SSC MOCK TEST - 291 (SOLUTION)

1. (B) Tree is found in Forest, similarly Grass is found in Lawn.
2. (C) As,

$Z \xrightarrow{-8} R \xrightarrow{+7} Y \xrightarrow{-8} Q$

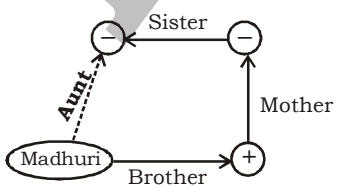
$K \xrightarrow{-8} C \xrightarrow{+7} J \xrightarrow{-8} B$

Similarly,

$P \xrightarrow{+7} W \xrightarrow{-8} O \xrightarrow{+7} V$

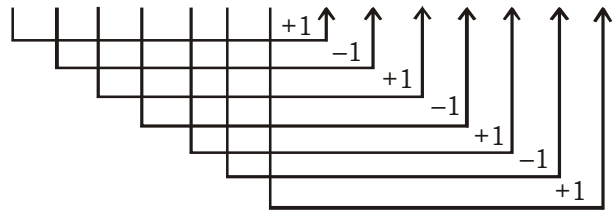
$\mathbf{E \xrightarrow{+7} L \xrightarrow{-8} D \xrightarrow{+7} K}$

3. (D) $123 : 369 :: 321 : 963$ (×3, ×3)
4. (C) Except 287, others are square of a number.
5. (A) Except Road, others are residential places.
6. (C) Except option (C), others don't have vowel.
7. (B) 1. Neckweed → 4. Necrophilia → 3. Necropolis → 2. Necrosis
8. (C) 1 2 3 5 6 7 9 10 11 13 **14** **15** (+1, +1, +2, +1, +1, +2, +1, +1, +2, +1, +1)
9. (B) January, April, July, **October** (+3, +3, +3)
10. (B) $1^2, 3^2, 5^2$; $2^2, 4^2, 6^2$; $3^2, 5^2$, **$7^2 = 49$**
11. (D) **First column:**
16 + 36 + 38 = 90
Second column:
49 + 25 + 16 = 90
Third column:
64 + 6 + **20** = 90
12. (B)



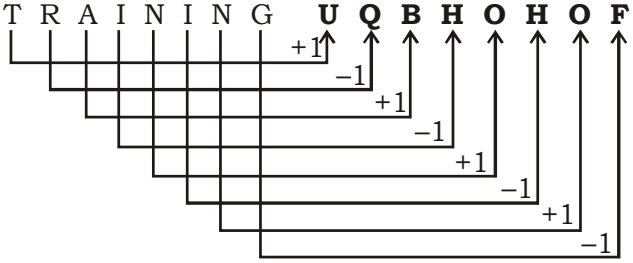
The lady is aunt of Madhuri.

13. (D) L U C K N O W M T D J O N X



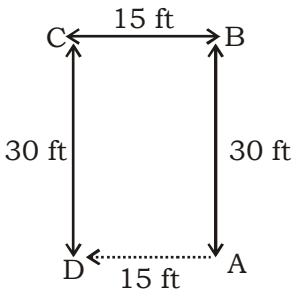
Similarly,

T R A I N I N G **U Q B H O H O F**



14. (D) Required Number = 18 + 8 = 26
Hence, the right option is (D).

15. (C)



Required distance DA = 15 ft (CB = DA, where CB = 15 ft)
Required direction = West

16. (B) 96 + 31 = 3 2
(9-6) (3-1)
76 + 73 = 1 4
(7-6) (7-3)
88 + 96 = 0 3
(8-8) (9-6)

17. (B)

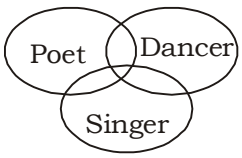
18. (D)

19. (B) **M**N**O**P/**M**NO**P**/M**NO**P

20. (C)

21. (D) The meaningful order according to the physical/body sizes:
Mosquito < Cat < Tiger < Elephant < Whale
The order is 3, 2, 4, 1, 5

22. (B)



23. (A)

24. (A)

25. (B) **L I G H T**
33, 99, 04, 59, 43

26. (D) In 1608 AD, the East India Company sent Captain William Hawkins to the court of the Mughal emperor Jahangir to get permission for trade. He got succeeded in getting the consent and established various factories on the Western coast of India.

27. (A) Wilson disease is an inherited disorder in which excessive amounts of copper accumulate in the body, particularly in the liver, brain, and eyes.

29. (D) Guwahati (ancient name, Pragjyotishpura), is the largest city of the state, Assam and also of the entire North Eastern Region of India. It is situated on the southern banks of the mighty river, Brahmaputra.

31. (B) Bones provide the structure for our bodies. The adult human skeleton is made up of 206 bones. These include the bones of the skull, spine (vertebrae), ribs, arms and legs.

32. (B) The Wadiyar dynasty or Wodiyar dynasty ruled the Kingdom of Mysuru from 1399 to 1947. After getting independence from the British rule in 1947, the Kingdom of Mysuru joined in the subsequent unification of Indian dominion and princely states into the Republic of India.

34. (A) Red blood cells are formed in the red bone marrow of bones.

35. (D) Wind turbines convert the kinetic energy in the wind into mechanical power. A generator can convert mechanical power into electricity. Mechanical power can also be utilized directly for specific tasks such as pumping water.

37. (D) Entomology is the study of insects.

38. (C) There are three sessions of Lok Sabha are held in a year: Budget session: February to May. Monsoon session: July to September. Winter session: November to mid-December.

40. (B) A Money Bill can be introduced in Lok Sabha only. If any question arises whether a Bill is a Money Bill or not, the decision of Speaker thereon is final.

41. (A) Sher Shah Suri defeated Humayun at the battle of Kannauj on 17 May 1540.

44. (D) In cricket, the term . Bend your back. is used to signify the extra effort put in by a fast bowler to obtain some assistance from a flat pitch. It involves putting in extra effort to extract extra speed or bounce.

48. (B) Although the Sports Ministry named volleyball the national sport, the most popular sport is Cricket. Rugby union is also popular. Other popular sports are water sports, badminton, athletics, football, basketball and tennis.

50. (C) The Tribal Cooperative Marketing Development Federation Ltd (TRIFED) has launched two competitions namely “Be the Brand Ambassador of Tribes India” and “Be a friend of TRIBES INDIA”.

51. (A) $a^3 - b^3 = 189$

$a - b = 3$

Now,

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

$3^3 = 189 - 3ab\ (3)$

$27 = 189 - 9ab$

$9ab = 189 - 27$

$ab = \frac{162}{9} = 18$

$\therefore \quad (a-b)^2 - ab$

$= (3)^2 - 18 = 9 - 18 = -9$

52. (C) $9\frac{3}{4} \div \left[2\frac{1}{6} \div \left\{4\frac{1}{3} - \left(2\frac{1}{2} + \frac{3}{4}\right)\right\}\right]$

$= \frac{39}{4} \div \left[\frac{13}{6} \div \left\{\frac{13}{3} - \left(\frac{5}{2} + \frac{3}{4}\right)\right\}\right]$

$= \frac{39}{4} \div \left[\frac{13}{6} \div \left\{\frac{13}{3} - \left(\frac{10+3}{4}\right)\right\}\right]$

$= \frac{39}{4} \div \left[\frac{13}{6} \div \left\{\frac{13}{3} - \frac{13}{4}\right\}\right]$

$= \frac{39}{4} \div \left[\frac{13}{6} \div \left\{\frac{52-39}{12}\right\}\right]$

$= \frac{39}{4} \div \left[\frac{13}{6} \div \frac{13}{12}\right]$

$= \frac{39}{4} \div \left[\frac{13}{6} \times \frac{12}{13}\right]$

$= \frac{39}{4} \div 2 = \frac{39}{4} \times \frac{1}{2}$

$= \frac{39}{8} = 4\frac{7}{8}$

53. (B) 3 men = 1 woman

1 man = 2 boys

Now, 4 men + 6 women + 10 boys

= 4 men + 18 men + 5 men

= 27 men = 9 women

In 6 days, 9 women can complete the work.

$\therefore$ In 3 days $\frac{9 \times 6}{3} = 18$ women complete the work.

54. (B) $\frac{2\sin\theta - \cos\theta}{\cos\theta + \sin\theta} = 1$

$\frac{\frac{2\sin\theta - \cos\theta}{\sin\theta}}{\frac{\cos\theta + \sin\theta}{\sin\theta}} = 1$ (Dividing numerator and denominator by sinθ)

$$\frac{2-\cot\theta}{1+\cot\theta}=1$$

$2 - \cot\theta = 1 + \cot\theta$

$2\cot\theta = 1$

$$\cot\theta = \frac{1}{2}$$

55. (B) Let the marked price be ₹ x.

Selling price = ₹ 576

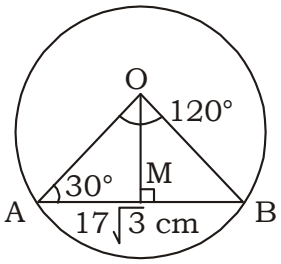
ATQ,

$$x \times \frac{80}{100} \times \frac{75}{100} = ₹\ 576$$

$$x \times \frac{4}{5} \times \frac{3}{4} = ₹\ 576$$

$$x = \frac{576 \times 20}{12} = ₹\ 960$$

56. (D)



Draw OM ⊥ AB

OM ⊥ AB

$$AM = MB = \frac{1}{2} \times 17\sqrt{3}\ \text{cm}$$

In ΔOAM,

$$\frac{AM}{AO} = \cos 30°$$

$$\frac{17\sqrt{3}}{2} \times \frac{1}{AO} = \frac{\sqrt{3}}{2}$$

AO = 17 cm

Radius of the circle = 17 cm

57. (B) First candidates secured 40% votes.

Second candidates secured 60% votes.

Let the total number of votes polled be x.

ATQ,

$$x \times \frac{60}{100} - x \times \frac{40}{100} = 596$$

$$\frac{20x}{100} = 596$$

$$x = \frac{596 \times 100}{20} = 2980$$

58. (C) Let the sum lent at 8% be ₹ x.
Sum lent at 12% = ₹ (3000 – x)
ATQ,

$$\frac{x \times 8 \times 5}{100} + \frac{(3000 - x) \times 12 \times 5}{100} = 1600$$

$$\frac{40x}{100} + \frac{180000 - 60x}{100} = 1600$$

$$\frac{40x - 60x + 180000}{100} = 1600$$

$-20x + 180000 = 160000$

$20x = 180000 - 160000$

$$x = \frac{20000}{20} = ₹\ 1000$$

∴ Required ratio = 1000 : (3000 – 1000)
= 1000 : 2000 = 1 : 2

59. (D) ATQ,
When B runs 200 m, A runs 190 m.

When B runs 180 m, A runs $= \frac{190}{200} \times 180 = 171$ m

When C runs 200 m, B runs 180 m.
Hence, C will give a start to A by (200 – 171) = 29 m

60. (B) $\frac{4x - 3}{x} + \frac{4y - 3}{y} + \frac{4z - 3}{z} = 0$

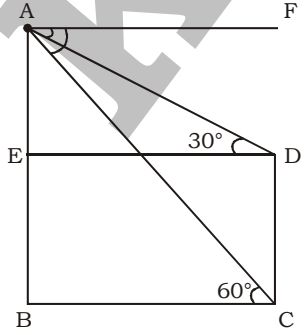
$$\frac{4x}{x} - \frac{3}{x} + \frac{4y}{y} - \frac{3}{y} + \frac{4z}{z} - \frac{3}{z} = 0$$

$$\frac{3}{x} + \frac{3}{y} + \frac{3}{z} = 4 + 4 + 4$$

$$\frac{1}{x} + \frac{1}{y} + \frac{1}{z} = \frac{12}{3}$$

∴ $\frac{1}{x} + \frac{1}{y} + \frac{1}{z} = 4$

61. (C)



Let AB is tower.

AB = 150 m

$\angle ADE = 30°$

$\angle ACB = 60°$

In $\triangle ABC$,

$$\tan 60° = \frac{AB}{BC}$$

$$\sqrt{3} = \frac{150}{BC}$$

$$BC = \frac{150}{\sqrt{3}} \text{ m}$$

In $\triangle ADE$,

$$\tan 30° = \frac{AE}{DE}$$

$$\frac{1}{\sqrt{3}} = \frac{AE}{\frac{150}{\sqrt{3}}} \qquad (\because \text{ BC = DE})$$

$$AE = \frac{150}{3} = 50 \text{ m}$$

BE = AB – AE

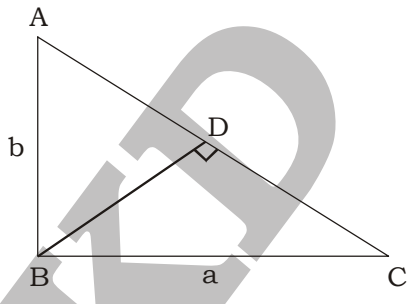
BE = 150 – 50 = 100 m

$\because$ BE = CD

$\therefore$ CD = 100 m

Height of the house = 100 m

62. (B)



BC = a, AC = b

$$AB = \sqrt{AC^2 + BC^2} = \sqrt{b^2 + a^2}$$

$$\text{Area of } \triangle ABC = \frac{1}{2} \times BC \times AC = \frac{1}{2}ab$$

$$\text{Again area of } \triangle ABC = \frac{1}{2} \times AB \times CD = \frac{1}{2} \times \sqrt{a^2 + b^2} \times p$$

ATQ,

$$\frac{1}{2}ab = \frac{1}{2}\sqrt{a^2+b^2}\times p$$

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

On squaring both sides, we get

$a^2b^2 = (a^2+b^2)p^2$

$$\frac{1}{p^2} = \frac{a^2+b^2}{a^2b^2}$$

$$\frac{1}{p^2} = \frac{a^2}{a^2b^2} + \frac{b^2}{a^2b^2}$$

$$\frac{1}{p^2} = \frac{1}{b^2} + \frac{1}{a^2}$$

$$\therefore \quad \frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$$

63. (D) Let the LCM and HCF be x and y respectively.

Now, x = 4y

ATQ,

y + 4y = 125

5y = 125

y = 25

x = 4 × 25 = 100

$$\therefore \text{ Second number} = \frac{\text{LCM}\times\text{HCF}}{\text{First nubmer}} = \frac{100\times 25}{100} = 25$$

64. (A) Pipe A can fill the tank in 12 hours.

Pipe B can fill the tank in 16 hours.

Pipe C can empty the tank in 30 hours.

Let the capacity of tank be 240 litres.

$$\text{Pipe A can fill the tank in 1 hour} = \frac{240}{12} = 20 \text{ litres}$$

$$\text{Pipe B can fill the tank in 1 hour} = \frac{240}{16} = 15 \text{ litres}$$

$$\text{Pipe C can empty the tank in 1 hour} = \frac{240}{30} = 8 \text{ litres}$$

Pipe A, B and C together can fill the tank in first 8 hours = 8 × (20 + 15 – 8) = 216 litres

Remaining capacity = 240 – 216 = 24 litres

Pipe B and C can together can fill the tank in 1 hour = (15 – 8) = 7 litres

$$\therefore \text{ Required time to fill the remaining part of tank} = \frac{24}{7} = 3\frac{3}{7} \text{ hours}$$

65. (D) Let the original speed = x km/hr

Speed after increase = $x \times \frac{9}{5} = \frac{9x}{5}$ km / hr

Let the distance be D km.

ATQ,

$$\frac{D}{x} - \frac{D}{\frac{9x}{5}} = \frac{30}{60}$$

$$\frac{D}{x} - \frac{5D}{9x} = \frac{1}{2}$$

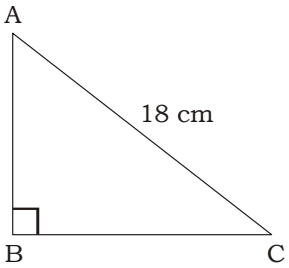
$$\frac{9D - 5D}{9x} = \frac{1}{2}$$

$$\frac{4D}{9x} = \frac{1}{2}$$

$$x = \frac{8D}{9} \text{ km/hr}$$

$\therefore$ Required time = $\frac{D}{\frac{8D}{9}} = \frac{D}{8D} \times 9 = \frac{9}{8}$ hours

66. (A)



Given that :

AB + BC + AC = 40 cm

AC = 18 cm

Now, AB + BC = 40 – 18 = 22 cm

In right $\triangle ABC$,

$AB^2 + BC^2 = AC^2$ (By pythagoras theorem)

$AB^2 + BC^2 = 18^2$

$AB^2 + BC^2 = 324$ cm

Now,

$(AB + BC)^2 = AB^2 + BC^2 + 2AB.BC$

$(22)^2 = 324 + 2AB.BC$

$484 = 324 + 2AB.BC$

$2AB.BC = 484 - 324$

$AB \times BC = \frac{160}{2} = 80$ cm

$\therefore$ Area of $\triangle ABC = \frac{1}{2} \times AB \times BC = \frac{1}{2} \times 80 = 40$ cm^2

67. (B) Let the principal be P.

CP – SP for 2 years = $P\left(\frac{R}{100}\right)^2$

$867 = P\left(\frac{17}{100}\right)^2$

$P = \frac{867 \times 100 \times 100}{17 \times 17} = ₹\ 30000$

$\therefore \quad CI = P\left(1+\frac{R}{100}\right)^2 - P$

$= 30000\left(1+\frac{17}{100}\right)^2 - 30000$

$= 30000 \times \frac{117}{100} \times \frac{117}{100} - 30000$

= 41067 – 30000 = ₹ 11067

68. (C) Ratio of their profit = 25000 × 12 : 30000 × 9 : 45000 × 5

= 5 × 12 : 6 × 9 : 9 × 5 = 20 : 18 : 15

$\therefore$ Share of C in the profit = $\frac{13250}{20+18+15} \times 15$ = ₹ 3750

69. (B) $\cot\theta = \frac{1}{\sqrt{3}}$

$\cot\theta = \cot 60°$

$\theta = 60°$

Now,

$\frac{2-\sin^2\theta}{1-\cos^2\theta} + \left(\text{cosec}^2\theta - \sec\theta\right)$

$\frac{2-\sin^2 60°}{1-\cos^2 60°} + \left(\text{cosec}^2 60° - \sec 60°\right)$

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

$= \frac{\frac{5}{4}}{\frac{3}{4}} + \left(\frac{4-6}{3}\right) = \frac{5}{3} - \frac{2}{3} = \frac{3}{3} = 1$

70. (A) Let the cost price of an article be ₹ 100.

$SP = 100 \times \frac{86.5}{100} = ₹\ 86.50$

Second SP = $100 \times \frac{109.5}{100} = ₹\ 109.50$

ATQ,

$(109.50 - 86.50) \rightarrow ₹\ 552$

$23 \rightarrow ₹\ 552$

$\therefore \quad 100 \rightarrow \frac{552}{23} \times 100 = ₹\ 2400$

71. (A) Average number of scooters produced per year (in thousands)

$= \frac{115 + 108 + 149 + 102 + 101}{5} = \frac{575}{5} = 115$

Clearly, it was in the year 1985.

72. (C) Decrease percentage in factory Q = $\left(\frac{20 - 15}{20} \times 100\right)\% = 25\%$

Decrease percentage in factory R = $\left(\frac{16 - 12}{16} \times 100\right)\% = 25\%$

Decrease percentage in factory T = $\left(\frac{41 - 35}{41} \times 100\right)\% = 14.63\%$

Required answer is factory Q and R.

73. (B) Required ratio = $\frac{20}{40} = 1 : 2$

74. (C) It was maximum in the year 1987.

75. (B) Number of scooters produced by factory Q in the year 1986 = 23 thousands

Total number of scooters produced by all the factories in the year 1985 = 115 thousands

Required percentage = $\left(\frac{23}{115} \times 100\right)\% = 20\%$

MEANINGS IN ALPHABETICAL ORDER

Abominable	causing moral revulsion	घिनौना
Accurately	in a way that is correct in all details; exactly	सही रूप में
Astonishment	great surprise	विस्मय
Composure	the state or feeling of being calm and in control of oneself	मानसिक संतुलन
Delightful	causing delight; charming	रमणीय
Distasteful	causing dislike or disgust; offensive; unpleasant	अप्रिय
Eminent	(of a person) famous and respected within a particular sphere or profession	प्रख्यात
Expectation	a strong belief that something will happen or be the case in the future	उम्मीद
Fissure	a long, narrow opening or line of breakage made by cracking or splitting, especially in rock or earth	दरार
Flock	a number of birds of one kind feeding, resting, or traveling together	झुण्ड
Frantic	wild or distraught with fear, anxiety, or other emotion	उन्मत्त
Fright	a sudden intense feeling of fear	भय
Hateful	arousing, deserving of, or filled with hatred	घृणित
Herd	a large group of animals, especially hoofed mammals, that live, feed, or migrate together	झुण्ड
Interim	the intervening time	अन्तरिम
Litter	trash, such as paper, cans, and bottles, that is left lying in an open or public place	कूड़े
Moderately	to a certain extent; quite; fairly	मध्यम
Momentary	lasting for a very short time; brief	क्षणिक
Obscure	not discovered or known about; uncertain	अस्पष्ट
Partially	only in part; to a limited extent	आंशिक रूप से
Plight	a dangerous, difficult, or otherwise unfortunate situation	दुर्दशा
Plumage	a bird's feathers collectively	पक्षति
Promptly	with little or no delay; immediately	तत्काल
Quake	(especially of the earth) shake or tremble	भूकंप
Transitory	not permanent	क्षणसाथी
Wonder	a feeling of surprise mingled with admiration, caused by something beautiful, unexpected, unfamiliar	आश्चर्य

SSC MOCK TEST - 291 (ANSWER KEY)

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

76. (A) Summons is a noun while summon is a verb.

Summons (n) – A notice summoning someone to appear in court.

Summon (v) – to ask someone to come/attend.

77. (C) Replace 'is it' with 'it is' as the given sentence is not a question.

90. (B) The correct spelling of 'Frantick' is 'Frantic'.

91. (B) The correct spelling of 'Arrivel' is 'Arrival'.