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SSC CGL Pre

Solution

SCP-9I4684809-E



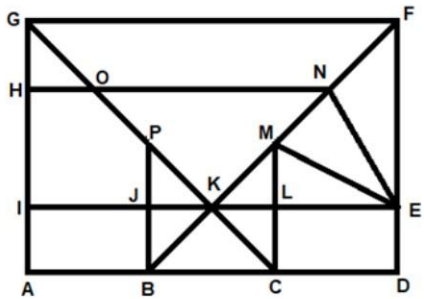
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General Intelligence and Reasoning

1. Solution: B



Triangles are: AGC, BFD, BJK, BPK, JKP, BCP, BKC, CBM, CKL, CKM, LKM, MKE, LME, EKN, EMN, EKF, EMF, ENF, KON, KGF, KGI and HOG. Total numbers of triangle are 22

2. Solution: A

Clues: 1) Nia sits second to the right of Lena. 2) Neither Nia nor Lena stands at the extreme end. 3) Sia sits immediate left of Priya. 4) Bill does not stand adjacent to Lena. Inferences: From clue 1 and clue 2, Lena either stands second or third from the left extreme end of the row (ends are taken with respect to the south direction) Case 1: Lena stands second from the left extreme end From clue 3, Priya stands at the right extreme end.

Table with 4 columns: Priya, Sia, Nia, Lena

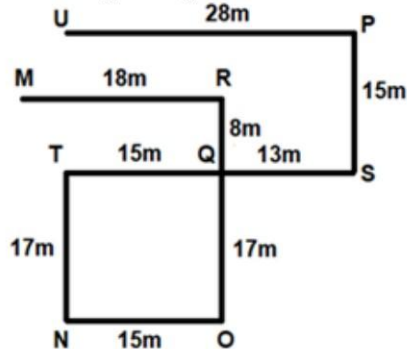
From clue 4, this case can be rejected as there is no position available for Bill. Case 2: Lena stands third from the left extreme end From clue 3, Sia stands at the left extreme end. From clue 4, Bill stands at the right extreme end and thus Maya stands immediate left of Nia. The final arrangement is as follows,

Table with 6 columns: Bill, Nia, Maya, Lena, Priya, Sia

Thus, three persons stand to the left of Maya.

3. Solution: C

M @ R (18m) means M 18m west of R O % R (25m) means O is 25m south of R N @ O (15m) means N is 15m west of O T & N (17m) means T is 17m north of N S # T (28m) means S is 28m east of T P & S (15m) means P is 15m north of S P # U (28m) means P is 28m east of U The final figure is given below:



Therefore, U is 32m north of N.

4. Solution: C

The logic followed here is as follows, From the left end, the letters are divided into two equal halves. For the letters of the first half, '3' is added to their place value, as per English alphabetical order, while for the letters of the second half, '4' is added to the place value, as per English alphabetical order.

Table for CLOTHING with columns C, L, O, T, H, I, N, G and rows for place values and additions.

So, 'CLOTHING' is coded as '6, 15, 18, 23, 12, 13, 18, 11'.

Table for RATE with columns R, A, T, E and rows for place values and additions.

So, 'RATE' is coded as '21, 4, 24, 9'.

Table for MARTIN with columns M, A, R, T, I, N and rows for place values and additions.

So, 'MARTIN' is coded as '16, 4, 21, 24, 13, 18'.

5. Solution: C Given equation: 144 * 3 * 42 * 6 * 124 * 176 After replacing '*' with mathematical sign given in option 'a' we get: 144 ÷ 3 × 42 - 6 = 124 + 176 48 × 42 - 6 = 300 48 × 42 - 6 = 300 2016 - 6 = 300 2010 ≠ 300 So, sign given in option 'a' will not balance the equation. After replacing '*' with mathematical sign given in option 'b' we get: 144 ÷ 3 + 42 - 6 × 124 = 176 48 + 42 - 6 × 124 = 176 48 + 42 - 744 = 176 90 - 744 = 176 -654 ≠ 176 So, sign given in option 'b' will not balance the equation. After replacing '*' with mathematical sign given in option 'c' we get: 144 ÷ 3 + 42 × 6 - 124 = 176 48 + 42 × 6 - 124 = 176 48 + 252 - 124 = 176 300 - 124 = 176 176 = 176 So, sign given in option 'c' will balance the equation. After replacing '*' with mathematical sign given in option 'd' we get: 144 ÷ 3 - 42 × 6 + 124 = 176

48 - 42 x 6 + 124 = 176
48 - 252 + 124 = 176
172 - 252 = 176
-80 ≠ 176
So, sign given in option 'd' will not balance the equation.

6. Solution: A
The pattern followed here is as follows:
Product of the place value of 2nd letter and 2nd last letter.

Table with 7 columns: B, L, U, N, D, E, R. Row 1: B, L, U, N, D, E, R. Row 2: 2, 12, 21, 14, 4, 5, 18.

In BLUNDER
Place values of L and E are 12 and 5, respectively.
12 x 5 = 60

Table with 7 columns: I, N, V, E, N, T, O, R. Row 1: I, N, V, E, N, T, O, R. Row 2: 9, 14, 22, 5, 14, 20, 15, 18.

Place values of N and O are 14 and 15, respectively
14 x 15 = 210

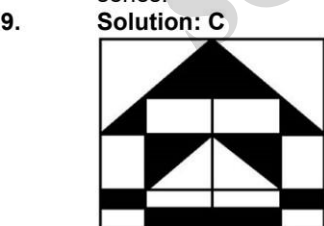
Table with 7 columns: M, A, R, C, H, I, N, G. Row 1: M, A, R, C, H, I, N, G. Row 2: 13, 1, 20, 3, 8, 9, 14, 7.

Place values of A and N are 1 and 14, respectively
1 x 14 = 14

7. Solution: D
Word I: 'TOMATO' can be formed using the letters of the given word only once.
Word II: 'OVATION' can be formed using the letters of the given word only once.
Word III: 'VITAMIN' can be formed using the letters of the given word only once.
Hence, option d.

8. Solution: B
The logic followed here is as follows,
125 141 166 202 251 315 396 496
+16 +25 +36 +49 +64 +81 +100

So, '496' will replace the question mark in the given series.



9. Solution: C
The logic followed here is as follows:
In each row from left to right,
(First number ÷ 3) + (Second number x 2) = Third number
In Row I:
(54 ÷ 3) + (17 x 2) = 18 + 34 = 52
In Row II:
(36 ÷ 3) + (19 x 2) = 12 + 38 = 50

In Row III:
(84 ÷ 3) + (23 x 2) = 28 + 46 = 74
So, '74' will replace the question mark.

11. Solution: B
The logic followed here is shown below:

Table with 3 columns: M, Q, S. Row 1: M, Q, S. Row 2: -2, +3, -5. Row 3: K, T, N. Row 4: +3, -4, +6. Row 5: N, P, T. Row 6: -4, +5, -7. Row 7: J, U, M. Row 8: +5, -6, +8. Row 9: O, O, U.

'JUM' will complete the given series.
The complete series is:
MQS, KTN, NPT, JUM, OOU

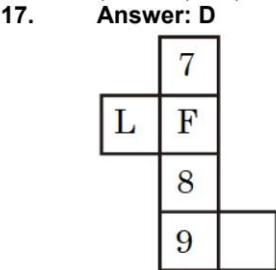
12. Solution: C
Pattern is:
13 @ 62 => (13 + 62) x 3 = 225
4 @ 38 => (4 + 38) x 3 = 126
29 @ 17 => (29 + 17) x 3 = 138

13. Solution: A
E + 1 = F, F + 1 = G
B + 2 = D, D - 1 = C
V + 2 = X, X - 1 = W
O + 2 = Q, Q - 1 = P

14. Solution: D
Logic: sum of 1st and 2nd number after reversing its digits is equal to 3rd number.
(182, 79, 378) => 281 + 97 = 378
(345, 16, 604) => 543 + 61 = 604
Similarly;
(79, 18, 178) => 97 + 81 = 178

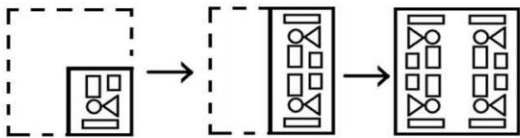
15. Solution: (D)
Options A, B, and C are all fruits, while option D, Cauliflower, is a vegetable. Therefore, the correct answer is 4. Cauliflower, as it is different from the rest.

16. Solution: C
Pattern is: (First number + second number) x 3 = Third number
(8, 5, 39) => (8 + 5) x 3 = 39
(14, 11, 75) => (14 + 11) x 3 = 75
Similarly;
(7, 4, 33) => (7 + 4) x 3 = 33



8 and L can come on the adjacent faces of the face containing 'F' on it.

18. Solution: A
The piece of paper when unfolded will appear will as follows,

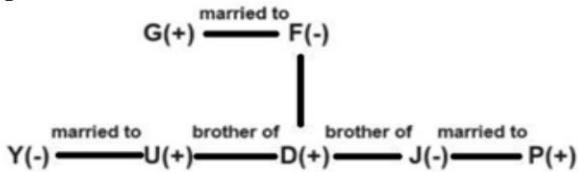


19. **Solution: (D)**
Number of red cars = 5 + 6 + 14 + 8 = 33

20. **Solution: B**
The correct water image of the given combination is as follows,

1 b 4 n j @ p L % 6 5
J p q u ! @ b r % e e

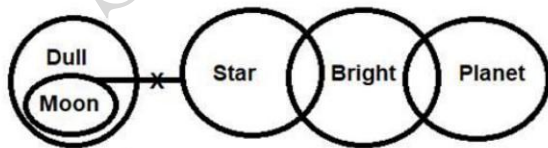
21. **Solution: D**
After decoding the code, we get:
Y + U means Y is the wife of U.
U - D means U is the brother of D.
D × F means D is the son of F.
F + G means F is the wife of G.
G ÷ J means G is the father of J.
J + P means J is the wife of P.
The family tree formed after decoding the code is given below:



22. **Solution: B**
Therefore, U is the brother-in-law of P.
The pattern is that each letter in the second group is 3 positions ahead of the corresponding letter in the first group:

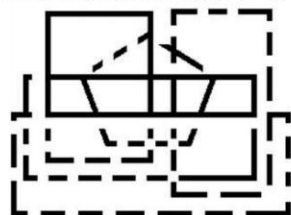
A + 3 = D
J + 3 = M
N + 3 = Q
Applying the same pattern to PTW:
P + 3 = S
T + 3 = W
W + 3 = Z

23. **Solution: A**
The following Venn diagram can be drawn from the given statements,



The part of Bright which is Star can never be Moon.
So, conclusion I follows.
From the above Venn diagram, conclusion II and conclusion III does not follow.

24. **Solution: D**
The embedded figure is as follows,



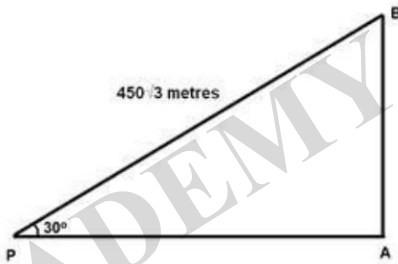
25. **Solution: B**

The relationship is: $(\text{first number}/3)^2 = \text{second number}$.
So, $(33/3)^2 = 11^2 = 121$, $(27/3)^2 = 9^2 = 81$, and $(45/3)^2 = 15^2 = 225$.

Quantitative Aptitude

26. **Solution: B**
Quantity of water in the mixture = $80 \times 0.3 = 24$ litres
So, the quantity of milk = $80 - 24 = 56$ litres
Let 'x' litres of water is added to the mixture
ATQ:
 $(80 + x) \times 0.4 = 56$
Or, $32 + 0.4x = 56$
Or, $0.4x = 24$
Or, $x = 24 \div 0.4 = 60$
Therefore, 60 litres of water should be added to the mixture

27. **Solution: B**



In the given figure, let 'A' and 'B' represent the foot and the top of the cliff, respectively.
In right $\triangle PAB$,
 $\cos 30^\circ = (AP/PB)$
Or, $(\sqrt{3}/2) = (AP/450\sqrt{3})$
So, $PA = (450\sqrt{3}) \times (\sqrt{3}/2) = 675$ metres
Therefore, distance between point 'P' and the foot of the cliff is 675 metres

28. **Solution: D**
Let the radius of the cylinder = '4x' cm
Then, height of the cylinder = 7x cm
So, volume of the cylinder = $\pi \times (\text{radius})^2 \times \text{height}$
Or, $2816 = (22/7) \times (4x)^2 \times 7x$
Or, $2816 \div (22 \times 16) = x^3$
Or, $x^3 = 8$
So, $x = 2$
So, radius of the cylinder = $4 \times 2 = 8$ cm
And height of the cylinder = $7 \times 2 = 14$ cm
So, radius of the hemisphere = 14 cm
Total surface area of the hemisphere = $3 \times \pi \times \text{radius}^2$
So, required area = $3 \times (22/7) \times 14^2 = 1848 \text{ cm}^2$

29. **Solution: A**
 $a^4 + \frac{1}{a^4} = 194$
Adding 2 on both side,
 $a^4 + \frac{1}{a^4} + 2 = 194 + 2$
Or, $(a^2 + \frac{1}{a^2})^2 = 196$
Or, $a^2 + \frac{1}{a^2} = \sqrt{196} = 14$
Adding 2 on both side,
 $a^2 + \frac{1}{a^2} + 2 = 14 + 2$
 $(a + \frac{1}{a})^2 = 16$
Or, $a + \frac{1}{a} = \sqrt{16} = 4$
Now, $(a + \frac{1}{a})^3 = 4^3$

$$a^3 + \frac{1}{a^3} + 3(a + \frac{1}{a}) = 64$$

$$\text{Or, } a^3 + \frac{1}{a^3} + 3 \times 4 = 64$$

$$\text{Or, } a^3 + \frac{1}{a^3} = 64 - 12 = 52$$

$$\text{So, } \frac{a^6 + 1}{a^3} = 52$$

30. **Solution: B**

Volume of the prism = area of the base $\times$ height

$$\text{Area of base of the prism} = 486\sqrt{3} \div 24 = (81\sqrt{3}/4) \text{ cm}^2$$

Let the length of each side of the base be 'a' cm

$$\text{So, } (81\sqrt{3}/4) = (\sqrt{3}/4) \times a^2$$

$$\text{Or, } 81 = a^2$$

So, $a = 9$ (Since, length cannot be negative therefore, we will take the positive root only)

So, lateral surface area of the prism = perimeter of the base $\times$ height = $3 \times 9 \times 24 = 648 \text{ cm}^2$

31. **Solution: B**

Let the number of cricket balls in the bag be 'y'.

Probability that both balls are cricket balls:

= Probability that first ball drawn is cricket $\times$

Probability that second ball drawn is cricket

$$\text{So, } \frac{y}{y+8} \times \frac{y-1}{y+7} = \frac{1}{5}$$

$$\text{Or, } 5y(y-1) = (y+8)(y+7)$$

$$\text{Or, } 5y^2 - 5y = y^2 + 8y + 7y + 56$$

$$\text{Or, } 4y^2 - 20y - 56 = 0$$

$$\text{Or, } y^2 - 5y - 14 = 0$$

$$\text{Or, } y^2 - 7y + 2y - 14 = 0$$

$$\text{Or, } y(y-7) + 2(y-7) = 0$$

$$\text{Or, } (y+2)(y-7) = 0$$

$$\text{So, } 'y' = -2, \text{ or } 'y' = 7$$

But 'y' cannot be negative. So, 'y' = 7

Therefore, required number of balls = $8 + 7 = 15$

32. **Solution: C**

$$81 \text{ of } 1.\bar{4} - 11 \times 0.\bar{42} - 6.70 \text{ of } 10 - 4 \times 0.\bar{6}$$

$$\text{Let } x = 1.\bar{4}$$

$$\text{Or, } x = 1.4444 \dots \text{ (I)}$$

$$\text{So, } 10x = 14.4444 \dots \text{ (II)}$$

On subtracting equation (I) from equation (II), we have;

$$9x = 13$$

$$\text{or, } x = \frac{13}{9}$$

$$\text{So, } 1.\bar{4} = \frac{13}{9}$$

$$\text{similarly, } 0.\bar{42} = \frac{42}{99} \text{ and } 0.\bar{6} = \frac{6}{9}$$

$$\text{Therefore, } 18 \text{ of } 1.\bar{4} - 11 \times 0.\bar{42} + 6.70 \text{ of } 20 -$$

$$4 \times 0.\bar{6} = 18 \times \frac{13}{9} - 11 \times \frac{42}{99} - 67 - \left(4 \times \frac{6}{9}\right)$$

$$= 117 - \frac{14}{3} - 67 - \frac{8}{3}$$

$$= \frac{351 - 14 - 201 - 8}{3}$$

$$= \frac{128}{3}$$

$$= \frac{128 \times 33}{99} = 42.\bar{66}$$

33. **Solution: B**

$$\text{Given, } \cos(90^\circ - \theta) = \sin(3\theta - 50^\circ)$$

We know that;

$$\cos A = \sin(90^\circ - A)$$

$$\text{So, } 90^\circ - \theta + 3\theta - 50^\circ = 90^\circ$$

$$\text{Or, } 2\theta + 40^\circ = 90^\circ$$

$$\text{So, } \theta = (90^\circ - 40^\circ) \div 2 = 25^\circ$$

$$\text{So, } \tan(2\theta - 10^\circ) = \tan 45^\circ = 1$$

34. **Solution: B**

Let the sum invested = ₹'K'

Let the rate of interest = 'y%' p.a

$$\text{Then } K \times \{1 + (y/100)\}^3 + K \times \{1 + (y/100)\}^2 = 1076.48 + 928$$

$$\text{Or, } \{(100 + y)/100\} = 1.16$$

$$\text{So, } y = 116 - 100 = 16$$

So, interest received in the first year of investing

$$= 928 \div 1.16 = 800$$

$$K \times \{(100 + y)/100\} - K = 800$$

$$\text{Or, } 0.16K = 800$$

$$\text{So, } K = 800 \div 0.16 = 5000$$

$$\text{Therefore, } 82\% \text{ of the sum invested} = 5000 \times 0.82 = ₹4,100$$

35. **Solution: D**

Number of permanent employees in office 'A'

$$= 1140 - 620 = 520$$

Number of permanent employees in office 'C'

$$= 1350 - 700 = 650$$

$$\text{So, required ratio} = 520:650 = 4:5$$

36. **Solution: A**

Let the cost price of article 'A' and article 'B' be ₹'4x' and ₹'5x', respectively.

Selling price of article 'A' = ₹(4x - 50)

Selling price of article 'B' = 5x - 5x $\times$ 0.12 = ₹'4.4x'

According to the question,

$$(4x - 50):4.4x = 5:6$$

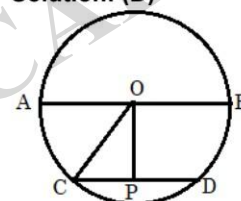
$$\text{Or, } 22x = 24x - 300$$

$$\text{So, } x = 300 \div 2 = 150$$

Therefore, selling price of article 'A' = 4x - 50

$$= 4 \times 150 - 50 = ₹550$$

37. **Solution: (D)**



Length of chord CD = 30 cm

So, CP = 15 cm

Radius OC = 17 cm

Distance of chord from center = OP

In triangle CPO,

$$OP = \sqrt{(17^2 - 15^2)} = \sqrt{(289 - 225)}$$

$$= \sqrt{64} = 8 \text{ cm}$$

38. **Solution: A**

Length of the third side of the triangle = $44 - (16 \times 2) = 12 \text{ cm}$

So, area of the triangle = $\sqrt{s(s-a)(s-b)(s-c)}$

Where 's' is the semi-perimeter of the triangle and 'a', 'b' and 'c' are the 3 sides of the triangle

Semi-perimeter of the triangle = $(44/2) = 22 \text{ cm}$

So, area of the triangle = $\sqrt{22 \times (22 - 16) \times (22 - 16) \times (22 - 12)}$

$$= \sqrt{(22 \times 6 \times 6 \times 10)} = \sqrt{7920} = 12\sqrt{55} \text{ cm}^2$$

39. **Solution: C**

Area of the square with perimeter of 52 cm = $(52/4)^2 = 169 \text{ cm}^2$

Area of the square with perimeter of 84 cm = $(84/4)^2 = 441 \text{ cm}^2$

Area of the square with perimeter of $4\sqrt{6} \text{ cm}$

$$= (4\sqrt{6}/4)^2 = 6 \text{ cm}^2$$

So, area of the rectangle = $169 + 441 + 6 = 616 \text{ cm}^2$

Let the length and breadth of the rectangle be '14x' and '11x' cm, respectively

$$\text{Then, } 14x \times 11x = 616$$

$$\text{So, } x^2 = 616 \div 154 = 4$$

So, $x = \sqrt{4} = 2$

Length and breadth of the rectangle is 28 cm and 22 cm, respectively

Perimeter of the rectangle = $2 \times (28 + 22) = 100$ cm

40. **Solution: A**

$$(a + b)^2 = a^2 + b^2 + 2ab = 29 + c^2 \dots (I)$$

$$(b + c)^2 = b^2 + c^2 + 2bc = 38 + a^2 \dots (II)$$

$$(c + a)^2 = c^2 + a^2 + 2ca = 54 + b^2 \dots (III)$$

Adding equations (I), (II) and (III), we get

$$\text{So, } (a + b)^2 + (b + c)^2 + (c + a)^2 = 2(a^2 + b^2 + c^2) + 2(ab + bc + ca) = a^2 + b^2 + c^2 + 29 + 38 + 54$$

$$\text{Or, } 2(a^2 + b^2 + c^2) + 2(ab + bc + ca) = a^2 + b^2 + c^2 + 121$$

Subtracting $(a^2 + b^2 + c^2)$ on both sides

$$a^2 + b^2 + c^2 + 2(ab + bc + ca) = 121$$

$$\text{Or, } (a + b + c)^2 = 121$$

$$\text{So, } a + b + c = \sqrt{121} = 11$$

41. **Solution: A**

On travelling at twice of her usual speed, Riya is saving $(2.5 - 0.5) = 2$ hours

Let the speed of Riya be 'x' km/h.

ATQ,

$$(60/x) = (60/2x) + 2$$

$$\text{Or, } (60/x) - (60/2x) = 2$$

$$\text{Or, } (60/2x) = 2$$

$$\text{So, 'x' = 15}$$

$$\text{So, time taken by Riya to cover 60 km} = (60/15)$$

$$= 4 \text{ hours}$$

And, time taken by Tina to cover the same distance

$$= 4 - 2.5 = 1.5 \text{ hours}$$

$$\text{So, speed of Tina} = (60/1.5) = 40 \text{ km/h}$$

$$\text{Therefore, required time} = (96/40) \times 60 = 144 \text{ minutes}$$

42. **Solution: C**

$$(1 + \tan \theta + \sec \theta)(1 + \cot \theta - \csc \theta)$$

$$= \left(1 + \frac{\sin \theta}{\cos \theta} + \frac{1}{\cos \theta}\right) \left(1 + \frac{\cos \theta}{\sin \theta} - \frac{1}{\sin \theta}\right)$$

$$= \frac{(\cos \theta + \sin \theta + 1)(\sin \theta + \cos \theta - 1)}{\cos \theta \sin \theta}$$

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

$$= \frac{\cos^2 \theta + \sin^2 \theta + 2\cos \theta \sin \theta - 1}{\cos \theta \sin \theta}$$

$$= \frac{1 - 1 + 2\sin \theta \cos \theta}{\cos \theta \sin \theta}$$

$$= 2$$

43. **Solution: C**

We know that,

$$3 \times \text{median} - 2 \times \text{mean} = \text{mode}$$

$$\text{Or, } 3 \times (2x - 4) - 2 \times (x - 1) = 2x$$

$$\text{Or, } 6x - 12 - 2x + 2 = 2x$$

$$\text{Or, } 2x = 10$$

$$\text{Or, } x = 10 \div 2 = 5$$

44. **Solution: C**

Average expenses on interest on loans

$$= (86000 + 96000 + 100000)/3 = 282000/3$$

$$= ₹94000$$

45. **Solution: A**

When power of '4' and '8' are even, then their unit digits are 6 each

Unit digit of 6 will always be 6 for any power

$$\text{Unit digit of } 122 \times 244^2 \times 366^3 \times 488^4 = \text{unit digit of } (2 \times 6 \times 6 \times 6) = 2 \times 6 = 12 = 2$$

46. **Solution: B**

Let the total work = L.C.M of 45 and 12 = 180 units

Then, efficiency of Ram = $180 \div 45 = 4$ units/day

Combined efficiency of Ram and Rahul = $180 \div 12$

= 15 units/day

So, efficiency of Rahul alone = $15 - 4 = 11$ units/day

Work done by Rahul in 9 days = $11 \times 9 = 99$ units

So, percent of work completed = $(99/180) \times 100 = 55\%$

47. **Solution: A**

Let the present ages of the husband and that of the wife be 'x' years and 'y' years, respectively

According to the question,

$$(x + 3):(y - 2) = 9:7$$

$$\text{Or, } 7x + 21 = 9y - 18$$

$$\text{Or, } 7x = 9y - 39 \text{ [I]}$$

$$\text{Also, } (x - 1):(y + 10) = 4:5$$

$$\text{Or, } 5x - 5 = 4y + 40$$

$$\text{Or, } 5x = 4y + 45 \text{ [II]}$$

Multiplying [II] by 1.4

$$7x = 5.6y + 63$$

$$\text{So, } 5.6y + 63 = 9y - 39$$

$$\text{Or, } 3.4y = 102$$

$$\text{So, } y = 102 \div 3.4 = 30$$

48. **Solution: B**

$$\text{Since, } x + y + (-z) = 1.713 + 2.951 - 4.664 = 0$$

$$\text{Therefore, } x^3 + y^3 + (-z)^3 - 3xy(-z) = 0$$

$$\text{Therefore, } x^3 + y^3 - z^3 + 3xyz = 0$$

49. **Solution: D**

$$\text{Amount received by Abhishek} = 12500 - 12500 \times 0.12 = ₹11,000$$

$$\text{Amount received by Kushal} = 11000 - 11000 \times 0.24 = ₹8,360$$

$$\text{So, amount spent by Kushal} = 8360 - 6270 = ₹2,090$$

$$\text{Therefore, required percentage} = (2090 \div 8360) \times 100 = 25\%$$

50. **Solution: A**

Ratio of profit shares of 'A', 'B' and 'C' respectively

$$= (900 \times 12):(1200 \times 15):(1650 \times 20)$$

$$= 10800:18000:33000 = 18:30:55$$

$$\text{So, profit share of 'A'} = 20600 \times (18/103) = ₹3,600$$

$$\text{Profit share of 'C'} = 20600 \times (55/103) = ₹11,000$$

$$\text{So, required difference} = 11000 - 3600 = ₹7,400$$

General Awareness

51. **Solution: A**

Alauddin Hassan Gangu Bahaman Shah was the founder of the Bahamani sultanate in the year 1347 AD. Rivalry with Vijayanagar kingdom over the fertile region of Raichur doab started from his period, and continued till the last of Bahaman rule.

Hence, option A is the correct answer.

52. **Solution: C**

Leqembi is a drug used in the treatment of **Alzheimer's disease**. It is an antibody intravenous (IV) infusion therapy that targets and removes beta-amyloid from the brain. It helps control Alzheimer's disease but does not cure it.

Alzheimer's disease is a progressive brain disorder that affects memory, thinking, and behavior.

Hence, Option C is the correct answer.

53. **Solution: D**

The United Nations World Food Programme (WFP) was established in 1961 to help alleviate world hunger. It is the world's largest humanitarian organization saving lives in emergencies and providing food assistance. WFP was awarded the **Nobel Peace Prize in 2020**.

Hence, Option D is the correct answer.

54. **Solution: D**

As per the Constitution of India, under **Article 243B(2)**, Panchayats at the intermediate level may not be constituted in a State having a population not

exceeding **twenty lakhs (20 lakhs)**. This provision allows smaller states to have a two-tier Panchayat system (village and district levels) instead of the three-tier system (village, intermediate, and district levels) that is mandatory for states with a population exceeding this threshold.

55. **Solution: C**

Dr Sarvepalli Radhakrishnan was a renowned Indian philosopher born in Tiruttani, Tamil Nadu. He became India's first Vice-President (1952 to 1962) and second President (1962- 1967) .

Books Authored by him: The Philosophy of Rabindranath Tagore, The Hindu View of Life, Indian Religious Thought, **Kalki, or the Future of Civilization**, The Principal Upanishads, Gautama the Buddha, etc.

Hence, Option C is the correct answer.

56. **Solution: (B)**

6

Explanation: The National Board for Micro, Small and Medium Enterprises meets once every 6 months in a year. The Ministry of Micro, Small and Medium Enterprises is a branch of the Government of India, which is responsible for the formulation and administration of rules, regulations and laws related to micro, small and medium enterprises in India.

57. **Solution: (A)**

Hydrogen

Explanation: The Sun is a mixture of many gases. Hydrogen (about 70%) and helium (about 28%). Carbon, nitrogen and oxygen make up 1.5% and the other 0.5% is made up of small amounts of many other elements like neon, iron, silicon, magnesium and sulfur.

58. **Solution: (C)**

Port of Karachi

Explanation: The Port of Karachi is the busiest sea port in Pakistan. It is one of South Asia's largest and busiest deep-water seaports, handling about 60% of the nation's cargo.

59. **Solution: (D)**

Petrology

Explanation: Petrology, scientific study of rocks that deals with their composition, texture, and structure; their occurrence and distribution; and their origin in relation to physicochemical conditions and geologic processes. It is concerned with all three major types of rocks-igneous, metamorphic, and sedimentary.

60. **Solution: C**

Kuwait has started the first-ever **Hindi radio broadcast** in order to strengthen the ties between the two nations. The Ministry of Information, Kuwait started a Hindi programme on Kuwait Radio on FM 93.3 and AM 96.3.

The programme will run every Sunday.

The Indian community with a strength of around 1 million is the largest expatriate community in Kuwait. India has been a natural trading partner of Kuwait, and until 1961, the Indian rupee was the legal tender in Kuwait.

The year 2021-22 marked the 60th anniversary of the establishment of diplomatic relations between the two countries.

Note: The Indian ambassador to Kuwait is Adarsh Swaika.

Hence, Option C is the correct answer.

61. **Solution: (A)**

Mixed economy

Explanation: In India both the private and public sectors exist simultaneously which is a feature of mixed economy.

62. **Solution: (B)**

Rangarajan Panel

Explanation: The Rangarajan Panel was set up by the Government of India for total decontrol of the sugar industry in November 2012. In April 2013, the government announced partial decontrol of sugar.

63. **Solution: (D)**

Convex

Explanation: Hypermetropia is also known as far-sightedness is corrected by convex. In this condition the patient is able to see far objects clearly but unable to see close objects clearly.

64. **Solution: (B)**

Geothermal energy

Explanation: Geothermal energy is heat within the earth surface.

65. **Solution: (A)**

1899

(None of the given options was correct in this question(1856 was given instead of 1899)

Explanation: In 1899 , V.D. Savarkar and his brother Ganesh Savarkar established a revolutionary society 'Mitra Mela', which influenced the members to fight for "absolute political independence" of India. It was the precursor of Abhinav Bharat Society, founded by the Savarkar Brothers in 1904 .

66. **Solution: (B)**

Electrons

Explanation: J.J. Thomson received the Nobel Prize in Physics for the discovery of Electron. Proton was discovered by Rutherford. Neutron was discovered by James Chadwick.

Positron was discovered by Carl Andersons.

67. **Solution: (C)**

Carbon Monoxide

Explanation: The gas that reduces the capacity of the blood to carry oxygen is CARBON MONOXIDE. It gets deposited in the haemoglobin of Red Blood Cells (RBCs) and prevents proper oxygen carrying capacity.

68. **Solution: (B)**

Alzheimer's disease

Explanation: It is a progressive disease that destroys memory and other important mental functions.

Brain cell connections and the cells themselves degenerate and die, eventually destroying memory and other important mental functions.Memory loss and confusion are the main symptoms..

69. **Solution: A**

Graphics Software: (Image Editing) It is an application program or collection of programs that enable a person to manipulate visual images on a computer system.

Most graphics software can import and export one or more graphics file formats.

• **Examples:** DirectX, Adobe Photoshop, piZap, Microsoft Publisher, Picasa, etc.

Hence, Option A is the correct answer.

70. **Solution: (C)**

Tulsidas

Explanation: The leading light of the Rama cult was saint-poet Tulsidas who also wrote the poem 'Ramacharitamanasa'.Tulsidas belonged to the

- saguna school of Bhakti and dedicated Ramcharitramanas to the life of lord Rama.
71. **Solution: B**
The 7th edition of Exercise Eastern Bridge has been held at the Air Force Base Masirah in Oman. This annual bilateral exercise involves the **Indian Air Force (IAF) and the Royal Oman Air Force (RAFO)**. The IAF participated with a contingent that included Mikoyan-Gurevich (MiG) -29s, Jaguars fighter planes, and C-17 Globemaster III transport planes. The primary goal of Exercise Eastern Bridge is to enhance the tactical and operational skills of both air forces. It aims to promote mutual understanding and strengthen the collaborative abilities of the IAF and RAFO under various scenarios. The exercise includes complex aerial manoeuvres, air-to-air and air-to-ground operations, and logistical coordination. Exercise Eastern Bridge has been held annually since 2009. The 6th edition was conducted at the IAF's Jodhpur base in Rajasthan, India, from February 21 to 25, 2022. Hence option B is the correct answer.
72. **Solution: B**
Manu Bhaker, a double Olympic medalist in shooting, has been appointed as the **brand ambassador for the Ministry of Ports, Shipping & Waterways (MoPSW)**. She won medals in the 10-meter air pistol event and the 10-meter air pistol mixed team event at the Paris 2024 Olympics. The Ministry aims to leverage her success and background to promote the marine sector's promising career opportunities and the vision of an Atmanirbhar Bharat by 2047, a key goal set by Prime Minister Narendra Modi. Hence, option B is the correct answer.
73. **Solution: D**
Cochin Shipyard Limited (CSL) launched two indigenously designed and constructed **Anti-Submarine Warfare Shallow Water-Crafts (ASW-SWCs)**, named **INS Malpe** and **INS Mulki**, for the Indian Navy. These are the **4th and 5th ships** of the 8 ASW-SWC projects being built by CSL for the Indian Navy. The vessels are **78 meters** long, with a draught of about **2.7 meters** and a displacement of approximately **900 tonnes**. They are equipped with state-of-the-art SONARs, lightweight torpedoes, ASW rockets, and mines. CSL, established in 1972, is a Miniratna PSU under the Ministry of Ports, Shipping, and Waterways. The contract to build these vessels was signed between the Ministry of Defence and CSL in April 2019. Hence option D is the correct answer.
74. **Solution: B**
Prime Minister Narendra Modi virtually addressed the two-day first **International Solar Festival (ISF) 2024**, held at **Bharat Mandapam in New Delhi, Delhi**. India's solar energy capacity has increased **32-fold** over the last decade. India has set a target to achieve **500 Gigawatts (GWs)** of non-fossil power capacity by 2030. The International Solar Festival (ISF) 2024 was organized by the **International Solar Alliance (ISA)**.

The festival aimed to highlight and promote the transformative power of solar energy and its global impact on sustainable development.

The event's goals included promoting affordable, reliable, and sustainable solar energy globally, fostering global cooperation, offering funding for solar projects, and showcasing innovative solar technologies.

The core themes of the festival focused on youth, communities, women, and the private sector, with activities including keynote sessions, technical discussions, and showcases of solar solutions.

The ISA was launched by **India and France at COP 21 in Paris** to promote solar energy and support the goals of the Paris Climate Agreement.

The Director-General of ISA is Ajay Mathur, and its headquarters is in Gurugram, Haryana. The ISA was established in 2015.

Hence, Option B is the correct answer.

75. **Solution: (B)**

Shaheed Diwas

Explanation: On March 23rd, India observes Shaheed day/divas as a tribute to Bhagat Singh, Sukhdev and Rajguru on their death anniversary. 30 January is observed as Martyr's Day or Shaheed Diwas in the memory of Mahatma Gandhi.

English Language

76. **Solution: C**

The correct order is CADB. C begins the paragraph by telling us how ants do not have ears or noses and though they have a mouth, they cannot speak using it. AD follows C to describe that instead of having ears and noses, they have two long feelers on their head called antennae to carry out their everyday functions. B describes the purpose of antennae: to smell things, feel vibrations and communicate with others. Thus, C is the right answer.

77. **Solution: C**

The sentence talks about how people living near the area are advised to remain cautious and report any activity they find odd to the authorities without delay. Option C conveys the intended meaning. Thus, C is the right answer.

The highlighted phrase and A are incorrect as the past tense verb REPORTED has been used in these instead of the base form verb REPORT to fit in the infinitive structure TO + VERB 1.

Option A and B are incorrect as the adverb UNUSUALLY has been used instead of the adjective UNUSUAL to modify the noun ACTIVITY.

78. **Solution: A**

The error is in part A of the sentence. In A, add the definite article THE before SAHARA DESERT as the sentence is talking of a specific desert. Thus, A is the right answer.

79. **Solution: D**

A RHINOLOGIST is a doctor who specialises in treating problems of the nose. Thus, D is the right answer.

Urologist - a doctor who specialises in the study or treatment of the function and disorders of the urinary system. Hematologist - a doctor who specialises in the study or treatment of the function and disorders of blood and bone marrow. Chiropractor - a person who

- treats diseases by pressing a person's joints, especially those in the back.
80. **Solution: B**
The idiom TO PLAY DUCKS AND DRAKES means to waste money. Thus, B is the right answer.
81. **Solution: B**
The sentence is in direct speech. Follow the instructions to change the sentence to indirect speech:
I. Remove the comma and inverted commas.
II. SAID TO will change to TOLD. Add THAT after the reporting clause MOHAN TOLD HER.
III. The modal verb WILL will change into WOULD.
IV. The first person pronoun I will change to the third person pronoun HE and the second person pronoun YOU will change into the third person pronoun HER.
V. THIS will change into THAT.
Thus, B is the right answer.
82. **Solution: A**
The sentence talks about how she missed the chance to see something miraculous because she had gone that day. The sentence is an example of third conditional sentences, where the IF clause is in past perfect tense and the second clause shows the hypothetical result of the action mentioned in the first clause by using WOULD HAVE. Thus, A is the right answer.
Option B is in simple past tense.
Option C is in the present perfect tense.
Option D is in simple present tense.
83. **Solution: B**
DCBA is the correct sequence of sentences. D begins the paragraph by telling us that big tech companies in the US do not have sufficient clean power to supply electricity to the data centres they plan to build. C tells us how some firms are providing a solution to deal with this problem. B describes the solution- harvesting the heat deep inside the Earth's surface to generate emission-free electricity. At last, A describes the method using which this can be done: by using drilling methods from the oil and gas fracking boom. Thus, B is the right answer.
84. **Solution: D**
The word FELICITY refers to intense happiness. The word JOY (a feeling of great happiness) can best express the meaning of the given word. Thus, D is the right answer.
Recognition - the act of accepting that something is true or important or that it exists. Perfection - the state of being perfect or without fault. Decay - the process or state of being slowly destroyed.
85. **Solution: B**
The idiom TO STEER AWAY OF means to avoid or keep away from someone or something. Thus, B is the right answer.
86. **Solution: B**
In the given sentence we are comparing the dish based on what was expected and how it actually turned out to be. The comparative degree of adjectives is used in such cases. The comparative degree of the adjective GOOD is BETTER and is followed by THAN to refer to the thing against which the comparison is made. Thus, B is the right answer.
A is incorrect as the superlative degree adjective is not used for comparisons.
C is incorrect as the positive degree adjective is not used for comparisons.

- D is incorrect as the correct comparative degree of the adjective GOOD is BETTER and not MORE GOOD.
87. **Solution: B**
The sentence is in the simple past tense, and passive voice. To change the sentence to the active voice, follow the rules below:
I. The subject clause will become the object clause. The subject in the sentence, THE LOUD HOWLING NOISE OF FOXES, will change to the object of the verb, the preposition BY will be omitted, and its object, MEETA, will become the subject and begin the sentence.
II. The simple past passive voice construction WAS HEARD will be replaced by the simple past active voice construction HEARD. Thus, B is the right answer.
88. **Solution: B**
The word CONFER means to grant a title, degree, benefit or right to someone. The word WITHHOLD (to refuse to give something to someone) is opposite in meaning to the underlined word. Thus, B is the right answer.
Invoke - to use a law in order to achieve something.
Plead - to request. Preach - to give someone advice, especially in a way they find boring or unwanted.
89. **Solution: C**
The idiom ON THE BACK BURNER means in the position of something that will not receive attention and action at the moment. Thus, C is the right answer.
90. **Solution: B**
We need a verb to fit in the infinitive structure TO + VERB 1. The phrasal verb MAKE OF (to understand the meaning of a statement or action) is suitable here as the sentence seeks to convey that the speaker is unable to understand why she is behaving strangely. Thus, B is the right answer.
Set in - to arrive and stay for a period of time. Let out - to allow someone or something to leave a place, especially by opening a closed or locked door. Give in - to finally agree to what someone wants, after refusing for a period of time.
91. **Solution: C**
The error is in part C of the sentence. Replace EMPLOYEES with its possessive case EMPLOYEES' to convey that the sentence talks about the ability of the employees. Thus, C is the right answer.
92. **Solution: A**
Follow the instructions to convert a sentence from passive to active voice:
I. The preposition BY will be removed, and its object, THE MAID, becomes the subject and begins the sentence.
II. The passive voice simple past tense verb construction WAS CLEANED will change to the active voice simple past tense verb construction CLEANED.
III. THE FLOOR will become the object of the verb CLEANED.
The sentence will be: The maid cleaned the floor.
Thus, A is the right answer.
93. **Solution: C**
An APIARY refers to a place where bees are kept. Thus, C is the right answer.
Aviary - a large cage or area in which birds are kept.
Burrow - a hole in the ground dug by an animal such

- as a rabbit, especially to live in. Arsenal - a collection of weapons.
94. **Solution: D**
The correct sequence of the given sentences in the paragraph is BADC. BA is a mandatory pair. B begins the paragraph by telling us how middle-class families often have to deal with financial strain in the months of March and April due to the expenses associated with enrolling children in private schools, and A follows by telling us what are included in the expenses that significantly burden parents: the cost of new books, notepads, and uniforms and the requirement to pay advance fees for several months. DC is another mandatory pair and it follows A. D tells us how many parents and children visit old bookstores in Sakchi to reduce some of the financial burden and C follows by telling us that they visit these stores and search their stores for relevant books despite severe heat. Thus, D is the right answer.
95. **Solution: C**
The error is in part C. Replace the adverb POSSIBLY with the adjective POSSIBLE to modify the noun CONFLICT. Thus, C is the right answer.
96. **Solution: B**
Opportunities fits best because it conveys the idea of new possibilities that the BJP can utilize after its victory.
Challenges implies difficulties rather than advantages.
Threats suggests danger rather than prospects.
Obstacles means hindrances, which contradicts the meaning of the sentence.

97. **Solution: A**
Reinforced is the best choice as it suggests strengthening BJP's influence in the Hindi heartland. Established implies something new, whereas BJP's presence was already there.
Diminished and Weakened contradict the sentence's meaning.
98. **Solution: B**
Setback accurately describes the negative impact on Kejriwal's ambitions without implying total failure. Boost and Success contradict the negative tone. Triumph is incorrect as it suggests victory.
99. **Solution: B**
Consequences fits best because it refers to the effects AAP's downfall has on the opposition. Considerations means things to think about, which does not fit the context.
Victories is incorrect as the sentence does not discuss success.
Alternatives does not relate to the meaning of the passage.
100. **Solution: B**
Reassess fits best as it implies the need for opposition parties to rethink their strategies in response to political shifts.
Change is too general.
Maintain contradicts the idea of making adjustments.
Justify does not fit the context of strategic planning.

SCHOLARS ACADEMY