3 \text{ cm}$$

$$C_2R = 2 \text{ cm}$$

$$CC_1 = CR - C_1R = (4 - 3)\text{m} = 1 \text{ cm}$$

In  $\Delta ACC_1$ ,

$$AC = \sqrt{AC^2 + CC_1^2} = \sqrt{3^2 - 1^2} = 2\sqrt{2} \text{ cm}$$

$$AB = 2AC = 2 \times 2\sqrt{2} = 4\sqrt{2} \text{ cm}$$

66. (D) The given equation is  $\frac{x+a}{x-a} - \frac{x-b}{x+b} = \frac{2(a+b)}{x}$

$$\frac{x+a}{x-a} - 1 - \frac{x-b}{x+b} + 1 = \frac{2(a+b)}{x}$$

$$\left(\frac{x+a}{x-a} - 1\right) - \left(\frac{x-b}{x+b} - 1\right) = \frac{2(a+b)}{x}$$

$$\frac{a}{x-a} + \frac{b}{x+b} = \frac{a+b}{x}$$

$$\frac{a}{x-a} + \frac{b}{x+b} = \frac{a}{x} + \frac{b}{x}$$

$$\frac{a}{x-a} - \frac{a}{x} = \frac{b}{x} - \frac{b}{x+b}$$

[After transposing]

$$\frac{ax - ax + a^2}{x(x-a)} = \frac{bx + b^2 - bx}{x(x+b)}$$

$$\frac{a^2}{x-a} = \frac{b^2}{x+b}$$

$$a^2x + a^2b = b^2x - ab^2$$

[After cross-multiplication]

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

$$x = \frac{ab}{b-a}$$



67. (B) Let the total profit be ₹  $x$ .

Then,

40% of  $x$  is distributed in the ratio  $125000 : 85000 = 25 : 17$

Therefore, the share of the first partner = 40% of  $x \left( \frac{25}{25+17} \right) = 40\% \text{ of } x \left( \frac{25}{42} \right)$

$$= \left( \frac{40x}{100} \right) \left( \frac{25}{42} \right) = \frac{5x}{21}$$

And the share of the second partner = 40% of  $x \left( \frac{17}{42} \right) = \frac{17x}{105}$

Now, from the question,

$$\text{The difference in share} = \frac{5x}{21} - \frac{17x}{105} = 300$$

$$\frac{x(25-17)}{105} = 300$$

$$\therefore x = ₹ 3937.50$$

68. (A) Let the parts of money invested at 10% and 15% per annum be  $P_1$  and  $P_2$  respectively.

$$\therefore \frac{P_1 \times 10 \times 1}{100} + \frac{P_2 \times 15 \times 1}{100} = 1900$$

$$10P_1 + 15P_2 = 190000$$

$$2P_1 + 3P_2 = 38000 \quad \dots\dots(i)$$

$$\text{Also, } \frac{P_1 \times 15 \times 1}{100} + \frac{P_2 \times 10 \times 1}{100} = 2100$$

$$15P_1 + 10P_2 = 210000$$

$$3P_1 + 2P_2 = 42000$$

On solving equations (i) and (ii), we get

$$P_2 = ₹ 6000$$

69. (A) Let,  $\alpha = 2x$ ,  $\beta = x$

$$\alpha + \beta = 3x = 90$$

$$\therefore \alpha = 60^\circ, \beta = 30^\circ$$

$$\frac{\sin \alpha}{\sin \beta} = \frac{\sin 60^\circ}{\sin 30^\circ} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3} : 1$$

70. (A) Let side of square =  $x$  cm

$$\text{Area of square} = x^2 \text{ cm}^2$$

$$\text{Breadth of rectangle} = \frac{3}{2} x$$

$$\text{Length of rectangle} = 20 \text{ cm}$$

ATQ,

$$\left( \frac{3}{2} x \right) \times 20 = 3 \times x^2$$

$$x = 10 \text{ cm}$$

71. (A) Let breadth =  $3x$  metres

So, length =  $4x$  metres

Area =  $12x^2$  metres

ATQ,

$$12x^2 = \frac{1}{12} \times \text{Hectare}$$

$$x^2 = \frac{1}{12} \times \frac{1}{12} \times 100 \times 100$$

$$x^2 = \left(\frac{100}{12}\right)^2$$

$$x = \frac{25}{3} \text{ metres}$$

$$\text{Breadth of lawn} = 3 \times \frac{25}{3} = 25 \text{ metres}$$

72. (B) In 1998, the production of total fruits = 100

$$\text{The Guava production in 1999} = 100 \times \frac{15}{100} = 15 \text{ tonnes}$$

$$\text{In 1996} = 10\% \text{ lower than 1998} = 15 \times \frac{90}{100} = 13.5 \text{ tonnes}$$

73. (A) Mangoes produced in 2001 =  $150 \times \frac{26}{100} = 39$  tonnes

$$25\% \text{ exported earned} = 39 \times \frac{25}{100} = 9.75 \text{ tonnes}$$

$$\text{Total revenue earned} = 9.75 \times 1000 \times 20 = 1.95 \text{ lakh}$$

74. (C) When total fruit production is increased by 12% in 2003, then =  $175 \times \frac{112}{100} = 196$  tonnes

$$\text{Production of mangoes} = 196 \times \frac{26}{100} = 50.96 \text{ tonnes}$$

75. (C) Total fruit production in 1998 = 100 tonnes

$$\text{Grapes production in 1998} = 100 \times \frac{14}{100} = 14 \text{ tonnes}$$

$$\text{Half of grapes exported} = \frac{14}{2} = 7 \text{ tonnes}$$

$$\text{Price tonnes} = \frac{1.4 \times 100000}{7} = ₹ 20000$$

**MEANINGS IN ALPHABETICAL ORDER**

Cajole	persuade (someone) to do something by sustained coaxing or flattery	बहलाना
Chronic	(of an illness) persisting for a long time or constantly recurring	पुराना
Circumspection	the quality of being wary and unwilling to take risks; prudence	एहतिहात
Coece	persuade (an unwilling person) to do something by using force or threats	मजबूर करना
Confiscated	(of property) taken or seized with authority	जब्त
Deprive	deny (a person or place) the possession or use of something	वंचित करना
Devastated	destroy or ruin (something)	तहस-नहस
Enchant	fill (someone) with great delight; charm	प्रसन्न करना
Fierce	having or displaying an intense or ferocious aggressiveness	भयंकर
Improbable	not likely to be true or to happen	असंभव
Incredible	impossible to believe	अविश्वसनीय
Inflation	the action of inflating something or the condition of being inflated	मुद्रास्फीति
Insatiable	(of an appetite or desire) impossible to satisfy	लालची
Introspection	the examination or observation of one's own mental and emotional processes	आत्मनिरीक्षण
Liberation	the act of setting someone free from imprisonment, slavery, or oppression; release	मुक्ति
Manipulate	handle or control (a tool, mechanism, etc.), typically in a skillful manner	हेरफेर
Persistent	continuing firmly or obstinately in a course of action in spite of difficulty or opposition	दृढ़
Plunder	steal goods from (a place or person), typically using force and in a time of war or civil disorder	लूटना
Resist	withstand the action or effect of	विरोध
Restraint	a measure or condition that keeps someone or something under control or within limits	संयम
Scanty	small or insufficient in quantity or amount	अल्प
Scarce	(especially of food, money, or some other resource) insufficient for the demand	दुर्लभ
Seldom	not often; rarely	कभी-कभी

**SSC MOCK TEST - 283 (ANSWER KEY)**

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

76. (C) Change 'live' into 'living'.  
77. (C) Change it into 'before the commence -ment of olympics games next year.  
90. (B) The correct spelling is 'Manipulate'.  
91. (B) The correct spelling is 'Argument'.