SSC MOCK TEST - 316 (SOLUTION)

1. (A) Honey is related to Bee, while Larva is related to Bug.
2. (C) As,

   $9^2 + 9 \rightarrow 90$

   Similarly,

   $20^2 + 20 \rightarrow$ **420**
3. (D) Smoke cause pollution, while war cause destruction.
4. (C) (A) $15 \xrightarrow{+20} 35, 400$ (square)

   (B) $16 \xrightarrow{+8} 24, 64$ (square)

   (C) $25 \xrightarrow{+5} 30, 25 \neq$ **900** (square)

   (D) $28 \xrightarrow{+10} 38, 100$ (square)
5. (D) Plash, Lotus and Red Jasmine are State flower of Uttar Pradesh, Haryana and Goa respectively, but Lily is not a state flower of any state of India.
6. (C) (A) D $\xleftrightarrow{\text{opposite}}$ W
   C $\xleftrightarrow{\text{opposite}}$ X

   (B) I $\xleftrightarrow{\text{opposite}}$ R
   H $\xleftrightarrow{\text{opposite}}$ S

   (C) D $\xleftrightarrow{\text{opposite}}$ **W** $\neq$ **T**
   Q $\xleftrightarrow{\text{opposite}}$ **J** $\neq$ **T**

   (D) V $\xleftrightarrow{\text{opposite}}$ E
   U $\xleftrightarrow{\text{opposite}}$ F
7. (C) 1. Terrible $\rightarrow$ 2. Territory $\rightarrow$ 3. Terror $\rightarrow$ 4. Terrorism $\rightarrow$ 5. Terrorist
8. (D) $P^- \Longleftrightarrow T^+$

   X^+ Y^- J

   Here the gender of J is not known.

9. (C) 43 → 50 → 55 → 65 → **76**
+(4+3) +(5+0) +(5+5) +(6+5)

10. (D) XXI XX XIX XVIII XVII **XVI**
↓ ↓ ↓ ↓ ↓ ↓
21 20 19 18 17 16

11. (D) % opposite #
& opposite ?
© opposite @

12. (B) **From Figure I,**
$3^2 + 2^2 + 1^2 + 5^2 = 9 + 4 + 1 + 25 = 39 - 1 = 38$
From Figure II,
$2^2 + 6^2 + 2^2 + 3^2 = 4 + 36 + 4 + 9 = 53 - 1 = 52$
From Figure III,
$(2^2 + 3^2 + x^2 + 4^2) - 1 = 53$
$(4 + 9 + x^2 + 16) = 54$
$x^2 = 54 - 29$
$x^2 = 25$
$x = 5$

13. (D)
+2 +4 +6 +8
H E **J** **G** N K T Q B Y
+2 +4 +6 +8

14. (B) As,
G G +1 H
S D +1 E
K Z +1 A
Z K +1 L
D S +1 T
G G +1 H

Similarly,

G → R $\xrightarrow{+1}$ **S**
S → N $\xrightarrow{+1}$ **O**
T → T $\xrightarrow{+1}$ **U**
N → S $\xrightarrow{+1}$ **T**
R → G $\xrightarrow{+1}$ **H**

15. (C)
16. (C) There are 8 triangles in the given figure.
17. (C) ab cd/bcde/cdef
18. (B) $\because$ $n^3 = 64$
$n^3 = (4)^3$
$\therefore$ $n = 4$
Number of cubes which are painted on only two faces = $(n - 2) \times 12$
$= (4 - 2) \times 12 = 24$
19. (C) $\frac{4+1}{3 \times \sqrt{3}} = \frac{5}{3\sqrt{3}}$

$\frac{5+2}{3\sqrt{3} \times \sqrt{3}} = \frac{7}{9}$

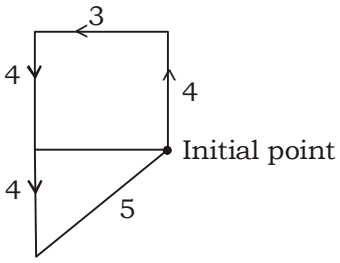
$\frac{7+3}{9 \times \sqrt{3}} = \frac{10}{9\sqrt{3}}$

$\frac{10+4}{9\sqrt{3} \times \sqrt{3}} = \frac{\mathbf{14}}{\mathbf{27}}$
20. (D) $50 \div 0.5 + 20 - 8 \times 0.25 = 13$
After changing the signs we have,
$50 \times 0.5 + 20 - 8 \div 0.25 = 13$

$= 50 \times \frac{1}{2} + 20 - \frac{8}{0.25} = 13$

$= 25 + 20 - 8 \times 4 = 13$
$= 45 - 32 = 13$
$13 = 13$
21. (B)
22. (C) W → E
A → R
R → X
M → S
O → T
T → W
E → A

23. (B)



Required minimum distance = $\sqrt{3^2 + 4^2}$ = 5 km

24. (B) X Y P Q Z
↓ ↓
Most powerful Least Powerful

25. (C) 75, 13, 40, 67

27. (A) In Rajkot Satyagraha campaigns, Mahatma Gandhi did not participate directly.

28. (C) The most relevant condition for presence of life on Mars is occurrence of ice caps and frozen water.

30. (B) The Godavari is the largest river system of the Peninsular India and is next only to the Ganga and the Indus systems regarding sanctity, picturesqueness and utility and is held in reverence as Vridha Ganga or Dakshin Ganga. Its total length is 1465 kilometres. The source of this river is in the Trimbak Plateau of North Sahyadri near Nasik, in Maharashtra, which is only 80 km from the shore of the Arabian Sea. From its source it flows eastwards in a narrow rocky bed upto Nashik, but the river valley opens out below this point. It receives a large number of tributaries both from the left as well as from the right. But the left bank tributaries are more in number and large in size than the right bank tributaries. The Manjra (724 km) is the only important right bank tributary. The Penganga, the Wardha, the Wainganga, the Indravati and the Sabari are important left bank tributaries.

31. (D) The Planning Commission is not a creature of the Constitution. This extra-Constitutional, non-statutory body was, in fact, set up by a resolution of the Union Cabinet. Prime Minister Jawaharlal Nehru was himself the Commission's first Chairman.

32. (B) The Mumbai headquartered company has named Urjit Patel for a term of five years with effect from August 1, 2020. He served as the 24th governor of the RBI from September 2016 to December 2018.

33. (B) Cohesion refers to attraction between molecules of the same kind while adhesion refers to attraction between different kinds of molecules.

34. (B) Milk is a mixture of lactose and milk-sugar.

37. (B) Territorial Jurisdiction of the Guwahati Government: Asam, Manipur, Meghalaya, Nagaland, Tripura, Mizoram and Arunachal Pradesh

40. (A) If the velocities of sound in air at temperatures t°1 C and t°2 C are V1 and V2 then we have the relation $\frac{V_1}{V_2} = \frac{273 + t_1}{273 + t_2}$.

41. (A) Tropic of Cancer is an imaginary line, at an angle of 23.50 degrees North from the Equator, that passes through the middle of India.

43. (D) Article-94

44. (C) Heat always flows from a body at higher temperature to a body at a lower temperature.

45. (D) The permanent hardness of water is due to presence of bicarbonate, chloride and sulphates of calcium and magnesium. Hard water is therefore salty and not good for drinking. It does not produce lather with soaps or detergents. When boiled, in the boilers, the salts of calcium and magnesium are deposited on the walls of the boilers which are harmful. Also hard water is not suitable for irrigation as it blocks the Xylem tissues' of the plants and stops the growth of the plant.

46. (C) UN Climate Change Conference, known as COP25 gets underway in the Spanish capital, Madrid, under the Presidency of Chile from 2-13 December 2019.

49. (B) The water-soluble vitamins include ascorbic acid (vitamin C), thiamin, riboflavin, niacin, vitamin B6 (pyridoxine, pyridoxal, and pyridoxamine), folacin, vitamin B12, biotin, and pantothenic acid.

50. (B) A supernova is the explosion of a star. It is the largest explosion that takes place in space.

51. (A) $100 \times 35 = 3500$

$200 \times 5 = 1000$

Total work = 4500

$200 \times 5 = 100 \times x$

10 days = x

Total days = 35 + 10 = 45 days

Extra days = 45 – 40 = 5 days

52. (D) Interest after 10 years at the rate of 5% = ₹ 500

$\therefore$ Time = $\dfrac{\text{Interest} \times 100}{\text{Principal} \times \text{Rate}}$

$= \dfrac{500 \times 100}{1500 \times 5} = 6\dfrac{2}{3}$ years

$\therefore$ Required time = $\left(10 + 6\dfrac{2}{3}\right)$ years = $16\dfrac{2}{3}$ years

53. (B) Let the minimum score be x.

Maximum score = $x + 100$

ATQ,

$28 \times 38 + x + x + 100 = 30 \times 40$

$1064 + 2x + 100 = 1200$

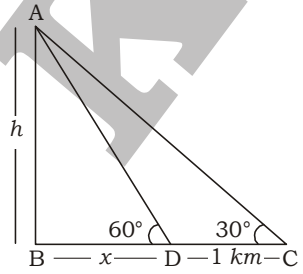
$2x = 1200 - 1164 = 36$

$x = 18$

54. (D) Required no. of students

L.C.M of 6, 8, 12 and 16 = 96

55. (A)



Height of balloon = AB = h km

BD = x km, CD = 1 km

From ΔABD,

$$\tan 60° = \frac{AB}{BD}$$

$$\sqrt{3} = \frac{h}{x}$$

$$x = \frac{h}{\sqrt{3}} \text{ km} \qquad \ldots(i)$$

From ΔABC,

$$\tan 30° = \frac{AB}{BC}$$

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

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

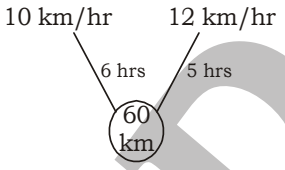
$$\sqrt{3}h - \frac{h}{\sqrt{3}} = 1$$

$$\frac{3h - h}{\sqrt{3}} = 1$$

$$2h = \sqrt{3}$$

$$h = \frac{\sqrt{3}}{2} \text{km}$$

56. (C) Let the required distance = LCM of (10, 12) = 60 km



$\therefore$ Difference in time = 6 – 5 = 1 hour = 60 minutes
given difference in time = 6 + 6 = 12 minutes

$\therefore$ $60 \rightarrow 12$
Hence, the required distance = 12 km

57. (A) $a = \frac{xy}{x+y}$, $b = \frac{xz}{x+z}$ and $c = \frac{yz}{y+z}$

$$\therefore \quad \frac{x+y}{xy} = \frac{1}{a}, \frac{x+z}{xz} = \frac{1}{b}, \frac{y+z}{yz} = \frac{1}{c}$$

$$\frac{1}{y} + \frac{1}{x} = \frac{1}{a}, \frac{1}{z} + \frac{1}{x} = \frac{1}{b}, \frac{1}{z} + \frac{1}{y} = \frac{1}{c}$$

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

$$\frac{2}{x}=\frac{bc+ca-ab}{abc}$$

$$x=\frac{2abc}{bc+ca-ab}$$

58. (A) $2x-\frac{1}{2x}=6$

$$2\left(x-\frac{1}{4x}\right)=6$$

$$x-\frac{1}{4x}=3$$

on Squaring, $x^2+\frac{1}{16x^2}-2.x.\frac{1}{4x}=9$

$$x^2+\frac{1}{16x^2}=9+\frac{1}{2}=\frac{19}{2}$$

59. (C) Here, area (DAMN) = $\frac{1}{2}$(area DABC)

$$\frac{\text{area of }\Delta AMN}{\text{area of }\Delta ABC}=\frac{1}{2}$$

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

$\sqrt{2}$ AM = AB

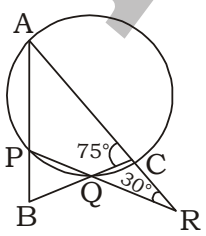
$\sqrt{2}$ AM = (AM + MB)

($\sqrt{2}$ − 1) AM = MB

$$\frac{AM}{BM}=\frac{1}{\sqrt{2}-1}$$

$$\frac{AM}{BM}=\frac{1}{\sqrt{2}-1}\times\frac{\sqrt{2}+1}{\sqrt{2}+1}=\sqrt{2}+1:1$$

60. (D) Sum of opposite angles of a cyclic quadrilateral are Supplementary



$\therefore$ $\angle ACQ + \angle APQ = 180°$

$75° + \angle APQ = 180°$

$\angle APQ = 105°$

$\angle APQ + \angle BPQ = 180°$

$105° + \angle BPQ = 180°$

$\angle BPQ = 180° - 105° = 75°$

$\angle ACQ$ is an exterior angle of ΔRCQ

$\angle ACQ = \angle CRQ + \angle COR$

$75° = 30° + \angle COR$

$\angle COR = 45°$

In ΔBPQ,

$\angle B = 180° - 75° - 45° = 60°$

61. (C) Volume of solid cylinder = $\pi r^2 h$

Volume of cone = $\frac{1}{3}\pi r^2 h$

Difference = $\pi r^2 h - \frac{1}{3}\pi r^2 h$

$= \frac{2}{3}\pi r^2 h = \frac{2}{3} \times \frac{22}{7} \times 5 \times 5 \times 12$

= 628.57 cu.cm.

62. (D) $l + b + h = 24$ [given]

$l^2 + b^2 + h^2 = 225$ [given]

$\therefore$ $(l + b + h)^2$

$= l^2 + b^2 + h^2 + 2(lb + bh + hl)$

$(24)^2 = 225 + 2(lb + bh + hl)$

$2(lb + bh + hl) = 576 - 225 = 351$ sq. cm.

63. (A) Sales tax = $\frac{120}{5}$ = ₹ 24

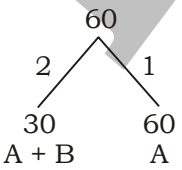
Remaining amount = (120 – 24) = ₹ 96

Profit = $96 \times \frac{1}{3}$ = ₹ 32

Cost price = (96 – 32) = ₹ 64

64. (B) A does $\frac{1}{3}$ work in 20 days

So, A does the whole work in 20 × 3 days



A = $\frac{60}{2-1}$ days = 60 days

65. (C) Let the original fraction be $\frac{a}{b}$.

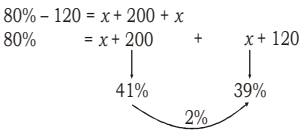
$$\frac{a^2 \times \frac{5}{4}}{b^2 \times \frac{4}{5}} = \frac{5}{8} \times \frac{a}{b}$$

$$\left(\frac{a}{b}\right)^2 \times \frac{25}{16} = \frac{5}{8} \times \left(\frac{a}{b}\right)$$

$$\left(\frac{a}{b}\right) = \frac{2}{5}$$

$a \times b = 2 \times 5 = 10$

66. (D) Let the opponent got x votes then winner got $x + 200$ votes.
ATQ,



2% of total votes = 200 – 120 = 80
Total votes = 4,000

Votes, for the losing candidate = $\frac{39}{100} \times 4000 - 120 = 1440$

Total votes cast = $\frac{4}{5} \times 4{,}000 = 3{,}200$

Required % = $\frac{1440}{3200} \times 100 = 45\%$

67. (B) Equation = $\left[(7^{-1} - 8^{-1})^{-1} - (3^{-1} - 4^{-1})^{-1}\right]$

$$= \left[\left(\frac{1}{7} - \frac{1}{8}\right)^{-1} - \left(\frac{1}{3} - \frac{1}{4}\right)^{-1}\right] = \left[\left(\frac{8-7}{56}\right)^{-1} - \left(\frac{4-3}{12}\right)^{-1}\right]$$

$$= \left[\left(\frac{1}{56}\right)^{-1} - \left(\frac{1}{12}\right)^{-1}\right] = 56 - 12 = 44$$

68. (B) Cost price of the watch = ₹ 250
Cost price after 10% custom duty = ₹ 275

CP	**MP**
(100 – 25)	(100 + 20)
75	120
5	8
↓×55	↓×55
275	440

Marked price = ₹ 440

69. (B) Let the length of each of the equal side of the ground be x metre

Base of the play ground = 24 m

Area of ground = $\frac{15}{25} \times 100 = 60$ m^2

But the ground has isosceles shape

Area of ground = $\frac{a}{4}\sqrt{4x^2 - a^2}$ [where a = base, x = each of the equal sides]

$\therefore \quad \frac{24}{4}\sqrt{4x^2 - (24)^2} = 60$

$4x - (24)^2 = (10)^2$

$4x^2 - 576 = 100$

$4x^2 - 676$

$x^2 = \frac{676}{4} = 169$

$x = 13$

$\therefore$ Length of each of the equal side

$x = 13$ m

70. (D) Let the rate of interest = R% /annum

Formula,

$$A = P\left(1 + \frac{R}{100}\right)^T$$

$$2420 = P\left(1 + \frac{R}{100}\right)^2 \ldots(i)$$

$$2662 = P\left(1 + \frac{R}{100}\right)^3 \ldots(ii)$$

Equation (ii) divided by (i)

$$1 + \frac{R}{100} = \frac{2662}{2420}$$

$$\frac{R}{100} = \frac{2662}{2420} - 1$$

$$\frac{R}{100} = \frac{2662 - 2420}{2420} = \frac{242}{2420} = \frac{1}{10}$$

$$R = \frac{1}{10} \times 100 = 10\%$$

71. (D) Squaring both the sides:

$$\left(\sqrt{\frac{x}{y}}+\sqrt{\frac{y}{x}}\right)^2 = \left(\frac{10}{3}\right)^2$$

$$\left(\frac{x+y}{\sqrt{xy}}\right)^2 = \left(\frac{10}{3}\right)^2$$

$$(x+y)^2 = \frac{100}{9}xy$$

$$(10)^2 = \frac{100}{9}xy$$

$$xy = 9$$

72. (A) $\frac{1}{3} + \frac{1}{10} + \frac{1}{6} = \frac{10+3+5}{30} = \frac{18}{30}$

$$1 - \frac{18}{30} = \frac{12}{30}$$

$$\text{Required\%} = \frac{12}{30} \times 100 = 40\%$$

73. (C) Required ratio = $\frac{1}{3} \times 16\% : \frac{1}{6} \times 16\% = 2 : 1$

74. (B) Required answer = $50 \times \frac{70}{100} = 35$ kg.

75. (B) Required% = $\frac{10}{100} \times 100 = 10\%$

MEANINGS IN ALPHABETICAL ORDER

Altruistic	showing a disinterested and selfless concern for the well-being of others	परोपकारी
Anaerobic	an absence of free oxygen	अनाक्सीय
Blatant	(of bad behavior) done openly and unashamedly	मुखर
Commensurate	corresponding in size or degree; in proportion	(किसी वस्तु) के अनुरूप
confined	limited to a certain extent	सीमित
Constituent	a component part of something	घटक
Desultory	lacking a plan, purpose, or enthusiasm	असंगत
Exemplary	serving as a desirable model	अनुकरणीय
Fallacy	a false belief;	भ्रांति
Fiasco	a complete failure	असफलता
Grievance	a complaint;	शिकायत
Idiotic	very stupid;	मूर्खतापूर्ण
Immaculate	perfectly clean, neat, or tidy	बेदाग
Innocuous	not harmful or offensive;	हानि न करने वाला
Magnitude	the great size or extent of something	परिमाण, मात्रा
Nuisance	anything that annoys or is unpleasant;	विघ्न, खलल
Optometrist	A person who has a profession of examining the eyes for visual defects and prescribing corrective lenses	आँखों के लिए लेंस बनाने वाला
Parity	the state or condition of being equal	समता
Parsimony	extreme unwillingness to spend money or use resources	मितव्ययिता
Perennial	lasting or existing for a long or apparently infinite time	चिरस्थायी
Venerable	accorded a great deal of respect	आदरणीय
Visceral	of or relating to the viscera	आंत संबंधी

SSC MOCK TEST - 316 (ANSWER KEY)

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

76. (A) Replace 'is living' by 'has been living', as this is an example of Present Continuous tense since the time is given in the sentence.

77. (C) Change 'did' into 'had done'.

90. (D) The correct spelling of 'Comensurate' is 'Commensurate'.

91. (D) The correct spelling of 'Grievence' is 'Grievance'.