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Rajnish Bhatnagar

SSC CGL Pre

Solution

SCP-914684810-E



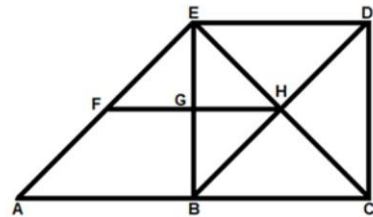
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General Intelligence and Reasoning

1. Solution: B



Triangles are: ΔBED, ΔBEC, ΔBDC, ΔCDE, ΔBHC, ΔBHE, ΔCHD, ΔDHE, ΔBHG, ΔHGE, ΔFEH, ΔFGE, ΔABE and ΔAEC.
So, there are 14 triangles in the given figure.

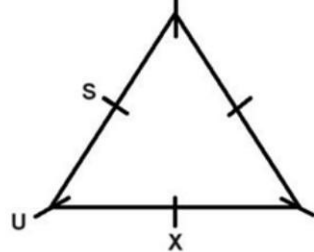
2. Solution: A

Clues:

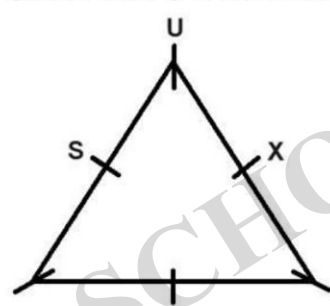
- 1) S sits at a side of the table.
- 2) U sits adjacent to both X and S.

Inferences:

From Clue 1 and 2, we get U sits either immediate right or immediate left of S. X sits 2nd to the right or 2nd to the left of S.
Case 1: When U sits immediate right of S.



Case 2: When U sits immediate left of S.

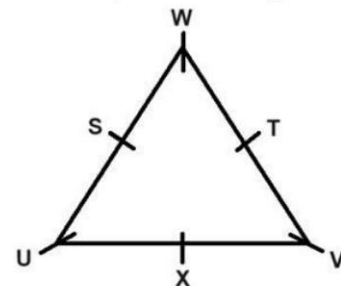


Clues:

- 1) T sits immediate right of V.
- 2) W sits at a corner of the table but not adjacent to V.
- 3) V doesn't sit adjacent to S.

Inferences:

From Clue 1 and 2, we get W sits 3rd to the right of X or immediate left of X. T sits immediate left of W and V sits 2nd to the left of W.
From Clue 3, we eliminate Case 2.
Therefore, the final arrangement is:



3.

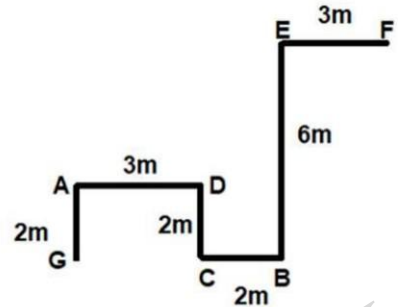
So, X sits second to the left of T.

Solution: B

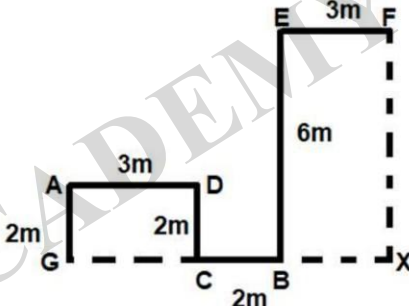
Given: G2@A3\$D2#C2\$B6@E3\$F

On decoding the given statements, we get, G is 2m south of A, A is 3m west of D, D is 2m north of C, C is 2m west of B, B is 6m south of E, E is 3m west of F.

The following arrangement can be drawn from the given statements:



Draw perpendiculars from F and G which meet at X.



Applying Pythagoras Theorem in ΔGXF,

GF = √ [GX² + XF²]

GF = √ [8² + 6²]

GF = √ [64 + 36]

GF = √ 100

GF = 10m

So, G is 10m to the southwest of F.

4.

Solution: C

The logic followed here is as follows, Each vowel is replaced with the letter having same place value, when the letters are written in reverse alphabetical order. Each consonant is replaced with its 5th succeeding letter as per English alphabetical order.

For PENGUIN,

P	E	N	G	U	I	N
U	V	S	L	F	R	S

So, code for 'PENGUIN' is 'UVSLFRS'.

For FATHER,

F	A	T	H	E	R
K	Z	Y	M	V	W

So, code for 'FATHER' is 'KZYMVW'.

For EMPEROR,

E	M	P	E	R	O	R
V	R	U	V	W	L	W

So, code for 'EMPEROR' is 'VRUVWLW'.

5.

Solution: C

Given equation: 29 * 105 * 3 * 13 * 4 * 12

After replacing '*' with mathematical sign given in option [a] we get:

$29 + 105 \div 3 - 13 = 4 \times 12$

$29 + 35 - 13 = 48$

$64 - 13 = 48$

$51 \neq 48$

So, sign given in option [a] will not balance the equation.

After replacing '*' with mathematical sign given in option [b] we get:

$29 \times 105 \div 3 - 13 + 4 = 12$

$29 \times 35 - 13 + 4 = 12$

$1015 - 13 + 4 = 12$

$1019 - 13 = 12$

$1006 \neq 12$

So, sign given in option [b] will not balance the equation.

After replacing '*' with mathematical sign given in option [c] we get:

$29 + 105 \div 3 - 13 \times 4 = 12$

$29 + 35 - 13 \times 4 = 12$

$29 + 35 - 52 = 12$

$64 - 52 = 12$

$12 = 12$

So, sign given in option [c] will balance the equation.

After replacing '*' with mathematical sign given in option [d] we get:

$29 - 105 \div 3 \times 13 + 4 = 12$

$29 - 35 \times 13 + 4 = 12$

$29 - 455 + 4 = 12$

$33 - 455 = 12$

$-422 \neq 12$

So, sign given in option [d] will not balance the equation.

6. **Solution: B**

The logic followed here is:

If the positional value of the alphabet is even, then the coded value will be two times of that positional value.

If the positional value of the alphabet is odd, then the coded value will be four times of that positional value.

As 'MIGRATE' is coded as '52, 36, 28, 36, 4, 40, 20'

Given Word	M	I	G	R	A	T	E
Positional Value	13	9	7	18	1	20	5
Coded Number	52	36	28	36	4	40	20

Similarly,

'QUALITY' is coded as '68, 84, 4, 24, 36, 40, 100'

Given Word	Q	U	A	L	I	T	Y
Positional Value	17	21	1	12	9	20	25
Coded Number	68	84	4	24	36	40	100

Similarly,

'SITUATE' is coded as '76, 36, 40, 84, 4, 40, 20'

Given Word	S	I	T	U	A	T	E
Positional Value	19	9	20	21	1	20	5
Coded Number	76	36	40	84	4	40	20

7. **Solution: D**

Word I: This word can be formed using the letters only once.

Word II: This word can be formed using the letters only once.

Word III: This word can be formed using the letters only once.

8. **Solution: B**

The pattern followed here is:

$72 + 4 = 76$

$76 + 8 = 84 \neq 80$

$84 + 12 = 96$

$96 + 16 = 112$

$112 + 20 = 132$

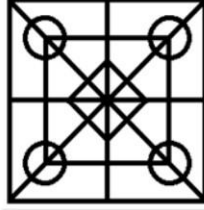
So, '80' is the wrong term.

Therefore, '84' will come in place of '80'.

The correct series is:

72, 76, 84, 96, 112, 132

9. **Solution: B**



10. **Solution: B**

The logic followed here is as follows:

In each row from left to right,
(Sum of the digits of the First number)² + (Sum of the digits of second number)² = Third number

In row I: $(1+7)^2 + (4+1)^2 = 8^2 + 5^2 = 64 + 25 = 89$

In row III: $(2+9)^2 + (3+1)^2 = 11^2 + 4^2 = 121 + 16 = 137$

In row II: $(2+3)^2 + (5+3)^2 = 5^2 + 8^2 = 25 + 64 = 89$

So, '89' will replace the question mark.

11. **Solution: A**

Given series:

A _ C D _ F _ H _ Y X _ V U _ S

The complete series will be:

A B C D / E F G H / Z Y X W / V U T S

'B, E, G, Z, W, T' will complete the series.

12. **Solution: B**

Here First number is shifting to last in result;

$8 \% 3 \% 2 = 328$

And,

$4 \% 2 \% 6 = 264$

So,

$1 \% 7 \% 3 = 731$

13. **Solution: B**

(A) $T + 2 = V$, $V + 2 = X$

(B) $I + 1 = J$, $J + 1 = K$

(C) $L + 2 = N$, $N + 2 = P$

(D) $G + 2 = I$, $I + 2 = K$

14. **Solution: A**

Logic: 1st number + 249 = 2nd number; 2nd number + 249 = 3rd number

$413 + 249 = 662$, $662 + 249 = 911$

And,

$387 + 249 = 636$, $636 + 249 = 885$

Similarly;

$287 + 249 = 536$, $536 + 249 = 785$

15. **Solution: (B)**

The relationship in the first pair is that an architect designs buildings or structures, **similarly**, a carpenter designs and creates furniture.

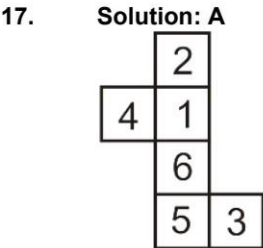
16. **Solution: C**

$(12, 144, 1728) \Rightarrow 12^1 = 12$, $12^2 = 144$, $12^3 = 1728$

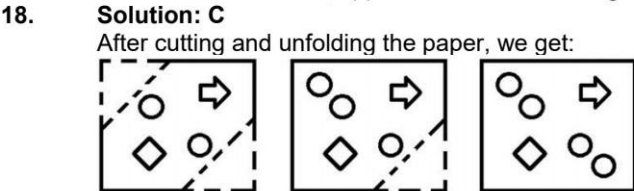
$(6, 36, 216) \Rightarrow 6^1 = 6$, $6^2 = 36$, $6^3 = 216$

Similarly;

$(10, 100, 1000) \Rightarrow 10^1 = 10$, $10^2 = 100$, $10^3 = 1000$



"3" will be on the face, opposite to the one having "4".

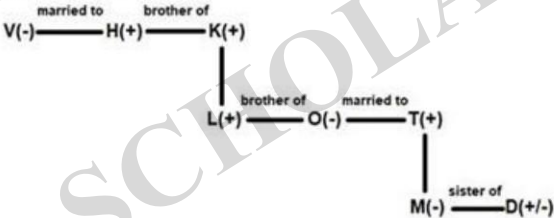


19. **Solution: D**
Reptiles (Neither mammals nor amphibians) = 14

20. **Solution: C**
The water image of the given combination is as follows:

J K n @ b K # L 7 8 W a
ᳵ ᳶ ᳷ ᳸ ᳹ ᳺ ᳻ ᳼ ᳽ ᳾ ᳿

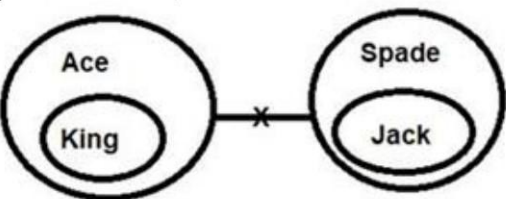
21. **Solution: A**
After decoding the code, we get:
V + H means V is wife of H
H - K means H is brother of K
K ÷ L means K is father of L
L - O means L is brother of O
O + T means O is wife of T
T ÷ M means T is father of M
M × D means M is sister of D
The family tree formed after decoding the code is given below:



Therefore, K is maternal grandfather of D.

22. **Solution: D**
The relationship between the numbers in the series is as follows:
 $19 \times 19 = 361 - 2 = 359$
 $17 \times 17 = 289 - 2 = 287$
So, for the next pair:
 $21 \times 21 = 441 - 2 = 439$

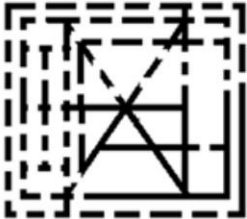
23. **Solution: B**
The following Venn diagram can be drawn from the given statements,



From the above Venn diagram, conclusion I and conclusion II follows.

From the above Venn diagram, conclusion III does not follow.

24. **Solution: B**
The embedded figure is shown below:

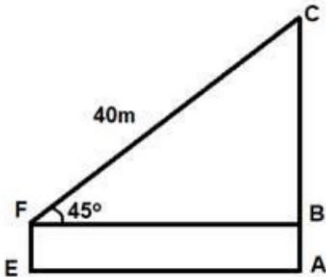


25. **Solution: C**
The relationship between "DFH" and "HFD" is that the letters are reversed:
DFH → HFD
So, the related letter sequence for "QSU" is "USQ."

Quantitative Aptitude

26. **Solution: B**
Let the original quantity of ethanol in the mixture = '4x' litres
Original quantity of acetone in the mixture = (4x + 44) litres
After removing 25% of the mixture and adding 3 litres of acetone,
Quantity of ethanol in the resultant mixture = $4x - 4x \times 0.25 = '3x'$ litres
Quantity of acetone in the resultant mixture = $(4x + 44) - (4x + 44) \times 0.25 + 3 = (3x + 36)$ litres
According to the question,
 $3x + 36 = 3x \times 1.6$
Or, $x = 36 \div 1.8 = 20$
So, original quantity of the mixture = $4x + 4x + 44 = 8 \times 20 + 44 = 204$ litres

27. **Solution: A**



In the given figure, let 'A' and 'C' represent the base of the tree and the top of the tree, respectively
Let EF represent the height of the person who threw the stone.
So, FB is parallel to EA and EF = AB
In right rFBC,
 $\sin 45^\circ = (CB/CF)$
Or, $(1/\sqrt{2}) = (CB/40)$
So, $CB = (40/\sqrt{2}) = 20\sqrt{2}$ metres
 $CA = CB + AB$
 $CA = (20\sqrt{2} + 2)$ metres
Therefore, height of the tree = $(20\sqrt{2} + 2)$ metres

28. **Solution: D**
Volume of the air in the room = length × width × height = $28 \times 16 \times \text{height} = 2240$
So, height of the room = $2240 \div (28 \times 16) = 5$ metres
So, area of large side of the wall = length × height = $28 \times 5 = 140 \text{ m}^2$
Area of small side of the wall = $16 \times 5 = 80 \text{ m}^2$

So, total area of the wall = $(140 \times 2) + (80 \times 2)$
= 440 m^2

So, cost of painting the side walls of the room
= $440 \times 32 = ₹14,080$

29. **Solution: C**

$$K + \frac{1}{K} + 2 = 0$$

$$K + \frac{1}{K} = -2$$

It will possible if $k = -1$

$$\text{Now, } K^{17} + \frac{1}{K^{11}} = -1 - 1 = -2$$

30. **Solution: C**

Length of each side of equilateral triangle = $(48/3)$
= 16 cm

Base area of prism = area of equilateral triangle
= $(\sqrt{3}/4) \times 16^2 = 64\sqrt{3} \text{ cm}^2$

Volume of prism = base area $\times$ height = $64\sqrt{3} \times 10$
= $640\sqrt{3} \text{ cm}^3$

31. **Solution: A**

Let number of blue balls in the bag be 'x'.

So, number of red balls in the bag = $(20 - x)$

ATQ;

$$\frac{x}{20} \times \frac{x-1}{19} = \frac{9}{38}$$

$$x(x-1) = 90$$

$$\text{Or, } x^2 - x = 90$$

$$\text{Or, } x^2 - x - 90 = 0$$

$$\text{Or, } x^2 - 10x + 9x - 90 = 0$$

$$\text{Or, } x(x-10) + 9(x-10) = 0$$

$$\text{Or, } (x-10)(x+9) = 0$$

$$\text{So, } x = 10 \text{ or } x = -9$$

Since, number of balls cannot be negative, number of blue balls in the bag = 10

32. **Solution: B**

Number of zeros will depend on the number of 10's.

Since, $10 = 5 \times 2$, number of 10's will depend on number of 5's. {Since, number of 2's will always be more}

So, number of 5's at the end of $124!$ = $[124/5] + [124/25]$ {Where $[]$ is greatest integer}
= $24 + 4 = 28$

33. **Solution: D**

Since, opposite angles of a cyclic quadrilateral are supplementary,

$$\text{So, } \angle A + \angle C = \angle B + \angle D = \pi$$

$$\text{So, } \angle A = \pi - \angle C \text{ and } \angle B = \pi - \angle D$$

$$\text{So, } \cos A = \cos(\pi - C) = -\cos C$$

$$\text{And, } \cos B = \cos(\pi - D) = -\cos D$$

$$\text{So, } \cos A + \cos B + \cos C + \cos D = -\cos C - \cos D + \cos C + \cos D = 0$$

34. **Solution: C**

Number of times the interest is compounded
= $20 \div 10 = 2$

Rate of interest = $21 \times (10/12) = 17.5\%$

Let the sum invested = ₹Y

$$\text{Then, } Y \times \{1 + (17.5/100)\}^2 - Y = 1827$$

$$\text{Or, } Y \times (47/40)^2 - Y = 1827$$

$$\text{So, } (609Y/1600) = 1827$$

$$\text{So, } Y = (1827/609) \times 1600 = 4800$$

$$\text{So, sum invested} = ₹4,800$$

35. **Solution: B**

Number of permanent employees in office 'D'
= $1240 - 480 = 760$

So, required difference = $760 - 680 = 80$

36. **Solution: C**

Let the cost price of 10 articles of type 'A' be ₹120x

So, cost price of each article of type 'A' = $120x \div 10$
= ₹12x

And cost price of each article of type 'B' = $120x \div 24$
= ₹5x

So, marked price of each article of type 'A'

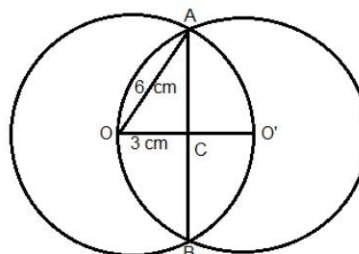
$$= 1.5 \times 12x = ₹18x$$

Profit earned on selling each article of type 'A'

$$= 18x - 12x - 5x = ₹x$$

Therefore, required percentage = $[x \div (12x + 5x)] \times 100$
= $(100/17) \sim 5.88\%$

37. **Solution: D**



In triangle AOC,

OA = Radius = 6 cm

OC = $OO'/2$ = Radius/2 = 3 cm

$$AC = \sqrt{(6^2 - 3^2)} = 3\sqrt{3}$$

Length of the common chord AB = $2 \times 3\sqrt{3}$
= $6\sqrt{3} \text{ cm}$

38. **Solution: A**

Since, $rABC \sim rEFD$,

$(AB/EF) = (BC/FD) = (AC/ED) = \{(\text{perimeter of triangle } ABC / \text{perimeter of triangle } EFD)\}$

So, AC and DE are corresponding sides,

And, $(DE/AC) = (11.5/9.2) = 1.25$

Perimeter of $rABC$ = $9.2 + 14 + 8 = 31.2 \text{ cm}$

Perimeter of $rEFD$ $\div$ perimeter of $rABC$ = 1.25

So, Perimeter of $rEFD$ = $31.2 \times 1.25 = 39 \text{ cm}$

Therefore, difference in perimeter = $39 - 31.2$
= 7.8 cm

39. **Solution: A**

If 3 given points are collinear, then the area of the triangle is zero.

For $P(x_1, y_1)$, $Q(x_2, y_2)$ and $R(x_3, y_3)$, the area of the triangle is

$$\text{So, } \frac{1}{2} \times [x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)] = 0$$

For the given set of points, area of the triangle

$$= \frac{1}{2} \times [2(a - 7) + 5(7 - 3) + 6(3 - a)] = 0$$

$$\text{Or, } \frac{1}{2} \times [2a - 14 + 20 + 18 - 6a] = 0$$

$$\text{Or, } \frac{1}{2} \times (24 - 4a) = 12 - 2a = 0$$

$$\text{So, } 2a = 12$$

$$\text{And } a = (12/2) = 6$$

40. **Solution: D**

Given,

$$p + \frac{1}{p-2} = 4$$

Subtracting 2 on both sides

$$p - 2 + \frac{1}{p-2} = 4 - 2$$

$$(p - 2) + \frac{1}{(p-2)} = 2$$

We know that for $a + \frac{1}{a} = 2$, then $a = 1$

$$\text{So, } (p - 2) = 1$$

$$\text{Or, } p = 1 + 2 = 3$$

$$(p - 2)^{45} + \frac{1}{(p-2)^{45}} + (p + 3)$$

$$= 1^{45} + \frac{1}{1^{45}} + (3 + 3)$$

$$= 1 + \frac{1}{1} + 6$$

$$= 2 + 6 = 8$$

41. **Solution: C**
Distance covered by car 'A' in one hour = 135 km
Time taken by car 'B' to overtake car 'A' = $135 \div (180 - 135) = 3$ hours
Distance covered by train 'A' in 4 hours i.e. $(3 + 1)$ hours = $4 \times 135 = 540$ km
So, required distance = $600 - 540 = 60$ km
42. **Solution: A**
 $\sin B = \sqrt{1 - \cos^2 B} = \sqrt{1 - \left(\frac{5}{9}\right)^2}$
 $= \sqrt{\frac{81 - 25}{81}} = \sqrt{\frac{56}{81}} = \frac{2}{9}\sqrt{14}$
Now, $\operatorname{Cosec} B = 1/\sin B = \frac{9}{2\sqrt{14}}$
43. **Solution: C**
Range = Value of the greatest observation - Value of the smallest observation
So, range of set $x = 46 - 12 = 34$
In order to find the median, we must arrange the elements of the given set in either ascending or descending order.
So, $x = \{12, 13, 14, 20, 21, 26, 28, 32, 46\}$
(Arranging in ascending order)
Median term = $(\text{number of terms} + 1)/2 = \{(9 + 1)/2\} = 5^{\text{th}}$ term (Since, number of observations is odd i.e. 9)
So, required median = 21
So, required difference = $34 - 21 = 13$
44. **Solution: (B)**
Calculate the average number of pens sold by P (J1) and Q (J2) in all five months:
 $J1 = (100 + 80 + 40 + 30 + 10) / 5 = 52$,
 $J2 = (10 + 20 + 120 + 60 + 50) / 5 = 52$
The value of $J1/J2 = 52/52 = 1$
45. **Solution: A**
Unit digit of $523^{24} = 3^{24}$
Cyclicity of '3' = 3, 9, 7, 1, 3 so, numbers repeat after every power of '4'.
So, 3^{24} will leave 1 as unit digit.
Similarly, $167^{123} = 7^{123}$
Cyclicity of '7' = 7, 9, 3, 1, 7 so, numbers repeat after every power of '4'.
So, $7^{123} = 7^{(40 \times 3 + 3)}$ will leave 1 as unit digit.
Now, for 286^{1283} , cyclicity of '6' is 6 only.
So, every power of 6 will leave 6 as unit digit.
So, required remainder = $1 - 1 + 6 = 6$
46. **Solution: A**
'A' alone can complete the whole work in = $15 \div 0.25 = 60$ days
In first 15 days 'A' completed 25% of the work i.e. $\{(15/60) \times 100\}\%$
Therefore, remaining 75% of the work will be completed by 'B'
If 'B' is working with his actual efficiency, then actual time taken to complete the 75% of the work in $45 \div (3/2) = 30$ days
So, 'B' alone can complete the whole work in = $30 \div 0.75 = 40$ days
Now,
Let the total work be 120 units {LCM of 40 and 60}
So, the efficiency of 'A' = $(120/60) = 2$ units/day
Efficiency of 'B' = $(120/40) = 3$ units/day
Required time to complete the work = $\{120/(3 + 2)\} = (120/5) = 24$ days
47. **Solution: D**
Sum of present ages of Dristi, Muskan, and Brinda = $25 \times 3 = 75$ years

Let the present age of Dristi and Brinda be '5x' years and '6x' years, respectively
So, present age of Muskan = $(6x + 7)$ years
ATQ:

$$5x + 6x + 6x + 7 = 75$$

$$\text{Or, } 17x = 68$$

$$\text{Or, } x = 68 \div 17$$

$$\text{Or, } x = 4$$

Therefore, the age of the Muskan = $6x + 7 = 6 \times 4 + 7 = 24 + 7 = 31$ years

48.

Solution: D

For statement (a)

Let 'p' and 'q' be 3 and 9, respectively

So, $3 \times 9 = 27$ i.e. odd number

So, statement (a) is correct

For statement (b)

Let 'p' and 'q' be 3 and 9, respectively

So, $(q/p) = (9/3) = 3$ which is a prime number

So, statement (b) is correct

For statement (c)

Let 'p' and 'q' be 5 and 6, respectively

So, $(p + q) = 11$ i.e. a prime number

So, statement (c) is correct

Therefore, all the above statements are correct

49.

Solution: B

Number of valid votes received by Ram = $9000 - 9000 \times 0.12 = 7920$

Number of valid votes received by Rahim = $10080 - 972 = 9108$

So, required percentage = $\{(9108 - 7920) \div 7920\} \times 100 = 15\%$

50.

Solution: C

Let the initial investments of 'A', 'B' and 'C' be ₹'5x', ₹'8x' and ₹'12x', respectively

Increased investment of 'A' = $5x \times 1.6 = ₹'8x'$

Increased investment of 'B' = $8x \times 1.25 = ₹'10x'$

Increased investment of 'C' = $12x \times 1.25 = ₹'15x'$

Since, time period of investment is the same, so, respective ratio of profit shares of 'A', 'B' and 'C' = $(5x + 8x):(8x + 10x):(12x + 15x) = 13x:18x:27x = 13:18:27$

Therefore, profit share of 'B' = $14500 \times (18/58) = ₹4,500$

General Awareness

51.

Solution: C

Indus River:

It rises near Lake Mansarovar in Tibet from the glaciers of Kailas ranges. Its length is about 2,900 km. After entering Jammu & Kashmir, it flows between the Ladakh and the Zaskar Ranges. It flows through the regions of Ladakh, Baltistan and Gilgit.

Right-bank tributaries: Shyok, Gilgit, Hunza, Nubra, Kabul, Khurram, Tochi, Gomai, Sangar, & Kunar

Left-bank tributaries: the Jhelum, the Chenab, the Ravi, the Beas and the Satluj.

Hence, Option C is the correct answer.

52.

Solution: (B)

Santiago Ramón y Cajal

Explanation: The neuron doctrine is the concept that the nervous system is comprised of discrete individual cells (neurons) which are separate from each other as opposed to forming a continuous network.

53.

Solution: (C)

Prolactin

Explanation: Prolactin: it is produced by pituitary gland. It is responsible for breasts to grow and expulsion of milk after baby is born. Oxytocin: it is produced in the hypothalamus. It plays a role in social bonding, sexual reproduction, childbirth, and the period after childbirth.

Estrogens: are hormones that are important for sexual and reproductive development, in women. They are also referred to as female sex hormones.

Progesterone: is an endogenous steroid and progestogen sex hormone involved in the menstrual cycle, pregnancy, and embryogenesis of humans and other species.

54. **Solution: (A)**

Alessandro Volta

Explanation: Alessandro Volta was the first person to isolate methane and Discovered methane mixed with air could be exploded using an electric spark: this is the basis of the internal combustion engine.

55. **Solution: (B)**

Lothal

Explanation: Lothal is one of the most prominent cities of the ancient Indus valley civilization, located in the Bhal region of the modern state of Gujarat and dating from 3700 BCE. It is the port city of the Indus Valley Civilisation.

56. **Solution: (D)**

Pascal's Law

Explanation: According to Pascal's law, any force applied to a confined fluid is transmitted uniformly in all directions throughout the fluid regardless of the shape.

57. **Solution: (A)**

Velocity

Explanation: Power exerted by an Object moving in a straight line = Force Velocity

58. **Solution: (D)**

Gottfried Haberier

Explanation: Gottfried Haberier gave the theory of the opportunity cost. Opportunity cost in microeconomics is the loss of the benefit that could have been taken by making the alternative option that was available at the time of selection.

59. **Solution: (B)**

Iran

Explanation: Iran has an observer status at the World Trade Organization (WTO) since 2005. The United States has consistently blocked Iran's bid to join the WTO. All other are the member of the WTO. Israel is a member since 21 April. Guinea is a member since 25 October 1995. And Norway has been a member Since 1 January 1995.

60. **Solution: (C)** Sanchi

Explanation: Sanchi is famous for outstanding specimens of Buddhist art and architecture, belonging to the period between the third century B.C. and the 12th century A.D. The major attractions of Sanchi include a number of Buddhist stupas, monasteries, temples and pillars. Sanchi is famous for outstanding specimens of Buddhist art and architecture, belonging to the period between the third century BC and the twelfth century AD.

61. **Solution: (D)**

Latitude

Explanation: It is the angular distance of a place north or south of the earth's equator, or of the equator of a

celestial object, usually expressed in degrees and minutes.

62. **Solution: (D)**

Hematite

Explanation: In Badampahar Mines high grade hematite ore is found. It was the second iron mine developed by TATA.

63. **Solution: (A)**

Geothermal Energy

Explanation: Geothermal energy is heat derived within the sub-surface of the earth. Water and/or steam carry the geothermal energy to the Earth's surface.

64. **Solution: (B)**

1951

Explanation: The first Indian Prime Minister, Jawaharlal Nehru, presented the First Five-Year Plan to the Parliament of India. The First Five-year Plan was launched in 1951 which mainly focused on the development of the primary sector.

65. **Solution: (A)**

Alamgir II

Explanation: Aziz-ud-din Alamgir II was the Mughal Emperor at the time of Battle of Plassey.

66. **Solution: (C)**

Criminal justice system reforms

Explanation: The Malimath committee submitted its report in 2003 which made recommendations on crime investigation and punishment. The key recommendations of the committee include stringent punishment for false registration of cases, strong scrutiny of the proof submitted in criminal cases and considering the confessions made before a superintendent level officer as evidence in a court of law.

67. **Solution: (C)**

Sri Lanka

Explanation: Kandyan dance is folk dance of Sri Lanka. Kandyan dance encompasses various dance forms popular and native to the area called Kandy of the Central hills region known as Udarata. But today it has been widespread to other parts of the country.

68. **Solution: (A)**

Underwater volcanic activity Explanation: Most tsunamis are caused by underwater tectonic activity (movement of the earth's plates) and therefore occur along plate boundaries and as a result of earthquake and rise or fall in the sea floor, causing water to be displaced.

69. **Solution: B**

A **small arrow** or blinking symbol, moving on the desktop, is called the **cursor**. Some other names of the cursor are Mouse pointer and arrow.

When we turn ON the computer then the first screen, which will be displayed on the computer is known as the desktop. The background image of the desktop is called wallpaper. The Desktop contains the Start menu, Taskbar, icons, gadgets, etc.

Hence, Option B is the correct answer.

70. **Solution: (D)**

Gulbadan Begum

Explanation: Gulbadan Begum was a Mughal princess and the youngest daughter of Emperor Babur, the founder of the Mughal Empire and the first Mughal emperor. She is best known as the author of Humayun-Nama, the account of the life of her half-

brother, Emperor Humayun, which she wrote on the request of her nephew, Emperor Akbar.

71. **Solution: C**

The **3rd edition of World Food India 2024** has been organized by the Ministry of Food Processing Industries from 19th to 22nd September 2024 at Bharat Mandapam, **New Delhi**.

The event was inaugurated jointly by Pralhad Joshi, Union Minister of Consumer Affairs, Food & Public Distribution and New & Renewable Energy, Chirag Paswan, Minister of Food Processing Industries & Shri Ravneet Singh Bittu, Minister of State, Food Processing Industries & Railways.

On this occasion, food processing units at 67 locations under PLISFPI and PMKSY schemes with total investments of ₹5,135 crores were inaugurated, Credit-linked support was provided to 25,000 beneficiaries for micro-projects worth ₹2,351 crores under PMFME scheme, and ₹245 crores seed capital sanctioned to 70,000 SHG members under PMFME scheme.

The event marked the achievement of the 100-day action plan of the Government.

72. **Solution: C**

· **Bleaching powder** is produced by the action of chlorine on calcium hydroxide (Ca(OH)_2).

· Bleaching powder is represented as CaOCl_2 , though the actual composition is quite complex.

· Bleaching powder is represented by $2\text{Ca(OH)}_2 + 2\text{Cl}_2 \rightarrow \text{Ca(OCI)}_2 + \text{CaCl}_2 + 2\text{H}_2\text{O}$.

Hence, Option C is the correct answer.

73. **Solution: B**

President of India Droupadi Murmu has approved the appointment of Preeti Sudan as the **Chairperson of the Union Public Service Commission (UPSC)**.

With this, she became the **second woman** to hold the position of chairperson of UPSC. Before her, the position had been held by R M Bathew in 1996.

She is an IAS officer from the 1983 batch.

She was the former Union Health Secretary.

She has succeeded Manoj Soni, who resigned earlier this month due to personal reasons, despite his tenure originally set to expire in May 2029.

UPSC:

The Union Public Service Commission (UPSC) is a constitutional body whose role is to recruit, select, and train civil servants for the Government of India. The body was established in 1926. It is headquartered in New Delhi.

Hence, Option B is the correct answer.

74. **Solution: D**

The **2024 Wimbledon Tennis Championship** was held at the All England Lawn Tennis and Croquet Club in Wimbledon, London, England. This was the 137th edition of the Wimbledon Championships and the third Grand Slam event of 2024.

Men's singles: Carlos Alcaraz of Spain has won the Men's Singles title defeating Novak Djokovic of Serbia.

Women's singles: Barbora Krejčíková of the Czech Republic defeated Jasmine Paolini of Italy to win her maiden Wimbledon women's singles title.

Men's doubles: Harri Heliövaara (Finland) & Henry Patten (United Kingdom)

Women's doubles: Kateřina Siniaková (Czech Republic) & Taylor Townsend (United States)

Mixed doubles: Polish-Taiwan pair of Jan Zieliński and Hsieh Su-Wei claimed their second Grand Slam title by defeating the Mexican duo Giuliana Olmos and Santiago Gonzalez.

Hence, Option D is the correct answer.

75. **Solution: (C)**

Bhagat Singh

Explanation: Revolutionary leader Bhagat Singh quotes "Bombs and Pistols do not make a revolution. The sword of revolution is sharpened on the whetting-stone of ideas."

English Language

76. **Solution: B**

The highlighted phrase is not correct to use here because both the parts of the sentences are of a complementary nature so we cannot use a connector that shows contrast. As the second part is the result and the first part is the reason we have to use AS. The sentence tells us how the success of the initiative depends on the parliament because it will require majority votes from both houses of the Parliament. Thus, B is the right answer.

The highlighted phrase and A have used contradictory category connectors BUT and HOWEVER, both of which are contextually incorrect here.

In C, the preposition BESIDE has been used which is used to show that something or someone is next to or to the side of another thing. This does not fit here.

77. **Solution: A**

In A, replace the base form verb FELL with the past participle verb FELLED (cut down) to fit in the passive voice structure IS/AM/ARE + VERB 3. Thus, A is the right answer.

78. **Solution: B**

The study of old age and of the changes it causes in the body is called GERONTOLOGY. Thus, B is the right answer.

The other options have different meanings:

Philology - the study of language, especially its history and development.

Entomology - the scientific study of insects.

Graphology - the study of handwriting.

79. **Solution: B**

The idiom GIVE A PIECE OF MIND means to scold someone. Thus, B is the right answer.

80. **Solution: D**

The sentence is in indirect speech. Follow the instructions below to convert a sentence from indirect to direct speech:

I. Add the comma and inverted commas.

II. Replace TOLD with SAID TO.

III. The simple past tense verb DID will change to the present perfect tense verb DO to agree with the first person pronoun I. The verb TALKS will remain unchanged as it represents a habitual action (the manner in which Ishan communicates with his mother). Such habitual or routine actions are represented in simple present tense and the tense for such sentences remain unchanged in indirect speech.

IV. The third person singular pronoun SHE will change into first person singular pronoun I.

Thus, D is the right answer.

81. **Solution: C**

We need a noun to combine with TRAINING and form a compound noun. REGIMEN (routine of actions) will fit here as the sentence tells us how recovery is an essential part of any athlete's training routine and yoga can play an important role in it. Thus, C is the right answer.

Disciple - a person who follows a teacher, especially a religious one. Attendant - a person whose job is to serve or help people in a public place. Prediction - a forecast.

82. **Solution: A**

All the spellings in A are correct. Thus, A is the right answer.

The spelling of the word VETERANS (people with a very long experience) is written incorrectly in B and D. The spelling of the word BOISTEROUS (noisy and full of energy) is written incorrectly in B and C.

The spelling of the word PUBLISHING (making publicly known) is written incorrectly in C.

83. **Solution: C**

BDAC is the correct sequence of sentences. B begins the paragraph by telling us that usually bug bites come with no major side effects and simply leave a mark that fades away in a few days. D follows B to describe how this is not the case with mosquito bites that can make a person sick. A describes how precautions can be taken to keep mosquitoes away from home and to protect themselves against such diseases. C describes one such precaution: removing still water as mosquitoes lay their eggs in such water. Thus, C is the right answer.

84. **Solution: B**

The word PAUCITY means less than enough of something. The word SHORTAGE (a situation where there is not enough of something) can best express the meaning of the given word. Thus, B is the right answer.

Beauty - the quality of being pleasing and attractive. Precision - the quality of being clear or exact. Ability - the power or skill needed to do something.

85. **Solution: B**

The idiom TO FLY INTO A PASSION means to suddenly become very angry or anxious. Thus, B is the right answer.

86. **Solution: B**

We need a base form verb to fit in the infinitive structure TO + VERB 1. STARE (to look fixedly with wide-open eyes) will fit here as the sentence tells us that his mother told him that it was rude to keep looking at other people for too long. Thus, B is the right answer.

Stair (noun) - a set of steps built between two floors inside a building. Steer - to control the direction in which a boat, car, etc. moves. Star - to have one of the main parts in a film, play, etc.

87. **Solution: C**

Follow the rules below to change a sentence from passive to active voice:

I. The subject THE PHYSICALLY CHALLENGED MAN will change to the object, and the object THE OFFICER will change into the subject and begin the sentence.

II. The simple past tense construction WAS HELPED will change to HELPED.

III. Remove the preposition 'by' before the subject THE OFFICER.

Thus, C is the right answer.

88. **Solution: A**

The word RESCUED means saved from a difficult or dangerous situation. The word ENDANGERED means put in danger and is opposite in meaning to the given word. Thus, A is the right answer.

The remaining options are contextually incorrect.

Relocated - moved to a new place. Assured - made something certain to happen. Strived - made great efforts to achieve something.

89. **Solution: B**

The idiom FACE THE MUSIC means to get punishment or face consequences for wrongdoing. The phrase in B most appropriately describes the meaning of the given idiom. Thus, B is the right answer.

90. **Solution: B**

We need an adjective to modify the noun HOUSE. MY (possessive adjective) will fit here to indicate that the speaker's house is located at the far-right end of the street. Thus, B is the right answer.

MAY is a helping verb that indicates possibility. MINE is a possessive pronoun and ME is an objective pronoun.

91. **Solution: B**

The error is in part B of the sentence. Replace the singular verb IS with the plural verb ARE to agree with the two subjects THE PAST AND THE FUTURE. Thus, B is the right answer.

92. **Solution: B**

Follow the rules below to change a sentence from passive to active voice:

I. The subject YOUR MOTHER will change to the object, and the object YOU will change into the subject and begin the sentence.

II. The simple past tense construction DID YOUR MOTHER PUNISH will change to WERE YOU PUNISHED.

III. Add the preposition 'by' before the object YOUR MOTHER.

Thus, B is the right answer.

93. **Solution: A**

BEVY refers to a large gathering of people of a particular kind. Thus, A is the right answer.

Brood - a group of young birds all born at the same time. Shoal - a large number of fish swimming together. Hamlet - a very small village.

94. **Solution: C**

The correct sequence of the given sentences in the paragraph is ACBD. A begins the paragraph by mentioning the arguments for and against lead generation and demand generation, which are familiar sights on LinkedIn. C comes next by explaining one of the terms, lead generation - it is a popular growth strategy, especially among marketers at big companies. BD is a mandatory pair and follows C. The pair explains the work of demand gen marketers - how they focus on educating and informing the audience rather than collecting information and sending emails. Thus, C is the right answer.

95. **Solution: A**

In A, replace the singular number HUNDRED with its plural form HUNDREDS. The plural form HUNDREDS is used when no definite number is given ahead of it. Thus, A is the right answer.

96. **Solution: C**

Priorities is the best fit because it conveys what the government considers most important.

Decisions refer to choices made rather than overall focus.
Policies refer to specific rules or regulations, not broad focuses.
Actions imply execution rather than intent.

97. **Solution: C**
Sidestepped means to avoid or evade, which fits the context of ignoring critical national issues.
Highlighted means bringing attention to, which contradicts the sentence.
Addressed implies directly dealing with the issues, which did not happen.
Analyzed suggests a detailed discussion, which was missing.

98. **Solution: B**
Implications is the best choice because it refers to the possible effects of these developments on India's future.
Consequences implies negative effects, whereas implications is neutral.
Considerations means factors to be thought about, but it does not fit well in this context.

Challenges suggests difficulties rather than broader effects.

99. **Solution: C**
Dig refers to a sarcastic or mocking remark, which fits the context of Modi's comment on the Gandhi family.
Attack is too strong and suggests hostility rather than sarcasm.
Joke implies humor, but the tone here is political.
Criticism would suggest a direct and serious critique rather than a mocking remark.
100. **Solution: D**
Remark is the best fit because it refers to a statement made by Rahul Gandhi, which was seen as controversial.
Comment is similar but less precise in this political context.
Speech refers to a full address rather than a specific statement.
Claim implies an assertion that needs proof, which is not the intended meaning.

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