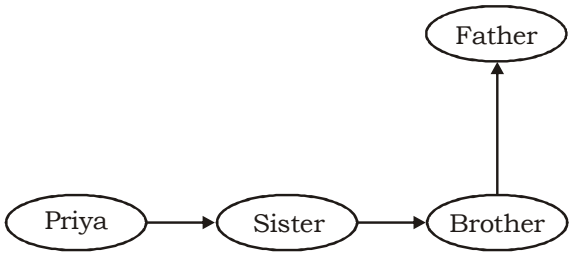
SSC MOCK TEST - 379 (SOLUTION)

1. (4) Resistance is related to ohm, while Angle is related to Redians.
2. (1) As, 13 ⇒ 31 × 2 = 62
   Similarly, 25 ⇒ 52 × 2 = 104
3. (4) Except Ahmadabad, others are the capital of a state.
4. (3) Except 225, the square root of other numbers are prime number.
5. (2) As, PRINT ⇒ 16 + 18 + 9 + 14 + 20 = 77⇒ 7 – 7 = 0
   And, MAGICIAN ⇒ 13 + 1 + 7 + 9 + 3 + 9 + 1 + 14 = 57⇒ 7 – 5 = 2
   Similarly, PLANET ⇒ 16 + 12 + 1 + 14 + 5 + 20 = 68⇒ 8 – 6 = 2
6. (3) 6 14 23 35 52 76 109 153 **210**
   +8 +9 +12 +17 +24 +33 +44 +57
   +1 +3 +5 +7 +9 +11 +13
7. (1) B E G J L O
   +3 +2 +3 +2 +3
8. (4)



   The boy in the photograph is the brother of Priya.
9. (2) As, 13 + 9 + 28 = 50
   Similarly, 15 + 25 + 10 = 50
10. (3) b**b**ce**f**k/b**b**c**e**fk/bb**c**ef**k**/bbc**e**fk
11. (4)
12. (2) **In first row,**
    18 × 2 = 36 ⇒ 36 – 1 = 35
    35 × 2 = 70 ⇒ 70 – 1 = 69
    In second row,
    25 × 2 = 50 ⇒ 50 – 1 = 49
    49 × 2 = 98 ⇒ 98 – 1 = 97
    In third row,
    23 × 2 = 46 ⇒ 46 – 1 = **45**
    45 × 2 = 90 ⇒ 90 – 1 = 89
13. (1) 78 ÷ 48 × 8 + (26 × 7) – 39 + (45 + 20) = 215
    After changing the numbers 48 and 39 to each other
    78 ÷ 39 × 8 + (26 × 7) – 48 + (45 + 20) = 215
    2 × 8 + 182 – 48 + 65 = 215
    198 + 65 – 48 = 215
    215 = 215

14. (4)

15. (1) 5. Fraud → 2. Freedom → 1. Freeze → 6. Fringe → 4. Frozen → 3. Fryer

16. (4) Let the age of M, 4 years ago be x years.

Age of A, 7 years from now = x years

Present age of M = (x + 4) years

Present age of A = (x + 7) years

Average age of A and M, 10 years from now = $\frac{(x+4+10+x+7+10)}{2}$

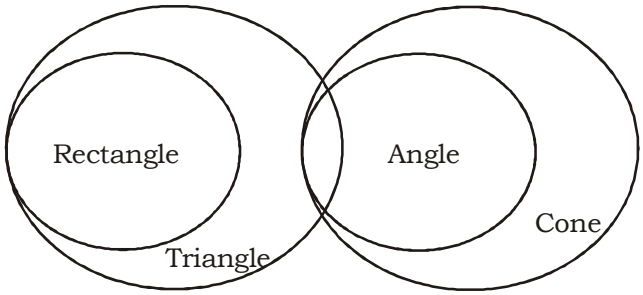
$33.5 = \frac{2x+31}{2}$

$2x + 31 = 67$

$x = \frac{67-31}{2}$ = 18 years

∴ Present age of A = (18 + 7) = 25 years

17. (1)



I. True II. False III. True

Hence, only conclusions I and III follow.

18. (1) 19. (3)

20. (4) 28 May 2006 = (2005 years + Period from 1.1.2006 to 28.5.2006)

Odd days in 1600 years = 0

Odd days in 400 years = 0

5 years = (4 ordinary years + 1 leap year) = (4 × 1 + 1 × 2) = 6 odd days

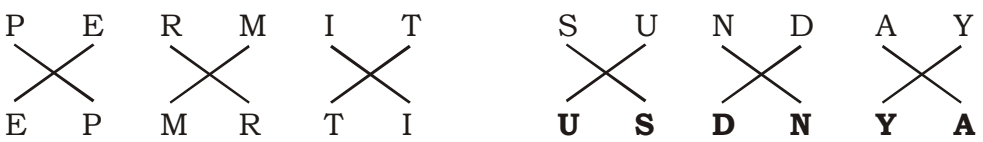
January + February + March + April + May = (31 + 28 + 31 + 30 + 28) = 148 days

148 days = (21 weeks + 1 day) = 1 odd day

Total number of odd days = (0 + 0 + 6 + 1) = 0 odd days

∴ Given day is Sunday.

21. (2) As, Similarly,



22. (1) 23. (1) 24. (2) 25. (2)

26. (3) Electron volt, unit of energy commonly used in atomic and nuclear physics, equal to the energy gained by an electron (a charged particle carrying unit electronic charge) when the electrical potential at the electron increases by one volt.

27. (2) Abu Rayhan al-Biruni was an Iranian scholar. He wrote the book Kitab-ul-Hind.

28. (3) The public network will be set up by the public data office aggregators (PDOAs) to provide Wi-Fi service through the public data offices (PDOs) spread throughout the country. It will help accelerate the proliferation of broadband internet services through a public Wi-Fi network.

29. (2) The nephron is the minute or microscopic structural and functional unit of the kidney. It is composed of a renal corpuscle and a renal tubule. The renal corpuscle consists of a tuft of capillaries called a glomerulus and a cup-shaped structure called Bowman's capsule.

32. (4) Baghmara is the headquarters of South Garo Hills district in the state of Meghalaya in India.

33. (3) Of the ₹ 1,100 crore estimated for the Ministry of Information and Broadcasting, ₹ 600 crore has been set aside for the recently announced Broadcasting Infrastructure and Network Development (BIND) Scheme.

35. (1) After India achieved independence, a formal model of planning was adopted, and accordingly the Planning Commission, reporting directly to the Prime Minister of India, was established on 15 March 1950, with Prime Minister Jawaharlal Nehru as the Chairman.

36. (1) The Indian military forces concluded a joint training exercise named 'Trishakti Prahar, which began in North Bengal.

39. (1) Impulse has the same units and dimensions as momentum.

41. (2) Unique Transaction Reference (UTR) number is a 22 character code used to uniquely identify a transaction in RTGS system.

43. (2) Article 63 of Indian Constitution states that "There shall be a vice president of India." The vice president acts as president in the absence of the president due to death, resignation, impeachment, or other situations. The vice president of India is also ex officio chairperson of the Rajya Sabha.

45. (3) The most commonly used abrasives are hydrated silica (softened silica), calcium carbonate (also known as chalk), and sodium bicarbonate (baking soda). Other abrasives include dibasic calcium phosphate, calcium sulfate, tricalcium phosphate, and sodium metaphosphate hydrated alumina.

46. (2) It is the official residence of the Wadiyar dynasty and the seat of the Kingdom of Mysore. The palace is in the centre of Mysore, and faces the Chamundi Hills eastward.

47. (2) Since beginning of Pattachitra painting, Lord Jagannath, considered an incarnation of Lord Krishna, has been the major source of inspiration. The subject matter of Pattachitra is mostly mythology, religious stories, and folklore.

48. (3) This article's tone or style may not reflect the encyclopedic tone used on Wikipedia.

50. (2) Equatorial Guinea has appointed Manuela Roka Botey as prime minister. She became the first woman in the country to hold the position. President Teodoro Obiang Nguema Mbasogo, who has ruled the country since 1979, made the announcement.

51. (1) Let B receives ₹ 100.

A receives = $100 \times \frac{125}{100}$ = ₹ 125

C receives = $100 \times \frac{125}{75}$ = ₹$\frac{400}{3}$

Ratio between A, B and C = 125 : 100 : $\frac{400}{3}$

= 375 : 300 : 400 = 15 : 12 : 16

$\therefore$ Share of C = $\frac{1462}{43} \times 16$ = ₹ 544

52. (3) $(2197)^{31} \times [(13)^{12} \div (169)^{7x}]^2 = 13^{33}$

$(13)^{3 \times 31} \times [(13)^{12} \div (13)^{2 \times 7x}]^2 = 13^{33}$

$(13)^{93} \times [(13)^{12 - 14x}]^2 = 13^{33}$

$(13)^{93} \times [(13)^{24 - 28x}] = 13^{33}$

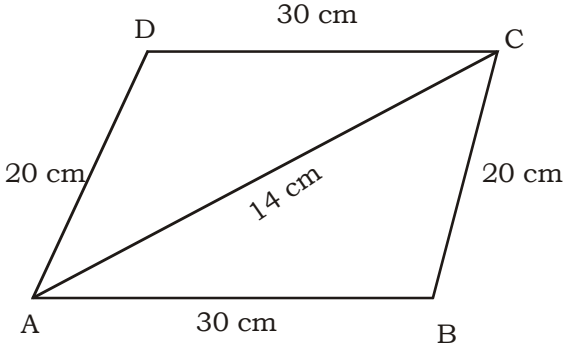
$(13)^{93 + 24 - 28x} = 13^{33}$

$117 - 28x = 33$

$28x = 117 - 33$

$\therefore \quad x = \dfrac{84}{28} = 3$

53. (4)



In parallelogram, diagonal bisects the area in two equal parts.

Now, Area of $\triangle ADC$ = Area of $\triangle ABC$

In $\triangle ADC$,

$$\text{Semi} - \text{perimeter} = \frac{20 + 30 + 44}{2} = \frac{94}{2} = 47 \text{ cm}$$

$$\text{Area of } \triangle ADC = \sqrt{s(s-a)(s-b)(s-c)}$$

$$= \sqrt{47(47-20)(47-30)(47-44)}$$

$$= \sqrt{47 \times 27 \times 17 \times 3}$$

$$= \sqrt{47 \times 3 \times 3 \times 3 \times 17 \times 3} = 9\sqrt{799}\,\text{cm}^2$$

$\therefore$ Area of parallelogram ABCD = $2 \times 9\sqrt{799}\,\text{cm}^2 = 18\sqrt{799}\,\text{cm}^2$

54. (2) On dividing the given number by 340, then Let k be the quotient and 47 as remainder.
Now, number = 342k × 47

= 19 × 18k + 19 × 2 + 9

= 19 (18 k + 2) + 9

$\therefore$ The given number when divide by 19, gives (18k + 2) as quotient and 9 as remainder.

55. (3) Total number of bananas = 100

Remaining bananas = 100 – 21 = 79

Selling price of 79 bananas = 79 × 4.50 = ₹ 355.50

$\therefore$ Cost price of 100 bananas = $\dfrac{355.50}{120} \times 100$ = ₹ 296.25

56. (4) Let the number of sides be n.

Each interior angle of a regular polygon = $180^\circ\left(\frac{n-2}{n}\right)$

Each exterior angle of a regular polygon = $\frac{360}{n}$

ATQ,

$180^\circ\left(\frac{n-2}{n}\right)-\frac{360}{n} = 132$

$180n - 360° - 360° = 132n$

$180n - 132n = 720$

$48n = 720$

$\therefore\ n = \frac{720}{48} = 15$

57. (3) $(3m + 7w) \times 5 = (4m \times 6w) \times 4$

$15m + 35w = 16m + 24w$

$1m = 11w$

Now, $3m + 7w$

$= 33w + 700 = 40w$

$\therefore$ Required number of days = $\frac{40\times 5}{10}$ = 20 days

58. (4) Let the speed of train be x km/hr and length of train be y m.

ATQ,

$$\frac{y}{(x-4)\times\frac{5}{18}} = 15$$

$18y = 75x - 300$ .....(i)

And, $\frac{y}{(x-6)\times\frac{5}{18}} = 20$

$18y = 100x - 600$ .....(ii)

Compare the equation (i) and (ii),

$75x - 300 = 100x - 600$

$100x - 75x = 600 - 300$

$25x = 300$

$\therefore\ x = \frac{300}{25}$ = 12 km/hr

59. (1) $x+\frac{1}{x+1}=1$

$(x+1)+\frac{1}{(x+1)}=2$

On squaring both sides,

$(x+1)^2+\frac{1}{(x+1)^2}+2=4$

$(x+1)^2+\frac{1}{(x+1)^2}=2$

Again cubing of $(x+1)+\frac{1}{(x+1)}=2$,

$(x+1)^3+\frac{1}{(x+1)^3}+3\left[(x+1)+\frac{1}{(x+1)}\right]=8$

$(x+1)^3+\frac{1}{(x+1)^3}=8-3\times 2$

$(x+1)^3+\frac{1}{(x+1)^3}=2$

Now, $\left[(x+1)^2+\frac{1}{(x+1)^2}\right]\times\left[(x+1)^3+\frac{1}{(x+1)^3}\right]=2\times 2$

$(x+1)^5+\frac{1}{(x+1)}+(x+1)+\frac{1}{(x+1)^5}=4$

$(x+1)^5+\frac{1}{(x+1)^5}+2=4$

$(x+1)^5+\frac{1}{(x+1)^5}=4-2$

$\therefore\ (x+1)^5+\frac{1}{(x+1)^5}=2$

60. (3) $\sec\theta\left(\frac{1+\sin\theta}{\cos\theta}+\frac{\cos\theta}{1+\sin\theta}\right)-2\tan^2\theta$

$=\frac{1+\sin^2\theta+2\sin\theta+\cos^2\theta}{\cos^2\theta(1+\sin\theta)}-2\tan^2\theta$

$=\frac{2+2\sin\theta}{\cos^2\theta(1+\sin\theta)}-2\tan^2\theta$

$$= \frac{2(1+\sin\theta)}{\cos^2\theta(1+\sin\theta)} - 2\tan^2\theta$$

$$= \frac{2}{\cos^2\theta} - 2\tan^2\theta$$

$= 2\sec^2\theta - 2\tan^2\theta$

$= 2(\sec^2\theta - 2\tan^2\theta) = 2$

61. (2) Upstream speed = 25 km/hr

Downstream speed = 35 km/hr

$\therefore$ Required time = $\frac{175}{25} + \frac{175}{35}$ = 7 + 5 = 12 hours

62. (2) P = ₹ 35000

R = 8%

T = 2 years

$$A = P\left(1+\frac{R}{100}\right)^T = 35000\left(1+\frac{8}{100}\right)^2$$

$$= 35000 \times \frac{108}{100} \times \frac{108}{100} = ₹\ 40824$$

CI = 40824 – 35000 = ₹ 5824

Again, P = ₹ 40824

R = 12%

T = 2 years

$$SI = \frac{40824 \times 12 \times 2}{100} = ₹\ 9797.76$$

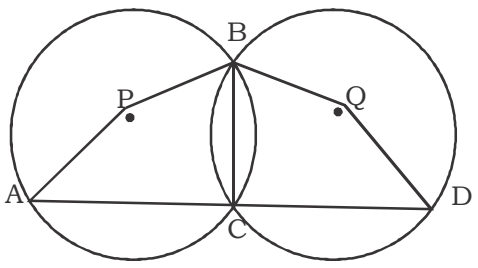
$\therefore$ Required difference = ₹ 9797.76 – ₹ 5824 = ₹ 3973.76

63. (1) Volume of wall = (2500 × 800 × 50) cm^3

Volume of a brick = (25 × 15 × 12) cm^3

$\therefore$ Required number of bricks = $\frac{90}{100} \times \frac{2500 \times 800 \times 50}{25 \times 15 \times 12} = 20000$

64. (2)



$\angle APB = 130°$

$\angle BCA = \frac{130°}{2} = 65°$

$\angle BCD = 180° - 65° = 115°$ (Straight angle)

External $\angle BQD = 2 \times 115° = 230°$

65. (4) $\frac{1}{a}-\frac{1}{b}=\frac{1}{a-b}$

$\frac{b-a}{ab}=\frac{1}{a-b}$

$(a-b)(b-a)=ab$

$(a-b)(a-b)=-ab$

$a^2+b^2-2ab=-ab$

$a^2+b^2-ab=0$

$\therefore$ $a^3+b^3=(a+b)(a^2+b^2-ab)=(a+b)\times 0=0$

66. (3) $\frac{8\sin\theta+5\cos\theta}{\sin^3\theta+2\cos^3\theta+3\cos\theta}$

Dividing numerator and denominator by $\cos\theta$,

$$=\frac{\frac{8\sin\theta}{\cos\theta}+\frac{5\cos\theta}{\cos\theta}}{\frac{\sin^3\theta}{\cos\theta}+\frac{2\cos^3\theta}{\cos\theta}+\frac{3\cos\theta}{\cos\theta}}=\frac{8\tan\theta+5}{\tan\theta.\sin^2\theta+2\cos^2\theta+3}$$

$$=\frac{8\tan\theta+5}{2\sin^2\theta+2\cos^2\theta+3}=\frac{8\tan\theta+5}{2\left(\sin^2\theta+2\cos^2\theta\right)+3}$$

$$=\frac{8\times 2+5}{2\times 1+3}=\frac{21}{5}$$

67. (2) Total of 50 numbers = $50\times 38=1900$

$\therefore$ Correct average = $\frac{1900-84+48}{50}=\frac{1864}{50}=37.28$

68. (4) $2^x=3^y=6^{-z}=k$ (let)

$2=k^{\frac{1}{x}}$, $3=k^{\frac{1}{y}}$ and $6=k^{-\frac{1}{z}}$

$\because$ $2\times 3=6$

$\therefore$ $k^{\frac{1}{x}}+k^{\frac{1}{y}}=k^{-\frac{1}{z}}$

$k^{\frac{1}{x}+\frac{1}{y}}=k^{-\frac{1}{z}}$

$\frac{1}{x}+\frac{1}{y}=-\frac{1}{z}$

$\frac{1}{x}+\frac{1}{y}+\frac{1}{z}=0$

69. (2) $3^{25}+3^{26}+3^{27}+3^{28}$

$=3^{25}(1+3+9+27)$

$=3^{25}\times 40$, which is divisible by 30.

70. (3) CP of machine = 5400 + 800 = ₹ 6200

MP of machine = $6200 \times \frac{124}{100}$ = ₹ 7688

Discount = 7688 – 7380.48 = ₹ 307.50

$\therefore$ Discount% = $\left(\frac{307.52 \times 100}{7688}\right)\%$ = 4%

71. (4) Level of field rise = $\frac{40 \times 30 \times 12.5}{1000 \times 30}$ = 0.5 m

72. (2) Fee paid for Architecture = $\frac{11}{100} \times 120000$ = ₹ 13200

73. (1) Expenditure on Furniture and Curtains = $\frac{23}{100} \times 120000$ = ₹ 27600

74. (4) Percentage difference between Flooring and Grills = (14 – 10) % = 4%

$\therefore$ Required expenditure = $\frac{4}{100} \times 120000$ = ₹ 4800

75. (2) Percentage expenditure on Miscellaneous = 100 – (10 + 10 + 11 + 15 + 14 + 19 + 13) = 8%

$\therefore$ Required expenditure = $120000 \times \frac{8}{100}$ = ₹ 9600

MEANINGS IN ALPHABETICAL ORDER

Apiary	a place where bees are kept; a collection of beehives	मधुमक्खियों के पालने का स्थान
Archaic	very old or old-fashioned	प्राचीन
Arsenal	a collection of weapons and military equipment stored by a country, person, or group	शस्त्रागार
Aviary	a large cage, building, or enclosure for keeping birds in	पक्षीशाल
Daunt	make (someone) feel intimidated or apprehensive	वश में करना
Evident	plain or obvious; clearly seen or understood	प्रत्यक्ष
Exploit	make full use of and derive benefit from (a resource)	शोषण
Fallacy	a mistaken belief, especially one based on unsound argument	हेत्वाभास
Knack	an acquired or natural skill at performing a task	आदत
Leisure	free time	फुर्सत
Liberate	set (someone) free from a situation, especially imprisonment or slavery, in which their liberty is severely restricted	मुक्त करना
Observant	quick to notice things	तेज़नज़र
Obsolete	no longer produced or used; out of date	अप्रचलित
Orchard	a piece of land planted with fruit trees	फलोद्यान
Replica	an exact copy or model of something, especially one on a smaller scale	प्रतिकृति
Shrewd	having or showing sharp powers of judgment; astute a home or job	चालाक

SSC MOCK TEST - 379 (ANSWER KEY)

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

76. (1) Replace ‘deliberately’ by ‘deliberate’.

77. (1) Replace ‘based’ by ‘having’.

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

91. (4) The correct spelling is 'Quiet'.