SSC MOCK TEST - 294 (SOLUTION)

1. (B) E R : K L :: I M : O G
   (+6, −6) (+6, −6)

2. (B) A group of letters form a word and a group of words form a sentence.

3. (D) As, Similarly,

   W −1→ H, H −1→ V; I
   D −1→ C
   E −1→ D
   L −1→ X, X −1→ K; Y

   F −1→ Q, Q −1→ E; R
   I −1→ H
   N −1→ M
   G −1→ D, D −1→ F; E

4. (B) $6424 \Rightarrow 6 \times 4 = 24$
   $7516 \Rightarrow 7 \times 5 = 35 \neq$ **16**
   $9327 \Rightarrow 9 \times 3 = 27$
   $5210 \Rightarrow 5 \times 2 = 10$

5. (D) Except FLY, others have a vowel.

6. (C) Except Chennai, others are union territory of India.

7. (D) 4. Multimodalities → 2. Multinational → 3. Multiplications → 1. Multiprocessors → 5. Multistratified

8. (C) 200 100 50 25 12.5 **6.25**
   (×0.5, ×0.5, ×0.5, ×0.5, ×0.5)

9. (C) **B A Z,** V U T, O N M, G F E, X W V
   (−6, −7, −8, −9)

10. (B) **First figure,**
    $9 + 4 = 13$ and $9 \times 4 = 36$
    Second figure,
    $6 + 7 = 13$ and $6 \times 7 = 42$
    Third figure,
    $12 + 4 = 16$ and $12 \times 4 =$ **48**

11. (C) $\sqrt{361} \times 9 = 19 \times 9 = 171$
    $\sqrt{529} \times 7 = 23 \times 7 = 161$
    $\sqrt{729} \times 9 = 27 \times 9 =$ **243**

12. (C) 22 times

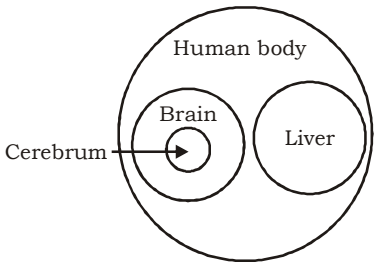
13. (A) As,

M	A	C	A	R	O	N	I	C
@	$	^	$	*	!	>	#	^

Similarly,

C	**A**	**M**	**I**	**O**	**N**
^	$	@	#	!	>

14. (D)



15. (B)

16. (D) 121 ? 11 ? 12 ? 48 ? 10

From option (D),

$121 \div 11 \times 12 > 48 + 10$

$11 \times 12 > 48 + 10$

$132 > 58$

17. (C)

18. (C) From the statement of Amar, his sister's birthday is on 20 or 21 or 22 June.

From the statement of Amar's brother, his sister's birthday is on 20 or 21 June.

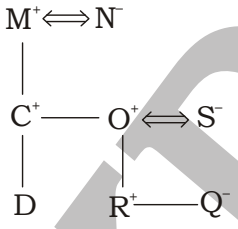
So, birthday is on 20 or 21 June.

19. (B)

20. (B) ab**a**d**n**a /aba**d**na/ **a**badna/ **a**bad**n**a/a**b**adna

21. (B) I N D I V I D U A L

22. (A)



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

26. (D) Dame Rajkumari Amrit Kaur was appointed the first Health Minister of India in 1947 and remained in office until 1957.

27. (A) Afzal Khan was the general of the Adil Shahi dynasty of Bijapur. Present day karnataka was known as Bijapur. He fought against Chhatrapati Shivaji in the Battle of Pratapgarh in 1659.

29. (A) Playing It My Way is the autobiography of former Indian cricketer Sachin Tendulkar. It was launched on 5 November 2014 in Mumbai.

31. (A) The liquidity coverage ratio (LCR) refers to the proportion of highly liquid assets held by financial institutions, to ensure their ongoing ability to meet short-term obligations.

32. (B) The SI unit for pressure is the pascal (Pa), equal to one newton per square metre.

33. (A) Gymnosperms are flowerless plants that produce cones and seeds in which seeds are not encased within an ovary. The gymnosperms are a group of seed-producing plants that includes conifers, cycads, Ginkgo, and gnetophytes.

34. (A) Ibrahim Sutar is an Indian social worker from Karnataka, India; and recipient of India's fourth highest civilian award, the Padma Shri. He is nicknamed the "Kabir of Kannada".

35. (C) Tata Group has proposed to purchase online grocer Big Basket and it has received the approval from Competition Commission of India for the acquisition. Tata Group's digital arm Tata Digital Ltd would acquire Big Basket for a value of Rs. 9,500 crore, which is 64.3% of the total share capital of Big Basket.

39. (D) Not less than 25 years of age to be a member of the Legislative Assembly and not less than 30 years as per Article 173 of Indian Constitution to be a member of the Legislative Council.

40. (B) The 28th busiest airport in the country Swami Vivekananda Airport is situated at Mana in Chattisgarh. Raipur Airport is among the 35 non-metro airports to have been recently upgraded by the Airports Authority of India.

41. (A) Article 123 deals with the ordinance making power of the President. President has many legislative powers and this power is one of them. He can only promulgate the ordinance under these circumstances: When both the houses or either of the house is not in session.

44. (B) The day is celebrated annually on April 29, which happens to be the birth anniversary of Jean-Georges Noverre, the creator of modern ballet.

46. (D) Kolleru Lake is one of the largest freshwater lakes in India located in state of Andhra Pradesh 15 kilometers away from the city of Eluru. Kolleru is located between Krishna and Godavari deltas. Kolleru spans into two districts - Krishna and West Godavari.

47. (C) Uttar Pradesh Shares Its Border With Nine Indian States.

51. (A) A and B can do a piece of work in 20 days.

(A + B)'s 1 day work = $\frac{1}{20}$

B alone can complete the $33\frac{1}{3}\%$ of the work in 12 days.

B complete the work in $\left(\frac{12}{1}\times 3\right)$ = 36 days

B's 1 day work = $\frac{1}{36}$

A's 1 day work = $\frac{1}{20}-\frac{1}{36}=\frac{9-5}{180}=\frac{4}{180}=\frac{1}{45}$

A alone complete the work in 45 days.

$\therefore$ A complete the $66\frac{2}{3}\%$ of the work in $\left(45\times\frac{2}{3}\right)$ = 30 days

52. (C) Let three numbers are x, y and z.

ATQ,

$$\frac{x+y}{2}+z=183$$

$x + y + 2z = 366$ .....(i)

$$\frac{x+z}{2}+y=157$$

$x + z + 2y = 314$ .....(ii)

$$\frac{y+z}{2}+x=136$$

$y + z + 2x = 272$ .....(iii)

Adding equations (i), (ii) and (iii), we get

$4x + 4y + 4z = 366 + 314 + 272$

$4(x + y + z) = 952$

$x + y + z = \frac{952}{4} = 238$ .....(iv)

Subtract equation (iv) from (i),

$z = 366 – 238 = 128$

Subtract equation (iv) from (ii),

$y = 314 – 238 = 76$

Subtract equation (iv) from (iii),

$x = 272 – 238 = 34$

Now, Average of x, y and z = $\frac{34+76+128}{3}=\frac{238}{3}=79\frac{1}{3}$

53. (B) $x + y = 9$ and $xy = 10$

Now,

$$\frac{1}{x^3}+\frac{1}{y^3}=\frac{x^3+y^3}{(xy)^3}$$

$$=\frac{(x+y)^3-3xy(x+y)}{(xy)^3}$$

$$=\frac{9^3-3\times10(9)}{(10)^3}$$

$$=\frac{729-270}{1000}=\frac{459}{1000}=0.459$$

54. (D) $\frac{3}{4} \div \frac{3}{4}\text{of}\frac{3}{4} \times \frac{4}{3} + \frac{5}{2} \div \frac{2}{5}\text{ of }\frac{5}{4}\left(\frac{2}{3} + \frac{2}{3}\text{of}\frac{5}{6}\right)$

$= \frac{3}{4} \div \frac{3}{4}\text{of}\frac{3}{4} \times \frac{4}{3} + \frac{5}{2} \div \frac{2}{5}\text{of}\frac{5}{4}\left(\frac{12+10}{18}\right)$

$= \frac{3}{4} \div \frac{9}{16} \times \frac{4}{3} + \frac{5}{2} \div \frac{10}{20} \times \frac{22}{18}$

$= \frac{3}{4} \times \frac{16}{9} \times \frac{4}{3} + \frac{5}{2} \times \frac{20}{10} \times \frac{22}{18}$

$= \frac{16}{9} + \frac{55}{9} = \frac{71}{9} = 7\frac{8}{9}$

55. (D) $2\cos^2\theta - 5\cos\theta + 2 = 0$

$2\cos^2\theta - 4\cos\theta - \cos\theta + 2 = 0$

$2\cos\theta(\cos\theta - 2) - 1(\cos\theta - 2) = 0$

$(2\cos\theta - 1)(\cos\theta - 2) = 0$

$\cos\theta = \frac{1}{2}, 2$

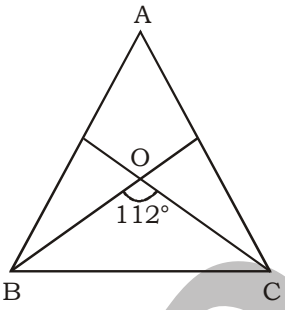
$\cos\theta = \cos 60°$ (2 can't be taken as $0° < \theta < 90°$)

$\theta = 60°$

$\therefore$ $\sec\theta + \sin\theta = \sec 60° + \sin 60°$

$= 2 + \frac{\sqrt{3}}{2} = \frac{4+\sqrt{3}}{2}$

56. (A)



In ΔABC,

$\angle A + \angle B + \angle C = 180°$ (Angle sum property of Δ)

$\frac{1}{2}\angle B + \frac{1}{2}\angle C = 90° - \frac{1}{2}\angle A$ .....(i)

In ΔBOC,

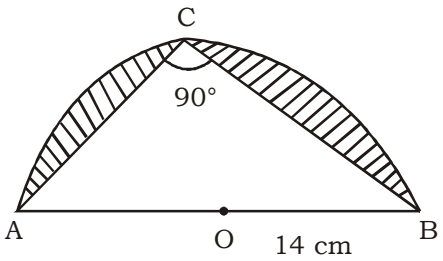
$\angle BOC + \frac{1}{2}\angle B + \frac{1}{2}\angle C = 180°$ (Angle sum property of A)

$112° + 90° - \frac{1}{2}\angle A = 180°$ [From (i)]

$\frac{1}{2}\angle A = 202° - 180°$

$\angle A = 22 \times 2 = 44°$

57. (C)



In ΔABC,

$\angle ACB = 90°$ and AC = BC (Given)

AB = 2 × OB = 2 × 14 = 28 cm

Now,

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

$28^2 = x^2 + x^2$ (Let AC = BC = x)

$2x^2 = 784$

$x = \sqrt{392} = 14\sqrt{2}$ cm

Now,

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

$$= \frac{1}{2} \times 14\sqrt{2} \times 14\sqrt{2} = 196 \text{ cm}^2$$

$$\text{Area of semi-circle} = \frac{1}{2} \times \frac{22}{7} \times 14 \times 14 = 308 \text{ cm}^2$$

∴ Area of shaded part = 308 – 196 = 112 cm^2

58. (A) $\left(x + \frac{1}{x}\right)^2 = 3$

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

Cubing both sides, we get

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

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

$$x^3 + \frac{1}{x^3} + 3 \times \sqrt{3} = 3\sqrt{3}$$

$$x^3 + \frac{1}{x^3} + 3\sqrt{3} = 3\sqrt{3}$$

$x^3 + \frac{1}{x^3} = 0$

$x^6 + 1 = 0$

$x^6 = -1$

$\therefore$ $x^{96} + x^{72} + x^{66} + x^{36} + x^{18} + 3$

$= (x^6)^{16} + (x^6)^{12} + (x^6)^{11} + (x^6)^6 + (x^6)^3 + 3$

$= (-1)^{16} + (-1)^{12} + (-1)^{11} + (-1)^6 + (-1)^3 + 3$

$= 1 + 1 - 1 + 1 - 1 + 3 = 4$

59. (B) Let the present age of A and B be 6x and 5x respectively.

ATQ,

$\frac{6x-4}{5x-4} = \frac{5}{4}$

$24x - 16 = 25x - 20$

$x = 4$ years

Age of A after 15 years = $6 \times 4 + 15 = 39$ years

Age of B after 15 years = $5 \times 4 + 15 = 35$ years

$\therefore$ Required ratio = 39 : 35

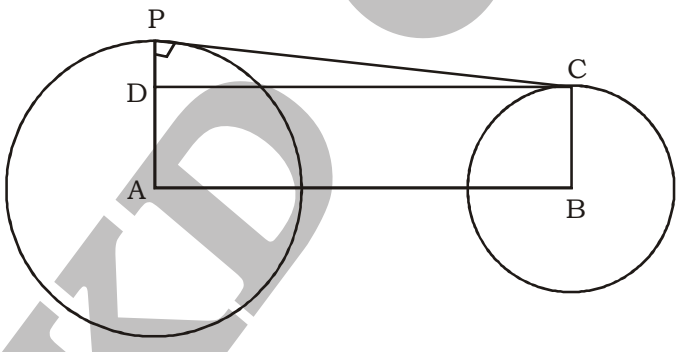
60. (D) $\text{Profit}\% = \left(\frac{30-24}{24} \times 100\right)\% = \left(\frac{6}{24} \times 100\right)\% = 5\%$

61. (B) Mean proportion between 14.4 and 3.6 = $\sqrt{14.4 \times 3.6} = \sqrt{51.84} = 7.2$

Third proportion of 4 and 3 = $\frac{3^2}{4} = \frac{9}{4} = 2.25$

$\therefore$ Required ratio = 7.2 : 2.25 = 16 : 5

62. (A)



Given that, AB = 7.2 cm, BC = 2.6 cm, AP = 4.3 cm

and PC is a common tangent.

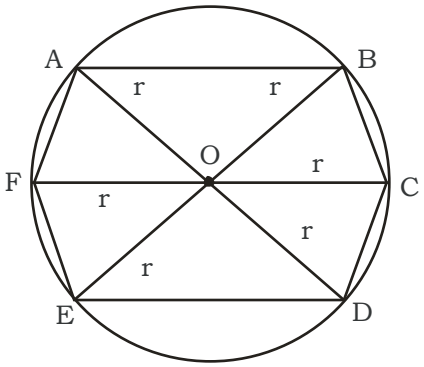
PD = PA – AD = 4.3 – 2.6 = 1.7 cm ($\because$ BC = AD = 2.6 cm)

In ΔPDC,

$PC = \sqrt{CD^2 - PD^2} = \sqrt{(7.2)^2 - (1.7)^2}$

$= \sqrt{51.84 - 2.89} = \sqrt{48.95} \approx 7\,\text{cm}$

63. (B)



ABCDEF is a regular hexagon inseribed in a circle with centre O.

Area of hexagon = 6 × Area of equilateral triangle

$$54\sqrt{3} = 6 \times \frac{\sqrt{3}}{4} \times r^2$$

$$r^2 = \frac{54\sqrt{3} \times 4}{6 \times \sqrt{3}} = 36$$

$$r = \sqrt{36} = 6\,cm$$

∴ Area of circle = πr^2 = 3.14 × 6 × 6 = 113.04 cm^2

64. (D) Total cost price = ₹ 1600

By alligation method,

Article I **Article II**

+1.5% –15%

+1.5%

[1.5 –(–15)] (15 –1.5)

Ratio = 16.5 : 13.5 = 11 : 9

Cost price of first article = $\frac{1600}{20} \times 11$ = ₹ 880

Selling price of first article = $880 \times \frac{115}{100}$ = ₹ 1012

Cost price of second article = $\frac{1600}{20} \times 9$ = ₹ 720

Selling price of second article = $720 \times \frac{85}{100}$ = ₹ 612

∴ Required difference = 720 – 612 = ₹ 108

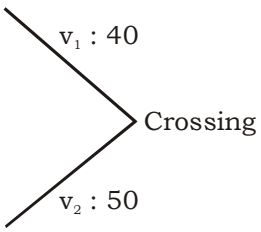
65. (A) Let the principal be ₹ x.

ATQ,

$$\frac{x \times 3 \times 4}{100} = ₹\ 600$$

$$x = \frac{600 \times 100}{12} = ₹\ 5000$$

66. (B)



If $\frac{40}{v_1} = \frac{50}{v_2}$, then they will collide, i.e. cars will reach at the same time.

$$\therefore \quad \frac{v_1}{v_2} \neq \frac{40}{50} = \frac{4}{5}$$

$$v_1 : v_2 \neq 4 : 5$$

67. (D) $\frac{5}{\sec^2\theta} + \frac{2}{1+\cot^2\theta} + 3\sin^2\theta$

$$= \frac{5}{\frac{1}{\cos^2\theta}} + \frac{2}{\text{cosec}^2\theta} + 3\sin^2\theta \qquad \left(1+\cot^2\theta = \text{cosec}^2\theta\right)$$

$$= 5\cos^2\theta + \frac{2}{\frac{1}{\sin^2\theta}} + 3\sin^2\theta$$

$= 5\cos^2\theta + 2\sin^2\theta + 3\sin^2\theta$

$= 5\cos^2\theta + 5\sin^2\theta$

$= 5(\cos^2\theta + \sin^2\theta)$

$= 5 \times 1 = 5 \qquad \left(\because \cos^2\theta + \sin^2\theta = 1\right)$

68. (C) Amount of water in first liquid = $8 \times \frac{30}{100} = \frac{12}{5}$ litres

Amount of water in second liquid = $6 \times \frac{40}{100} = \frac{12}{5}$ litres

Total amount of water = $\frac{12}{5} + \frac{12}{5} = \frac{24}{5}$ litres

$\therefore$ Required % $= \left(\dfrac{\frac{24}{5}}{8+6} \times 100 \right)\%$

$= \left(\dfrac{24}{5 \times 14} \times 100 \right)\% = \dfrac{240}{7}\% = 34\dfrac{2}{7}\%$

69. (B) Total students in a class = 75

Number of girls = $75 \times \dfrac{48}{100} = 36$

Number of boys = 75 – 36 = 39

$\therefore$ Average marks of whole class = $\dfrac{36 \times 62 + 39 \times 56}{75} = \dfrac{2232 + 2184}{75}$

$= \dfrac{4416}{75} = 58.88$

70. (A) A : B = 160 : 100 = 8 : 5

B : C = 100 : 140 = 5 : 7

Now, ratio of efficiency of A : B : C = 8 : 5 : 7

Total work = 15 × (8 + 5 + 7) = 300

$\therefore$ B alone $\dfrac{2}{3}$ work completed in $300 \times \dfrac{2}{3} \times \dfrac{1}{5}$ = 40 days

71. (B) For working partner, A received = $7400 \times \dfrac{5}{100}$ = ₹ 370

Balance = ₹ (7400 – 370) = ₹ 7030

Ratio of their investments = (6500 × 6) : (8400 × 5) : (10000 × 3)

= 39000 : 42000 : 30000 = 13 : 14 : 10

$\therefore$ B's share = ₹ $\left(7030 \times \dfrac{14}{37} \right)$ = ₹ 2660

72. (D) Total number of students coming from that locality = (6 + 15 + 11 + 18 + 16) × 10

= 66 × 10 = 660

73. (B) Required total number of students = (18 + 16) × 10 = 340

74. (C) Number of students coming form Bus = 150

$\therefore$ Required percentage = $\left(\dfrac{150}{660} \times 100 \right)\% = 22\dfrac{8}{11}\%$

75. (D) Required ratio = 6 : 16 = 3 : 8

MEANINGS IN ALPHABETICAL ORDER

Adhere	stick fast to (a surface or substance)	पालन करना
Attribute	regard something as being caused by (someone or something)	गुण
Collide	hit with force when moving	टकराना
Comply	(of a person or group) act in accordance with a wish or command	पालन करना
Cope	(of a person) deal effectively with something difficult	सामना
Debater	a person who argues about a subject, especially in a formal manner	झगड़नेवाला
Deficit	the amount by which something, especially a sum of money, is too small	घाटा
Enrage	make very angry	क्रुद्ध
Evident	plain or obvious; clearly seen or understood	प्रत्यक्ष
Fuse	join or blend to form a single entity	गलाकर एकरूप करना
Illuminate	make (something) visible or bright by shining light on it; light up	उजागर करना
Invigorate	give strength or energy to	मजबूत करना
Kiln	a furnace or oven for burning, baking, or drying, especially one for calcining lime or firing pottery	भट्ठा
Leisure	free time	फुर्सत
Linguist	relating to language or linguistics	भाषाई
Officious	assertive of authority in an annoyingly domineering way, especially with regard to petty or trivial matters	परेशान करने वाला
Polyglot	knowing or using several languages	बहुभाज़ी
Praise	express warm approval or admiration of	प्रशंसा
Surplus	an amount of something left over when requirements have been met; an excess of production or supply over demand	अतिरिक्त

SSC MOCK TEST - 294 (ANSWER KEY)

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

76. (A) Replace 'as to' with 'due to'. "As to" – about, regarding, concerning...

"Due to" – because of something.

77. (B) "difficult" should be followed by infinitive with 'to'.

Replace 'decided' with 'to decide'

90. (D) The correct spelling of is 'Quiet'.

91. (C) The correct spelling of 'Restaurent' is 'Restaurant', 'Meazure' is 'Measure' and 'Roberry' is 'Robbery'.