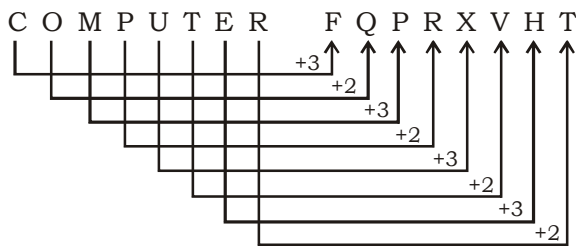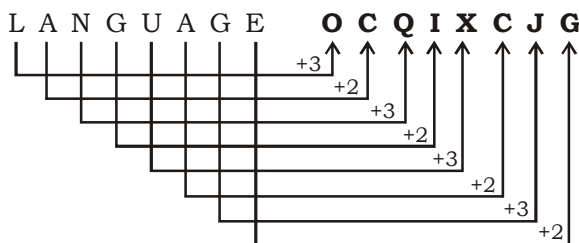## SSC MOCK TEST – 30 (SOLUTION)

1. (B) A pod is a group of dolphins, and a herd is a group of cows.

2. (C) Each term in the series is the product of the digits of the preceding term.
So, missing term = 1 × 8 = 8.

3. (C) As,

Similarly,


4. (D) To chat is to talk and to flutter is to flap.

5. (A)

6. (C) A professor works at a college, and a mechanic works at a garage.

7. (A) The doze is to sleep lightly, and to tiptoe is to walk lightly.

8. (A) As, 121 = $(5)^3$ – 4 and 61 = $(4)^3$ – 3
Also, 337 = $(7)^3$ – 6
∴ ? = $(6)^3$ – 5 = 211

9. (B) 10 – 1 = 9 and 9 × 11 = 99
9 – 1 = 8 and 8 × 11 = 88

10. (C) A purse is used to hold money and an urn is used to hold ashes.

11. (B) Except option (B), rest are the books written by Munshi Premchand whereas Maila Aanchal is written by Phaniswar Nath 'Renu'.

12. (D) All except chalk are obtained from crops.

13. (D) 4913 is a perfect cube whereas rest are perfect square.

14. (D) All excepts sharp are related to dimension.

15. (A) Except (41-72) The difference between rest of the intervals is a multiple of 9.

16. (D) All except Agra are cities situated on the banks of river Ganga.

17. (D)

18. (C) All except Scallop live in shells.

19. (C) Each row contains 12 plants
There are 11 gaps between the two corner trees i.e. (11 × 2 = 22) meters and 1 metre is left on each side.
∴ Length of the garden = 22 + 2 = 24 m.

20. (A) The upper element is converted to an element similar to the lower elements and each one of the lower elements converted to an element similar to the upper element.

21. (A) There were all sparrows but six' means that six birds were not sparrows but only pigeons and ducks.
Similarly, Number of sparrows + number of ducks = 6
Number of sparrows + Number of pigeons = 6.
This is possible only when there are 3 sparrows, 3 pigeons and 3 ducks i.e. 9 birds in all.

22. (A)
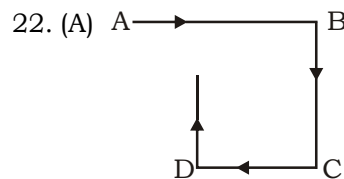
Hence finally Sujata is facing towards North.

23. (D) Number of cuts made to cut a roll into 10 pieces = 9.
Therefore required number of rolls

$$= \frac{(45 \times 24)}{9} = 120.$$

24. (C)
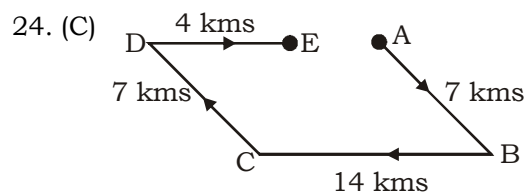
Required distance = AE = 14 – 4 = 10 kms

25. (C) The correct order is :

Plant	Cotton	Yarn	Cloth	Saree
(2) $\to$	(4) $\to$	(1) $\to$	(5) $\to$	(3)

26. **(C)** Each term in the series is obtained by adding 1 to the square of the preceding term.
So, missing term = $(101)^2 + 1 = $ **10202**.

27. **(B)** The terms of the given series are $(2^2 - 1)$, $(4^2 - 1), ..., (8^2 - 1), (10^2 - 1), (12^2 - 1)$.
So, missing term = $(6^2 - 1) = (36 - 1) = $ **35**.

28. **(D)** The pattern is +0, +3, +8, +15, ... i.e.
$(1^2 - 1), + (2^2 - 1), + (3^2 - 1), + (4^2 - 1), ...$
So, missing term = $28 + (5^2 - 1) = 28 + 24 = $ **52**.

29. **(D)**

1. 5   2. 5
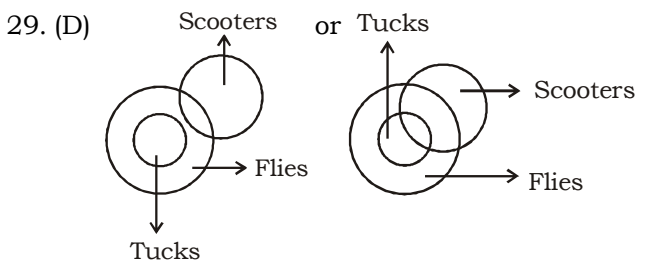
30. **(A)** The colours adjacent to yellow are (orange, blue) and (red, pink). Hence violet will be opposite to yellow.

31. **(D)** The girl is the wife of the grandson of Amit's mother i.e. the girl is the wife of son of Amit.
Hence, Amit is father-in-law of that girl.

32. **(A)** Such decisions as given in the statement are taken only after taking the existing vacancies into consideration. So, I implicit while II isn't.

33. **(D)** 'Migen' means 'Cup'; 'Lasan' means 'Board'; 'Poen' means 'Walk'; 'Cuop' means 'Pull'; and 'Dansa' means 'Man'.
The only possible choices left are choices a and d. Choice a can be ruled out because migen means 'Cup'. So, (D) is the right option.

34. **(D)**

35. **(C)**

36. **(B)**

So, the relation (K + Y × Z – I) shows that 'I' is the niece of 'K'.
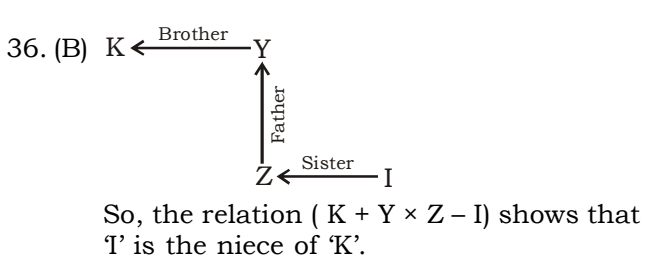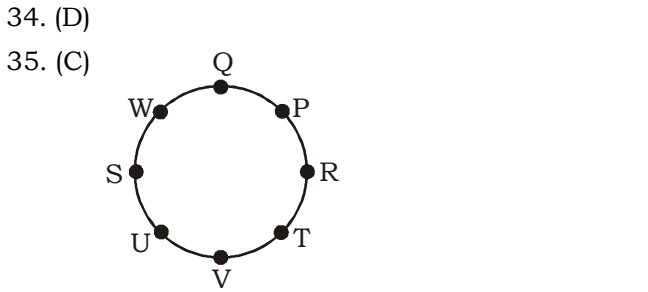
37. **(C)** $\dfrac{(20 + 9 + 14 + 7)}{2} = 30$

and $\dfrac{(11 + 16 + 10 + 13)}{2} = 25$

Therefore, $\dfrac{(18 + ? + 12 + 20)}{2} = 32$

$\Rightarrow$? = 64 – 50 = 14

38. **(D)** $(15 \times 6) + 2 = 92$
$(7 \times 6) + 2 = 44$
$(7 \times 15) + 2 = 107$.

39. **(D)** $(1)^2 + (5)^2 + (4)^2 + (3)^2 = 51 \times 10 = 510$
and $(3)^2 + (4)^2 + (6)^2 + (2)^2 = 65 \times 10 = 650$
Similarly, $(3)^2 + (1)^2 + (2)^2 + (8)^2 = 78 \times 10 = 780$

40. **(B)** The figure may be labelled as shown.
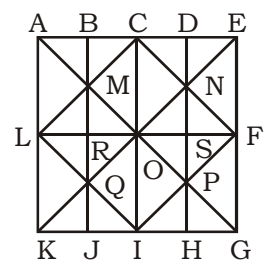
The horizontal lines are AK, BJ, CI, DH and EG i.e. 5 in number.
The vertical lines are AE, LF and KG i.e. 3 in number.
The slanting lines are LC, CF, FI, LI, EK and AG i.e. 6 in number.
Thus, there are 5 + 3 + 6 = 14 straight lines in the figure.

41. **(D)**

42. **(C)**

43. **(C)** 1, 3, 5 are figures having partially or completely curved boundaries.
2, 6, 8 are all triangles.
4, 7, 9 are all quadrilaterals.

44. **(A)**

45. **(D)**

46. **(A)**
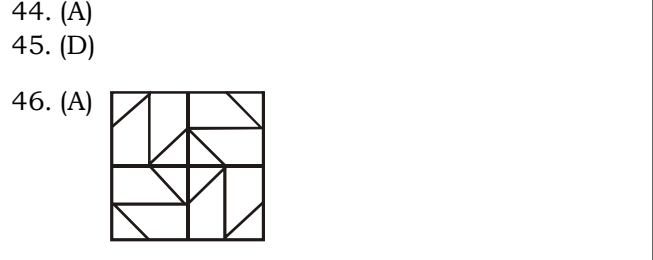
47. **(D)** In question figure, one of the dots lies in the region common to the circle and the square only, another dot lies in the region common to the square, the triangle and the rectangle only and the third dot lies in the region common to the triangle and the rectangle only. In each of the figures (A), (B) and (C) there is no region common to the square, the triangle and the rectangle only. Only figure (D) consists of all the three types of regions.

48. **(C)**

49. **(A)** Clearly, the smallest such number is 3.

D ⌐
  ⌐D ⌐
⌐   ⌐
  └D

'D' represents the 'ducks'.

50. **(C)**

52. **(D)** In the photoelectric effect, electrons are emitted from solids, liquids or gases when they absorb energy from light. It is the phenomenon of emission of electrons from the surface of metals when the radiations of suitable frequency and suitable wavelength fall on the surface of the metal.

55. **(C)** Electromagnetic waves include radio waves, microwaves, infrared, visible light, ultra-violet, x-rays and gamma rays. Electromagnetic waves are transverse waves and they all travel at the speed of light in vacuum.

59. **(C)** One can use the MAX function to find the highest number in a series of numbers.

62. **(B)** Tritium is a radioactive isotope of hydrogen. The name of this isotope is formed from the Greek word "tritos" meaning "third".

64. **(C)** A terrestrial ecosystem is an ecosystem found only on landforms. Six primary terrestrial ecosystems which exist are tundra, taiga, temperate deciduous forest, tropical rain forest, grassland and desert.

66. **(D)** Ronald Wilson Reagan was the 40th President of the United States. Prior to his presidency, he served as the 33rd Governor of California and also was an actor in film and television actor.

67. **(A)** Money is referred to as a measure of value and prices. Because the market enables any commodity to be turned into money and money into any commodity, objective exchange value is expressed in terms of money. It is a price index.

69. **(A)** Selling Price is an artifact of "monopolistic competition". The firm under monopolistic competition should incur certain expenditure on promotion of the sales. The amount spent by the firm on sales promotion is known as selling costs. Selling costs also include some of the other costs such as salaries of salesman, door to door canvassing etc.

70. **(C)** Article 37 of the Constitution declares that the Directive Principles of State Policy shall not be enforceable by any court, but the principles therein laid down are nevertheless fundamental in the governance of the country and it shall be the duty of the state to apply these principles in making laws.

72. **(C)** The Forty-second Amendment of the Constitution of India, enacted in 1976, brought about the most widespread changes to the Constitution until then. It is often called a "mini-Constitution" or the "Constitution of India".

74. **(C)** The southernmost point in India is Indira Point on Great Nicobar Island. Kanyakumari and it is the southernmost tip of the Indian mainland.

78. **(B)** Assuming they are the diatomic forms, N_2 and O_2.
Oxygen is 32 grams per mole and nitrogen is 28 grams per mole.
So, we have
$32 \times 21 = 672$, $28 \times 79 = 2212$
Now after adding it together we will get 2884.
Required percent of nitrogen = 2212/2884
= .7669 * 100
= 76:69 or 77%

79. **(C)** In the nucleus of each cell, the DNA molecule is packaged into thread-like structures called chromosomes. Each chromosome is made up of DNA tightly coiled many times around proteins called histones that support its structure.

80. **(A)** The highest temperature ever recorded on Earth was 136 Fahrenheit (58 Celsius) in the Libyan desert (El Azizia).
The coldest temperature ever measured was (–126) Fahrenheit or (–88) Celsius. at Vostok Station in Antarctica.

81. **(A)** A lichen is not a single organism. It is a stable symbiotic association between a fungus and algae and/or cyanobacteria. Like all fungi, lichen fungi require carbon as a food source. This is provided by their symbiotic algae and/or cyanobacteria that are photosynthetic. The lichen symbiosis is thought to be a mutualism, since both the participants benefit.

83. **(C)** In the Mixed Cropping system of India, a legume (pulses) is grown in one line and in another line the main crop is grown. Some successful mixed cropping practices are: Soyabean + Pigeon pea, Maize + Black gram, Pigeon pea + Green gram, Groundnut + Sunflower, Sorghum + Pigeon pea, Wheat + Chickpea, Barley + Chickpea, Wheat + Mustard, Cotton + Groundnut, Wheat + Chick pea, etc.

87. (C) Alluvium soils are generally suitable for a variety of crops like wheat, rice, millets, pulses, maize, sugarcane, rubber, jute, vegetables etc. These soils develop from the weathering material transported by rivers from their catchment areas and deposited in their basins during floods.

88. (B) Saponification is a process that produces soap, usually from fats and lye. The Ester Saponification method employs an ester exchange reaction of oils, fats and methyl alcohol by which methyl esters of the fatty acids are obtained. Special equipment is required to recover methyl alcohol.

89. (B) Ajoy Ghosh was born on February 20, 1909 in a small town called Mihijam which stands on the banks of the river. Ajoy Kumar Ghosh was the General Secretary of party from 1951 till the day of his death on January 13, 1962. He attended the meeting of Hindustan socialist republic army in September 1928.

90. (B) Mahmoud Abbas is the President of the State of Palestine and Palestinian National Authority. He has been the Chairman of the Palestine Liberation Organization (PLO) since 11 November 2004 and has been Palestinian president since 15 January 2005 (Palestinian National Authority since 15 January 2005 and State of Palestine since 8 May 2005). Abbas is a member of the Fatah party.

93. (B) Top 10 Countries with Highest rate of Illiteracy
   1. Niger - 84.3 %
   2. Burkina Faso - 77.0%
   3. Afghanistan - 63.7%
   4. Sierra Leone - 63.7%
   5. The Gambia - 63.5%
   6. Guinea-Bissau - 63.2%
   7. Senegal - 62.7%
   8. Benin - 62.5%
   9. Ethiopia - 61.3%
   10. Mauritania - 60.1%

95. (D) We orbit the Sun at a distance of about 150 million kilometers. This number is actually an average, since we follow an elliptical path. At its closest point, the Earth gets to 147 million km, and at its most distant point, it's 152 million km.

101. (A) Chemistry : Mathematics | Mathematics : Physics
   3 : 5 | 3 : 5

   After combining the ratio,
   Chemistry : Mathematics : Physics
   $9x$: $15x$: $25x$
   According to the question,
   $9x + 15x + 25x = 147$
   $49x = 147$
   $x = 3$
   Marks in chemistry = $9 \times 3 = 27$

102. (D) Total CP = ₹ 32

   Total SP = $\dfrac{12}{12} \times 18 + \dfrac{4}{12} \times 6$

   = (18 + 2) = ₹ 20

   Loss % = $\left(\dfrac{32 - 20}{32}\right) \times 100 = 37.5\%$

103. (C) Work done = $\dfrac{11}{30}$

   Remaining work = $\dfrac{19}{30}$

   $\dfrac{19}{30}$ work in 28 days

   whole work in = $\dfrac{30 \times 28}{19}$ days

   = $\dfrac{840}{19}$ days

   = $44\dfrac{4}{19}$ days

104. (B) Let the speed and length of the train be s m/s and x m respectively.
   ATQ,

   $s + 3 \times \dfrac{5}{18} = \dfrac{x}{36}$

   $\Rightarrow s = \dfrac{x}{36} + \dfrac{15}{18}$ ...(i)

   and,

   $x - 6 \times \dfrac{5}{18} = \dfrac{x}{30}$

   $\Rightarrow s = \dfrac{x}{30} + \dfrac{30}{18}$ ...(ii)

   Equating (i) and (ii), we get,

   $\dfrac{x}{36} + \dfrac{15}{18} = \dfrac{x}{30} + \dfrac{30}{18}$

   $\Rightarrow \dfrac{x}{30} - \dfrac{x}{36} = \dfrac{30}{18} - \dfrac{15}{18}$

   $\Rightarrow \dfrac{6x}{36 \times 30} = \dfrac{15}{18}$

   $\therefore x = 150$ m

105. (A) Let total number of candidates be x.
   $\therefore 50x - 30 \times 100 = 45x$
   $\Rightarrow 5x = 3000$

   $\Rightarrow x = \dfrac{3000}{5} = 600$

106. (B) $0.7 + \sqrt{0.16} = 1.1$

   $1.02 - \dfrac{0.6}{24} = 0.995$

   $1.2 \times 0.83 = 0.996$

   $\sqrt{1.44} = 1.2$

107. (C) Suppose printed price = ₹ 100
   $\therefore$ S.P. = ₹ (100 − 2.5) = ₹ 97.5

   $\therefore$ Marked price = $\dfrac{100 \times 39}{97.5}$ = ₹ 40

108. (C) If the capital after tax deduction be x, then
$x \times (4 - 3.75)\% = 48$

$\Rightarrow \dfrac{x \times 0.25}{100} = 48$

$\Rightarrow \dfrac{x \times 25}{10000} = 48$

$\Rightarrow \dfrac{x}{400} = 48$

$\Rightarrow x = 48 \times 400 = ₹\ 19200$

∴ Required capital

$= \dfrac{19200 \times 100}{96} = ₹\ 20,000$

109. (B) Let there were 8000 mangoes initially. Then,

Hence 661 m = 1983
$\Rightarrow$ m = 3
Hence the total no. of mangoes
= 3 × 8000
= 24000

110. (A) Let the initial cost price of Book and pen is B and P respectively.
According to the question,
13% B + 17% P = profit
17% B + 13% P = (profit + 80)
$-\quad -\quad\quad -$
on subtraction,
$-$ 4% B + 4% P = $-$ 80
4% B $-$ 4% P = 80
4% [B $-$ P] = 80

$\dfrac{4}{100}$ [B $-$ P] = 80

B $-$ P = 2000 ...(i)
B + P = 25000 [given] ...(ii)
from (i) and (ii)

(i) B = $\dfrac{25000 + 2000}{2}$ = ₹ 13500

P = $\dfrac{25000 - 2000}{2}$ = ₹ 11500

(ii) Difference in cost price = ₹ 2000

111. (A) Difference in time after accident
= (4 + 1 − 3.5)hr
= 1.5 km
Distance = 150 km

Speed = $\dfrac{150}{1.5} = 100$ km/h

Speed after accident 75% = $\dfrac{3}{4}$

ATQ,

Required distance = 12 × 100
= 1200 km

112. (A) By Alligation method,

Ratio of male to female = 1 : 1

Number of males = $\dfrac{1}{2}$ × 8000 = 4000

113. (D) (25 × 10) M = (20 × 50) C
$\Rightarrow$ 1 M = 4 C
Work completed in 10 days by 5 men

= $\dfrac{5}{10}$ = $\dfrac{1}{2}$ part.

Remaining work = 1 $-$ $\dfrac{1}{2}$ = $\dfrac{1}{2}$ part.

let x children assist in remaining work
= (x + 5 × 4) children
= (20 + x) children
ATQ,

$\dfrac{1}{2}$ (20 + x) = 20

$\Rightarrow$ 10 + $\dfrac{x}{2}$ = 20

$\Rightarrow x$ = 10 × 2 = 20 children

114. (B) Unbroken tables

= $\dfrac{5}{6}$ × 108 = 90

Unbroken chairs = $\dfrac{3}{4}$ × 132 = 99

Unbroken pairs = 90

115. (B) LCM of 24, 36 and 54 seconds
= 216 seconds
= 3 minutes 36 seconds
∴ Required time = 10 : 15 : 00 + 3 minutes 36 seconds
= 10 : 18 : 36 AM

116. (A) In first alloy, zinc = $\dfrac{1}{3}$

In second alloy, zinc = $\dfrac{2}{5}$

In the new alloy, zinc = $\dfrac{5}{13}$

By the rule of Alligation,

```
        A                    B
       1/3                  2/5
          \                /
            \    5/13    /
              \        /
   2/5 − 5/13  /      \   5/13 − 1/3
```

∴ Required ratio

$= \left(\dfrac{2}{5} - \dfrac{5}{13}\right) : \left(\dfrac{5}{13} - \dfrac{1}{3}\right)$

$= \dfrac{26 - 25}{65} : \dfrac{15 - 13}{39}$

$= \dfrac{1}{65} : \dfrac{2}{39} = \dfrac{1}{5} : \dfrac{2}{3} = 3 : 10$

117. (C) $p \times q = p + q + \dfrac{p}{q}$

∴ $8 \times 2 = 8 + 2 + \dfrac{8}{2}$

$= 10 + 4 = 14$

118. (C) Total amount in the bag

$= \left(\dfrac{1}{4} \times 600 + \dfrac{1}{2} \times 1200\right)$

$= (150 + 600) = ₹\ 750$

The amount taken out

$= \dfrac{1}{4} \times \left(\dfrac{12}{100} \times 600\right) + \dfrac{1}{2} \times \left(\dfrac{24 \times 1200}{100}\right)$

$= \left(\dfrac{1}{4} \times 72 + \dfrac{1}{2} \times 288\right)$

$= 18 + 144 = ₹\ 162$

Required percentage = $\dfrac{162}{750} \times 100 = 21.6\%$

119. (C) Let C.P = 1000

M.P = $1000 \times \dfrac{115}{100} = 1150$

Profit = 1150 − 920 = 230

∴ Profit % when traders uses a watt of 920 g

instead of 1 kg = $\left(\dfrac{230}{920} \times 100\right)\% = 25\%$

120. (C) Average speed = $\dfrac{2 \times 6 \times 3}{(6 + 3)} = 4$ km/hr

121. (C) A + B do = 8 unit work
∴ Hence c did only = 3 unit work

∴ Required share = $\dfrac{3}{11} \times 660$

$= ₹\ 180$

122. (D) If average cost of 1 pen
= ₹ x, then
$30x + 75 \times 2 = 510$
$\Rightarrow 30x = 510 - 150$
$= 360$

$\Rightarrow x = \dfrac{360}{30}$

$= ₹\ 12$

123. (C) Arithmetic mean (AM) = $\dfrac{a + b}{2}$

Geometric mean (GM) = $\sqrt{ab}$
As AM > GM

$\dfrac{a + b}{2} > \sqrt{ab}$

124. (B) Let the present age of son is x years.
Age of father = 42 years
ATQ,
$2x = 42$ years,
$x = 21$ years
∴ Age of son 5 years back was
= 21 − 5 = 16 years

125. (C) Let x = no. of benches
So, ATQ,
$6(x + 1) = 7x - 5$
or $7x - 6x = 6 + 5$
$\Rightarrow x = 11$
So, No. of students = $6(x + 1)$
= 72

126. (C) Given CP of 40 books = ₹ 3200
According to the question,
SP of 40 books
= CP of 40 books + SP of 8 books
[∵ SP = CP + PROFIT]
SP of 32 books = ₹ 3200
[∵ CP of 40 books = 3200]
SP of 1 book = ₹ 100
SP of 1 dozen books = ₹ 1200

127. (B)
```
   A → 10 ——————— 6
   A → 10 —→ 60 — 5
   A + B + C → 30 ————— 2
```
∴ Efficiency of tap C = (6 + 5 − 2)
= 9 unit/hr

∴ Required time = $\dfrac{60}{9}$ hours

128. (C) Here, $\sqrt[3]{175616} = 56$

∴ $\sqrt[3]{175.616} = 5.6$

$\sqrt[3]{0.175616} = 0.56$

and $\sqrt[3]{0.000175616}$
= 0.056
∴ Required sum
= 5.6 + 0.56 + 0.056
= 6.216

129. (B) $1.5x = 0.04y$

$\Rightarrow \dfrac{x}{y} = \dfrac{0.04}{1.5} = \dfrac{4}{150} = \dfrac{2}{75}$

$\Rightarrow \dfrac{y}{x} = \dfrac{75}{2}$

Now, $\dfrac{y^2 - x^2}{y^2 + 2xy + x^2}$

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

$= \dfrac{y - x}{y + x} = \dfrac{\dfrac{y}{x} - 1}{\dfrac{y}{x} + 1}$

$= \dfrac{\dfrac{75}{2} - 1}{\dfrac{75}{2} + 1} = \dfrac{73}{77}$

130. (B) $\tan\theta = \dfrac{\sin\alpha - \cos\alpha}{\sin\alpha + \cos\alpha}$

$\therefore 1 + \tan^2\theta$

$= 1 + \dfrac{(\sin\alpha - \cos\alpha)^2}{(\sin\alpha + \cos\alpha)^2}$

$\Rightarrow \sec^2\theta$

$= \dfrac{(\sin\alpha + \cos\alpha)^2 + (\sin\alpha - \cos\alpha)^2}{(\sin\alpha + \cos\alpha)^2}$

$\Rightarrow \sec^2\theta = \dfrac{2(\sin^2\alpha + \cos^2\alpha)}{(\sin\alpha + \cos\alpha)^2}$

$\Rightarrow \dfrac{1}{\cos^2\theta} = \dfrac{2}{(\sin\alpha + \cos\alpha)^2}$

$\Rightarrow \dfrac{1}{\cos\theta} = \dfrac{\pm\sqrt{2}}{\sin\alpha + \cos\alpha}$

$\Rightarrow \sin\alpha + \cos\alpha = \pm\sqrt{2}\cos\theta$
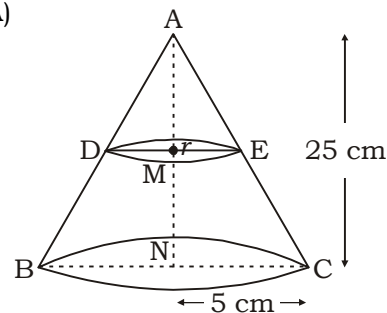
131. (B) By mid-point theorem

$\dfrac{EF}{AD} = \dfrac{FG}{DC} = \dfrac{GH}{CB} = \dfrac{HE}{BA} = \dfrac{1}{2}$

$\therefore \dfrac{EF + FG + GH + HE}{AD + DC + CB + BA}$

$\therefore \dfrac{\dfrac{1}{2}(AD + DC + CB + BA)}{(AD + DC + CB + BA)} = \dfrac{1}{2}$

$= 1 : 2$

132. (A)

$\Delta AME \sim \Delta ANC$

$\therefore \dfrac{25 - h}{25} = \dfrac{r}{5}$

$\Rightarrow h = 25 - 5r$ ...(i)

volume of frustum (V)

$= \dfrac{1}{3}\pi[5^2 + r^2 + 5r]h$

$\Rightarrow 110 = \dfrac{1}{3}\pi[25 + r^2 + 5r](25 - 5r)$

$\Rightarrow \dfrac{5}{3}\pi[(5 - r)(5^2 + r^2 + 5r)] = 110$

$\Rightarrow \dfrac{5}{3}\pi[5^3 - r^3] = 110$

$\Rightarrow 5^3 - r^3 = \dfrac{110 \times 3}{5\pi}$

$\Rightarrow 125 - r^3 = \dfrac{110 \times 3}{5 \times \dfrac{22}{7}}$

$\Rightarrow r = (104)^{1/3}$ cm

133. (B) $x = 6 + \dfrac{1}{x}$

$\Rightarrow x - \dfrac{1}{x} = 6$

On squaring both sides,

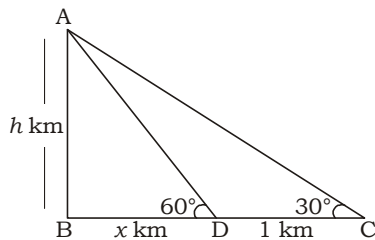$\Rightarrow x^2 + \dfrac{1}{x^2} - 2 = 36$

$\Rightarrow x^2 + \dfrac{1}{x^2} = 36 + 2 = 38$

On squaring again,

$x^4 + \dfrac{1}{x^4} + 2 = 1444$

$\Rightarrow x^4 + \dfrac{1}{x^4} = 1444 - 2 = 1442$

134. (A)

From ΔABD

$\tan 60° = \dfrac{AB}{BD}$

$\Rightarrow \sqrt{3} = \dfrac{h}{x}$

$= x = \dfrac{h}{\sqrt{3}}$ km ...(i)

From ΔABC

$\tan 30° = \dfrac{AB}{BC}$

$= \dfrac{1}{\sqrt{3}} = \dfrac{h}{\dfrac{h}{\sqrt{3}}+1} = \sqrt{3}h = \dfrac{h}{\sqrt{3}} + 1$

$= \dfrac{3h-h}{\sqrt{3}} = 1 = 2h = \sqrt{3}$

$h = \dfrac{\sqrt{3}}{2}$ km

135. (D) $\angle PQY = 180° - \angle PYQ - \angle YPQ$
= $180° - 40° - (180° - 120°) = 80°$
$\therefore \angle RQZ = 180° - \angle PQY$
= $180° - 80°$
= $100°$
$\therefore \angle RZQ = 180° - 25° - 100°$
= $55°$
$\therefore \angle BZX = 180° - \angle RZQ$
= $180° - 55°$
= $125°$

136. (D) Area of square = (side)²
= $(24)^2$
= 576 cm²
Area of rectangle = length × breadth
= $576 - 176$ = length × breadth
= 400 cm²

$\Rightarrow$ Breadth of rectangle = $\dfrac{400}{24} = \dfrac{50}{3}$

= $16\dfrac{2}{3}$ cm

137. (A) $\tan \theta = \dfrac{3}{4} \Rightarrow \tan^2\theta = \dfrac{9}{16}$
Expression

$= \dfrac{4\sin^2\theta - 2\cos^2\theta}{4\sin^2\theta + 3\cos^2\theta}$

$= \dfrac{4\dfrac{\sin^2}{\cos^2\theta} - 2\dfrac{\cos^2\theta}{\cos^2\theta}}{4\dfrac{\sin^2\theta}{\cos^2\theta} + 3\dfrac{\cos^2\theta}{\cos^2\theta}}$
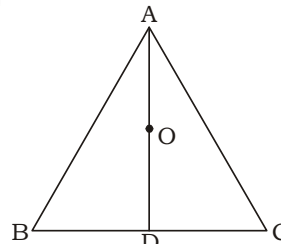
$= \dfrac{4\tan^2\theta - 2}{4\tan^2\theta + 3}$

$= \dfrac{4 \times \dfrac{9}{16} - 2}{4 \times \dfrac{9}{16} + 3}$

$= \dfrac{\dfrac{9}{4} - 2}{\dfrac{9}{4} + 3} = \dfrac{9-8}{9+12} = \dfrac{1}{21}$

138. (D)

DB = DC = 3 cm
$AD = \sqrt{AB^2 - BD^2} = \sqrt{6^2 - 3^2}$
$= \sqrt{36-9} = \sqrt{27} = 3\sqrt{3}$ cm
$\therefore$ OD = In-radius
$= \dfrac{1}{3} \times 3\sqrt{3} = \sqrt{3}$ cm
$\therefore$ Area of circle = πr^2
$= \pi \times \sqrt{3} \times \sqrt{3} = 3\pi$ cm².

139. (B) $\sec \theta = \dfrac{4x^2 + 1}{4x}$

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

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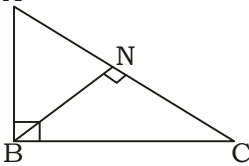
$= \sqrt{\dfrac{(4x^2+1)^2 - (4x)^2}{(4x)^2}}$

$= \dfrac{4x^2 - 1}{4x}$

$\therefore \sec \theta + \tan \theta = \dfrac{4x^2+1}{4x} + \dfrac{4x^2-1}{4x}$

$= \dfrac{4x^2+1+4x^2-1}{4x} = \dfrac{8x^2}{4x} = 2x$

140. (D)

In $\triangle ABC$ & $\triangle BNC$,
$\angle ABC = \angle BNC = 90°$
and $\angle C = \angle C$ (common)
$\therefore \triangle ABC \sim \triangle BNC$

and BC = $\sqrt{10^2 - 6^2}$ = 8 cm

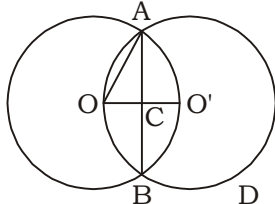$\therefore \dfrac{AC}{BC} = \dfrac{BC}{NC}$

$\Rightarrow \dfrac{10}{8} = \dfrac{8}{NC}$

$\Rightarrow$ NC = 6.4
$\therefore$ AN = 10 – 6.4 = 3.6
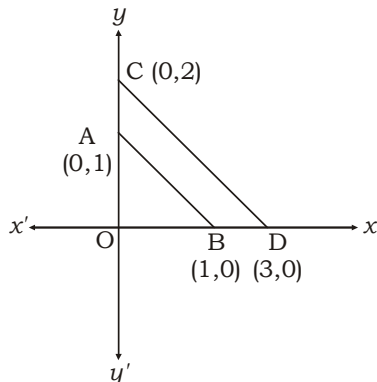$\therefore$ AN : NC = 3.6 : 6.4 = 9 : 16

141. (B)

OC = 2 cm
OA = 4 cm

$\therefore$ AC = $\sqrt{4^2 - 2^2}$ = $\sqrt{16-4}$ = $\sqrt{12}$ = $2\sqrt{3}$

$\therefore$ AB = $4\sqrt{3}$ cm

142. (C)

$x = 0$ is the equation of y-axis.
$y = 0$ is the equation of x-axis.
Putting $x = 0$ in $x + y = 1$, $y = 1$
Putting $y = 0$ in $x + y = 1$, $x = 1$
Putting $x = 0$ in $2x + 3y = 6$
$3y = 6 \Rightarrow y = 2$
Putting $y = 0$ in $2x + 3y = 6$
$2x = 6 \Rightarrow x = 3$
$\therefore$ OB = 1; OA = 1
OD = 3; OC = 2
$\therefore$ Required area = $\triangle$OCD – $\triangle$OAB

= $\dfrac{1}{2}$ × 3 × 2 – $\dfrac{1}{2}$ × 1 × 1

= $3 - \dfrac{1}{2} = 2\dfrac{1}{2}$ sq. units

143. (C)

144. (A) tan θ + cot θ = 2

$\Rightarrow$ tan θ + $\dfrac{1}{\tan\theta}$ = 2

$\Rightarrow$ tan²θ – 2 tan θ + 1 = 0
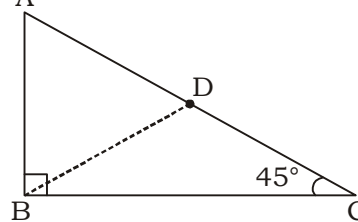$\Rightarrow$ (tan θ – 1)² = 0
$\Rightarrow$ tan θ = 1 = 0
$\Rightarrow$ tan θ = 1
$\therefore$ cot θ = 1
$\Rightarrow \theta$ = 45°
$\therefore$ tanⁿ45° + cotⁿ45° = 1 + 1 = 2

145. (A)

BD = AD = CD (mid-point of hypotenuse is circumcentre.)

$\therefore$ BD = $\dfrac{1}{2}\left(4\sqrt{2}\right)$ = $2\sqrt{2}$ units

146. (D) Total accidents = 230 + 150 + 120 + 160 + 40 + 200 + 100 = 1000
Percentage of accidents involving two-wheelers to two wheelers

= $\dfrac{230}{100}$ × 100 = 23%

Percentage of accidents involving two-wheelers to other objects

= $\dfrac{770 \times 100}{1000}$ = 77%

$\therefore$ Required difference
= 77 – 23 = 54%

147. (C) Two-wheelers + Cars + Buses + Stationary Vehicles
= 230 + 150 + 120 + 100
= 600 ≈ 60%

148. (D) $\because$ 1000 ≡ 360°
Sector angle for stationary vehicles.

$\dfrac{360}{1000}$ × 100 = 36°

149. (A) Required percentage

= $\dfrac{40 + 200}{1000}$ × 100

= $\dfrac{24000}{1000}$ = 24%

150. (B) Required difference

= $\dfrac{160 - 120}{1000}$ × 100 = 4%

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Agnostic	A person who claims that they cannot have true knowledge about the existence of God (but does not deny that God might exist)	अनीश्वरवादी
Alliteration	Use of the same consonant at the beginning of each stressed syllable in a line of verse	अनुप्रास अलंकार
Antiquarian	An expert or collector of antiquities	पुरातत्ववेत्ता
Apostate	A disloyal person who betrays or deserts his cause or religion or political party or friend etc.	स्वधर्मत्यागी
Ascetic	Someone who practices self-denial as a spiritual discipline	संन्यासी
Camouflage	An outward semblance that misrepresents the true nature of something	झूठा आवरण
Cerebration	The process of using your mind to consider something carefully	सोच-विचार
Commiseration	A feeling of sympathy and sorrow for the misfortunes of others	सहानुभूति
Debacle	A sudden and violent collapse	विध्वंस, शिकस्त
Defame	Charge falsely or with malicious intent; attack the good name and reputation of someone	बदनाम करना
Desecration	Blasphemous behaviour the act of depriving something of its sacred character	अपवित्रता, पवित्र वस्तुओं का अनादर
Devotee	An ardent follower and admirer	श्रद्धालु
Ditty	A short simple song (or the words of a poem intended to be sung)	गीत
Earnestly	In a serious manner	गंभीरतापूर्वक
Emergence	The gradual beginning or coming forth	उत्थान
Encroaching	Gradually intrusive without right or permission	अतिक्रमणकारी
Evident	Capable of being seen or noticed	स्पष्ट
Excavate	Recover through digging	खोद कर निकालना
Exploit	Use or manipulate to one's advantage	शोषण करना
Faint-Hearted	Lacking conviction or boldness or courage	डरपोक
Flourishing	Very lively and profitable	समृद्ध
Fructify	Become productive or fruitful	उपजाऊ होना
Germane	Relevant and appropriate	अनुकूल, उचित
Gratis	Without payment	बिना मूल्य का
Hedonist	Someone motivated by desires for sensual pleasures	सुखवादी
Heresy	Any opinions or doctrines at variance with the official or orthodox position	विरुद्ध मत
In pursuit of	Following something closely and determined to catch	की खोज में निकलना
Inevitable	Incapable of being avoided or prevented	अवश्यंभावी, निश्चित
Inhibit	Limit, block, or decrease the action or function of	बाधा डालना
Insinuation	An indirect (and usually malicious) implication	उकसावा
Machination	A crafty and involved plot to achieve your (usually sinister) ends	साजिश, षडयंत्र
Naive	Marked by or showing unaffected simplicity and lack of experience	अनुभवहीन, सीधा-सादा
Oath	A solemn promise, usually invoking a divine witness,	शपथ

	regarding your future acts or behaviour	
Ominous	indicating ill fortune	अशुभ
Orthodox	Adhering to what is commonly accepted	कट्टरपंथी, दकियानूसी
Oxymoron	Conjoining contradictory terms (as in `deafening silence')	विरोधालंकार
Parasite	An animal or plant that lives in or on a host (another animal or plant); it obtains nourishment from the host without benefiting or killing the host	परजीवी
Parasol	A handheld collapsible source of shade	छतरी
Perish	Pass from physical life and lose all bodily attributes and functions necessary to sustain life	नष्ट हो जाना
Practice	Avail oneself to	व्यवहार में लाना
Precious	Of high worth or cost	बहुमूल्य
Preoccupations	An idea that preoccupies the mind and holds the attention	अन्यमनस्कता, विचारमग्न
Prevent	Stop (someone or something) from doing something or being in a certain state	बाधा डालना, रोकना
Profane	Impure or defiled	अपवित्र, अशुद्ध
Prostate	A type of gland	एक प्रकार की ग्रंथी
Pun	A humorous play on words	श्लेशालंकार
Quell	Suppress or crush completely	कुचलना, दबाना
Rational	Consistent with or based on or using reason	तर्कसंगत
Remains	Any object that is left unused or still extant	अवशेष
Remnants	A small part or portion that remains after the main part no longer exists	अवशेष, बाकी
Renounce	Turn away from; give up	त्यागना
Repress	Put down by force or intimidation	कुचलना, दबाना
Restoration	The state of being restored to its former good condition	मरम्मद, पूर्वावस्था की प्राप्ति
Resumption	Beginning again	पुन: शुरू होने की क्रिया
Resurrection	A revival from inactivity and disuse	पुनरूत्थान
Retrieval	The act of regaining or saving something lost (or in danger of becoming lost)	पुन: प्राप्ति
Sacrilege	Blasphemous behaviour, the act of depriving something of its sacred character	पवित्र वस्तुओं का अनादर
Salvation	(theology) the act of delivering from sin or saving from evil	निर्वाण, मोक्ष
Sceptic	Someone who habitually doubts accepted beliefs	नास्तिक
Show up	Appear or become visible; make a showing	स्पष्ट होना, निकल आना
Spoil	Make a mess of, destroy or ruin	नष्ट करना, खराब करना
Stoic	Seeming unaffected by pleasure or pain; impassive	आत्मसंयमी
Stout-hearted	Brave	बहादुर
Take off	Depart from the ground	जमीन छोड़ना
Turn up	Appear or become visible; make a showing	होना, निकल आना
Urbane	Showing a high degree of refinement and the assurance that comes from wide social experience	शिष्ट, सुशील
Voluptuous	Having strong sexual appeal	आकर्षक, कामुक

SSC MOCK TEST - 30 (ANSWER KEY)

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

151. (B) Change 'aims to do' into 'aims at doing'. 'Aim' takes 'at' after it and all the prepositions take 'v_1 + ing' after them.

152. (A) If past time (i.e. last weekend) is given in a sentence, the sentence must be in simple past tense and never in present perfect tense. Change 'have visited' into 'visited'.

153. (A) Substitute 'do you ?' by 'would you ?' 'would' is used for making a 'polite request' in an interrogative sentence.

154. (A) Remove 'the' before 'life'. In general meaning, 'life' should not be preceded by an article.

155. (B) Add 'to' before 'Australia'.

156. (C) 'Get along with someone' means 'to have smooth relations with someone'.

157. (C) Among those options, 'Restoration' is the appropriate one, which means 'the act of restoring something to its former good condition.'

158. (B) This is a famous saying.

159. (D) 'Beside' means 'by the side of' or 'adjacent to'.

162. (C) 'As ...... as' a is co-relative conjunction. We need 'as' after 'tall'.

163. (A) Establish (V_1) will be preceded by 'to'. 'In' is followed by 'V_1 + ing'.

165. (B) If the two actions take place in the past, and an action preceded the other then the 1st action should be in past perfect tense.

166. (A) 'The long and short of something' is a phrase which means 'the substance or gist of the general situation without giving details'.

Correction of Mock Test- 29

11. (*)   26. (D)   27. (C)   29. (C)   61. (A)

109. (D) From the given options, the least number which divide 200 and 320 is 20.

136. (D)   196. (D)

> *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*