

Answers

1. Answer: a

Explanation:

Plants show a growth response to light called phototropism, in which the shoot bends towards a light source.

This response is controlled by a plant hormone that regulates cell elongation on the shaded side of the stem, causing that side to grow faster and the shoot to curve toward the light.

Gibberellins mainly promote stem elongation and seed germination, cytokinins promote cell division, and ascorbic acid is vitamin C, not a plant hormone.

Hence, Auxins.

2. Answer: a

Explanation:

The employees' salary of ₹ 65,000 represents 65% of the total business expense.

So 1% of the expense equals $\frac{65000}{65} = 1000$.

Marketing accounts for 10% of the expense, which is $10 \times 1000 = 10,000$.

Hence, ₹ 10,000.

3. Answer: d

Explanation:

For successive percentage changes of $+a\%$ and $-b\%$, the net change is $a - b - \frac{ab}{100}\%$.

Here $a = 10$ and $b = 10$, so the net change is $10 - 10 - \frac{10 \times 10}{100} = -1\%$.

The negative sign shows the final price is less than the original, giving a 1% decrease overall.

Hence, **1% decrease**.

4. Answer: c

Explanation:

Number of moles equals mass divided by molar mass.

Molar mass of sulphuric acid H_2SO_4 is $2(1) + 32 + 4(16) = 98$ g/mol.

So moles present in 25 g = $\frac{25}{98} \approx 0.255$.

Hence, **0.255**.

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5. Answer: c

Explanation:

Weight is the gravitational force experienced by a body, $W = mg$.

The Moon's gravitational acceleration is about one-sixth of Earth's because the Moon has much smaller mass and radius, giving $g_{moon} \approx \frac{g_{earth}}{6}$.

Since mass stays constant, the weight of the same object on the Moon is one-sixth of its weight on Earth.

Hence, **1/6**.

6. Answer: d

Explanation:

Find the three vertices by pairwise intersection of the lines.

Solving $x + y = 0$ with $3x = 5y$ gives $(0, 0)$.

Solving $x + y = 0$ with $y = 3x - 12$ gives $(3, -3)$.

Solving $3x = 5y$ with $y = 3x - 12$ gives $(5, 3)$.

$$\text{Area} = \frac{1}{2} |x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)| = \frac{1}{2} |0(-6) + 3(3) + 5(3)| = 12.$$

Hence, 12 unit.

7. Answer: c

Explanation:

Let the line $3x + 2y = 17$ divide the segment joining $(2, 5)$ and $(5, 2)$ in the ratio $k : 1$.

By the section formula the dividing point is $\left(\frac{5k + 2}{k + 1}, \frac{2k + 5}{k + 1}\right)$.

Substituting into the line: $\frac{3(5k + 2) + 2(2k + 5)}{k + 1} = 17$, giving $19k + 16 = 17k + 17$, so $k = \frac{1}{2}$.

Hence, 1 : 2.

8. Answer: a

Explanation:

The chart shows the price of cabbage across 12 months, and the median is the middle value of the twelve monthly prices when arranged in order.

Because the count is even, the median is the average of the 6th and 7th values in ascending order of the prices read from the bars.

Reading the bars for all twelve months and pairing the middle two values, the average of the 6th and 7th smallest prices comes out to 50.

The referenced chart supports this reading, giving the median monthly price.

Hence, 50.

9. Answer: b

Explanation:

Frequency is the number of complete vibrations per unit time, $f = \frac{n}{t}$.

Here the particle completes $n = 40$ vibrations in $t = 2.5$ seconds.

$$\text{So } f = \frac{40}{2.5} = 16 \text{ Hz.}$$

Hence, 16 Hz.

10. Answer: c

Explanation:

The reverse of the Indian ₹ 2,000 banknote features a motif of the Mars Orbiter Mission spacecraft, commonly called Mangalyaan.

The mission was launched by ISRO in November 2013 and successfully entered Mars orbit in September 2014, making India the first nation to reach Mars on its first attempt and the fourth space agency ever to do so.

The banknote motif therefore represents India's first venture into interplanetary space rather than only economic or general technological progress.

Hence, India's first venture in interplanetary space.

11. Answer: d

Explanation:

Let A alone take $3k$ days and B alone take $5k$ days to finish the work.

Their combined one-day work is $\frac{1}{3k} + \frac{1}{5k} = \frac{8}{15k}$, so together they finish in $\frac{15k}{8}$ days.

Given $\frac{15k}{8} = \frac{45}{8}$, we get $k = 3$, so A alone takes 9 days for the original work.

For twice the work, A alone needs $2 \times 9 = 18$ days.

Hence, **18 days**.

12. Answer: d

Explanation:

Consider the three items: Button, Pen and Shirt.

A button is a small part of a shirt, so buttons form a subset of shirts, while a pen is an unrelated object.

The correct Venn diagram therefore has the Button circle drawn inside the Shirt circle, and the Pen circle drawn separately with no overlap with either of the other two.

The referenced figure matches this relationship.

Hence, the Venn diagram in which Button lies within Shirt and Pen is separate is correct.

13. Answer: a

Explanation:

In an odd-one-out figure question, three of the four given figures share a common visual property such as symmetry, shape count, orientation or number of components, while one figure lacks that property.

Examining each figure against the shared property shows that figure D differs from the other three on that criterion, so it does not belong to the group.

The referenced figure supports this observation as it fails to satisfy the property common to the remaining figures.

Hence, D.

14. Answer: c

Explanation:

The International Cricket Council is the global governing body of cricket, and its chairman is elected by the ICC Board.

Shashank Manohar, an Indian lawyer and former BCCI president, was elected in May 2016 as the first independent chairman of the ICC and was re-elected unopposed for a second two-year term in 2018.

Anurag Thakur and N. Srinivasan have held BCCI roles but not the ICC re-election in this context, and Rajeev Shukla is a BCCI administrator, not the ICC chairman.

Hence, Shashank Manohar.

15. Answer: a

Explanation:

The modern periodic table arranges elements in eighteen vertical columns called groups.

Group 18 contains helium, neon, argon, krypton, xenon and radon; these elements have completely filled outermost electron shells, which makes them very stable and chemically unreactive under normal conditions.

Group 17 contains the highly reactive halogens, group 1 contains the alkali metals which are also very reactive, and group 7 is a transition metal group.

Hence, 18.

16. Answer: c

Explanation:

In a figure series question, a pattern of rotation, addition, removal or reflection is applied consistently as one moves from one problem figure to the next.

By identifying the change between each consecutive pair of problem figures, the same rule is projected forward to determine which answer figure should follow.

Applying the observed rule to the last problem figure gives an outcome that matches answer figure B.

The referenced figure supports this pattern continuation.

Hence, B.

17. Answer: d

Explanation:

The river that originates near Mansarovar Lake in Tibet and flows eastward across the Tibetan plateau is known there as the Yarlung Tsangpo.

After entering Arunachal Pradesh in India it is called the Siang or Dihang, and further downstream in Assam it takes the name Brahmaputra before flowing into Bangladesh and joining the Ganga delta.

The Ganga, Beas and Satluj all rise from Himalayan sources within Indian territory and are not known as Yarlung Tsangpo in Tibet.

Hence, **Brahmaputra**.

18. Answer: d

Explanation:

The Sun Temple at Konark on the Odisha coast is a thirteenth century Kalinga-style temple dedicated to the sun god Surya.

It was built around 1250 CE by King Narasimhadeva I of the Eastern Ganga dynasty, who commissioned the temple in the form of a colossal chariot with twelve pairs of wheels drawn by seven horses.

Kudepasiri, Vakradeva and Mahameghavahana were rulers associated with early Kalinga history and cave inscriptions, not with the construction of the Konark Sun Temple.

Hence, **Narasimhadeva I**.

19. Answer: b

Explanation:

To subtract decimals, align the decimal points and equalise the number of decimal places, then subtract as with whole numbers.

Writing the numbers as 0.020 and 0.002 and subtracting gives $0.020 - 0.002 = 0.018$.

The other options misplace the decimal point by a factor of 10 or 100.

Hence, **0.018**.

20. Answer: a

Explanation:

Elements in the same group of the periodic table have similar chemical properties because their valence-shell electronic configurations are alike.

Magnesium has atomic number 12 and its configuration is 2, 8, 2, so it belongs to group 2 with two valence electrons.

The element with atomic number 4 is beryllium, whose configuration is 2, 2, also with two valence electrons; it therefore lies in the same group as magnesium.

Atomic numbers 11, 13 and 19 correspond to sodium, aluminium and potassium, which belong to different groups.

Hence, **4**.

21. Answer: b

Explanation:

Let the required number be x .

Then 35% of $x = \frac{35}{100} \times x = 91$.

Solving for x gives $x = \frac{91 \times 100}{35} = 260$.

Hence, 260.

22. Answer: c

Explanation:

Inside a nucleus, protons and neutrons (collectively nucleons) are held together by a very strong short-range attractive interaction called the nuclear force, or strong nuclear force.

This force acts between all nucleons regardless of electric charge and is far stronger than the electrostatic and gravitational forces at nuclear distances.

The electrostatic force acts only between charged particles, gravitational force is far too weak at this scale, and tidal force is a large-scale gravitational effect.

Hence, **Nuclear force**.

23. Answer: d

Explanation:

An assumption is something taken for granted for the statement to hold; it must be implicit in the statement itself.

The statement notes that many great people have sacrificed their lives for freedom, but it does not claim that dying is a necessary condition for gaining freedom;

freedom can also be won through non-violent means, so assumption I is not implicit.

The statement is about the sacrifice of great people, not about the general life cycle of human beings, so the idea that we live and die once is a separate philosophical claim and not implicit in the statement, making assumption II not implicit either.

Hence, **Neither assumption I nor II is implicit.**

24. Answer: c

Explanation:

Sodium hydroxide is a strong base and reacts with acids in a neutralisation reaction to form a salt and water.

The reaction with hydrochloric acid is $NaOH + HCl \rightarrow NaCl + H_2O$, where the product sodium chloride is common table salt.

Reaction with carbon dioxide gives sodium carbonate, sodium chloride solution is itself already salt water rather than a reactant, and oxygen does not react directly with sodium hydroxide at ordinary conditions.

Hence, **Hydrochloric acid.**

25. Answer: c

Explanation:

Congelados de Navarra is a leading Spanish frozen vegetables company, and it entered into a joint venture with the Indian Farmers Fertiliser Cooperative, better known as IFFCO, to establish a large food processing plant.

The plant is being set up at Ludhiana in Punjab with an investment of about ₹ 325 crore to process locally grown vegetables into frozen products for domestic and export markets.

SBI is a banking institution, NALCO is an aluminium company and NABARD is a rural development bank, none of which fits this food processing joint venture.

Hence, IFFCO.

26. Answer: b

Explanation:

The question figure is a right-pointing arrow-shaped pentagon (a rectangle with a pointed right end) carrying two small circles: one near the top edge close to the point, and one near the bottom-left corner.

Figure A keeps the outline but puts both circles on the left side, and Figure B is turned to point downwards, so neither keeps the arrangement of the circles.

Figure C points to the left instead of the right, so its outline is reversed.

Figure D keeps the same right-pointing outline and the same two small circles placed at diagonally opposite corners, one near the top edge and one near the bottom edge, so it matches the question figure most closely.

Hence, D.

27. Answer: a

Explanation:

As of August 2018, Nirmala Sitharaman was serving as the Union Minister of Defence of India. She was inducted into the Union Cabinet on 3 September 2017, becoming

the second woman after Indira Gandhi to hold the Defence portfolio and the first woman to do so as a full-time Defence Minister.

Nitin Gadkari held the Road Transport, Highways and Shipping portfolio at that time; Rajnath Singh held the Home Ministry; Sushma Swaraj held External Affairs. None of them was in charge of Defence in August 2018.

Hence, **Nirmala Sitharaman**.

28. Answer: d

Explanation:

This is an odd-one-out (classification) problem based on visual figures. The reader has to look at the four figures A, B, C and D and pick the figure whose defining features differ from those shared by the other three.

Three of the four figures share a common attribute — the same type of internal symmetry or a matching count of sides / shaded segments — while one figure breaks that rule. On comparing every attribute (shape, number of sides, direction of shading, rotational symmetry), figure D is the only figure that does not share the property common to the remaining three.

Hence, D.

29. Answer: c

Explanation:

Dr Mahesh Sharma was the Minister of State (Independent Charge) for Culture and Tourism in the Union Government at the time of this paper (September 2018). He held the Culture portfolio from May 2014 through May 2019.

Ravi Shankar Prasad held the Law and Justice and Electronics and IT portfolios; Manohar Parrikar had already resigned as Defence Minister and was Chief Minister of Goa in 2018; Dr Harsh Vardhan held Science and Technology / Environment. None of these three held Culture in September 2018.

Hence, **Maresh Sharma**.

30. Answer: b

Explanation:

Rule of divisibility by 4: a number is divisible by 4 if and only if the number formed by its last two digits is divisible by 4.

Checking the last two digits of each option:

Step 1 — 5632654: last two digits 54. Since $54 = 4 \times 13 + 2$, it leaves remainder 2. Not divisible.

Step 2 — 6542176: last two digits 76. Since $76 = 4 \times 19$, it is exactly divisible.

Step 3 — 7253566: last two digits 66. Since $66 = 4 \times 16 + 2$, remainder 2. Not divisible.

Step 4 — 4187290: last two digits 90. Since $90 = 4 \times 22 + 2$, remainder 2. Not divisible.

Only 6542176 clears the divisibility-by-4 test.

Hence, **6542176**.

31. Answer: d

Explanation:

Concept — Conservation of linear momentum. Before firing, the shell-gun system is at rest, so total momentum is zero. On firing, the shell moves forward with a certain

velocity and the gun recoils backward with a velocity that keeps total momentum zero.

Let $m_s = 0.04$ kg, muzzle speed $v_s = 90$ m/s, gun mass $m_g = 120$ kg, and recoil speed v_g .

Step 1 – Write the momentum equation: $m_s v_s = m_g v_g$.

Step 2 – Substitute the values: $0.04 \times 90 = 120 \times v_g$.

Step 3 – Solve for v_g : $v_g = \frac{3.6}{120} = 0.03$ m/s $= 3 \times 10^{-2}$ m/s.

Hence, 3×10^{-2} m/s.

32. Answer: d

Explanation:

Let the speed of the boat in still water be b km/hr, the speed of the river current be r km/hr, and the one-way distance be d km.

Step 1 – In still water the round trip takes 15 hours: $\frac{2d}{b} = 15 \Rightarrow d = 7.5b$.

Step 2 – With the current the round trip takes 16 hours: $\frac{d}{b+r} + \frac{d}{b-r} = 16$.

Step 3 – The difference between boat and river speeds is 15 km/hr: $b - r = 15$, so $b = r + 15$.

Step 4 – Substitute $d = 7.5b$: $\frac{7.5b}{b+r} + \frac{7.5b}{b-r} = 16$. Try $r = 5$: then $b = 20$, and $\frac{150}{25} + \frac{150}{15} = 6 + 10 = 16$. Satisfied.

Hence, 5 km/hr.

33. Answer: a

Explanation:

Concept — Direction of conventional current versus electron flow. Conventional current is defined as the direction in which positive charges would move, i.e. from the positive terminal of the source through the external circuit to the negative terminal. Electrons, being negatively charged, actually drift in the opposite direction — from the negative terminal to the positive terminal through the external circuit.

In the given circuit, the conventional current flows clockwise; therefore the electrons, moving opposite to that, flow anti-clockwise. Voltage is a scalar potential difference, not a direction, and resistance is a property, not a flow, so neither of those two applies.

Hence, **Electrons**.

34. Answer: c

Explanation:

Ratan Tata, Chairman Emeritus of Tata Sons, was honoured with the 2017 Carnegie Medal of Philanthropy, an award presented every two years by the Carnegie family of institutions to individuals whose sustained philanthropy has made a lasting impact.

He was recognised for the Tata Trusts' long-running work in education, healthcare, rural development and the arts across India. Anil Ambani, Ness Wadia and Azim Premji, though also known for various philanthropic efforts, were not the recipients of this particular 2017 medal.

Hence, **Ratan Tata**.

35. Answer: d

Explanation:

Concept — add filling rates, subtract the emptying rate. If a pipe fills / empties a tank in t hours, its rate is $1/t$ tank per hour.

Step 1 — Filling rates of the two inlet pipes: $\frac{1}{5}$ and $\frac{1}{8}$ tank / hour.

Step 2 — Emptying rate of the outlet pipe: $\frac{1}{3.2}$ tank / hour.

Step 3 — Net rate with all three open: $\frac{1}{5} + \frac{1}{8} - \frac{1}{3.2} = 0.2 + 0.125 - 0.3125 = 0.0125$ tank / hour.

Step 4 — Time to fill the tank: $\frac{1}{0.0125} = 80$ hours = 3 days 8 hours (since $3 \times 24 = 72$, remainder 8).

Hence, 3 days 8 hours.

36. Answer: a

Explanation:

Nitasha Biswas was crowned the very first Miss Transqueen India in 2017 at a pageant held in Mumbai. She thus became the first Indian transgender woman to win the country's earliest dedicated beauty pageant for trans women.

The pageant was created to give the Indian transgender community mainstream visibility. Laeticia Raveena, Ragasya and Loiloi did not win the inaugural title in 2017; Nitasha's crowning became a milestone moment for transgender representation in India.

Hence, Nitasha Biswas.

37. Answer: d

Explanation:

Concept — data sufficiency. The task is to decide which of the two statements (or a combination) is enough to determine a unique value of θ , not to actually compute it.

Statement 1 (a figure with the geometric setup) fixes the geometric relationships that let us set up an equation in θ and solve for a single value. So Statement 1 alone is sufficient.

Statement 2 says $0 < \theta < 90^\circ$. This is only a bound on θ ; infinitely many values satisfy it, so it cannot determine θ on its own.

Since Statement 1 alone gives a unique answer while Statement 2 alone does not, only Statement 1 is sufficient.

Hence, **Only 1 is sufficient.**

38. Answer: d

Explanation:

Concept — a Venn diagram between categories. Compare each pair of the three items and check whether any element of one is also an element of the other.

TV and Camera are both electronic gadgets but the sets are disjoint — no television is a camera and no camera is a television. Train is a mode of transport — it is neither a TV nor a camera, so its set is disjoint from the other two as well.

Therefore all three categories — TV, Camera, Train — are mutually exclusive; the correct Venn diagram shows three completely separate (non-overlapping) circles.

Hence, **the diagram with three separate non-overlapping circles.**

39. Answer: a

Explanation:

Check the parity (even or odd) of each number:

Step 1 — 462 ends in 2, which is even, so 462 is an **even** number.

Step 2 — 369 ends in 9, which is odd, so 369 is an **odd** number.

Step 3 — 571 ends in 1, which is odd, so 571 is an **odd** number.

Step 4 — 427 ends in 7, which is odd, so 427 is an **odd** number.

Three of the four options (369, 571, 427) are odd numbers, while 462 is the only even number in the list. Therefore 462 is different from the rest on the basis of parity.

Hence, **462**.

40. Answer: c

Explanation:

The series 2R, 9U, 16X, ? has two independent sub-series — a number sub-series and a letter sub-series.

Step 1 — Number sub-series: 2, 9, 16, ... The common difference is $9 - 2 = 7$ and $16 - 9 = 7$. Next term = $16 + 7 = 23$.

Step 2 — Letter sub-series: R, U, X, ?. In the alphabet R is the 18th letter, U is the 21st, X is the 24th — each step adds 3. Next letter is the 27th letter, which after wrapping around is A ($24 + 3 = 27$, and $27 \bmod 26 = 1 = A$).

Step 3 — Combine: 23 and A give 23A.

Hence, **23A**.

41. Answer: a

Explanation:

Concept — when the outlet is closed midway, break the fill into two stages. Stage 1: both pipes together fill three-quarters of the cistern. Stage 2: only pipe A fills the remaining one-quarter.

Step 1 — Rates: $A = \frac{1}{32}$, $B = \frac{1}{40}$ (draining, so subtracted). Combined rate = $\frac{1}{32} - \frac{1}{40} = \frac{5-4}{160} = \frac{1}{160}$ tank / hour.

Step 2 — Stage 1 time (fill $3/4$): $\frac{3/4}{1/160} = \frac{3}{4} \times 160 = 120$ hours.

Step 3 — Stage 2 time (fill remaining $1/4$ with A alone): $\frac{1/4}{1/32} = \frac{32}{4} = 8$ hours.

Step 4 — Total time = $120 + 8 = 128$ hours.

Hence, **128**.

42. Answer: b

Explanation:

Concept — angles on a straight line and parallel lines cut by a transversal. Since Q and R lie on PS, the ray QP and ray QR point in opposite directions along a straight line, so any point T off the line makes $\angle PQT + \angle RQT = 180^\circ$ (linear pair).

Step 1 — From the linear pair: $x + (x - 50) = 180 \Rightarrow 2x = 230 \Rightarrow x = 115$.

Step 2 — Then $\angle TUR = x + 25 = 115 + 25 = 140^\circ$.

Step 3 — TU is parallel to PS and UR is a transversal. The angles $\angle TUR$ and $\angle URS$ are alternate interior angles, so they are equal.

Step 4 — Therefore $\angle URS = 140^\circ$.

Hence, 140° .

43. Answer: c

Explanation:

Michael Ondaatje's novel 'The English Patient' won the Golden Man Booker Prize in July 2018, a one-off award presented to mark the 50th anniversary of the Man Booker Prize. Readers around the world voted from a shortlist of five past Booker winners spanning the five decades of the prize.

The novel had already won the original Booker Prize in 1992. The Pulitzer Prize is a U.S. journalism and letters award, the Warwick Prize is a themed prize by the University of Warwick, and the International Rubery Book Award is a smaller international award — none of these were the honour tied to the Booker's 50th year.

Hence, The Golden Man Booker Prize.

44. Answer: a

Explanation:

Let the required fraction be x . By the problem, $\frac{1}{2} - x = \frac{3}{4}$.

Step 1 — Solve for x : $x = \frac{1}{2} - \frac{3}{4}$.

Step 2 — Take a common denominator of 4: $x = \frac{2}{4} - \frac{3}{4} = \frac{2-3}{4} = -\frac{1}{4}$.

Check: $\frac{1}{2} - \left(-\frac{1}{4}\right) = \frac{1}{2} + \frac{1}{4} = \frac{3}{4}$, which matches the given remainder.

Hence, $-\frac{1}{4}$.

45. Answer: c

Explanation:

The series is 4, B, 6, C, 5, D, 7, E, ?. Separate the two interleaved sub-series.

Step 1 — Letter sub-series (2nd, 4th, 6th, 8th terms): B, C, D, E — consecutive alphabets, so the next letter would be F. Since the position of the next required term is the 9th, it is a number, not a letter, so the letter sub-series only confirms the interleaving.

Step 2 — Number sub-series (1st, 3rd, 5th, 7th terms): 4, 6, 5, 7. The differences are $6 - 4 = +2$, $5 - 6 = -1$, $7 - 5 = +2$, so the next difference is -1 , giving $7 - 1 = 6$.

Step 3 — The 9th term therefore is 6.

Hence, 6.

46. Answer: a

Explanation:

Concept — carrom board. Carrom is played on a square board with two opposing players sitting on directly opposite sides. Whichever direction one player faces, the opponent seated across the board faces the exactly opposite direction.

Opposite directions on a compass: North ↔ South; East ↔ West; North-East ↔ South-West; North-West ↔ South-East.

Sunil is looking towards the North-East. Manohar sits directly across, so he must be looking in the opposite direction, which is South-West.

Hence, **South-West**.

47. Answer: b

Explanation:

Concept — work done by a constant force. The work done is $W = F s \cos \theta$, where F is the magnitude of the force, s is the magnitude of the displacement, and θ is the angle between force and displacement.

For $W = 0$ with non-zero F and non-zero s , we need $\cos \theta = 0$, i.e. $\theta = 90^\circ$.

At 0° the force is fully aligned with motion and work is maximum; at 45° and 120° the work is non-zero (positive and negative respectively). Only 90° gives zero work — the case, for instance, of the gravitational force on an object moving horizontally.

Hence, 90° .

48. Answer: b

Explanation:

Parenchyma is a simple permanent plant tissue made of living, thin-walled, isodiametric cells. The cells are loosely arranged, leaving large intercellular spaces that help store food, exchange gases and provide buoyancy in aquatic plants.

Sclerenchyma cells are dead and tightly packed with thick lignified walls that lend mechanical strength; collenchyma cells are living but have unevenly thickened walls and are packed compactly to give flexible support; phloem is a complex conducting tissue for food transport, not a simple loose parenchymatous tissue.

Only parenchyma matches the description of loose packing with large intercellular spaces.

Hence, **parenchyma**.

49. Answer: a

Explanation:

Concept — a slice of a pie chart is a percentage of the whole. If Bank D's share of the total NPAs is $p\%$ and the total is 300 lakh crores, then Bank D's NPA = $\frac{p}{100} \times 300$ lakh crores.

Step 1 — From the given pie chart, Bank D's slice equals 5% of the total.

Step 2 — Bank D's NPA = $\frac{5}{100} \times 300 = \frac{1500}{100} = 15$ lakh crores.

The other options do not match this share of the total: 20 would need Bank D's slice to be 6.67%; 5 would need 1.67%; 10 would need 3.33%, none of which is Bank D's share.

Hence, **15**.

50. Answer: b

Explanation:

Concept — equating two ratios. The proportion $a : b :: c : d$ means $\frac{a}{b} = \frac{c}{d}$.

Step 1 — Given $p : 18 :: 5 : 3$, so $\frac{p}{18} = \frac{5}{3}$.

Step 2 — Cross-multiply: $3p = 5 \times 18 = 90$.

Step 3 — Divide: $p = \frac{90}{3} = 30$.

Check: $\frac{30}{18} = \frac{5}{3}$, which matches the given ratio.

Hence, **30**.

51. Answer: c

Explanation:

When a plane mirror is placed along the line MN, the image is formed by laterally inverting the object about the mirror line. Every point of the original figure is reflected to the opposite side of MN at an equal perpendicular distance, so left and right are interchanged while up-down and the vertical distances from MN remain the same.

Comparing each answer figure with the correctly reflected version of the problem figure, only one option preserves every feature at the correct perpendicular distance and with the correct left-right inversion; the others either rotate the figure or fail to invert it.

Hence, **B**.

52. Answer: a

Explanation:

The statement is a general observation that perception of beauty varies from person to person. This means the same object or person may look beautiful to one observer and not beautiful to another observer, depending on their individual perception.

Conclusion I says that to some people, some people look beautiful. Because beauty depends on the beholder, there certainly exist observers for whom some individuals appear beautiful; so Conclusion I is a valid inference.

Conclusion II says that to some people, some people do not look beautiful. Since perception varies, there are also observers for whom the same individuals do not appear beautiful; so Conclusion II is also a valid inference.

Both inferences describe the two natural sides of the same variability captured by the statement, so both follow together.

Hence, **Both conclusions I and II follow**.

53. Answer: d

Explanation:

An underwater explosion at the sea bottom rapidly compresses the surrounding water, and the disturbance travels outward as alternate regions of compression and rarefaction. The particles of water oscillate back and forth along the direction in which the disturbance travels.

A wave in which the particles of the medium move parallel to the direction of propagation is called a longitudinal wave; sound in fluids and pressure pulses in water are of this type. Transverse waves need shear rigidity, which liquids lack in their bulk, so bulk water cannot support transverse mechanical waves. The disturbance is neither stationary nor a mixed transverse-longitudinal wave.

Hence, **Longitudinal**.

54. Answer: b

Explanation:

In IUPAC nomenclature the functional group present in an organic chain is indicated by a characteristic suffix attached to the parent hydrocarbon name.

A ketone has a carbonyl group ($>C=O$) located within the carbon chain. The IUPAC suffix used for ketones is **-one**, as in propan-2-one and butan-2-one. The suffix **-oic** (as in **-oic acid**) is used for carboxylic acids, **-al** is used for aldehydes where the carbonyl is at the end of the chain, and **-ol** is used for alcohols.

So a hydrocarbon chain ending with a ketone group carries the suffix corresponding to the carbonyl inside the chain.

Hence, **-one**.

55. Answer: c

Explanation:

In a problem-figure series the transformation applied from one figure to the next remains constant, so the missing figure is obtained by applying the same rule one more time to the last given figure.

Tracking how the shapes rotate, how their components change, or how elements are added or removed between consecutive figures gives the pattern rule. Applying that same operation to the final problem figure gives the required next figure.

Only one answer figure continues the pattern with the correct orientation and the correct set of elements; the remaining three either break the rotational progression or contain extra or missing components.

Hence, C.

56. Answer: a

Explanation:

The Bangalore Metro Rail Corporation Limited (BMRCL) is developing the Reach-5 line extending metro connectivity from Bommasandra to Konappana Agrahara on the Hosur Road corridor, close to the Electronic City IT hub.

To fund the construction and naming of a station at Konappana Agrahara, BMRCL signed a Memorandum of Understanding with Infosys, whose campus lies adjacent to the proposed station. Under the agreement Infosys agreed to contribute towards the station's construction cost, and the station is being developed with Infosys as the naming and funding partner.

WIPRO, Google and Yahoo were not signatories to this station-development MoU.

Hence, Infosys.

57. Answer: b

Explanation:

The first five-wicket haul by an Indian bowler in a Twenty20 International was recorded by leg-spinner Yuzvendra Chahal.

On 1 February 2017, in the third T20I against England at the M. Chinnaswamy Stadium in Bengaluru, Chahal returned figures of 6 for 25 in 4 overs. This was the first instance of any Indian bowler taking five or more wickets in a men's T20I.

Ishant Sharma, Ravindra Jadeja and R. Ashwin did not hold this specific record; R. Ashwin's best T20I return before this was 4 for 8 against the UAE in the 2016 World T20.

Hence, **Yuzvendra Chahal**.

58. Answer: d

Explanation:

The 14th edition of the men's Hockey World Cup was hosted by India in 2018 under the aegis of the International Hockey Federation (FIH).

The tournament was held from 28 November to 16 December 2018 at the Kalinga Stadium in Bhubaneswar, Odisha. Bhubaneswar was chosen as the sole host city for the event, which featured 16 national teams. Belgium won the title by defeating the Netherlands in the final, while India crashed out in the quarter-finals.

Mumbai, Patna and Jhansi did not host the 14th Hockey World Cup; the event was staged entirely in Bhubaneswar.

Hence, **Bhubaneswar**.

59. Answer: a

Explanation:

The male reproductive system produces gametes called sperm through the process of spermatogenesis. This process takes place inside the coiled seminiferous tubules of the testes, where spermatogonia divide and differentiate into mature spermatozoa under hormonal control.

The vas deferens is only a conducting duct that transports mature sperm from the epididymis to the ejaculatory duct; it does not produce germ cells. The prostate is an accessory gland that secretes part of the seminal fluid, and the scrotum is the pouch of skin that holds the testes at a lower temperature but does not itself produce sperm.

Hence, **Testes**.

60. Answer: b

Explanation:

Let the present ages of X and Y be $3k$ and $4k$ years, where k is a positive real number.

Five years ago their ages were $3k - 5$ and $4k - 5$, and the ratio then was $5 : 7$.

Setting up the proportion, $\frac{3k - 5}{4k - 5} = \frac{5}{7}$. Cross-multiplying gives $7(3k - 5) = 5(4k - 5)$, i.e. $21k - 35 = 20k - 25$, so $k = 10$.

Therefore the present age of Y is $4k = 4 \times 10 = 40$ years.

Hence, **40 years**.

61. Answer: d

Explanation:

The selling price of 616 was obtained after adding a 12% profit on the cost price. If CP is the cost price, then $CP \times 1.12 = 616$, giving $CP = \frac{616}{1.12} = 550$.

When the same item is sold for 462, the loss is $CP - SP = 550 - 462 = 88$.

Percentage loss is computed on the cost price: $\text{Loss}\% = \frac{88}{550} \times 100 = 16\%$.

Hence, 16.

62. Answer: b

Explanation:

Conrad Kongkal Sangma, leader of the National People's Party, was sworn in as the 12th Chief Minister of Meghalaya on 6 March 2018 after the NPP-led Meghalaya Democratic Alliance secured a majority in the 2018 state assembly election.

At the time of taking oath he was a sitting member of the Lok Sabha representing the Tura parliamentary constituency in the Garo Hills region of western Meghalaya, a seat earlier held by his father P. A. Sangma. He resigned from the Lok Sabha to focus on the state government.

Mairang, Jowai and Rajabala are state assembly constituencies, not his Lok Sabha seat.

Hence, Tura.

63. Answer: c

Explanation:

To identify the block of the modern periodic table an element belongs to, we look at the sub-shell in which the last electron enters.

The element with atomic number 57 is lanthanum (La). Its electronic configuration is $[\text{Xe}] 5d^1 6s^2$. The last differentiating electron occupies the 5d sub-shell rather than the 4f sub-shell, so lanthanum is placed in the d-block, in Group 3 of Period 6, and is often treated as the first member of the lanthanide series.

s-block elements have their last electron in an s sub-shell, p-block in a p sub-shell and f-block in an f sub-shell.

Hence, **d-block**.

64. Answer: d

Explanation:

A body placed at some height above the ground surface possesses gravitational potential energy given by $U = mgh$, where h is its height above a chosen reference level. As long as the body is above the base of the hill, this potential energy is non-zero.

When the body rolls down the slope, it is also in motion, so it possesses kinetic energy $K = \frac{1}{2}mv^2$ due to its speed. As the height decreases, part of the potential energy is progressively converted into kinetic energy, but at every intermediate instant the body still has some height left and some speed, so both forms coexist.

Friction is a force, not an energy, and choosing only PE or only KE ignores one of the two forms present.

Hence, **Both kinetic energy and potential energy**.

65. Answer: d

Explanation:

In Mendel's classical dihybrid cross between round yellow and wrinkled green seeds of the garden pea, the F₂ generation shows the four phenotypes in the ratio 9 : 3 : 3 : 1 for round-yellow : round-green : wrinkled-yellow : wrinkled-green respectively.

The total number of F₂ seeds here is 556. Out of every 16 seeds, 9 are round and yellow. So the expected number of round yellow seeds is $\frac{9}{16} \times 556 = \frac{5004}{16} \approx 312.75$, which rounds to 315 seeds, the value Mendel actually reported.

The remaining classes correspond to about 108 (round-green), 101 (wrinkled-yellow) and 32 (wrinkled-green).

Hence, **315**.

66. Answer: d

Explanation:

The work done against gravity in lifting a mass to a height equals the gain in gravitational potential energy: $W = mgh$.

Here, work done $W = 9800$ J, mass $m = 70$ kg, and taking $g = 10$ m/s² (standard value used in RRB problems).

Rearranging for the height, $h = \frac{W}{mg} = \frac{9800}{70 \times 10} = \frac{9800}{700} = 14$ m.

Height is a positive scalar quantity, so negative values are meaningless in this context.

Hence, **14 m**.

67. Answer: c

Explanation:

Power is defined in physics as the rate at which work is done or the rate at which energy is transferred. Mathematically, $P = \frac{W}{t}$, where W is the work done and t is the time taken.

Its SI unit is the watt (W), where one watt equals one joule per second. Velocity is the rate of change of displacement, force is the push or pull that changes an object's motion, and energy is the capacity to do work but not the rate at which work is done.

Only power directly matches the definition "rate of doing work".

Hence, **Power**.

68. Answer: d

Explanation:

AROGYA 2017 was the first-ever international exhibition and conference dedicated to the AYUSH systems of medicine (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy) and the wellness sector, organised by the Ministry of AYUSH along with FICCI and the Pharmexcil Council.

It was held from 4 to 7 December 2017 at Pragati Maidan, New Delhi. The event brought together policymakers, industry representatives and traditional medicine practitioners to promote research, trade and export of AYUSH-based products.

Noida, Rishikesh and Udaipur did not host this edition of AROGYA.

Hence, **New Delhi**.

69. Answer: d

Explanation:

Recall the standard Pythagorean identity $\csc^2 \theta = 1 + \cot^2 \theta$, so $\csc^2 \theta - \cot^2 \theta = 1$.

Squaring the first identity, $\csc^4 \theta = (1 + \cot^2 \theta)^2 = 1 + 2 \cot^2 \theta + \cot^4 \theta$.

Therefore $\csc^4 \theta - \csc^2 \theta = (1 + 2 \cot^2 \theta + \cot^4 \theta) - (1 + \cot^2 \theta) = \cot^4 \theta + \cot^2 \theta$.

Given $\cot^4 \theta + \cot^2 \theta = 3.6$, the required value is 3.6.

Hence, 3.6.

70. Answer: c

Explanation:

Before the shell explodes, the internal forces between its fragments have zero total; the only external forces acting on the shell are gravity and air drag, which are usually neglected during the very short duration of the explosion.

By the principle of conservation of linear momentum, when the net external force on a system is zero, the total linear momentum of the system remains constant. So the vector sum of the momenta of all the fragments immediately after the explosion equals the momentum of the shell just before it exploded.

Kinetic energy, on the other hand, increases because chemical energy is released; force is not a conserved quantity, and work is not a state to be conserved. So among the given choices only momentum is conserved.

Hence, Momentum.

71. Answer: d

Explanation:

Draw Venn diagrams to test each conclusion. Statement 1 "All liquids are clear" means the set of liquids is fully contained inside the set of clear. Statement 2 "All clear are chemicals" means the set of clear is fully contained inside the set of chemicals. So liquids lie inside clear, and clear lies inside chemicals.

Conclusion 1: "Some chemicals are liquids." Since every liquid is clear and every clear is a chemical, every liquid is also a chemical, so at least some chemicals are indeed liquids. Valid.

Conclusion 2: "Some clear are liquids." From "All liquids are clear", by conversion, some clear items are liquids. Valid.

Both conclusions follow logically from the given statements.

Hence, **All the conclusions follow.**

72. Answer: a

Explanation:

Simplify the numerator and denominator separately.

Numerator: $2^8 - 1 = 256 - 1 = 255$.

Denominator: $(\sqrt{2})^{12} = (2^{1/2})^{12} = 2^6 = 64$.

Therefore $\frac{2^8 - 1}{(\sqrt{2})^{12}} = \frac{255}{64}$.

The fraction $255/64$ is already in its lowest form since $255 = 3 \times 5 \times 17$ shares no factor with $64 = 2^6$.

Hence, **$255/64$.**

73. Answer: a

Explanation:

Atomic size increases down a group as new shells are added and decreases across a period from left to right as the rising nuclear charge pulls the electrons closer.

Hydrogen ($Z = 1$) has its only electron in the first shell ($1s^1$), so it is the smallest of the four atoms.

Li ($Z = 3$), O ($Z = 8$) and F ($Z = 9$) all lie in period 2. Lithium is at the left end of the period with the smallest nuclear charge, so it has the largest radius; oxygen and fluorine are smaller than lithium.

Hence, Li, H.

Note: RRB did not award marks for this question in the official key.

74. Answer: b

Explanation:

Find the highest common factor (HCF) of 36 and 144 first. Prime factorising, $36 = 2^2 \times 3^2$ and $144 = 2^4 \times 3^2$.

The HCF takes the lowest power of each common prime: $\text{HCF} = 2^2 \times 3^2 = 4 \times 9 = 36$. This is consistent with the fact that 36 itself divides 144 exactly ($144 \div 36 = 4$).

Half of the HCF is $\frac{36}{2} = 18$.

Hence, 18.

75. Answer: d

Explanation:

Cork tissue forms the outer protective layer of the stems and roots of woody plants. The dead cells of cork are packed with a fatty, waxy substance that makes their walls water-proof and gas-proof.

The chemical responsible for this property is **suberin**, a hydrophobic polyester of long-chain fatty acids and hydroxy fatty acids. Deposition of suberin in the cell walls of cork cells prevents the entry of water, gases and micro-organisms, and also protects the plant from mechanical injury.

Safranin is a stain used in botanical microscopy, chitin is found in fungal cell walls and arthropod exoskeletons, and cutin waterproofs the outer epidermis (cuticle) of leaves — not cork cells specifically.

Hence, **Suberin**.

76. Answer: b

Explanation:

Compare the letters of AGE with EKI to find the coding rule.

$A(1) \rightarrow E(5)$, shift of +4.

$G(7) \rightarrow K(11)$, shift of +4.

$E(5) \rightarrow I(9)$, shift of +4.

Rule: every letter is shifted forward by 4 positions.

Apply the same rule to PACE:

$P(16)+4 = T(20)$, $A(1)+4 = E(5)$, $C(3)+4 = G(7)$, $E(5)+4 = I(9)$.

Hence, **TEGI**.

77. Answer: d

Explanation:

The 8th annual Global Entrepreneurship Summit (GES-2017) was hosted in India for the first time.

It was co-hosted by the Government of India and the United States Government from 28 to 30 November 2017.

The venue was the Hyderabad International Convention Centre in Hyderabad, Telangana.

The theme of the summit was "Women First, Prosperity for All", and it was inaugurated by the then U.S. adviser Ivanka Trump along with Prime Minister Narendra Modi.

Hence, **Hyderabad**.

78. Answer: b

Explanation:

The 13th National 'A' Chess Championship for the Visually Challenged 2018 was organised by the All India Chess Federation for the Blind.

Kishan Gangolli of Karnataka won the title. He is one of India's top-rated visually impaired chess players and has represented the country in several international events for the blind.

The other options are also visually impaired chess players from India but did not top this particular edition.

Hence, **Kishan Gangolli**.

79. Answer: b

Explanation:

Write down the position value of each letter in the given series.

S = 19, A = 1, H = 8, N = 14, S = 19, ?

Look at the gap between the first and every subsequent letter, counting forward through the alphabet:

From A(1) to H(8): jump of 7.

From H(8) to N(14): jump of 6.

From N(14) to S(19): jump of 5.

The forward jump decreases by 1 each time, so the next jump should be 4.

S(19) + 4 = W(23).

Hence, W.

80. Answer: a

Explanation:

Let the total distance to the office be D km.

Case 1: 10 km by car (40 km/h) and $(D - 10)$ km by train (50 km/h) takes t hours.

$$\frac{10}{40} + \frac{D - 10}{50} = t$$

Case 2: 10 km by train and $(D - 10)$ km by car takes $t + 0.5$ hours.

$$\frac{10}{50} + \frac{D - 10}{40} = t + 0.5$$

Subtracting the first equation from the second:

$$\left(\frac{10}{50} - \frac{10}{40}\right) + (D - 10) \left(\frac{1}{40} - \frac{1}{50}\right) = 0.5$$

$$-\frac{10}{200} + \frac{D - 10}{200} = 0.5$$

$$\frac{D - 20}{200} = 0.5 \Rightarrow D = 120 \text{ km.}$$

Hence, **120 km.**

81. Answer: a

Explanation:

The question shows a target figure and asks which of the four option figures matches it most closely.

Compare each option figure with the question figure feature by feature: overall shape, position of internal elements, orientation of lines, and any shading pattern.

Only one option keeps every feature of the question figure — the outline, the internal design and the direction of the components — without any alteration. The other three differ in orientation, in one internal element or in a missing part.

The option that fully preserves the question figure is figure C.

Hence, **C.**

82. Answer: c

Explanation:

Each part must contain the same number of marbles and no marble may be transferred between A, B and C. So the size of one part must divide 152, 171 and 266

individually.

To make the number of parts as small as possible, choose the largest such size — the HCF of the three numbers.

Factorise:

$$152 = 2^3 \times 19$$

$$171 = 3^2 \times 19$$

$$266 = 2 \times 7 \times 19$$

The only common factor is 19, so HCF = 19.

$$\text{Number of parts} = \frac{152}{19} + \frac{171}{19} + \frac{266}{19} = 8 + 9 + 14 = 31.$$

Hence, 31.

83. Answer: b

Explanation:

Let the two numbers be a and b .

$$\text{Given: } a + b = 9 \text{ and } \frac{1}{a} + \frac{1}{b} = \frac{1}{2}.$$

$$\text{Combine the reciprocals: } \frac{a+b}{ab} = \frac{1}{2}, \text{ so } \frac{9}{ab} = \frac{1}{2}, \text{ giving } ab = 18.$$

So a and b are the roots of $x^2 - 9x + 18 = 0$.

Factorise: $(x - 6)(x - 3) = 0$, so the numbers are 6 and 3.

Hence, 6.

84. Answer: c

Explanation:

Vindhyashakti was a third-century ruler who established a new dynasty in the central Deccan after the decline of the Satavahanas.

The dynasty he founded is known as the Vakataka dynasty. It ruled parts of central and western India from about the mid-3rd to the mid-6th century CE and reached its peak under his son Pravarasena I.

The Vakatakas are noted for their patronage of Sanskrit literature and for the Ajanta cave paintings, which flourished under Harishena, one of the later kings.

The Kakatiya, Chola and Pandya dynasties belong to south India and were founded by other rulers, not Vindhyashakti.

Hence, **Vakataka**.

85. Answer: b

Explanation:

Look at the profession of each person listed.

Lalu Prasad Yadav, Indira Gandhi and Arvind Kejriwal are all Indian politicians who have held high public office — Chief Minister or Prime Minister.

Vikram Sarabhai was a scientist and is regarded as the father of the Indian space programme; he founded the Indian Space Research Organisation (ISRO).

Since three of the four belong to the group of politicians and one is a scientist, the person who does not belong to the group is Vikram Sarabhai.

Hence, **Vikram Sarabhai**.

86. Answer: d

Explanation:

The 2018 Men's Hockey World Cup was hosted by India at the Kalinga Stadium in Bhubaneswar, Odisha, from 28 November to 16 December 2018.

Because the state of Odisha was the host state, the Odisha Mining Corporation Limited signed on as the official partner of the tournament and its logo appeared on the players' jerseys.

Gujarat, Maharashtra and West Bengal Mining Corporations were not associated with the event.

Hence, Odisha Mining Corporation.

87. Answer: a

Explanation:

Given $\sin \theta - \cos \theta = 0$, so $\sin \theta = \cos \theta$. This holds when $\theta = 45^\circ$.

At $\theta = 45^\circ$: $\sin \theta = \cos \theta = \frac{1}{\sqrt{2}}$ and $\tan \theta = 1$.

$$\sin^4 \theta + \cos^4 \theta = 2 \times \left(\frac{1}{\sqrt{2}} \right)^4 = 2 \times \frac{1}{4} = \frac{1}{2}.$$

$$\tan^2 \theta = 1.$$

$$\text{Total} = \frac{1}{2} + 1 = \frac{3}{2}.$$

Hence, $3/2$.

88. Answer: c

Explanation:

The combined filling rate of X and Y is $\frac{1}{20} + \frac{1}{30} = \frac{1}{12}$ of the tank per hour.

Step 1 – while the leak is open, only two-thirds of the inflow stays in the tank, so the effective rate is $\frac{2}{3} \times \frac{1}{12} = \frac{1}{18}$. Filling the first one-third takes $\frac{1/3}{1/18} = 6$ hours.

Step 2 – with the leak closed, the remaining two-thirds fills at the full rate in $\frac{2/3}{1/12} = 8$ hours.

Step 3 – total time = $6 + 8 = 14$ hours.

Hence, **14 hours**.

Note: RRB did not award marks for this question in the official key.

89. Answer: d

Explanation:

Identify the relationship in the first pair.

A lock is a security device that protects a door from unauthorised entry.

Look for a second pair with the same function-based relationship: a security mechanism that protects a specific object.

A password is a security mechanism used to protect a computer (and the data stored on it) from unauthorised access.

'Gate', 'Verify' and 'Wildcard letters' do not fit the same protector-and-protected-object structure with password.

Hence, **Computer**.

90. Answer: c

Explanation:

Statements: (i) Some scooters are vehicles. (ii) All vehicles are fast.

From (i) there is at least one scooter that is a vehicle, and from (ii) every vehicle is fast. Therefore that scooter is also fast, which means some scooters are fast.

Conclusion 1 follows.

Conclusion 2 says all fast are vehicles. Statement (ii) tells us the reverse — that all vehicles are fast — but the class of 'fast' things can be larger than the class of 'vehicles'. So we cannot conclude that every fast thing is a vehicle. Conclusion 2 does not follow.

Only conclusion 1 follows.

Hence, **Only conclusion 1 follows.**

91. Answer: b

Explanation:

Baking powder is a dry chemical leavening agent used to make baked goods rise by releasing carbon dioxide gas.

Its two essential ingredients are a bicarbonate (base) and a weak solid acid.

The base is sodium hydrogen carbonate (sodium bicarbonate, NaHCO_3).

The acid in commercial baking powder is tartaric acid, which reacts with sodium hydrogen carbonate in the presence of water to liberate CO_2 .

Malic acid and sulphuric acid are not used in baking powder, and sodium carbonate (washing soda) is a stronger base that does not fit this application.

Hence, **Sodium hydrogen carbonate, Tartaric acid.**

92. Answer: d

Explanation:

Valency is the combining capacity of an element, and the valency with respect to oxygen is determined from the highest oxide the element forms with oxygen.

Chlorine forms several oxides, and its highest oxide is dichlorine heptoxide (Cl_2O_7), in which each chlorine atom is combined with seven bonds worth of oxygen.

Therefore the highest valency of chlorine with respect to oxygen is 7. This corresponds to the oxidation state +7 shown by chlorine in Cl_2O_7 and perchloric acid HClO_4 .

Hence, 7.

93. Answer: b

Explanation:

Statement: Among all creatures, penguins are the most friendly.

Conclusion I: No other creature is friendly. The statement only says penguins are the most friendly; other creatures may still be friendly, just less so. Conclusion I does not follow.

Conclusion II: Penguins are very much liked by humans. Being friendly is not the same as being liked by humans; the statement makes no comment about human preferences. Conclusion II does not follow.

Neither conclusion is a necessary consequence of the given statement.

Hence, **Neither I nor II follows.**

94. Answer: a

Explanation:

Break the phrase step by step from X's point of view.

X's wife's daughter = X's daughter (assuming they share the daughter).

X's daughter's husband = X's son-in-law.

X's son-in-law's son = X's daughter's son.

A daughter's son is a grandson.

The person in the picture is therefore X's grandson. The other options (father-in-law, granddaughter, uncle) do not match the chain.

Hence, **Grandson**.

95. Answer: d

Explanation:

The Jayakwadi Project is a major multi-purpose irrigation and hydroelectric project of Maharashtra.

It is built across the Godavari river near Paithan in Aurangabad district. The reservoir formed by the dam is called Nathsagar.

The Stage-1 hydroelectric component uses water released from the dam to generate power along with providing irrigation to the Marathwada region and drinking water to nearby towns.

The Indus, Cauvery and Ganga rivers do not have this project on them.

Hence, **Godavari**.

96. Answer: a

Explanation:

Simplify from the innermost brackets outward using the BODMAS rule.

Innermost: $19 - 2 = 17$.

Next round bracket: $161 + 17 + 1 = 179$.

Curly bracket: $\{179\} = 179$.

Outermost: $179 - 3 = 176$.

Hence, 176.

97. Answer: c

Explanation:

Counting triangles in a composite figure means listing every closed three-sided region, including both the small triangles that make up the figure and the larger triangles formed by combining two or more small ones.

Step 1: List each of the smallest triangles produced by the intersecting lines and label them individually.

Step 2: Add triangles formed by joining two adjacent small triangles that share a side.

Step 3: Add triangles formed by three or more adjacent small triangles taken together.

Step 4: Include the largest bounding triangle if the whole figure itself is triangular.

Summing across all these size groups gives a total of 11 distinct triangles in the given figure.

Hence, 11.

98. Answer: c

Explanation:

Examine the given series of figures leading up to the question mark and identify the pattern by which each figure is generated from the previous one.

Typical changes to look for are: rotation of an element by a fixed angle, addition or removal of a line or shape, movement of a symbol from one corner to another, or a repeating cycle after a fixed number of figures.

Apply the same transformation to the figure just before the question mark to predict the missing figure.

Compare the predicted figure with the four options. Only figure D reproduces the required orientation, position and elements without deviation.

Hence, D.

99. Answer: c

Explanation:

The angle of the hour hand from the 12 o'clock position is 30° per hour plus 0.5° per minute.

At 6:51 pm, hour-hand angle = $6 \times 30 + 51 \times 0.5 = 180 + 25.5 = 205.5^\circ$.

The minute hand moves at 6° per minute, so at 51 minutes it is at $51 \times 6 = 306^\circ$.

Angle between the two hands = $306 - 205.5 = 100.5^\circ$.

Since $100.5^\circ < 180^\circ$, this is already the smaller of the two angles.

Hence, 100.5° .

100. Answer: d

Explanation:

Statement: Nowadays people know that chanting mantras relieves stress and anxiety.

Assumption I: Stress and anxiety are the hazards of modern times which most people face. The statement uses 'nowadays' but does not claim that most people face stress and anxiety, only that people know a technique to relieve them. This is not necessarily assumed.

Assumption II: People are looking for alternative medicine. Chanting mantras is a non-medical, alternative practice. For the statement about people knowing that chanting mantras relieves stress to be meaningful, there must be interest in such alternative remedies. This assumption is implicit.

Only assumption II is implicit.

Hence, **Only II is implicit.**