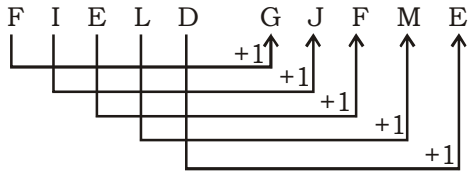
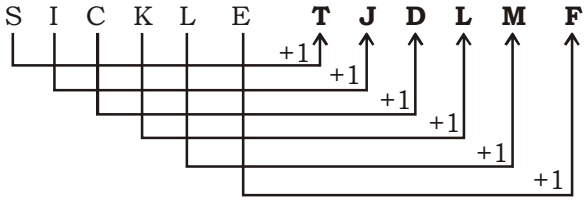
SSC MOCK TEST – 21 (SOLUTION)

1. (A) Alphabetic positions of K and T are 11 and 20 respectively. Similarly positions of J and R are 10 and 18 respectively.
2. (C) As 'indolence' and 'Work' are opposite to each other, in the same way 'Taciturn' and 'Talkaive' are opposite to each other.
3. (A) As the cry of 'Dog' is called 'Bark', in the same way the cry of 'Goat' is called 'Bleat'.
4. (D) F I E L D G J F M E

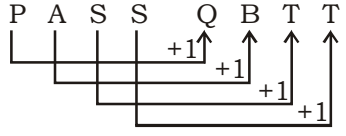


Similarly,

S I C K L E **T J D L M F**

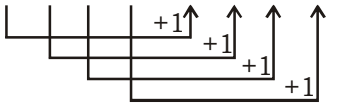


5. (A) 'Jade' is a 'Green' coloured precious stone, in the same way 'Garnet' is a 'Red' coloured precious stone.
6. (C) As 'Knowlege' is achieved by 'Reading', in the same way 'Experience' is achieved by 'Work'.
7. (A) As, $61 = (4)^3 - 3$ $121 = (5)^3 - 4$
   and $337 = (7)^3 - 6$
   Therefore, $? = (6)^3 - 5 = 211$
8. (D) As the dwelling place of 'Rabbit' is 'Burrow' in the same way the dwelling place of 'Lunatic' is 'Asylum'.
9. (B) K e a C C a e K
   1 2 3 4 4 3 2 1
   Similarly,
   X g m F **F m g X**
   1 2 3 4 4 3 2 1
10. (B) P A S S Q B T T

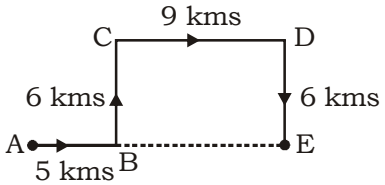


Similarly,

F A I L **G B J M**

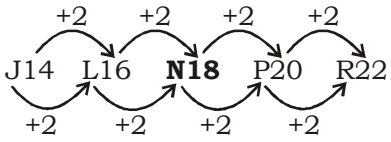


11. (A) Loaf, Sourdough, and Pumpernickel are types of bread. A **Rye** is not a type of bread.
12. (B) The Guitar, Violin and Cello are stringed instruments whereas the **Flute** is a wind instrument.
13. (A) Freeway, Interstate and Expressway are all high-speed highways whereas a **Street** is for low speed traffic.
14. (C) A Leopard, Cougar and Lion all belong to the Cat family whereas an **Elephant** does not belong to that group.
15. (B) The Couch, Table and Chair are types of furniture whereas the **Rug** is not a furniture.
16. (B) The Mayor, Governor and Senator are elected persons whereas the Lawyer is not an elected person.
17. (D) Except 4218, the sum of the first three digits is equal to the last digit.
18. (C) Except TXPH, there is a vowel in rest of the options.
19. (C) Except (C) the sum of the digits of both the numbers in rest of the options are same.
20. (C)

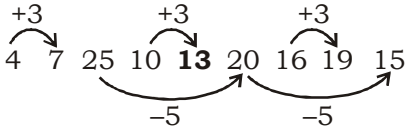


Required distance = AE = AB + BE ($\because$ BE = CD)
= 5 + 9
= 14 kms.

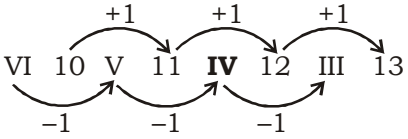
21 (B)



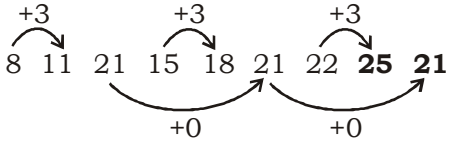
22. (A)



23. (B)

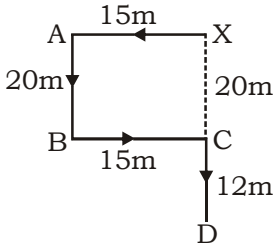


24. (B)



25. (B) Let ₹ x be the fare of city B from city A and ₹ y be the fare of city C from city A.
Then, $2x + 3y = 77$ ... (i) and
$3x + 2y = 73$ ...(ii)
On multiplying (i) by 3 and (ii) by 2 and subtracting, we get
$5y = 85$ or $y = 17$.
Putting y = 17 in (i), we get; x = 13.
So, (x, y) = ₹ (13, 17)

26. (A)



Required distance = XD = XC + CD
= 20 + 12
= 32 m in south direction

27. (A) (**15** × 2 – 3) = 27, (**31** × 2 – 6) = 56
and (**45** × 2 – 9) = 81

28. (B) $\frac{(18\times12)}{3}$ = **72** and $\frac{(32\times16)}{4}$ = **128**

Therefore, $\frac{(24\times14)}{?}$ = 112

$\Rightarrow \left(\frac{336}{?}\right) = 12$

$\Rightarrow ? = \left(\frac{336}{112}\right)$

$\Rightarrow$? = **3**.

29. (D) $(2)^3 + (1)^3 + (3)^3$ = **36**
and $(0)^3 + (4)^3 + (3)^3$ = **91**
Therefore, $(4)^3 + (2)^3 + (1)^3$ = *73*.

30. (B) (7 × 3) = **21** and (9 × 3) = **27**
and (4 × 9) = **36** and (2 × 9) = **18**
Therefore (9 × 6) = **54** and (4 × 6) = **24**.

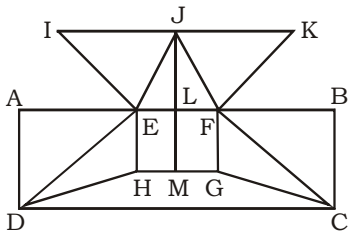
31. (A) Clearly, Conclusion I directly follows from the given statement. Also, it is mentioned that old ideas are replaced by new ones, as thinking changes with the progress in time. So, Conclusion II does not follow.

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

P X S Z R A

Therefore, right of P is X.

33. (B) The figure is given below:



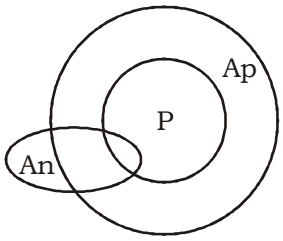
The horizontal lines are IK, AB, HG and DC i.e. 4 in number.
The vertical lines are AD, EH, JM, FG and BC i.e. 5 in number.
The slanting line are IE, JE, JF, KF, DE, DH, FC and GC i.e. 8 in number.
Thus, there are 4 + 5 + 8 = 17 straight lines in the given figure.

34. (B) x weeks x days = $(7x + x)$ days = $8x$ days.

35 (D) Given: D is the brother of B.
From statement 1, we can detect that D is son of C (son of D is the grandson of C).
From statement 2, we can detect that B is 'Female' (sister of D).
So, we can say that both the statement 1 and 2 are required.

36. (B)

37. (B)



I. 5 II. 3

38. (D) Daughter of Abhijit's brother → The niece of Abhijit.
Thus, the granddaughter of the woman is Abhijit's niece. Hence, the woman is the mother of Abhijit.

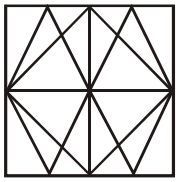
39. (B) At 5 o'clock, the hands are 25 minutes apart.
To be at right angles and that too between 5 : 30 and 6, the minute hand has to gain (25 + 15) = 40 min. spaces.
$\because$ 55 min. spaces are gained in 60 min.

$\therefore$ 40 min. spaces are gained in $\left(\frac{60}{55}\times40\right)$

min = $43\frac{7}{11}$ min.

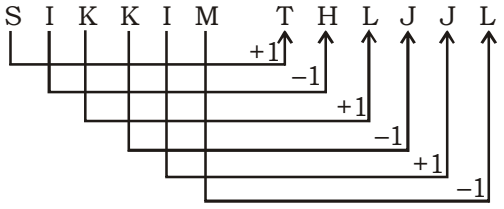
$\therefore$ Required time = $43\frac{7}{11}$ min. past 5.

40. (D) 

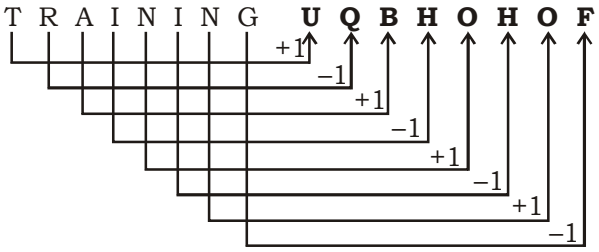
41. (C) 

42. (A) Here the common faces with number 3, are in same positions. Hence 6 is opposite to 2 and 5 is opposite to 1. Therefore 4 is opposite to 3.

43. (C) S E A S O N
4 3 2 6 1 5

44. (C) 

Similarly,



45. (A) In all other figures, there are two small line segments towards the pin and three small line segments towards the arrow.

46. (C)

47. (A) 1, 2, 3 are figures composed of two straight lines.
4, 5, 6 are figures composed composed of three straight lines.
and 7, 8, 9 are figures composed of four straight lines.

48. (B) The series is ab<u>b</u>/aa<u>a</u>bbb/<u>a</u>aaa<u>b</u>bbb/a.

49. (A) $\frac{\text{Member}}{(3)} \rightarrow \frac{\text{Family}}{(1)} \rightarrow \frac{\text{Locality}}{(4)} \rightarrow \frac{\text{City}}{(2)} \rightarrow \frac{\text{Country}}{(5)}$

50. (B)

51. (B) Rajaraja began his conquests by attacking the confederation between the rulers of the Pandya and Krala kingdoms and of Ceylon. Rajendra Chola I, the son of Rajaraja, invaded the island in 1018 A.D. As a result of the campaign, Rajendra captured the crown of the Sinhala king, his Queen and daughter. The Sinhala king Mahind-V was taken prisoner and transported to the Chola country". The naval supremacy of the Colas continued under the immediate successors of Rajendra. Rajadhiraja, not only defeated and destroyed the Chera fleet at Kandalur but sent out his squadrons on an expedition against Ceylon.

54. (B) Natural Calamities are sudden "acts of god," which cannot be anticipated and planned. So budgetary approvals are not needed in this case. A budget is normally a statement of revenue receipts and expenditure. An appropriation bill or running bill is a legislative motion (bill) which authorizes the government to spend money. It is a bill that sets money aside for specific spending.

58. (A) Arya Samaj is a Hindu reform movement founded by Swami Dayananda in Bombay on 7 April, 1875. The membership amounted to 100 persons, including Swami Dayanand. On the 24th of June, 1877, the second major Arya Samaj was established at Lahore.

59. (D) The Fourth Five-Year Plan (1969-1974) set before itself the two principal objectives - growth with stability and progress towards self-reliance. It laid great emphasis on agriculture's growth rate so that a chain reaction can start. The Fifth Five-Year Plan (1974-1979) also focused on self-reliance in agricultural production and defense.

60. (D) Light year is a unit of length used informally to express astronomical distances. It is most often used when expressing distances to stars and other distances on a galactic scale. It is equal to just under 10 trillion kilometres.

61. (D) Rail Bandhu is the first on-board magazine of the Railway which was launched by the then Railway Minister Mamata Banerjee in 2011. It is distributed free in the Rajdhanis, Shatabdis and AC coaches of the Durantos.

62. (B) Political rights are those rights by which citizens are given share in the political life of the community including that of the management of government. This generally consist of the following rights:- Right to vote, Right to be elected, Right to public offices, Right to petition, Right to criticize government, Right to residence, Right to public meeting, etc. Right to life is a phrase that describes the belief that a human being has an essential right to live, particularly that a human being has the right not to be killed by another human being.

63. (D) Income Tax (corporate and non-corporate combined) contribute about 56 percent of tax revenue of India. But, income tax apart from agricultural income is shared between the Union and states. Among the given options, Excise duty is the chief and single largest source of revenue income. The Government of India earns maximum from Union Excise Duty.

64. (B) The manufacture of iron ore involves the process of reduction. Important ores of iron are Haematite and Magnetite.

65. (C) The Central Leather Research Institute (CLRI), Chennai was established in 1948. The institute is the World's largest Leather Research Institute. It serves as a constituent laboratory under the Council of Scientific and Industrial Research.

68. (B) Bromine is your answer as it remains liquid in room temperature. It's boiling point is 58.8° C, thus it stays in liquid form.

73. (D) The Prime Minister is the chief channel of communication between the President and the Council of Minister and keeps the former informed about all the decisions of the council. Article 74 of the Constitution lays down that there shall be a Council of Ministers with Prime Minister at the head to aid and advise the President.

74. (C) Under Section 22 of the Reserve Bank of India Act, the Bank has the sole right to issue bank notes of all denominations. The distribution of one rupee notes and coins and small coins coins all over the country is undertaken by the Reserve Bank as agent of the Government. The system as it exists today is known as the minimum reserve system.

75. (A) Proteins are large biological molecules consisting of one or more chains of amino acids which are essential nutrients for the human body. They are one of the building blocks of body tissue and can also serve as a fuel source. As fuel, proteins contain 4 kcal per gram, just like carbohydrates and unlike liquids, which contain 9 kcal per gram.

85. (B) The Members of Gram Panchayats, Members of Panchayat Samiti and Zila Parishad are elected directly by the electorates of the respective territorial constituencies through universal adult franchise.

86. (D) Shakuntala Devi was an Indian to beat the computers in mathematical wizardry. She was an Indian writer and mental calculator, popularly known as the "Human Computer". She wrote a number of books, including novels as well as texts about mathematics, puzzles, and astrology. She also wrote what is considered the first study of homosexuality in India.

88. (B) Majuli is a large river island in the Brahmaputra river, in Assam. It is the largest river island in the world. The island is formed by the Brahmaputra River in the south and the Kherlutia Xuti, a branch of the Brahmaputra, joined by the Subansiri River in the north. Majuli island is accessible by ferries from the City of Jorhat. The island is about 200 kilometres east from the state's largest city – Guwahati.

89. (A) The Central Bank of a country regulates money supply with the help of open market operations, changing the reserve requirements **(CRR)** and changing discount rate **(bank rate)**. Besides, banks are required to maintain liquid assets in the form of gold, cash and approved securities **(margin requirements)**. The Reserve Bank of India has recently been resorting more to open market operations.

90. (C) A flower has calyx, corolla, androecium and gynoecium. Calyx and corolla are accessory organs, while androecium and gynoecium are reproductive organs. Photosynthetic activity is found in the calyx, pericarp and locular parenchyma. It suggests that all of these tissues have significant roles in CO_2 scavenging and the provision of carbon assimilates.

92. (D) Populations density is a measurement of population per unit area. For humans, population density is the number of people per unit of area, usually quoted per square kilometer.

93. (D) Surface tension is responsible for the shape of liquid droplets. Although easily deformed, droplets of water tend to be pulled into a spherical shape by the cohesive force, including gravity. Drops of virtually all liquids would be perfectly spherical. The spherical shape minimizes the necessary "wall tension" of the surface layer according to Laplace's law.

94. (B) The Internet protocol suite is the set of communications protocols used for the Internet and similar networks, and generally the most popular protocol stack for wide area networks. It is commonly known as TCP/IP because of its most important protocols : Transmission Control Protocol (TCP) and Internet Protocol (IP), which were the first networking protocols defined in this standard.

97. (B) The Dead Sea is a salt lake bordering Jordan to the east and Israel and the West Bank to the west. With 33.7% salinity, it is also one of the world's saltiest bodies of water. It is 8.6 times saltier than the ocean. This salinity makes for a harsh environment in which animals cannot flourish, hence it is named as dead sea.

98. (A) Light scattering in colloidal solutions or particles in suspension in transparent medium is known as Tyndall Effect. It is similar to Rayleigh scattering, in that the intensity of the scattered light depends on the fourth power of the frequency, so blue light is scattered much more strongly than red light.

99. (A) Trishul is the name of a short range surface-to-air missile developed by India as a part of the Integrated Guided Missile Development Programme. It has a range of 9 km and is fitted with a 5.5 kg warhead.

100. (B) Active transport, this is the only transport method that can move species against their concentration gradient (from low to high concentration). Facilitated diffusion only moves species down their concentration gradient from high to low concentration.

101. (C) Rate = $12\frac{1}{2}\% = \frac{1}{8}$

Amount	Instalment
8×9	9] ×9
64	81]
136	81
×50 ↓	×50 ↓
` 6800	` 4050

102. (C) Total maximum marks in four subjects = 120 + 140 + 100 + 180 = 540

60% of total maximum marks = $\frac{3}{5} \times 540$

= 324

Marks obtained in three subjects

$= 120 \times \frac{2}{5} + 140 \times \frac{11}{20} + 100 \times \frac{9}{20}$

= 48 + 77 + 45

= 170

Marks to be obtained in Maths = 324 – 170 = 154

103. (C) S.I = 956 – 800 = ₹ 156

$\therefore$ Rate = $\frac{\text{S.I} \times 100}{\text{Principal} \times \text{Time}}$

$= \frac{156 \times 100}{800 \times 3} = 6.5\%$ per annum

$\therefore$ New rate = 10.5%

$\therefore$ S.I = $\frac{\text{Principal} \times \text{Time} \times \text{Rate}}{100}$

$= \frac{800 \times 3 \times 10.5}{100} = ₹\ 252$

Amount = 800 + 252

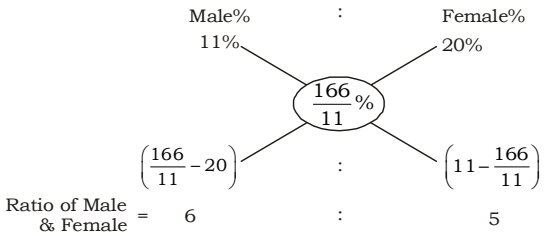
= ₹ 1052

104. (A) Population of the village = 5500

After increment new population of the village = 6330

% increment = $\frac{(6330 - 5500)}{5500} \times 100$

$= \frac{830}{55} = \frac{166}{11}\%$



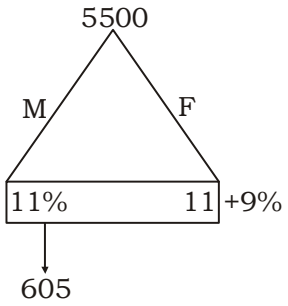
According to the question :-

11 units = 5500

1 unit = 500

Number of females = 500 × 5 = 2500

Short trick:-



$\therefore$ 9% = 225

No. of females = $\frac{225}{9} \times 100 = 2500$

105. (C) Let the total valid votes be 100%
Then second condidate got = (100 – 52 – 12)% = 36%
According to the question,
⇒ 36% = 28800

⇒ $100\% = 28800 \times \frac{100}{36} = 800{,}00$

Hence total valid votes = 80,000
⇒ Total votes polled = 80,000 + 10,000 = 90,000

⇒ Total number of votes = $\frac{10}{9} \times 90{,}000$

= 1,00,000

106. (B) Total weight of section A = 42 × 25
= 1050 kg
Total weight of group B = 28 × 40 = 1120 kg
Total weight of whole class = 2170 kg
Average weight of whole class

$= \frac{2170}{70} = 31$ kg

107. (C) According to the question :-

$n \times \frac{90}{100} \times \frac{80}{100} \times \frac{75}{100} = 270$

$n = \frac{270 \times 10 \times 10 \times 100}{9 \times 8 \times 75}$

n = 500 chocolates
Short trick:-

$10\% = \frac{1}{10}$, $20\% = \frac{1}{5}$, $25\% = \frac{1}{4}$

ATQ,

Quantity	Remain
10	9
5	4
4	3
200	108
×2.5 ↓	×2.5 ↓
500	270

108. (C) According to the question,

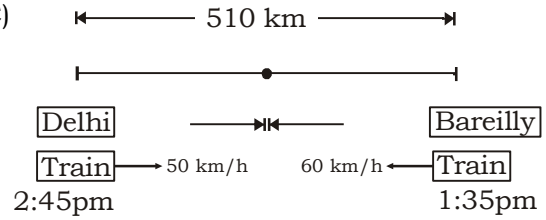
	Man	:	Woman	:	Girl
Efficiency →	6	:	3	:	1

money received by (woman + girl)

$= \frac{10000}{10} \times 4$

= Rs. 4000

109. (C)



Let R is a point where both the trains meet.
Till 2 : 45 pm the distance covered by the second train

$= \frac{70}{60} \times 60 = 70$ km

Remaining distance = 510 – 70 = 440 km
Now relative speed of both trains = 50 + 60 = 110 km/h

Required time of meeting = $\frac{440}{110} = 4$ hours

Distance from Delhi to meeting point R
= 4 × 50 = 200 km

110. (C) 4% = $\frac{1}{25}$, 5% = $\frac{1}{20}$, 6% = $\frac{3}{50}$

25	——	26
20	——	21
50	——	53
25,000	——	28938
×2 ↓		×2 ↓
50,000		57876

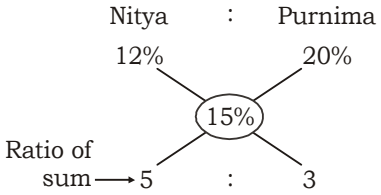
CI = 57876 – 50000
= ₹ 7876

111. (A)

C.P		S.P	
100		110	4 more
5% less → 95	20% Profit →	114	↓
			7 (given)

∴ C.P of suitcase = $\frac{7}{4} \times 100 = ₹\ 175$

112. (A) They left with 85% money it means they spent 15%.
∴ By alligation method,



Amount of Nitya = $\frac{1200}{8} \times 5 =$ Rs. 750

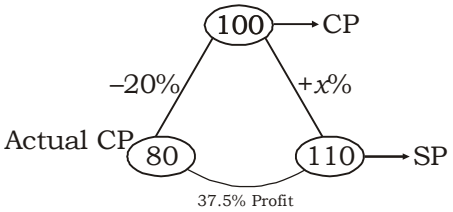
Amount of Purnima = $\frac{1200}{8} \times 3 =$ Rs. 450

After spending of 12%, amount left with

Nitya = $\frac{750 \times 88}{100} =$ Rs. 660

113. (D) The remainder will be same. On dividing 9 by 6, remainder = 3
On dividing 81 by 6, remainder = 3

114. (A)



Let the initial weight = 100 unit and the cost price of 1 unit weight is ₹ 1
According to the question,

gain % = $37\frac{1}{2}\% = \frac{3}{8} \rightarrow$ Profit
$\frac{}{} \rightarrow$ CP

CP = 8 units SP = 11 units
↓×10 ↓×10
80 110

$x\% = \frac{(110-100)}{100} \times 100 = 10\%$

115. (D)

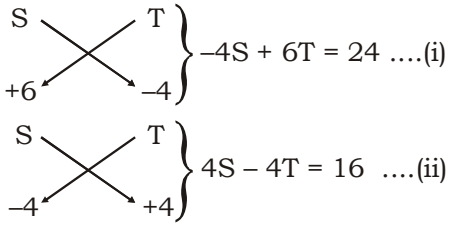
	No. of Pen		Rupees
Buy	4	→	15
	or 12	→	45
Sell	6	→	25
	or 12	→	50

Profit	No. of Pens
5	12
↓×5	↓×5
25	60

Profit percentage = $\frac{50-45}{45} \times 100$

$= \frac{5}{45} \times 100 = \frac{1}{9} \times 100 = 11\frac{1}{9}\%$

116. (A)



from equation (i) & (ii)
– 4S + 6T = 24
4S – 4T = 16
On adding, 2T = 40 ⇒ T = 20 hours
put in equation (ii)
4S – 80 = 16 ⇒ S = 24 km/h
Distance = $t \times S = 24 \times 20$
= 480 km

117. (A)

	A	:	B
Efficiency →	2	:	1

according to the question,
Both A and B take 4 days to complete the work
then, Total work = (2 + 1) × 4 = 12 units

Time taken by B = $\frac{12}{1}$ = 12 days

118. (D) Total Distance = 240 × 5 = 1200 km
then required speed to cover the same distance in $1\frac{2}{3}$ hours, i.e. is in $\frac{5}{3}$ hrs.

$\Rightarrow \frac{1200}{\frac{5}{3}} = \frac{1200 \times 3}{5}$ = 720 km/hr.

119. (B) Discount offered by Apurva

$= 25 + 5 - \frac{25 \times 5}{100} = 28.75\%$

Discount offered by Vivek

$= 16 + 12 - \frac{16 \times 12}{100} = 26.08\%$

Buying from Apurva is more preferable.

120. (B)Height of pole = 100m
Work done by spiderman in 2 minutes = 1m
Time taken by spiderman to climb 96m
i.e., 96 + 4 = 100 meter
= 96 × 2 + 1 min
= 3 hrs 13 min

121. (C)

	Water	:	Milk		
same	30	:	170	→	200
	1×30	:	7×30	→	240

* 87.5% → $\frac{7}{8}$

Additional milk required = (210 – 170)l
= 40l.

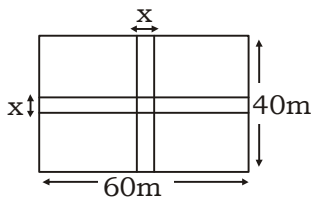
122. (A) Total surface area of tank without top
TS A = 30 × 20 + 2(12 × 20) + 2(30 × 12)
= 1800 m^2
∴ area of iron sheet = T.S.A without top
⇒ Length × width = 1800

⇒ Length = $\frac{1800}{3}$ = 600 m

∴ Cost = 600 × 10 = ₹ 6000

123. (B) $4x - 3y = 13$
Cubing both sides
$64x^3 - 27y^3 - 3 \times 4x \times 3y\,(4x - 3y) = (13)^3$
$\Rightarrow 64x^3 - 27y^3 - 36\,(14)(13) = 2197$
$= 64x^3 - 27y^3 = 2197 + 6552$
$\Rightarrow 64x^3 - 27y^3 = 8749$

124. (A)



Total area of park = 60 × 40 = 2400 m²
and area of lawn = 2109 m² (given)
area of the cross roads = 2400 – 2109
= 291 m²
$\Rightarrow x(60 + 40 - x) = 291$
$\Rightarrow x^2 - 100x + 291 = 0$
$\Rightarrow (x - 97)(x - 3) = 0$
$\Rightarrow x = 3$ or 97
$\Rightarrow x = 3$ [$\because$ $x = 97$ is not possible]

125. (C) Water Poured by the man = $\frac{4}{3}$ litres/min

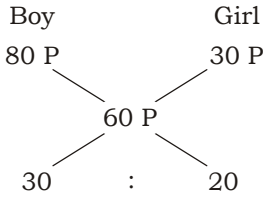
Water Poured by the woman = $\frac{3}{4}$ litres/min

Required time to fill 200 litres of water

$= \frac{200}{\frac{4}{3}+\frac{3}{4}} = \frac{200\times 12}{25}$

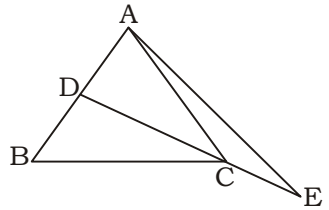
$\Rightarrow$ 96 min = 1 hour 36 min.

126. (C) Average ₹/student = $\frac{3900P}{65}$ = 60 paise



then no. of girls = $\frac{2}{5}$ × 65 = 26

127. (C)



ΔABC is equilateral,
$\Rightarrow \angle BCD = \angle DCA = 30°$ ($\because$ CD bisects(ACB)
$\therefore$ ACE = 180° – 30° = 150°
AC = CE

$\therefore \angle CAE = \angle CEA = \frac{30}{2} = 15°$

128. (A) Larger Radius (R) = 14 + 7 = 21 cm
Smaller Radius (r) = 7 cm
$\therefore$ Area of shaded portion

$= \pi\frac{30°}{360°}(21 \times 21 - 7 \times 7)$

$= \frac{22}{7} \times \frac{1}{12} \times 392 = 102.67$ cm²

129. (D) Ratio of A, B and C

$\frac{1}{2} : \frac{1}{4} : \frac{5}{16}$

$=$ 8 : 4 : 5 ⟶ 17
Diff ⟶ 4 ×4000 ⟶ ` 68000
×4000
` 16000

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

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

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

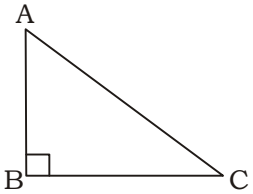
$= 3\sqrt{3} - 3\sqrt{3} = 0$
$\Rightarrow x^6 + 1 = 0$
$\therefore x^{206} + x^{200} + x^{90} + x^{84} + x^{18} + x^{12} + x^6 + 1$
$= x^{200}(x^6 + 1) + x^{84}(x^6 + 1) + x^{12}(x^6 + 1) + (x^6 + 1)$
$= 0$
[$\because$ $x^6 + 1 = 0$]

131. (B) maximum value of (2 sinθ + 3 cosθ) is

$\Rightarrow \sqrt{a^2 + b^2}$

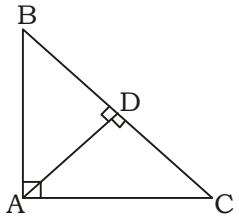
$\Rightarrow \sqrt{4 + 9} = \sqrt{13}$

132. (C)



$AB \times BC = \frac{AC^2}{2}$
$= AC^2 = 2AB \times BC$
$= AB^2 + BC^2 = 2AB \times BC$
$= (AB - BC)^2 = 0$
$\Rightarrow$ AB = BC
$\therefore \angle BAC = \angle ACB = 45°$

133. (C)

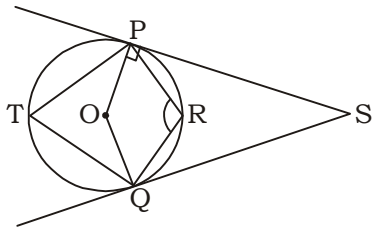


In ΔABC, $AD \perp BC$
$\Delta BAC \sim \Delta ADC$
$\therefore$ The Ratio of area of two similar triangles = Ratio of square of their corresponding sides

Hence, $\frac{ar(BAC)}{ar(ADC)} = \frac{BC^2}{AC^2} = \frac{64}{36}$

$= \frac{16}{9} = 16 : 9$

134. (D)



$\angle OPS = \angle OQS = 90°$
$\angle PSQ = 20°$ (Given)
$\therefore \angle POQ = 160°$
$[\angle PSQ + \angle POQ = 180°]$
$\Rightarrow PTQ = 80°$
PRQT is a cyclic quadrilateral
$\therefore \angle PRQ = 180° - 80° = 100°$

135. (D) $a - b = x + y - x + y = 2y$
$b - c = x - y - x - 2y = -3y$
$c - a = x + 2y - x - y = y$
ATQ,
$a^2 + b^2 + c^2 - ab - bc - ca$

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

$= \frac{1}{2}\left[(2y)^2 + (-3y)^2 + y^2\right]$

$= \frac{1}{2} \times 14y^2$

$= 7y^2$

136. (A) $\sec^2\theta + \tan^2\theta = 7$
$\Rightarrow 1 + \tan^2\theta + \tan^2\theta = 7$
$= 2\tan^2\theta = 7 - 1 = 6$
$\Rightarrow \tan^2\theta = 3$
$\tan\theta = \sqrt{3}$
$\theta = 60°$

137. (C) $5\tan\theta = 4 \Rightarrow \tan\theta = \frac{4}{5}$

$\therefore \frac{5\sin\theta - 3\cos\theta}{5\sin\theta + 2\cos\theta}$

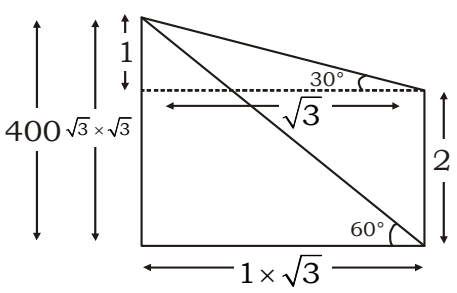
$= \frac{5 \cdot \frac{\sin\theta}{\cos\theta} - \frac{3\cos\theta}{\cos\theta}}{5 \cdot \frac{\sin\theta}{\cos\theta} + \frac{2\cos\theta}{\cos\theta}}$

$\frac{5\tan - 3}{5\tan\theta + 2} = \frac{5 \times \frac{4}{5} - 3}{5 \times \frac{4}{5} + 2}$

$= \frac{4-3}{4+2} = \frac{1}{6}$

138. (B) In a cyclic quadrilateral opposite angles are supplementary.

139. (C)



$3 \text{ — } 400$
$1 \text{ — } \frac{400}{3}$

$\therefore$ The height of the pillar is $= \frac{400}{3} \times 2$

$= \frac{800}{3}$ m.

140. (A) $\sqrt{x} + \frac{1}{\sqrt{x}} = 3$

$\therefore x + \frac{1}{x} = 7$

$x^2 + \frac{1}{x^2} = 47$

141. (A) $\sec x + \cos x = 3$
square both sides
$\sec^2 x + \cos^2 x + 2\sec x \cdot \cos x = 9$
$= \sec^2 x + \cos^2 x = 9 - 2 = 7$
Now,
$\tan^2 x - \sin^2 x$
$= \sec^2 x - 1 - (1 - \cos^2 x)$
$[\because \sec^2 x - \tan^2 x = 1]$
$= \sec^2 x + \cos^2 x - 2$
$= 7 - 2 = 5$

142. (B) $\frac{x^2}{by+cz} = \frac{y^2}{cz+ax} = \frac{z^2}{ax+by} = 1$

So, $x^2 = by + cz$; $y^2 = cz + ax$, $z^2 = ax + by$

$\therefore \frac{a}{a+x} + \frac{b}{b+y} + \frac{c}{c+z}$

$= \frac{ax}{ax+x^2} + \frac{by}{by+y^2} + \frac{cz}{cz+z^2}$

$= \frac{ax}{ax+by+cz} + \frac{by}{by+cz+ax} + \frac{cz}{cz+ax+by}$

$= \frac{ax+by+cz}{ax+by+cz} = 1$

short trick:-

Let a = b = c = 1 and x = y = z = 2
because these value satisfy

$\frac{x^2}{by+cz} = \frac{y^2}{cz+ax} = \frac{z^2}{ax+by} = 1$

$\therefore \frac{a}{a+x} + \frac{b}{b+y} + \frac{c}{c+z} = \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 1$

143. (B) $\cos\theta = \frac{15}{17}$

$\Rightarrow \sec\theta = \frac{1}{\cos\theta} = \frac{17}{15}$

$\therefore \cot(90 - \theta) = \tan\theta$

$= \sqrt{\sec^2\theta - 1}$

$= \sqrt{\left(\frac{17}{15}\right)^2 - 1} = \sqrt{\frac{289}{225} - 1}$

$= \sqrt{\frac{289-225}{225}} = \sqrt{\frac{64}{225}}$

$= \frac{8}{15}$

144. (D) For maximum value,

$a = b = c = d = \frac{1}{4}$

$\therefore (1 + a)(1 + b)(1 + c)(1 + d) = \left(\frac{5}{4}\right)^4$

145. (B) $12 \times 12 \times 12 = 1728$
$= 1728 - 1720 = 8$
$\therefore$ Required number = 8

146. (B) Total grain production of state
P = 45 + 103 + 27 + 29 = 204 lakh tonnes
Q = 48 + 86 + 73 + 19 + 15 = 241 lakh tonnes
R = 59 + 32 + 67 + 14 + 31 = 203 lakh tonnes
S = 41 + 37 + 59 + 21 + 15 = 173 lakh tonnes
Obviously, State Q had the highest grain production.

147. (C) Total rice Production = 393 lakh tonnes
Total wheat Production = 331 lakh tonnes
$\therefore$ Required Ratio = 393 : 331 = 1.2 : 1

148. (A) In the states Q, R and S Jowar recorded highest production.

149. (D) Required percentage = $\frac{103}{331} \times 100$
$= 31.11\% \approx 30\%$

150. (C) Average per hectare yield of rice = 30 tonnes
Total rice production = 393 lakh tonnes

$\therefore$ Required area = $\frac{393}{30} = 13.1$

= 13 lakh hectare

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Acquaint	To cause (someone) to know and become familiar with something	अवगत कराना
Archaeologist	An anthropologist who studies prehistoric people and their culture	पुरातत्त्ववेत्ता
Benediction	A prayer that asks for God's blessing	आशीर्वाद
Celibate	Not married and not having sex	ब्रह्मचारी
Crank	A person who is often angry or easily annoyed	सनकी
Dotage	Being of very old age and often less able to remember or do things	बुढ़ापा
Exterminate	To destroy or kill (a group of animals, people, etc.) completely	पूर्णतया संहार करना
Fastidious	Giving careful attention to detail; hard to please	अतिसावधान, तुनुकमिजाज
Furore	A sudden outburst (as of protest)	गुस्सा
Hypothetical	Based primarily on surmise rather than adequate evidence	कल्पना की गई बात
Imbecility	The fact of being very stupid	मूर्खता
Imposter	A person who makes deceitful pretenses	ढ़ोंगी
Instantaneous	Happening very quickly, happening in an instant	तत्क्षण
Mountebank	A dishonest person who tricks and cheats other people	धोखेबाज, कपटी
Ostentatious	Displaying wealth, knowledge, etc., in a way that is meant to attract attention, admiration, or envy	आंडबरपूर्ण, दिखावटी
Postulate	To suggest (something, such as an idea or theory) especially in order to start a discussion	चर्चा शुरू करने का प्रस्ताव देना
Puerile	Silly or childish especially in a way that shows a lack of seriousness or good judgment	बचकाना
Recluse	One who lives in solitude	एकांतवासी
Reticent	Temperamentally disinclined to talk	कम बोलने वाला
Sacrosanct	Too important and respected to be changed, criticized, etc.	पावन जिसका उल्लंघन ना
Scintillating	Marked by high spirits or excitement	उत्तेजक, जोशीला
Senility	Behaving in a confused or strange way, and unable to remember things	बुढ़ापा एवं इस के कारण दुर्बल याददाश्त
Slothfulness	A disinclination to work or exert yourself	आलस्य
Superannuation	A monthly payment made to someone who is retired from work	सेवा–निवृत्तिपेंशन
Stickler	Someone who insists on something	हठी
Tepid	Moderately warm	गुनगुना
Unwittingly	In a way not intended or planned	अनजाने में
Vanity	Feelings of excessive pride	घमंड

किया जाये

SSC MOCK TEST - 21 (ANSWER KEY)

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

151. (C) Add 'those of' before 'the hospital'. Here the charges of both the hospitals need to be compared.
152. (B) Add 'themselves' after 'adapt'. Verbs like 'adapt' takes reflexive pronoun if the object is not mentioned after them.
153. (B) No error.
or
In general, this sentence seems to give the sense that there is a probability (of getting all the information required). Thus, replace 'will' by 'may'.
154. (B) Since, this sentence is in indirect speech, it should be affirmative not interrogative. Thus, replace 'why did I call' by 'why I called'.
155. (B) Replace 'little' by 'a little'. Here we mean atleast 'some' not equivalent to 'nothing'.

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