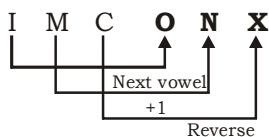
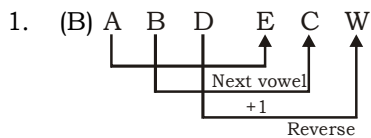


SSC MOCK TEST – 51 (SOLUTION)



2. (C) $6 \Rightarrow \frac{6^2}{2} = \frac{36}{2} = 18$

$4 \Rightarrow \frac{4^2}{2} = \frac{16}{2} = 8$

3. (B) As milk is adulterated by water, in the same way, ghee is adulterated by **Vanaspatti**.

4. (B) An oxygen is one of the constituent of water, similarly **sodium** is a constituent of salt.

5. (D)

Word	T	O	M	A
Digit	1	2	3	4

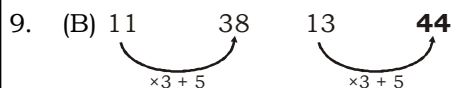
\Rightarrow TOMATO = 123412

Also, MTOOTA = **312214**

6. (D) In Mustard seed is a usable part similarly in carrot **root** is a usable part.

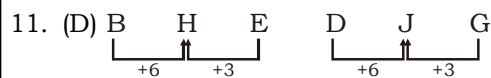
7. (D) **Word Antonyms**
Always Never
Often Rarely

8. (A) Wastes are kept in a dustbin whereas books are stacked in a **rack**.



10. (D)

R	O	C	K	C	R	O	K
1	2	3	4	3	1	2	4
W	H	A	T	A	W	H	T
1	2	3	4	3	1	2	4



12. (B) $263 \Rightarrow 2 \times 3 = 6$ $331 \Rightarrow 3 \times 1 = 3$
 $383 \Rightarrow 3 \times 3 \neq 8$ $551 \Rightarrow 5 \times 1 = 5$

13. (D) All except **Guhawati** are capitals of states of India.

14. (D) Except **247**, others are multiple of 17.

15. (B) In all other pairs, second denotes the class to which the first belong.

16. (D) All except **Identification** are synonyms.

17. (C) All except **Chanakya** were the great mathematicians whereas Chanakya was an economist.

18. (C) In all other pairs, second is the head of the first.

19. (B) Let the present age of B = x yrs
then, present age of A = 3x yrs
4 yrs later, A's age = 31 yrs (given)
 $\Rightarrow 3x + 4 = 31$

$\Rightarrow x = \frac{31 - 4}{3} = \frac{27}{3} = 9$ yrs

So, B's present age = 9 yrs

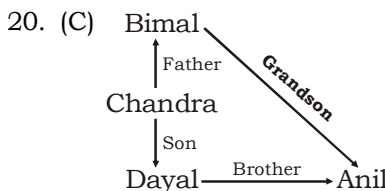
then, A's present age = $9 \times 3 = 27$ yrs

4 year ago A's age = $27 - 4 = 23$ yrs

4 year ago C's age = $2 \times 23 = 46$ yrs

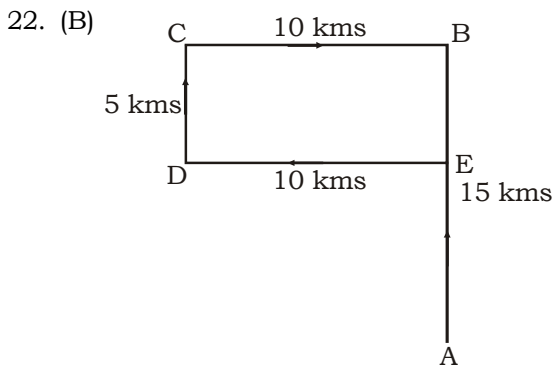
Present age of C = $46 + 4 = 50$ yrs

So, present age of B and C are 9 years and 50 years respectively.



21. (C) The letters at the odd positions are moved two steps backward and the letters at even positions are moved two steps forward to get the result.

So, PAROLE will be NCPQJG



Finally, he is to the **North** of his house.

23. (C) The symbols adjacent to the face with symbol '*' are @, -, + and \$. Hence, the symbol opposite to '*' is **8**.

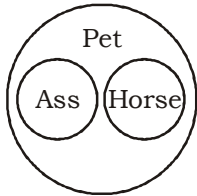
24. (B) The sitting arrangement is as follows:

• • • • •

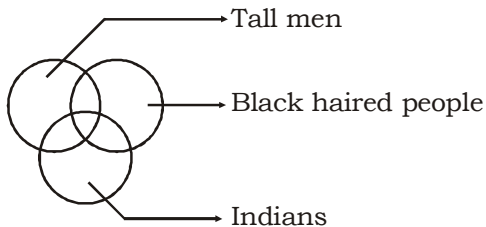
P X S Z R A

Therefore, right of P is **X**.

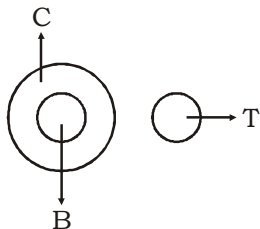
25. (D)



26. (A)

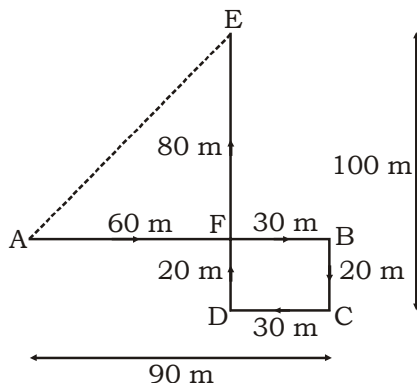


27. (A)



Only conclusion (I) follows.

28. (C)



$$\text{Required distance} = \sqrt{60^2 + 80^2}$$

$$= \sqrt{3600 + 6400} = \sqrt{10000} = \mathbf{100 \text{ m}}$$

So, from starting point his father was 100 metre away.

29. (D) The colour of milk is 'white'. But, as given, 'green' means 'white'. So, the colour of milk is **'green'**.

30. (C) The order from the oldest to the youngest would be Vani - Sita - **Rani** - Mary - Nita.

(Middle)

31. (D) Series has following pattern

$$3 \times 1^2, 3 \times 2^2, 3 \times 3^2 \text{ and so on}$$

$$\text{Next term will be } 3 \times 7^2 = \mathbf{147}$$

32. (C) Pattern is +2, +2, +4, +4, ..., +16, +16

$$\text{Missing number will be } 18+8 = \mathbf{26}$$

33. (C) Pattern is $\times 2, \times 3, \times 4$

$$\text{So, next number in the series will be } \times 5$$

$$24 \times 5 = \mathbf{120}$$

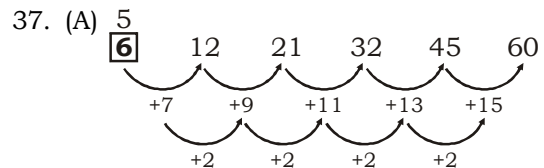
34. (B) Pattern in the series is, +20.5, +22.5,

Next term will be +24.5 and so on.

$$\Rightarrow 138 + 24.5 = \mathbf{162.5}$$

35. (B)

36. (C) Animesh is 22nd from left or twelfth from right (old position of Aman). So there are 21 boys to his left and 11 boys to his right. Thus including Animesh there are **33** boys in the row.



38. (D) $93 - (27 + 3) = 63$

$$79 - (38 + 4) = 37$$

$$\text{Therefore, } 67 - (16 + ?) = 42$$

$$\Rightarrow ? = \mathbf{9}$$

39. (B) Putting the position of the letters in reverse order

$$P = 11, S = 8, V = 5 \text{ and } Y = \mathbf{2}.$$

$$40. (D) 1 + \left(\frac{1}{2}\right) = \frac{3}{2}$$

$$2 + \left(\frac{2}{3}\right) = \frac{8}{3}$$

$$3 + ? = \frac{19}{5}$$

$$\Rightarrow ? = \left(\frac{19}{5}\right) - 3$$

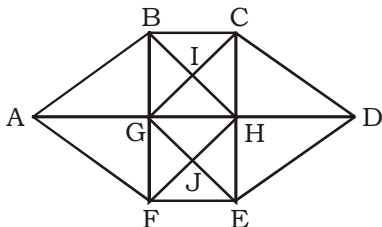
$$\Rightarrow ? = \left(\frac{4}{5}\right)$$

41. (A) $(15 - 12) + (10 - 9) = 3 + 1 = 4$

$$(28 - 12) + (16 - 20) = 16 + (-4) = 12$$

$$\text{Similarly, } (23 - 11) + (15 - 16) = 12 + (-1) = \mathbf{11}.$$

42. (C) The figure may be labelled as shown.



Simple triangles are ABG, BIG, BIC, CIH, GIH, CDH, HED, GHJ, HJE, FEJ, GFJ and AGF i.e. 12 in number.

Triangles composed of two components are ABF, CDE, GBC, BCH, GHG, BHG, GHF, GHE, HEF and GEF i.e. 10 in number.

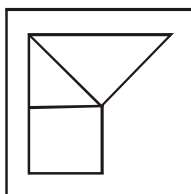
Triangles composed of three components are ABH, AFH, CDG and GDE i.e. 4 in number.

Triangles composed of four components are BHF and CGE i.e. 2 in number.

Total number of triangles in the figure = 12 + 10 + 4 + 2 = **28**.

43. (B)

44. (A)



45. (C)

46. (D)

47. (D)

48. (C)

Front Face	-	'	\$
Opposite Face	?	,	+

Only cube (4) can be formed.

49. (B) $3649 \Rightarrow \sqrt{36} + \sqrt{49} = 13$

$$\Rightarrow 13^2 + 13 = 169 + 13 = 182$$

$$\text{and } 6481 \Rightarrow \sqrt{64} + \sqrt{81} = 17$$

$$\Rightarrow 17^2 + 17 = 289 + 17 = 306$$

$$\text{so, } 2516 \Rightarrow \sqrt{25} + \sqrt{16} = 9$$

$$\Rightarrow 9^2 + 9 = 81 + 9 = \mathbf{90}$$

50. (B)

51. (B) The most common way to locate points on the surface of the Earth is by standard, geographic coordinates called latitude and longitude. These coordinates values are measured in degrees (of arc, not temperature), and represent angular distances calculated from the center of the Earth.

52. (D)

53. (C)

54. (A) The distances between molecules in solids are very small, i.e., solids are more dense - as compared to liquids and gases. Because they are so close, so can collide very quickly. Sound is nothing more than a local disturbance, the propagation of which is facilitated by the collisions between particles.

55. (D)

56. (A) Superintendence, direction and control of preparation of electoral rolls for, and conduct of the elections will be under Article 243 K

57. (A) SAARC was circulated by President Ziaur Rahman of Bangladesh in May 1980. He was interested in setting up an ASEAN-like entity for South Asia. CHECK

In 1980, Bangladesh President Ziaur Rahman proposed the creation of a trade bloc consisting of South Asian countries. The Bangladeshi proposal was accepted by India, Pakistan and Sri Lanka during a meeting held in Colombo in 1981

58. (B) The Sixth Century BC was a Period of Religious and Economic unrest in India. The 600 BC saw the religious and economic reform movement in the Gangetic basin. Numerous religious sects arose in this area in Sixth Century BC.

59. (B) The pitch of a note depends on the frequency of the source of the sound. Frequency is measured in Hertz (Hz), with one vibration per second being equal to one hertz (1 Hz). A high frequency produces a high pitched note and a low frequency produces a low pitched note.

60. (C) Silicon carbide (SiC), also known as carborundum, is a compound of silicon and carbon with chemical formula SiC. It occurs in nature as the extremely rare mineral moissanite.

61. (D) Helge Palmcrantz invented the machine gun around 1914. They could fire 400-600 small-calibre rounds per minute, but there was a problem, the early machine guns would rapidly overheat and become inoperative without the aid of cooling mechanisms; they were consequently fired in short rather than sustained bursts.

62. (A) Ketone are metabolic end product of fatty acid metabolism. In health individual ketones are formed in liver and are completely metabolised therefore negligible amount appear in urine. However when carbohydrate are unavailable to be used as energy, our body used fat which then get metabolised to ketone as by product.
63. (A)
64. (C) The third 1 mmtpa distillation unit was commissioned in September 1967 to process Ankleshwar, kalol and North Gujarat crudes. In December 1968, Udex plant was commissioned for production of benzene and toluene using feedstock from CRU.
65. (B)
66. (D) Dayananda Saraswati was born on 12 February in 1824 in a Hindu family in Tankara, near Morbi in the Kathiawad region (now Rajkot district of Gujarat). His original name was Mool Shankar because he was born in Dhanu Rashi and Mool Nakshatra.
67. (A) El Nino is a climate cycle in the Pacific Ocean with a global impact on weather patterns. The cycle begins when warm water in the western tropical Pacific Ocean shifts eastward along the equator toward the coast of South America.
68. (A)
69. (B)
70. (A) Abscisic acid also known as abscisin II or Dormin is responsible for seed dormancy by inhibiting cell growth.
71. (B) The first attempt to calculate National Income of India was made by Dadabhai Naroji in 1867-68. This was followed by several other methods. The first scientific method was made by Prof. V.K.R Rao in 1931-32. But this was not very satisfactory. The first official attempt was made by Prof.P.C.Mahalnobis in 1948-49, who submitted his report in 1954.
72. (C) The minimum age for a person to become a member of Rajya Sabha is 30 years.
73. (A)
74. (B)
75. (D) Bacteria and Fungi are decomposer that digest their food outside their body and feed on dead and decay substance i.e organic substance to derive their energy.
76. (C) Klinefelter syndrome is also called xxy syndrome in which primary feature is sterility. Secondary features are poor sexual growth of male features i.e less body hair, small genitals, breast growth, weak muscles etc. Extra chromosome isretained because of nondisjunction event during paternalor maternal meiosis I (gametogenesis)
77. (C)
78. (A)
79. (C) The collecting or study of money is called numismatics.
80. (A)
81. (A)
82. (D)
83. (B)
84. (D) The Union government has recently constituted the Financial Sector Search and Recruitment Committee headed by cabinet secretary PK Sinha to decide on members and heads of financial regulatory agencies. The head of the regulatory body, whose members are to be selected, will be a special invitee to the panel.
85. (B)The Haryana government has recently launched Asia's first 'Gyps Vulture Reintroduction Programme' at Jatayu Conservation Breeding Centre, Pinjore.
86. (C)
87. (B) Near Wildlife Sanctuary is situated in Rewari district of Haryana State, India. It is 36.9 km from Rewari. It is spread over an area of 211.35 hectares. It is 5 km away from Kosali on the Kosali-Mahendragarh road. It is named Nahar because it comes under Nahar Village. Forest Department, Government of Haryana officially notified this as Wildlife Sanctuary on 30th January 1987.
88. (D) The Pandyan empire was home to temples including Meenakshi Amman Temple in Madurai. The Pandya kings were called either Jatavarman or Maravarman Pandyan.
89. (D) The book 'A Voice of Freedom' has been authored by Nayantara Sahgal. Nayantara Sahgal (born on 10th May 1927) is an Indian writer in English. She was one of the first female Indian writers in English to receive wide recognition. She is a member of the Nehru-Gandhi family, the second of the three daughters born to Jawaharlal Nehru's sister, Vijaya Lakshmi Pandit.
90. (B) Two scientist contribute to discovery of first virus i.e Tobacco mosaic virus Invanoshy reported in 1892 that extract form infected leaf. Beijerinck's in 1898, was the first to call virus the incitant of tobacco mosaic.
91. (D) The Caspian Sea is a landlocked sea between Asia and Europe (European Russia). It is the world's largest inland body of water, with a surface area of 371,000 km²

- (143,000 sq. mi.), and therefore has characteristics common to both seas and lakes. It is often listed as the world's largest lake, though it is not a freshwater one.
92. (D) Blubber is thick layer of fat also called adipose tissue directly under skin of all marine mammals.
93. (B)
94. (B) An amicus curiae (literally, friend of the court) is someone who is not a party to a case and offers information that bears on the case, but who has not been solicited by any of the parties to assist a court.
95. (A) Phytoplankton are microscopic marine plant is the base of several food web. In balanced ecosystem they provide food for variety of sea creatures including whale, snail, jellyfish etc.
96. (C)
97. (B) On the second position in the list of the states in India with the largest forest cover is Arunachal Pradesh, with an estimated forest covered area of about 6.73 million hectares in 2013. It is the only state which has experienced a decrease in forest cover as compared to the Survey Report of 2007. The figure for Arunachal Pradesh in 2007 was nearly 6.8 million hectares.
98. (D) Linked gene are also called genetic linkage is the tendency of alleles that are close together on same chromosome to be inherited together during meiosis I.
99. (D)
100. (D)
101. (D)
102. (A) % of marks obtained by Alex in Biology
- $$= \frac{90}{125} \times 100 = 72\%$$
- = % of marks obtained by Alex in Hindi.
103. (B) 56% of 150 = 84.
Hence, five students will get grade A.
104. (D) Let the average price of 1 book = ₹ x
According to the question,
- $$\text{₹ } \frac{50x + 76}{(50 + 14)} = (x - 1)$$
- $$\text{₹ } \frac{50x + 76}{64} = x - 1$$
- $$\text{₹ } 50x + 76 = 64x - 64$$
- $$\text{₹ } 140 = 14x$$
- $$\text{₹ } x = ₹ 10$$
- Therefore average price of per book = ₹ 10

105. (A) $W = 2M, B = \frac{1}{2}M$
- Given: $3M + 4W + 6B = 7$
 $1.5W + 4W + 1.5W = 7$
 (As, $3M = 1.5W, 6B = 3M = 1.5W$)
 $7W = 7$
 So, 7 women together can complete the work in 7 days.
106. (C) $55\frac{5}{9}\% = \frac{5}{9}$
- So,
- | | | |
|---------|-----|---------|
| | D.S | U.S |
| Time → | 9 | (9 + 5) |
| | 9 | : 14 |
| Speed → | 14 | : 9 |
- $\underbrace{\hspace{10em}}_{5 \text{ km/h} \rightarrow 10 \text{ km/h} \times 2}$
- \ downstream speed = $14 \times 2 = 28 \text{ km/h}$
 \ upstream speed = $9 \times 2 = 18 \text{ km/h}$
- \ Speed of boat in still water = $\frac{1}{2}(28 + 18)$
 = 23 km/h
107. (B) Let us consider that total population of town be 41 unit
- | | | |
|---------|---|---------------------|
| Male | : | Female |
| 28 unit | | (41 - 28) = 13 unit |
- $14\frac{2}{7}\%$ Male are married
- i.e. $\frac{28}{7} = 4$ male
- So, % of married females = $\frac{4}{13} \times 100\%$
- $$= 30\frac{10}{13}\%$$
108. (B) Let the principal be ₹ x and time be y years
 Now, we have
- $$\frac{x \cdot 10 \cdot y}{100} = 35 - x$$
- $$\text{₹ } y = \frac{(35 - x)}{x} \times 10 \quad \dots(i)$$
- $$\frac{x \cdot 8 \cdot y}{100} = 30 - x$$
- $$\text{₹ } y = \frac{(30 - x)}{x} \times 12.5 \quad \dots(ii)$$
- equating the equation (i) and (ii)
- $$\frac{10}{x} (35 - x) = \frac{12.5}{x} (30 - x)$$

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$$\text{E } 350 - 10x = 375 - 12.5x$$

$$\text{E } 2.5x = 25$$

$$\text{E } x = ₹ 10$$

putting the value of equation (i)

$$y = \frac{35-10}{10} \times 10 = 25 \text{ yrs}$$

So, time is 25 yrs.

109. (A) Trader buys 1200 gm for ₹ $1200 \times \frac{110}{100}$

$$= ₹ 1320$$

$$\text{his total gain (profit)} = 1320 - 1000 = ₹ 320$$

$$\text{Net profit percentage} = \frac{320 \times 100}{1000} = 32\%$$

110. (C) radii are in the ratio 2 : 3 : 1

Let their radii be $2x$, $3x$ and x respectively and $h_1 = h_2 = h_3 = x$

$$\text{volume of cone} = \frac{1}{3} \pi r^2 h = \frac{1}{3} \pi (2x)^2 x = \frac{4}{3} \pi x^3$$

$$\text{volume of cylinder} = \pi r^2 h = \pi (3x)^2 x = 9\pi x^3$$

$$\text{volume of hemisphere} = \frac{2}{3} \pi x^3 = \frac{2}{3} \pi x^3$$

$$\text{ratio} = \frac{4}{3} \pi x^3 : 9\pi x^3 : \frac{2}{3} \pi x^3$$

$$= 4 : 27 : 2$$

111. (D) $a^3 + b^3 + c^3 - 3abc = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$

$$= \frac{1}{2} (a + b + c)[(a - b)^2 + (b - c)^2 + (c - a)^2]$$

$$\frac{a^3 + b^3 + c^3 - abc}{(a - b)^2 + (b - c)^2 + (c - a)^2}$$

$$= \frac{\frac{1}{2} (a + b + c)[(a - b)^2 + (b - c)^2 + (c - a)^2]}{(a - b)^2 + (b - c)^2 + (c - a)^2}$$

$$= \frac{1}{2} (a + b + c) = \frac{1}{2} (25 + 15 - 10) = \frac{30}{2} = 15$$

112. (C) $A + B = 90^\circ \Rightarrow A = 90^\circ - B$

$$\Rightarrow \sin A = \sin(90^\circ - B) = \cos B$$

Similarly,

$$\Rightarrow \cos A = \sin B, \tan A = \cot B$$

$$\sin A \times \cos B + \cos A \times \sin B - \tan A \times \tan B + \sec^2 A - \cot^2 B$$

$$= \cos^2 B + \sin^2 B - \cot B \times \tan B + \sec^2 A - \tan^2 A$$

$$= 1 - 1 + 1 = 1$$

113. (C) Rate of interest = $11\frac{1}{9}\%$ or $\frac{1}{9}$

Let us consider

$$= \frac{1}{9} \text{ interest}$$

$$= \frac{1}{9} \text{ principal}$$

$$\text{S.I in 5 year} = 5 \times 1 = 5$$

So, Principal S.I

$$\begin{array}{ccc} & \times 1100 & \\ & \swarrow & \searrow \\ & 9 & 5 \\ \text{9900} & \xrightarrow{\text{4 unit less}} & 4400 \\ & \times 1100 & \end{array}$$

114. (B) P can complete $\frac{1}{4}$ of work in 10 days

P can complete the whole work in 40 days.

Q can complete 40% of work in 15 days.

Q can complete the whole work in

$$\frac{15 \times 100}{40} = 37\frac{1}{2} \text{ days}$$

R can complete the whole work in

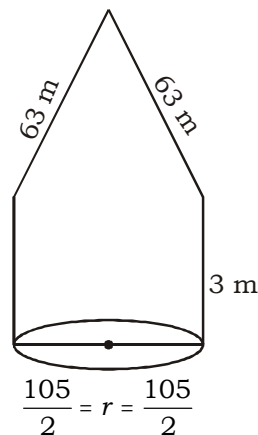
$$13 \times 3 = 39 \text{ days}$$

S can complete the whole work in

$$7 \times 6 = 42 \text{ days}$$

Q will be able to complete the work first.

115. (A)



$$\text{Slant surface area} = \pi r l$$

$$= \frac{22}{7} \times \frac{105}{2} \times 63 = 10395 \text{ m}^2$$

curved surface area of cylinder

$$= 2prh = 2 \times \frac{22}{7} \times \frac{105}{2} \times 3$$

$$= 22 \times 15 \times 3 = 990 \text{ m}^2$$

$$\backslash \text{ Required area of canvas to make the tent} \\ = 10395 + 990 = 11385 \text{ m}^2$$

116. (C) $m^4 + \frac{1}{m^4} = 119$

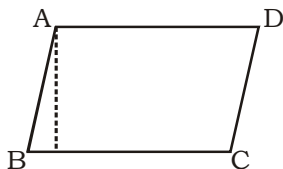
$$\text{P } m^4 + \frac{1}{m^4} + 2 = 119 + 2 = 121 = 11^2$$

$$\text{P } m^2 + \frac{1}{m^2} = 11$$

$$\text{P } m^2 + \frac{1}{m^2} - 2 = 11 - 2 = 9 = 3^2$$

$$\text{P } m - \frac{1}{m} = \pm 3$$

117. (B) Sides are in ratio 5 : 4



Let the sides are $5x$ and $4x$ units

\ parallelogram's area = greater side \times altitude

$$\text{P } 1000 = 5x \times 20 \text{ P } x = 10$$

similarly parallelogram's area = smaller side \times its altitude

$$\text{P } 1000 = 4x \times \text{its altitude}$$

$$\text{P } 1000 = 4 \times 10 \times \text{it's altitude}$$

\ altitude = 25 units

118. (B) $x^2 = y + z \text{ P } x = \frac{y+z}{x}$

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

$$\text{Similarly, } y^2 = z + x \text{ P } y + 1 = \frac{x+y+z}{y}$$

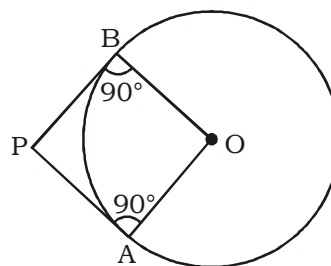
$$\text{and } z^2 = x + y \text{ P } z + 1 = \frac{x+y+z}{z}$$

$$\backslash \frac{1}{x+1} + \frac{1}{y+1} + \frac{1}{z+1}$$

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

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

119. (D)



\(\because\) PA and PB are tangents

OB and OA are radii

PA \perp OA and PB \perp OB

$$\text{P } \angle A + \angle B = 180^\circ$$

$$\text{P } \angle P + \angle O = 180^\circ$$

\ \(\square\) OAPB is a cyclic quadrilateral

120. (C) $\frac{\cos^2 q}{\cot^2 q - \cos^2 q} = 3$

$$\text{P } \frac{\cos^2 q}{\frac{\cos^2 q}{\sin^2 q} - \cos^2 q} = 3$$

$$\text{P } \frac{\cos^2 q}{\cos^2 q \left(\frac{1}{\sin^2 q} - 1 \right)} = 3$$

$$\text{P } \frac{\sin^2 q}{1 - \sin^2 q} = 3$$

$$\text{P } \frac{\sin^2 q}{\cos^2 q} = 3 \text{ P } \tan^2 q = 3$$

$$\text{P } \tan q = \sqrt{3}$$

$$\backslash q = 60^\circ$$

121. (C) Male = $\frac{5}{9}$ part of total population

$$\text{Married male} = 60\% = \frac{3}{5}$$

So, total % of married male



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$$= \frac{5}{9} \times \frac{3}{5} \times 100 = 33\frac{1}{3}\%$$

it means they will be married to $33\frac{1}{3}\%$

of women

So, total population of married population

is $66\frac{2}{3}\%$.

122. (A) A	24		$6 \times 3 = 18$
B	36	144	4
C	48		$3 \times 4 = 12$

$$\text{Required no. of days} = \frac{\pi(144 - 12 + 18)\delta}{\xi(6 + 4)\frac{\delta}{\theta}}$$

$$= \frac{150}{10} = 15 \text{ days}$$

$$123. (B) \text{ Loss} = \frac{20}{15} - \frac{15}{20}$$

$$= \frac{80 - 45}{60} = ₹ \frac{35}{60}$$

$$\backslash \text{ loss}\% = \frac{35}{60} \times 100 \times \frac{15}{20} = 43\frac{3}{4}\%$$

124. (D) Let x litres from each vessel are mixed

\ Total water in third vessel

$$= \frac{3x}{7} + \frac{5x}{8} = \frac{59x}{56}$$

Total milk in third vessel

$$= \frac{4x}{7} + \frac{3x}{8} = \frac{53x}{56}$$

$$\backslash \text{ Required ratio} = \frac{59x}{56} : \frac{53x}{56} = 59 : 53$$

$$125. (A) a = \sqrt{2} + 1 \quad \& \quad a + 1 = \sqrt{2} + 2$$

$$b = \sqrt{2} - 1 \quad \& \quad b + 1 = \sqrt{2}$$

$$\backslash \frac{1}{a+1} + \frac{1}{b+1} = \frac{1}{\sqrt{2}+2} + \frac{1}{\sqrt{2}}$$

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

126. (D) $DABC \sim DPQR$

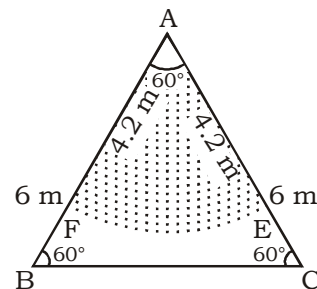
$$\& \frac{\text{Perimeter of } DABC}{\text{Perimeter of } DPQR} = \frac{AB}{PQ} = \frac{BC}{QR} = \frac{CA}{RP}$$

$$\& \frac{6 + 8 + 12}{\text{Perimeter of } DPQR} = \frac{AB}{PQ} = \frac{6}{9} = \frac{2}{3}$$

$$\& \frac{26}{\text{Perimeter of } DPQR} = \frac{2}{3}$$

$$\backslash \text{ Perimeter of } DPQR = \frac{26 \times 3}{2} = 39 \text{ cm}$$

127. (C) In figure, ABC is grassy field



AF and AE are rope 4.2 m long

The horse is tied at vertices A

Available area = shaded AFE

\(\therefore\) AFE is a sector of the circle

$$\backslash \text{ area of } AFE = \frac{\pi r^2 \theta}{360}$$

$$= \frac{22}{7} \times \frac{4.2 \times 4.2 \times 60}{360} = 2.2 \times 4.2 \text{ m}^2$$

$$\text{area of total grassy field} = \frac{\sqrt{3}}{4} \times 6 \times 6$$

$$= 1.732 \times 9 \text{ m}^2$$

\ Required percentage

$$= \frac{2.2 \times 4.2 \times 100}{1.732 \times 9} = 59.28\% \approx 59\%$$

128. (B) If $\sin A = \cos B$ then, $A + B = 90^\circ$

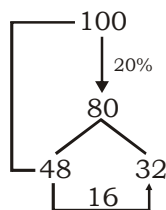
Hence, $x + y + 3(x + y) = 90^\circ$

$$\& 4x + 4y = 90^\circ$$

$$\& 2x + 2y = 45^\circ$$

$$\& \tan(2x + 2y) = \tan 45^\circ = 1$$

129. (D)



$$16 \text{ @ } 1900 - 300$$

$$16 \text{ @ } 1600$$

$$1 \text{ @ } 100$$

$$\text{then } 32 \text{ @ } 32 \times 100 = 3200$$

130. (B) C.P. of 1st transistor = ₹ $\frac{100}{120} \cdot 840$

$$= ₹ 700$$

C.P. of 2nd transistor = ₹ $\frac{100}{96} \cdot 960$

$$= ₹ 1000$$

So, total C.P. = ₹ (700 + 1000) = ₹ 1700

Total S.P. = ₹ (840 + 960) = ₹ 1800

$$\text{Gain \%} = \frac{100}{1700} \cdot 100\% = 5\frac{15}{17}\%$$

131. (B) Let the first part of journey is x km and the second part of journey is $(285 - x)$ km

$$\frac{x}{40} + \frac{285 - x}{55} = 6$$

$$\frac{11x + 2280 - 8x}{440} = 6 \Rightarrow \frac{3x + 2280}{440} = 6$$

$$3x + 2280 = 2640 \Rightarrow 3x = 2640 - 2280$$

$$\Rightarrow x = \frac{360}{3} = 120 \text{ km}$$

The distance travelled by train

$$= 285 - x = 285 - 120 = 165 \text{ km}$$

132. (A) Let the original number is x

$$\text{answer obtained by student} = x \times 7.2 = 7.2x$$

$$\text{but correct answer} = 0.72x$$

$$\Rightarrow 7.2x - 0.72x = 2592 \Rightarrow 6.48x = 2592$$

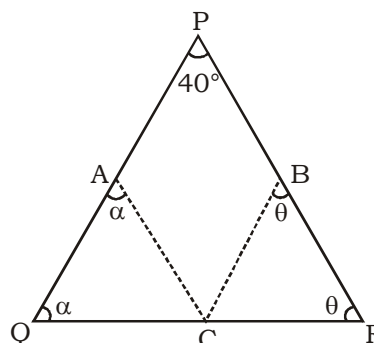
$$\Rightarrow x = \frac{2592}{6.48} = 400$$

The original number is 400

133. (C) Profit percent = $25 - 10 + \frac{25 - 10}{100}$

$$= 25 - 10 - 2.5 = 12.5\%$$

134. (D)



$$\because QC = AC \Rightarrow \angle AQC = \angle QAC = a$$

$$\text{and } CR = CB \Rightarrow \angle CBR = \angle CRB = q$$

$$\text{In } \triangle PQR \Rightarrow a + q + 40^\circ = 180^\circ$$

$$\Rightarrow a + q = 140^\circ$$

$$\because \angle PAC = 180 - a \text{ and } \angle CBP = 180 - q$$

$$\text{In } \square APBC \Rightarrow \angle P + \angle A + \angle C + \angle B = 360^\circ$$

$$\Rightarrow 40 + 180 - a + \angle C + 180 - q = 360$$

$$\Rightarrow \angle C - a - q = -40 \Rightarrow \angle C - (a + q) = -40$$

$$\Rightarrow \angle C - 140 = -40 \Rightarrow \angle C = 140 - 40 = 100^\circ$$

$$\Rightarrow \angle ACB = 100^\circ$$

135. (C) The time taken by A in 1 round = $\frac{35}{4}$ hrs

$$\text{The time taken by B in 1 round} = \frac{35}{5} \text{ hrs}$$

$$\text{L.C.M of } \frac{35}{4} \text{ and } \frac{35}{5} = 35$$

They will meet earliest again after 35 hours.

136. (A) Let the income be 100.

$$\text{Total expenditure} = 30 + (100 - 30) \times \frac{50}{100}$$

$$= 65$$

$$\text{saving} = 100 - 65 = 35$$

$$\text{Now, } 35 \text{ @ } ₹ (1000 + 1800)$$

$$\Rightarrow 100 \text{ @ } \frac{2800}{35} \times 100 = ₹ 8000$$

137. (A) Amount for first year = $6000 \times \frac{105}{100}$

$$= ₹ 6300$$

after repaid ₹ 2100 the rest amount

$$= 6300 - 2100 = 4200$$

$$\text{Amount for second year} = 4200 \times \frac{105}{100}$$

$$= ₹ 4410$$

after repaid ₹ 2100 the rest amount

$$= 4410 - 2100 = ₹ 2310$$

$$\text{Amount for third year} = 2310 \times \frac{105}{100}$$

$$= 2425.50$$

138. (A) After cutting 4 squares, the remaining sheet folded up to form an open rectangular box.

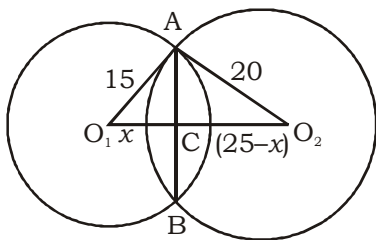
$$\text{Length of box} = 40 - (4 + 4) = 40 - 8 = 32 \text{ cm}$$

$$\text{Breadth of box} = 15 - (4 + 4) = 15 - 8 = 7 \text{ cm}$$

and depth of box = 4 cm

$$\text{Volume of the box} = 32 \times 7 \times 4 = 896 \text{ cm}^3$$

139. (B)



AB is common chord

Radius $O_1A = 15 \text{ cm}$

Radius $O_2Q = 20 \text{ cm}$

$O_1O_2 = 25 \text{ cm}$

Let $O_1C = x$ and $CO_2 = 25 - x$

In right angled $\triangle O_1AC$,

$$AC^2 = 225 - x^2 \quad \dots(i)$$

In right angled $\triangle O_2AC$, $AC^2 = 20^2 - (25 - x)^2$

$$\therefore 225 - x^2 = 400 - (625 + x^2 + 50x)$$

$$\therefore 225 - x^2 = 400 - 625 - x^2 + 50x$$

$$\therefore 225 = -225 + 50x \therefore 50x = 450 \therefore x = 9$$

By equation (i) $AC^2 = 225 - 81 = 144$

$$\therefore AC^2 = 12^2 \therefore AC = 12 \text{ cm}$$

\ Length of common chord $AB = 2AC$

$$= 2 \times 12 = 24 \text{ cm}$$

140. (B) $10 \sin^4 a + 15 \cos^4 a = 6 = 6(\sin^2 a + \cos^2 a)^2$

$$\therefore 10 \tan^4 a + 15 = 6(\tan^2 a + 1)^2$$

[Dividing both sides by $\cos^4 a$]

$$\therefore 10 \tan^4 a + 15 = 6 \tan^2 a + 6 + 12 \tan^2 a$$

$$\therefore 4 \tan^4 a + 9 - 12 \tan^2 a = 0$$

$$\therefore (2 \tan^2 a - 3)^2 = 0$$

$$\therefore 2 \tan^2 a - 3 = 0$$

$$\therefore \tan^2 a = \frac{3}{2}$$

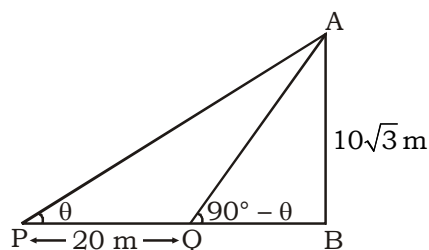
$$\therefore 27 \operatorname{cosec}^6 a + 8 \sec^6 a$$

$$= 27(1 + \cot^2 a)^3 + 8(1 + \tan^2 a)^3$$

$$= 27 \left(1 + \frac{2}{3} \right)^3 + 8 \left(1 + \frac{3}{2} \right)^3$$

$$= 27 \times \frac{125}{27} + 8 \times \frac{125}{8} = 250$$

141. (C)



Length of building = $10\sqrt{3} \text{ m}$

$\triangle ATQ$,

$$BP - BQ = 20$$

$$AB \cot \alpha - AB \cot (90^\circ - \alpha) = 20$$

$$10\sqrt{3} (\cot \alpha - \tan \alpha) = 20$$

$$\cot \alpha - \frac{1}{\cot \alpha} = \frac{2}{\sqrt{3}} = \sqrt{3} - \frac{1}{\sqrt{3}}$$

$$\cot \alpha = \sqrt{3}$$

Distance of point P from building

$$= AB \cot \alpha$$

$$= (10\sqrt{3})(\sqrt{3})$$

$$= 30 \text{ m}$$

142. (A) $-1^{5^2} + 1^{2^5}$

$$= -1^{25} + 1^{32}$$

$$= -1 + 1 = 0$$

143. (D) selling price of one egg to make a profit

$$\text{of } 20\% = 720 \times \frac{120}{100} \times \frac{1}{20 \times 12}$$

$$= \frac{360}{100} = ₹ 3.60$$

144. (A) Total no. of cows = n

$$\text{no. of cows which 1st son got} = \frac{n}{2}$$

$$\text{no. of cows which 2nd son got} = \frac{n}{4}$$

$$\backslash \text{ Remaining cows} = n - \frac{3n}{2} + \frac{n}{4}$$

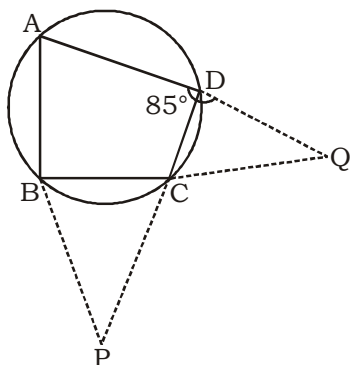
$$= n - \frac{3n}{4} = \frac{n}{4}$$

it is given that both son has $7 + 7 = 14$ cows with them

$$\text{E } \frac{n}{4} = 14 \quad \backslash \quad n = 56$$

So, the value of $n = 56$

145. (C) ABCD is cyclic Quadilateral produced AB and DC meet at point P produced BC and AD meet at point Q



$$\text{E } \angle ADC = 85^\circ$$

$$\backslash \text{ E } \angle CDQ = 180 - 85 = 95^\circ$$

$$\text{E } \angle PBC = \text{E } \angle ADC = 85^\circ$$

$$\backslash \text{ E } \angle BCP = 180^\circ - (\text{E } \angle PBC + \text{E } \angle CPB)$$

$$\text{E } \angle BCP = 180 - 125 = 55^\circ$$

$$\backslash \text{ E } \angle DCQ = \text{E } \angle BCP = 55^\circ$$

$$\backslash \text{ D } \angle CDQ \text{ E } \angle C + \text{E } \angle D + \text{E } \angle Q = 180$$

$$55^\circ + 95^\circ + \text{E } \angle Q = 180^\circ$$

$$\text{E } \angle Q = 180^\circ - 150^\circ = 30^\circ$$

$$\text{E } \angle CQD = 30^\circ$$

146. (B) Traced arc length by minute hand in 60×60 seconds = $2\pi r$
 \backslash Length of arc made in 18 seconds

$$= \frac{2\pi r}{60 \times 60} \times 18$$

$$= 2 \times \frac{22}{7} \times \frac{35 \times 18}{60 \times 60} = 1.1 \text{ cm}$$

147. (B) Least integer divisible by 21, 36, 66
 $= \text{L.C.M} = 2 \times 2 \times 3 \times 3 \times 7 \times 11$

\backslash Least perfect square number

$$= 2 \times 2 \times 3 \times 3 \times 7 \times 7 \times 11 \times 11 = 213444$$

148. (D) There is maximum gap between 1998 and 2000 for state U. And maximum percentage increase is also for state U.

149. (B) Required less %

$$= \frac{105 - 70}{105} \times 100 = 33 \frac{1}{3} \%$$

150. (C) Avg. production

$$= \frac{80 + 60 + 25 + 50 + 50 + 80 + 80}{7}$$

$\gg 60.72$ million tonnes

151. (A) Replace 'from' by 'of'. 'Deprive' will take 'of'.

152. (C) Replace function by functioning. 'Start' take 'V₁+ing' after it.

153. (B) Replace 'are' by 'has', as the sentence takes present perfect form and 'cost' being a singular noun will take singular verb.

154. (*) Replace 'are' by 'is', as 'Neither of' takes a singular verb after it. Also change player into players.

155. (C) 'coward' and 'person' can't come together. This is superfluous. Remove 'person' or change 'coward' into 'cowardly'.

156. (D) 'Absolve somebody of/from something' means 'to state formally that somebody is not responsible for something'.

157. (C) By 'impressionable age' we mean 'the young age when someone gets easily influenced or impressed by something'.

158. (A) A habit or usual action always takes simple present tense if the person is alive.

159. (A) 'unsavoury' means 'something not considered morally acceptable'.

160. (C) 'Protruding' means 'sticking out from a place or surface'.

175. (D) 'An invaluable advice' is extremely useful piece of advice.'

176. (B) Verb 'avoids' takes 'V₁+ing' after it.

177. (C) 'precipitate' means 'cause a situation, which is bad or undesirable, to happen suddenly or unexpectedly'.

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Acquisitive	excessively interested in acquiring money or material things	कुछ प्राप्त करने की लालसा वाला
Association	an official group of people who have joined together for a particular purpose	संघ
Capitalist system	an economic system in which a country's businesses and industry are controlled and run for profit by private owners rather than by the government	पूंजीवादी व्यवस्था
Catalysis	the acceleration of a chemical reaction by a catalyst	उत्प्रेरण
Conjure up	to make something appear as a picture in your mind	दिमाग में छवि बनाना
Council	a group of people chosen to give advice, make rules, do research, provide money, etc.	परिषद्
Endocrinologist	a doctor who studies the part of medicine concerning the endocrine system and hormones	अन्तःस्त्रावविज्ञानी
Exploitation	the action of making use of and benefiting from resources	शोषण
Fanatic	a person filled with excessive zeal, especially for an extreme religious or political cause	कट्टरपंथी
Fatalist	a person who believes that events are decided by fate and cannot be controlled	भाग्यवादी
Fatuous	silly and pointless	बुद्धिहीन
Foster	encourage or promote the development of (something, typically something regarded as good)	पोषण करना
Genial	friendly and cheerful	हंसमुख
Hapless	(especially of a person) unfortunate.	बदकिस्मत
Harrowed	Distressed, shocked, frightened or upset	पीड़ित, व्यथित
Impart	to give a particular quality to something	प्रदान करना
Indispensable	absolutely necessary	अति आवश्यक
Inspid	not interesting or exciting	नीरस, उबाऊ
Judicious	having, showing, or done with good judgment or sense	न्यायसंगत
Juvenile	connected with young people who are not yet adults	किशोर
Pedantic	too worried about small details or rules	रूढ़िवादी
Perpetrate	carry out or commit (a harmful, illegal, or immoral action)	अनैतिक कार्रवाई करना
Perpetuate	make (something, typically an undesirable situation or an unfounded belief) continue indefinitely	बनाये रखना
Redress	remedy or set right (an undesirable or unfair situation)	निवारण करना
Succour	assistance and support in times of hardship and distress	मदद



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SSC MOCK TEST - 51 (ANSWER KEY)

- | | | | | | | | |
|---------|---------|---------|----------|----------|----------|----------|----------|
| 1. (B) | 26. (A) | 51. (B) | 76. (C) | 101. (D) | 126. (D) | 151. (A) | 176. (B) |
| 2. (C) | 27. (A) | 52. (D) | 77. (C) | 102. (A) | 127. (C) | 152. (C) | 177. (C) |
| 3. (B) | 28. (C) | 53. (C) | 78. (A) | 103. (B) | 128. (B) | 153. (B) | 178. (D) |
| 4. (B) | 29. (D) | 54. (A) | 79. (C) | 104. (D) | 129. (D) | 154. (*) | 179. (C) |
| 5. (D) | 30. (C) | 55. (D) | 80. (A) | 105. (A) | 130. (B) | 155. (C) | 180. (D) |
| 6. (D) | 31. (D) | 56. (A) | 81. (A) | 106. (C) | 131. (B) | 156. (D) | 181. (C) |
| 7. (D) | 32. (C) | 57. (A) | 82. (D) | 107. (B) | 132. (A) | 157. (C) | 182. (D) |
| 8. (A) | 33. (C) | 58. (B) | 83. (B) | 108. (B) | 133. (C) | 158. (A) | 183. (D) |
| 9. (B) | 34. (B) | 59. (B) | 84. (D) | 109. (A) | 134. (D) | 159. (A) | 184. (B) |
| 10. (D) | 35. (B) | 60. (C) | 85. (B) | 110. (C) | 135. (C) | 160. (C) | 185. (D) |
| 11. (D) | 36. (C) | 61. (D) | 86. (C) | 111. (D) | 136. (A) | 161. (D) | 186. (C) |
| 12. (B) | 37. (A) | 62. (A) | 87. (B) | 112. (C) | 137. (A) | 162. (C) | 187. (D) |
| 13. (D) | 38. (D) | 63. (A) | 88. (D) | 113. (C) | 138. (A) | 163. (D) | 188. (C) |
| 14. (D) | 39. (B) | 64. (C) | 89. (D) | 114. (B) | 139. (B) | 164. (D) | 189. (D) |
| 15. (B) | 40. (D) | 65. (B) | 90. (B) | 115. (A) | 140. (B) | 165. (D) | 190. (A) |
| 16. (D) | 41. (A) | 66. (D) | 91. (D) | 116. (C) | 141. (C) | 166. (C) | 191. (D) |
| 17. (C) | 42. (C) | 67. (A) | 92. (D) | 117. (B) | 142. (A) | 167. (D) | 192. (B) |
| 18. (C) | 43. (B) | 68. (A) | 93. (B) | 118. (B) | 143. (D) | 168. (B) | 193. (B) |
| 19. (B) | 44. (A) | 69. (B) | 94. (B) | 119. (D) | 144. (A) | 169. (C) | 194. (B) |
| 20. (C) | 45. (C) | 70. (A) | 95. (A) | 120. (C) | 145. (C) | 170. (A) | 195. (A) |
| 21. (C) | 46. (D) | 71. (B) | 96. (C) | 121. (C) | 146. (B) | 171. (B) | 196. (D) |
| 22. (B) | 47. (D) | 72. (C) | 97. (B) | 122. (A) | 147. (B) | 172. (B) | 197. (C) |
| 23. (C) | 48. (C) | 73. (A) | 98. (D) | 123. (B) | 148. (D) | 173. (C) | 198. (B) |
| 24. (B) | 49. (B) | 74. (B) | 99. (D) | 124. (D) | 149. (B) | 174. (B) | 199. (A) |
| 25. (D) | 50. (B) | 75. (D) | 100. (D) | 125. (A) | 150. (C) | 175. (D) | 200. (C) |

Mock Test - 50 (corrections)

113. (*) Let the salary of C be ₹ 100
then, we have salary of B = ₹ 25
salary of A = ₹ 10

$$\backslash \text{ Required \%} = \frac{100 - 10}{10} \times 100\% = 900\%$$

129. (A) Required ratio = $40^\circ : 140^\circ = 2 : 7$

138. (*) Area of circle = $\pi r^2 = \frac{22}{7} \times 10.5 \times 10.5$
= 346.5 cm²

Note:- If you face any problem regarding result or marks scored, please contact 9313111777

Note:- If your opinion differs regarding any answer, please message the mock test and question number to 8860330003