SSC MOCK TEST - 378 (SOLUTION)

1. (2) Pragmatic is antonym of Quixotic, while Bright is antonym of Murky.

2. (3) As,

$736 \longrightarrow 2\ 3\ \times\ 3\ 2$

Similarly,

$\mathbf{1300} \longrightarrow 5\ 2\ \times\ 2\ 5$

3. (3) As, $(2^2 + 2^2) + (2^2 + 9^2) = 93$

And, $(2^2 + 8^2) + (4^2 + 5^2) = 109$

Similarly, $(5^2 + 1^2) + (1^2 + 3^2) = 36$

4. (3) Except option (3), the sum of all the digits are odd number.

5. (4) Chandigarh, Lakshadweep and Puducherry are Union territories of India, while Panji is a capital of Goa.
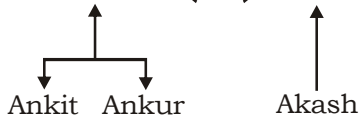
6. (3) $R \xrightarrow{-5} M \xrightarrow{-3} J$

$C \xrightarrow{-5} X \xrightarrow{-3} U$

$\mathbf{L} \xrightarrow{\mathbf{+5}} \mathbf{Q} \xrightarrow{\mathbf{-3}} \mathbf{N}$

$T \xrightarrow{-5} O \xrightarrow{-3} L$

7. (3) 4. Insignificant $\rightarrow$ 3. Interpretable $\rightarrow$ 2. Interpretation $\rightarrow$ 5. Involved $\rightarrow$ 1. Involvement

8. (3) Shakuntala $\Longleftrightarrow$ Prabhat

Ankit Ankur   Akash

Hence, Prabhat has three children.

9. (3) $12 - 8 = 4 \rightarrow 2 \times 2$

$28 - 12 = 16 \rightarrow 4 \times 4$

$64 - 28 = 36 \rightarrow 6 \times 6$

$128 - 64 = 64 \rightarrow 8 \times 8$

$100 \rightarrow 10 \times 10 = 128 + 100 = \mathbf{228}$

10. (4) $P \xrightarrow{+3} S \xrightarrow{+3} V \xrightarrow{+3} \boxed{\mathbf{Y}}$

$T \xrightarrow{+3} W \xrightarrow{+3} Z \xrightarrow{+3} \boxed{\mathbf{C}}$

$R \xrightarrow{+3} U \xrightarrow{+3} X \xrightarrow{+3} \boxed{\mathbf{A}}$

11. (3) $A \xleftarrow{\text{opposite}} T$

$Q \xleftarrow{\text{opposite}} \mathbf{R}$

$P \xleftarrow{\text{opposite}} Z$

12. (2) From option (2),

8 + **5** = 13,

8 – **5** = 3

6 + **5** = 11,

6 – **5** = 1

8 + 6 = 14,

8 – 6 = 2

13. (1) The weight of R is 7.5 kg.

The weight of T is 4 times the weight of G.

Weight of T = 4R = 4 × 7.5 = 30 kg

The weight of S is 3 times the weight of T.

Weight of S = 3T

Weight of S = 3 × 30 = 90 kg

The weights of Q and R are equal.

Weight of Q = Weight of R = 7.5 kg

The weight of P is twice the weight of Q.

Weight of P = 2Q = 2 × 7.5 =15 kg

Order of weight is: S > T > P > R = Q

So, T is the second heaviest object.

14. (3) As,

R   O   S   H   N   I

18 + 15 + 19 + 8 + 14 + 9 = 83 ⟶ 38

Similarly,

S   U   S   H   M   A

19 + 21 + 19 + 8 + 13 + 1 = 81 ⟶ 18

15. (4)

16. (1) There are 10 triangles in the given figure.

17. (4) Q RST/RSTU/STUV/TUVW

18. (3) $n^3 = 125$

$n = (5)^3$

$n = 5$

∴ Number of cubes which is painted on only one face = $(n - 2)^2 \times 6$

= $(5 - 2)^2 \times 6 = 9 \times 6 = 54$

19. (1) Odd day in the year 2000 $= \dfrac{2000}{400} = 0 \text{ odd day}$

Total years between 2000 to 2020 = 20 years = 5 leap years + 15 Normal year

= 5 × 2 + 15 × 1 = 25 odd days

$= \dfrac{25}{7} = 4 \text{ odd days}$

Now total odd day between January 2021 to 30 December 2021 = January + February + March + April + May + June + July + August + September + October + November + December.

$$= \frac{31}{7} + \frac{28}{7} + \frac{31}{7} + \frac{30}{7} + \frac{31}{7} + \frac{30}{7} + \frac{31}{7} + \frac{31}{7} + \frac{30}{7} + \frac{31}{7} + \frac{30}{7} + 5$$

$$= 3 + 0 + 3 + 2 + 3 + 2 + 3 + 3 + 2 + 3 + 2 + 5 \text{ and } 4 \text{ odd days} = \frac{31+4}{7} = \frac{35}{7} = 0 \text{ odd days}$$

∴ Required day was Sunday.

20. (2) 1023   1020   1026   1017   **1029**   1014

          −3   +6   −9   +12   −15

21. (3) 20 ÷ 20 + 20 − 25 × 25 = 419

After changing the signs we have,

20 × 20 + 20 − 25 ÷ 25 = 419

400 + 20 − 1 = 419

419 = 419

22. (3)

23. (4) EMAIL

       MAIL

       AIM

       LIE

       LIME

       MILE

24. (4)　　25. (1)

26. (2) One of the most remarkable features of the Indus valley civilization is that the city was provided with an excellent closed drainage system. Thus Indus people had a perfect underground drainage system. No other contemporary civilization gave so much attention to cleanliness.

28. (1) The constitution as adopted on November 26, 1949, contained a preamble, 395 Articles and 8 Schedules. The Indian Constitution came into force on January 26, 1950 and this date is referred to in the Constitution as the Date of its Commencement.

29. (3) When a fast moving train takes a curved path, it tends to move away tangentially off the track. In order to prevent this, the curved tracks are banked on the outside to produce the necessary centripetal force required to keep the train moving in a curved path.

30. (2) Eugenics is the selection of desired heritable characteristics in order to improve future generations, typically in reference to humans. The term eugenics was coined in the 1880s.

33. (4) Lal Bahadur Shastri National Academy of Administration, Mussoorie-248179 (Uttarakhand),Govt of India.

34. (1) Ozone is a allotrope of oxygen comprised of three oxygen atoms. Ozone in the Earth's upper atmosphere shields many living organisms by blocking the ultraviolet light from reaching the surface.

35. (4) The Zafarnama (Epistle of Victory) was a spiritual victory letter sent by Guru Gobind Singh Ji in 1705 to the Mughal Emperor of India, Aurangzeb after the Battle of Chamkaur. The letter is written in Persian verse.

36. (3) According to a study by the Reserve Bank of India (RBI), Maharashtra, Karnataka and Gujarat received the top GST compensation, during the five-year transition period from July 2017 to June 2022.

37. (3) Kabir was one of the most influential saints. He was considered to be the contemporary of Guru Nanak and Sultan Sikander Lodhi.

38. (1) The mercury column in the barometer fall rapidly before a severe storm, It is due to Fall in the atmospheric pressure. In general, a falling barometer indicates the approach of a storm.

40. (1) Each year, trees add on extra layer to their trunks. Each ring corresponds to roughly one year. We can obtain the age by literally counting the number of rings in the trunk.

41. (4) Kanak Rele (born 11 June 1937) is an Indian dancer, choreographer and academic best known as an exponent of Mohiniyattom. She is the founder-director of the Nalanda Dance Research Centre and the founder-principal of the Nalanda Nritya Kala Mahavidyalaya in Mumbai.

42. (1) Kumar Ram Narain Karthikeyan (born 14 January 1977) is a racing driver who was the first Formula One driver from India. He has previously competed in A1GP, and the Le Mans Series.

43. (3) World Water Day, held on 22 March every year since 1993, focuses on the importance of freshwater.

47. (1) Only brass is an alloy of copper and zinc; whereas common salt, cane sugar and water are compounds.

48. (1) Tilak (April) and Annie Besant & S Subramaniam Iyer (September) established Home Rule Leagues in 1916. Tilak's league was to work in Maharashtra, Kamataka, Central Provinces and Berar and Annie Besant in the rest of India.

49. (2) Write once, run anywhere (WORA), or sometimes Write once, run everywhere (WORE), was a 1995slogan created by Sun Microsystems to illustrate the cross-platform benefits of the Java language.

50. (2) According to data released by the National Statistical Office (NSO) in its latest Twenty Point Programme (TPP) progress report, only 9,753 km of roads could be constructed Pradhan Mantri Gram Sadak Yojana (PMGSY) in the first six months of FY23.

51. (2) Ratio of profit between Priti and Raghav = 5000 × 12 : 8000 × 5
= 60 : 40 = 3 : 2

∴ Share of Raghav in profit = $\frac{1500}{5} \times 2$ = ₹ 600

52. (3) Let the maximum marks be x.
ATQ,

$$x \times \frac{20}{100} + 10 = x \times \frac{42}{100} - x \times \frac{12}{100}$$

$$\frac{20x}{100} + 10 = \frac{30x}{100}$$

$$\frac{30x}{100} - \frac{20x}{100} = 10$$

$$\frac{10x}{100} = 10$$

∴ x = 100

53. (3) Let the quantity of first, second and third variety be 2x, 4x and 3x kg respectively.

Total cost price = 50 × 2x + 20 × 4x + 30 × 3x = 100x + 80x + 90x = ₹ 270x

Total selling price = 33 × (2x + 4x + 3x) = 33 × 9x = ₹ 297x

∴ Profit% = $\left(\frac{297x - 270x}{270x} \times 100\right)\%$ = 10%

54. (2) P = ₹ 15625

R = 4%

A = ₹ 17576

T = ?

We know that,

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

$$17576 = 15625\left(1 + \frac{4}{100}\right)^T$$

$$\frac{17576}{15625} = \left(1 + \frac{1}{25}\right)^T$$

$$\left(\frac{26}{25}\right)^3 = \left(\frac{26}{25}\right)^T$$

∴ T = 3 years

55. (2) 50% of (x – y) = 30% of (x + y)

$$\frac{50}{100}(x - y) = \frac{30}{100}(x + y)$$

$$\frac{x - y}{2} = \frac{3x + 3y}{10}$$

10x – 10y = 6x + 6y

4x = 16y

$$\frac{x}{y} = \frac{16}{4}$$

∴ Required% = $\left(\frac{4}{16} \times 100\right)\% = 25\%$

56. (3) $\left(1 - \frac{1}{3}\right)\left(1 - \frac{1}{4}\right)\left(1 - \frac{1}{5}\right)......\left(1 - \frac{1}{99}\right)\left(1 - \frac{1}{100}\right)$

$$= \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} \times .... \times \frac{98}{99} \times \frac{99}{100} = 2 \times \frac{1}{100} = \frac{1}{50}$$

57. (4) Let the M.P be ₹ 100.

∴ Cost price = $100 \times \frac{3}{4}$ = ₹ 75

Selling price = $100 \times \frac{120}{100}$ = ₹ 120

Profit% = $\left(\frac{120 - 75}{75} \times 100\right)\% = \left(\frac{45}{75} \times 100\right)\% = 60\%$

58. **(1)** Let the original speed of the aircraft be x km/hr.

Then new speed = (x – 200) km/hr

Duration of flight at original speed = $\left(\dfrac{600}{x}\right)$ hour

Duration of flight at reduced speed = $\left(\dfrac{600}{x-200}\right)$ hour

ATQ,

$\dfrac{600}{x-200} - \dfrac{600}{x} = \dfrac{1}{2}$

$\dfrac{600x - 600(x-20)}{x(x-200)} = \dfrac{1}{2}$

$\dfrac{120000}{x^2 - 200x} = \dfrac{1}{2}$

$x^2 - 200x - 240000 = 0$

$x^2 - 600x + 400x - 240000 = 0$

(x – 600) (x + 400) = 0   (Ignore the –ve value of x)

x = 600 or x = –400

∴ x = 600

So, the original speed of the aircraft was 600 km/hr.

Hence, duration of flight = $\left(\dfrac{600}{x}\right)$ hour = $\left(\dfrac{600}{60}\right)$ hour = 1 hour

59. **(2)** Volume of the sphere = Volume of the cylinder

$\dfrac{4}{3}\pi r^3 = \pi r^2 h$ [∵ Their radii are equal]

$\dfrac{r}{h} = \dfrac{3}{4}$

r : h = 3 : 4

60. **(4)** l = 28 cm

r = 14 cm

$l = \dfrac{\pi r \theta}{180}$

$28 = \dfrac{22}{7} \times \dfrac{14 \times \theta}{180}$

$\theta = \dfrac{28 \times 180 \times 7}{22 \times 14} = \dfrac{7 \times 180}{11}$

Area of Sector = $\dfrac{\pi r^2 \theta}{360} = \dfrac{22}{7} \times \dfrac{14 \times 14}{360} \times \dfrac{7 \times 180}{11}$ = 196 cm²
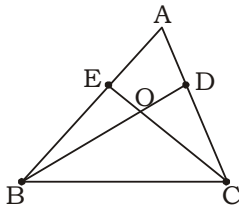
61. (1) Area of the paper = Surface area of the cylinder

$$22 \times 10 = 2 \times \frac{22}{7} \times r \times 10$$

$$r = \frac{7}{2} \text{ cm}$$

Volume of the cylinder = $\pi r^2 h = \frac{22}{7} \times \frac{7}{2} \times \frac{7}{2} \times 10 = 385 \text{ cm}^3$

62. (4)

Median BD = median CE (given)

$$\frac{2}{3} BD = \frac{2}{3} CE$$

BO = CO
∠OBC = ∠OCB (Angles opposite to equal sides of a $\triangle$ are equal)
In $\triangle$ BCD and $\triangle$ CBE,
BD = CE (given)
BD = DB (Common)
∠DBC = ∠ECB (proved above)
$\triangle$ BCD $\cong$ $\triangle$ CBE
DC = BE (by CPCT)
2DC = 2BE   (AC = AB = 4 cm)

63. (2) $\sin\theta + \cos\theta = \sqrt{2} \sin(90° - \theta)$

$$\sin\theta = \sqrt{2}\cos\theta - \cos\theta$$

$$\frac{\sin\theta}{\cos\theta} = \sqrt{2} - 1$$

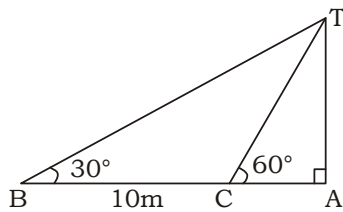$$\frac{\cos\theta}{\sin\theta} = \frac{1}{\sqrt{2} - 1}$$

$$\cos\theta = \frac{1}{\sqrt{2} - 1} = \frac{\sqrt{2} + 1}{(\sqrt{2} - 1)(\sqrt{2} + 1)} = \sqrt{2} + 1$$

64. (2) $\dfrac{x^4 + 1}{x^5 - \dfrac{1}{x}} = \dfrac{\dfrac{x^4 + 1}{x^2}}{\dfrac{x^5 + \dfrac{1}{x}}{x^2}}$

$$= \frac{x^2 - \dfrac{1}{x^2}}{x^3 - \dfrac{1}{x^3}} = \frac{\left(x - \dfrac{1}{x^2}\right)^3 + 2}{\left(x - \dfrac{1}{x}\right)^3 + \left(x - \dfrac{1}{x}\right)} = \frac{3^2 + 2}{3^3 + 9} = \frac{11}{36}$$

65. (2)

Speed of the train = 60 km/h

$BC = 60 \times \dfrac{10}{60} = 10$ km

In $\triangle$ TAC,

$\tan 60° = \dfrac{TA}{CA}$

$\sqrt{3} = \dfrac{TA}{CA}$

$CA = \dfrac{TA}{\sqrt{3}}$ km

In $\triangle$ TAB,

$\tan 30° = \dfrac{TA}{BA}$

$\dfrac{1}{\sqrt{3}} = \dfrac{TA}{BC + CA}$

$\dfrac{1}{\sqrt{3}} = \dfrac{TA}{\dfrac{TA}{\sqrt{3}} + 10}$

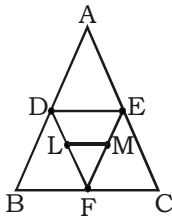$3TA = TA + 10\sqrt{3}$

$TA = 5\sqrt{3}$ km

66. (1) $\dfrac{a + 2\sqrt{ab} + b}{\sqrt{a} + \sqrt{b}} + \dfrac{a - 2\sqrt{ab} + b}{\sqrt{a} - \sqrt{b}}$

$= \dfrac{(\sqrt{a} + \sqrt{b})^2}{\sqrt{a} + \sqrt{b}} + \dfrac{(\sqrt{a} - \sqrt{b})^2}{\sqrt{a} - \sqrt{b}}$

$= \sqrt{a} + \sqrt{b} + \sqrt{a} - \sqrt{b}$

$= 2\sqrt{a} = 2\sqrt{9} = 6$

67. (1)

$\dfrac{AB}{AD} = \dfrac{BC}{DE}$ [By Similar triangles]

$\dfrac{2}{1} = \dfrac{BC}{DE}$

BC = 2DE

$\dfrac{LM}{DE} = \dfrac{LF}{DF}$ [By Similar triangles]

$\dfrac{LM}{DE} = \dfrac{1}{2}$

DE = 2LM

2 × 2 LM = BC

LM : BC = 1 : 4

68. (3) Length of tree having 80 m shadow = $\dfrac{24}{18}$ × 60 = 80 m

69. (1) Fourth proportional = $\dfrac{9}{16}$ × 8 = 4.5

70. (1) Let selling price of a chair = ₹ x

So total selling price = 30x + 20x × $\dfrac{3}{4}$ = ₹ 45x

Selling price = 5000 + $\dfrac{35}{100}$ × 5000 = ₹ 6750

Selling price of each a chair = $\dfrac{6750}{45}$ = ₹ 150

71. (1) Total number of employees of KD Defence in the year 2010, 2012 and 2014
= (4.8 + 5.2 + 7.2) × 100 = 1720
Total number of employees joining KD tech over all the year together
= (0.75 + 1.2 + 1.8 + 1.65 + 4.25 + 5.2) × 100 = 1485

∴ Required % = $\left(\dfrac{1720}{1485} \times 100\right)$% = 115.82% ≈ 116%

72. (3) Total number employees joining KD publication in the year 2010 and 2012
= (4.5 + 6.5) × 100 = 1100
Total number of employees joining same organisation in the the year 2013 and 2014
= (7.8 + 6.2) × 100 = 1400
∴ Required ratio = 1100 : 1400 = 11 : 14

73. (4) Total number of employees joining Kd campus in the year 2010, 2012 and 2015

= (2.8 + 4.5 + 6.5) × 100 = 1380

∴ Required difference = 1380 – 425 = 955

74. (2)

75. (3) Required average = $\dfrac{(7.8 + 1.65 + 5.2) \times 100}{3}$ = $\dfrac{1465}{3}$ = 488.33 ≈ 488

MEANINGS IN ALPHABETICAL ORDER

Acquainted	make someone aware of or familiar with	परिचित
Acquitted	free from a criminal charge by a verdict of not guilty affairs of state or diplomatic occasions	बरी, दोषमुक्त
Affluent	wealthy against surprise attack	धनी
Circuitous	longer than the most direct way	घुमावदार
Congenial	pleasant because of similar to one's interest faults or weaknesses from the main force, used especially as a guard	अनुकूल, सौहार्दपूर्ण
Gradual	taking place or progressing slowly	क्रमिक
Indulge	allow oneself to enjoy the pleasure of something institution in which you use humour to show their	लिप्त होना
Mechanism	a natural or established process by which something	तंत्र
Mellow	pleasantly smooth or soft; free from harshness	कोमल
Monotonous	dull, tedious, and repetitive	नीरस, उबाऊ
Outpost	a small military camp or position at some distance	चौकी
Plaintive	sounding sad and mournful	शोक भरा, विलापी
Protocol	the official procedure or system of rules governing	अनुशासन तंत्र की क्रियाविधि
Sap	gradually weaken or destroy	कमजोर करना
Satire	a way of criticizing a person, an idea or an takes place or is brought about	व्यंग्य

SSC MOCK TEST - 378 (ANSWER KEY)

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

76. (2) The correct answer is (1). With 'one of' use noun in plural form.
   Correct sentence: Public speaking is one of the most feared forms of communication.

77. (3) The correct answer is (3). Use 'what' instead of 'that.'
   Correct sentence: After a long gap, we went shopping last Sunday and bought what we wanted.

87. (1) The correct answer is (1). Unless is a conjunction which we use in conditional phrase.
   Correct sentence: I cannot help you unless you tell me your problem.

90. (1) The correct spelling is 'Accessibility'.

91. (3) The correct spelling is 'Reiterated'.