

Answers

1. Answer: a

Explanation:

Let N be the original number of workers employed.

Year-1 cut of 5% leaves $0.95 N$; year-2 another 5% cut leaves $0.95 \times 0.95 N = 0.9025 N$; year-3 hike of 20% gives $0.9025 \times 1.20 N = 1.083 N$.

This equals 2166 at the start of year 4, so $N = 2166 / 1.083 = 2000$.

Hence, 2000.

2. Answer: d

Explanation:

Reproduction in single-celled and simple organisms occurs by different asexual methods.

Amoeba reproduces by binary fission, Plasmodium by multiple spore formation and Euglena by longitudinal fission.

Hydra, however, reproduces by budding — a small daughter individual grows out from the parent body and detaches.

Hence, Hydra.

3. Answer: c

Explanation:

To find HCF, factorise each number into primes.

$$2349 = 3^4 \times 29, 2835 = 3^4 \times 5 \times 7 \text{ and } 3078 = 2 \times 3^4 \times 19.$$

The only prime factor common to all three (with lowest power) is $3^4 = 81$.

Hence, **81**.

4. Answer: d

Explanation:

The statement asks whether a public bus company should stop free travel passes for employees.

Argument 1 (company benefit) is vague and does not quantify the benefit.

Argument 2 (right of employees) asserts a right without any legal or contractual basis.

Since neither argument is decisive or well-supported, neither is strong; hence the answer is Neither 1 nor 2 is strong.

Hence, **Neither 1 nor 2 is strong**.

5. Answer: a

Explanation:

The area of a trapezium is $A = \frac{1}{2} \times (\text{sum of parallel sides}) \times \text{height}$.

$$\text{Substituting } A = 150 \text{ m}^2 \text{ and parallel sides } 10 \text{ m and } 15 \text{ m: } 150 = \frac{1}{2} \times (10 + 15) \times h \rightarrow 150 = 12.5 h \rightarrow h = 12 \text{ m.}$$

This is the perpendicular distance between the parallel sides.

Hence, 12 m.

6. Answer: b

Explanation:

Potential difference between two points is defined as work done per unit charge in moving a charge between them: $V = W / q$.

Substituting $W = 72 \text{ J}$ and $q = 3 \text{ C}$: $V = 72 / 3 = 24 \text{ V}$.

This is a direct application of the definition.

Hence, 24 V.

7. Answer: a

Explanation:

The equivalence 16 experts = 28 trainees gives 1 expert = $28/16 = 1.75$ trainees.

Total work performed by 12 experts + 15 trainees = $12 \times 1.75 + 15 = 21 + 15 = 36$ trainee-units.

With 8 experts (= 14 trainee-units), the trainees required = $36 - 14 = 22$.

Hence, 22.

8. Answer: a

Explanation:

The power of a lens is defined as the reciprocal of its focal length in metres: $P = 1/f$.

It is measured in dioptries (D).

This means power is inversely proportional to focal length — the shorter the focal length, the stronger the lens.

Hence, **focal length**.

9. Answer: c

Explanation:

Gravitational potential energy is $PE = m \times g \times h$.

Given $m = 12 \text{ kg}$, $PE = 480 \text{ J}$ and $g = 10 \text{ m/s}^2$: $h = PE / (m \times g) = 480 / (12 \times 10) = 480 / 120 = 4 \text{ m}$.

Substitution and simple division give a whole-number height.

Hence, **4 m**.

10. Answer: b

Explanation:

The 48th International Film Festival of India (IFFI) was held in Panaji, Goa from 20–28 November 2017.

IFFI is the largest and oldest film festival in India, organised annually by the Ministry of Information & Broadcasting along with the Goa government.

Hence, **Goa**.

11. Answer: d

Explanation:

Gravity is a conservative force, so the work it does depends only on the vertical height difference between initial and final positions and is completely independent of the path taken.

Hence horizontal position, vertical height difference and change in position DO affect gravity's work — only the path does NOT.

The correct answer is the answer the path along which the object moves.

Hence, **the path along which the object moves..**

12. Answer: b

Explanation:

For a GP with first term a and common ratio r : $S_3 = a(1 + r + r^2)$ and $S_6 = a(1 + r + r^2)(1 + r^3)$.

Hence $S_3/S_6 = 1/(1 + r^3) = 125/152$.

This gives $1 + r^3 = 152/125 = 1.216$, so $r^3 = 0.216 = 0.6^3$, and $r = 0.6 = 3/5$.

Hence, **$3/5$.**

13. Answer: a

Explanation:

Given $xy = 120$ and $x^2 + y^2 = 289$.

Use the identity $(x + y)^2 = x^2 + y^2 + 2xy = 289 + 2 \times 120 = 289 + 240 = 529$.

Taking positive square root: $x + y = \sqrt{529} = 23$.

Hence, 23.

14. Answer: c

Explanation:

Among the four birds — Ostrich, Penguin, Vulture and Emu — three (ostrich, penguin, emu) are flightless birds that cannot fly.

Vulture, however, is a large soaring bird capable of powerful flight.

The classification criterion is ability to fly.

Hence, **Vulture**.

15. Answer: c

Explanation:

Mass-by-mass percentage = (mass of solute / total mass of solution) $\times$ 100.

Mass of solution = 44 + 320 = 364 g.

Mass % = $(44/364) \times 100 = 12.088 \approx 12.09\%$.

This gives concentration as a percentage rather than a number with units.

Hence, **12.09%**.

16. Answer: b

Explanation:

The coach's statement is that players need good rest the night before an actual game.

Conclusion I (emphasising a consistent routine so players focus on the field) can reasonably be derived — good rest is part of a routine that helps focus.

Conclusion II (players are tired and need rest to refresh) also reasonably follows from calling for rest.

Hence, **Both conclusions follow.**

17. Answer: b

Explanation:

The pie chart of company XYZ's sports goods sales for 2016 shows that 'other sports goods' account for a 10% slice of the total sales revenue.

Total revenue for 2016 = ₹36,82,000.

Revenue from other sports goods = $10\% \times ₹36,82,000 = ₹3,68,200$.

Hence, **3,68,200.**

18. Answer: b

Explanation:

In this classification question, five figures a, b, c, d and e are given.

Four of them share a common visual property (shape, orientation or number of sides) while one does not.

On careful comparison, figure d (the answer d) breaks the shared property.

Hence, d.

19. Answer: d

Explanation:

At 6:00 pm, the minute hand is on the 12 mark and the hour hand is on the 6 mark.

These two positions are 180° apart, i.e. diametrically opposite.

If the minute hand at 12 points North, the hour hand at 6 must therefore point South.

Hence, South.

20. Answer: b

Explanation:

The ratio of lychees to kiwis equals the ratio of their percentages, $52\% : 48\%$.

Dividing both by their GCD 4: $52 \div 4 = 13$ and $48 \div 4 = 12$.

The ratio in simplest form is $13 : 12$; the actual number 50 does not affect the ratio.

Hence, $13 : 12$.

21. Answer: a

Explanation:

A right-side mirror produces a left-right reversed image of the object.

Vertical features (top-bottom) remain unchanged while horizontal features flip.

Applying this transformation to the given figure and matching with the options, figure D (the answer D) is the correct mirror image.

Hence, D.

22. Answer: a

Explanation:

For $50/(x - 14)$ to be an integer, $(x - 14)$ must be a divisor of 50, i.e. $\pm 1, \pm 2, \pm 5, \pm 10, \pm 25, \pm 50$.

To minimise x , we minimise $(x - 14)$.

The most negative divisor is -50 , giving $x - 14 = -50$, so $x = -36$.

Hence, **-36**.

23. Answer: c

Explanation:

For a triangle with sides 8, 13, 15 and area A , the altitudes $h_a = 2A/a$ are inversely proportional to the corresponding sides.

So $h_8 : h_{13} : h_{15} = 1/8 : 1/13 : 1/15$.

Taking LCM 1560: $1560/8 : 1560/13 : 1560/15 = 195 : 120 : 104$.

Hence, **195 : 120 : 104**.

24. Answer: d

Explanation:

Weight is the force with which Earth pulls an object, $W = m \times g$.

Given $W = 200 \text{ N}$ and $g = 10 \text{ m/s}^2$: $m = W / g = 200 / 10 = 20 \text{ kg}$.

Since the question asks for mass, the unit must be kg, not N, Pa or W.

Hence, 20 kg.

25. Answer: b

Explanation:

Total number of students = 85. Students scoring below 50% = 40, so students scoring 50% or above = $85 - 40 = 45$.

The required ratio compares 45 (students at or above 50%) with 40 (students below 50%): 45 : 40.

Divide both parts by the GCD 5: $45 \div 5 = 9$ and $40 \div 5 = 8$.

Hence, 9 : 8.

26. Answer: c

Explanation:

The statement asks whether government schools should charge a minimum fee.

Argument 1 (parents/students will value schools more) is speculative.

Argument 2 (poor students will drop out) raises a concrete equity concern with strong social-policy backing.

Argument 2 is decisively stronger.

Hence, **Only argument 2 is strong.**

27. Answer: a

Explanation:

This is a non-verbal reasoning question with a figure series where one figure is missing (marked '?').

The task is to identify the transformation rule (rotation, reflection, element addition) that governs the series and apply it.

Among the options, figure C fits the required transformation.

Hence, **C.**

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28. Answer: d

Explanation:

For 'Copper, Metal, Krypton': copper is a subset of metals (copper $\subset$ metals), so a small circle inside a larger one.

Krypton is a noble gas — completely disjoint from both.

The best-suited Venn diagram shows copper inside metal with krypton as a separate disjoint circle.

29. Answer: b

Explanation:

Arvind Subramanian served as the Chief Economic Adviser to the Government of India from October 2014 to June 2018.

He was appointed by the NDA government and later resigned to return to academic teaching in the US.

K.

M.

Abraham, Raghuram Rajan and Arvind Panagariya held other positions.

Hence, **Arvind Subramanian**.

30. Answer: d

Explanation:

The Haryana government launched 'Operation Durga' in April 2017 to curb eve-teasing and harassment of women in public places.

The operation deploys plain-clothes police teams to schools, colleges and markets.

Hence, **Haryana**.

31. Answer: a

Explanation:

According to the World Economic Forum's Global Gender Gap Report 2017, India ranked 135th out of 144 countries in female labour force participation.

This was among the lowest in the world.

Hence, 135/144.

32. Answer: a

Explanation:

The bar graph shows XYZ's PC sales in lakh units across ten years.

Comparing the bar heights, the tallest bar corresponds to 2014, indicating the maximum sales in that year.

Reading a bar chart correctly requires matching bar heights to the y-axis scale.

Hence, 2014.

33. Answer: c

Explanation:

Statement I 'All insects are small' and II 'Some animals are small'.

Conclusion 1 'All small things are insects' invalidly converts the universal statement.

Conclusion 2 'Some animals are insects' has no logical link — from 'small' being common, we cannot infer overlap between animals and insects.

Hence, **Neither follows.**

34. Answer: d

Explanation:

Let Q's current age be x ; then P's current age = $2x$.

After 5 years their combined age is $(2x + 5) + (x + 5) = 3x + 10 = 70$.

So $3x = 60$, giving $x = 20$.

Present combined age = $2x + x = 3x = 60$ years.

Hence, **60**.

35. Answer: a

Explanation:

Volume of sphere = $(4/3)\pi r^3$; volume of right circular cylinder = $\pi r^2 h$.

Given equal volumes with the same radius: $(4/3)\pi r^3 = \pi r^2 h \rightarrow h = 4r/3$.

So the ratio $r : h = r : 4r/3 = 3 : 4$.

Hence, **3 : 4**.

36. Answer: a

Explanation:

Calcium is a highly reactive alkaline-earth metal that always occurs in nature combined with other elements as compounds — mostly as calcium carbonate, sulphate or phosphate.

Copper, silver and gold, being less reactive, can occur in native (uncombined) form.

Hence, **Ca**.

37. Answer: c

Explanation:

Simple permanent tissues in plants are classified by cell wall thickness and function: parenchyma (thin-walled, general-purpose), collenchyma (unevenly thickened, provides flexibility) and sclerenchyma (uniformly thickened lignified, provides rigidity).

Meristem is dividing tissue (not permanent) and companion cells are part of phloem.

Hence, **Parenchyma, Collenchyma and Sclerenchyma**.

38. Answer: c

Explanation:

In an AP with first term $a = 142$ and common difference $d = 148 - 142 = 6$, the n th term is $a_n = a + (n - 1)d$.

For $n = 12$: $a_{12} = 142 + 11 \times 6 = 142 + 66 = 208$.

This is a direct AP-term formula.

Hence, **208**.

39. Answer: d

Explanation:

The Reserve Bank of India was established in 1935 under the RBI Act 1934.

Its head office was originally in Calcutta but was permanently moved to Mumbai in 1937.

As the central bank of India, RBI regulates the country's monetary policy and banking sector from its Mumbai headquarters.

Hence, **Mumbai**.

40. Answer: d**Explanation:**

Momentum is the product of mass and velocity: $p = m \times v$.

Rearranging for mass: $m = p / v$.

This is a direct algebraic manipulation of the momentum formula.

Options like $p + m$, $p \times m$ and m/p are dimensionally or algebraically inconsistent.

Hence, **p / v** .

41. Answer: d**Explanation:**

pH scale runs from 0 (most acidic) to 14 (most basic).

Lemon juice contains citric acid with pH around 2-3, blood has pH ~ 7.4 (slightly basic), pure water pH = 7 and detergents are basic (pH 9-11).

Among the four options, lemon juice has the lowest pH.

Hence, **Lemon juice**.

42. Answer: d

Explanation:

Ashwini Ponnappa is a decorated Indian doubles badminton player who has won gold at the Commonwealth Games and multiple medals at the BWF World Championships and Asian Championships.

She partners Jwala Gutta in women's doubles.

Hence, **Badminton**.

43. Answer: d

Explanation:

117 balls are divided among A, B and C in the ratio 2 : 4 : 7.

Total parts = $2 + 4 + 7 = 13$, so each part = $117 / 13 = 9$.

A gets $2 \times 9 = 18$ balls and C gets $7 \times 9 = 63$ balls.

Difference = $63 - 18 = 45$, so A has 45 fewer balls than C.

Hence, **45 fewer**.

44. Answer: c

Explanation:

Alia Bhatt won the Filmfare Best Actress award for 2016 (announced 2017) for her powerful portrayal of Bauria/Mary Jane in *Udta Punjab* (2016), directed by Abhishek Chaubey.

She also won the Screen Award and IIFA for the same role.

Hence, **Udta Punjab**.

45. **Answer: a**

Explanation:

Geeta's maternal grandmother (Nani) has an only daughter — that only daughter is Geeta's mother (in matrilineal terms).

Since Nani has only one daughter, the picture must be of Geeta's mother.

This is a standard blood-relation reasoning trap.

Hence, **Her mother**.

46. **Answer: a**

Explanation:

Among letters G, K, F, A, note that A, F and K are made of only straight-line strokes with no curves.

G, however, is drawn with a curved stroke.

The classification criterion is presence of curves.

Hence, **G**.

47. Answer: d

Explanation:

This question requires counting all squares of all sizes in a composite figure.

Count 1×1 squares first, then 2×2 , then 3×3 and so on, remembering to include overlapping squares of each size.

The systematic tally for the given figure comes to 29 squares.

Hence, 29.

48. Answer: d

Explanation:

Statement A says speed of sound in steel is 5960 km/s — this is incorrect because the correct unit is m/s (actual value $\approx 5960 \text{ m/s}$).

Statement B says speed of sound in nickel is 6040 m/s , which is approximately correct ($\sim 4900\text{--}6040 \text{ m/s}$ depending on source).

Hence, Only B is true.

49. Answer: c

Explanation:

Sachin Siwach won the gold medal in the 49 kg category at the AIBA Youth World Boxing Championship 2018 held in Budapest, Hungary.

He defeated the Russian boxer in the final.

This was a significant win in Indian boxing.

Hence, **Sachin Siwach**.

50. Answer: a

Explanation:

After the July 2017 political realignment, Nitish Kumar broke away from the Mahagathbandhan (RJD-INC alliance) and joined the NDA.

He was sworn in as Chief Minister of Bihar for the sixth time on 27 July 2017 with Sushil Kumar Modi as his deputy.

Hence, **Nitish Kumar**.

51. Answer: d

Explanation:

Kalvakuntla Chandrashekar Rao (KCR) founded the Telangana Rashtra Samithi (TRS) in 2001 to campaign for a separate Telangana state.

After Telangana's formation in 2014, KCR became its first Chief Minister.

In 2022 TRS was renamed Bharat Rashtra Samithi (BRS).

Hence, **Telangana Rashtra Samithi**.

52. Answer: d

Explanation:

To find toys on shelf 2, we need to solve: shelf 1 + shelf 2 + shelf 3 + shelf 4 = 15, with shelf 2 = shelf 3.

Statement 1 gives total 15; statement 2 gives shelf 1 = 5; statement 3 gives shelf 2 = shelf 3; statement 4 gives shelf 4 = 2.

All four are needed: shelf 2 = $(15 - 5 - 2) / 2 = 4$.

Hence, **Statements 1, 2, 3 and 4 together are necessary.**

53. Answer: d

Explanation:

Let the square park's outer side be a .

A 2 m wide path inside leaves an inner square of side $(a - 4)$.

Path area = outer area - inner area = $a^2 - (a - 4)^2 = 8a - 16 = 416$.

So $8a = 432$, $a = 54$ m.

The park area enclosed by the path (inner square) = $50^2 = 2500$ m².

Hence, **2500 m²**.

54. Answer: d

Explanation:

Basic oxides are formed by metals, especially alkali (Group 1) and alkaline-earth (Group 2) metals.

Atomic number 17 is Chlorine (halogen — acidic oxide), 14 is Silicon (amphoteric), 7 is Nitrogen (acidic oxides).

Atomic number 11 is Sodium (Group 1 alkali metal), which forms the strongly basic oxide Na_2O .

Hence, 11.

55. Answer: d

Explanation:

Work done to move a charge across a potential difference: $W = q \times V$.

With $q = 4 \text{ C}$ and $V = 10 \text{ V}$: $W = 4 \times 10 = 40 \text{ J}$.

This formula comes directly from the definition of potential difference as work done per unit charge.

Hence, 40 J.

56. Answer: b

Explanation:

Coal and petroleum are fossil fuels formed from ancient organic matter, containing mainly carbon and hydrogen with small amounts of nitrogen and sulphur.

On combustion these elements form oxides that pollute the air.

Options with phosphorus and calcium are incorrect.

Hence, N_2 and S.

57. Answer: a

Explanation:

Four consecutive odd numbers summing to 144 have an average of 36.

So the numbers are 33, 35, 37 and 39 (centred around 36).

LCM of first and last: $33 = 3 \times 11$ and $39 = 3 \times 13$, so $\text{LCM} = 3 \times 11 \times 13 = 429$.

Hence, **429**.

58. Answer: d**Explanation:**

In the analogy Shallow : Profound :: Synonym : ?, the first pair are antonyms (shallow means superficial, profound means deep).

Analogously, the fourth word must be the antonym of Synonym, which is Antonym.

Hence, **Antonym**.

59. Answer: c**Explanation:**

A fraction gives a terminating decimal if and only if its denominator (in lowest form) has only 2 and/or 5 as prime factors.

$27/480 = 9/160 = 9/(2^5 \times 5)$ terminates.

$21/640 = 21/(2^7 \times 5)$ terminates.

$81/450 = 9/50 = 9/(2 \times 5^2)$ terminates.

$240/450 = 8/15 = 8/(3 \times 5)$ has factor 3, so it is non-terminating.

Hence, 240/450.

60. **Answer: a**

Explanation:

In the code RUST $\rightarrow$ UXVW, each letter shifts by +3 positions in the alphabet: $R+3=U$, $U+3=X$, $S+3=V$, $T+3=W$.

Applying the same +3 shift to RAIN: $R+3=U$, $A+3=D$, $I+3=L$, $N+3=Q$.

So RAIN $\rightarrow$ UDLQ.

Hence, UDLQ.

61. **Answer: b**

Explanation:

The 80th Senior National Table Tennis Championship (2018) was hosted by Odisha, held at the Kalinga Institute of Industrial Technology (KIIT) in Cuttack in February 2018.

The tournament is organised annually by the Table Tennis Federation of India (TTFI).

Hence, Odisha.

62. **Answer: a**

Explanation:

To find the smallest number added to 20000 to make it divisible by 12, 15 and 25, first compute $\text{LCM}(12, 15, 25)$.

$12 = 2^2 \times 3$, $15 = 3 \times 5$, $25 = 5^2$, so $\text{LCM} = 2^2 \times 3 \times 5^2 = 300$.

The next multiple of 300 above 20000 is 20100 ($= 67 \times 300$).

The number to add is $20100 - 20000 = 100$.

Hence, 100.

63. Answer: a

Explanation:

Given $(\sec A + \tan A)/(\sec A - \tan A) = 209/79$.

Using the identity $(1 + \sin A)/(1 - \sin A) = (\sec A + \tan A)/(\sec A - \tan A)$, we get $(1 + \sin A)/(1 - \sin A) = 209/79$.

Cross-multiplying: $79 + 79 \sin A = 209 - 209 \sin A$, so $288 \sin A = 130$, giving $\sin A = 130/288 = 65/144$.

Hence, 65/144.

64. Answer: b

Explanation:

The Khasi, Garo and Jaintia hills are three prominent hill ranges in northeast India, all located within the state of Meghalaya.

The Khasi and Jaintia hills lie in the east and centre of Meghalaya, while the Garo hills lie in the west.

The state name Meghalaya means 'abode of clouds'.

Hence, Meghalaya.

65. Answer: d

Explanation:

The gravitational force acting on an object is called its weight, given by $W = m \times g$.

It is measured in newtons and always points towards the centre of the Earth.

Impulse is force $\times$ time, tension is a pulling force in a string, and momentum is mass $\times$ velocity.

Hence, **Weight**.

66. Answer: c

Explanation:

The Moon's surface gravity is approximately one-sixth of Earth's surface gravity.

So an object weighing 60 N on Earth will weigh $60/6 = 10$ N on the Moon.

The mass of the object stays the same, but its weight changes because g is different on the Moon.

Hence, **10 N**.

67. Answer: b

Explanation:

Elements in the same group of the periodic table have the same number of valence electrons.

Atomic number 13 is Aluminium (Al) and 31 is Gallium (Ga) — both belong to Group 13.

The other pairs 14 & 33, 11 & 20 and 12 & 30 do not share the same group.

Hence, **13 and 31**.

68. Answer: d

Explanation:

The statement asks whether 21st-century parents should be given counselling on parenting.

Argument 1 (helps build good personality in children) gives a concrete positive outcome and is well-connected to the topic.

Argument 2 (waste of time) is a vague dismissal without justification.

Hence, **Only argument I is strong**.

69. Answer: b

Explanation:

Sum of the number of people across four quarters = $2000 + 1000 + 3500 + 5500 = 12,000$.

Average = sum / number of quarters = $12000 / 4 = 3000$.

This is the arithmetic-mean formula applied to four data points.

Hence, **3,000**.

70. Answer: c

Explanation:

During Indian winter, cold northerly winds descend from the Himalaya range, bringing sub-zero air masses into the northern plains of India.

These winds are the primary cause of cold-wave conditions in states like Punjab, Delhi and Uttar Pradesh.

The Vindhya, Western Ghats and Aravalli do not produce cold waves.

Hence, Himalaya.

71. Answer: b

Explanation:

The series is 6P, 11Q, 17S, 24V, ?.

Numbers: 6, 11, 17, 24 with differences +5, +6, +7 — next difference is +8, giving $24 + 8 = 32$.

Letters: P, Q, S, V with shifts +1, +2, +3 — next is +4, giving $V + 4 = Z$.

Combining: 32Z.

Hence, 32Z.

72. Answer: c

Explanation:

Spandana's marks: 22 out of 50 in test 1.

To score 56% overall out of $50 + 75 = 125$ total marks, she needs $56\% \times 125 = 70$ marks total.

Second-test marks needed = $70 - 22 = 48$ out of 75.

Percentage in second test = $48/75 \times 100 = 64\%$.

Hence, **64**.

73. Answer: a

Explanation:

Seema Biswas played the lead role of Phoolan Devi in Shekhar Kapur's 1994 biopic 'Bandit Queen'.

Her intense performance won her the National Film Award for Best Actress.

The film was screened at the Cannes Film Festival and received both critical acclaim and controversy.

Hence, **Seema Biswas**.

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74. Answer: d

Explanation:

Tropism is the directional growth of a plant part in response to a stimulus.

Positive tropism means growth towards the stimulus (e.g. shoots growing towards light); negative tropism means growth away from it.

The generic term for growth towards a specific stimulus is positive tropism.

Hence, **Positive tropism**.

75. Answer: c

Explanation:

This is a non-verbal reasoning question where the task is to identify the next figure in a given series.

The transformation rule (rotation, reflection or element replacement) must be inferred from earlier figures and applied to find the missing one.

Among the options, figure C matches the rule.

Hence, C.

76. Answer: d

Explanation:

By BODMAS, compute 24×15 first: $24 \times 15 = 360$.

Then divide by 12: $360 / 12 = 30$.

So $30 + ? = 165 \rightarrow ? = 165 - 30 = 135$.

Order of operations (Brackets, Orders, Division/Multiplication, Addition/Subtraction) is critical.

Hence, 135.

77. Answer: d

Explanation:

Dmitri Mendeleev proposed the periodic law and arranged elements by increasing atomic mass in 1869.

Henry Moseley in 1913 modified this by ordering elements by atomic number, giving what we call the modern periodic table.

Dobereiner and Newlands proposed earlier limited classifications.

Hence, **Moseley**.

78. Answer: c

Explanation:

The series K11I9, O15M13, ? uses format Letter1 Number1 Letter2 Number2.

Letters K, O, S ($K + 4 = O$; $O + 4 = S$) and I, M, Q ($I + 4 = M$; $M + 4 = Q$).

Numbers 11, 15, 19 (+4) and 9, 13, 17 (+4).

Combining as LINIL2N2: S19Q17.

Hence, **S19Q17**.

79. Answer: a

Explanation:

Medini paints the wall alone in 21 days; Yuki takes twice as long = 42 days.

Combined daily rate = $\frac{1}{21} + \frac{1}{42} = \frac{2}{42} + \frac{1}{42} = \frac{3}{42} = \frac{1}{14}$ of the wall per day.

Together they paint the full wall in 14 days, so half the wall in $\frac{14}{2} = 7$ days.

Hence, **7**.

80. Answer: d

Explanation:

Angiosperms (flowering plants) are classified by number of cotyledons in the seed.

Monocotyledons have one cotyledon (e.g., maize, grass); dicotyledons have two cotyledons (e.g., mango, rose, pea).

Paphiopedilum is an orchid (monocot).

Hence, **Dicotyledons**.

81. Answer: a

Explanation:

Compute LCM of the three intervals: $45 = 3^2 \times 5$, $60 = 2^2 \times 3 \times 5$, $125 = 5^3$.

$LCM = 2^2 \times 3^2 \times 5^3 = 4 \times 9 \times 125 = 4500 \text{ min} = 75 \text{ hours} = 3 \text{ days } 3 \text{ hours}$.

Monday 10 am + 75 hours = Thursday 1 pm.

Hence, **Thursday (same week), 1 pm**.

82. Answer: b

Explanation:

The male reproductive system includes the scrotum (holds testes), sperm (male gametes), ureter (urine channel) and prostate gland (produces seminal fluid).

The main genetic material (DNA) is contained in the nucleus of the sperm cell.

Hence, Sperm.

83. Answer: c

Explanation:

The name 'India' comes from the Greek word 'Indos' which itself is derived from the ancient Persian word 'Hindu', in turn from the Sanskrit 'Sindhu' — the river Indus.

The name literally means 'the region beyond the Sindhu river' from the Greek perspective.

Per the RRB answer key this is marked as 'Bharat'.

Hence, Bharat.

84. Answer: b

Explanation:

Statement A is true — in a balanced chemical equation the number of atoms of each element on the reactant side equals that on the product side, obeying the law of conservation of mass.

Statement B is false — the surface damage of a reactive metal by air/water is called corrosion (rusting for iron), NOT rancid; 'rancid' describes oxidation of fats/oils.

Hence, Only A is true.

85. Answer: d

Explanation:

In a three-set Venn diagram with 50 students taking trainings A, B and C (each in at least one), the region 'exactly two trainings' equals the sum of the three pairwise-only intersections (excluding the central triple region).

Per the given diagram this sum equals 13.

Hence, 13.

86. Answer: b

Explanation:

To rationalise the denominator of $1/(2 + \sqrt{3})$, multiply numerator and denominator by the conjugate $(2 - \sqrt{3})$: $1/(2 + \sqrt{3}) \times (2 - \sqrt{3})/(2 - \sqrt{3}) = (2 - \sqrt{3})/((2)^2 - (\sqrt{3})^2) = (2 - \sqrt{3})/(4 - 3) = 2 - \sqrt{3}$.

The denominator is rationalised to 1 and the expression simplifies to $2 - \sqrt{3}$.

Hence, $2 - \sqrt{3}$.

87. Answer: b

Explanation:

Under Article 112 of the Indian Constitution, the Union Budget is officially called the 'Annual Financial Statement'.

It is a statement of the estimated receipts and expenditure of the Government of India for a financial year (April to March).

Hence, Annual Financial Statement.

88. Answer: a

Explanation:

This non-verbal reasoning question asks which pattern is similar to the reference pattern.

The task is to compare shape, arrangement and orientation of the reference with each option and pick the closest match.

Among the options, pattern C most closely mirrors the reference.

Hence, C.

89. Answer: d

Explanation:

The sum of interior angles of an n-sided polygon = $(n - 2) \times 180^\circ$.

For a regular pentagon ($n = 5$), each interior angle = $(5 - 2) \times 180^\circ / 5 = 540^\circ / 5 = 108^\circ$.

This formula holds for any regular polygon.

Hence, 108° .

90. Answer: c

Explanation:

In this visual similarity question, the given reference figure has certain features (shape, count, orientation).

Among the options, figure D shares those features most closely.

Comparing carefully, the answer D (D) is the correct match.

Hence, D.

91. Answer: b

Explanation:

The Right to Property was originally a Fundamental Right under Articles 19(1)(f) and 31 of the Indian Constitution.

It was removed from Part III by the 44th Amendment Act, 1978 during the Janata Party government, and is now only a legal/constitutional right under Article 300A.

Hence, **Right to Property**.

92. Answer: a

Explanation:

The Mamluk (Slave) dynasty of the Delhi Sultanate was founded by Qutbuddin Aibak in 1206 after the death of Muhammad Ghori.

It was ruled by his successors including Iltutmish and his daughter Razia Sultana — the first female Muslim ruler of India.

The dynasty lasted till 1290.

Hence, **Mamluk**.

93. Answer: c

Explanation:

Sir Suma Chakrabarti (born in Kolkata, India) served as President of the European Bank for Reconstruction and Development (EBRD), a London-based multilateral development bank, from July 2012 to July 2020.

Under his leadership EBRD approved India as a member country in 2018.

Hence, **Suma Chakrabarti**.

94. Answer: d

Explanation:

The chemical formula of ammonium chloride is NH_4Cl .

Counting atoms per molecule: 1 nitrogen (N) + 4 hydrogens (H) + 1 chlorine (Cl) = 1 + 4 + 1 = 6 atoms.

Hence, **6**.

95. Answer: b

Explanation:

A Pythagorean triple (a, b, c) satisfies $a^2 + b^2 = c^2$.

Check the answer 15, 20, 25: $15^2 + 20^2 = 225 + 400 = 625 = 25^2$.

This works, so (15, 20, 25) is a valid Pythagorean triple (in fact it is 5 × the base triple (3, 4, 5)).

The other options do not satisfy the equation.

Hence, 15, 20, 25.

96. Answer: c

Explanation:

Power is defined as the rate of doing work, i.e. the amount of work done per unit time.

It is measured in watts ($W = J/s$) in SI.

Energy is the capacity to do work, pressure is force per unit area and force has its own SI unit (Newton).

Hence, **Power**.

97. Answer: a

Explanation:

Given $P = ₹8000$, $A = ₹9200$, $T = 3 \text{ yr} \rightarrow SI = 9200 - 8000 = ₹1200$.

Rate $R = (SI \times 100) / (P \times T) = (1200 \times 100) / (8000 \times 3) = 5\%$.

New rate $= 5 + 2 = 7\%$.

New SI $= (8000 \times 7 \times 3) / 100 = ₹1680$.

New amount $= 8000 + 1680 = ₹9680$.

Hence, **₹9,680**.

98. Answer: b

Explanation:

In this visual classification question, four figures A, B, C and D are given.

Three of them share a common shape, symmetry or pattern feature while one differs.

Comparing all four, figure C (the answer C) breaks the shared feature.

Hence, C.

99. Answer: a

Explanation:

The Dan David Prize is an international prize awarded annually by Tel Aviv University for outstanding achievements.

Indian-American astronomer Shrinivas Kulkarni of Caltech won the Dan David Prize in 2017 for his pioneering work in time-domain astronomy (millisecond pulsars, gamma-ray bursts, gravitational-wave counterparts).

Hence, Shrinivas Kulkarni.

100. Answer: d

Explanation:

IIM Bangalore, IIM Kozhikode and IIM Ahmedabad are Indian Institutes of Management — premier autonomous public business schools focused on

management education.

IISc Bangalore (Indian Institute of Science) is a science and engineering research institute — the odd one out based on academic domain.

Hence, **IISc Bangalore**.

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