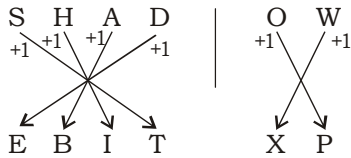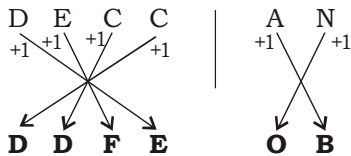# SSC MOCK TEST – 49 (SOLUTION)
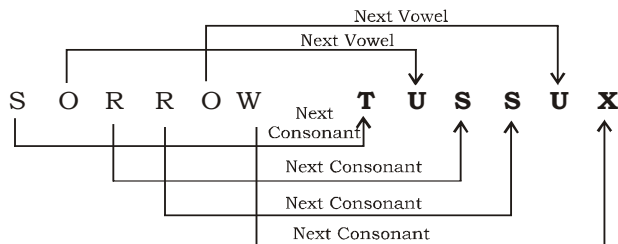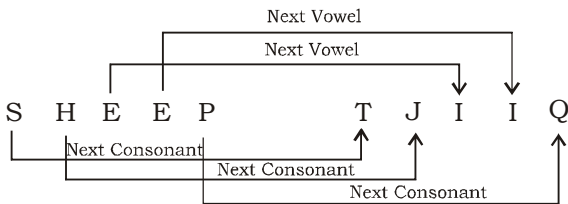
1. (A) $4 \Rightarrow 4^3 - 4^2 = 64 - 16 = 48$
   $5 \Rightarrow 5^3 - 5^2 = 125 - 25 = \textbf{100}$

2. (C) As magnet has poles, similarly battery has **terminals**.

3. (B) As,
   $5^3 - 1 = 124$
   Similarly,
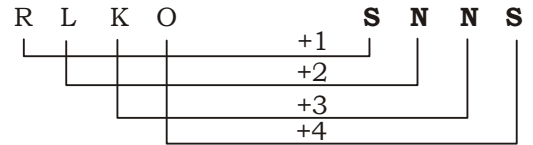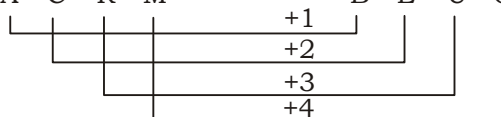 $9^3 - 1 = \textbf{728}$
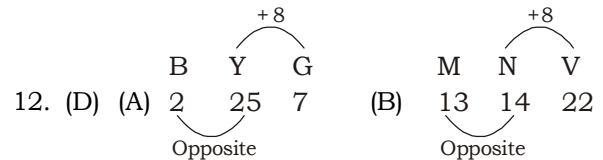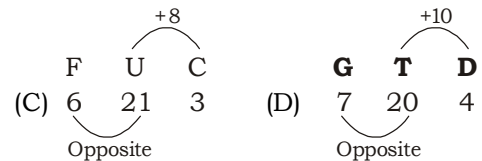
4. (C) As,

   Similarly,

5. (D)

6. (A) As President is the nominal head of a country, similarly **Governor** is the nominal head of a State.

7. (C) $74 \Rightarrow 74 - (\text{Reverse } (47)) = 74 - 47 = 27$
   $86 \Rightarrow 86 - (\text{Reverse } (86)) = 86 - 68 = \textbf{18}$

8. (C)

9. (D) All except Chess are outdoor games.

10. (B) (A) $150 = 5^3 + 5^2$ (B) $14 = 2^3 + 6$
    (C) $252 = 6^3 + 6^2$ (D) $80 = 4^3 + 4^2$

11. (B) All except Gazelle are animals found in the mountains.

12. (D)

13. (B) All except India are islands, while India is a peninsula.

14. (C) Given time = 9 : 48
    Total minutes in 9 hrs 48 min.
    = 60 × 9 + 48 = 588 min.
    Now we have,

    $$\frac{Total\ \min\ in\ given\ time}{2} - (\text{Given minutes} \times 6)$$

    $$= \frac{588}{2} - 48 \times 6 = 294 - 288 = 6°$$

15. (D) Originally, let number of women = X. Then, number of men = 2X.
    So, in city Y, we have :
    $(2X - 10) = (X + 5)$ or X = 15.
    Therefore, total number of passengers in the beginning = (X + 2X) = 3X = 45.

16. (A) Let d and s represent the number of daughters and sons respectively.
    Then, we have :
    $d - 1 = s$ and $2(s - 1) = d$.
    Solving these two equations,
    we get: $d = 4$, $s = 3$
    So, total no of children = 3 + 4 = 7

17. (B) C**A**R**E**

18. (C)

	A		
B	C	D	E
	F		
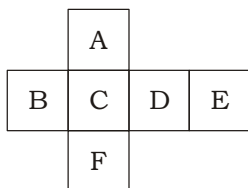
So, C/E, A/F and B/D
are opposite to each other.

19. (D) $8 \times 6 \div 2 - 4 + 8 = 28$

$\Rightarrow 8 \times 3 - 4 + 8 = 28$

$\Rightarrow 24 - 4 + 8 = 28$

$\Rightarrow 24 + 4 = 28$

$\Rightarrow 28 = 28$

20. (D) $\dfrac{Shocker}{4} \quad \dfrac{Shout}{2} \quad \dfrac{Sink}{1} \quad \dfrac{Smuggler}{3}$

21. (A)   No. of letters

I like You   8   × 2 = 16

I hate u   6   × 2 = 12

22. (C) For first triangle,

$10 - 4 = 6$

$18 - 10 = 8$

$18 - 4 = 14$

For second triangle,

$14 - 8 = 6$

$22 - 14 = 8$

$22 - 8 = 14$

For third triangle,

$11 - 5 = 6$

$15 - 11 = 4$

$15 - 5 = \mathbf{10}$

23. (B) $(7 \times 3) = 21$ and $(9 \times 3) = 27$

and $(4 \times 9) = 36$ and $(2 \times 9) = 18$

Therefore, $(9 \times 6) = 54$ and $(4 \times 6) = 24$.

24. (C) $\sqrt{4 \times 9} = 6$

and $\sqrt{9 \times 16} = 12$

Therefore, $\sqrt{16 \times ?} = 20$

$\Rightarrow ? = \mathbf{25}$
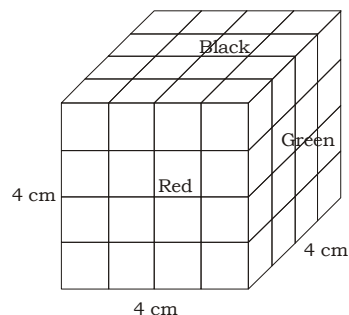
25. (A) $(15 - 12) + (10 - 9) = 4$

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

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

26. (B) From third and fourth dice, it is clear that digit 2, 3, 4 and 6 can't be opposite to digit 1. So, we can say that digit 5 is opposite to 1 and vice versa.

27. (C) One side of the cube = $\sqrt[3]{64}$

Number of small cubes having no face coloured = $(x - 2)^3$

= $(4 - 2)^3 = \mathbf{8}$

28. (D) Number of small cubes having only one face coloured = 4 from each face

= 4 × 6 = **24**

29. (B) The arrangement is as follows:

    T   Q   P   R   S

Therefore, P is sitting between Q and R.

30. (D) The pattern of difference is + 0, + 3, + 8, + 15, + 24 ..... i.e. + $(1^2 - 1)$, + $(2^2 - 1)$, + $(3^2 - 1)$, + $(4^2 - 1)$, ...

So, missing term = $28 + (5^2 - 1)$

= 28 + 24 = **52**

31. (C) The terms of the given series are numbers formed by joining together consecutive odd numbers in order i.e. 1 and 3, 3 and 5, 5 and 7, 7 and 9, 9 and 11, ...
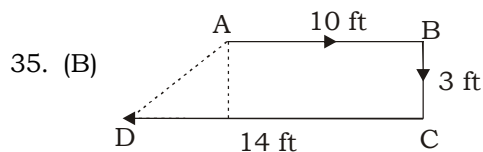
So, missing term = number formed by joining 11 and 13 = 1113.

32. (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 = $(6^2 - 1) = (36 - 1) = 35$.

33. (C)

0	6	24	60	120	210
1^3-1	2^3-2	3^3-3	4^3-4	5^3-5	6^3-6

So, missing term = $5^3 - 5 = \mathbf{120}$

34. (B) Only the child of my father means 'Abhisek' himself. This means the girl is the daughter of Abhisek. Hence, Abhisek's wife is the mother of the girl.

35. (B)

Required distance = AD

= $\sqrt{3^2 + (14 - 10)^2}$ = $\sqrt{9 + 16}$ = 5 ft

36. (D)

Education	Job	Income	Well-being
2	4	1	3

37. (D)

Liquid — Milk, River water (Milk and River water inside Liquid)

38. (B)

Mammal — Cow, Bat (Cow and Bat inside Mammal, separate circles)

39. (D) Neither Conslusion I nor II follows.

40. (A) I directly follows from the statement and so, I is implicit. Also, the statement is a suggestion and does not tell about a government policy or its position of funds. So, II is not implicit.

41. (A) $|p\underline{\boldsymbol{q}}r|\underline{\boldsymbol{r}}qp|p\underline{\boldsymbol{q}}r|\underline{\boldsymbol{r}}qp$

42. (D) $|a\underline{\boldsymbol{b}}|ab\underline{\boldsymbol{c}}|abcd|\underline{\boldsymbol{a}}bcde|\underline{\boldsymbol{a}}\,b$

43. (C)

44. (C) As,

G	A	N	G	A
−1	+2	−3	+4	−5
F	C	K	K	V

Then,

Y	A	M	U	N	A
−1	+2	−3	+4	−5	+6
X	**C**	**J**	**Y**	**I**	**G**

45. (C) Present Age →

	Grandfather	Raju
	x	$x - 65$

After 10 years → $x + 10$ $x - 65 + 10$

or

$x - 55$

So, $x + 10 + x - 55 = 95$

$\Rightarrow 2x - 45 = 95$

$\Rightarrow 2x = 95 + 45 = 140$

$\Rightarrow x = 70$

Thus, Grandfather's Age = 70 years

and Raju's Age = 5 years

46. (B)

47. (A)

48. (C)

49. (D)

50. (B)

51. (C) DNA was first observed by a German biochemist named Frederich Miescher in 1869. But for many years, researchers did not realize the importance of this molecule. And Watson, Crick and Wikins were awarded the Nobel Prize in medicine in 1962 "for their discoveries concerning the molecular structure of nucleic acid and its significance for information transfer in living material".

52. (B) This is awarded for outstanding achievements in the music industry.

53. (A) The Nilgiri Biosphere Reserve is an international biosphere reserve in the Western Ghats and Nilgiri hills ranges of south India. The western Ghats, Nilgiri Sub-Cluster (6000^+ Km^2)

54. (A) The book 'Curfew in the city' has been authored by Vibhuti Narain Rai. The book was first published as a hindi novel in 1988 and has been translated in English by C.M. Naim and brought out by Penguim in 2016.

56. (B) The Growth, development and adoption of new varieties of oilseeds and complementary technologies nearly doubled oilseed production from 12.6mt in 1987-88 to 24.4 mt in 1996-97. Catalyzed by the technology mission on oil seeds, yellow Revolution was brought about.

58. (D) Bats generally emerge from caves, attics, or trees at dusk and hunt for insects in the night.
Bats generate ultrasound via the Larynx and emit the sound through the open mouth or much more rarely the nose.

59. (C) Among their documented positive attributed are good cleaning and high foaming in both soft and hard water, rapid biodegradability and skin mildness.

60. (A) Copper Sulphate is a chemical used in the treatment of some bacteria, algae, fungi. It is also used to kill snails, accidentally or on purpose

61. (B) In botany, Xylem is a type of vessel in the plant. Its main purpose is to transport water and minerals from the roots to the rest of the plant.

63. (B) Secondary storage, sometimes called auxiliary storage or external storage is non-volatile storage that is not under the direct control of a computer's central processing unit (CPU) or does not direct interact with an application.

65. (A) X-Ray penetrate objects and reveal information about its contents using two x-ray spectra. You can identity different meterials, and now a new algorithm is making it possible to find diamonds in the rock.

66. (A) Ecotype is a group of organisms within the species that is adapted to particular environmental condition and therefore exhibits behavioural structural, or physiological differences from other members of the species.

67. (B) Pench National Park is in Seoni and Chhindwara districts of Madhya Pradesh in India.

68. (A) Microsoft Outlook is a personal information manager from Microsoft, available as a part of the Microsoft office suite.

70. (C) The Committee to Review arrangements for Institution Credit for Agriculture and Rural Development set up by the Reserve Bank of India under the Chairmanship of Shri B. Sivaraman, conceived and recommended the establishment of NABARD.

73. (C) In the world, India's rank in 7th
Total area : - 3287263 km^2 (1269219 sq m.)

74. (A) Monotremes are mammals that lay eggs instead of giving birth to young ones like marsupials and placental mammls.

76. (C) Helium is lighter than air so it used in the deep divers for breathing. It is a nobel gas and belongs to the group of non-reactive gases.

78. (C) Hicky's Bengal Gazette was an English newspaper from Kolkata. It was the first major Newspaper in India.
Started in 1780, it was published for two years.

80. (B) The main feature of this stage is rapid, self-sustained growth.

82. (D) Lord Mahavira and Siddharatha were contemporaries to each other.

83. (A) The President Summons both houses (Rajya Sabha and Lok Saabha) of the Parliament and prorogues them. He can dissolves the Lok Sabha.

84. (B) Panchayati Raj System was first adopted by Rajasthan (Nagaur Disstrict) on oct 2 1959.

86. (B) According to Charter Act of 1813 the whole of the of the country was to be open to the Christian missionaries.

87. (C) (A) Ascorbic Acid : Vitamin C
(B) Chlorophyll : Quencher
(C) Cartenoid : Photosynthetic Pigment
(D) Superoxide : Enzyme

90. (B) This is a difficult number to know for certain since we can only see a fraction of the universe even with the most powerful instrument. The most current estimates guess that there are 100 to 200 billion galaxies in the universe.

91. (C) Operation flood started in 1970, is a project of the National Dairy Development Board (NDDB) which was the world's biggest dairy development programmes. Kurien gave the necessery thrust using his professional management skills to the programme and is recognized as its architect father of operation flood : Dr Verghese Kurien.

92. (C) Jim Corbett National Park is the oldest national park in India and was established in 1936 as Hailey National Park to protect the endangered Bengal tiger.

93. (C) The relationship between the biotic components of a place is called ecosystem. The producer system is green plants that make their own food.

96. (B) Planning Commission is not a constitutional body. This was set up by resolution of the government of India in march 1950 in pursuance of declared objectives of the Government to promote a rapid rise in the standard of living of the people by efficient exploitation of the resources of the country, increasing production and offering opportunities to all for employment in the service of the community.

99. (C) Anatomy : - Study of internal structure of organism
Agrostology – Study of grass
Agronomy – Science of soil management and production of crop
Agrology – Soil Science dealing with production of crop

100. (B) Ozone is found in the stratosphere, where it blocks the sun's UV waves and prevents them from reaching the earth's surface.

101. (C) Popoulation of Hindu in 2013
= 35% of 5 million
$$= \frac{35}{100} \times 5,000,000$$
= 17,50,000

102. (B) Ratio between the Hindu and Sikh population in 2012 = 30 : 45
= 2 : 3

103. (A) Hindu population in 2012
= 30% of 5,00,000
= 1,50,000
Muslim population
= 25% of 5,00,000
= 1,25,000
Total population
= 1,50,000 + 1,25,000
= 2,75,000

104. (A)
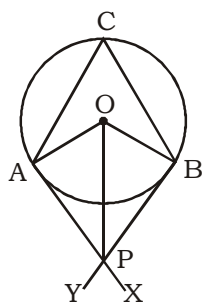
∠ACB = 65°
∠AOB = 2 × 65° = 130°
∠OAP = 90°, ∠AOP = 65°
∠APO = 180° – 90° – 65° = 25°

105. (C) Area of the base = $\frac{1}{2}$ (sum of parallel sides) × perpendicular distance
$$= \frac{1}{2}(14 + 8) \times 8 = 88 \text{ sq. cm.}$$
∴ Volume = Area of the base × height
⇒ 1056 = 88 × h
$$h = \frac{1056}{88} = 12 \text{ cm}$$

106. (D) 5% → $\frac{1}{20}$, 10% → $\frac{1}{10}$

20	—	21
20	—	19
10	—	9
4000	—	3591
↓		↓
In Jan month		In April month

107. (C) The minimum number of Bananas
= L.C.M of (6, 8, 10, 12, 15, 16) + 4
= 24 + 4 ⇒ 244

108. (A)

	Ist yr	IInd yr	IIIrd yr
S.I →	300	300	300
C.I →			18

∴ r % = $\frac{18}{300}$ × 100 ⇒ 6%

Difference between S.I and C.I according to the rate for two years → 0.36%
ATQ, → 0.36 = ₹ 18 (given)
∴ Principal = $\frac{1800}{36}$ × 100
⇒ ₹ 5000

109. (A) Assume if he travelled the whole journey on foot then
distance travelled in 13 hours = 13 × 5
= 65 km
similarly by cycle = 13 × 7 = 91 km

Foot   Cycle
65   91
(79)
12   14
6   :   7→13
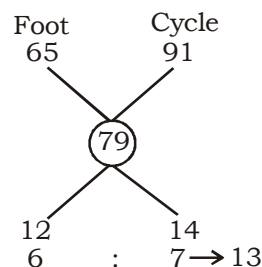
$$\frac{T_1}{T_1} = \frac{6}{7} \xrightarrow{\times 7} \text{foot}, \text{cycle} = 49\text{Km}$$

110. (A) 25% = $\frac{1 \to \text{Profit}}{4 \to \text{CP}}$

CP : SP
Old → 4x : 5x
Similarly,
              CP   :   SP
New → (4x – 950) : (5x – 950)

$$\frac{(4x - 950)}{(5x - 950)} = \frac{10}{13} \left[\therefore 30\% = \frac{3}{10} \right]$$

52x – 950 × 13 = 50x – 950 × 10
2x = 950 (13 – 10)
x = 475 × 3 = 1425
Cost price = 4x = 4 × 1425 = ₹ 5700

111. (A) ATQ,

	Boy : Girl
Efficiency :	2x : x
Time :	x : 2x

A→5
B→8 $8x$
Boy→x $5x$
Girl→$2x$ 40   20
$40x$ Total units of work
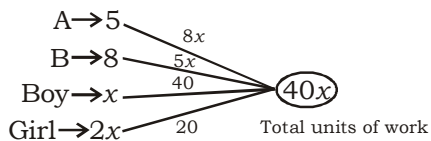
ATQ, $\dfrac{40x}{13x+60} = 3$

$\Rightarrow 39x + 180 = 40x$

$\Rightarrow x = 180$ days

Time taken by the boy to complete the work = 180 days

Time taken by girl to complete the work = 360 days

Ratio of efficienies =

A	:	B	:	Boys	:	Girl
8 × 180	:	5 × 180	:	40	:	20
72	:	45	:	2	:	1

Recieved wages = ₹ 4800

Now, share of A = $\dfrac{4800}{120} \times 72 = $ ₹ 2880

share of B = $\dfrac{4800}{120} \times 45 = $ ₹ 1800

share of Boy = $\dfrac{4800}{120} \times 2 = $ ₹ 80

share of Girl = $\dfrac{4800}{120} \times 1 = $ ₹ 40

112. (D) Formula → $\sqrt{xy}$

$\Rightarrow \sqrt{9 \times 16}$

= 12 m

113. (C) PR = $\sqrt{PM^2 + MR^2}$ = $\sqrt{36 + 64}$ = 10 cm

PQ = $\sqrt{QR^2 - PR^2}$ = $\sqrt{(26)^2 - (10)^2}$ = 24 cm

∴ ar (ΔPQR) = $\dfrac{1}{2} \times$ (PR) × (PQ)

= $\dfrac{1}{2} \times 10 \times 24 = 120$ cm^2

114. (A) Area of walls = 2 ($l + b$) × h

= 2(8 + 6) × 3 = 84 m^2

Area of two windows and a door

= $2\left(1\dfrac{1}{2} \times 1\right) + \left(2 \times 1\dfrac{1}{2}\right) = 6$ m^2

∴ Area to be covered = 84 − 6

= 78 m^2

∴ Area of paper = Area to be covered = 78

$\Rightarrow$ (length × breadth) of paper = 78

$\Rightarrow$ length of paper = $\dfrac{78}{50} \times 100$ m

= 156 m

∴ cost = $\dfrac{156 \times 25}{100}$ = ₹ 39

115. (B) Area of large cube = 6(5)^2

= 150 (unit)

Area of cuboid = 2 (1 × 1 + 1 + 125 + 125 × 1)

= 502 sq.units

∴ Percentage increase in surface area

= $\dfrac{502 - 150}{150} \times 100 = 234\dfrac{2}{3}$ %

116. (D) sec 17° − sin 73°

= sec 17° − sin (90° − 17°)

= sec 17° − cos 17° = $\dfrac{1}{\cos 17°}$ − cos 17°

= $\dfrac{1 - \cos^2 17°}{\cos 17°}$ = $\dfrac{\sin^2 17}{\cos 17°}$ = $\dfrac{\dfrac{x^2}{y^2}}{\sqrt{1 - \dfrac{x^2}{y^2}}}$

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

117. (B) $2^{32} - (2 + 1)(2 - 1)(2^2 + 1)(2^4 + 1)(2^8 + 1)(2^{16} + 1)$

$2^{32} - (2^2 - 1)(2^2 + 1)(2^4 + 1)(2^8 + 1)(2^{16} + 1)$

$2^{32} - (2^4 - 1)(2^4 + 1)(2^8 + 1)(2^{16} + 1)$

$2^{32} - (2^8 - 1)(2^8 + 1)(2^{16} + 1)$

$2^{32} - (2^{32} - 1) = 1$

118. (D) Divided by x →

$\dfrac{\dfrac{x^4}{x} + \dfrac{1}{x^2 \times x}}{\dfrac{x^2}{x} - \dfrac{3x}{x} + \dfrac{1}{x}}$ = $\dfrac{x^3 + \dfrac{1}{x^3}}{x - 3 + \dfrac{1}{x}}$

$\Rightarrow$ $\dfrac{110}{2}$ = 55

119. (A) Let the fraction be = $\dfrac{100}{100}$

ATQ,

$\dfrac{140}{200} \times \dfrac{16}{7}$

∴ Original fraction = $\dfrac{5}{8}$

120. (B) 20% → $\dfrac{1}{5}$, 15% → $\dfrac{3}{20}$

Before discount   After discount

5	—	4
20	—	17
100	—	68
↓×6		↓×6
₹600		₹408

121. (B) ₹ 4960 is the amount of 3 years at rate of 3% annually, then

$$x + \frac{x \times 8 \times 3}{100} = 4960 \text{ or, } \frac{124x}{100} = 4960$$

$$\therefore x = \frac{4960 \times 100}{124} = 4000$$

∴ Initial value of cow = 3000 + 4000 = ₹ 7000

122. (A) Let initial investment = $3x$, $5x$ and $7x$
After one year $(3x - 45600) : 5x : 7x + 337600$
New Ratio → 24 : 59 : 167

$$\frac{3x - 45600}{5x} = \frac{24}{59}$$

$x = 47200$

∴ initial investment of Bhim
= 47200 × 3 = 141600

123. (A) Let the downstream and upstream speed be $3x$ and $5x$.

speed of the current = $3\frac{3}{4}$ km/hr

$$\Rightarrow \frac{5x - 3x}{2} = \frac{15}{4} \text{ km/hr}$$

$$\Rightarrow x = \frac{15}{4} \text{ km/hr}$$

∴ Speed of the boat in still water

$$= \frac{5x + 3x}{2} = 4x$$

$$= \frac{4 \times 15}{4} \text{ km/hr} = 15 \text{ km/hr}$$

124. (A) Let the number of filling pipes = x
∴ outlet pipes = $(8 - x)$
ATQ,

$$= \frac{x}{12} - \frac{8-x}{36} = \frac{1}{3}$$

$$= \frac{3x - 8 + x}{36} = \frac{1}{3} \Rightarrow 4x - 8 = 12$$

$$\Rightarrow 4x = 20$$
$$\Rightarrow x = 5$$

Number of filling pipes = 5

125. (C) Let the cost price be

```
            1000
           /    \
        S.P      M.P
      920 gm    1150 gm
         |_____|
           230 gm
```
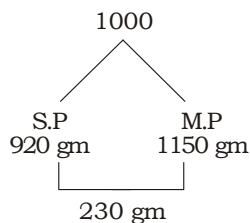
∴ Profit % = $\frac{230}{920} \times 100 = 25\%$

126. (B)
```
  Teaching staff   Non Teaching
     12, 000          5, 000
          \          /
           10,000
          /          \
     5, 000          2, 000
        5               2
        ↓ ×4            ↓ ×4
       20               8
```

127. (D) $\frac{AE}{EB} = \frac{4}{5} = \frac{AD}{DC}$ .... (I) $(DE \parallel CB)$

Again,

$$\frac{AN}{NE} = \frac{AD}{DC} = \frac{4}{5} \qquad (DN \parallel CE)$$

$$1 + \frac{AN}{NE} = 1 + \frac{4}{5} \Rightarrow \frac{9}{5}$$

$$\frac{AN + NE}{NE} = \frac{9}{5}$$

$$\frac{AE}{NE} = \frac{9}{5} \qquad \text{.......... (II)}$$

Divide (I) and (II)

$$\frac{\frac{AE}{EB}}{\frac{AE}{NE}} = \frac{\frac{4}{5}}{\frac{9}{5}}$$

$$\frac{NE}{EB} = \frac{4}{9}$$

128. (D) ∠DCK = ∠FDG
= 55° (corresponding)
∴ ∠ACE = ∠DCK
= 55° (vertically opposite)
So, ∠AEC = 180° – (40° + 55°)
= 85°
∴ ∠HAB = ∠AEC = 85° (corresponding)
Hence, x = 85°

129. (B) Let radius of the circle is 'r' units OP = $(1 - r)$, OA = $(1 + r)$ and AP = 1
In ΔAOP; OA^2 = AP^2 + OP^2
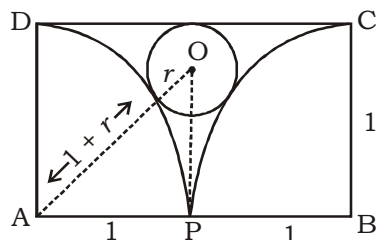
$\Rightarrow (1 + r)^2 = 1^2 + (1 - r)^2$

$\Rightarrow r = \dfrac{1}{4}$ units

$\therefore$ Area of smaller circle $= \pi\left(\dfrac{1}{4}\right)^2$

$= \dfrac{\pi}{16}$ square units

Sum of the area of the quarter circles $= \dfrac{\pi}{4}$

$+ \dfrac{\pi}{4} = \dfrac{\pi}{2}$ square units

Area of shaded region

$= 2 - \left(\dfrac{\pi}{16} + \dfrac{\pi}{2}\right)$

$= 2 - \dfrac{9}{16}\pi$

$= 2 - \dfrac{9}{16} \times \dfrac{22}{7} = \dfrac{13}{56}$ sq. units

130. (B)
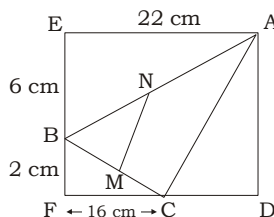
$AC^2 = CD^2 + AD^2$
$\quad\quad = 6^2 + 8^2 = 100$
$AC \quad = 10$ cm

$MN = \dfrac{1}{2}AC = \dfrac{1}{2} \times 10 = 5$ cm

(By mid point theorem)

131. (A) Let the value of x & y be 1
$\therefore$ Required answer $= (1)^2 + (1)^2 = 2$

132. (D)
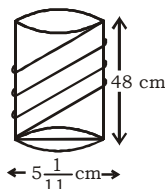
The above figure, will look like the figure (below), when we open it.
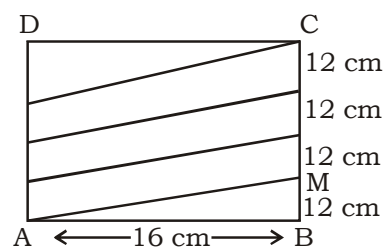
The base circumference

$= 2\pi r = 2 \times \dfrac{22}{7} \times \dfrac{56}{11} \times \dfrac{1}{2}$

$= 16$ cm
$\therefore$ AM = length of one complete

turn $= \sqrt{16^2 + 12^2}$

$= 20$ cm
$\therefore$ Total length $= 4 \times 20 = 80$ cm

133. (A) $2 \sin \alpha + 15 \cos^2 \alpha = 7$
$\Rightarrow 2\sin\alpha + 15(1 - \sin^2 \alpha) = 7$
$\Rightarrow 2\sin\alpha + 15 - 15\sin^2 \alpha = 7$
$\Rightarrow 15 \sin^2\alpha - 2 \sin^2 \alpha - 8 = 0$
$\Rightarrow 15 \sin^2\alpha - 12 \sin \alpha + 10 \sin \alpha - 8 = 0$
$\Rightarrow 3 \sin \alpha (5 \sin \alpha - 4) + 2 (5 \sin \alpha - 4) = 0$
$\Rightarrow (3 \sin \alpha + 2) (5 \sin \alpha - 4) = 0$

$\Rightarrow \sin \alpha = \dfrac{4}{5}$

$\therefore \csc \alpha = \dfrac{5}{4}$

$\cot \alpha = \sqrt{\csc^2\alpha - 1} = \sqrt{\dfrac{25}{16} - 1} = \sqrt{\dfrac{9}{16}} = \dfrac{3}{4}$

134. (D) Let the number of students be x then we have,

$\dfrac{x}{2} - 5 = \dfrac{x}{3} - 2$

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

$\Rightarrow \dfrac{3x - 2x}{6} = 3$

$\Rightarrow x = 18$
So, the number of students = 18

135. (C) Ist student 30% failed by 96 marks.
IInd student gets 45% passed by 24 marks more
$\therefore \quad 15\% \rightarrow 120$ marks
Total marks = 800
Passing marks = 240 + 96
= 336

pass % $= \dfrac{336}{800} \times 100 \Rightarrow 42\%$

136. (C) The minute hand complete one revolution in 60 minute.

$\therefore$ In 50 minute it will cover $\dfrac{50}{60} = \dfrac{5}{6}$

of the revolution.
$\because$ 1 revolution = 2π radian.

$\therefore \dfrac{5}{6}$ revolution = $2\pi \times \dfrac{5}{6} = \dfrac{5\pi}{3}$ radian

$\therefore$ Distance moved by tip = $3 \times \dfrac{5\pi}{3}$ cm

$= 5\pi$ cm

$= 5 \times \dfrac{22}{7}$ cm = 15.71 cm

137. **(B)** $\dfrac{5x}{x} - \dfrac{3}{x} + \dfrac{5y}{y} - \dfrac{3}{y} + \dfrac{5z}{z} - \dfrac{3}{z} = 0$

$5 + 5 + 5 - 3\left(\dfrac{1}{x} + \dfrac{1}{y} + \dfrac{1}{z}\right) = 0$

$\left(\dfrac{1}{x} + \dfrac{1}{y} + \dfrac{1}{z}\right) = 5$

138. **(D)** Take $\alpha = 0°$

$\therefore u_1 = 1^n = 0^0 = 1°$

$\therefore u_6 = 1^6 = 6$ & $u_4 = 1^4 = 4$

$\therefore 2u_6 - 3u_4 + 1 = 2 \times 1 - 3 \times 1 + 1 = 0$

139. **(A)** Let the total no of students be 100

then failed students in computer = 100 − 28 = 72

fail students in commerce = 100 − 13 = 87

Student only failed in computer = 72 − 62 = 10

Student only failed in commerce = 87 − 62 = 25

fail in both subjects = 62

Total failed students = 62 + 25 + 10 = 97

$\therefore$ Pass students = 100 − 97 = 3

only in computed no of pass students =

$\dfrac{10}{3} \times 9 = 30$

140. **(B)** Let $\theta = 0°$, then

$m = a$ and $n = 0$

$(m+n)^{\frac{2}{3}} + (m-n)^{\frac{2}{3}} = a^{\frac{2}{3}} + a^{\frac{2}{3}}$

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

141. **(A)** Put the value of x, y and z as 1, 8 and 27 respectively

ATQ,

$(1 + 8 - 27)^3 + 27 \times 1 \times 8 \times 27$

$= (-18)^3 = 3^3 \times 2^3 \times 3^3$

$= (-18)^3 + (18)^3 = 0$

142. **(*) Note:- Read "$(a + b)^2 + (b + c)^{2"}$ as "$(a + b)^2 + (b + c)^2 + (c + a)^{2"}$**

$(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + ac + bc)$

or, $2^2 = a^2 + b^2 + c^2 + 2(-1)$

$\therefore a^2 + b^2 + c^2 = 6$

$(a + b)^2 + (b + c)^2 + (c + a)^2$

$= 2(a^2 + b^2 + c^2 + ab + ac + bc)$

$= 2(6 - 1) = 10$

143. **(B)** Harender invest

$= (700 \times 3) \times \left(700 \times \dfrac{5}{7} \times 3\right) + \left(500 + 200 \times \dfrac{3}{5}\right) \times 6$

Bhim invest = $600 \times 12 = ₹ 7200$

Harender's share = $\dfrac{7320}{14520} \times 726 = 366$

144. **(A)** Let the speed of the train be x km/h speed of the man = 6 km/h (given)

$\therefore$ Both are moving in the same direction

$\therefore$ Relative Speed = $(x - 6)$ Km/h

we know $\Rightarrow t = \dfrac{d}{v} \Rightarrow 45 = \dfrac{450 \times 18}{(x - 6) \times 5}$

$5x - 30 = 180 \Rightarrow 5x = 210$

$x = 42$ km/h

$\because$ The trains reaches next station after 1 hour then it will travel 42 km in next one hour. To cover the same distance time taken by the man

$t = \dfrac{d}{v} = \dfrac{42}{6} = 7$ h

145. **(C)** Cost price of article = ₹ 400

Marked price = $400 \times \dfrac{(100 + 80)}{100} = ₹ 720$

Selling price after discount

$= 720 \times \dfrac{(100 - 15)}{100}$

$= \dfrac{720 \times 85}{100}$

CP	:	SP
400	:	612

+212

Profit % = $\dfrac{212}{400} \times 100 = 53\%$

146. **(B)**

	Ritu	:	Priti
Efficiency →	5	:	4

$\left[25\% = \dfrac{1}{4}\right]$

ATQ,

Priti takes 25 days to complete the work then total work = 4 × 25

= 100 units

Last 5 days Ritu and Priti work together.

Then 5 days work = 5 × (5 + 4) = 45 units

Remaining work = 100 − 45 = 55 units

Time taken by Ritu = $\dfrac{55}{5}$

= 11 days

147. (B) Total weight of 5 persons = 190 kg

Weight of Boat and 5 persons = 52 × 06

= 312 kg

∴   Weight of ⇒ 312 − 190

Boat = 122 kg

148. (C) Production in 1993-94 = 600 tonnes

Production in 1997-98 = 1200 tonnes

% increase in production

= $\dfrac{1200-600}{600}\times100$ = 100%

149. (D) Production in 1996-97 = 1000 tonnes

Production in 1992-93 = 400 tonnes

% increase = $\dfrac{1000-400}{400}\times100$

= $\dfrac{600}{400}\times100$ = 150%

150. (D) Production in 1994-95   = 900

Production in 1995-96   = 800

% decrease = $\dfrac{900-800}{900}\times100$

= $\dfrac{100}{900}\times100$

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

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Absolute	Not limited or restricted	असीम
Accorded	to give (something such as special treatment or status) to someone	नवाज़ना
Agnosticism	The belief that it is not possible to know whether God exists or not.	वह सिद्धांत जो ईश्वर के अस्तित्व के बारे में अज्ञान हो
Alliteration	The use of the same letter or sound at the beginning of words that are close together	अनुप्रास
Anglomaniac	One who has extremely strong admiration for England or English customs.	वह जो अंग्रेजों एवं उनकी परम्पराओं का समर्थक हो
Assure	To make something certain to happen	आश्वस्त करना
Atheism	Disbelief or lack of belief in the existence of God or gods.	नास्तिकता
Barren	Not producing anything useful or successful	अनउपजाऊ, बंजर
Client state	A country which depends on a larger and more powerful country for support and protection.	वह देश जो दूसरे विकसित एवं शक्तिशाली देशों पर संरक्षण/ समर्थन के लिए निर्भर हो
Diminutive	Very small	अति छोटा
Disarmament	The reduction or withdrawal of military forces and weapons	निरस्त्रीकरण
Doorway	An entrance to a room or building through a door	प्रवेश द्वार
Endow	to give	प्रदान करना
Enigmatic	Mysterious and difficult to understand	गूढ़, रहस्यपूर्ण
Fecund	Producing new and useful things	उपजाऊ
Fragrant	Having a pleasant smell	खुशबूदार
Haemophiliac	A person who suffers from severe loss of blood from even a slight injury because the blood fails to clot normally.	साधारण चोट से भी खुन आने की वंशानुगत प्रवृति
Honorary	(Of a position in an organization) not paid	अवैतनिक
Hustler	a person who tries to trick somebody into giving them money	ठग
Inebriate	A chronic drinker	मदहोश, शराबी
Lascivious	Feeling or showing strong sexual desire	कामुक
Lolita	A very young seductive girl	वह नवयुवती जो आकर्षक हो
Mawkish	Sentimental in a feeble way	अति भावुक
Pyromaniac	A person suffering from an obsessive desire to set fire to things.	वह व्यक्ति जिसे आग लगाने की सनक हो
Render	Provide or give (a service, help, etc.)	देना
Short-sighted	Not considering what will or might happen in the future	जो दूरदर्शी ना हो
Sonnet	A poem that has 14 lines, each containing 10 syllables, and a fixed pattern of rhyme.	चौदह पंक्तियों की कविता
Stupefied	Shocked or surprised	आश्चर्यचकित
Theism	The doctrine or belief in the existence of a God or gods	ईश्वरवाद
Threshold	A strip of wood, metal, or stone forming the bottom of a doorway and crossed in entering a house or room/ a point or level at which something begins	चौखट, शुरूआत
Trace	Indication of the existence or passing of something	निशानी, सुराग
Transcending	to be or go beyond the usual limits of something	के पार

SSC MOCK TEST - 49 (ANSWER KEY)

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

151. (D) 'encroach' will take 'on/upon' after it 'encroach on something' means 'to begin to affect or use too much of somebody's rights'.

152. (C) Possessive adjective used for the subject 'one' should be 'one's'. Replace 'his' by 'one's'.

153. (A) Since the subject is plural, replace 'kind' by 'kinds'.

154. (A) Place an article 'a' before a singular countable noun 'rainy day'.

155. (C) Remove 'will' as it is not used in 'if clause'.

156. (C) You assure (to tell someone in a very strong or definite way) someone of something.

174. (D) 'Just' an adverb comes after the helping verb and before the main verb.

175. (A) The formation of conditional sentence is- If + sub + had + V_3, sub + would have + V_3.

178. (C) 'Between' is used for two.

179. (*) Read 'I will write' into 'I will have written'

181. (C) The sentence is not a question. 'Was' will come after the subject 'Kohli'.

Mock Test-48 (Correction)

31. (C) One more logic can be applied to this question.

165   195   255   285   345   **375**
   +30   +60   +30   +60   +30
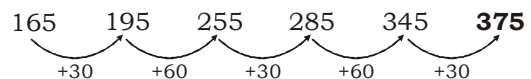
157. (A)

184. (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