SSC MOCK TEST – 52 (SOLUTION)

1. (A) As, 335 – 216 = 119
    Similarly, 987 – **868** = 119

2. (A) M O N K E Y
    ↓-1 ↓-1 ↓-1 ↓-1 ↓-1 ↓-1
    L N M J D X $\xrightarrow{Reverse}$ X D J M N L

    T I G E R
    ↓-1 ↓-1 ↓-1 ↓-1 ↓-1
    S H F D Q $\xrightarrow{Reverse}$ **Q D F H S**

3. (B) If skirmish is not controlled, it will give rise to war and if disease is not controlled, it will give rise to **epidemic**.

4. (B) As, 16 : 56 = 2 : 7
    Similarly, 32 : **112** = 2 : 7

5. (D) As 'Conduction' is the property found in 'Metal', in the same way **'insulation'** is the property found in 'Plastic'.

6. (D) Tree Originates from root and smoke originates from **fire**.

7. (A) $9 = 3^2$ $16 = 4^2$
    $8 = (3 – 1)^3$ or 2^3 **$27 = (4 – 1)^3$ or 3^3**

8. (C) Umpire is required to give decision in match and Judge is required to give decision in **Law suit**.

9. (B) B E G K
    ↓-1 ↓-1 ↓-1 ↓-1
    A D F J

    P S V Y
    ↓-1 ↓-1 ↓-1 ↓-1
    O R U X

10. (B) All except **Chandelas** were associated with ancient kingdoms in southern India, While Chandelas formed a kingdom in north India.

11. (C) 35 Þ (3 – 1) × (5 – 1) = 2 × 4 = 08 Þ 35 – 08
    57 Þ (5 – 1) × (7 – 1) = 4 × 6 = 24 Þ 57 – 24
    59 Þ (5 – 1) × (9 – 1) = 4 × 8 = 32 ¹ 34 Þ **59 – 34**
    79 Þ (7 – 1) × (9 – 1) = 6 × 8 = 48 Þ 79 – 48

12. (C) In all other groups, the third and second letters are consecutive and first letter is 3 steps ahead of second.

13. (A) All except **Brigadier** are ranks in Navy, while Brigadier is a rank in army.

14. (A) Except **microbe**, the other three are man-made.

15. (D) In all other pairs, first is essentially required to use the second.

16. (C) Except **Neurologist**, the other three are related to social science, while neurologist is a medical professional who specilizes in brain.

17. (B) The sequence is
    a e b d **c** / f j g i **h** / k o l n **m**.

18. (B) STORY

19. (C) Clearly, it can be seen that G is coded as 5, A- 2 , T - 4, E - 7. So GATE = **5247**

20. (C) As we know that Lizards are the animal who can crawl. So, they will be called **flier**.

21. (C)

    Note: Consider all distances be 50 kms.

22. (C) Let the total number of friends be x and number of friends attended the meeting be $x – 4$.
    Then, we have

    $$\frac{96}{x-4} - \frac{96}{x} = 4 \; Þ \; \frac{1}{x-4} - \frac{1}{x} = \frac{4}{96}$$

    $$Þ \; \frac{x-(x-4)}{x(x-4)} = \frac{1}{24}$$

    $$Þ \; x^2 – 4x – 96 = 0 \; Þ \; (x – 12)(x + 8) = 0$$
    $$Þ \; x = 12.$$
    No. of friends attended the picnic = 12 – 4 = 8
    \ Eight more than the number of those who attended the picnic = 8 + 8 = **16**.

23. (C) When this figure is folded to form a cube then the face bearing **three dots** will lie opposite the face bearing five dots.

24. (A)

So, he is **10 kms in west** from starting point.

25. (C) Shyam's position from left
= 9 – (4 – 2)
= 9 – 2 = **7th**

26. (D) **None of the above**
As, 0 × 1 × 2 ..... × 9 = 0
and 0 + 6 = **6**

27. (C) The correct order is :

Newly married couple	Family	Caste	Clan	Species
3	2	1	4	5

28. (A) Anupam's son-in-law is the brother of the lady who was sitting in the car. Hence, the husband is also the **son-in-law** of Anupam.
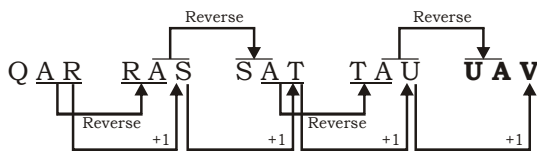
29. (D)
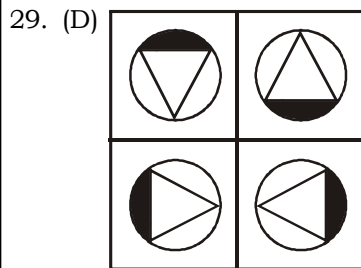
30. (B) Suppose boy got x sums right and $2x$ sums wrong.
Then, we have
$x + 2x = 48$
Þ $3x = 48$
Þ $x = 16$
So, he had solved **16** sums correctly.

31. (A) The series is $10^2 + 1 = 101$, $11^2 – 1 = 120$, $12^2 + 1 = 145$, $13^2 – 1 = 168$, $14^2 + 1 = 197$, $15^2 – 1 = $ **224**.

32. (A)

Q A R   R A S   S A T   T A U   **U A V**

33. (B) 28 days after 26/2/12 is 25/3/12. As, in the given series the difference between two consecutive dates is 28 days.
Note: 2012 was a leap year.

34. (A) $1 × 1 + 1 = 2$; $2 × 2 + 2 = 6$, $6 × 3 + 3 = 21$; $21 × 4 + 4 = $ **88**.

35. (C) **Both assumptions I and II are implicit**.
Clearly, the penalty is imposed to prevent people from misusing the alarm chain. This means that some people misuse it. So, I is implicit. The alarm chain is provided to stop the running train at the time of urgency. So, II is also implicit.

36. (D) A B C D E F G H I J K L **M** N O P Q R S T U V W X Y Z
1 2 3 4
11 10 9 8 7 6 5 4 3 2 1
Required letter is = **M**

37. (C)
345
9   19   40   83   170   **344**
×2 + 1   ×2 + 2   ×2 + 3   ×2 + 4   ×2 + 5

38. (A) 714 = 51 × 14
915 = 61 × 15
1136 = 71 × 16
1377 = 81 × 17

39. (D) 9 – 5 = 4; 4 × 2 = 8
17 – 11 = 6; 6 × 2 = 12
26 – 19 = 7; 7 × 2 = 14

40. (D) All the numbers mentioned here are consecutive prime numbers. So, the next prime number in the series is **23**.

41. (A) $4 + 3 = 7$; $7^3 = 343$
$4 + 4 = 8$; $8^3 = 512$
\ $4 + 5 = 9$; $9^3 = $ **729**

42. (A) $13^2 + 14^2 = 169 + 196 = 365$
$15^2 + 16^2 = 225 + 256 = 481$
\ $18^2 + 19^2 = 324 + 361 = $ **685**

43. (A) Some readers are writers" may be a possibility but cannot be concluded from the given statements.
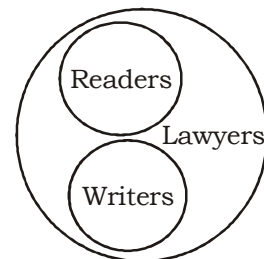
I. ✔
II. ✘

Only conclusion I follows.

44. (C)
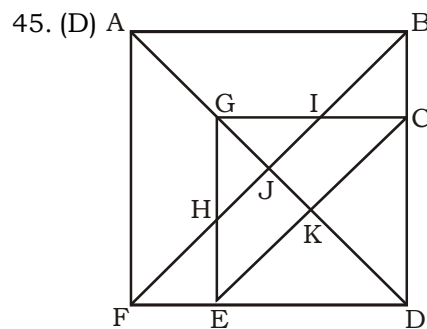
45. (D) Simple triangles are EFH, BIC, GHJ, GIJ, EKD and CKD i.e. 6 in number.

Triangles composed of two components are ABJ, AFJ, GCK, GEK, CED arid GHI i.e. 6 in number.

Triangles composed of three components are GCD, GED, DJB and DJF i.e. 4 in number.

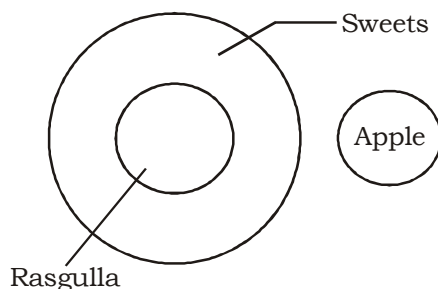Triangles composed of four components are ABF and GCE i.e. 2 in number.

Triangles composed of five components are ABD and AFD i.e. 2 in number.

There is only one triangle i.e. FBD composed of six components.

\ Total number of triangles in the figure = 6 + 6 + 4 + 2 + 2 + 1 = 21.

46. (D)

47. (A)

Rasagulla is one of the sweets, while apple is different from these.

48. (B)
49. (D)
50. (B)
52. (B) One barrel of oil contains 159 liters. One metric ton of oil corresponds to around 7.5 barrels on average, depending upon the density of the petroleum or its by-product. One cubic meter of oil is equal to 6.29 barrels.

54. (D) A monolithic statue of Bahubali referred to as "Gommateshvara" built by Chamundaraya ministers and commander of the Ganga dynasty is a 60 feet (18 m) monolith and is situated above a hill in Shravanabelagola, in the Hassan district of Karnataka. It was built in the 10th century AD.

55. (C) Preamble of Indian Constitution declares India as a SOVEREIGN, SOCIALIST, SECULAR and DEMOCRATIC REPUBLIC. The words Socialist, Secular, and Integrity were not in the original constitution and have been inserted by the 42nd amendment act 1976.

56. (C) NRSC is situated at Hyderabad. It has been converted into a full-fledged centres of ISRO since September 1ST, 2008. Earlier, NRSC was an autonomous body called National Remote Sensing Agency (NRSA) under Department of Space (DOS). The Centre is responsible for remote sensing satellite data acquisition and processing, data dissemination, aerial remote sensing and decision support for disaster management.

59. (B) The Ministry of Statistics & Programme Implementation has released the new series of national income, revising the base year 2011-2012.The base year of national income was last revised in January 2010.

60. (A) The second largest tropical rain forest is found in the Congo Basin in Africa.There are five major tropical rain forest regions in the world: Central America, the Amazon Basin, Africa, Southern Asia and Australia.

61. (C) The book 'Nyaya Sutra' has been authored by Gautama. The Nyaya Sutras is a Hindu text, notable for focusing on knowledge and logic, and vedic rituals are not mentioned in this. The first book is structured as a general introduction and table of contents of sixteen categories of knowledge.

62. (B) The University of Calcutta is a public state university located in Kolkata, West Bengal, India established on 24th January 1857. In 1858, Bankim Chandra Chattopadhyay became the first graduate of the university.

63. (B) $2NaHCO_3 + H2SO_4 \circledR 2CO_2 + NaSO_4 + 2H_2O$

64. (D) Exobiology is the branch of biology that deals with the search for extra terrestrial life and the effects of extra terrestrial surroundings on living organisms. It is also called astrobiology.

65. (A) The International Day for the Elimination of Racial Discrimination is observed every year on March 21. The theme of 2016 is "Challenges and Achievements of the Durban Declaration and Programme of Action".

68. (C) Iceland makes the maximum use of geothermal Energy. About 85 percent of total primary energy supply in Iceland is derived from domestically produced geothermal energy sources. The main use of geothermal energy is for space heating with the heat

being distributed to buildings through extensive district-heating systems. About 85% of all houses in Iceland are heated with geothermal energy.

70. (C) Pepper [kali goal mirch] was one of the most required thing imported by greek trader in ancient India traditon so in sanskrit literature it is named as yavanpriya.

71. (C) Isotope is forms of an element with same atomic number but different mass number. Polonium has maximum number of isotopes i.e 33.

72. (D) Table salt often comes in "iodized" form which means it includes a small amount of potassium iodide or sodium iodide. Iodized salt is intended to supply us with the trace amount we need of the chemical element iodine, which is necessary for the proper functioning of our thyroid gland.

73. (C) Voting right by the youths at the age of 18 years was exercised for the first time in the General Election of 1989.

74. (C) As per article 66, the candidate contesting for election of Vice-President of India should have the following qualifications:
    (I). He must be a citizen of India.
    (II). He must have completed the age of 35 years.
    (III). He cannot hold an office of profit.
    (IV). He must have qualification to become a member of Rajya Sabha.

75. (C) Sikkim became a state of India by the Thirty-sixth Constitution Amendment Act, 1975 on 26th April, 1975. The Sikkim State day is observed on 16th May of every year because this was the day when the first Chief Minister of Sikkim assumed the office.

78. (C) The Huangpu River, originates at Dianshan Lake, in the Qingpu District of Shanghai, and finally flows into the Yangtze River at Wusong Estuary. Flowing through the hundred-li (31 miles) harbor district of Shanghai, the Huangpu River is the biggest river in Shanghai.The Huangpu River flows through the heart of Shanghai.

80. (D) In 1781, Warren Hastings founded Madarasa 'Alia', it was transformed into Aliah University by the Government of India, in 2007.

83. (A) PM2.5 and ground level Ozone are held responsible for the maximum number of premature mortalities in India. PM2.5 causes respiratory irritation or breathing difficulties or Asthma, and sometimes may prove fatal.

85. (C) A judge of the Supreme Court can be removed from his office by an order of the President. The President can issue the removal order after an address by the Parliament, supported by a special majority of each House of Parliment (that is, a majority of the total membership of that House and a majority of not less than two thirds of the members of that house present and voting), has been presented to the President in the same session of Parliament for such a removal.

86. (B) The President can also remove the chairman or any other member of UPSC for misbehaviour. However, in this case, the president has to refer the matter to the Supreme Court for an enquiry. If the Supreme Court, after the enquiry, upholds the cause of removal and advises so, the president can remove the chairman or a member. Under the provisions of the Constitution, the advise tendered by the Supreme Court in this regard is binding on th president. During the course of enquiry by the Supreme Court, the president can suspend the chairman or the member of UPSC.

88. (B) Cycas an ancient group of seed plant first occured in Pennsylvanian, so have existed for approximately 300 million years ago.

90. (C) The Shanti Swarup Bhatnagar Prize for Science and Technology (SSB) is a scientific award in India given annually by the Council of Scientific and Industrial Research (CSIR) for notable and outstanding research, applied or fundamental, in biology, chemistry, environmental science, engineering, mathematics, medicine and Physics. The purpose of the prize is to recognize outstanding Indian work (according to the view of CSIR awarding committee) in science

and technology. It is the most coveted award in multidisciplinary science in India.

94. (D) NR Visakh, the Tamil Nadu teenager and International Master, has created history by becoming the first Indian to won the 9th edition of Mumbai Mayor's International Open Chess Tournament 2016.

97. (A) T Haque was the chairman of Commission for Agriculture Costs and Prices, and now has been appointed as the head of the newly created land policy cell in the NITI Aayog. T Haque was among the prime movers behind the Model Land Leasing Act.

99. (C) The executive authority of a state is vested in the Governor; and Governor is the constitutional head of the state in the same way as President is the Constitutional head of the Union.

101. (B) No. of students in law faculty in 2013-14
= 250
Total students = 250 + 250 + 600 + 500
= 1600

% of students in law faculty = $\dfrac{250}{1600} \times 100$
= 15.6%

102. (A) No. of science students in 2011-12
= 400
No. of science students in 2013-14
= 600
% increase in science students

= $\dfrac{600-400}{400} \times 100$ = 50%

103. (C) No. of students in science faculty in 2011-12
= 400
Total students = 150 + 200 + 400 + 600
= 1350
% of students in science faculty

= $\dfrac{400}{1350} \times 100$ = 29.6%

104. (C) Net C.P. = 4700 + 800 = 5500

\ Required % = $\dfrac{300}{5500}$ × 100 = $5\dfrac{5}{11}$%

105. (B) ∵ cos 43° = $\dfrac{x}{\sqrt{x^2+y^2}}$

⇒ cos(90° − 47°) = $\dfrac{x}{\sqrt{x^2+y^2}}$

⇒ sin 47° = $\dfrac{x}{\sqrt{x^2+y^2}}$

⇒ cos 47° = $\sqrt{1-\sin^2 47°}$

= $\sqrt{1-\left(\dfrac{x}{\sqrt{x^2+y^2}}\right)^2}$ = $\sqrt{1-\dfrac{x^2}{x^2+y^2}}$

= $\sqrt{\dfrac{x^2+y^2-x^2}{x^2+y^2}}$ = $\sqrt{\dfrac{y^2}{x^2+y^2}}$

= $\dfrac{y}{\sqrt{x^2+y^2}}$

∴ cos 47° = $\dfrac{y}{\sqrt{x^2+y^2}}$

So, tan 47° = $\dfrac{\sin 47°}{\cos 47°}$ = $\dfrac{\dfrac{x}{\sqrt{x^2+y^2}}}{\dfrac{y}{\sqrt{x^2+y^2}}}$

= $\dfrac{x}{\sqrt{x^2+y^2}} \times \dfrac{\sqrt{x^2+y^2}}{y}$ = $\dfrac{x}{y}$

106. (B)
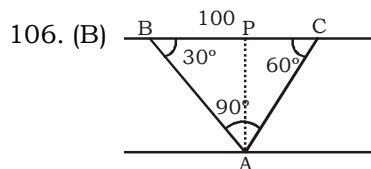
∠BAC = 90°

⇒ sin 30° = $\dfrac{AC}{100}$

⇒ $\dfrac{1}{2}$ = $\dfrac{AC}{100}$; AC = 50 m,

⇒ sin 60° = $\dfrac{AP}{AC}$
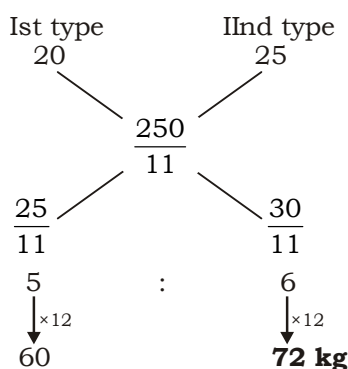
⇒ $\dfrac{\sqrt{3}}{2}$ = $\dfrac{AP}{50}$
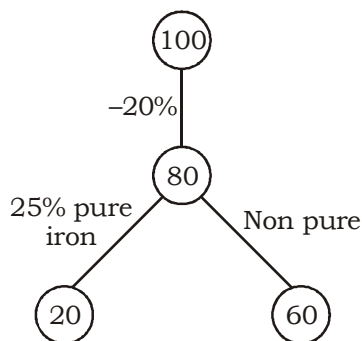
AP = $25\sqrt{3}$ m

107. (B)
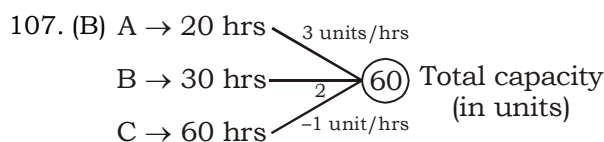
In first hour A + C will fill = 3 − 1 = 2 units
In second hour B + C will fill = 2 − 1 = 1 unit
Hence, 2 + 1 = 3 units will be filled in 2 hours
So, 3 × 20 = 60 units will be filled in
= 20 × 2 = 40 hours

108. (C) $10\% = \dfrac{1}{10}$

Cost price of mixture = $\dfrac{250}{11}$

Ist type   IInd type
20   25

$\dfrac{250}{11}$

$\dfrac{25}{11}$ $\dfrac{30}{11}$

5   :   6

↓×12   ↓×12

60   **72 kg**

109. (B) Let the total quantity of hematite mined = 100 kg.
ATQ,

∴ 20 units = 80,000 kg
1 unit = 4,000 kg
Total hematite = 100 × 4000 = 4,00,000 kg

110. (B) Here, first divisor (175) is a multiple of second divisor (25).
∴ Required remainder = Remainder obtained on dividing 132 by 25 = 7

111. (B) pq + rp = − qr   …(i)
pq + qr = − rp   …(ii)
qr + rp = − pq   …(iii)
Now,

$$\dfrac{p^2}{p^2 + pq + rp} + \dfrac{q^2}{q^2 + rp + qr} + \dfrac{r^2}{r^2 + qr + rp}$$

$$= \dfrac{p^2}{p(p + q + r)} + \dfrac{q^2}{q(p + q + r)} + \dfrac{r^2}{r(r + q + p)}$$

$$= \dfrac{(p + q + r)}{(p + q + r)} = 1$$

112. (D) Required average weight

$$\dfrac{(50 \times 6 + 51 \times 2 + 55 \times 2)}{10} = \dfrac{300 + 102 + 110}{10}$$

$$= \dfrac{512}{10} = 51.2 \text{ kg}$$

113. (C) $2\pi R_1 (R_1 + h) = \pi(12^2 − 8^2)$

$$R_1 + h = \dfrac{80}{2R_1} = \dfrac{40}{R_1}$$

$$h = \dfrac{40}{R_1} − R_1 = \dfrac{40 − R_1^2}{R_1}$$

114. (C) First of all, we find the HCF of 945 and 2475.
So, HCF = 45
∴ Maximum number of animals in each flock = 45
Required total number of flocks

$$= \dfrac{945}{45} + \dfrac{2475}{45} = 21 + 55 = 76$$

115. (A) $\dfrac{60 + x}{180} = \dfrac{2}{3}$
180 + 3x = 360
3x = 180
x = 60

116. (C) $a = \dfrac{1 + x}{2 − x}$

$$\Rightarrow \dfrac{1}{a + 1} + \dfrac{2a + 1}{a^2 − 1} = \dfrac{3a}{a^2 − 1}$$

$$\dfrac{3\left(\dfrac{1 + x}{2 − x}\right)}{\left(\dfrac{1 + x}{2 − x}\right)^2 − 1} = \dfrac{3(1 + x)(2 − x)}{1 + x^2 + 2x − (4 + x^2 − 4x)}$$

$$= \dfrac{3(1 + x)(2 − x)}{6x − 3} = \dfrac{3(1 + x)(2 − x)}{3(2x − 1)}$$

$$= \dfrac{(1 + x)(2 − x)}{(2x − 1)}$$

117. (B) Suppose Sreea joins for x months. Then,

$$\dfrac{450 \times 12}{300 \times x} = \dfrac{2}{1}$$

$\Rightarrow x = \dfrac{450 \times 6}{300}$ = 9 months

∴ sreea joins after (12 – 9) = 3 months.

118. (D) ∵ ∠SPQ = 90°

∴ ∠PSQ = 180° – 90° – 35° ⇒ 55°

∴ ∠PSQ = ∠PRQ = $x°$ = 55°

119. (D) $a^2 + b^2 + c^2 = 2a - 2b - 2c - 1 - 1 - 1$

⇒ $a^2 - 2a + 1 + b^2 + 2b + 1 + c^2 + 2c + 1 = 0$

⇒ $(a-1)^2 + (b+1)^2 + (c+1)^2 = 0$

∴ $(a-1)^2 = 0 \Rightarrow a = 1$

$(b+1)^2 = 0 \Rightarrow b = -1$

$(c+1)^2 = 0 \Rightarrow c = -1$

∴ $a + b + c \Rightarrow 1 + (-1) + (-1)$

⇒ – 1

120. (C) $\left[\dfrac{11}{2} \times \text{min hand} - 30 \times \text{hour hand}\right]^o$

$\left[\dfrac{11}{2} \times 20 - 30 \times 3\right]^o$

[110–90]° = 20°

121. (D) 25% = $\dfrac{1}{4}$

	Alcohol		Water
Quantity →	4	:	1
Price →	2	:	1
	8	:	1 9

Total quantity of petrol = (4 + 1) = 5

Total price = 5 × 2 = ₹ 10

\ Profit = $\dfrac{1}{9}$ = $11\dfrac{1}{9}$%

122. (A) Let speed of cyclist = x kmph & Time = t hours

Then distance covered by jogger = $\dfrac{xt}{2}$

and time = 2t

⇒ Required ratio = $\dfrac{xt}{2 \times 2t} : x$

= 1 : 4

123. (A) $\dfrac{\tan^2\theta}{\sec\theta + 1} - \sec\theta$

⇒ $\dfrac{\tan^2\theta(\sec\theta - 1)}{(\sec\theta + 1)(\sec\theta - 1)} - \sec\theta$

⇒ $\dfrac{\tan^2\theta(\sec\theta - 1)}{\sec^2\theta - 1} - \sec\theta$

[∵ sec²θ –1 = tan²θ]

∴ $\dfrac{\tan^2\theta(\sec\theta - 1)}{\tan^2\theta} - \sec\theta = \sec\theta - 1 - \sec\theta$ = –1

124. (B)

	A	B
Eff.	1	2
	×	
	15 days	

Total work = 1 × 15 unit = 15x

11 days work of A = 11 × 1x = 11x

Left work = (15 – 11)x = 4x

one day work of B = 2x

No. of B days = $\dfrac{4x}{2}$ = 2 days

125. (B) Required Bricks

= $\dfrac{20 \times 100 \times 100 \times 100 \text{ cm}^3}{25 \times 12.5 \times 8 \text{ cm}^3}$ = 8000

126. (C) $\dfrac{a}{1} = \dfrac{\sqrt{x+2} + \sqrt{x-2}}{\sqrt{x+2} - \sqrt{x-2}}$

[By componendo devidendo]

⇒ $\dfrac{a+1}{a-1} = \dfrac{2\sqrt{x+2}}{2\sqrt{x-2}} = \dfrac{\sqrt{x+2}}{\sqrt{x-2}}$

⇒ $\left(\dfrac{a+1}{a-1}\right)^2 = \left(\dfrac{\sqrt{x+2}}{\sqrt{x-2}}\right)^2 = \dfrac{x+2}{x-2}$

⇒ $\dfrac{a^2 + 1 + 2a}{a^2 + 1 - 2a} = \dfrac{x+2}{x-2}$

⇒ $\dfrac{a^2 + 1}{2a} = \dfrac{x}{2}$ [by C & D]

⇒ $2a^2 + 2 = 2ax$

⇒ $2a^2 - 2ax = -2$

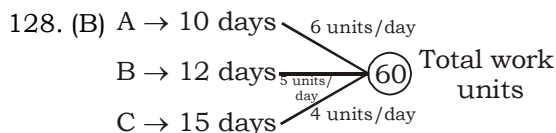⇒ $a^2 - ax = -2/2$

= –1

127. (A) Length of hypotenuse = $\sqrt{24^2 + 7^2}$ = 25

∴ $\dfrac{1}{2} \times 25 \times h = \dfrac{1}{2} \times 7 \times 24$

$h = \dfrac{7 \times 24}{25}$ = 6.72 cm

128. (B) A → 10 days — 6 units/day

B → 12 days — 5 units/day → 60 Total work units

C → 15 days — 4 units/day

work done by A in 2 days = 6 × 2 = 12 units

work done by B in 3 days = 5 × 3 = 15 units

\ Required time = $\dfrac{63}{9}$ = 7 days

129. (C) Marks in Physics = 80 out of 100

Marks in Chemistry = 66 out of 100

Marks obtained in all subject

$= \dfrac{80}{100} \times 400 = 320$

So, marks obtained in maths

$= 320 - (80 + 66) = 174$ out of 200

Percentage marks obtained in Maths

$= \dfrac{174}{200} \times 100 = 87\%$

130. (B) $675 = 5 \times 5 \times 3 \times 3 \times 3$

\ Required number = 5

131. (B) $\cos(\alpha + \beta) = 0 = \cos 90°$

$\Rightarrow \alpha + \beta = 90°$

$\Rightarrow \alpha = 90° - \beta$

Now, $\alpha - \beta = 90° - 2\beta$

$\sin(\alpha - \beta) = \sin(90° - 2\beta)$

$= \cos 2\beta$

132. (D) $x \cos 60° - \sin 30° = x \tan 30° \cot 60°$

$\ \ x \times \dfrac{1}{2} - \dfrac{1}{2} = x \times \dfrac{1}{\sqrt{3}} \times \dfrac{1}{\sqrt{3}}$

$\ \ \dfrac{x}{2} - \dfrac{1}{2} = \dfrac{x}{3}$

$\ \ \dfrac{x}{6} = \dfrac{1}{2}$

$\ \ x = 3$

133. (D)

Rohan → 25 �构 4

100

Rohan + Kamal → 20 ⎬ 5

efficiency = 4 : 1

\ Required amount = ₹ 125

134. (A) $\dfrac{2}{x} = \dfrac{y}{54}$

$\ \ xy = 2 \times 54 = 6 \times 18$

135. (C) Weekly changes = ₹ 168,000

Gross collection increase per day

$= \dfrac{168000}{7} = ₹\ 24000$

136. (D) Difference of amount in 1 year

$\ \ ₹\ 242$

\ Rate % $= \dfrac{242}{2420} \times 100 = 10\%$

137. (A) If a, b, c are lengths of perpendiculars
Then,

Side of the triangle$= \dfrac{2}{\sqrt{3}}(a + b + c)$

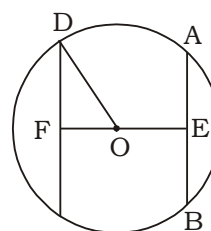$\therefore$ Area $= \dfrac{\sqrt{3}}{4}$ (side)^2

$= \dfrac{\sqrt{3}}{4}\left\{\dfrac{2}{\sqrt{3}}(a + b + c)\right\}^2$

$= \dfrac{\sqrt{3}}{4} \times \dfrac{4}{3}(a + b + c)^2$

$= \dfrac{\sqrt{3}}{3}(a + b + c)^2$

138. (C)

In figure, AB = 16 cms, OE = 15 cms

In ΔOEA

$OE^2 + AE^2 = OA^2$

$OA^2 = 15^2 + 8^2 = 17^2$

$OA = 17$

$\therefore$ OA = OD = 17 cms

And OF = 8 cms

In ΔOFD

$OF^2 + DF^2 = OD^2$

$DF^2 = 17^2 - 8^2 = 15^2$

DF = 15 cms

$\therefore$ Length of chord = 15 × 2 = 30 cms

139. (B) $x = \dfrac{1}{2 + \sqrt{3}} = \dfrac{1 \times (2 - \sqrt{3})}{(2 + \sqrt{3})(2 - \sqrt{3})}$

$\Rightarrow \dfrac{2 - \sqrt{3}}{4 - 3} = 2 - \sqrt{3}$

$\Rightarrow y = \dfrac{1}{2 - \sqrt{3}} = 2 + \sqrt{3}$

$8xy(x^2 + y^2)$

$= 8 \times (2 - \sqrt{3})(2 + \sqrt{3})[(2 - \sqrt{3})^2 + (2 + \sqrt{3})^2]$

$= 8 \times (4 - 3)[2 \times (4 + 3)]$

$= 8 \times 14$

$= 112$

140. (A)

Let the speed of train$_1$ and train$_2$ is respectively x km/h and y km/h

Both the train are moving in opposite dirrection then

relative speed = $(x + y)$ km/h

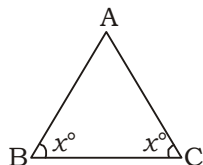From condition (i), they meet after 8 hours

$8(x + y) = 288 ⊳ x + y = 36$ ...(i)

from condition (ii),

$(x - y) = 11$ ...(ii)

from equ. (i) & equ. (ii)

$x = 23\dfrac{1}{2}$ km/h and $y = 12\dfrac{1}{2}$ km/h

141. (D)

ABC is a isosceles triangle in which AB = AC

∴ $\angle B - \angle C = x°$

$\angle A = 2 \times 2x° = 4x°$

∵ $\angle A + \angle B + \angle C = 180°$

$\Rightarrow 4x° + x° + x° = 180°$

$\Rightarrow 6x° = 180°$

$\Rightarrow x° = 30°$

∴ Required angle = $\dfrac{4x°}{2} = \dfrac{4 \times 30}{2} = 60°$

142. (A)

143. (C) Length of direct common tangent

$= \sqrt{(C_1 C_2)^2 - (r_1 - r_2)^2} = \sqrt{(13)^2 - (8 - 3)^2}$

$= \sqrt{169 - 25} = \sqrt{144} = 12$ cm

144. (B) Let the pocket money be P rupees then

$P \times \left(\dfrac{4}{5} \times \dfrac{3}{4} \times \dfrac{9}{10}\right) = 13.50$

P = ₹ 25

145. (C)

∴ Required distance = $\dfrac{7.5}{60} \times 40 = 5$ km

146. (D) Volume of hollow cylinder = $\pi(R^2 - r^2)h$

∴ $\pi(9^2 - r^2) \times 14 = 748$

$81 - r^2 = \dfrac{748}{14} \times \dfrac{7}{22}$

$r^2 = 81 - 17 = 64$

$r = 8$

So, thickness = 9 – 8 = 1 cm

147. (D) Let the sum lent in each case be x. Then,

$\dfrac{x \times 9 \times 2}{100} + \dfrac{x \times 10 \times 2}{100} = 760$

$\dfrac{x \times 2}{100}(9 + 10) = 760$

$⊳ \dfrac{2 \times 19x}{100} = 760$

$⊳ x = \dfrac{760 \times 100}{2 \times 19} = ₹ 2000$

148. (D) Difference of marks between Physics & Chemistry = 191.25 – 157.5 = 33.75
Difference of marks between Social Science & Chemistry = 157.5 – 123.75 = 33.75

149. (C) Marks obtained in (Maths & Chemistry) = 360
Marks obtained in (Physics & Social Science) = 315
Difference = 45

150. (D) Marks obtained in English = 135

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Acoustics	the branch of physics concerned with the properties of sound.	ध्वनि विज्ञान
Astronomy	the branch of science that deals with celestial objects, space, and the physical universe as a whole.	खगोल विज्ञान
Averse	having a strong dislike of or opposition to something	अनिच्छुक/ नापसंद
Bestowed	conferred or presented (an honor, right, or gift)	प्रदान किया हुआ
Calumny	the making of false and defamatory statements in order to damage someone's reputation; slander.	झूठा अभियोग, बदनामी
Catharsis	the process of releasing strong feelings, for example through plays or other artistic activities, as a way of providing relief from anger, suffering, etc.	भावनाओं का प्रवाह
Concur	be of the same opinion; agree	सहमत होना
Conferred	granted or bestowed (a title, degree, benefit, or right)	किसी पद से सम्मानित
Defunct	no longer existing or functioning.	निष्क्रिय
Discrepancy	a lack of compatibility or similarity between two or more facts.	भिन्नता
Endowed	given or bequeathed an income or talent to (a person or institution).	भेंट किया हुआ
Entrusted	Having assigned the responsibility for doing something to someone	कोई काम सौंपा हुआ
Fraught with	Filled with a specified element	भरा हुआ
Having the last laugh	to make someone who has criticized or defeated you, look stupid by succeeding at something more important or by seeing them fail	अलोचकों को अपनी सफलता से करारा जवाब देना जिससे वे लज्जित प्रतीत होते हो
Idiosyncrasy	a mode of behaviour or way of thought peculiar to an individual.	सनक, व्यक्तिगत विशिष्टता
In consonance with	agreement	के अनुरूप
Inexorable	impossible to stop or prevent.	अवश्यंभावी
Jubilation	a feeling of great happiness and triumph.	जश्न, खुशी
Keep in leash	to allow very little freedom to do something	नियंत्रण में रखना
Momentous	An event of great importance or significance, especially in its bearing on the future.	अति महत्वपूर्ण
Ouija	a board marked with letters of the alphabet and other signs, used in seances to receive messages said to come from people who are dead	एक वर्णमाला बोर्ड जो मृत व्यक्तियों के संदेशों को प्राप्त करने में प्रयोग होता है।

Paronyms	a word that is a derivative of another and has a related meaning	व्युत्पन्न शब्द
Pedestal	a position in which someone is greatly or uncritically admired	विशिष्ट पद
Philanderer	a man who readily or frequently enters into casual sexual relationships with women	स्त्री प्रेमी
Sagacity	the quality of having or showing keen mental discernment and good judgment	बुद्धिमता, अक्लमंदी
Threshold	the point just before a new situation, period of life, etc. begins	प्रारंभ, देहलीज
Uncouth	(of a person or their appearance or behaviour) lacking good manners, refinement, or grace	भद्दा
Underhand	secret and dishonest	चालाकीपूर्ण
Undulate	to go or move gently up and down like waves	लहराना
Unprecedentedly	in a way that has never happened, been done or been known before	अभूतपूर्व
Wrath	extreme anger (chiefly used for humorous or rhetorical effect)	क्रोध

SSC MOCK TEST - 52 (ANSWER KEY)

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

151. (B) Since the indirect speech is in past tense, 'is' should be replaced by 'was'.
152. (C) Replace 'arising' by 'rising'.
153. (B) Sentence starting with 'It is high time' takes simple past form. Thus, replace 'leave' by 'left'.
154. (B) As the sentence is in passive form. Thus, replace 'to attend' by 'to be attended'.
155. (C) Replace 'have' by 'has' as the subject of this sentence is singular i.e, 'each of the students'.
174. (C)
175. (D) 'Advice' is singular uncountable noun.
176. (C) The subject of the sentence is 'My brother'. Thus, it will take singular verb.
177. (B) Verb 'avail' takes 'of' and reflexive pronoun after it.
178. (A) 'Hardly ..... when' is an example of correlative conjunction.

179. (C) 'Hardly any' means 'very little.
180. (C) 'recollect' takes 'V + ing' after it.
181. (A) Here two actions/states are inversely or directly proportional to each other. Here Comparative degrees will come in both preceded by article 'the'.

Mock Test - 51 (corrections)

52. (B)
53. (B)
130. Solution is correct but options are wrong.

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