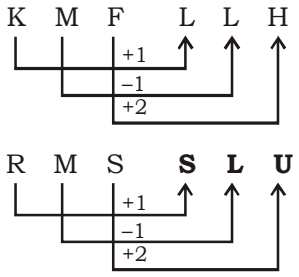
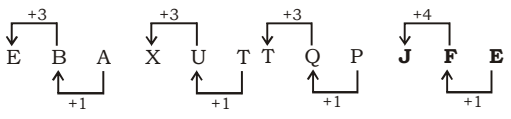
SSC MOCK TEST – 27 (SOLUTION)

1. (C) Kanpur is one of the city in Uttar Pradesh whereas Gwalior is the city in **Madhya Pradesh**.
2. (D) First is the antonyms of second.
3. (C) Scissors is to knife as pitcher is to **watering Can**. The scissors and knife both are used for cutting. Both the pitcher and watering can are used for storing and pouring water.
4. (B) A fence and a wall mark a boundary. A path and an alley mark a passageway.
5. (D) A gym is a place where people exercise. A restaurant is a place where people eat food.
6. (D) Candid and Indirect refer to opposing traits. Similarly honest and untruthful refer to opposing traits.
7. (A) The relationship is $(2x + 2) : x$. Put $x = 31$, then $2x + 2 = 31 \times 2 + 2 = 64$.
8. (D) The relationship is $x^2 : (x + 1)^2 + 1$. Put $x = 7$ then $(x + 1)^2 + 1 = (7 + 1)^2 + 1 = 8^2 + 1 = 65$.
9. (B)



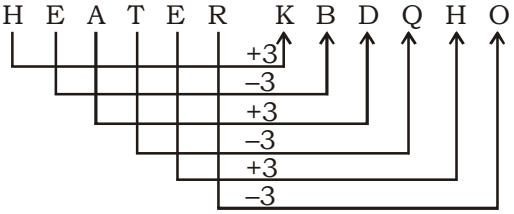
10. (C) Each letter of the first group is replaced by two letter - one that comes after it and one that comes before it, in the second group.
11. (A) All except Arrow are used while holding with hand.
12. (D) All except Hen are young ones of animals, while Hen is the female of Cock.
13. (C) All except Deer are flesh-eating animals.
14. (D) All except Veil cover the head, while veil covers the face.
15. (A) Sum of the digits in each of the number except 324 is 10.
16. (A) In all other numbers, the sum of the first and the last digits is equal to the sum of other two digits.
17. (B) In all other pairs, first is the study of second.
18. (D)



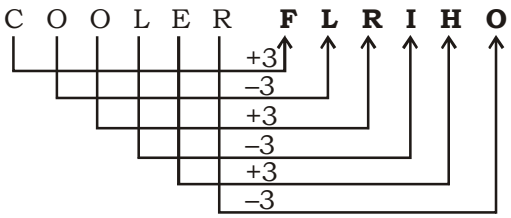
19. (C) Only son of Neena's father-in-law (Mahipal) → Neena's husband.
So, Raman is Neena's husband and Anita and Bindu are his daughters.
Thus, Bindu is the Grand daughter of Mahipal.
20. (B) The position as per the given instruction is mentioned below :-

N O P **Q** R S T
↓
Middle

21. (D)
22. (C)
23. (B) 1 2 3 6 9 18 **27** 54
×2 ×3/2 ×2 ×3/2 ×2 ×3/2 ×2
24. (D) 4 5 9 18 34 **59**
$+1^2$ $+2^2$ $+3^2$ $+4^2$ $+5^2$
25. (B) e j o t y d i n s x c h **m r w**
+5 +5 +5 +5 +5 +5 +5 +5 +5 +5 +5 +5 +5 +5 +5
26. (A) The series is aababcabcd/dcbacbabaa.
(Original) (Reverse)
27. (B) As,



Similarly,



28. (C) Given : D is the son of B, B is the brother of C and A is the father of C.
This means that B is the father of D and A is the father of B. So, A is the grandfather of D.
Now, F is the spouse of A. So, F is the grandmother of D.

29. (C) The new alphabet series is :
A B C D E F G H I J K L M
Z Y X W V U T S R Q P O N
The twelfth letter from the left is L.
The seventh letter to the right of L is U.

30. (B) Clearly, number of boys in the line
= (11 + 1 + 3) = 15.
∴ Number of boys to be added = 28 – 15 = 13.

31. (B) Ashish leaves his house at 6:40 a.m.
He reaches Kunal's house in another 25 minutes i.e. 7:05 a.m.
Both leave for office in 15 minutes after 7:05 a.m. i.e. at 7:20 a.m.

32. (C) After using the correct symbols, we have expression = (3 × 15 + 19) ÷ 8 – 6
= (45 + 19) ÷ 8 – 6 = 64 ÷ 8 – 6 = 8 – 6 = 2

33. (D) From (ii) and (iii) we have

Sign on front face	×	◆	◁
Sign on opposite face	×	○	→

Here, (•) is missing as it is opposite to (×).

34. (A) The alphabets are coded as shown :

T	W	E	N	Y	L	V
8	6	3	9	5	2	0

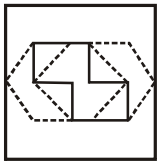
So, in TWELVE,
T is coded as 8,
W as 6, E as 3, L as 2, V as 0.
Thus, the code for TWELVE is 863203.

35. (D) A is the daughter of B means A is the sister of the son (say D) of B i.e. A/D × B.

36. (D)

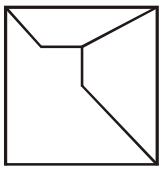
37. (B)

38. (C)



39. (B) The aeroplanes fly in the 'sky' and the 'sky' is called 'sea'. So, the aeroplanes fly in the 'sea.

40. (A)



41. (C)

42. (D) From (i) and (iii)
Common word is 'peru' which means 'fine'
From (ii) and (iii)
Common word is 'lisa' which means 'clear'
So, **dona** means weather.

43. (B) Above information can be analysed as below :

	English	Hindi	Mathematics	Geography	History	French
A	×	×	×			
B	×	×			×	×
C	×			×		
D	×	×	×	×		
E					×	×

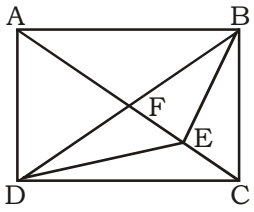
Hence, B teaches maximum number of subjects, i.e 5

44. (D) The number in the second column is three times the difference between the numbers in the third and first columns.
So, missing number = 3 × (16 – 7) = 3 × 9 = 27.

45. (B) $2^2 + 1^3 + 3^3 = 8 + 1 + 27 = 36$.
$0^3 + 4^3 + 3^3 = 0 + 64 + 27 = 91$.
So, missing number = $4^3 + 2^3 + 1^3$
$= 64 + 8 + 1 = 73$.

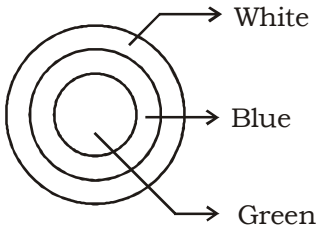
46. (B) We have, 3 + 4 = number below 4 = 7
3 + 4 + 5 = number below 5 = 12.
3 + 7 + 12 = number below 12 = 22.
∴ Missing number = 3 + 7 = 10.

47. (C) The figure may be labeled as shown.



The simplest triangles are AFB, FEB, EBC, DEC, DFE and AFD i.e. 6 in number.
Triangles composed of two components each are AEB, FBC, DFC, ADE, DBE and ABD i.e. 6 in number.
Triangles composed of three components each are ADC and ABC i.e. 2 in number.
There is only one triangle i.e. DBC which is composed of four components.
Thus, there are 6 + 6 + 2 + 1 = 15 triangles in the figure.

48. (A)



1. 3 2. 3 3. 5
Only (1) and (2) follows.

49. (B)

50. (B)

51. (A) "Regulating Act of 1773" :
Governance of East India Company was put under British parliamentary control to setup a Supreme Court in Calcutta. The Governor of Bengal was nominated as Governor General for Calcutta, Bombay and Madras.
In March 1942, Sir Stafford Cripps came with a draft declaration on the proposals of the British Government.

52. (C) Area of Pacific Ocean is 465.2 million sq.km.
Area of Atlantic Ocean is 106.4 million sq.km.
Area of Indian Ocean is 73.56 million sq.km.
Area of Indian Ocean is 14.06 million sq.km.

57. (B) Six fundamental rights provided by our Constitution are :
1. Right to equality
2. Right to liberty
3. Right against exploitation
4. Right to freedom of religion
5. Cultural and Educational rights
6. Right to constitutional remedy

63. (A) Field Marshal Kodandera Madappa Cariappa (28 January 1899 - 15 May 1993) was the first Indian Chief of Army Staff of the Indian Army and led the Indian forces on the Western Front during the Indo-Pakistan War of 1947.

67. (C) Harry Brearley of England invented Stainless Steel in 1913.
Electric Iron was invented by H.W. Seeley of USA in 1882.
Electromagent was invented by W.Sturgeon of England in 1824.
Gramophone was invented by T.A. Edison of USA in 1878.

70. (C) Surface temperature of Sun is about 6000° C and temperature at the centre is around 15,000,000° C.

71. (C) The "Operation flood" was the largest integrated dairy development programme of the world. It was started by National dairy development board in 1970.

73. (B) Nazi Party, by the name of National Socialist German Workers' Party was a political party of the mass movement known as National Socialism. Under the leadership of Adolf Hitler, the party came to power in Germany in 1933 and governed it by totalitarian methods until 1945. It was founded as the German Worker's Party by Anton Drexler, a Munich locksmith, in 1919. Hitler attended one of its meetings that year, and his energy and oratorical skills soon enabled him to take over the party.

74. (D) Diameter of moon is 3475 km and its circumference is 10864 km.

76. (C) Mahapadma was also known as "Ugrasena" means 'Owner of huge army'.

78. (A) Mountains of Asia are : Pamir knot, Himalayas, Karakoram, Altai, Tien Shan, Kunlun, Hindu Kush, Stanovio, Yablonovoi, Urals, Taurus, Elbruz, Pontic, Zagros, Sulaiman.

79. (C) Ammeter - Measures strength of electric current.
Audiometer - Measures intensity of sound.
Anemometer - Measures force and velocity of wind and direction.

82. (B) Wilson Jones (2nd May, 1922 - 5th October, 2003) was a professional player of English billiards from India. Jones, a dominant national amateur was a champion for more than a decade and won the amateur world championship twice, in 1958 and 1964.

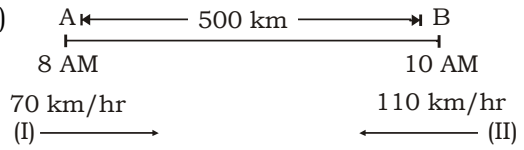
83. (A) A Uniform Resource Locator (URL) is commonly informally referred to as a web address, although the term is not defined identically. It is a reference to a web resource that specifies its location on a computer network and a mechanism for retrieving it. URLs occur most commonly to reference web pages (http), and is also used for file transfer (ftp), email (mailto), database access (JDBC), and many other applications.

86. (B) Burma was separated from India in the year 1937 by the British Government. Burma was formed as an independent country and then was named as Myanmar. The country was an independent Buddhist kingdom during 11th century. Then Mongols attacked the country and grabbed the power and ruled for 100 years. Then it was undertaken by China. Later in the year 1800, France and Britain competed with each other for overtaking Burma. Britain gained power gradually and thus Burma was maintained under British Government of India.

90. (D) DSL means Digital Subscriber Line.

97. (D) Gun powder is the mixture of Potassium Nitrate, powdered Charcoal and Sulphur.

101. (B)



In 2 hours, I-train will cover
= 70 × 2 = 140 km
i.e. At 10 AM, distance b/w trains
= 500 – 140 = 360 km
Relative speed = 70 + 110 = 180 km/hr

$\therefore$ Required time = $\frac{360}{180}$ = 2 hr

i.e. the trains will meet at 10 + 2 = 12 noon

102. (A) $75\% = \frac{3}{4}$

	Lucky	:	Ashu
Ratio of salary →	700	:	400

ATQ,

	Vicky	:	Ashu
Old salary →	700	:	400
	+40%		+25%
New salary →	980		500

+480

Percent of Vicky's salary more than Ashu's salary = $\frac{480}{500} \times 100 = \frac{480}{5} = 96\%$

103. (C) $(3m + 2w) \times 4 = (2m + 3w) \times 5$

$12m + 8w = 10m + 15w$

$2m = 7w$

$\frac{m}{w} = \frac{7}{2}$

m	:	w
7	:	2
↓×22		×22↓
154	:	44

$\therefore$ Per day amount of a man = ₹ 154

104. (C)

Cost paid by shopkeeper	Actual Cost	Cost paid by customer
1000 →	$1100_{\times 9}$	
	$900_{\times 11}$ →	$900_{\times 11}$
9000	9900	11880

+2880

Required profit% = $\frac{2880}{9000} \times 100 = 32\%$

105. (D) 25% = $\frac{1}{4}$, 30% = $\frac{3}{10}$

	Old		New
Free →	4	×	5
Viewers →	10	×	7
Total Revenue →	40		35

–5

% decrease in revenue = $\frac{5}{40} \times 100$

= $12\frac{1}{2}\%$ decrease

106. (A)

	Quantity		Rate
CP_1 →	$2_{\times 3}$	:	$1_{\times 3}$
CP_2 →	$3_{\times 4}$	:	$1_{\times 4}$

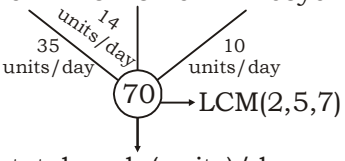
Because he buys the articles double at 3 for ₹ 1.

	Quantity		Rate	
CP →	$18_{\times 2}$	:	$7_{\times 2}$	–5 unit
SP →	$4_{\times 9}$	:	$1_{\times 9}$	

5 units = 45
1 unit = 9
Number of articles bought = 9 × 36 = 324

107. (B) Let man walked for t hours.
$\therefore$ t × 4 + (9 – t) × 9 = 61
$\Rightarrow$ 4t + 81 – 9t = 61
$\Rightarrow$ 5t = 20
$\Rightarrow$ t = 4 hours
$\therefore$ Distance travelled on foot
= 4 × 4 = 16 km

108. (D) 2 men = 5 women = 7 boys



Now total work = 70 × 469 units
Required time for (7 men + 5 women + 2 boys)

= $\frac{\text{Total work}}{\text{total efficiency}}$

= $\frac{70 \times 469}{(35 \times 7 + 5 \times 14 + 10 \times 2)} = \frac{70 \times 469}{335}$

= 98 days

short trick:-

Formula = $\frac{\text{Days}}{\frac{\text{And}}{\text{OR}}}$

= $\frac{469}{\frac{7}{2} + \frac{5}{5} + \frac{2}{7}}$

= $\frac{469 \times 70}{335}$ = 98 days

109. (D) Ratio = 3 : 2 : 1, $3x$, $2x$, $1x$
Initial price = $(6x)^2 = 36x^2$
After breaking into pieces
= $9x^2 + 4x^2 + x^2 = 14x^2$
Loss = $36x^2 - 14x^2$
$4620 = 22x^2$
$x^2 = 210$
Initial price = $36x^2 = 36 \times 210 = ₹\ 7560$

short trick:-

Weight → 3 : 2 : 1 → 36 (Square of weight)
Cost → 9 : 4 : 1 → 14 → 22 ×210 → 4620

∴ Initial cost of gold
⇒ 36 × 210
= ₹ 7560

110. (D) Let principal be P.
Clearly, S.I. = P
Time = 5 years
Rate = R_1

$\because$ S.I. = $\frac{P \times R \times T}{100} \Rightarrow$ S.I. = $\frac{P \times R_1 \times 5}{100}$

Thus, R_1 = 20%
When, S.I. = 2P
T = 12 years
Rate = R_2

Then, 2P = $\frac{P \times R_2 \times 12}{100}$

$\therefore R_2 = \frac{50}{3} = 16\frac{2}{3}\%$

$\because R_2 < R_1$

$\therefore$ The required rate of interest = $16\frac{2}{3}\%$

111. (A) Let the amount paid by A originally
= 100 units

A → B
100 $\xrightarrow{+15\%}$ 115
138 $\xleftarrow{+20\%}$ 115

profit = (138 – 115) = 23 units
According to the question,
23 units = ₹ 69
1 unit = ₹ 3
100 units = ₹ 3 × 100
= ₹ 300

112. (B) Let the required number of non-officers = x
Then, $110x + 460 \times 15 = 120(15 + x)$
$110x + 460 \times 15 = 120 \times 15 + 120x$
or, $120x - 110x = 460 \times 15 - 120 \times 15$
or, $10x = 15 \times 340$
$\therefore x = 15 \times 34$
= 510

short trick:-

From Alligation :

460 — 110
120
10 — 340
1 — 34
×15 — ×15
15 — 510

113. (B) A can do $\frac{1}{3}$ of a work in 5 days
$\therefore$ A can complete the work in
= 5 × 3 = 15 days

B can do $\frac{2}{5}$ of a work in 10 days
$\therefore$ B can complete the work in

$10 \times \frac{5}{2}$ = 25 days

(A + B)'s 1 day work = $\frac{1}{15} + \frac{1}{25}$

= $\frac{5+3}{75} = \frac{8}{75}$ part.

$\therefore$ (A + B)' together completes the work in $\frac{75}{8}$ days

i.e., $9\frac{3}{8}$ days

short trick:-

A → $\frac{1}{3}$ = 5 = 15 — 5
75
B → $\frac{2}{5}$ = 10 = 25 — 3

$\therefore$ Total time to complete the work = $\frac{75}{8}$

= $9\frac{3}{8}$ days

114. (D) Here after two years, the interest would be $\left(2 + 4 + \frac{2 \times 4}{100}\right)\%$
i.e. 6.08% of the sum
After three years, the interest would be $\left(6.08 + 5 + \frac{6.08 \times 5}{100}\right)\%$
i.e. 11.3840% of the sum
Thus, at the end of the third year the total amount to be paid would be (100 + 11.3840)% of the sum.
$\therefore$ Required amount

= $\frac{13000 \times 111.3840}{100}$ = ₹ 14479.92

short trick:-

$2\% = \frac{1}{50}$, $4\% = \frac{1}{25}$, $5\% = \frac{1}{20}$

Principal		Amount
50	—	51
25	—	26
20	—	21
25000	—	27846

$\therefore$ Amount after 3 year $= \frac{13000}{25000} \times 27846$

$= 14479.92$

115. (C) Listed price of the washing machine = ₹ 10,000

$10\% = \frac{1}{10}$, $20\% = \frac{1}{5}$

Cost price $= 10{,}000 \times \frac{9}{10} \times \frac{4}{5} =$ ₹ 7200

Cost price after transport Cost

$= 7200 + 7200 \times \frac{10}{100} =$ ₹ 7920

Selling price $= 7920 \times \frac{11}{10} =$ ₹ 8712

116. (A) A : B : C
$= 3{,}20{,}000 \times 4 : 5{,}10{,}000 \times 3 : 2{,}70{,}000 \times 5$
$= 32 \times 4 : 51 \times 3 : 27 \times 5$
$= 128 : 153 : 135$
= Total profit = 1,24,800
$\therefore$ A's share profit

$= \frac{128}{128+153+135} \times 124800$

$= \frac{128}{416} \times 124800 =$ ₹ 38,400

117. (C) Number of valid votes $= 180{,}000 \times \frac{90}{100}$

$= 162000$
Valid votes in favour of second candidate
$= (100 - 80)\%$ of 162000

$= \frac{20}{100} \times 162000 = 32400$

118. (A) Initial speed of man = 5 km/h
New speed of man = 6 km/h

Distance $= \frac{xy}{x-y}(t_2 - t_1)$

$t_2 - t_1 = 10 - 5 = 5$ min $= 1/12$ hour
put all values in the above formula.

$D = \frac{5 \times 6}{1} \times \frac{1}{12} = 2.5$ km

Speed $= \frac{\text{distance}}{\text{time}}$

Time $= \frac{2.5}{5} = 30$ min

New speed $= \frac{2.5}{20} \times 60 = 7.5$ km/h

short trick:-

Ist speed $\rightarrow 5$ — 6
30 → 1 hour
IInd speed $\rightarrow 6$ — 5

more time $= 10 - 5 = 5$ min

$= \frac{5}{60}$ min $= \frac{1}{12}$

Total distance $= \frac{36}{12} = 2.5$ km

$\therefore$ Normal speed $= 5 \times 2.5$
$= 7.5$ km/hr

119. (D) Average speed

$= \frac{2 \times S_1 \times S_2}{S_1 + S_2} = \frac{2 \times 20 \times 30}{20 + 30}$

$= 24$ km/hr.

120. (A) Pipe (A + B + C) together fill the tank in 1 hour

$= \frac{1}{20} + \frac{1}{30} - \frac{1}{40}$

$= \frac{6+4-3}{120} = \frac{7}{120}$ part.

Thus, they together fill the whole tank in $\frac{120}{7}$ hours.

$= 17\frac{1}{7}$ hours.

short trick:-

A $\rightarrow$ 20 — 6
B $\rightarrow$ 30 — 120 — 4
C $\rightarrow$ 40 — 3

$\therefore$ tank will fill in $= \frac{120}{7}$

$= 17\frac{1}{7}$ hours

121. (C) Let the no. of boys be x.
and girls be $(15 + x)$
ATQ,

$(15 + x) \times \frac{110}{100} - x \times \frac{116}{100} = 9$

$\Rightarrow 1650 + 110x - 116x = 900$
$\Rightarrow 6x = 750$
$\Rightarrow x = 125$
$\therefore$ Total no. of students
$= 125 + (125 + 15)$
$= 265$

122. (A) $\frac{52725}{\left(\frac{25}{28} + \frac{625}{784} + \frac{15625}{21952}\right)}$

$= \frac{52725 \times 21952}{(19600 + 17500 + 15625)}$

$= \frac{52725 \times 21952}{52725} =$ ₹ 21952

123. (A) $\angle BDC = \angle BAC = 30°$
$\therefore \angle BCD + \angle BDC + \angle DBC = 180°$
$\therefore \angle BCD = 180° - (30° + 60°) = 90°$

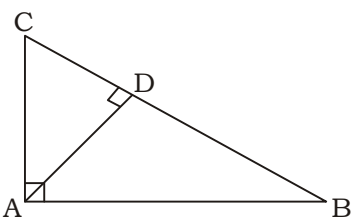
124. (D) $\frac{144}{0.144} = \frac{14.4}{x}$
$\Rightarrow 144 \times x = 14.4 \times 0.144$
$\Rightarrow x = \frac{14.4 \times 0.144}{144}$
$= \frac{144 \times 144}{144 \times 10000} = 0.0144$

125. (D) Side of square = $\sqrt{484}$ = 22 cm
$\therefore$ length of wire = 22 × 4 = 88 cm
$\therefore 2\pi r = 88$
$\Rightarrow 2 \times \frac{22}{7} \times r = 88$
$\Rightarrow r = \frac{88 \times 7}{2 \times 22} = 14$ cm
$\therefore$ Area = πr^2
$= \frac{22}{7} \times 14 \times 14 = 616$ cm^2.

126. (D) $\angle DCK = \angle FDG$
= 55° (vertically opposite)
So, $\angle AEC = 180° - (40° + 55°)$
= 85°
$\therefore \angle HAB = \angle AEC$
= 85° (corresponding)
Hence, x = 85°

127. (D) $\tan 9° = \frac{p}{q}$
$\therefore \frac{\sec^2 81°}{1 + \cot^2 81°} = \frac{\sec^2 81°}{\text{cosec}^2 81°}$
$= \frac{1}{\cos^2 81°} \times \sin^2 81°$
$= \tan^2 81° = \tan^2(90° - 9°)$
$= \cot^2 9° = \frac{q^2}{p^2}$

128. (D)



$AB = \sqrt{AD^2 + BD^2} = \sqrt{36 + 16} = \sqrt{52}$ cm
$\Delta ABC \sim \Delta ABD$
$\therefore \frac{AB}{BC} = \frac{BD}{AB}$
$\Rightarrow AB^2 = BC \times BD$
$\Rightarrow 52 = BC \times 4$
$\Rightarrow BC = 13$ cm

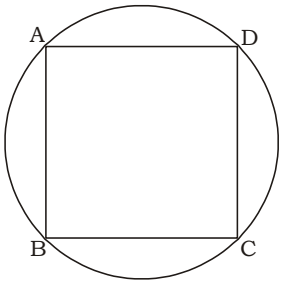
129. (C) Area of the base = $6 \times \frac{\sqrt{3}}{4} \times (2a)^2$
$= 6 \times \frac{\sqrt{3}}{4} \times 4a^2 = 6\sqrt{3}\, a^2$ sq. cm.
Height = $\sqrt{\left(\frac{5a}{2}\right)^2 - (2a)^2}$
$= \sqrt{\frac{25}{4}a^2 - 4a^2} = \sqrt{\frac{9a^2}{4}} = \frac{3}{2}a$ cm
$\therefore$ volume of pyramid
$= \frac{1}{3} \times$ area of base $\times$ height
$= \frac{1}{3} \times 6\sqrt{3}a^2 \times \frac{3}{2}a = 3\sqrt{3}a^3$ cm^3

130. (D) Given expression
$= \left(1 + \frac{1}{x}\right)\left(1 + \frac{1}{x+1}\right)\left(1 + \frac{1}{x+2}\right)\left(1 + \frac{1}{x+3}\right)$
$= \frac{x+1}{x} \times \frac{x+2}{x+1} \times \frac{x+3}{x+2} \times \frac{x+4}{x+3}$
$= \frac{x+4}{x}$

131. (A) $\angle MAN = \frac{1}{2}(\angle B - \angle C)$
$= \frac{1}{2}(65° - 30°) = \frac{1}{2}(35°) = 17.5°$

132. (C) Given :
$\frac{x^2}{by + cz} = \frac{y^2}{cz + ax} = \frac{z^2}{ax + by} = 1$
so,
$x^2 = by + cz$, $y^2 = cz + ax$, $z^2 = ax + by$
$\frac{a}{a+x} + \frac{b}{b+y} = \frac{c}{c+z}$
$= \frac{ax}{ax + x^2} + \frac{by}{by + y^2} + \frac{cz}{cz + z^2}$
$\Rightarrow \frac{ax}{ax + by + cz} + \frac{by}{by + ax + cz} + \frac{cz}{cz + ax + by}$
$\Rightarrow \frac{ax + by + cz}{ax + by + cz} = 1$

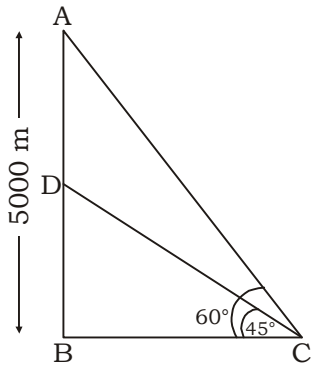
133. (A)



ABCD is a concyclic quadrilateral.
$\angle A + \angle C = \angle B + \angle D = 180°$
$\therefore \angle A = 180° - \angle C$
$\therefore \cos A = \cos (180° - C)$
$= - \cos C$
and $\cos B = - \cos D$
$\therefore \cos A + \cos B + \cos C + \cos D$
$= \cos A + \cos B - \cos A - \cos B = 0$

134. (D) $\angle ACB = \angle DAC = 50°$ (Alternate inerior $\angle$s)
$\angle BOC = 180° - 80° = 100°$
$\therefore$ Now, in ΔBOC,
$\angle OBC = 180° - (100° + 50°) = 30°$

135. (C)



$\angle ACB = 60°$
$\angle DCB = 45°$
AB = 5000 metre
AD = x metre
$\therefore$ From ΔABC,

$$\tan 60° = \frac{AB}{BC}$$

$$\Rightarrow \sqrt{3} = \frac{5000}{BC}$$

$$\Rightarrow BC = \frac{5000}{\sqrt{3}} \text{ metre}$$

From ΔDBC,

$$\tan 45° = \frac{DB}{BC}$$

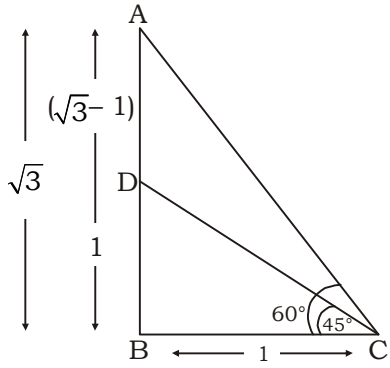
$$\Rightarrow DB = BC = \frac{5000}{\sqrt{3}}$$

$\therefore AD = AB - BD$

$$= 5000 - \frac{5000}{\sqrt{3}}$$

$$= 5000\left(1 - \frac{1}{\sqrt{3}}\right) m$$

short trick:-



ATQ,
$\sqrt{3}$ unit = 5000 m

$$\sqrt{1} \text{ unit} = \frac{5000}{\sqrt{3}} m$$

$\therefore$ vertical distance between the aeroplanes is

$$(AD) = \frac{5000}{\sqrt{3}} \times (\sqrt{3} - 1)$$

$$= 5000 \times \frac{(\sqrt{3} - 1)}{\sqrt{3}}$$

$$= 5000 \times \left(\frac{\sqrt{3}}{\sqrt{3}} - \frac{1}{\sqrt{3}}\right)$$

$$= 5000\left(1 - \frac{1}{\sqrt{3}}\right) m$$

136. (C) Since volume is constant

$$\therefore n \times \frac{4}{3}\pi(1)^3 = \frac{4}{3}\pi(4)^3$$

$\Rightarrow n = 64$

137. (C) $\tan(A + B) = \sqrt{3} = \tan 60°$
$\Rightarrow A + B = 60°$ ...(i)

$$\tan(A - B) = \frac{1}{\sqrt{3}} = \tan 30°$$

$\Rightarrow A - B = 30°$ ...(ii)
$\therefore A + B + A - B = 60° + 30°$
$\Rightarrow 2A = 90°$

$$\Rightarrow A = \frac{90°}{2} = 45°$$

138. (A) Third proportional of a and $b = \frac{b^2}{a}$

$$= \frac{\left(\sqrt{x^2+y^2}\right)^2}{\frac{x}{y}+\frac{y}{x}} = \frac{x^2+y^2}{\frac{x^2+y^2}{xy}} = xy$$

139. (D) $\sin^2\theta + \cos^2\theta + \sec^2\theta + \text{cosec}^2\theta + \tan^2\theta + \cot^2\theta$
$= 1 + \sec^2\theta - \tan^2\theta + \text{cosec}^2\theta - \cot^2\theta + 2(\tan^2\theta + \cot^2\theta)$
$= 3 + 2((\tan\theta - \cot\theta)^2 + 2) > 7$ $[(\tan\theta - \cot\theta)^2 > 0]$

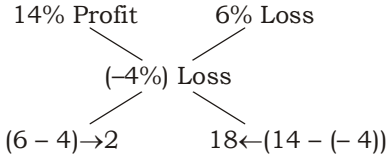
140. (B) $4\cos^2\theta - 4\cos\theta + 1 = 0$
$\Rightarrow (2\cos\theta - 1)^2 = 0$
$\Rightarrow 2\cos\theta - 1 = 0$
$\Rightarrow 2\cos\theta = 1$

$$\Rightarrow \cos\theta = \frac{1}{2} = \cos 60°$$

$\Rightarrow \theta = 60°$
$\therefore \tan(\theta - 15°) = \tan(60° - 15°)$
$= \tan 45° = 1$

141. (B) $x + y + z = a - b + b - c + c - a = 0$
$\therefore x^3 + y^3 + z^3 - 3xyz = 0$

142. (C)



On 14% profit $= \frac{1}{10} \times 50 = 5$ kg

143. (B) $\frac{51.84}{4.32} = \frac{5184}{432} = 12$

$$\therefore \frac{0.005184}{0.432} = \frac{5184}{432} \times \frac{1}{1000}$$

$$= \frac{12}{1000} = 0.012$$

144. (A) The LCM of 5, 6, 8 and 9 = 360 seconds
= 6 minutes

145. (B) Let the number of boys and girls in the room be x and y respectively.
According to the question,
$x^2 = y^2 + 28$
$\Rightarrow x^2 - y^2 = 28$ ...(i)
and $x = y + 2$
$\Rightarrow x - y = 2$ ...(ii)

On dividing equation (i) by equation (ii), we have

$$\frac{x^2-y^2}{x-y} = \frac{28}{2}$$

$$\Rightarrow \frac{(x+y)(x-y)}{x-y} = 14$$

$\Rightarrow x + y = 14$
$\therefore$ Total number of boys and girls = 14

146. (B) Required percent increase

$$= \frac{7500-5300}{5300} \times 100 = 41.5\%$$

147. (A) Profit in year 1996-97 = Gross Traffic Receipt – Total expenditure
= 8500 – 8000 = 500
Therefore, profit percent of Gross Traffic Receipt

$$= \frac{500}{8500} \times 100 = 5.9\%$$

148. (C) Profit percent of Gross Traffic Receipt in year 1997-98

$$= \frac{9400-8800}{9400} \times 100 = 6.38\%$$

In year 1995-1996

$$\Rightarrow \frac{7500-5900}{7500} \times 100 = 21.33\%$$

149. (C) Profit percent

$$= \frac{\text{Gross Traffic Profit– Total expenditure}}{\text{Gross Traffic profit}} \times 100$$

$$\Rightarrow \frac{\text{Total Expenditure}}{\text{Gross Traffic Profit}}$$

$$= 1 - \frac{10}{100} = 0.9$$

According to question,
Total expenditure = 5800

$$\therefore \text{Gross Traffic profit} = \frac{5800}{0.9}$$

= ₹ 6444 crores

150. (D) Required increase
= ₹ (8800 – 5100) crores = ₹ 3700 crore

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Appease	To make (someone) pleased or less angry	मनाना, शांत करना
Ascetic	A person who lives in a simple and strict way, without physical pleasures	संन्यासी, आत्मसंयमी
Avid	Ardently or excessively desirous	लालायित
Bashful	Nervous or uncomfortable in social situations, afraid to talk to people because of a lack of confidence	संकोची
Brazen	Acting or done in a very open and shocking way without shame or embarrassment	बेशर्म
Burrow	A hole made by an animal, usually for shelter	बिल
Caucus	A group of people with similar interests, often within a larger organization or political party	दल, गुट
Ceramics	The art of making and decorating pottery	भृत्तका शिल्प
Courtesy	Polite behaviour that shows respect for other people	शिष्टाचार, शालीनता
Cramped	Constricted in size	तंग
Depict	To describe something in words, or give an impression of something in words or with a picture	दर्शाना
Dismal	Causing or showing sadness	शोकयुक्त, निराशाजनक
Evaders	Who avoids or tries to avoid fulfilling, answering, or performing (duties, questions, or issues)	बचने वाला
Get on with (something)	To continue doing something, especially after an interruption	लगातार प्रयासरत रहना
Hermetic	Completely sealed; completely airtight	वायुरूद्ध
Invigorating	Making somebody feel healthy and full of energy	स्फूर्तिदायक
Lamentable	Very disappointing	निराशाजनक
Meek	Humble in spirit or manner; suggesting retiring mildness or even cowed submissiveness	विनम्र, दब्बू
Niggling	Small and of little importance	महत्वहीन, नगण्य
Occult	Connected with magic powers and things that cannot be explained by reason or science	तंत्र-मंत्र संबंधित, रहस्यमय
On and off	Not regularly	कभी-कभी
Pedantic	Marked by a narrow focus on or display of learning especially its trivial aspects	पांडित्य प्रदर्शक
Pervade	To spread through all parts of (something) : to exist in every part of (something)	सर्वत्र व्याप्त होना
Sabotage	The act of destroying or damaging something deliberately	गड़बड़ करना

SSC MOCK TEST - 27 (ANSWER KEY)

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

151. (C) Use 'happier' in place of 'more happier'. Two compartive degrees never come together.

152. (B) Replace 'are' by 'have been'. An action (tax-evading) already started and still going on comes under present perfect continuous tense.

153. (C) Change 'this' into possessive adjective i.e., 'their'.

154. (B) Replace 'than' by 'but'. 'No other' should be followed by 'but'.

155. (D) No error.

Mock Test - 26 Correction

8. (C) Given solution is correct but the correct option is (C).

19. (B) Given: $2 + 8 \times 16 - 4 \div 2$
After interchanging the signs we have,
$= 2 \times 8 - 16 \div 4 \times 2$
$= 2 \times 8 - 4 \times 2$
$= 16 - 8 = 8$

55. (C) Explanation given is correct. Take the correct option as (C).

57. (A)

70. (D) Option (D) is correct. Read 'No_2' as '$4No_2$'.

90. (B & C)

104. (B) $\frac{12.4 \times x + 26}{x + 5} = 12$

$\Rightarrow 12.4x + 26 = 12x + 60 \Rightarrow 0.4x = 34$

$x = \frac{34}{0.4}$ or $\frac{340}{4} = 85 + 5 = 90$

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