SSC MOCK TEST - 349 (SOLUTION)

1. (A) As,

   $18 \Rightarrow (1 + 8)^3 = 729$

   Similarly,

   $21 \Rightarrow (2 + 1)^3 = 27$

2. (D) Clue is related to Mystery, while Warning is related to Danger.

3. (D) $217 \Rightarrow 21 \div 7$ (Divisible)

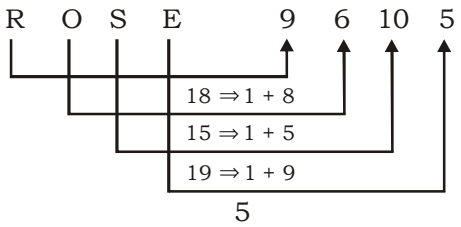
   $248 \Rightarrow 24 \div 8$ (Divisible)

   $273 \Rightarrow 27 \div 3$ (Divisible)

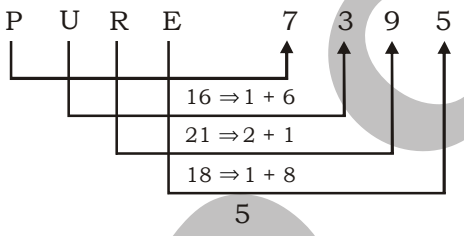
   $344 \Rightarrow 34 \div 4$ (Not Divisible)

4. (C) Except Joviality, others are same.

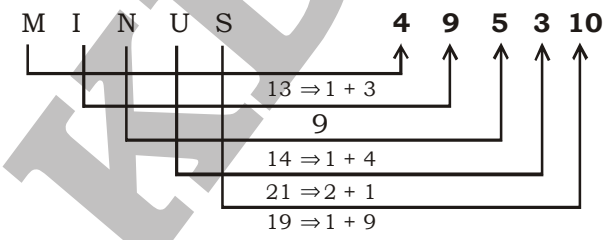
5. (C) As,



   And,



   Similarly,



6. (D) $15 \times 1 + 2 = 17$

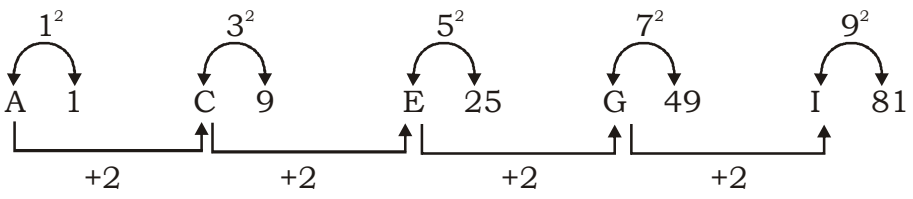
   $17 \times 2 + 2 = 36$

   $36 \times 3 + 2 = 110$

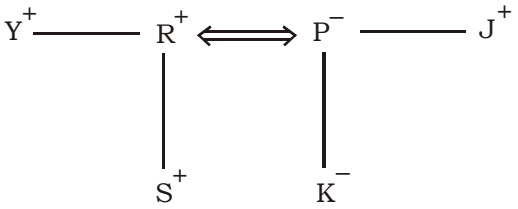
   $110 \times 4 + 2 = 442$

   $442 \times 5 + 2 =$ **2212**

7. (B)



8. (B)



P have two children.

9. (D) As,

$18 - 6 = 12$

$12 + 6^2 = 48$

Similarly,

$24 - 6 = 18$

$18 + 6^2 = 54$

10. (B) k j i **i**/k **j i** i/k j i **i**/k **j i** l

11. (B)

12. (D) **In the first column,**

$17 + 18 \Rightarrow 35 \times (3 + 5) = 280$

In the second column,

$19 + 21 \Rightarrow 40 \times (4 + 0) = 160$

In the third column,

$22 + 25 \Rightarrow 47 \times (4 + 7) = 517$

13. (B) $57 \div 24 - 19 \times 5 + 37 = -80$

After changing 24 and 19 with each other,

$57 \div 19 - 24 \times 5 + 37 = -80$

$3 - 120 + 37 = -80$

$40 - 120 = -80$

$-80 = -80$

14. (B) Let the number of notebook be x.

ATQ,

$12 \times x + (11 - x) \times 9 = 123$

$12x + 99 - 9x = 123$

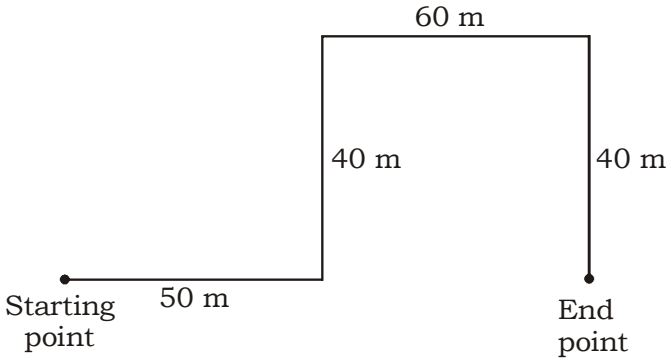
$3x = 24$

$x = 8$

$\therefore$ Number of notebook she purchased is 8.

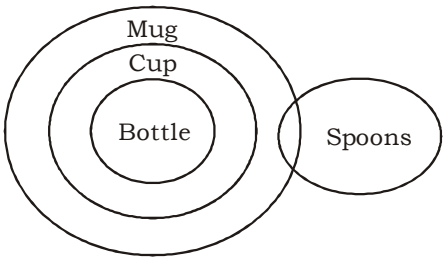
15. (B) 3. Expandable → 5. Expanded → 1. Expanse → 4. Expansion → 2. Expansive

16. (A)



∴ Required distance = 50 + 60 = 110 m

17. (B)



I. False II. False III. True

Hence, conclusion III follows.

18. (B) 19. (A)

20. (B) As,

$256 \Rightarrow (2 + 5 + 6)^2 = 169$

$169 \Rightarrow (1 + 6 + 9)^2 = 256$

Similarly,

$181 \Rightarrow (1 + 8 + 1)^2 = 100$

$100 \Rightarrow (1 + 0 + 0)^2 = 1$

21. (B) $A \times \frac{3}{100} + B \times \frac{6}{100} = \frac{4}{5}\left(A \times \frac{4}{100} + B \times \frac{6}{100}\right)$

$\frac{3A}{100} + \frac{6B}{100} = \frac{4}{5}\left(\frac{4A}{100} + \frac{6B}{100}\right)$

$\frac{3A}{100} + \frac{6B}{100} = \frac{16A}{500} + \frac{243}{500}$

$\frac{6B}{100} - \frac{24B}{500} = \frac{16A}{500} - \frac{3A}{100}$

$\frac{6B}{500} = \frac{A}{500}$

$\frac{A}{B} = \frac{6}{1}$

∴ (A + B) : (A – B) = (6 + 1) : (6 – 1) = 7 : 5

22. (B) 23. (C) 24. (C) 25. (D)

26. (B) The tower was constructed by the Hindu king Rana Kumbha of Mewar in 1448 to commemorate his victory over the combined armies of Malwa and Gujarat sultanates led by Mahmud Khilji.

28. (A) The National Human Rights Commission is a statutory (and not a constitutional) body. It was established in 1993 under a legislation enacted by the Parliament, namely, the Protection of Human Rights Act, 1993. This Act was amended in 2006. The commission is a multi-member body consisting of a chairman and four members. The chairman should be a retired chief justice of India, and other members should be a serving or retired judge of the Supreme Court, a serving or retired Chief Justice of a high court and two persons having knowledge or practical experience with respect to human rights.

38. (B) Meteoroids, Meteors and Meteorites: Throughout space, millions and millions of rock-like materials wander about at terrific speed of approximately 150000 to 160000 miles per hour. These rocklike materials in space are called Meteoroids.

39. (A) The International Monetary Fund (IMF) is an organisation of 187 countries, working to foster global monetary cooperation, secure financial stability, facilitate international trade, promote employment and sustainable economic growth and reduce poverty around the world.

41. (C) Indian Culture. Which of the following places is famous for Chikankari work, which is a traditional art of embroidery? Explanation : Lucknow, in Uttar Pradesh (India), is the centre of chikankari , a skill of more than 200 years old.

45. (A) Natural radioactivity is the process of spontaneous disintegration of atoms with emission of radioactive rays {alpha, beta and gamma rays) It is a nuclear phenomenon and is independent of external factors such as pressure and temperature.

51. (A) SI for 2 years = ₹ 1200

SI for 1 years = $\frac{1200}{2}$ = ₹ 600

CI for 1st year = ₹ 600

CI for 2nd year = 1500 – 600 = ₹ 900

Now,

$$900 = 600\left(1+\frac{R}{100}\right)^1$$

$$\frac{900}{600} = 1+\frac{R}{100}$$

$$\frac{3}{2}-1 = \frac{R}{100}$$

$$\frac{R}{100} = \frac{1}{2}$$

R = 50%

$\therefore$ $P = \frac{1200\times100}{50\times2}$ = ₹ 1200

52. (C) Let the salary of A and B be 7x and 9x respectively.

ATQ,

$$\frac{7x+800}{9x+600} = \frac{4}{5}$$

35x + 4000 = 36x + 2400

x = ₹ 1600

$\therefore$ Required difference = (9x – 7x) = 2x = 2 × 1600 = ₹ 3200

53. (A) Required time = $\frac{840+1600}{72\times\frac{5}{18}}$

$= \frac{2440}{20}$ = 122 second = 2 minutes 2 seconds

54. (B) ATQ,

The volume of 3 cylinders = Volume of 4 cuboids

$3\times\frac{22}{7}\times 42^3\times h = 4\times154\times96\times9$

$16632 \times h = 532224$

$\therefore$ h = 32 cm

55. (C) Average age of remaining 15 girls = $\frac{1450-(35\times14+35\times18)}{15}$

$= \frac{1450-1120}{15} = \frac{330}{15}$ = 22 years

56. (A) Let the share of A and B be ₹ x and ₹ (3903 – x) respectively.

A's share after 7 years = $x\left(1+\frac{4}{100}\right)^7$

B's share after 9 years = $(3900-x)\left(1+\frac{4}{100}\right)^9$

According to the question,

$x\left(1+\frac{4}{100}\right)^7 = (3900-x)\left(1+\frac{4}{100}\right)^9$

$\frac{x}{(3903-x)} = \frac{676}{625}$

$625x = 676 \times 3903 - 676x$

$1301x = 676 \times 3903$

$\therefore$ x = ₹ 2028

57. (B) Let the number of female be x and the number of male be (x + 2000).

ATQ,

$(x + 2000) \times \frac{60}{100} + x \times \frac{45}{100} = 7500$

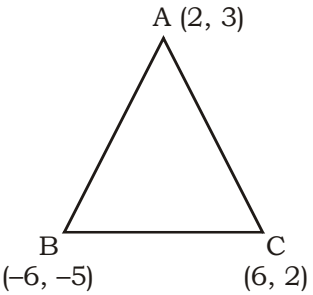
$\frac{60x}{100}+\frac{45x}{100}+1200 = 7500$

$\frac{105x}{100} = 6300$

$x = \frac{6300\times100}{105}$ = 6000

$\therefore$ Total population of village = 6000 + 8000 = 14000

58. (C)



$$\text{Area of } \Delta ABC = \frac{1}{2}\left[x_1y_2 - x_2y_1 + x_2y_3 - x_3y_2 + x_3y_1 - x_1y_3\right]$$

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

$$= \frac{1}{2}[-10 + 18 - 12 + 30 + 18 - 4]$$

$$= \frac{1}{2} \times 40 = 20 \text{ square units}$$

59. (D) Let the capacity of tank be 36 litres.

Both pipes work = $\frac{36}{18} + \frac{36}{12}$ = 5 litres/hour

Both pipes take = $\frac{36}{5}$ = 7.5 hours

All the pipes take = 7.5 + 0.5 = 8 hours

Total efficiency = $\frac{36}{8}$ = 4.5 litres/hours

Now, efficiency of outlet pipe = 5 – 4.5 = 0.5 litres/hour

$\therefore$ Required time by C = $\frac{36}{0.5}$ = 72 hours

60. (C) Let the marks of one student be x.

As, One of them secured 22 marks more than the other.

So, marks of other student = x + 22

One of them got 55% of sum of their marks.

$$(x + x + 22) \times \frac{55}{100} = x + 22$$

$$110x + 1210 = 100x + 2200$$

$$10x = 990$$

$$x = 99$$

Marks of other student = x + 22 = 99 + 22 = 121

$\therefore$ Required total marks = 121 + 99 = 220

61. (A) Length of cuboudal box = 5 × (2 × 7) = 70 cm
Breadth = 3 × (2 × 7) = 42 cm
Height = 20 cm
Volume = 70 × 42 × 20 = 58800 cm^3

Volume of all 15 cylinders = $15 \times \frac{22}{7} \times 7 \times 7 \times 20 = 46200\ cm^3$

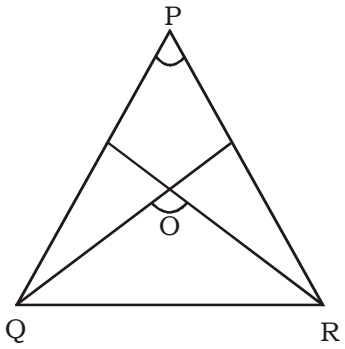
$\therefore$ Area of remaining empty space = 58800 – 46200 = 12600 cm^3

62. (A) $2\sin^2 x + 3\sin x - 2 = 0$
$2\sin^2 x + 4\sin x - \sin x - 2 = 0$
$2\sin x(\sin x + 2) - (\sin x + 2) = 0$
$(2\sin x - 1)(\sin x + 2) = 0$

Therefore, $\sin x = \frac{1}{2}$ and $\sin x \neq -2$

$x = 30° = \frac{\pi}{6}$

63. (B)



Let $\angle PQR = 2x$ and $\angle PRQ = 2y$

$\angle OQR = x$ and $\angle ORQ = y$ [Since, QO and RO are angle bisectors]

In ΔPQR,

$\theta + \angle PQR + \angle PRQ = 180°$

$\theta = 180° - 2(x + y)$ .....(i)

In ΔQOR,
$x + y + 108° = 180°$
$x + y = 72°$
Putting value of (x + y) in (i),
$\theta = 180° - 2 \times 72° = 180° - 144° = 36°$

64. (B) $4a^2 + b^2 = 25$ and $ab = 5$
$4a^2 + b^2 = 20$
After 4ab in both sides,
$4a^2 + b^2 + 4ab = 20 + 4ab$
$(2a)^2 + (b)^2 + 2 \times 2a \times b = 20 + 4 \times 5$ ($\because$ ab = 5)
$(2a + b)^2 = 20 + 20$
$(2a + b)^2 = 40$

$\therefore$ $2a + b = \sqrt{40} = 2\sqrt{10}$

65. (B) Let x be added to 8, 13, 26 and 40 to make them proportional.

ATQ,

$(8 + x) : (13 + x) :: (26 + x) : (40 + x)$

$$\frac{(8+x)}{(13+x)} = \frac{(26+x)}{(40+x)}$$

$320 + 8x + 40x + x^2 = 338 + 13x + 26x + x^2$

$320 + 48x = 338 + 39x$

$9x = 18$

$\therefore \quad x = 2$

66. (D) $\sin 10° \cos 80° + \sin 80° \cos 10°$

$= \cos(90° - 80°)\cos 80° + \sin 80° \sin(90° - 10°)$

$= \cos 80° \cos 80° + \sin 80° \sin 80°$

$= \cos^2 70° + \sin^2 70° = 1$

67. (B) Let x cm be the major arc, then $\frac{x}{5}$ cm be the length of minor are.

Circumference of circle = $x + \frac{x}{5} = \frac{6x}{5}$

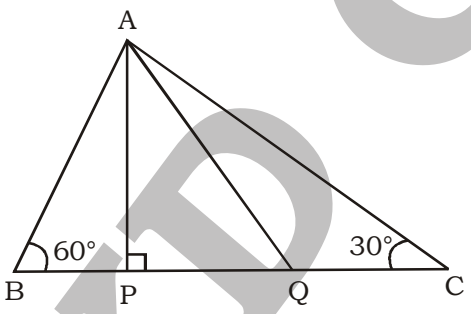
We know, Circumference of circle = $2\pi r = 2 \times \frac{22}{7} \times 10.5$

$$\frac{6x}{5} = 2 \times \frac{22}{7} \times 10.5$$

$x = 55$ cm

$\therefore$ Area of major sector = $\frac{\text{length of arc}}{2\pi r} \times \pi r^2 = \frac{1}{2} \times 55 \times 10.5 = 288.75 \text{ cm}^2$

68. (D)



AP is perpendicular to BC, and AQ is the bisector of angle PAC.

In ΔABP,

$\angle APB = 90°$

$\angle ABP = 60°$

So, $\angle BAP = 180° - (90° + 60°) = 30°$

Now in ΔABC,

$\angle ABC = 60°, \angle ACB = 30°$

So, $\angle BAC = 180° - (60° + 30°) = 90°$

And $\angle BAC = \angle BAP + \angle PAQ + \angle QAC$

Since, AQ is the bisector of angle PAC.

So, $\angle PAQ = \angle QAC$

$\angle BAC = \angle BAP + 2\angle PAQ$

$90° = 30° + 2\angle PAQ$

$2\angle PAQ = 60°$

$\therefore \quad \angle PAQ = 30°$

69. (A) Distance between A and B = 2400 km
Relative speed = 54 + 66 = 120 km/hr

So, the two trans meet after travelling = $\frac{2400}{120}$ = 20 hours

During those 20 hours, the train A covered = 54 × 20 = 1080 km
Train B covered = 56 × 20 = 1320 km
So, train will meet after 1080 km from station A.

70. (C) SP = ₹ 2040
Loss = 15%

$CP = \frac{2040}{85} \times 100$ = ₹ 2400

$\therefore$ SP = 2400 × $\frac{118}{100}$ = ₹ 2832

71. (A) Total number of salesmen joining D in the year 2010, 2011 and 2012 together = 13400
Total number of salesmen joining C = 10900

$\therefore$ Required percentage = $\left(\frac{13400}{10900} \times 100\right)\%$ = 122.9 ≈ 123%

72. (B) Ratio between the total number of salesmen joining B in the year 2013 and the number of salesmen joining D in the year 2010 = 5.1 : 1.7 = 3 : 1

73. (B) Total number of salesmen joining A in the year 2010, 2011 and 2014
= (2.4 + 1.7 + 4.3) × 1000 = 8400
Total number of salesmen joining B in the year 2014 = 6.5 × 1000 = 6500
$\therefore$ Required difference = 8400 – 6500 = 1900

74. (D) By just observing the table, we can easily see that C is the only company whose salesman increased continuously during the year 2010 to 2015.

75. (B) Required number of salesman = (2.4 + 1.7 + 3.9 + 3.4 + 4.3 + 5.7) × 1000 = 21400

MEANINGS IN ALPHABETICAL ORDER

Abridgement	a shortened version	संक्षेपण
Almanac	an annual calendar containing important dates and statistical information	पंचांग
Anachronism	something that belongs to another time	अलग समय काल का
Consensus	a general agreement	आमराय
Contagious	(of a disease) spread from one person or organism to another by direct or indirect contact	संक्रामक
Council	an advisory, deliberative, or legislative body of people formally constituted	परिषद्
Councilor	a member of a council	पार्षद
Counsel	advice	सलाह
Counselor	a person trained to give guidance on personal, social, or psychological problems	परामर्श देने वाला
Efficacy	the ability to produce a desired or intended result	प्रभाव
Envisaged	something conceived of as a possibility or a desirable future event	परिकल्पित
Fortify	strengthen (a place) with defensive works	मजबूत करना
Gravity	seriousness	गंभीरता
Hanker	feel a strong desire for or to do something	लालसा करना
Levity	a manner lacking seriousness	ओछापन
Linguistics	the scientific study of language and its structure	भाषा विज्ञान
Nadir	the lowest point	निम्नतम बिंदु
Nauseous	affected with nausea; inclined to vomit	घिनौना
Outrageous	shockingly bad or excessive	अपमानजनक
Pacification	the act of appeasing someone	शांत करना
Provocation	action that makes someone annoyed or angry	उकसावा
Semantics	the branch of linguistics and logic concerned with meaning	शब्दों के अर्थ की विद्या
Status quo	the existing state of affairs	वर्तमान स्थिति
Substance	the quality of being important, valid, or significant	महत्तता
Substantive	having a firm basis in reality and therefore important, meaningful, or considerable	मौलिक
Worrisome	causing anxiety or concern	चिंताप्रद
Zenith	the highest point	शीर्ष बिंदु

SSC MOCK TEST - 349 (ANSWER KEY)

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