

**SSC MOCK TEST – 36 (SOLUTION)**

1. (A) Ink is used for writing, similarly Colour is used for painting.
2. (C) CHAIR  $\xrightarrow{\text{Reverse}}$  RIAHC  
Similarly,  
TABLE  $\xrightarrow{\text{Reverse}}$  ELBAT
3. (D) Havana is the capital of Cuba and Nicosia is the capital of Saipras.
4. (B)  $6 + 15 = 21$   
 $3 + 15 = 18$
5. (D) 

L	K	J	M	N	O
		+1			
			+3		
				+5	

D	C	B	E	F	G
			+1		
				+3	
					+5
6. (B) Kangaroo is the national animal of Australia and Reindeer is the national animal of Siberia.
7. (B)  $72 \Rightarrow (7 + 2) \times 2 = 18$   
 $56 \Rightarrow (5 + 6) \times 2 = 22$
8. (A) Brick is used in wall. Similarly, Tile is used in Roof.
9. (A)  $(7)^2 - 1 = 49 - 1 = 48$   
 $(12)^2 - 1 = 144 - 1 = 143$
10. (C) Brick is used by Mason and Colour is used by painter.
11. (D) 

C	B	C	D
-1	+1	+1	

I	H	I	J
-1	+1	+1	

O	N	O	P
-1	+1	+1	

U	T	U	W
-1	+1	+2	
12. (A) '064' is only the square of a number in the given options.
13. (B) Plastic is a non-metal whereas Iron, Bronze and Copper are either a metal or an alloy.
14. (D)  $96 = 32 \times 3$ ;  $24 = 8 \times 3$   
 $39 = 13 \times 3$ ;  $18 = 6 \times 3$   
 $81 = 27 \times 3$ ;  $54 = 18 \times 3$   
Here (82, 64) are not multiples of 3.
15. (A) We can find more than one vowel in rest of the options.
16. (D) Except Agra, all are hill-stations.
17. (B) 61 is the only prime number in the given options.
18. (D) Except 'Boat', all run on road.
19. (D)
20. (D)  $\therefore F(6) + E(5) + E(5) + D(4) = 20$   
 $B(2) + R(18) + E(5) + A(1) + D(4) = 30$
21. (A) SCOUT
22. (B)
23. (D)  $1 \rightarrow 5 \rightarrow 4 \rightarrow 2 \rightarrow 3$
24. (D) 

10	12	15	68	70	73
+2	+3		+2	+3	

25. (C)  $b c a \underline{a} / b \underline{c} a a / b c \underline{a} a / \underline{b} c a a$   
 $\Rightarrow acab$
26. (C)  $8 + 16 = 24$   
 $16 + 24 = 40$   
 $24 + 40 = 64$   
 $40 + 64 = 104$   
 $64 + 104 = 168$

27. (D) 

	C	25	D
	15		15
A	20	B	E

  
 $\therefore$  Required distance =  $20 + 25 = 45$  m

28. (B) 

12	18	27	$40\frac{1}{2}$
$\times \frac{3}{2}$	$\times \frac{3}{2}$	$\times \frac{3}{2}$	

29. (D) Required number =  $51 - 21 + 1 = 31$

30. (A) 

M	I	C	R	O	W	A	V	E
-1	+1	-1	+1	-1	+1	-1	+1	-1
L	J	B	S	N	X	Z	W	D
P	O	P	U	L	A	R		
-1	+1	-1	+1	-1	+1	-1		
O P O V K B Q								

31. (D)  $B = (2)$ ,  $MAT = 13 + 1 + 20 = 34$

$JOGLEX = 10 + 15 + 7 + 12 + 5 + 24 = 73$

32. (A)  $+ \Rightarrow \div$ ,  $\times \Rightarrow +$

$- \Rightarrow \times$   $\div \Rightarrow -$

$36 - 6 + 3 \times 5 \div 3 = 74$

$\Rightarrow 36 \times 6 \div 3 + 5 - 3 = 74$

$\Rightarrow 36 \times 2 + 5 - 3 = 74$

$\Rightarrow 72 + 5 - 3 = 74$

$\therefore 74 = 74$

33. (C) 

2	5	10	17	26
+3	+5	+7	+9	

34. (C) 

A	C	F	J	O	U	B
+2	+3	+4	+5	+6	+7	

35. (A) 

138	142	146	150	146	142	138
+4	+4	+4	-4	-4	-4	

36. (A) 

17	14	15	12	13	10	11
-3	+1	-3	+1	-3	+1	

37. (A)

38. (D)  $5 \times 2 \times 6 = 60$

$8 \times 4 \times 2 = 64$

$7 \times 6 \times 3 = 126$

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39. (D)  $25 = 5 \times 5$   
 $30 = 5 \times 6$   
 $35 = ? \times 5$   
 $\therefore ? = \frac{35}{5} = 7$
40. (D)  $(24 \times 2) + 5 = 48 + 5 = 53$   
 $(51 \times 4) + 7 = 204 + 7 = 211$   
 $(67 \times 6) + 5 = 402 + 5 = 407$
41. (C)
42. (B)  $1 \times 10 \Rightarrow (1 \times 10) - 1 = 9$   
 $2 \times 10 \Rightarrow (2 \times 10) - 2 = 18$   
 $3 \times 10 \Rightarrow (3 \times 10) - 3 = 27$   
 $8 \times 10 \Rightarrow (8 \times 10) - 8 = 72$
43. (B)
44. (D)  $[(4)^2 + (2)^2 + (5)^2 + (3)^2] \div 2 = 54 \div 2 = 27$   
 $[(5)^2 + (3)^2 + (2)^2 + (6)^2] \div 2 = 74 \div 2 = 37$   
 $[(5)^2 + (9)^2 + (2)^2 + (2)^2] \div 2 = 114 \div 2 = 57$
45. (C)
46. (D)  $8 - 8 + 1 = 11 \div 11$   
 $\Rightarrow 0 + 1 = 1$   
 $\Rightarrow 1 = 1$
47. (A) As,
- |   |   |   |   |   |
|---|---|---|---|---|
| M | O | N | E | Y |
| ↓ | ↓ | ↓ | ↓ | ↓ |
| 1 | 2 | 3 | 4 | 5 |
- 
- |   |   |   |   |
|---|---|---|---|
| P | L | U | S |
| ↓ | ↓ | ↓ | ↓ |
| 6 | 7 | 8 | 9 |
- So,
- |   |   |   |   |
|---|---|---|---|
| P | L | U | M |
| ↓ | ↓ | ↓ | ↓ |
| 6 | 7 | 8 | 1 |
48. (C)  $6 + 3 \Rightarrow 3 \times 6 - (6 - 1) = 18 - 5 = 13$   
 $5 + 20 \Rightarrow 5 \times 20 - (5 - 1) = 100 - 4 = 96$   
 $11 + 7 \Rightarrow 11 \times 7 - (11 - 1) = 77 - 10 = 67$   
 $19 + 11 \Rightarrow 19 \times 11 - (19 - 1) = 209 - 18 = 191$
49. (D)
- |                         |           |        |          |                       |
|-------------------------|-----------|--------|----------|-----------------------|
| Day before<br>yesterday | Yesterday | Today  | Tomorrow | Day after<br>tomorrow |
| ↓                       | ↓         | ↓      | ↓        | ↓                     |
| Wednesday               | Thursday  | Friday | Saturday | Sunday                |
50. (C) C  $\Rightarrow$  02, 11, 23, 32, 40  
A  $\Rightarrow$  00, 13, 21, 33, 42  
R  $\Rightarrow$  57, 68, 77, 88, 99  
D  $\Rightarrow$  03, 10, 22, 30, 41
51. (B) The separation of powers, often imprecisely used interchangeably with the trias political principle, is a model for the governance of a state. The normal division of branches is into a legislature, an executive, and a judiciary. Division of powers is the often overlooked principle of dividing governmental power among the federal, state, and local governments.
52. (B) The Calcutta High Court is the oldest

High Court in the country which was established on 2<sup>nd</sup> July, 1862. Madras High Court in Chennai, Bombay High Court in Mumbai, Calcutta High Court in Kolkata are the first three High Courts in India.

53. (B) The equatorial climate is found between 5 degree north and 10 degree south of the equator. Precipitation in the equatorial region is heavy between 60 inches and 106 inches and is well distributed throughout the year. Due to this abundant rainfall, tropical rainforest climate is usually found at latitudes within five degrees North and South of the equator.
55. (C) Economic liberalization is a very broad term that usually refers to fewer government regulations and restrictions in the economy in exchange for greater participation of private entities. The doctrine is associated with classical liberalism. The arguments for economic liberalization include greater efficiency and effectiveness that would translate to a "bigger pie" for everybody. Thus, liberalization in short refers to "the removal of controls", the encourage economic development.
56. (A) An important physical property of non-metals is that they are brittle and hence cannot be beaten into sheets or drawn into wires. In other words, non-metals are non-malleable and non-ductile. When stress is applied on non-metals, they shatter into pieces.
57. (C) The atmosphere of the Earth is an envelope of gases extending to a height of 200 kms.
58. (B) Jaundice is a yellow discoloration of the skin, mucous membranes, and the whites of the eyes caused by increased amounts of bilirubin in the blood. Normally, the liver metabolizes excretes the bilirubin in the form of bile. However, if there is a disruption in this normal metabolism and/or production of bilirubin, jaundice may result.
59. (C) The different parts of a flower are calyx, corolla, androecium and gynoecium. Calyx and corolla are accessory organs, while androecium and gynoecium are reproductive organs. Photosynthetic activity is found in the calyx, green shoulder, pericarp and locular parenchyma.

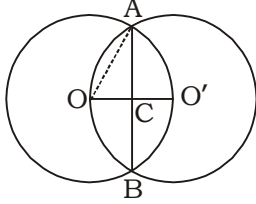
- It suggests that all of these tissues have significant roles in CO<sub>2</sub> scavenging and the provision of carbon assimilates.
65. (C) When a running car stops suddenly, the passengers tend to lean forward due to inertia of motion. Inertia is that property of a body due to which it resists a change in its state of rest or of uniform motion.
66. (B) Legal tender is a medium of payment allowed by law or recognized by a legal system to be valid for meeting a financial obligation. So it is accepted by people and government on a legal basis. Paper currency and coins are common forms of legal tender in many countries.
68. (A) Mercury causes bio-magnification problem in the ecosystem.
70. (C) The Kushan period is considered the Golden period of Gandhara. Peshawar Valley and Taxila are littered with ruins of stupas and monasteries of this period. Gandharan art flourished and it produced some of the best pieces of Indian sculpture. Many monuments were created to commemorate the Jataka tales. The Gandhara civilization peaked during the reign of the great Kushan King Kanishka (128-151). The cities of Taxila (Takshasila) at Sirsukh and Peshawar were built.
76. (D) Female birds in most families have only one functional ovary (the left one), connected to an oviduct-although two ovaries are present in the embryonic stage of each female bird.
77. (D) **Composition of air**  
Nitrogen : 78.08 percent  
Oxygen : 20.94 percent  
Argon : 0.93 percent  
Carbon dioxide : 0.03 percent  
Neon : 0.0018 percent  
Helium : 0.005 percent  
Ozone : 0.00006 percent  
Hydrogen : 0.00005 percent
80. (D) The Ninth Five Year Plan recognised the integral link between rapid economic growth and the quality of life of the mass of the people. Ensuring environmental sustainability of the development process through social mobilisation and participation of people at all level was one of the specific objectives of the Ninth Plan as approved by the National Development Council. In the Ninth Plan document, policies and programmes during the Eighth Plan period were reviewed, shortcomings identified and new policy framework suggested overcoming the shortcomings and ensuring sustainability of the development process not only in economic terms but also in terms of social and environmental factors.
81. (B) According to Newton's first law, an object that is at rest will stay at rest unless an external force acts upon it and an object that is in motion will not change its velocity unless an external force acts upon it. So this law is known as the law of inertia.
82. (C) The chemical used for cloud seeding for artificial rains is silver iodide.
83. (C) There are three bones in each human ear. The small ear bones are arranged in series and are known as ossicles. Ear bones are the malleus or hammer, the incus or anvil and the stapes, or stirrup. Together they form a short chain that crosses the middle ear and transmits vibrations caused by sound waves from the eardrum membrane to the liquid of the inner ear. As we have a pair of ear, total number of bones are 6.
85. (C) Article 280 of the Indian Constitution deals with the Finance Commission. The Finance Commission of India came into existence in 1951. It was established under Article 280 of the Indian Constitution by the President of India. It was formed to define the financial relations between the centre and the state.
86. (C) Raja Todar Mal was a warrior, an able administrator and an exemplary finance minister. He was one of the 'Navratnas' of Akbar's court. He introduced an excellent land revenue system. In 1582, the title Diwan-I-Ashraf was bestowed upon him by the Emperor.
89. (B) When magma solidifies under the earth's surface, it forms plutonic rock bodies or plutons. The most common rock types in plutons are granite, granodiorite, tonalite, monzonite, and quartz diorite.
90. (D) Lucknow Pact, (December 1916) was a

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- famous agreement made by the Indian National Congress headed by Maratha leader Bal Gangadhar Tilak and the All-India Muslim League led by Muhammad Ali Jinnah which was adopted by the Congress at its Lucknow session on December 29 and by the league on December 31, 1916. The meeting at Lucknow marked the reunion of the moderate and radical wings of the Congress. The pact dealt both with the structure of the government of India and with the relation of the Hindu and Muslim communities.
92. (A) Corporate Tax is a levy placed on the profit of a firm, with different rates used for different levels of profits. Corporate taxes are taxes against profits earned by businesses during a given taxable period. Most countries tax all corporations doing business in the country on income from that country.
94. (D) When treated with ammoniacal silver nitrate solution alkynes form white precipitate of silver acetylides.
96. (C) The process is known as index definition. The order in which columns are listed in the index definition is important. A database index is a data structure that improves the speed of data retrieval operations on a database table at the cost of slower writes and increased storage space. Indices can be created using one or more columns of a database table, providing the basis for both rapid random lookups and efficient access of ordered records.
98. (A) Goa is a former Portuguese colony, the Portuguese overseas territory of Portuguese India existed for about 450 years until it was annexed by India in 1961. In 1510, the Portuguese defeated the ruling Bijapur kings with the help of a local ally, Timayya, leading to the establishment of a permanent settlement in Velha Goa (or Old Goa). In 1843 the capital was moved to Panjim from Velha Goa. By the mid of the 18<sup>th</sup> century the area under occupation had expanded to most of Goa's present day state limits. Simultaneously the Portuguese lost other possessions in India until their borders stabilized and formed the Estado-da-India Portuguesa, of which Goa was the largest territory.
99. (A) An ecosystem is a community of living and non-living things that work together. It includes soil, atmosphere, heat and light from the sun and also includes water and living organisms.
100. (B) Dadabhai Naoroji, of Bombay Parsee origin, is the "Grand Old Man of India" and the "Father of Indian Nationalism" who worked with perseverance and unshakeable faith towards the goal of Swaraj was the first Indian to claim self-government for his people. Dadabhai Naoroji was also the first Indian to show that India was being drained of its wealth under the British rule and thus was fast succumbing to poverty. He played a key role in founding the Indian National Congress in 1885 and was associated with the organisation till his death.
101. (D) Let the numbers be  $3x$  and  $4x$  respectively  
 First number  $\times$  second number  
 $= \text{HCF} \times \text{LCM}$   
 $\Rightarrow 3x \times 4x = 2028$   
 $\Rightarrow x^2 = \frac{2028}{3 \times 4} = 169$   
 $\therefore x = \sqrt{169} = 13$   
 $\therefore$  Sum of the numbers  
 $= 3x + 4x = 7x = 7 \times 13 = 91$
102. (D) ATQ,  
 $\frac{13}{4} \times \frac{2}{3} - \left(\frac{9}{4} - \frac{5}{3}\right) \times \frac{3}{4}$   
 $= \frac{13}{6} - \left(\frac{27 - 20}{12}\right) \times \frac{3}{4}$   
 $= \frac{13}{6} - \frac{7}{12} \times \frac{3}{4} = \frac{13}{6} - \frac{7}{16}$   
 $= \frac{104 - 21}{48} = \frac{83}{48}$
103. (B)  $q(p^2 - 1)$   
 $= (\sec\theta + \csc\theta) \{(\sin\theta + \cos\theta)^2 - 1\}$   
 $= \left(\frac{1}{\cos\theta} + \frac{1}{\sin\theta}\right) \{\sin^2\theta + \cos^2\theta + 2\sin\theta\cos\theta - 1\}$   
 $= \left(\frac{\sin\theta + \cos\theta}{\cos\theta\sin\theta}\right) (1 + 2\sin\theta\cos\theta - 1)$   
 $= \left(\frac{\sin\theta + \cos\theta}{\cos\theta\sin\theta}\right) (2\sin\theta\cos\theta)$   
 $= 2(\sin\theta + \cos\theta) = 2p$

104. (B)



$$OC = 2 \text{ cm}$$

$$OA = 4 \text{ cm}$$

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

$$= \sqrt{16 - 4}$$

$$= \sqrt{12} = 2\sqrt{3}$$

$$\Rightarrow AB = 4\sqrt{3} \text{ cm}$$

105. (A) Boys : Girls

$$= 4 : 3 = 32 : 24$$

Girls : Teachers

$$= 8 : 1 = 24 : 3$$

$\therefore$  Boys : Girls : Teachers

$$= 32 : 24 : 3$$

$\therefore$  Required ratio

$$= (32 + 24) : 3 = 56 : 3$$

106. (A) Let price of the third variety =  $x$  per kg.  
ATQ,

$$126 + 135 + 2x = 4 \times 153$$

$$\Rightarrow 261 + 2x = 612$$

$$\Rightarrow 2x = 612 - 261 = 351$$

$$\Rightarrow x = \frac{351}{2} = ₹ 175.5$$

107. (C) Average of first five odd multiples of 3

$$= \frac{3(1+3+5+7+9)}{5}$$

$$= \frac{3 \times 25}{5} = 15$$

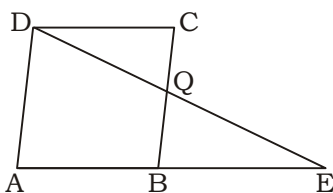
108. (B) Required percent

$$= \frac{1}{4} \times 3 + \frac{2}{3} \times 5 + \left(1 - \frac{1}{4} - \frac{2}{3}\right) \times 11$$

$$= \frac{3}{4} + \frac{10}{3} + \frac{11}{12} = \frac{9+40+11}{12} = 5\%$$

109. (B)  $AD \parallel BC$

$\Rightarrow AD \parallel BQ$



Point B is the mid-point of AE.

$\therefore$  Q is the mid-point of DE.

In  $\Delta$ s DQC and BQE.

$$\angle DQC = \angle BQE$$

$$\angle DCQ = \angle QBE$$

$$\angle CDQ = \angle QEB$$

$\therefore$  Both triangles  $\Delta$ DQC and  $\Delta$ BQE are similar.

$$\Rightarrow CQ : QB = 1 : 1$$

110. (A)  $\frac{x}{y} + \frac{y}{x} = -2 \Rightarrow \frac{x^2 + y^2}{xy} = -2$

$$\Rightarrow x^2 + y^2 = -2xy$$

$$\Rightarrow x^2 + y^2 + 2xy = 0$$

$$\Rightarrow (x + y)^2 = 0$$

$$\Rightarrow x + y = 0$$

$$\therefore x^3 + y^3 + 3xy(x + y) = (x + y)^3 = 0$$

111. (A)  $(3 + 2\sqrt{2})(3 - 2\sqrt{2})$

$$= (3)^2 - (2\sqrt{2})^2 = 9 - 8 = 1$$

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

$$(x + y)^3 + (x - y)^3$$

$$= x^3 + y^3 + 3x^2y + 3xy^2 + x^3 - y^3 - 3x^2y + 3xy^2$$

$$= 2x^3 + 6xy^2$$

$$\therefore (3 + 2\sqrt{2})^{-3} + (3 - 2\sqrt{2})^{-3}$$

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

$$= (3 - 2\sqrt{2})^3 + (3 + 2\sqrt{2})^3$$

$$= 2 \times (3)^3 + 6 \times 3 \times (2\sqrt{2})^2$$

$$= 2 \times 27 + 18 \times 8$$

$$= 54 + 144 = 198$$

112. (D) If the number of men be 100. Then

Number of women = 90

$\therefore$  Required percent

$$= \frac{100}{90} \times 100 = 111\% \text{ (Approximate)}$$

113. (B)  $\frac{x+a}{b+c} + 1 + \frac{x+b}{c+a} + 1 + \frac{x+c}{a+b} + 1 = 0$

$$\Rightarrow \frac{x+a+b+c}{b+c} + \frac{x+b+c+a}{c+a} + \frac{x+c+a+b}{a+b} = 0$$

$$\Rightarrow (x + a + b + c) \left( \frac{1}{b+c} + \frac{1}{c+a} + \frac{1}{a+b} \right) = 0$$

$$\Rightarrow (x + a + b + c) = 0$$

$$\Rightarrow x = -(a + b + c)$$

114. (C) Let the original number of boys and girls be  $x$  and  $y$  respectively.

Then

$$\frac{x}{y-15} = \frac{2}{1}$$



$\Rightarrow x = 2y - 30$  ... (i)

Again,  $\frac{x - 45}{y - 15} = \frac{1}{5}$

$\Rightarrow 5x - 225 = y - 15$

$\Rightarrow 5x = y - 15 + 225$

$\Rightarrow 5(2y - 30) = y + 210$  [From equation (i)]

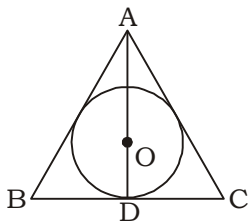
$\Rightarrow 10y - 150 = y + 210$

$\Rightarrow 10y - y = 210 + 150$

$\Rightarrow 9y = 360$

$\Rightarrow y = \frac{360}{9} = 40$

115. (C)



$BD = DC = 7\sqrt{3}$  cm

$AD = \sqrt{AB^2 - BD^2}$

$= \sqrt{(14\sqrt{3})^2 - (7\sqrt{3})^2}$

$= \sqrt{(14\sqrt{3} + 7\sqrt{3})(14\sqrt{3} - 7\sqrt{3})}$

$= \sqrt{21\sqrt{3} \times 7\sqrt{3}} = 21$  cm

$\therefore OD =$  Radius of circle

$= \frac{1}{3} \times 21 = 7$  cm

$\therefore$  Area of circle  $= \pi r^2$

$= \frac{22}{7} \times 7 \times 7 = 154$  sq.cm.

116. (C)  $x^2 + 4y^2 + z^2 - 2x - 4y - 2z + 3 = 0$

$\Rightarrow x^2 - 2x + 1 + 4y^2 - 4y + 1 + z^2 - 2z + 1 = 0$

$\Rightarrow (x - 1)^2 + (2y - 1)^2 + (z - 1)^2 = 0$

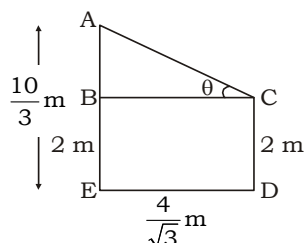
$\Rightarrow x - 1 = 0 \Rightarrow x = 1$

$2y - 1 = 0 \Rightarrow y = \frac{1}{2}$

$z - 1 = 0 \Rightarrow z = 1$

$\Rightarrow x + y + z = 1 + \frac{1}{2} + 1 = 2\frac{1}{2}$

117. (D)



$\tan \theta = \frac{AB}{BC} = \frac{\frac{10}{3} - 2}{\frac{4}{\sqrt{3}}} = \frac{4}{3} \times \frac{\sqrt{3}}{4}$

$\Rightarrow \frac{1}{\sqrt{3}} = \tan 30^\circ \Rightarrow \theta = 30^\circ$

118. (A)  $x = \sqrt{2^3 \sqrt{4 \sqrt{2^3 \sqrt{4 \dots}}}}$

On squaring

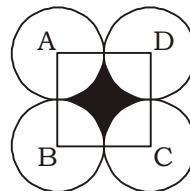
$x^2 = 2^3 \sqrt{4 \sqrt{2^3 \sqrt{4 \dots}}}$

On cubing,

$x^6 = 8 \times 4x$

$\Rightarrow x^5 = 32 = 2^5 \Rightarrow x = 2$

119. (B)



Area of the shaded region  
= Area of square of side 6 cm -  
4 × a right angled sector

$= 36 - 4 \times \frac{\pi \times 3^2}{4}$

$= 36 - 9\pi = 9(4 - \pi)$  sq. cm

120. (A) Let the cost price of 1 book be  $x$

$\Rightarrow$  Cost price of 3 books =  $3x$

and, cost price of 12 books =  $12x$

Selling price of 12 books = 1800

$= 12x + 3x = 1800$

$\Rightarrow 15x = 1800$

$\therefore x = \frac{1800}{15} = 120$

The cost price of each book = ₹ 120

121. (C) Let the principal be  $x$ .

Time =  $\frac{SI \times 100}{\text{Principal} \times \text{Rate}}$

$= \frac{x \times 100 \times 3}{x \times 50} = 6$  years

122. (B)  $\angle OCX = 45^\circ$  (ABCD is a square & AC bisects  $\angle BCD$ )

$\angle COD + \angle COX = 180^\circ$

$\Rightarrow \angle COX = 180^\circ - \angle COD = 180^\circ - 105^\circ = 75^\circ$

In  $\triangle OCX$

$\angle OCX + \angle COX + \angle OXC = 180^\circ$

$\Rightarrow 45^\circ + 75^\circ + \angle OXC = 180^\circ$

$\Rightarrow \angle OXC = 180^\circ - 120^\circ = 60^\circ$

$\Rightarrow x = 60^\circ$

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123. (C) Let C.P. of article be  $x$

$$\text{S.P. at 15\% gain} = \frac{115x}{100} = \frac{23x}{20}$$

$$\text{New C.P.} = ₹ \frac{90x}{100}$$

$$\text{New S.P.} = ₹ \frac{90x}{100} \times \frac{125}{100} = ₹ \frac{9x}{8}$$

ATQ,

$$\frac{23x}{20} - \frac{9x}{8} = 4$$

$$\Rightarrow \frac{46x - 45x}{40} = 4$$

$$\Rightarrow x = 40 \times 4 = ₹ 160$$

124. (B) Let the number of each type of notes be  $x$

$$\therefore x + 5x + 10x = 640$$

$$\Rightarrow 16x = 640$$

$$\Rightarrow x = 40$$

$\therefore$  Total number of notes

$$= 3 \times 40 = 120$$

125. (B) Quotient = 16

$$\text{Divisor} = 25 \times 16 = 400$$

and remainder = 80

$$\text{Dividend} = \text{Divisor} \times \text{quotient} + \text{remainder}$$

$$= 400 \times 16 + 80$$

$$= 6400 + 80 = 6480$$

126. (A)  $a_4 = a + (4 - 1) \times d$

$$16 = a + 3d \Rightarrow a = 16 - 3d \quad \dots(i)$$

$$\text{Also, } 80 = a + 11d \quad \dots(ii)$$

After putting the value of  $a$  from equation

(i) in equation (ii)

$$\Rightarrow 16 - 3d + 11d = 80$$

$$8d = 80 - 16 = 64$$

$$\Rightarrow d = 8$$

$$\Rightarrow a = 16 - 24 = -8$$

127. (D) Let the amount to be distributed be ₹  $x$ .

$$P : Q : R = 2 : 7 : 9$$

Sum of the ratios

$$= 2 + 7 + 9 = 18$$

$$\therefore P = \frac{2}{18} \times x = \frac{x}{9}$$

$$Q = \frac{7}{18} x$$

$$R = \frac{9x}{18} = \frac{x}{2}$$

As given,

$$\frac{x}{9} + \frac{7x}{18} = \frac{x}{2}$$

Thus, we get no conclusion. Amount should be given in the question.

$$128. (C) (m^2 + n^2) \cos^2 \beta = \left( \frac{\cos^2 \alpha}{\cos^2 \beta} + \frac{\cos^2 \alpha}{\sin^2 \beta} \right) \cos^2 \beta$$

$$\left[ \because m = \frac{\cos \alpha}{\cos \beta} \text{ and } n = \frac{\cos \alpha}{\sin \beta} \right]$$

$$= \left( \frac{\cos^2 \alpha \sin^2 \beta + \cos^2 \alpha \cos^2 \beta}{\cos^2 \beta \sin^2 \beta} \right) \cos^2 \beta$$

$$= \cos^2 \alpha \left( \frac{\sin^2 \beta + \cos^2 \beta}{\cos^2 \beta \sin^2 \beta} \right) \cos^2 \beta$$

$$= \cos^2 \alpha \left( \frac{1}{\cos^2 \beta \sin^2 \beta} \right) \cos^2 \beta$$

$$= \frac{\cos^2 \alpha}{\sin^2 \beta} = \left( \frac{\cos \alpha}{\sin \beta} \right)^2 = n^2$$

129. (C) Let large number =  $x$  then

Smaller number =  $520 - x$

ATQ,

$$\frac{96x}{100} = \frac{(520 - x)}{100} \times 112$$

$$\Rightarrow 96x = 520 \times 112 - 112x$$

$$\Rightarrow 112x + 96x = 520 \times 112$$

$$\Rightarrow 208x = 520 \times 112$$

$$\Rightarrow x = \frac{520 \times 112}{208} = 280$$

$\therefore$  Smaller number

$$= 520 - 280 = 240$$

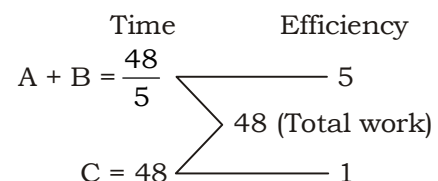
130. (B) A's work = (B + C)'s work

ATQ,

(A + B)'s can complete the work in 9 hr 36

minutes i.e.  $\frac{48}{5}$  hrs

C can complete the work in 48 hours.



We know that

A's efficiency = (B + C)'s efficiency

C's efficiency = 1

then,

$$A - B = 1$$

$$\text{and } A + B = 5$$

$\Rightarrow$  A's efficiency = 3  
and B's efficiency = 2

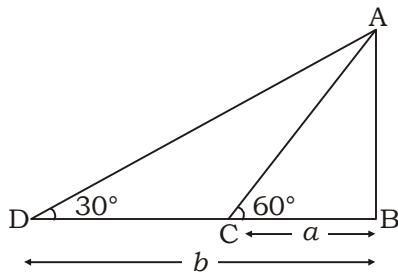
time taken by B is =  $\frac{48}{2} = 24$  hr

131. (C) Let AB be the tower such that  
CB = a and BD = b  
In  $\triangle ABC$

$$\tan 60^\circ = \frac{AB}{BC} = \frac{AB}{a}$$

$$\Rightarrow AB = a\sqrt{3} \quad \dots(i)$$

In  $\triangle ABD$ ,



$$\tan 30^\circ = \frac{AB}{BD}$$

$$\Rightarrow \frac{1}{\sqrt{3}} = \frac{AB}{b} \quad \dots(ii)$$

From equations (i) and (ii)

$$(AB)^2 = ab$$

$$AB = \sqrt{ab}$$

132. (C) Let the merchant bought 100 metres of cloth for ₹ 100.

$\therefore$  Total S.P.

$$= ₹ \left( \frac{50 \times 140}{100} + \frac{25 \times 60}{100} + 25 \right)$$

$$= ₹ (70 + 15 + 25) = ₹ 110$$

$\therefore$  Gain percent = 10%

133. (B)  $m^2 - n^2 = (\tan\theta + \sin\theta)^2 - (\tan\theta - \sin\theta)^2$   
 $= 4 \tan\theta \sin\theta \quad [\because (a+b)^2 - (a-b)^2 = 4ab]$

$$\text{and } 4\sqrt{mn} = 4\sqrt{(\tan\theta + \sin\theta)(\tan\theta - \sin\theta)}$$

$$= 4\sqrt{\tan^2\theta - \sin^2\theta}$$

$$= 4\sqrt{\frac{\sin^2\theta}{\cos^2\theta} - \sin^2\theta}$$

$$= 4\sqrt{\frac{\sin^2\theta - \sin^2\theta \cos^2\theta}{\cos^2\theta}}$$

$$= 4\sqrt{\frac{\sin^2\theta(1 - \cos^2\theta)}{\cos^2\theta}}$$

$$= 4\sqrt{\frac{\sin^4\theta}{\cos^2\theta}} = 4\frac{\sin^2\theta}{\cos\theta}$$

$$= 4 \sin\theta \frac{\sin\theta}{\cos\theta} = 4 \sin\theta \tan\theta$$

$$\Rightarrow m^2 - n^2 = 4\sqrt{mn}$$

134. (B) Let the CP of each shirt be ₹ 100, then SP = ₹ 140.

$$\therefore \text{New SP} = \frac{140 \times 90}{100} = ₹ 126$$

$\therefore$  When S.P. is ₹ 126.

CP = ₹ 100

$$\therefore \text{When S.P. is ₹ } \frac{13608}{72}$$

then C.P.

$$= \frac{100}{126} \times \frac{13608}{72} = ₹ 150$$

135. (C) Let the first number be x, then

$$x = \frac{60 \times 4 - x}{4}$$

$$\Rightarrow 4x = 240 - x$$

$$\Rightarrow 5x = 240$$

$$\Rightarrow x = \frac{240}{5} = 48$$

136. (C) Let marked price = ₹ x and Cost price = ₹ y.

ATQ,

$$50\% \text{ of } x = 90\% \text{ of } y$$

$$\Rightarrow \frac{x \times 50}{100} = \frac{y \times 90}{100}$$

$$\Rightarrow y = \frac{x \times 50}{90} = ₹ \frac{5}{9}x$$

=  $\frac{5}{9}$  th of marked price.

137. (B)  $M_1D_1 = M_2D_2$

$$\Rightarrow 9 \times 20 = M_2 \times 15$$

$$\Rightarrow M_2 = \frac{9 \times 20}{15} = 12 \text{ pipes}$$

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

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



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- and time =  $2t$
- $\Rightarrow$  Required ratio =  $\frac{xt}{2 \times 2t} : x$
- = 1 : 4
139. (B) (2 men + 3 women)  $\times$  10  
 = (3 men + 2 women)  $\times$  8  
 $\Rightarrow$  20 men + 30 women  
 = 24 men + 16 women  
 $\Rightarrow$  4 men = 14 women  
 or 2 men = 7 women  
 $\therefore$  2 men + 3 women = 10 women  
 $\therefore$  2 men + 1 woman = 8 women  
 $\therefore M_1 D_1 = M_2 D_2$   
 $\Rightarrow 10 \times 10 = 8 \times D_2$
- $\Rightarrow D_2 = \frac{25}{2} = 12\frac{1}{2}$  days
140. (D) S.I. =  $\frac{P \times R \times T}{100}$
- $\therefore y = \frac{x \times T \times R}{100}$
- and  $z = \frac{y \times T \times R}{100}$
- So,  $\frac{y}{z} = \frac{x}{y} \Rightarrow y^2 = zx$
141. (A) Let the length of each train be  $x$  metre.
- Speed of first train =  $\frac{x}{18}$  m/sec
- Speed of second train =  $\frac{x}{12}$  m/sec
- When both trains cross each other, time taken
- =  $\frac{2x}{\frac{x}{18} + \frac{x}{12}}$
- =  $\frac{2x}{2x+3x} = \frac{2x \times 36}{5x}$
- =  $\frac{72}{5} = 14.4$  seconds
142. (D) Let the first investment be  $3x$   
 Then second investment be  $5x$   
 Combined loss %
- =  $\frac{3x \times \frac{15}{100} - 5x \times \frac{10}{100}}{3x + 5x} \times 100$
- =  $\frac{45x - 50x}{8x} \times 100$
- =  $\frac{-5x}{8x \times 100} \times 100$
- =  $\frac{-5}{8}$  percent or  $\frac{5}{8}\%$  loss [-ve sign shows loss.]
143. (B) The sum of two sides of a triangle is greater than the third side.  
 (3, 5, 6) and (2, 5, 6)  
 Hence, the maximum no. of triangle is 2.
144. (B)  $\frac{SI}{CI} = \frac{rt}{100 \left[ \left(1 + \frac{r}{100}\right)^t - 1 \right]}$
- =  $\frac{4 \times 2}{100 \left[ \left(1 + \frac{4}{100}\right)^2 - 1 \right]}$
- =  $\frac{2}{25 \left( \frac{676}{625} - 1 \right)} = \frac{2 \times 625}{25 \times 51}$
- $\frac{SI}{CI} = \frac{50}{51} = 50 : 51$
145. (C) Mean of 10 observations - Mean of 9 observations = 10th observation  
 10th observation =  $10 \times 17 - 16 \times 9$   
 =  $170 - 144 = 26$
146. (C) Required percentage =  $\frac{420}{600} \times 100 = 70\%$
147. (B) Required ratio =  $\frac{360}{435} = \frac{24}{29}$   
 i.e. 24 : 29
148. (A) Total marks of Physics = 469  
 Average marks =  $\frac{469}{7} = 67$
149. (A) Average marks  $\frac{651}{7} = 93$   
 Required percentage =  $\frac{93}{150} \times 100 = 62\%$
150. (B) Total (B) =  $70 + 80 + 63 + 68 + 49 + 30 = 360$   
 Total (E) =  $123 + 79 + 79 + 84 + 40 + 27 = 432$   
 Required percentage =  $\frac{432 - 360}{360} \times 100 = 20\%$

**MEANINGS IN ALPHABETICAL ORDER**

<b>Word</b>	<b>Meaning in English</b>	<b>Meaning in Hindi</b>
Arena	A level area surrounded by seats for spectators, in which sports, entertainments and other public events are held	अखाड़ा, रंगभूमि
Assimilation	The act of fully understanding an idea or some information so that you are able to use it yourself	समावेश, सम्मिलन
Augur	(of an event or circumstance) indicate a good or bad outcome	पूर्वसूचना देना
Barbarous	Not polite or proper : very rude or offensive	असभ्य, क्रूर
Calumny	a false accusation of an offense or a malicious misrepresentation of someone's words or actions	मिथ्या आरोप
Catharsis	The act of purging of emotional tensions	भावनात्मक क्रोध के मुक्ति की अभिव्यक्ति
Concubine	A woman with whom a man cohabits without being married	उपपत्नी
Cordial	Politely pleasant and friendly	शिष्ट, दोस्ताना
Culprits	A person who has committed a crime or done something wrong	अपराधी
Dandy	A man who cares too much about his clothing and personal appearance	सजीला
Delinquents	A young person who regularly does illegal or immoral things	अपचारी, अपराधी
Denomination	A value or size of a series of values or sizes	मूल्यवर्ग, कोटि
Designate	Chosen for a particular job	मनोनीत करना
Extricate	To free or remove (someone or something) from something (such as a trap or a difficult situation)	छुड़ाना, मुक्त करना
Foment	Instigate or stir up (an undesirable or violent sentiment or course of action)	भड़काना, उकसाना
Hangar	A large building in which aircraft are kept	विमान घर
Haphazard	Marked by great carelessness	अव्यवस्थित, बेतरतीब
Hereditary	(of a title, office, or right) conferred by or based on inheritance	अनुवांशिक
Implicate	To show that someone or something is closely connected to or involved in something (such as a crime)	फँसाना
Incumbent	Having an official position	अधिकारी, पदाधिकारी
Lass	A girl or young woman	किशोरी, लड़की
Maunder	To talk or complain about something in a boring and/or annoying way	बड़बड़ाना
Morbid	Having or expressing a strong interest in sad or unpleasant things, especially disease or death	मरणासन्न, अस्वस्थ
Nemesis	punishment or defeat that is deserved and cannot be avoided	दण्ड, सजा
Oratory	The art of speaking in public eloquently or effectively	बोलने की कला
Ouija	Representation of spirit acts	आत्माओं का आमंत्रण
Persuade	To cause someone to do or believe something by asking, arguing or giving reasons	समझाना, फुसलाना, मनाना
Profound	Very great; felt or experienced very strongly	प्रगाढ़, अथाह
Purgation	The action of causing something to leave the body	शुद्धिकरण
Ransacked	A place untidy and damaged because of being gone hurriedly through searching something	लूटा हुआ
Sanatorium	A place like a hospital where patients who have a lasting illness or who are getting better after an illness are treated	आरोग्य आश्रम
Subjugation	The act of defeating somebody/something; complete control over somebody/something	आधिपत्य, जीतना
Trousseau	The clothes, household linen and other belongings collected by a bride for her marriage	दुल्हन का साज-सामान
Twigs	A small very thin branch that grows out of a larger branch on a bush or tree	टहनी
Uncouth	Behaving in a rude way : not polite or socially acceptable	अशिष्ट, असभ्य
Verbalization	To express something in words, in speech or writing	शाब्दिक अभिव्यक्ति
Wrath	intense anger	क्रोध, गुस्सा

**SSC MOCK TEST - 36 (ANSWER KEY)**

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

151. (C) 'Rich' will be followed by 'in', as 'rich in something' means 'containing or providing a large supply of something'.
152. (A) 'Have' is followed by 'V<sub>3</sub>'. Here we have present perfect tense.
153. (A) Change 'needed' into 'need'. The sentence is a general fact.
154. (A) Replace 'impatient' by an adverb 'impatiently' which qualifies the verb 'looking'. Here 'look' is not used as a verb of sensation hence will not take adjective after it.
155. (C) Replace 'whom' by a relative pronoun 'who', as there is a need of a subject in the subordinate clause.
156. (B) As 'effect' means 'cause something to happen or bring about'.
157. (D) Disposable things are 'use and throw' objects.
158. (A) Reconcile with (to adjust, समझौता करना)  
Reconcile oneself to (to accept a situation reluctantly)

159. (D) Profound means extreme.
174. (A) Prefer (verb) and preferable (adj) take preposition 'to'.
175. (A) The correct phrase is 'on the alert'. It means watchful and attentive for someone or something.
177. (A) Sentences starting with 'let's' take question tag 'shall we'
178. (B) The formula of past conditional sentence is -  
If + sub + had + V<sub>3</sub>, sub + would + have + V<sub>3</sub>
179. (A) The sentence is of past. Change 'is' into 'was'
180. (B) When there are 'two', we use 'between'

**Mock Test 35 (Corrections)**

146. (A) Solution given is correct. Read the correct option as (A).

**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**