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**SSC CGL Pre**

# Solution

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**SCP-908574066-E**

- BALAJI COLONY TIRUPATI CELL 9391794863
- DILSUKHNAGAR HYDERABAD CELL:9398611586
- OPP TO CLOCK TOWER VRC CENTRE NELLORE CELL:6301414541






  
**VENKIS COACHING**

## General Intelligence and Reasoning

- Answer: (B)**  
The logic followed here is:  
First number  $\times$  (First number  $\div$  2) = Second number  
In '23: 264.5':  
 $23 \times 11.5 = 264.5$   
 $204 = 204$   
Similarly,  
In '18: ?':  
 $18 \times 9 = ?$   
**? = 162**  
So, '162' will come in the place of question mark.
- Answer: (C)**  
The pattern followed here is:  
 $2^{\text{nd}} \text{ number} = 2 \times (1^{\text{st}} \text{ number} - 1)$   
 $3^{\text{rd}} \text{ number} = (1^{\text{st}} \text{ number} - 1)^2$   
In (19, 36, 324),  
 $1^{\text{st}} \text{ number} = 19, 2^{\text{nd}} \text{ number} = 2 \times (19 - 1) = 36,$   
 $3^{\text{rd}} \text{ number} = (19 - 1)^2 = 324$   
In (32, 62, 961),  
 $1^{\text{st}} \text{ number} = 32, 2^{\text{nd}} \text{ number} = 2 \times (32 - 1) = 62,$   
 $3^{\text{rd}} \text{ number} = (32 - 1)^2 = 961$   
In option 'a', (24, 48, 576):  
 $1^{\text{st}} \text{ number} = 24, 2^{\text{nd}} \text{ number} = 2 \times (24 - 1) = 46 \neq 48,$   
 $3^{\text{rd}} \text{ number} = (24 - 1)^2 = 529 \neq 576$   
In option 'b', (43, 84, 336):  
 $1^{\text{st}} \text{ number} = 43, 2^{\text{nd}} \text{ number} = 2 \times (43 - 1) = 84,$   
 $3^{\text{rd}} \text{ number} = (43 - 1)^2 = 1764 \neq 336$   
In option 'd', (15, 32, 256):  
 $1^{\text{st}} \text{ number} = 15, 2^{\text{nd}} \text{ number} = 2 \times (15 - 1) = 28 \neq 32,$   
 $3^{\text{rd}} \text{ number} = (15 - 1)^2 = 196 \neq 256$   
All combination of numbers doesn't follow this pattern except for  
In option 'c', (27, 52, 676):  
 $1^{\text{st}} \text{ number} = 27, 2^{\text{nd}} \text{ number} = 2 \times (27 - 1) = 52,$   
 $3^{\text{rd}} \text{ number} = (27 - 1)^2 = 676$
- Answer: (B)**  
Given equation:  $123 - 43 \div 96 + 8 \times 13$   
After interchanging the given two signs, we get:  
 $123 - 43 + 96 \div 8 \times 13$   
 $= 123 - 43 + 12 \times 13$   
 $= 123 - 43 + 156$   
 $= 279 - 43$   
 $= 236$   
So, the value of the given equation is '236'.
- Answer: (B)**  
a.  $UTS \Rightarrow U - 1 = T, T - 1 = S$   
b.  $GHI \Rightarrow G + 1 = H, H + 1 = I$   
c.  $ONM \Rightarrow O - 1 = N, N - 1 = M$   
d.  $WVU \Rightarrow W - 1 = V, V - 1 = U$
- Answer: (A)**  
Given:  $12 \# 48 \# 8 \# 16 \# 51 = 37$   
Substituting the mathematical operator in place of \*, we have,  
In option 'a':  
 $12 \times 48 \div 8 + 16 - 51 = 37$   
 $12 \times 6 + 16 - 51$   
 $= 72 + 16 - 51$   
 $= 88 - 51$   
 $= 37$   
LHS = RHS  
In option 'b':  
 $12 \div 48 \times 8 + 16 - 51 = 37$   
 $= 2 + 16 - 51$   
 $= 18 - 51$

$= - 33$   
 $- 33 \neq 37$   
In option 'c':  
 $12 - 48 \times 8 + 16 \div 51 = 37$   
 $12 - 48 \times 8 + 16 \div 51$   
 $= 12 - 384 + 0.313$   
 $= 12.313 - 384$   
 $= - 371.687$   
 $- 371.687 \neq 37$   
In option 'd':  
 $12 + 48 \div 8 \times 16 - 51 = 37$   
 $12 + 48 \div 8 \times 16 - 51$   
 $= 12 + 6 \times 16 - 51$   
 $= 12 + 96 - 51$   
 $= 108 - 51$   
 $= 57$   
 $57 \neq 37$

6. **Answer: (C)**  
The logic followed here is:

R	A	M
+2	+4	+6
T	E	S
+2	+4	+6
V	I	Y
+2	+4	+6
X	M	E
+2	+4	+6
Z	Q	K
+2	+4	+6
B	U	Q

So, 'ZQK' is the missing term in the given series.

The complete series is:

RAM, TES, VIY, XME, **ZQK**, BUQ

**Answer: (B)**

After decoding the code, we get:

'M + N' means M is the father of N.

'N  $\times$  W' means N is the sister of W.

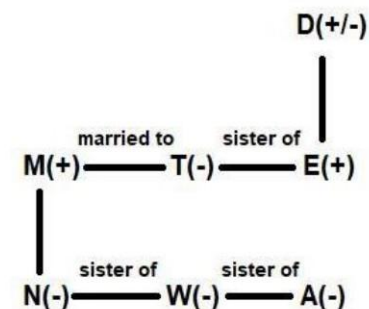
'W  $\times$  A' means W is the sister of A.

'A  $\div$  T' means A is the daughter of T.

'T  $\times$  E' means T is the sister of E.

'E - D' means E is the son of D.

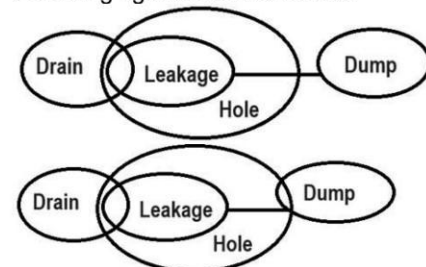
The family tree formed after decoding the code is:



8. So, M is the son-in-law of D.

**Answer: (C)**

Following figures can be formed:



Conclusions:

I. No Hole are Dump: Doesn't follow (As, there is no direct relation between Hole and Dump, so, no definite conclusion follows)

II. Some Hole can be Dump: Follows (As, there is no direct relation between Hole and Dump, so, all the possible conclusions follow)

III. Some Drain are Hole: Follows (As, some Drain are Leakage and all Leakage are Hole, so, some Drain, which are Leakage are also Hole)

Only conclusions II and III follow.

9. **Answer: (D)**

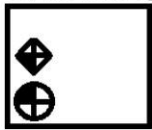
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10. **Answer: (B)**

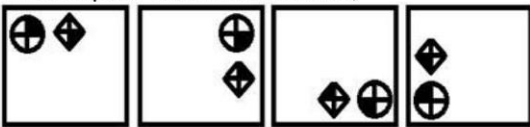
The logic followed here is as follows:

The circle and diamond are moving in clockwise direction. The shaded portion in the circle moves in clockwise direction while the shaded portion in the diamond moves in anti-clockwise direction.

So, the next figure will be as follows,



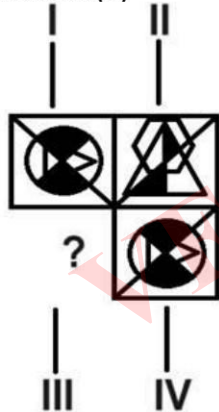
The complete series is as follows,



11. **Answer: (C)**

As, 'Virat Kohli' is a famous 'Cricket' player in the same way 'Rani Rampal' is a famous 'Hockey' player.

12. **Answer: (D)**



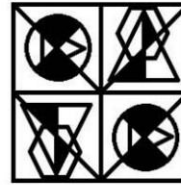
The pattern followed here is:

Figure IV is the mirror image of figure I, similarly figure III will be mirror image of figure II.

So, the figure that will come in place of IV is:



So, the complete figure is:



13. **Answer: (A)**

The difference between the numbers in the series is increasing as follows: 3, 9, 27, 81. This pattern is based on powers of 3:  $3^1, 3^2, 3^3, 3^4$ .

$$623 + 3 = 626$$

$$626 + 9 = 635$$

$$635 + 27 = 662$$

$$662 + 81 = 743$$

$$743 + 243 = 986$$

14. **Answer: (D)**

The logic followed here is as follows:

Firstly, each letter is replaced with its reverse letter as per the English alphabetical series and then, the letters are then arranged as per the English alphabetical series.

In 'HOTEL',

H	O	T	E	L
S	L	G	V	O
G	L	O	S	V

So, 'HOTEL' is coded as 'GLOSVO'.

In 'BROAD',

B	R	O	A	D
Y	I	L	Z	W
I	L	W	Y	Z

So, 'BROAD' is coded as 'ILWYZ'.

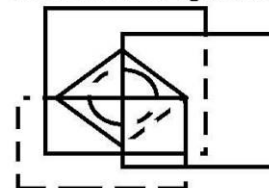
Similarly, in 'MIGHT',

M	I	G	H	T
N	R	T	S	G
G	N	R	S	T

So, 'MIGHT' is coded as 'GNRST'.

15. **Answer: (C)**

The embedded figure is as follows:



16. **Answer: (B)**

The logic followed here is:

The 1<sup>st</sup> number is multiplied by 2.5 to get the 2<sup>nd</sup> number.

In option 'a',  $68 \times 2.5 = 170$

In option 'b',  $74 \times 2.5 = 185 \neq 195$

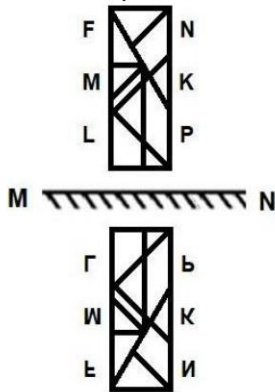
In option 'c',  $46 \times 2.5 = 115$

In option 'd',  $52 \times 2.5 = 130$

Therefore, all of the above options follow the same logic except option b.



17. **Answer: (C)**  
If mirror is placed to the right of the figure,



18. **Answer: (A)**  
The logic followed here is as follows:  
The first word can be divided into three groups:  
The first two letters and the last two letters are replaced with their corresponding reverse letter while the middle letter is replaced with the second preceding letter as per English alphabetical letter.

For 'TRUMP':

T	R	U	M	P
G	I	S	N	K

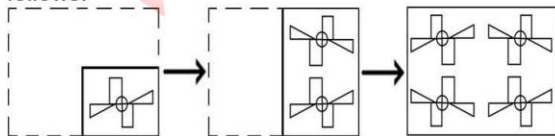
For 'CORKS':

C	O	R	K	S
X	L	P	P	H

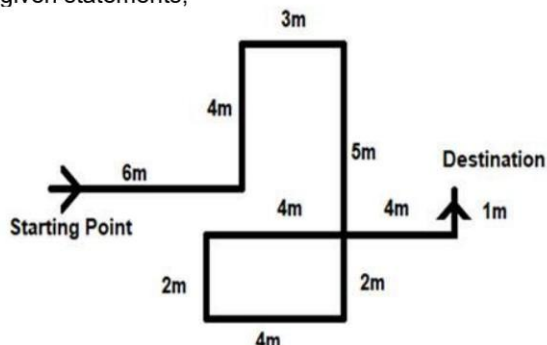
So, 'XLPPH' is related to 'CORKS' in the same way as 'GISNK' is related to 'TRUMP'.

19. **Answer: (D)**  
All are mechanical tools except for 'Bulb'.
20. **Answer: (C)**  
On splitting the English alphabetical series into groups having four consecutive letters, ABCD/EFGH/IJKL/MNOP/QRST/UVWX/YZ  
On recoding the English alphabet in then given manner, we have, DCBA/HGFE/LKJI/PONM/TSRQ/XWVU/ZY  
The 16<sup>th</sup> letter of this series is 'M'.  
So, the fourth letter to the right of 'M' is 'Q'.

21. **Answer: (D)**  
The piece of paper when unfolded, will appear as follows:



22. **Answer: (A)**  
The following arrangement can be drawn from the given statements,



- Tina's destination is in the east direction with respect to the starting point.

23. **Answer: (B)**  
The pattern followed here is:  
The 2<sup>nd</sup> letter in each row is the 5<sup>th</sup> succeeding letter of the 1<sup>st</sup> letter of that row. The 3<sup>rd</sup> letter in each row is the 5<sup>th</sup> succeeding letter of the 2<sup>nd</sup> letter of that row as per the English Alphabetical series.

For Row 1:  
1<sup>st</sup> letter = K, 2<sup>nd</sup> letter = K + 5 = P, 3<sup>rd</sup> letter = P + 5 = U

For Row 2:  
1<sup>st</sup> letter = X, 2<sup>nd</sup> letter = X + 5 = C, 3<sup>rd</sup> letter = C + 5 = H

Similarly,  
For Row 3:  
1<sup>st</sup> letter = J, 2<sup>nd</sup> letter = J + 5 = O, 3<sup>rd</sup> letter = O + 5 = T

So, 'O' will come in place of question mark.

24. **Answer: (C)**  
The logic followed here is:  
The middle number = (The sum of the square of the two numbers given in the horizontal rectangle) - (The product of the two numbers given in the vertical rectangle)

In figure A:  
Middle number = 65  
The numbers given in the vertical rectangles = 8 and 4  
The numbers given in the horizontal rectangles = 9 and 4

$$= [(9)^2 + (4)^2] - (8 \times 4)$$

$$= [(81 + 16) - 32]$$

$$= 97 - 32$$

$$= 65$$

In figure C:

Middle number = 163

The numbers given in the vertical rectangles = 14 and 3

The numbers given in the horizontal rectangles = 13 and 6

$$= [(13)^2 + (6)^2] - (14 \times 3)$$

$$= [(169 + 36) - 42]$$

$$= 205 - 42$$

$$= 163$$

Similarly, in figure B:

Middle number = ?

The numbers given in the vertical rectangles = 19 and 2

The numbers given in the horizontal rectangles = 7 and 12

$$= [(7)^2 + (12)^2] - (19 \times 2)$$

$$= [(49 + 144) - 38]$$

$$= 193 - 38$$

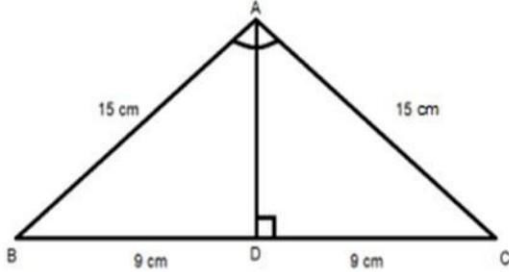
$$= 155$$

So, '155' will come in place of the question mark.

25. **Answer: (A)**  
Taking letters in clockwise direction from 'A', in both dice I and dice II,  
Dice I: A, B, C  
Dice II: A, D, E  
So, 'B' is opposite to 'D', 'C' is opposite to 'E' and 'F' is opposite to 'A'.  
Thus, the letters on the sides opposite to 'B' and 'E' are 'D' and 'C' respectively.

## Quantitative Aptitude

26. **Answer: (C)**  
 $\triangle ABC$  is an isosceles triangle [As two sides of the triangle is same]  
 Since we know, Angle bisector of an angle of a triangle divides the opposite side into two parts that are proportional to the other two sides of the triangle.



- So,  $BD:DC = AB:AC = 15:15 = 1:1$   
 So,  $BD = 18 \times (1/2) = 9$  cm  
 We also know that the perpendicular bisector of the base of an isosceles triangle is also the angle bisector of the vertex angle  
 So,  $AD = \sqrt{AB^2 - BD^2} = \sqrt{15^2 - 9^2} = \sqrt{225 - 81} = \sqrt{144} = 12$  cm  
 So,  $(AD + BD) = 12 + 9 = 21$  cm

27. **Answer: (C)**  
 $[b \times (b^2 + 3b + 3) + 1]^{1/3}$   
 $= [b^3 + 3b^2 + 3b + 1]^{1/3}$   
 $= \{(b + 1)^3\}^{1/3}$   
 $= (b + 1) = 728 + 1 = 729$

28. **Answer: (B)**  
 Total number of books sold by stores 'A' and 'B' together in 2018 =  $400 + 350 = 750$   
 Total number of books sold by stores 'A' and 'B' together in 2019 =  $340 + 460 = 800$   
 Total number of books sold by stores 'A' and 'B' together in 2020 =  $520 + 440 = 960$  (**Maximum**)  
 Total number of books sold by stores 'A' and 'B' together in 2022 =  $510 + 300 = 810$

29. **Answer: (A)**  
 $\frac{78548}{26} = 3021 \frac{2}{26}$   
 Or,  $78548 = 26 \times 3021 + 2$   
 So, required remainder = 2

30. **Answer: (C)**  
 The tank is the shape of a cuboid  
 We know that volume of a cuboidal tank = Length  $\times$  Breadth  $\times$  Depth  
 Let the depth of the water in the tank be 'h' metres  
 ATQ:  
 $28800 = 720 \times h$   
 Or,  $h = (28800/720) = 40$   
 Required depth = 40 metres

31. **Answer: (B)**  
 $30 - [20 - \{56 - (50 - 13 - 12)\}]$   
 $= 30 - [20 - \{56 - (50 - 25)\}]$   
 $= 30 - [20 - \{56 - 25\}]$   
 $= 30 - [20 - 31]$   
 $= 30 - [-11]$   
 $= 30 + 11$   
 $= 41$

32. **Answer: (B)**  
 Principal =  $\frac{x}{(1+\frac{R}{100})^1} + \frac{x}{(1+\frac{R}{100})^2} + \dots + \frac{x}{(1+\frac{R}{100})^n}$

Here, x = amount of instalment, R = rate, n = number of instalments

Let the amount of her each instalment be ₹'x'

$$2,550 = \frac{x}{(1 + \frac{4}{100})} + \frac{x}{(1 + \frac{4}{100})^2}$$

$$\text{Or, } 2,550 = \frac{x}{(\frac{100+4}{100})} + \frac{x}{(\frac{100+4}{100})^2}$$

$$\text{Or, } 2,550 = \frac{x}{(\frac{104}{100})} + \frac{x}{(\frac{104}{100})^2}$$

$$\text{Or, } 2,550 = \frac{25x}{26} + \frac{625x}{676}$$

$$\text{Or, } 2,550 = \frac{650x + 625x}{676}$$

$$\text{Or, } 2,550 = \frac{1275x}{676}$$

33. **Answer: (B)**  
 We know that;  $\tan(A + B) = \frac{\tan A + \tan B}{(1 - \tan A \tan B)}$

We have given,  
 $\frac{\tan 26^\circ + \tan 19^\circ}{x(1 - \tan 26^\circ \tan 19^\circ)} = \tan 30^\circ$   
 Or,  $\frac{1}{x} \times \frac{\tan 26^\circ + \tan 19^\circ}{(1 - \tan 26^\circ \tan 19^\circ)} = \tan 30^\circ$   
 Or,  $\frac{1}{x} \times \tan (26^\circ + 19^\circ) = \tan 30^\circ$   
 Or,  $\frac{1}{x} \times \tan 45^\circ = \tan 30^\circ$   
 Or,  $\frac{1}{x} = \frac{1}{\sqrt{3}}$   
 Or,  $x = \sqrt{3}$

34. **Answer: (B)**  
 $2x + 4y - 9 = 0$   
 If,  $a + b - c = 0$ , then,  $a^3 + b^3 - c^3 = -3abc$   
 So,  $(2x)^3 + (4y)^3 + (-9)^3 = -3 \times (2x) \times (4y) \times (9)$   
 Or,  $8x^3 + 64y^3 - 729 = -216xy$   
 Or,  $8x^3 + 64y^3 - 729 + 216xy = 0 \dots (i)$   
 $8x^3 - 723 + 64y^3 + 216xy = 8x^3 - 729 + 6 + 64y^3 + 216xy$   
 Put the value of equation (i) in the above equation, we get,  
 $8x^3 - 723 + 64y^3 + 216xy = 0 + 6 = 6$

35. **Answer: (A)**  
 Speed of the car =  $(600/12) = 50$  km/h  
 So, speed of the bike =  $50 \times (5/2) = 125$  km/h  
 So, required distance =  $(3 \times 125) + (2 \times 125 \times 0.60) = 375 + 150 = 525$  km

36. **Answer: (B)**  
 $A1 = (500 + 400 + 230 + 350 + 620) = ₹2,100$   
 $A2 = \frac{150+165+135+155+95}{5} = \frac{700}{5} = ₹140$   
 So,  $A1:A2 = 2100:140 = 15:1$

37. **Answer: (C)**  
 $\tan 2A = -\frac{2}{p}$   
 Or,  $\frac{\sin 2A}{\cos 2A} = -\frac{2}{p}$   
 Or,  $\frac{2\sin A \cos A}{\cos^2 A - \sin^2 A} = -\frac{2}{p}$   
 Or,  $\frac{\sin A \cos A}{\cos^2 A - \sin^2 A} = -\frac{1}{p}$   
 Or,  $\cot A - \tan A = -p$   
 So,  $\tan A - \cot A = p$

38. **Answer: (B)**  
 Let the cost price of the article be ₹'100x'  
 ATQ:  
 $'100x' \times 0.4 = 1,200$   
 Or,  $40x = 1,200$   
 Or,  $'x' = (1200/40) = 30$   
 So, cost price of the article =  $100x = 100 \times 30 = ₹3,000$



So, selling price of the article =  $3,000 + 1,200 = ₹4,200$   
Required marked price of the article =  $4200 \div 0.7 = ₹6,000$

39. **Answer: (B)**

'C' can finish the work alone in  $5 \times 3 = 15$  days  
Let total work be {L.C.M of 10, 12, 15} = 60 units  
So, efficiency of 'A' =  $(60/10) = 6$  units/day  
Efficiency of 'B' =  $(60/12) = 5$  units/day  
Efficiency of 'C' =  $(60/15) = 4$   
Effective efficiency of 'A', 'B' and 'C' together =  $(6 + 5 + 4) = 15$  units/day  
Required time taken by them to finish the work =  $(60/15) = 4$  days

40. **Answer: (B)**

We know,  
 $x^4 + x^2y^2 + y^4 = (x^2 + xy + y^2)(x^2 - xy + y^2)$   
So,  
 $(x^2 + xy + y^2)(x^2 - xy + y^2) = 63$   
Or,  $9 \times (x^2 - xy + y^2) = 63$   
Or,  $(x^2 - xy + y^2) = 7$   
Now,  
 $(x^2 + xy + y^2) + (x^2 - xy + y^2) = 9 + 7$   
Or,  $2(x^2 + y^2) = 16$   
Or,  $(x^2 + y^2) = (16/2) = 8$

41. **Answer: (D)**

Let the quantity of three variety of rice in the new mixture be '2x' kg, 'x' kg, and 'x' kg respectively  
Let the price of the third variety of rice be ₹'y'/kg  
ATQ:  
 $(35 \times 2x) + (48 \times x) + (y \times x) = 40 \times (2x + x + x)$   
Or,  $70x + 48x + xy = 40 \times 4x$   
Or,  $118x + xy = 160x$   
Or,  $xy = 42x$   
Or,  $y = 42$

So, the price of the third variety of rice = ₹42/kg

42. **Answer: (D)**

Let 'Q' be 5a  
Therefore, 'P' =  $0.8 \times 5x = 4a$   
Required percentage =  $\{(5a - 4a) \div 4a\} \times 100 = (a/4a) \times 100 = 25\%$

43. **Answer: (A)**

Amount received from scheme 'A' after 2.5 years  
=  $5486 + \{5486 \times (15/100) \times 2.5\} = 5486 \times 1.375$   
= ₹7,543.25  
Now, simple interest received from scheme 'B'  
=  $\{7543.25 \times (6/100) \times 2\} = 7543.25 \times 1.12 = ₹8,448.44$   
So, total interest received from scheme 'A' and 'B' together =  $8448.44 - 5486 = ₹2,962.44$

44. **Answer: (B)**

Let the total work = 72 units (LCM of 18 and 72)  
So, combined efficiency of 'M' and 'S' =  $(72/72) = 1$  unit/day  
Combined efficiency of 'M', 'S', and 'R' =  $(72/18) = 4$  units/day  
So, efficiency of 'R' =  $4 - 1 = 3$  units/day  
So, time taken by 'R' to complete the work alone =  $(72/3) = 24$  days

45. **Answer: (B)**

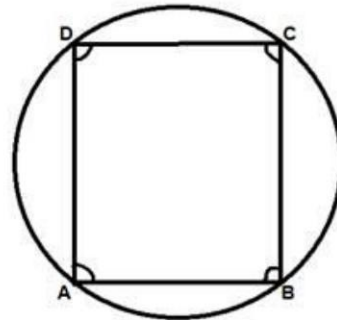
Run scored by Rohit =  $30 \times (4/2) = 60$   
Run scored by Rahane =  $30 \times (9/2) = 135$

46. **Answer: (A)**

According to the question,  
 $\frac{15}{45} = \frac{45}{x}$   
Or, 'x' =  $45 \times 3$   
So, 'x' = 135

So, required value =  $\sqrt{\sqrt{x^4} + 56} - 24 \times 5 = \sqrt{x^{4 \times \frac{1}{2}} + 56} - 120 = 135^{2 \times \frac{1}{2}} - 64 = 135 - 64 = 71$

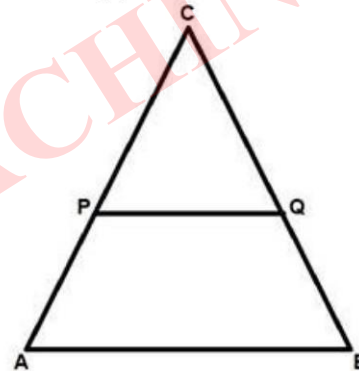
47. **Answer: (C)**



We know that opposite angles of a parallelogram are equal while sum of opposite angles of a parallelogram is  $180^\circ$ .

So,  $\angle ADC + \angle ABC = 180^\circ$   
Also,  $\angle ADC = \angle ABC$   
So,  $2 \times \angle ADC = 180^\circ$   
So,  $\angle ADC = 90^\circ$

48. **Answer: (B)**



Using BPT theorem which states if a line is drawn parallel to one side of a triangle intersecting the other two sides in distinct points, then the other two sides are divided in the same ratio.

Let CP and CA be '3x' cm and '4x' cm, respectively  
Therefore,  $PA = CA - CP = 4x - 3x = 'x'$  cm

$$\frac{CP}{PA} = \frac{CQ}{BQ}$$

$$\text{Or, } \frac{3x}{x} = \frac{6}{BQ}$$

So,  $BQ = 2$  cm  
So,  $BC = 2 + 6 = 8$  cm

49. **Answer: (D)**

Let runs needed to be scored in 10<sup>th</sup> innings be 'x'  
Sum of runs scored in 9 innings =  $9 \times 54 = 486$   
Sum of runs to be scored in 10 innings =  $60 \times 10 = 600$   
ATQ:

$$486 + 'x' = 600$$

$$\text{Or, } x = 114$$

So, he needs to score 114 runs in 10<sup>th</sup> inning

50. **Answer: (B)**

Since, the sphere is moulded in form of the cylindrical rod, therefore their volumes will be equal  
Let the length/height of the rod be 'h' cm  
ATQ:

Since we know volume of a sphere =  $\frac{4}{3} \times \pi \times \text{radius}^3$   
And we also know volume of a cylinder =  $\pi \times \text{radius}^2 \times \text{length}$



$\frac{4}{3} \times \pi \times 9^3 = \pi \times 3^2 \times h$   
 Or,  $4 \times 243 = 9 \times 'h'$   
 Or,  $'h' = 108$   
 So, length of the rod = 108 cm

## General Awareness

51. **Answer: (A)**  
 Hiran Minar at Fatehpur Sikri was built in the memory of Akbar's favourite **elephant**, named Hiran. It also served as lighthouse for travellers. It is uniquely designed and its exterior wall contains tusk like spikes. Hence, Option A is the correct answer.
52. **Answer: (A)**  
**Phycology** is the scientific study of **algae**. Algae are important as primary producers in aquatic ecosystems. Most algae are **eukaryotic**, photosynthetic organisms that live in a wet environment.  
**Additional Information:**  
**Cyanobacteria** is a phylum of gram-negative bacteria that obtain energy via photosynthesis. Cyanobacteria is also refers as "**blue green algae**", although they are not usually scientifically classified as algae. They appear to have originated in a freshwater or terrestrial environment.  
**Note:** The scientific study of the morphology and physiology of the feet is known as Podology.
53. **Answer: (C)**  
 The **Securities and Exchange Board of India (SEBI)** has unveiled a new logo on the occasion of its **35<sup>th</sup> Foundation Day** observed on 12<sup>th</sup> April 2023. The new logo retains the traditional **blue palette** but also reflects the unique combination of its rich traditions and its new data and technology-based approach in all three areas of its mandate in the securities market: Development and Regulation of the Securities Market and Investor Protection.  
**SEBI:**  
 It was established on **12<sup>th</sup> April 1988** under the Ministry of Finance. The body was granted statutory powers in **1992**. It functions as a quasi-judicial body.  
 · **Headquarters:** Mumbai, Maharashtra  
 · **Chairman:** Madhabi Puri Buch
54. **Answer: (C)**  
 The National Commission for Minorities is a **statutory body** set up under the National Commission for Minorities Act, of 1992. It consists of a Chairperson, a Vice-Chairperson and 5 members and all of them shall be from amongst the minority communities.  
 Tenure: 3 years  
**Note:** The Government of India has declared six religions namely, Muslims, Christians, Sikhs, Buddhists and Parsis (Zoroastrian) and Jain as religious minorities in India.
55. **Answer: (C)**  
 The moon is a bit more than one-quarter (27 percent) the size of Earth, a much larger ratio (1:4) than any other planets and their moons. Earth's moon is the fifth largest moon in the solar system.  
 The moon is the natural satellite of the earth, meaning the earth is by far bigger by far than the moon.  
 The approximate size of Moon is about **one-fourth** (or a quarter) the size of Earth. Put another way, Earth is about four times wider than the Moon.
- The Moon is about **1/4** size of Earth and weighs about 80 times less.  
 The diameter of the Moon is 3,474 km. Now, let's compare this to the Earth. The diameter of the Earth is 12,742 km. This means that the Moon is approximately 27% the size of the Earth.
56. **Answer: (D)**  
 The Indian cricket team played its first T20I match, under the captaincy of Virender Sehwag, during the **2006 - 07** series in South Africa. It was 10th ever international Twenty20 match and Sachin Tendulkar scored 10 runs. India won the match by 6 wickets on the penultimate ball of the match.
57. **Answer: (B)**  
 The gland that is composed of follicles and stromal tissues is the **thyroid gland**. Unlike other endocrine glands that directly secrete their products into the bloodstream, the thyroid gland stores its products in follicles. These follicles are often clustered together to form numerous lobules, which constitute the parenchyma of each lobe of the thyroid. The thyroid gland plays a crucial role in regulating body metabolism through the secretion of thyroid hormones (T3 and T4) and also contributes to calcium homeostasis through calcitonin secretion.
58. **Answer: (B)**  
 The **Kerala Government** has launched **K-SMART (Kerala Solutions for Managing Administrative Reformation and Transformation)**, which will bring all services of the three-tier local self-government institutions on a unified digital platform.  
 This is the **first** such initiative in the country that the entire bouquet of services of a department is being made available to the public on a digital platform. K-SMART will provide a major relief to expatriates who want to avail various services of the local bodies without visiting the offices.  
 Initially, K-SMART application, developed by Information Kerala Mission of the state IT department, will be operational in corporations and municipalities. Gradually, it will be rolled out in gram panchayats. It is embedded with an Integrated Messaging System that facilitates delivery of the acknowledgment receipt of complaints and applications in the portal that can be accessed through login of the applicant or complainant as also via Whatsapp and email.  
**Note:** Kerala is the first state in the country to declare Internet access a fundamental right.
59. **Answer: (B)**  
 The **Kabli Bagh Mosque**, the first Mughal monument in India was built by Babur to commemorate the victory over **Sultan Ibrahim Lodhi** in the **First Battle of Panipat (1526 AD)**. The mosque, situated inside an enclosure having octagonal towers on its corners, has its entrance on the north.  
 This mosque is in Kabul Bagh Colony, **Panipat, Haryana**.
60. **Answer: (C)**  
 Bandipur National Park is located in the state of **Karnataka**. It covers an area of 868.63 square kilometers in the Chamarajnagar district. It was established as a tiger reserve under Project Tiger in 1973. It is a part of the Nilgiri Biosphere Reserve since 1986. The park's diverse biomes include dry deciduous forests, moist deciduous forests, and shrublands. The Kabini River flows in the north, the Moyar River in the south, and the Nugu River runs through the park. The



highest point is Himavad Gopaldaswamy Betta, where a Hindu temple stands at the summit. Bandipur experiences a typical tropical climate with distinct wet and dry seasons.

61. **Answer: (A)**  
Depreciation is a ratable reduction in the carrying amount of a fixed asset. The term **depreciation** represents a loss or diminution in the value of an asset consequent upon wear and tear, obsolescence, effluxion of time or permanent fall in market value. Physical deterioration of an asset is caused by movement, strain, friction, erosion etc. For instance, assets are building, **machinery**, furniture, etc.
62. **Answer: (B)**  
**Pulicat** Lake is located at the border of Tamil Nadu and Andhra Pradesh. It is the second largest brackish water lake in India after Chilika lake. It extends from the extreme southeastern portion of Andhra Pradesh to the adjacent portion of Tamil Nadu state.
63. **Answer: (C)**  
**Electrical Resistance** is a measure of the opposition to current flow in an electrical circuit. The SI unit of electric resistance is the **ohm** ( $\Omega$ ). Ohms are named after Georg Simon Ohm (1784-1854), a German physicist who studied the relationship between voltage, current, and resistance.
64. **Answer: (C)**  
The **National Girl Child Day (NGCD)** is observed annually across India on **24<sup>th</sup> January** to focus on the inequalities faced by girls, to promote the education, health & nutrition of the girl child, and to spread awareness about the rights of a girl child. The day was observed for the first time in **2008** as an initiative by the Ministry of Women and Child Development and the Government of India.
65. **Answer: (B)**  
The Vaitarna River flows in a **westward** direction. It is one of the west-flowing rivers in the region north of Mumbai and south of the Tapi River. The river originates in the Sahyadri hill range at Trimbak in the Nashik district of Maharashtra and travels approximately 120 kilometers westward before joining the Arabian Sea. The main tributaries include Pinjal, Ganjai, Surya, Daharji, and Tansa.
66. **Answer: (D)**  
The Third Battle of Panipat was fought on **14<sup>th</sup> January 1761** at Panipat, between a northern expeditionary force of the Maratha Empire and the King of Afghanistan, Ahmad Shah Durrani, with two Indian Muslim allies: the **Rohilla Afghans of the Doab** and **Shuja-Ud-Daula, the Nawab of Oudh**. The Marathas were defeated in the battle, with 40,000 of their troops killed, while Abdali's army is estimated to have suffered around 20,000 casualties.
67. **Answer: (B)**  
Stockholm Convention - Persistent organic pollutant  
**Kyoto Protocol - Climate change**  
Montreal Protocol - Ozone Layer  
Cartagena Protocol - Biosafety
68. **Answer: (D)**  
**National Reading Day** is observed annually on **19 June** to encourage the habit and culture of reading and to promote literacy. The day also marks the death anniversary of **Puthuvayil Narayana Panicker**, who is

considered as the Father of Kerala's Library and Literacy Movement.

69. **Answer: (A)**  
**Escape Velocity** is that minimum velocity with which a body should be projected from the surface of earth so as it goes out of gravitational field of earth and never return to earth. Escape velocity is independent of the mass, shape and size of the body and its direction of projection. Escape velocity is also called second cosmic velocity. For earth, escape velocity = **11.2 km/s**. For moon, escape velocity = 2.4 km/s.
70. **Answer: (D)**  
Economic profit is the profit an entity achieves after accounting for both explicit and implicit costs. Normal profit occurs when economic profit is zero or alternatively when revenues equal explicit and implicit costs. Normal profit or economic profit is an economic condition occurring when the difference between a firm's total revenue and the total cost is equal to zero. Economic profit or normal profit is the same as **net profit**.
71. **Answer: (C)**  
**Ramsar Convention:** It was signed in **1971** in the **Iranian city of Ramsar** and is **one of the oldest inter-governmental accords** for preserving the ecological character of wetlands. It is also known as the **Convention on Wetlands**. Its aim is to develop and maintain an international network of wetlands that are important for the conservation of global biological diversity and for sustaining human life through the maintenance of their ecosystem components, processes and benefits. Wetlands declared as Ramsar sites are protected under strict guidelines of the convention.
72. **Answer: (D)**  
**Ovary** is the primary sex organ of female reproductive system in human beings. The primary sex organs in a female consist of a **pair of ovaries** which are oval bodies lying at the back of the abdomen below the kidney. Each ovary consists of many ovarian follicles. Each follicle can produce an egg. The secondary sex organs in a female are the fallopian tubes, uterus, and vagina.
73. **Answer: (A)**  
Scientists are exploring hydrothermal vents on Svalbard's Knipovich Ridge, a 500-km-long ridge in the Arctic Ocean. Svalbard, discovered in 1596 by Willem Barentsz, is an Arctic archipelago under Norwegian sovereignty. It lies between the North Pole and Norway, covering 61,022 sq.km with a majority glaciated. Featuring Spitsbergen as its largest island, Svalbard experiences Arctic conditions, including midnight sun and polar night due to its location in the Arctic Circle.
74. **Answer: (B)**  
Antonio Costa, former Prime Minister of Portugal, was elected President of the European Council, replacing Charles Michel, effective October 1, 2024. Estonian Prime Minister Kaja Kallas will be the new High Representative for Foreign Affairs and Security Policy. The European Council elects its President by secret ballot for a 2.5-year term, renewable once. The President leads the Council's work and represents the EU internationally.



75. **Answer: (A)**  
Paraguay has become the 100th full member of the International Solar Alliance (ISA) by officially handing over its Instrument of Ratification in New Delhi. The ISA, co-founded by India and France during the 2015 COP21, promotes global solar energy deployment. The alliance now has 119 signatories, with 100 ratified members. The ISA aims to implement the Paris Climate Agreement through extensive solar energy adoption.

## English Language

76. **Answer: (D)**  
FASTIDIOUS refers to someone who is very attentive to detail and wanting everything correct. Thus, D is the right answer.  
Incentive - something that encourages or motivates someone to do something.  
Fratricide - murder of a brother.  
Homicide - murder of a person.
77. **Answer: (C)**  
We need the past participle form of a verb to complete the passive voice structure IS + VERB. The sentence seeks to convey that the submersible has a proprietary real-time hull health monitoring system. EQUIPPED (having the necessary tools and resources) will fit here. Thus, C is the right answer.  
The remaining options are contextually incorrect.  
DIMINISHED - lessened or reduced.  
SNEAKED - went somewhere or did something secretly.  
ADDRESSED - dealt with a problem.
78. **Answer: (A)**  
The correct option is A. A gown refers to a long dress, typically worn on formal occasions. Thus, A is the right answer.  
Grown - past participle of grow, meaning to become larger or older.  
Groan - a low, mournful sound uttered in pain or grief.  
Gone - past participle of go, meaning to leave or depart.
79. **Answer: (B)**  
The correct spelling of the word is CLAMOROUS (noisy and disorderly). Thus, B is the right answer.
80. **Answer: (A)**  
The correct spelling of the word is ATROCIOUS (appalling; shockingly bad).
81. **Answer: (C)**  
In C, remove the preposition AT, as it is redundant.
82. **Answer: (B)**  
In B, replace the singular pronoun THIS with THESE as the object COMPOUNDS is plural. Thus, B is the right answer.
83. **Answer: (D)**  
A person who speaks two languages fluently is known as BILINGUAL. Thus, D is the right answer.  
Monolingual - speaking only one language. Trilingual - speaking three languages. Polyglot - a person who speaks many languages.
84. **Answer: (C)**  
CADB is the correct order of the sentences. CA is a mandatory pair. C begins the paragraph by talking about the rise in the use of social media over the past decade and a half, and A follows and supports this by talking about the United States, where an increase in the number of adults using social media has been

observed. DB is another mandatory pair. D follows A by stating that this increase in social media use has given rise to interest and concern, and B follows D and concludes the paragraph by telling us that the concern is about the impacts of social media on our lives and psychological well-being.

85. **Answer: (C)**  
The idiom THROW IN THE TOWEL means to surrender or give up. Thus, C is the right answer.  
None of the other options correctly conveys the meaning of the idiom.
86. **Answer: (B)**  
We need a verb that can agree with the relative pronoun WHICH. SUPPLIED (provided) will fit here contextually as the sentence tells us how the city's Sampangi lake provided water to many parts of Bangalore. Thus, B is the right answer.  
Threw - hurled. Defeated - conquered. Hurt - injured.
87. **Answer: (B)**  
We need a past participle verb to fit in the WAS + VERB passive voice construction. The sentence tells us how the lake was changed into a sports stadium TRANSFORMED (modified; changed) will fit here contextually. Thus, B is the right answer.  
Schemed - planned. Distorted - changed the shape or size of something. Compressed - squeezed.
88. **Answer: (C)**  
We need an adjective to modify the noun POND. TINY (very small) will fit here contextually as the sentence talks about how the lake was changed into a sports stadium, which left behind only a small pond. Thus, C is the right answer.  
Modest - humble. Fantastic - wonderful. Damaged - ruined.
89. **Answer: (A)**  
We need a plural subject pronoun to refer to the plural noun LAKES and to form the subject of the verb WERE. THEY will fit here. Thus, A is the right answer.  
THEM is an object pronoun. WE is a first person pronoun, used to refer to people. IT is a singular pronoun.
90. **Answer: (B)**  
We need an adjective to modify the nouns LAKES AND WELLS. The sentence talks about how the lakes and wells were worshipped as holy earlier. SACRED (holy) will fit here contextually. Thus, B is the right answer.  
Enormous - huge. Precise - accurate. Obtuse - slow and stupid.
91. **Answer: (B)**  
We need a phrase that can convey how he tried to get his performance up to the level of that of his classmates. CATCH UP WITH (to reach to the level of someone) can replace the underlined phrase in the sentence. Thus, B is the right answer.  
Catch out - detect that someone has done something wrong or made a mistake. Catch on - to understand. CATCH IN is grammatically incorrect.
92. **Answer: (B)**  
Option B is the right answer.  
The sentence is in direct speech and in simple future tense. To convert this sentence to the indirect speech, follow these rules:  
I. Remove the comma and the inverted commas.  
II. The subject (THE BOY) will begin the sentence followed by SAID.

III. Put THAT between the reporting and reported speeches.

IV. The simple past tense verb LET will change to the past perfect tense HAD LET.

V. THIS changes to THAT.

VI. The first person pronoun I will change to the third person pronoun HE.

93. **Answer: (B)**

The sentence is in active voice and in simple future tense (WILL MAKE). Follow the rules below to convert a sentence in indicative mood to passive voice:

I. The subject clause will become the object clause. Here, the subject pronoun WE will change to the object of the verb and assume the object form US, and the object EXPEDITIONS will change into the subject and begin the sentence.

II. Replace WILL MAKE with WILL BE MADE. The passive voice construction for simple future tense is "WILL + BE + past participle".

III. Add the conjunction BY before US to link the verb with its object.

94. **Answer: (B)**

The sentence is in active voice and in simple future tense (WILL SPEND). Follow the rules below to convert a sentence in indicative mood to passive voice:

I. The subject clause will become the object clause. Here, the subject pronoun THEY will change to the object of the verb and assume the object form THEM, and the object MONEY will change into the subject and begin the sentence.

II. Replace WILL SPEND with WILL BE SPENT. The passive voice construction for simple future tense is "WILL + BE + past participle".

III. Add the conjunction BY before THEM to link the verb with its object.

95. **Answer: (B)**

ALLURE means attract or tempt. REPULSE (repel) will be its antonym. Thus, B is the right answer.

Hoist - lift. Allay - pacify. Peruse - read.

96. **Answer: (A)**

ABJURE means to give up or forsake. RENOUNCE is its synonym. Thus, A is the right answer.

Awaken - rouse. Distort - change the shape or size of something. Postulate - suggest.

97. **Answer: (B)**

JOVIAL means happy and friendly. Thus, B is the correct answer.

Morose - solemn or thoughtful in character or manner. Morose - sullen and ill-tempered.

Indifferent - having no particular interest or sympathy; unconcerned.

98. **Answer: (D)**

The phrase "call it a day" means to stop working for the day, especially when one feels that they have done enough. Thus, D is the right answer.

Call off the day - cancel the day's activities. The other options are incorrect.

99. **Answer: (C)**

We need a phrase that can convey that the person needs to deal with her habit of being late for class. GET OVER (to solve or deal with a problem) can replace the bracketed phrase in the sentence.

Thus, C is the right answer.

Get up - to rise or stand.

Get through - to complete or finish something.

Get along - to have a friendly relationship with someone.

100. **Answer: (B)**

PERILOUS means risky or dangerous. SECURE (safe; protected) will be its antonym. Thus, B is the right answer.

Reluctant - unwilling. Watchful - alert. DANGEROUS is a synonym of the given word.