SSC MOCK TEST - 315 (SOLUTION)

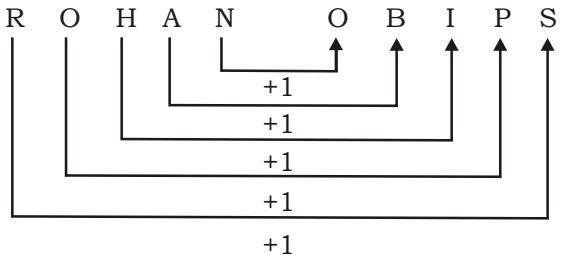
1. (B) As,

$36 \Rightarrow (36)^2 = 1296 \Rightarrow 1 + 2 + 3 + 6 = 18$

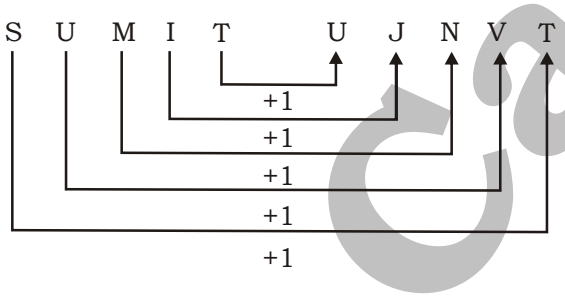
Similarly,

$47 \Rightarrow (47)^2 = 2209 \Rightarrow 2 + 2 + 0 + 9 = 13$

2. (D) Candle is made from Wax, while Paper is made from Pulp.
3. (C) Except Srilanka, others are middle east nations.
4. (D) Except Moon, others have one vowel.
5. (B) As,



Similarly,



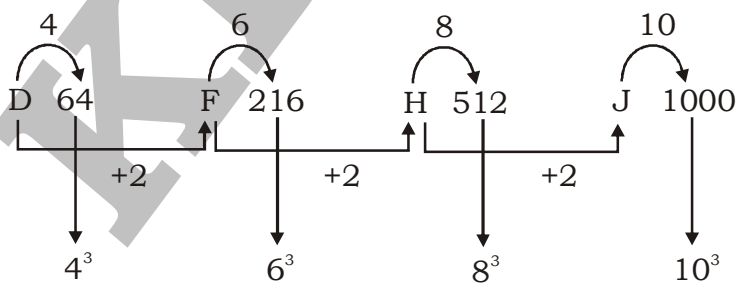
6. (A) $17 + 3^2 = 26$

$26 + 4^2 = 42$

$42 + 5^2 = 67$

$67 + 6^2 =$ **103**

7. (C)



8. (B) Initial speed = 72 km/hr

$\therefore$ Required average speed = $\frac{72+80+88+96+104}{5} = \frac{440}{5}$ = 88 km/hr

9. (C) As,
4 + 5 + 8 + 3 + 1 + 2 + 4 + 7 + 5 = 39
Similarly,
4 + 5 + 1 + 3 + 4 + 5 + 6 + 6 + 5 = 39

10. (B) pl**s**p/p**l**sp/**p**lsp/pl**s**p

11. (B)

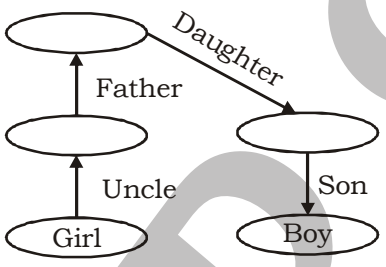
12. (A) **In first column,**
98 – 46 = 52 ⇒ 25 × 4 = 100
In second column,
47 – 22 = 25 ⇒ 52 × 4 = 208
In third column,
91 – 23 = 68 ⇒ 86 × 4 = **344**

13. (D) 646 ÷ 19 – 746 + 20 × 34 = 100
After Changing the signs – and + to each other,
646 ÷ 19 + 746 – 20 × 34 = 100
34 + 746 – 680 = 100
780 – 680 = 100
100 = 100

14. (B) 2017 was a normal year.
Number of days in 2017 = 365
So, there are 52 week and one odd day
1 January 2017 was Sunday.
It means 30 December 2016 was Saturday.
So, 31 December 2017 was Sunday.

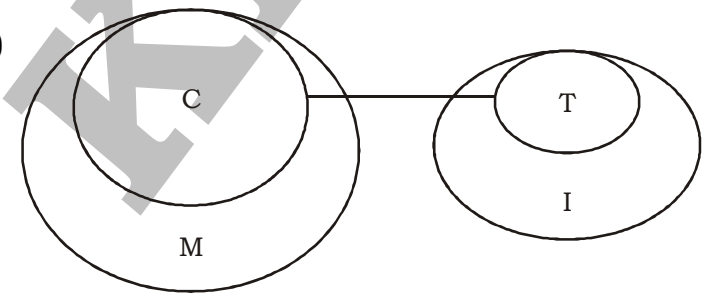
15. (D) 2. Movement → 4. Moviemaker → 1. Multifocal → 3. Multinominal → 5. Mutual Fund

16. (A)



Hence, the boy is the brother of that girl.

17. (B)

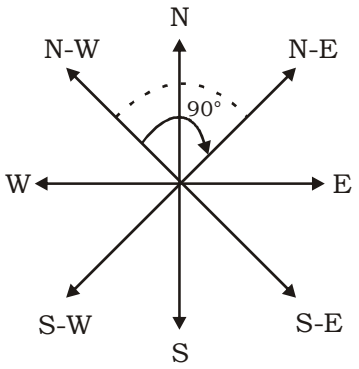


I. False II. True III. False
Hence, only conclusion II follows.

18. (C) 19. (B)

20. (D) a : b = 2 : 3
c : d = 5 × 2 : 3 × 3 = 10 : 9
∴ 2c : 5d = 2 × 10 : 5 × 9 = 20 : 45 = 4 : 9

21. (B)



There is 90° angle between North-West and North-East and 135° angle between North-East and West.

So, final direction will be West.

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

26. (A) In Satyarth Prakash, Swami Dayanand Saraswati propounded that the original home of the Aryans was Tibet.

29. (A) Jaugada is located near the cities of Berhampur and Purushottampur in Ganjam district of Odisha, India. Jaugada is an important archaeological and historical site. Did you know that Jaugada is the second place in Odisha where there is a major Ashokan rock edict, also known as Kalinga edict

30. (B) Tirthankara, also called Jina, in Jainism, a saviour who has succeeded in crossing over life's stream of rebirths and has made a path for others to follow.

31. (C) The authority and function of Advocate General is also specified in the Constitution of India under Article 165 and 177. The Governor of each State shall appoint a person who is qualified to be appointed as a Judge of a High Court to be Advocate General for the State.

32. (B) Osmium (Os), chemical element, one of the platinum metals of Groups 8-10 (VIIIb), Periods 5 and 6, of the periodic table and the densest naturally occurring element.

33. (D) Propane is a colourless, odourless gas with a chemical formula of C3H8 i.e 3 carbon and 8 hydrogen atoms.

34. (B) The state emblem is an adaptation from the Sarnath Lion Capital of Ashoka.

35. (A) The shape of benzene: Benzene is a planar regular hexagon, with bond angles of 120°. This is easily explained. It is a regular hexagon because all the bonds are identical. The delocalization of the electrons means that there aren't alternating double and single bonds.

36. (B) The textiles ministry on Monday said it has approved a pilot project on skilling of design or commissioning technical personnel associated with application of geo-textiles in infrastructure projects including roads, highways, railways and water resources.

38. (A) Celebrated on the birth anniversary of hockey wizard Dhyan Chand, the National Sports Day is also a timely reminder for the need for sporting activities in life. Question: When is National Sports Day? Answer: The National Sports Day in India is celebrated on August 29.

39. (A) The district derives its name from the eponymous headquarters town founded by Firoz Shah Tughlak in the 14th century. He named it after his son Fateh Khan, as Fatehabad.

40. (C) Pedology is the study of soils as naturally occurring phenomena, taking into account their composition, distribution and processes of formation.

44. (D) In order to suitably implement the GST legislation, 101st resulted in the insertion, deletion and amendment of certain Articles of the Constitution.

45. (A) Itanagar, located at an altitude of 530 meters above sea level between 93 east longitude and 27 north latitude.

46. (B) A leading luminary of the Ghadar Party, Kartar Singh Sarabha was executed at Lahore in November 1915 for his role in the Ghadar Conspiracy in February 1915.

48. (B) In the month of October the Disarmament Week use to observed. This year, the disarmament week will be starting on October 24 and continue till October 30. Disarmament Week is observed annually to promote awareness and understanding of the issues of disarmament in several countries.

50. (C) Nagpur (Maharashtra) [India], October 26 (ANI/HunkGoldenand Media): Lokmat Media Group organized the first-ever National Inter-Religious Conference in Nagpur on Sunday to commemorate its Nagpur edition's golden jubilee year celebrations.

51. (A) Circumference of the circles = 220 meters

$2\pi r = 220$

$r = \frac{220}{2 \times 22} \times 7 = 35$ cm

d = 70 cm

Let the side of the square be s meter.

ATQ,

$\frac{s}{70} = \frac{3}{10}$

s = 21 meters

$\therefore$ Area of the square = 21 × 21 = 441 sq. meters

52. (A) Let the CP = ₹ 100

$MP = 100 \times \frac{125}{100} = ₹\ 125$

$SP = 125 \times \frac{88}{100} = ₹\ 110$

ATQ,

₹ (110 – 100) $\rightarrow$ ₹ 600

₹ 100 $\rightarrow$ $\frac{600}{10} \times 100 = ₹\ 6000$

$\therefore$ Cost price of an article = ₹ 6000

53. (C) Let initially family's total income be ₹ 100.

Total expenses = ₹ 60

Total saving = ₹ 40

So, A's initial income = ₹ 40

Income of A after hike = $40 \times \frac{150}{100} = ₹\ 60$

New total savings = ₹ 60

New total income = ₹ 120

$\therefore$ New total savings = $\left(\frac{60}{120} \times 100\right)\%$ = 50% of the total income.

54. (A) Let the time taken by pipe A and pipe B alone to fill the tank be 3x minutes and 4x minutes respectively.

ATQ,

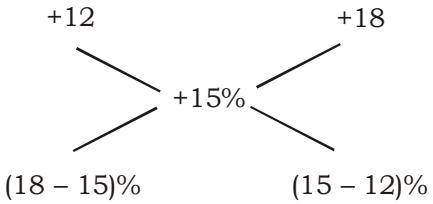
$$\frac{1}{3x}+\frac{1}{4x}=\frac{7}{60}$$

$$\frac{7}{12x}=\frac{7}{60}$$

$x = 5$

$\therefore$ Time taken by pipe A alone to fill the tank = $3x = 3 \times 5 = 15$ minutes

55. (A) **By alligation method,**



Ratio = 3 : 3 = 1 : 1

$\therefore$ Quantity sold at 15% profit = $\frac{1500}{2}$ = 750 kg

56. (D) If Ram is walking $\frac{5}{6}$ of his usual speed that means he is taking $\frac{6}{5}$ of usual time.

$\frac{6}{5}$ of usual time – usual time = 30 min

$\frac{1}{5}$ of usual time = 30 min

$\therefore$ Usual time = 150 mintues = 2 hours 30 minutes

57. (A) $(16W \times 16) = (36C \times 18)$

$32W = 81\ C$

$64W = 162\ C$

$\therefore$ Required time = $\frac{36\times18}{162}$ = 4 days

58. (B) Capacity of tank = 60 litres

Tap A fall the tank in1 hour = $\frac{60}{15}$ = 4 litres

Tap B fill the tank in 1 hour = $\frac{60}{20}$ = 3 litres

In 8 hours, tap A and B fill the tank = $(4 + 3) \times 8 = 56$ litres

Now, tap A's turn and fills the remaining 4 litres in 1 hour.

$\therefore$ Total time = 8 + 1 = 9 hours

59. (D) Let the length of high speed train be 2x m.

Length of slow speed train = x m

Relative speed = $(52+56)\times\frac{5}{18}$ = 30 m/s

ATQ,

$\frac{2x+x}{30}=24$

$3x = 30 \times 24$

$x = \frac{30\times24}{3}$ = 240 m

Length of high speed train = 240 × 2 = 480 m

Let the length of plateform be y m

ATQ,

$\frac{480+y}{56\times\frac{5}{18}}=48$

$(480 + y) \times 18 = 48 \times 56 \times 5$

$8640 + 18y = 13440$

$18y = 4800$

$\therefore \quad y = \frac{4800}{18} = 266\frac{2}{3}$ m

60. (B) CI – SI = ₹ 5315.625

R = 15%

T = 3 years

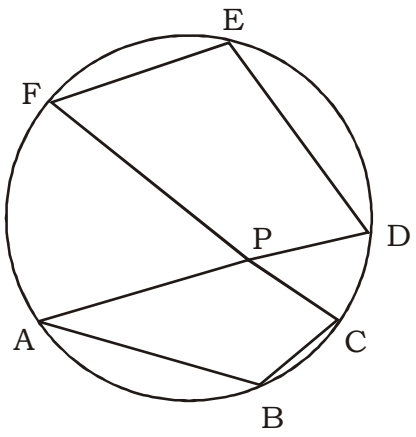
Now,

CI – SI for 3 years = $P\left(\frac{15}{100}\right)^2\left(\frac{300+R}{100}\right)$

$5315.625 = P\left(\frac{15}{100}\right)^2\left(\frac{300+15}{100}\right)$

$\therefore \quad P = \frac{5315.625\times100\times100\times100}{15\times15\times315}$ = ₹ 75000

61. (D)



In ABCF,

$\angle AFC = 180° - \angle ABC = 180° - 85° = 95° = \angle AFP$ (Opposite angles of cyclic quadrilateral)

Similarly,

$\angle FAD = 180° - \angle FED = 180° - 105° = 75° = \angle FAP$

Now, in Δ FAP,

$\angle APC = \angle FAP + \angle AFP$ (External Angle Theorem)

$\therefore$ $\angle APC = 75° + 95° = 170°$

62. (B) $\frac{2145}{x} = \frac{3003}{42}$

$x = \frac{2145 \times 42}{3003}$

$x = 30$

Now, $\frac{x}{2508} = \frac{y}{11704}$

$\frac{30}{2508} = \frac{y}{11704}$

$y = \frac{30 \times 11704}{2508}$

$\therefore$ $y = 140$

63. (A) $\tan\alpha + \cot\alpha = \sqrt{3}$

Cubing both sides,

$\tan^3\alpha + \cot^3\alpha + 3(\tan\alpha + \cot\alpha) = \left(\sqrt{3}\right)^3$

$\therefore$ $\tan^3\alpha + \cot^3\alpha = 3\sqrt{3} - 3\left(\sqrt{3}\right) = 0$

64. (C) Age of two women = $6(x + 2) - (6x - 55 - 60) = 127$ years

$\therefore$ Average age of two women = $\frac{127}{2} = 63.5$ years

65. (C) $\frac{(\text{Total Surface Area})_{\text{Sphere}}}{(\text{Total Surface Area})_{\text{Hemisphere}}}$

$= \frac{4\pi r^2}{3\pi r^2} = \frac{4}{3}$

$\therefore$ $(\text{T.S.A.})_{\text{sphere}} : (\text{T.S.A.})_{\text{hemisphere}} = 4 : 3$

66. (B) $x + \frac{1}{x} = \sqrt{3}$

Cubing both sides,

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

$x^6 + 1 = 0$

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

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

67. (D) CP for Anand = ₹ x

MP = $x + \frac{50}{100} \times x$ = ₹ $1.5x$

SP by Anand = CP of Balaji

$= 1.5x - 1.5x \times \frac{20}{100}$ = ₹ $1.2x$

SP by Balaji = ₹ $(1.2x + 20)$

ATQ,

$1.2x + 20 = x + \frac{30}{100} \times x$

$1.2x + 20 = 1.3x$

$x = 20 \times 10$

x = ₹ 200

CP of Balaji = 1.2×200 = ₹ 240

$\therefore$ Profit percent = $\left(\frac{20}{240} \times 100\right)\% = 8.33\%$

68. (A) $1 + \frac{1}{\cot^2 63^\circ} - \sec^2 27^\circ + \frac{1}{\sin^2 63^\circ} - \text{cosec}^2 27^\circ$

$= 1 + \tan^2 63^\circ - \text{cosec}^2 (90^\circ - 27^\circ) + \text{cosec}^2 63^\circ - \sec^2 (90^\circ - 27^\circ)$

$= 1 + (\sec^2 63^\circ - 1) - \text{cosec}^2 63^\circ + \text{cosec}^2 63^\circ - \sec^2 63^\circ = 0$

69. (B) Let the distance between P and Q be D km and usual speed of the car = x km/hr

Case-I,

$$\frac{D}{x}-\frac{D}{x+10}=1$$

$$D=\frac{x^2+10x}{10}$$

Case-II,

$$\frac{D}{x}-\frac{D}{x+2}=1\frac{3}{4}$$

$$D=\frac{7(x^2+20x)}{80}$$

$$\frac{x^2+10x}{10}=\frac{7x^2+140x}{80}$$

$x^2 - 60x = 0$

$x = 60$ kms/hr

$$\therefore \quad D=\frac{60^2+10\times 60}{10}=\frac{3600+600}{10}=420 \text{ km}$$

70. (A) Share of wife = $\frac{84100}{2}$ = ₹ 42050

Share of A = ₹ x, then share of B = ₹ (42050 – x)

Now, $x\times\left(1+\frac{5}{100}\right)^3$

$$(42050-x)\left(1+\frac{5}{100}\right)^5$$

$$\frac{x}{42050-x}=\left(1+\frac{5}{100}\right)^2$$

$$\left(\frac{21}{20}\right)^2=\frac{441}{400}$$

x = ₹ 22050

$\therefore$ Share of B = 42050 – 22050 = ₹ 20000

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

So, length = $4x$ metres

Area = $12x^2$ metres

ATQ,

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

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

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

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

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

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

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

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

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

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

$\therefore$ Total revenue earned = 9.75 × 1000 × 20 = 1.95 lakh

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

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

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

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

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

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

MEANINGS IN ALPHABETICAL ORDER

Catastrophe	an event causing great and often sudden damage or suffering; a disaster	तबाही
Catastrophic	involving or causing sudden great damage or suffering	आपत्तिजनक
Catatonic	relating to or characterized by catatonia	तानप्रतिष्टम्भी
Chasm	a deep fissure in the earth, rock, or another surface	खाई
Impoverished	(of a person or area) made poor	गरीब
Ingenious	(of a person) clever, original, and inventive	सरल
Keenly	intensely	गौर से
Optimistic	hopeful and confident about the future	आशावादी
Penniless	(of a person) having no money; very poor	दरिद्र
Pessimistic	tending to see the worst aspect of things or believe that the worst will happen	निराशावादी
Philanthropist	a person who seeks to promote the welfare of others, especially by the generous donation of money to good causes	लोकोपकारक
Predecessor	a person who held a job or office before the current holder	पूर्वज
Spasmodic	occurring or done in brief, irregular bursts	अकड़नेवाला
Spendthrift	a person who spends money in an extravagant, irresponsible way	उड़ाऊ
Telepathy	the supposed communication of thoughts or ideas by means other than the known senses	मानसिक दूरसंचार

SSC MOCK TEST - 315 (ANSWER KEY)

1. (B)
2. (D)
3. (C)
4. (D)
5. (B)
6. (A)
7. (C)
8. (B)
9. (C)
10. (B)
11. (B)
12. (A)
13. (D)
14. (B)
15. (D)
16. (A)
17. (B)
18. (C)
19. (B)
20. (D)
21. (B)
22. (A)
23. (D)
24. (D)
25. (D)
26. (A)
27. (C)
28. (A)
29. (A)
30. (B)
31. (C)
32. (B)
33. (D)
34. (B)
35. (A)
36. (B)
37. (C)
38. (A)
39. (A)
40. (C)
41. (A)
42. (C)
43. (B)
44. (D)
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92. (C)
93. (B)
94. (C)
95. (A)
96. (A)
97. (D)
98. (A)
99. (A)
100. (D)