SSC MOCK TEST – 28 (SOLUTION)
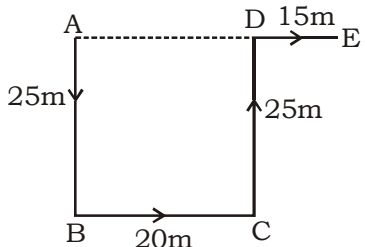
1. (B) Towel is to bathtub as chest of drawers is to bed. The towel and bathtub are found in a bathroom. The chest and the bed are found in a bedroom.

2. (B) A cobbler makes and repairs shoes. A contractor builds and repairs buildings.

3. (B) Hunger can be satiated with food. Similarly, Disease can be warded off by medicine.

4. (B) The first word is Antonyms of second word.

5. (C) A skein is a quantity of yarn. A ream is a quantity of paper.

6. (C) The number has been written in reverse order.

7. (D) A pen is used by a poet. A needle is used by a tailor.

8. (C)
A   C   E   H   I   L
+7
+6
+7

Similarly, M   O   Q   **T   U   X**
+7
+6
+7

9. (A) The saw and the nails are tools used by a carpenter. The stethoscope and thermometer are used by a pediatrician.

10. (A) 4 : 32 :: 7 : **98**
$4^2 \times 2 = 32$ $7^2 \times 2 = 98$

11. (B) In all other groups, the third, first and second letters are in alphabetical order.

12. (D) All except Paragon are evil-doers

13. (C) All except Character are external qualities.

14. (B) In all other numbers, the sum of second and last digits is twice the sum of first and third digits.

15. (B) Except Mole hills rest are the mountains whereas Mole hills is a small mound ridge on earth raised by Mole.

16. (A) 83 is the only prime number in the group.

17. (D) In all other pairs, the second number is one less than the square if the first number.

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

19. (A) Seven pieces consist of 6 smaller equal pieces and one half cake piece.
Weight of each small piece = 20 gm
So, total weight of the cake = 2 (20 × 6)
= 240 gm

20. (D) It is clear that the sex of A cannot be determined.

21. (B) The letter is the first half and the other half are separately reversed to obtain the code.

22. (C) Number of persons between Amrita and Mukul = 50 - (10 + 25) = 15.
Since Mamta lies in middle of these 15 persons.
So, Mamta's position is 8th from Amrita i.e. 18th from the front.

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

24. (B) $(2)^2 + (4)^2 = $ **20**
$(3)^2 + (9)^2 = $ **90**
Therefore, $(1)^2 + (5)^2 = $ **26**.

25. (C) All numbers are cubed,
$(7)^3 = 343$
$(1)^3 = 1$
$(3)^3 = 27$
Similarly, $(5)^3 = $ **125**.

26. (D)
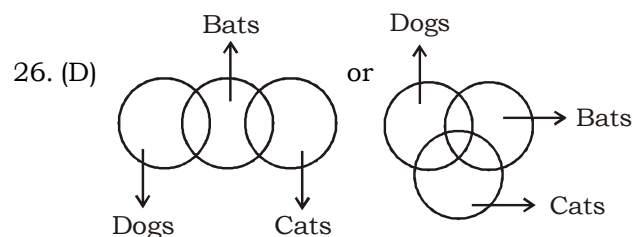
1. 5   2. 5

27. (A) The required number of sweets will be such that it leaves a reminder of 1 when divided by 2, 3 or 4 and no reminder when divided by 5. Such a number is 25 among the options.

28. (A) The colour of milk is 'white' and as given 'white' is called 'sky'.
So, the colour of milk is 'sky'.

29. (A) P × R – Q means P is the brother of R who is the wife of Q i.e. P is the brother-in-law of Q.

30. (B) I → G R M
II → M A S
Combining I & II
G R M A S
Gaurav won the race.

31. (C) 6 7 9 5 6 9 7 **6** 8 7 **6** 7 8 6 9 4 6
7 7 6 9 5 7 **6** 3

32. (B) Using the correct symbols, we have the given expression :-
40 + 12 ÷ 3 × 6 – 60 = 40 + 4 × 6 – 60
= 40 + 24 - 60 = 4.

33. (D) The correct order is :

Tree	Branch	Leaves	Flower	Fruit
4	2	1	3	5

34. (C) Number of dots on the top faces of the dice (II), (IV) and (VI) are 1, 1 and 1 respectively. Number of dots on the top faces of the dice (I), (III) and (V) are 5, 5 and 3 respectively. Number of dots on top faces = 5 + 5 + 3 + 1 + 1 + 1 = 16

35. (B) On interchanging – and ÷, we have the equation as
$5 + 3 \times 8 \div 12 - 4 = 3$
or $5 + 3 \times 2/3 - 4 = 3$
or $3 = 3$, which is true.

36. (D) Total runs scored = $(36 \times 5) = 180$.
Let the runs scored by E be x.
Then, runs scored by D = $x + 5$
Runs scored by A = $x + 8$
Runs scored by B = $x + x + 5 = 2x + 5$
Runs scored by C = $(107 - B)$
$= 107 - (2x + 5) = 102 - 2x$.
$\therefore$ Total runs = $(x + 8) + (2x + 5) + (102 - 2x) + (x + 5) + x = 3x + 120$.
$\therefore 3x + 120 = 180 \Rightarrow 3x = 60 \Rightarrow x = 20$.

37. (C)

The movements of Rohit are shown in figure. Rohit's distance from the starting point A = AE = AD+DE = 20 + 15 = 35 metres
The direction with reference to the starting point is east

38. (D) Blood Relation Analysis :
Father of my daughter's Father = Deepak's Father
Brother of Deepak's father = Deepak's Uncle

39. (D) 3 6 4 9 2 and 0 5 8
S M I L E   R U N
Similarly, 2 9 4 5 6 3
E L I U M S

40. (D) Series 1: 5, 7, 10, 14
Series 2: 6, 8, 11, ...
In series 2 pattern is +2, +3, Next will be +4
So required number in the series will be 11+4 = 15

41. (C) The series is **b**bcc**a**a / cc**a**abb / **a**ab**b**cc.

42. (C) Series 1 : 8, 7, 6, (..)
Series 2 : 9, 10, 11, 12
Series 3 : 8, 9, 10
In series 1 pattern the every number is decreasing by 1.
So, missing term = 6 – 1 = 5

43. (D) All the letters of each term are moved five steps forward to obtain the corresponding letters of the next term.

44. (D)

45. (C)

46. (C)

47. (C) The figure may be labeled as shown.
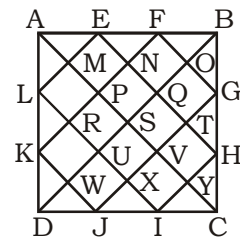
The simplest triangles are AML, LRK, KWD, DWJ, JXI, IYC, CYH, HTG, GOB, BOF, FNE and EMA i.e. 12 in number.
Triangles composed of two components each are AEL, KDJ, HIC and FBG i.e. 4 in number.
Triangles composed of three components each are APF, EQB, BQH, GVC, CVJ, IUD, DUL and KPA i.e. 8 in number.
Triangles composed of six components each are ASB, BSG, CSD, DSA, AKF, EBH, GGJ and IDL i.e. 8 in number.
Triangles composed of twelve components each are ADB, ABC, BCD and CDA i.e. 4 in number.
Total number of triangles in the figure = 12 + 4 + 8 + 8 + 4 = 36.

48. (B)

49. (B)
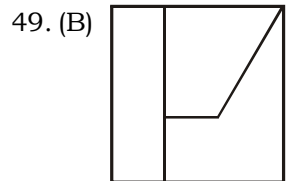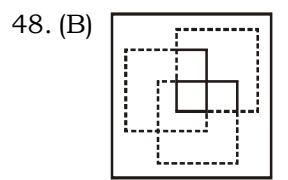
50. (B)

53. **(B)** Gymnosperm is a plant, such as a cycad or conifer, whose seeds are not enclosed within an ovary. In gymnosperms, no special structure develops to enclose the seeds, which begin their development 'naked' on the bracts of cones.

57. **(D)** Electronic mail or e-mail is a method of exchanging digital messages from an author to one or more recipients. It can be used to send documents, videos, audios etc, depending on the limit allowed by the mail service provider.

59. **(D)** Kaushik Basu is an Indian economist who is Senior Vice-President and Chief Economist of the World Bank. He is on leave from Cornell University where he is the C. Marks Professor of International studies and Professor of Economics.

61. **(D)** Prior to his election as President, Pranab Mukherjee was Union Finance Minister from 2009 to 2012. He is the 13th and current President of India, in office since July 2012.

62. **(C)** Karnataka, Kerala and Tamil Nadu are the three leading coffee producing states of India. Among the non-traditional areas, Andhra Pradesh and Odisha have dominant position in this respect (Coffee Board, Ministry of Commerce & Industry).

63. **(A)** Red light is used in traffic signal because it has the longest wavelength and is refracted least. Violet light has the shortest wavelength and is refracted most.

68. **(D)** Nitrobacter plays an important role in the nitrogen cycle by oxidizing nitrite into nitrogen in soil. It uses energy from the oxidation of nitrite ions, NO_2 - into nitrate NO_3-to fulfill their energy needs.

71. **(D)** Razia Sultana was the first and last women ruler of Delhi Sultanat (from 1236 to May 1240). She was the daughter of Shams-ud-din Iltutmish who was the founder of the Delhi Sultanate and the third ruler of the Slave dynasty.

72. **(D)** The 2013 Booker Prize for Fiction was awarded on 15 October 2013 to Eleanor Catton for her novel 'The Luminaries'. The Man Booker Prize promotes the finest in fiction by rewarding the best book of the year.

78. **(C)** The President addresses the joint sittings of Parliament in the Central Hall. The President addresses a joint session of Parliament during the first session in the year. The speech is written by the government of the day which he simply reads out.

79. **(D)** Kerosene floats on water because it is immiscible [because one has polar molecules (water) while the other has non-polar molecules (kerosene)] with water and its density is lower than of water. The density of water and kerosene are is 1 g/cm^3 and 0.78–0.81 g/cm^3 respectively.

80. **(A)** The area of given states in ascending order is as follows:-

Tamil Nadu : 130,058 km^2.

Andhra Pradesh : 160, 205 km^2.

Karnataka : 191, 791 km^2.

Gujarat : 196, 021 km^2.

81. **(D)** The banana plant is called a 'banana tree'; it is technically a herbaceous plant (or 'herb') not a tree, because the stem does not contain true woody tissue. It is an edible fruit, botanically a berry, produced by several kinds of large herbaceous flowering plants in the genus Musa.

82. **(C)** The Boundary Commission of 1974 was chaired by sir Cyril Radcliffe. The Radcliffe Line was published on 17 August 1974 as a boundary demarcation line between India and Pakistan. Sir Henry McMahon chaired the commission to decide the boundary between Chinese-held and Indian-held territory in the eastern Himalayan region.

83. **(C)** The Fundamental Rights in our constitution were inspired by the American Constitution. Other features borrowed from the American Constitution are: Written Constitution, Vice-President as the ex-officio Chairman of Rajya Sabha, independence of Judiciary and judicial review, etc.

85. **(C)** Mean fundamental frequency, which is associated with the perceptual notion of pitch, is commonly considered as the major difference between adult male and female voices. Pitch of a man's voice falls under low frequency, whereas woman's voice is of the high pitch type.

86. (D) DNA stands for Deoxyribonucleic acid. It is a nucleic acid. Alongside proteins and carbohydrates, nucleic acids compose the three major macromolecules essential for all known forms of life.

87. (A) ATM stands for Automated Teller Machine. It is an electronic telecommunications device that enables the customers of a financial institution to perform financial transactions without the need for human cashier, clerk or bank teller.

88. (C) After the Great Crash of 1929 (Great Depression), the American public sought a scapegoat for the economic collapse. Some held President Hoover responsible; and others targeted the 'three B's' – brokers, bankers and businessmen.

90. (B) Disguised unemployment exists where part of the labour force is either left without work or is working in a redundant manner where worker productivity is essentially zero. An economy demonstrates disguised unemployment where productivity is low and where too many workers are filling too few jobs.

91. (B) Beriberi refers to a cluster of symptoms caused primarily by a nutritional deficit in vitamin B_1 (Thiamine). It has been endemic in regions dependent on what is referred to as polished, white, or de-husked rice.

94. (A) The common air pollutants are particulate matter, ozone, carbon monoxide, sulphur oxides, nitrogen oxides and lead. Carbon dioxide from the burning of fossil fuels is also responsible for the greenhouse effect.

95. (D) Isodynamic line is an imaginary line or a line on a map connecting points on the earth's surface at which the horizontal magnetic intensity is the same called also isogam. It connects points on the Earth where the strength of the Earth's magnetic field is the same.

100. (B) Gross National Product (GNP) is the gross value of all the final products without deducting the depreciation of fixed capital. The net national product (NNP) is calculated by deducting depreciation from the gross national product, i.e..

NNP = GNP – Depreciation.

101. (D) Let I be the total income of the person.
Total expenditure of the person
= 18% + 25% + 24% + 20% = 87%
Then Remaining sum = 13% of the income
13% of I = 19500

$I = 19500 \times \dfrac{100}{13}$

Total income (I) = ₹ 1,50,000

102. (C) A $\oplus$ ⟶ 15 hrs   +2
B $\oplus$ ⟶ 10 hrs   +3   ㉚
C $\ominus$ ⟶ 30 hrs   −1   Total capacity of tank

Time taken by pipes A and B to fill the tank

$= \dfrac{30}{5} = 6$ hours

ATQ,
Volume filled by 3 pipes in 2 hrs
= 2 × (4) = 8 units
Volume left = (30 – 8) = 22 units
This Remaining capacity would be filled by

A and B $= \dfrac{22}{5} = 4$ hours 24 minutes

So, the total time taken
= 2 + 4 hrs 24 min
= 6 hours 24 minutes
Required extra time
= 6 hours 24 min – 6 hours
= 24 minutes

103. (A) (i) 30% discounts

(ii) $15 + 15 - \dfrac{15 \times 15}{100} = 27.75\%$

(iii) $20 + 10 - \dfrac{20 \times 10}{100} = 28\%$

(iv) $20 + 12 - \dfrac{20 \times 12}{100} = 29.60\%$

So we can say option (A) is better for customer.

104. (A) Required time

$= \left(\dfrac{114}{21-15} \right)$ minutes $= \dfrac{114}{6} = 19$ minutes

105. (D) Here, rate of interest is not given. Hence we can't answer the question.

106. (A) The total sum after deduction
= 3115 – (25 + 28 + 52) = ₹ 3010
Their diminished share in the ratio
8 : 15 : 20

∴ A's diminished share = $\frac{8}{43}$ × 3010

= 8 × 70 = ₹ 560

B's diminished share = $\frac{15}{43}$ × 3010

= 15 × 70 = ₹ 1050

C's diminished share = $\frac{20}{43}$ × 3010

= 20 × 70
= ₹ 1400
∴ A's share = 560 + 25 = ₹ 585
B's share = 1050 + 28 = ₹ 1078
C's share = 1400 + 52 = ₹ 1452

107. (D)

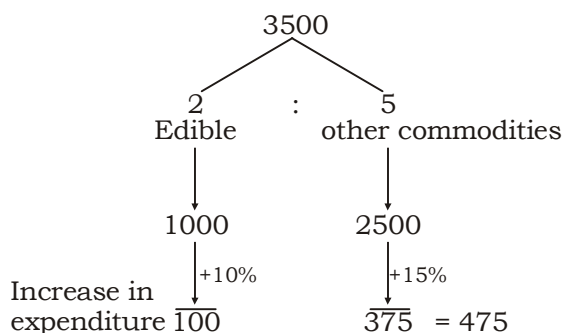|	**A**	**B**
	10	6

Total marks = 75 × 10   ?
= 750
Total marks of 16 students = 76 × 16
= 1216
∴ Total marks of 6 students
= 1216 – 750
= 466
Average marks of 6 students

= $\frac{466}{6}$ = $77\frac{2}{3}$

108. (C) As the height of each stack is same, the required number of books in each stack
= HCF of 84, 90 and 120
84 = 2 × 2 × 3 × 7
90 = 2 × 3 × 3 × 5
120 = 2 × 2 × 2 × 3 × 5
∴ HCF = 2 × 3 = 6

109. (D) From the given alternatives,
$5^2 + 6^2 + 7^2 = 110$
∴ The smallest number = 5

110. (D)

```
            3500
          /      \
        2    :    5
     Edible    other commodities
        |           |
      1000         2500
        | +10%       | +15%
   Increase in
   expenditure 100    375  = 475
```

Hence total expenditure increased = 475

111. (B) Ratio of time in Downstream : Upstream
= 5 : 11
∴ Ratio of speed in Downstream : Upstream
= 11 : 5

$\left(\because \text{Speed} \propto \frac{1}{\text{Time}} \right)$

let the speed of stream be x km/hr

Now, $\frac{8+x}{8-x} = \frac{11}{5}$ (Ratio of speed)

$\Rightarrow 40 + 5x = 88 - 11x$
$\Rightarrow 16x = 48$
∴ x = 3 km/hr

112. (B) Change the ratio into fractions

	Water	:	**Milk**
Vessel I	$\frac{1}{3}$		$\frac{2}{3}$
Vessel II	$\frac{2}{7}$		$\frac{5}{7}$

from, Vessel I, $\frac{1}{5}$ is taken and

from, Vessel II, $\frac{4}{5}$ is taken.

Therefore, the ratio of water to milk in the new vessel

$= \left(\frac{1}{3} \times \frac{1}{5} + \frac{2}{7} \times \frac{4}{5} \right) : \left(\frac{2}{3} \times \frac{1}{5} + \frac{5}{7} \times \frac{4}{5} \right)$

$= \left(\frac{1}{15} + \frac{8}{35} \right) : \left(\frac{2}{15} + \frac{20}{35} \right)$

$= \frac{31}{105} : \frac{74}{105} = 31 : 74$

113. (A) Difference in rates = $13\% - 12\frac{1}{2}\%$

$= \frac{1}{2}\%$

S.I. = ₹ 104 = $\frac{P}{100} \times \frac{1}{2} \times 1$

$\Rightarrow$ P = 104 × 2 × 100 = ₹ 20800

114. (C) The age of new comer is

∴ $60 - 45 \times \frac{1}{9}$ = 55 years

115. (A) ATQ,

Total work = $\dfrac{200 \times 10 \times 6}{5}$ = 2400 units

10 days work = $2400 \times \dfrac{5}{6}$ = 2000 units

Due to rain, destroyed work = $2000 \times \dfrac{2}{5}$

= 800 units

Total work to be done = (2400 – 2000) + 800
= 1200 units

Required time for 150 men = $\dfrac{1200}{150}$ = 8 days

Total time taken in completion of work
= 10 + 20 + 8 = 38 days

116. (C) Let AB be the tower and C and D be the points of observation.
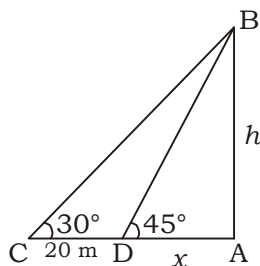
Then, ∠ACB = 30°, ∠ADB = 45°
and CD = 20 m.
AD = x
Let AB = h

Then, $\dfrac{AB}{AC}$ = tan 30° = $\dfrac{1}{\sqrt{3}}$

$\Rightarrow$ AC = AB × $\sqrt{3}$ = $h\sqrt{3}$

$\Rightarrow$ x + 20 = $h\sqrt{3}$

And, $\dfrac{AB}{AD}$ = tan 45° = 1 $\Rightarrow$ AD = AB = h

$\Rightarrow$ x = h
CD = 20 $\Rightarrow$ (AC – AD) = 20

h + 20 = $h\sqrt{3}$

$\sqrt{3}h$ – h = 20

$h = \dfrac{20}{(\sqrt{3}-1)}$ = 10($\sqrt{3}$ +1) = 27.32 m.

117. (B) 20% = $\dfrac{1}{5}$

	Salesman A		Salesman B
CP $\longrightarrow$	$5_{\times 5}$	:	$4_{\times 6}$
SP $\longrightarrow$	$6_{\times 5}$	:	$5_{\times 6}$
Profit $\longrightarrow$	$+1_{\times 5}$	:	$+1_{\times 6}$
	5	:	6

1 unit

1 unit = ₹ $\dfrac{3000}{30}$ = ₹ 100

Difference = 1 × 100 = ₹ 100

118. (B) Let the total distance covered by the car
= 2d km,
According to the question,

$\dfrac{d}{40} + \dfrac{d}{60}$ = 10 $\Rightarrow$ $\dfrac{3d + 2d}{120}$ = 10

$\Rightarrow$ 5d = 1200 $\Rightarrow$ d = 240 km
∴ total distance = 2d = 2 × 240 = 480 km

119. (D) Total profit or loss is given as

= $\dfrac{1}{3}$ × 12% + $\dfrac{2}{5}$ × 15% + $\left[1 - \left(\dfrac{1}{3} + \dfrac{2}{5} \right) \times (-24)\% \right]$

= 4% + 6% – $\left(\dfrac{4}{15} \right)$ × 24%

= 10% – $\dfrac{32}{5}$%

= $\dfrac{18}{5}$% $\Rightarrow$ $3\dfrac{3}{5}$% (+ve)

120. (C) According to the question,

7% of 36000 = $\dfrac{7 \times 36000}{100}$ = ₹ 2520

8% of 20,000 = $\dfrac{8 \times 20,000}{100}$ = ₹ 1600
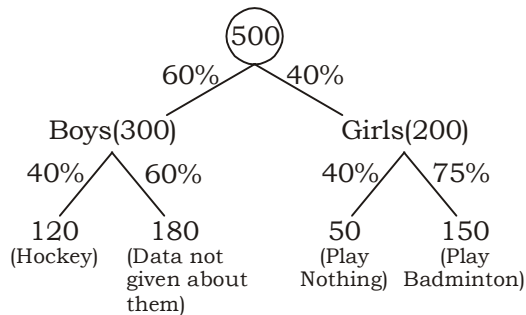
5% of 10,000 = $\dfrac{5 \times 10,000}{100}$ = ₹ 500

So, the discount amount to be given over
= ₹ 6,000
= [2520 – (1600 + 500)] = ₹ 420
Hence required percentage

= $\dfrac{420}{6000}$ × 100 = 7%

121. (C)

No. who don't play any game = 180 + 50 = 230

∴ Required Percentage = $\dfrac{230}{500}$ × 100

= 46%

122. (B) Let no. is 100x, and other no. = y
ATQ,
125x = y – 300 ...(i)
and 150x = y – 200 ...(ii)
subtract both equations,
– 25x = – 100
⇒ x = 4
So, Iˢᵗ no. = 400 and 150x = y – 200
⇒ 150 × 4 = y – 200
⇒ y = 800
⇒ 100x + y = 1200

123. (B) Earning of 1 man per day = $\dfrac{150}{3}$ = ₹ 50

Earning of 1 woman per day = $\dfrac{150}{4}$ = ₹ $\dfrac{75}{2}$
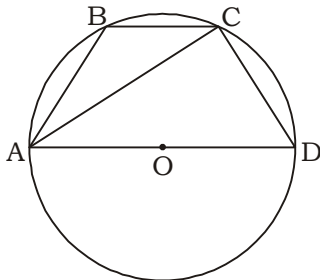
Earning of 1 boy per day = $\dfrac{150}{5}$ = ₹ 30

Earning of (7 men + 12 women + 3 boys)

= 7 × 50 + 12 × $\dfrac{75}{2}$ + 3 × 50

= 350 + 450 + 150

= ₹ 950

124. (D)

In ΔACD,
∠DAC = 52°
∠ACD = 90°
∠D = 180° – 52° – 90° = 38°
∴ ∠ABC + ∠ADC = 180°
⇒ ∠ABC = 180° – 38° = 142°
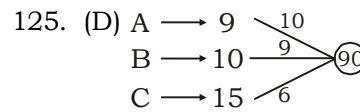
125. (D) A ⟶ 9 ⟍10
     B ⟶ 10 ⟶⁹ ⟶ 90
     C ⟶ 15 ⟋⁶
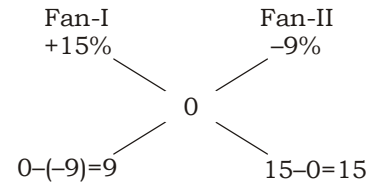Two days work of (B + C) = 2 × 15 = 30 w
Work left = 90 – 30 = 60 w

Work left done by A = $\dfrac{60}{10}$ = 6 days

126. (C) By Alligation Rule,

Fan-I   Fan-II
+15%   –9%

0

0–(–9)=9   15–0=15

i.e. C.P. of I-fan : C.P. of II-Fan = 9 : 15 = 3 : 5

Cost price of first fan = $\dfrac{2160}{8}$ × 3 = ₹ 810

Cost price of IInd fan = $\dfrac{2160}{8}$ × 5 = ₹ 1350

127. (A) In ΔONY = 60° = ∠OYN
∴ ∠NOY = 180° – 2 × 60° = 60°
In Δ OMY,
OM = OY = radii
∴ ∠OMY = ∠OYM = 25°
∴ ∠MOY = 180° – 2 × 25° = 130°
∴ ∠MON = 130° – 60° = 70°

128. (A) $\dfrac{\text{volume of cube}}{\text{volume sphere}}$ = $\dfrac{363}{49}$

⇒ $\dfrac{x^3}{\frac{4}{3}\pi r^3}$ = $\dfrac{363}{49}$

⇒ $\dfrac{x^3}{r^3}$ = $\dfrac{363}{49}$ × $\dfrac{4}{3}$ × $\dfrac{22}{7}$

⇒ $\dfrac{x^3}{r^3}$ = $\dfrac{11 \times 11 \times 11 \times 2 \times 2 \times 2}{7 \times 7 \times 7}$

⇒ $\dfrac{x}{r}$ = $\dfrac{22}{7}$ = 22 : 7

129. (A)
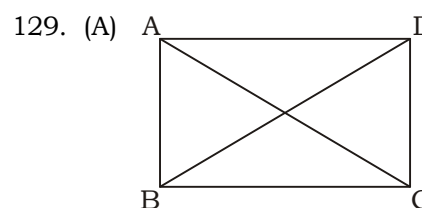
AB = CD
BC = AD
AC = BD
It will be a rectangle and each angle will be a right angle.

130. (C)

131. (B) Take $x = 1$

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

$\therefore x^{89} + \dfrac{1}{x^{77}}$

$= 1^{89} + \dfrac{1}{1^{77}} = 2$

132. (B) $\sin\theta + \cos\theta = 3\sin\theta - 3\cos\theta$

$\Rightarrow 4\cos\theta = 2\sin\theta$

$\Rightarrow \tan\theta = 2$

$\therefore \sin^4\theta - \cos^4\theta = (\sin^2\theta + \cos^2\theta)(\sin^2\theta - \cos^2\theta)$

$= \sin^2\theta - \cos^2\theta$

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

$= \dfrac{\tan^2\theta - 1}{1 + \tan^2\theta} = \dfrac{4-1}{1+4} = \dfrac{3}{5}$

133. (D) $7a + \dfrac{1}{4a} = 7$

Multiplying by $\dfrac{4}{7}$,

$4a + \dfrac{1}{7a} = 4$

squaring both sides,

$16a^2 + \dfrac{1}{49a^2} + 2 \times 4a \times \dfrac{1}{7a} = 16$

$\Rightarrow 16a^2 + \dfrac{1}{49a^2} = 16 - \dfrac{8}{7}$

$\Rightarrow 16a^2 + \dfrac{1}{49a^2} = \dfrac{112-8}{7} = \dfrac{104}{7}$

134. (B) $(\tan 1° \cdot \tan 89°) \cdot (\tan 2° \cdot \tan 88°) \ldots$ $\tan 45°$

$= (\tan 1° \cdot \cot 1°)(\tan 2° \cdot \cot 2°) \ldots \tan 45°$

$= 1 \times 1 \times \ldots \times 1 = 1$

$[\because \ \tan(90° - \theta) = \cot\theta]$

135. (B) $\dfrac{x}{x^2 - 2x + 1} = \dfrac{1}{3}$

$\Rightarrow \dfrac{x^2 - 2x + 1}{x} = 3$
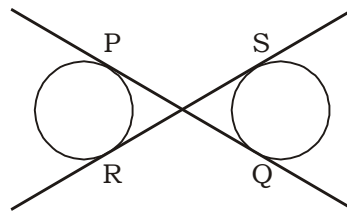
$\Rightarrow x - 2 + \dfrac{1}{x} = 3$

$\Rightarrow x + \dfrac{1}{x} = 5$

cubing both sides

$x^3 + \dfrac{1}{x^3} + 3\left(x + \dfrac{1}{x}\right) = 125$

$\Rightarrow x^3 + \dfrac{1}{x^3} = 125 - 3 \times 5 = 110$

136. (B) Transverse common tangent

$= \sqrt{d^2 - (r_1 + r_2)^2}$

$= \sqrt{(25^2 - (8+7)^2}$

$= \sqrt{625 - 225}$

$= \sqrt{400}$

$= 20$ cm

137. (A) Required Ratio

$= \dfrac{\dfrac{1}{3}\pi r_1^2 h_1}{\dfrac{1}{3}\pi r_2^2 h_2}$

$= \left(\dfrac{r_1}{r_2}\right)^2 \times \dfrac{h_1}{h_2} = \left(\dfrac{3}{5}\right)^2 \times \dfrac{1}{3}$

$= \dfrac{3}{25} = 3 : 25$

138. (B) $(a - b)^2 = a^2 + b^2 - 2ab$

$\Rightarrow (3)^2 = a^2 + b^2 - 2 \times 4$

$\Rightarrow a^2 + b^2 = 9 + 8 = 17$

139. (C) **short tricks :-**

maximum value $= \sqrt{a^2 + b^2}$

$= \sqrt{5^2 + 12^2} = 13$

140. (A) Area of the base of pyramid

$= \dfrac{1}{2} \times (\text{diagonal})^2$

$= \dfrac{1}{2} \times 1200 = 600$ sq. m.

volume of pyramid

$= \dfrac{1}{3} \times \text{Area of base} \times \text{height}$

$= \dfrac{1}{3} \times 600 \times 6 = 1200$ cu. metre.

141. (A) $\cos\theta = \dfrac{3}{5}$

$\sec\theta = \dfrac{1}{\cos\theta} = \dfrac{5}{3}$

$\therefore \cot(90° - \theta) = \tan\theta = \sqrt{\sec^2\theta - 1}$

$= \sqrt{\left(\dfrac{5}{3}\right)^2 - 1}$

$= \sqrt{\dfrac{25}{9} - 1}$

$= \sqrt{\dfrac{16}{9}} = \dfrac{4}{3}$

142. (C) circumference of circle = πD

$= \dfrac{22}{7} \times 56 = 176$ cm

$\therefore$ length of wire = 176 cm

$\therefore$ Perimeter of rectangle = $2(l + b)$

$\Rightarrow 2(l + b) = 176$

$\Rightarrow l + b = 88$

$\therefore$ longer side of rectangle

$= \dfrac{6}{11} \times 88 = 48$ cm

143. (C) $\tan\theta = \dfrac{4}{3}$ (Given)

$\dfrac{3\sin\theta + 2\cos\theta}{3\sin\theta - 2\cos\theta}$

$= \dfrac{3\tan\theta + 2}{3\tan\theta - 2}$ (divided by cos θ)

$= \dfrac{3 \times \dfrac{4}{3} + 2}{3 \times \dfrac{4}{3} - 2} = \dfrac{6}{2} = 3$

144. (D) Let the longer part be x

$\therefore$ According to question,

Shortest part = $\dfrac{2x}{3}$

$\therefore x + \dfrac{2}{3}x = 85$ m

$\Rightarrow \dfrac{3x + 2x}{3} = 85$

$\Rightarrow \dfrac{5x}{3} = 85$

$\therefore x = 51$ m

145. (D) Sum of ages of 5 children = 50

1 2 ③ 4 5 = 50

$\therefore$ Age of Middle (3rd) child = $\dfrac{50}{5} = 10$

$\Rightarrow$ (Average value of ages)

1	2	3	4	5
		↓		
4	7	10	13	16

$\therefore$ Difference = Eldest age – Youngest age

= 16 – 4

= 12 years

146. (C) Required percentage

$= \left[\dfrac{(1020 + 1240)}{(8800 + 9500)} \times 100\right]\%$

$= \left(\dfrac{2260}{18300} \times 100\right)\%$

= 12.34%

147. (B) Required percentage

$= \left[\dfrac{(850 + 920 + 890 + 980 + 1350)}{(7400 + 8450 + 7800 + 8700 + 9800)} \times 100\right]\%$

$= \left(\dfrac{4990}{42150} \times 100\right)\% = 11.83\%$

148. (D) Required percentage

$= \left[\dfrac{(840 + 1050 + 920 + 980 + 1020)}{(7500 + 9200 + 8450 + 9200 + 8800)} \times 100\right]\%$

$= \left(\dfrac{4810}{43150} \times 100\right)\% = 11.14\%$

149. (D) Required percentage

$= \dfrac{8100 + 9500 + 8700 + 9700 + 8950}{5}$

$= \dfrac{44950}{5} = 8990$

150. (D) The percentage of candidates qualified to candidates appeared from state P during different years are :

For 1997 = $\left(\dfrac{780}{6400} \times 100\right)\% = 12.18\%$

For 1998 = $\left(\dfrac{1020}{8800} \times 100\right)\% = 11.59\%$

For 1999 = $\left(\dfrac{890}{7800} \times 100\right)\% = 11.41\%$

For 2000 = $\left(\dfrac{1010}{8750} \times 100\right)\% = 11.54\%$

For 2001 = $\left(\dfrac{1250}{9750} \times 100\right)\% = 12.82\%$

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Austerity	An ascetic practice	तपस्या
Biblophobia	A person who hates, fears, or distrusts books.	पुस्तक-द्वेषी
Burgle	To break into and steal from	चोरी करना, सेंध मारना
Cacophobia	The fear of ugliness	बदसुरत होने का भय
Claustrophobia	A morbid fear of being closed in a confined space.	बंद जगह का भय
Cryogenics	The study of the production and behaviour of materials at very low temperatures.	विज्ञान जिसका संबंध ताप के अत्यधिक कम होने एवं उससे उत्पन्न प्रभावों से है
Cypher	A secret method of writing	संकेताक्षर
Cytology	The branch of biology that studies the structure and function of cells	कोशिका विज्ञान
Dactylography	The scientific study of fingerprints as a means of identification.	पहचान के लिए उंगलियों के निशान का साधन के रूप में वैज्ञानिक अध्ययन
Deny	To refuse to accept or admit (something)	खंडन करना, अस्वीकार करना
Desultory	Marked by lack of definite plan, regularity, or purpose	अनियमित, असंबद्ध
Enlighten	To give knowledge or understanding to (someone)	ज्ञान देना
Execute	To do a piece of work, perform a duty, put a plan into action	कार्यान्वित करना
Florid	Having a red or reddish colour, Ornate	लाल, रक्ताभ, सजा हुआ
Fraudulent	Intended to cheat somebody	छलपूर्ण, कपटपूर्ण
Illustrate	To give examples	उदाहरण देना
Misconceive	Interpret in the wrong way	गलत समझना
Notion	An idea or opinion	राय, धारणा
Pallid	Very pale in a way that suggests poor health	पीला, अस्वस्थ
Pastel	Small sticks of chalk	रंगीन वर्तिका
Persist	To continue to do something despite difficulties or opposition	दृढ़ रहना
Possess	To have or own something	युक्त होना, अधिकृत होना
Rebuke	To speak in an angry and critical way to (someone)	फटकारना, डांटना
Rubicund	(of a person's face) having a healthy red colour	लाल वर्ण, रक्तिम
Sabotage	The act of deliberately spoiling something in order to prevent it from being successful	गड़बड़ करना, तोड़-फोड़ करना
Slimy	Covered with an unpleasant thick liquid substance	लिसलिसा पदार्थ से लथपथ
Sober	Serious and sensible	गंभीर, सचेत
Stoutly	In a brave and determined way	दृढ़तापूर्वक
Tentacle	One of the long, flexible arms of an animal (such as an octopus) that are used for grabbing things and moving	(किसी जानवर) की लम्बी लचीली बांह
Throng	A crowd of people	भीड़, जमघट
Vivid	Producing powerful feelings or strong, clear images in the mind	सुस्पष्ट
Wilt	To grow weak or faint	मुरझाना, सूख जाना

K D Campus Pvt. Ltd

2007, OUTRAM LINES, 1ST FLOOR, OPPOSITE MUKHERJEE NAGAR POLICE STATION, DELHI-110009

SSC MOCK TEST - 28 (ANSWER KEY)

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

151. (B) Change 'attended' into 'was attending'.

152. (C) Replace 'he had hand in' by 'he had a hand in'. A phrase 'To have a hand in something' means 'to be involved in something'.

153. (D) No error. [If 'but' is at the begining of an independent clause, it means 'except'.]

154. (C) Remove 'on'. We say 'on Wednesday' but when 'next' or 'last' precedes the day, the preposition is removed.

155. (B) Remove 'also'. 'But' is used to suggest in an affirmative sense what the first part of the sentence implied in a negative way.

Correction

Read 188 (C) as florid

Corrections of Mock test-27

142. (C) 5 kg.

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