

Answers

1. Answer: d

Explanation:

A gorge is a deep and narrow valley whose sides are very steep and rocky.

It is formed mainly by vertical (downward) erosion, when a river keeps cutting through hard rock over a long period of time.

Gorges are typical of the youthful stage of a river, where down-cutting is far stronger than sideways erosion; an exceptionally deep and wide gorge is called a canyon.

Hence, **Gorge**.

2. Answer: c

Explanation:

Formic acid (methanoic acid) is a weak carboxylic acid that ionizes only partially in water: $\text{HCOOH} \rightleftharpoons \text{HCOO}^- + \text{H}^+$.

Its acid dissociation constant is $K_a = \frac{[\text{HCOO}^-][\text{H}^+]}{[\text{HCOOH}]}$, which has a value of about 1.8×10^{-4} at 25 °C (pKa $\approx$ 3.75).

This makes formic acid roughly ten times stronger than acetic acid, whose K_a is about 1.8×10^{-5} .

Hence, 1.8×10^{-4} .

3. Answer: a

Explanation:

Under Article 83(1) of the Constitution, the Rajya Sabha (Council of States) is a permanent body and is not subject to dissolution.

Its members are elected for a term of six years, and one-third of them retire every second year, so the House continues without a break.

Only the Lok Sabha can be dissolved by the President, on the advice of the Council of Ministers; no emergency or presidential discretion can dissolve the Rajya Sabha.

Hence, **Never**.

4. Answer: c

Explanation:

Article 60 of the Constitution lays down the oath or affirmation to be taken by the President before entering office.

The oath is administered by the Chief Justice of India; in his absence, it is administered by the senior-most judge of the Supreme Court available.

Through this oath, the President pledges to preserve, protect and defend the Constitution and the law.

Hence, **Chief Justice of India**.

5. Answer: a

Explanation:

The term 'hat-trick' originated in cricket, where it means a bowler taking three wickets on three consecutive deliveries.

It dates back to 1858, when English bowler H. H. Stephenson took three wickets in three balls and was presented with a hat bought from a collection made in his honour.

The expression was later borrowed by other games, such as football and hockey, for three goals by one player in a match, but its origin lies in cricket.

Hence, **Cricket**.

6. Answer: a

Explanation:

Malonic acid is a dicarboxylic acid with the structure $\text{HOOC}-\text{CH}_2-\text{COOH}$.

In IUPAC naming, a dicarboxylic acid is named as alkane + 'dioic acid', counting the carbon atoms of both carboxyl groups in the main chain.

Malonic acid has a three-carbon chain (propane) with $-\text{COOH}$ groups at both ends, so its IUPAC name is propanedioic acid.

Hence, **Propanedioic acid**.

7. Answer: d

Explanation:

The States Reorganisation Act, 1956 was passed on the recommendations of the Fazl Ali Commission (States Reorganisation Commission, 1953).

It came into force on 1 November 1956 and reorganised the states mainly on linguistic lines, abolishing the earlier Part A, B, C and D classification of states.

As a result, the 27 states were replaced by 14 states and 6 union territories.

Hence, 14.

8. Answer: b

Explanation:

The thyroid is a butterfly-shaped endocrine gland located in the neck.

Its follicular cells secrete thyroxine (T₄) and triiodothyronine (T₃), while its parafollicular C cells secrete calcitonin, which lowers the calcium level in the blood.

Melanocyte-stimulating hormone comes from the pituitary, and oxytocin and vasopressin are made in the hypothalamus and released from the posterior pituitary, so of the given hormones only calcitonin is a thyroid secretion.

Hence, **Calcitonin**.

9. Answer: c

Explanation:

A National Emergency can be proclaimed under Article 352 on grounds of war, external aggression or armed rebellion (earlier 'internal disturbance').

The first National Emergency was proclaimed on 26 October 1962 in the wake of the Chinese aggression during the Sino-Indian war.

It continued through the 1965 Indo-Pak war and was finally revoked on 10 January 1968.

Hence, 1968.

10. Answer: d

Explanation:

Kalaripayattu is a traditional martial art that originated in Kerala and is regarded as one of the oldest fighting systems in the world.

It is practised in a training arena called a 'kalari' and combines strikes, kicks, grappling, weapon training and traditional healing methods.

Its body movements and footwork have also influenced classical performing arts of Kerala such as Kathakali.

Hence, A martial art and art of warfare of Kerala.

11. Answer: b

Explanation:

Antonie van Leeuwenhoek (1632-1723), a Dutch scientist, is known as the father of microbiology.

Using single-lens microscopes that he made himself, he became the first person to observe and describe bacteria and protozoa, which he called 'animalcules', in the

1670s.

The other names are associated with different fields: Hippocrates is the father of medicine, R. Misra the father of Indian ecology, and S. R. Kashyap the father of Indian bryology.

Hence, **Antonie van Leeuwenhoek**.

12. Answer: d

Explanation:

India shares its land borders with seven countries: Pakistan, Afghanistan, China, Nepal, Bhutan, Myanmar and Bangladesh.

Bangladesh has the longest border with India, followed by China, while Nepal borders several northern states such as Uttarakhand, Uttar Pradesh, Bihar, West Bengal and Sikkim.

Hong Kong is a Special Administrative Region of China on the southern Chinese coast and has no boundary with India.

Hence, **Hong Kong**.

13. Answer: a

Explanation:

The Kudankulam Nuclear Power Plant is located at Kudankulam in the Tirunelveli district of Tamil Nadu, near the southern tip of India.

It is being built and operated by the Nuclear Power Corporation of India Limited

(NPCIL) in collaboration with Russia, using VVER-1000 pressurised water reactors.

With its two operational 1000 MW units, it is the largest nuclear power station in India.

Hence, **Tamil Nadu**.

14. Answer: c

Explanation:

Cambodia is a country in Southeast Asia, bordered by Thailand, Laos and Vietnam.

Its capital and largest city is Phnom Penh, situated at the confluence of the Mekong and Tonle Sap rivers, and its currency is the Cambodian riel.

The other cities are capitals of different countries: Gaborone of Botswana, Santiago of Chile and Prague of the Czech Republic.

Hence, **Phnom Penh**.

15. Answer: c

Explanation:

The Finance Commission is a constitutional body set up by the President every five years under Article 280 to recommend how central taxes are shared between the Centre and the states.

The 14th Finance Commission, constituted in 2013 for the award period 2015–2020, was chaired by former RBI Governor Dr. Y. V. Reddy; it raised the states' share in the divisible pool of central taxes to 42%.

Among the others, Dr. C. Rangarajan chaired the 12th, Dr. Vijay L. Kelkar the 13th and N. K. Singh the 15th Finance Commission.

Hence, **Dr. Y. V. Reddy**.

16. Answer: c

Explanation:

Surface tension is the property of a liquid surface by which it behaves like a stretched elastic membrane, due to cohesive forces between its molecules.

It is defined as the force acting per unit length of an imaginary line drawn on the liquid surface: $T = \frac{F}{L}$.

Hence its SI unit is newton per metre (N/m), and its dimensional formula is $[MT^{-2}]$.

Hence, **Force / Length**.

17. Answer: b

Explanation:

Sikkim is a Himalayan state in northeast India that became the 22nd state of the Indian Union in 1975.

Its capital and largest town is Gangtok, located in the eastern Himalayas at an altitude of about 1,650 metres.

The other cities are capitals of other states and union territories: Bhopal of Madhya Pradesh, Imphal of Manipur and Kavaratti of Lakshadweep.

Hence, **Gangtok**.

18. Answer: a

Explanation:

Root hairs are unicellular, tube-like outgrowths of the epidermal cells of the root, found in the root-hair zone just behind the root tip.

They greatly increase the surface area of the root in contact with the soil, which makes the absorption of water and mineral salts efficient.

Guard cells and stomata, on the other hand, are found in the leaf epidermis and control gaseous exchange and transpiration.

Hence, **Root hairs**.

19. Answer: c

Explanation:

Steel Authority of India Limited (SAIL) is a Maharatna public sector undertaking under the Ministry of Steel, incorporated on 24 January 1973.

It is one of the largest steel-making companies in India and runs integrated steel plants at Bhilai, Rourkela, Durgapur, Bokaro and Burnpur.

Its corporate headquarters is at Ispat Bhawan, Lodhi Road, New Delhi.

Hence, **New Delhi**.

20. Answer: a

Explanation:

Rory McIlroy is a professional golfer from Northern Ireland, a former world number one and winner of four major championships.

Juan Martin Lopez and Matias Vila are Argentine field hockey players who were part of the team that won gold at the 2016 Rio Olympics.

Bharat Chhetri is a former Indian hockey goalkeeper who captained India at the 2012 London Olympics, so the only player not linked to hockey is the golfer.

Hence, **Rory McIlroy**.

21. Answer: c

Explanation:

Groundwater fills the pores and cracks of soil and rocks below the land surface.

The upper surface of this saturated zone, i.e., the level below which the ground is fully saturated with water, is known as the water table.

It rises during the rainy season and falls during dry periods or due to excessive pumping, which is why wells dry up in summer.

Hence, **Water table**.

22. Answer: c

Explanation:

Under Article 370 of the Indian Constitution, one state enjoyed a special status with its own separate constitution.

The Constitution of Jammu and Kashmir was adopted by its Constituent Assembly in November 1956 and came into force on 26 January 1957.

As of the 2018 exam, it was the only Indian state with its own constitution; this special status was later revoked in August 2019.

Hence, **Jammu and Kashmir**.

23. Answer: c**Explanation:**

The Mississippi is one of the longest rivers of North America.

It rises from Lake Itasca in Minnesota and flows southwards for about 3,730 km before draining into the Gulf of Mexico near New Orleans.

Together with its tributary the Missouri, it forms one of the largest river systems in the world, flowing entirely within the United States of America.

Hence, **United States of America**.

24. Answer: b**Explanation:**

The famous panel "Ravana shaking Mount Kailasa" (Ravananugraha) is a masterpiece of Indian rock-cut sculpture.

It is carved in the Kailasa temple (Cave 16) at Ellora in Maharashtra, built under the Rashtrakuta king Krishna I in the 8th century.

The panel shows Ravana trying to lift the mountain while Shiva steadies it with his toe; Ellora is a UNESCO World Heritage Site.

Hence, **Ellora Caves**.

25. Answer: b

Explanation:

"Ace Against Odds" is the autobiography of Indian tennis star Sania Mirza.

It was co-written with her father Imran Mirza and Shivani Gupta and released in July 2016.

The book traces her journey from Hyderabad to becoming the world number one in women's doubles.

Hence, **Sania Mirza**.

26. Answer: b

Explanation:

The order of precedence of India ranks constitutional functionaries for official purposes.

The President, as the Head of State under Article 52, occupies the first position and is therefore called the first citizen of India.

The Vice-President comes second and the Prime Minister third in the order of precedence.

Hence, **President of India**.

27. Answer: c

Explanation:

The Rajiv Gandhi Khel Ratna (now Major Dhyan Chand Khel Ratna) is India's highest sporting honour.

In 2018 it was jointly conferred on cricketer Virat Kohli and weightlifter Saikhom Mirabai Chanu, who had won the 2017 World Weightlifting Championship gold.

The awards were presented by President Ram Nath Kovind on 25 September 2018.

Hence, **Saikhom Mirabai Chanu and Virat Kohli**.

28. Answer: c

Explanation:

The Pagal Panthis were a semi-religious sect founded by Karam Shah in the Mymensingh region.

Under his son Tipu (Tipu Shah), the sect led a peasant uprising in the 1820s-1830s against oppressive zamindars and the East India Company.

The movement took place in the Mymensingh and Sherpur area of Bengal (now in Bangladesh).

Hence, **Bengal**.

29. Answer: b

Explanation:

The Constituent Assembly adopted the Constitution of India on 26 November 1949, now observed as Constitution Day.

The Constitution came into force on 26 January 1950, a date chosen to honour the Purna Swaraj declaration of 26 January 1930.

This day is celebrated every year as Republic Day.

Hence, **26 January, 1950**.

30. Answer: b

Explanation:

The Poona Sarvajanik Sabha was one of the important pre-Congress political associations of western India.

It was founded in 1870 in Pune (Poona) by Mahadev Govind Ranade, G. V. Joshi (Sarvajanik Kaka) and others.

It acted as a bridge between the government and the people, raising public grievances such as famine relief.

Hence, **Pune**.

31. Answer: c

Explanation:

The atomic number of an element equals the number of protons in the nucleus of its atom.

Aluminium (symbol Al) has 13 protons, with electronic configuration 2, 8, 3.

It belongs to group 13 and period 3 of the modern periodic table and is the most abundant metal in the Earth's crust.

Hence, **13**.

32. Answer: a

Explanation:

The Sangma revolt was a tribal movement of the Garo people led by Sonaram (Songram) R. Sangma.

In the early 20th century he organised the Garos against British forest restrictions, forced labour and taxation in the Garo Hills.

The Garo Hills were then part of the province of Assam (now in Meghalaya), so the revolt is recorded as having taken place in Assam.

Hence, **Assam**.

33. Answer: c

Explanation:

The Lahore session of the Indian National Congress was held in December 1929 under the presidency of Jawaharlal Nehru.

At this session the Congress adopted the resolution demanding complete independence (Purna Swaraj) and authorised a civil disobedience movement.

The tricolour was hoisted on the banks of the Ravi on 31 December 1929, and 26 January 1930 was celebrated as the first Independence Day.

Hence, Purna Swaraj Resolution.

34. Answer: d

Explanation:

A no-confidence motion is moved in the Lok Sabha under Rule 198 to test whether the Council of Ministers enjoys the confidence of the House.

The first such motion was moved by Acharya J. B. Kripalani in August 1963 against the Jawaharlal Nehru government, soon after the 1962 India-China war.

The motion was defeated, with 62 votes in favour and 347 against.

Hence, 1963.

35. Answer: a

Explanation:

Article 57 allows a President to be re-elected, but in practice only one person has held the office for two full terms.

Dr. Rajendra Prasad, the first President of India, served from 26 January 1950 and was re-elected in 1957, remaining in office until May 1962.

Dr. S. Radhakrishnan, V.V. Giri and A.P.J. Abdul Kalam each served only a single term.

Hence, **Dr. Rajendra Prasad**.

36. Answer: a

Explanation:

Freestyle is one of the two Olympic styles of wrestling, the other being Greco-Roman.

In freestyle wrestling, wrestlers may use their legs and attack the opponent's legs, unlike Greco-Roman where holds below the waist are banned.

The term is also used in swimming, but among the given sports it belongs to wrestling.

Hence, **Wrestling**.

37. Answer: b

Explanation:

The Hindu Widows' Remarriage Act legalised the remarriage of Hindu widows in British India.

It was enacted on 26 July 1856 during the tenure of Governor-General Lord Dalhousie (drafted under him and passed under Lord Canning).

The Act was the result of a sustained campaign led by social reformer Ishwar Chandra Vidyasagar.

Hence, **1856 AD**.

38. Answer: b

Explanation:

Anil Kumble is India's highest wicket-taker in Test cricket with 619 wickets.

He is popularly known as "Jumbo", a nickname given because of his big frame and the fast, skidding deliveries he bowled.

He is also only the second bowler to take all 10 wickets in a Test innings, against Pakistan in 1999.

Hence, **Jumbo**.

39. Answer: d

Explanation:

The Java Trench, also called the Sunda Trench, is formed where the Indo-Australian plate subducts beneath the Eurasian (Sunda) plate.

It runs along the southern side of Sumatra and Java in Indonesia, with a maximum depth of about 7,450 m.

It is the deepest point of the Indian Ocean.

Hence, **Indian Ocean**.

40. Answer: c

Explanation:

A Geographical Indication (GI) is a sign used on products that have a specific geographical origin and qualities due to that origin.

To meet its obligations under the WTO TRIPS Agreement, India enacted the Geographical Indications of Goods (Registration and Protection) Act in 1999.

The Act came into force in September 2003, and Darjeeling Tea became the first product to get a GI tag in India in 2004-05.

Hence, **1999**.

41. Answer: c

Explanation:

SLR is a quantitative tool of monetary policy used by the Reserve Bank of India.

It is the minimum share of net demand and time liabilities that a commercial bank must keep in liquid assets such as cash, gold and approved government securities.

It is prescribed under Section 24 of the Banking Regulation Act, 1949, and stood at

19.5% at the time of the 2018 exam.

Raising SLR reduces the funds banks can lend, while lowering it increases credit availability.

Hence, **Statutory Liquidity Ratio**.

42. Answer: b

Explanation:

Citizenship is dealt with in Part II (Articles 5 to 11) of the Indian Constitution.

Although India has a federal structure, the Constitution provides only one citizenship, that of India, and there is no separate state citizenship.

This feature was borrowed from the British Constitution, unlike the USA, where citizens hold both federal and state citizenship.

It promotes national unity, as every citizen enjoys the same political and civil rights throughout the country.

Hence, **Single citizenship**.

43. Answer: c

Explanation:

The Hathigumpha (Elephant Cave) inscription is carved in the Udayagiri hills near Bhubaneswar in Odisha.

It was engraved by Kharavela, the Jain king of Kalinga belonging to the

Mahameghavahana (Chedi) dynasty, around the 1st century BCE.

Written in Prakrit in the Brahmi script, it records the year-wise achievements of his reign, including military campaigns and public works.

It is a key source for the post-Mauryan history of Kalinga.

Hence, **Kharavela**.

44. Answer: b

Explanation:

SI prefixes are used to express very large or very small multiples of a unit in powers of ten.

The small-value prefixes are milli (10^{-3}), micro (10^{-6}), nano (10^{-9}), pico (10^{-12}), femto (10^{-15}), atto (10^{-18}), zepto (10^{-21}) and yocto (10^{-24}).

Yotta stands for 10^{24} , a very large multiple, so it is not a small-value prefix at all.

The femtometre (fermi) is commonly used to measure nuclear sizes.

Hence, **Femto**.

45. Answer: b

Explanation:

Iran is a West Asian country with Tehran as its capital.

Its official currency is the Iranian Rial (IRR), issued by the Central Bank of the Islamic

Republic of Iran.

In everyday use prices are often quoted in toman, an informal unit equal to 10 rials.

Yen is the currency of Japan, while dinar is used in countries such as Iraq and Kuwait.

Hence, **Iranian Rial**.

46. Answer: a

Explanation:

Venus is the second planet from the Sun and the closest planet to the Earth.

Its average orbital distance from the Sun is about 108.2 million km, which is about 0.72 astronomical units.

For comparison, Mercury orbits at about 57.9 million km and the Earth at about 149.6 million km.

Venus has the most nearly circular orbit of all the planets, so its distance from the Sun varies very little.

Hence, **108.2 million km**.

47. Answer: d

Explanation:

Brihat Samhita is an encyclopaedic Sanskrit work of the 6th century CE.

It was written by Varahamihira, the astronomer-astrologer of Ujjain, traditionally counted among the nine gems of King Vikramaditya's court.

It covers astronomy, astrology, planetary movements, weather, architecture, gemstones and many other subjects.

His other notable work is Pancha Siddhantika, which summarises five earlier astronomical systems.

Hence, **Varahamihira**.

48. Answer: a

Explanation:

Under a floating exchange rate system, the value of a currency is determined by demand and supply in the foreign exchange market.

When the domestic currency loses value against a foreign currency, so that more rupees are needed to buy one dollar, it is called depreciation (in Hindi, avamulyan).

Its opposite, a market-driven rise in value, is appreciation, while revaluation refers to a deliberate official increase under a fixed exchange rate.

Depreciation makes exports cheaper and imports costlier.

Hence, **Depreciation**.

49. Answer: a

Explanation:

Hutom Pyanchar Naksha (Sketches by Hutom the Owl) is a classic of 19th-century Bengali prose.

It was written by Kaliprasanna Singha under the pen name 'Hutom' and published in 1862.

The book satirises the babu culture and social life of contemporary Calcutta in colloquial Bengali.

Kaliprasanna Singha is also known for translating the Mahabharata into Bengali.

Hence, **Kaliprasanna Singha**.

50. Answer: c

Explanation:

The neutron is an electrically neutral subatomic particle found in the nucleus of an atom, with a mass slightly greater than that of a proton.

It was discovered in 1932 by the British physicist James Chadwick, who bombarded beryllium with alpha particles and studied the resulting radiation.

He was awarded the Nobel Prize in Physics in 1935 for this discovery.

The electron was discovered by J. J. Thomson and the proton is credited to Ernest Rutherford.

Hence, **James Chadwick**.

51. Answer: a

Explanation:

Number the seats 1 to 5 from left to right; since T is third to the right of R, R is at 1 or 2, and as R likes mangoes it cannot be at an end, so $R = 2$ and $T = 5$.

The ends hold apple and orange, and the orange-lover is not next to R, so T at seat 5 likes oranges and seat 1 likes apples, while seat 3 likes bananas.

P does not like bananas and is not next to T, so $P = 1$ (apple); Q does not like grapes, so $Q = 3$ (banana) and $S = 4$ (grapes).

The order is P (apple), R (mango), Q (banana), S (grapes), T (orange), so S, who likes grapes, sits between the banana-lover Q and the orange-lover T.

Hence, **The one who likes grapes.**

52. Answer: d

Explanation:

A definite relation between two letters exists only if every sign on the path between them points the same way (with = allowed).

Conclusion i: from $D > E = F$ we get $D > F$, so $D < F$ is false.

Conclusion ii: the path $B > C \leq D > E$ has opposite signs ($>$ and $\leq$), so no definite relation between B and E can be drawn, and it does not follow.

Thus neither conclusion i nor conclusion ii follows, which is statement D.

Hence, **D.**

53. Answer: b

Explanation:

The first pair links a dwelling place with the animal that lives in it.

A burrow is the hole in the ground in which a rabbit lives.

In the same way, a sty is the enclosure in which a pig is kept.

A cock lives in a coop, a goat in a pen or shed and a bear in a den, so they do not fit.

Hence, **Pig**.

54. Answer: a

Explanation:

A water image is formed by flipping a figure vertically (top becomes bottom), while left and right stay the same.

So the letters of LIGHT keep their left-to-right order; I and H look unchanged, L appears with its foot at the top, T appears with its bar at the bottom, and G is turned upside down.

An image where the T keeps its bar on top, or where the L or the whole word is laterally reversed, is not a water image.

The correct figure shows every letter of LIGHT flipped top-to-bottom, including both the L and the T.

Hence, **the vertically inverted LIGHT with the L, G and T all flipped upside down.**

55. Answer: d

Explanation:

The complete figure is a four-pointed star centred where the four cells meet, with each arm split along a cell border.

The upper arm runs along the vertical border, so its right half must lie in the missing top-right cell as a line from near the centre up to the top-left corner of that cell.

The right arm runs along the horizontal border, so its upper half must appear as a line from near the centre to the bottom-right corner of the missing cell, with a small square at the bottom-left corner matching the central squares.

Only one figure has the small square at the bottom-left with lines going to the top-left and bottom-right corners.

Hence, the figure with a small square at the bottom-left and lines to the top-left and bottom-right corners.

56. Answer: b

Explanation:

Check the differences between consecutive terms.

$155 - 143 = 12$, $176 - 155 = 21$, $206 - 176 = 30$, $245 - 206 = 39$, so the differences increase by 9 each time.

The next difference is $39 + 9 = 48$.

So the next term is $245 + 48 = 293$.

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Hence, 293.

57. Answer: d

Explanation:

Check the differences between consecutive terms.

$487 - 486 = 1$, $491 - 487 = 4$, $500 - 491 = 9$, $516 - 500 = 16$, which are the squares $1^2, 2^2, 3^2, 4^2$.

The next difference is $5^2 = 25$.

So the next term is $516 + 25 = 541$.

Hence, 541.

58. Answer: b

Explanation:

A conclusion follows only if it is a definite consequence of the statement taken as true.

Every resident of Madrid keeps a dog and John lives in Madrid, so John has a dog; conclusion i follows.

Amy is also a resident of Madrid, so she too must have a dog; conclusion ii contradicts the statement and does not follow.

Thus only conclusion i follows, which is statement A.

Hence, A.

59. Answer: d

Explanation:

Only straight lines are counted; the two curved outer arcs of the figure are not straight lines.

The diamond (square) in the centre has 4 straight sides.

Each arrow-shaped end has 7 straight lines: 2 slanted lines forming the arrow head, 3 vertical lines and 2 horizontal lines forming the notched shaft.

So the two arrows together have $7 + 7 = 14$ straight lines.

Total straight lines = $4 + 14 = 18$.

Hence, 18.

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60. Answer: b

Explanation:

In classification, find the common property shared by four items and pick the one that lacks it.

Jupiter, Neptune, Mars and Earth are all planets that revolve around the Sun in the solar system.

The Sun, however, is a star, the central body of the solar system that produces its

own light and heat.

So the Sun is the odd one out.

Hence, **Sun**.

61. Answer: d

Explanation:

R likes mango, so R is neither at an end (apple/orange) nor in the middle (banana); since T is third to the right of R, R must be 2nd and T 5th from the left.

The orange-lover cannot sit next to R, so orange is at the 5th place (T) and apple at the 1st place.

P cannot be in the middle (no banana) or 4th (next to T), so P is 1st with apple; Q cannot like grapes, so Q is 3rd with banana and S is 4th with grapes.

Final order from left: P (apple), R (mango), Q (banana), S (grapes), T (orange).

The child sitting 4th, who likes grapes, is S.

Hence, **S**.

62. Answer: a

Explanation:

When a mirror is placed along a vertical line to the right of a word, the left and right sides get interchanged while top and bottom remain the same.

So the order of the letters reverses to E, C, N, A, R, F, and every letter is also laterally flipped.

Letters like A look the same, while F, R, N, C and E appear reversed (facing left).

The image that shows the whole word reversed with every letter laterally inverted is the correct one.

Hence, the figure showing FRANCE fully laterally reversed, with letters in the order E-C-N-A-R-F and each letter flipped.

63. Answer: a

Explanation:

From 'All cats are dogs', the conversion gives 'Some dogs are cats', so conclusion i follows.

Cats and animals are both inside dogs, but no direct relation between cats and animals is given, so neither ii nor iii follows definitely.

However, ii ('Some cats are animals') and iii ('No cat is an animal') form a complementary pair with the same subject and predicate, so exactly one of them must be true.

Therefore, conclusion i follows along with either ii or iii.

Hence, **Only i and either ii or iii.**

64. Answer: b

Explanation:

The passage says the hummock grasslands are grass-dominated areas where trees are found in very small numbers or not at all.

It further states that the main vegetation of these grasslands is various grasses with spiky leaves, not trees.

The statement attributes the spiky leaves to trees, which directly contradicts the passage.

So the statement is definitely false.

Hence, D.

65. Answer: d

Explanation:

The differences between consecutive terms are +3, -5, +7, -11, i.e. consecutive prime numbers with alternating signs.

$216 + 3 = 219$, $219 - 5 = 214$, $214 + 7 = 221$, $221 - 11 = 210$.

The next prime is 13 and the sign turns positive, so the next term = $210 + 13 = 223$.

Hence, **223**.

66. Answer: c

Explanation:

Decode each symbol: P@Q means P is the mother of Q, and Q@R means Q is the mother of R.

R%S means R is the sister of S, so S is a sibling of R and therefore also a child of Q.

Since S is male, S is the son of Q, and Q is the daughter of P.

So S is the son of P's daughter, i.e. P's grandson.

Hence, **Grandson**.

67. Answer: a

Explanation:

Combine the statements into one chain: $P \geq Q > R = S$.

Between Q and S the signs are $>$ and $=$, so $Q > S$, i.e. $S < Q$; conclusion i is true.

Between P and R the signs are $\geq$ and $>$, and a strict sign in the path makes the result strict, so $P > R$; conclusion ii is true.

Similarly, $P > S$ because $R = S$, so conclusion iii is also true.

Hence, **All conclusions are true**.

68. Answer: d

Explanation:

P is the father-in-law of M and M's wife is N, so N is P's daughter.

O is the daughter of N (and M), so P is O's grandfather.

Q's mother is O, so Q is one generation below O, and M being Q's grandfather is consistent.

P is three generations above Q ($P \rightarrow N \rightarrow O \rightarrow Q$), so P is Q's great grandfather.

Hence, **Great grandfather**.

69. Answer: d

Explanation:

Two elements change in the series: the arrow and the & symbol.

The arrow rotates 90° anticlockwise each step: up, left, down, right, up, so the next arrow points left.

The & symbol moves anticlockwise along the border: top-left, middle-left, bottom-left, bottom-middle, bottom-right, so it next moves to the middle-right.

The next figure must therefore have a left-pointing arrow with the & symbol (unchanged in shape) on the right side.

Hence, **the figure with a left-pointing arrow and the & symbol at the middle-right**.

70. Answer: a

Explanation:

From 'Some trees are flags', only a partial overlap between trees and flags is known, so 'All trees are flags' cannot be concluded; conclusion i does not follow.

Two particular statements ('Some... Some...') do not give any definite conclusion, so

the relation between trees and small boats is unknown; conclusion ii does not follow.

The two conclusions are not a complementary pair, so the either-or case does not apply.

Thus neither conclusion follows.

Hence, D.

71. Answer: a

Explanation:

Faces that appear together on a die are adjacent and can never be opposite each other.

From the first position, Purple is adjacent to Red and White.

From the second position, Purple is adjacent to Orange and Green.

So Purple touches Red, White, Orange and Green; the only remaining colour, Gray, must be opposite to Purple.

Hence, **Gray**.

72. Answer: a

Explanation:

R likes mango, so R is neither at an end (apple/orange) nor in the middle (banana); since T is third to the right of R, R must be 2nd and T 5th from the left.

The orange-lover cannot sit next to R, so orange is at the 5th place (T) and apple at the 1st place.

P cannot be in the middle (no banana) or 4th (next to T), so P is 1st with apple; Q cannot like grapes, so Q is 3rd with banana and S is 4th with grapes.

Final order from left: P (apple), R (mango), Q (banana), S (grapes), T (orange).

S likes grapes, T likes orange and Q sits between R (mango) and S (grapes), so these are correct; but R is third to the LEFT of T, not to the right.

Hence, **R is third to the right of T.**

73. Answer: c

Explanation:

The suffix '-cide' means killing, and the prefix tells who is killed.

Matricide is the killing of one's mother ('matri' = mother).

Similarly, Xenocide is the killing of foreigners or strangers ('xeno' = foreign).

So the second pair is completed by Foreigner.

Hence, **Foreigner.**

74. Answer: a

Explanation:

The passage clearly says that rainfall and temperature are the major factors that determine the vegetation of any region.

The statement says temperature is an important factor in determining a region's vegetation.

This is directly stated in the passage, so no assumption is needed.

Therefore, the statement is definitely true.

Hence, **A**.

75. Answer: d

Explanation:

Classify each letter as a vowel or a consonant.

L, Y, K and M are all consonants.

E is the only vowel among the five letters.

So E does not belong to the group.

Hence, **E**.

76. Answer: a

Explanation:

The boy's mother's husband is the boy's father.

The father's brother is the boy's uncle, and the uncle's mother is also the father's mother.

So the woman is the boy's paternal grandmother, and her husband is the boy's paternal grandfather.

Hence, **Grandfather**.

77. Answer: d

Explanation:

Compare TEMPER with JBQOBM letter by letter: the letter E (2nd and 5th positions) is coded as B both times.

In REVIEW, the letter E also occurs at the 2nd and 5th positions, so its code must have B at the 2nd and 5th positions.

Among the given codes, only SBOTBF has B at both these positions; the others have H, E or Y there.

So REVIEW is coded as SBOTBF.

Hence, **SBOTBF**.

78. Answer: d

Explanation:

In the first pair, the second number is the sum of the digits of the first number.

$$1 + 4 + 9 + 6 = 20.$$

Applying the same rule to 2087: $2 + 0 + 8 + 7 = 17$.

Hence, 17.

79. Answer: a

Explanation:

To form a complete square, the chosen pieces must have straight edges and their slanted sides must fit into each other without gaps.

Piece 1 has a curved base and piece 5 has no matching slant, so they cannot be part of a square.

Pieces 2, 3 and 4 each have straight sides and one slanted side; the slants of 3 and 4 fit against each other and piece 2 fills the remaining strip.

Together these three pieces make a complete square.

Hence, 2, 3, 4.

80. Answer: c

Explanation:

Each term is obtained by multiplying the previous term by 1, 2, 3, 4, ... and adding 2, 3, 4, 5, ... respectively.

$$31 \times 1 + 2 = 33, 33 \times 2 + 3 = 69, 69 \times 3 + 4 = 211, 211 \times 4 + 5 = 849.$$

$$\text{Next term} = 849 \times 5 + 6 = 4245 + 6 = 4251.$$

Hence, 4251.

81. Answer: c

Explanation:

Every right-angled triangle in this figure must have one of the two slanted diagonals as its hypotenuse, because all the other lines are horizontal or vertical.

The diagonal of the upper-left square gives 2 large triangles (the two halves of that square) and 2 smaller triangles cut off by the edges of the lower-right square, i.e. 4 triangles.

In the same way, the diagonal of the lower-right square gives 2 large halves and 2 smaller triangles cut off by the edges of the upper-left square, i.e. 4 more triangles.

Total right-angled triangles = $4 + 4 = 8$.

Hence, 8.

Your Personal Exams Guide

82. Answer: c

Explanation:

The figure is a 3×3 grid of squares in which the top-right and bottom-left cells are each split into 4 smaller squares.

Squares of the 3×3 grid: 9 single cells + 4 squares of size 2×2 + 1 whole outer square = 14.

The two subdivided cells add $4 + 4 = 8$ smaller squares.

Total squares = $14 + 8 = 22$.

Hence, **22**.

83. Answer: d

Explanation:

Each letter is replaced by its opposite letter in the alphabet, so that the positions of a letter and its code always add up to 27.

Check: $B(2) \rightarrow Y(25)$, $O(15) \rightarrow L(12)$, $R(18) \rightarrow I(9)$, $D(4) \rightarrow W(23)$, $E(5) \rightarrow V(22)$, $R(18) \rightarrow I(9)$, giving YLIWVI.

Applying the same rule to BATTLE: $B \rightarrow Y$, $A \rightarrow Z$, $T \rightarrow G$, $T \rightarrow G$, $L \rightarrow O$, $E \rightarrow V$.

Hence, **YZGGOV**.

84. Answer: c

Explanation:

In the first pair, each letter moves 2 places forward in the alphabet.

$L + 2 = N$ and $K + 2 = M$, so LK becomes NM.

Applying the same rule to XT: $X + 2 = Z$ and $T + 2 = V$.

Hence, **ZV**.

85. Answer: c

Explanation:

In the group, each term is formed by letters that move 2 places backward each time.

NLJ: N(14), L(12), J(10); TRP: T(20), R(18), P(16); XVT: X(24), V(22), T(20); HFD: H(8), F(6), D(4).

IMF: I(9), M(13), F(6) does not follow the -2, -2 pattern, so it is the odd one out.

Hence, IMF.

86. Answer: c

Explanation:

When the same distance is covered at two speeds, the difference in the times taken equals the total of the late and early margins.

Time difference = 11 + 8 = 19 minutes = $\frac{19}{60}$ hour.

So $\frac{d}{24} - \frac{d}{30} = \frac{19}{60}$, i.e. $\frac{5d-4d}{120} = \frac{19}{60}$, which gives $d = 38$ km.

Hence, 38 km.

87. Answer: a

Explanation:

Let the cost price be ₹ x ; then profit = $1741 - x$ and loss = $x - 897$.

Given profit = 111% of loss: $1741 - x = \frac{111}{100}(x - 897)$.

So $174100 - 100x = 111x - 99567$, giving $211x = 273667$ and $x = 1297$.

Check: profit = ₹444 and loss = ₹400, and 444 is 11% more than 400.

Hence, ₹1297.

88. Answer: a

Explanation:

The side of a square is the square root of its area.

Side of the glass = $\sqrt{576} = 24$ cm.

The 7 cm gap lies on both sides of the glass, so the table length = $24 + 2 \times 7 = 38$ cm.

Hence, 38 cm.

89. Answer: d

Explanation:

Average = sum of the values $\div$ number of values.

Sales in 2010 from the graph: C1 = 50, C2 = 75, C3 = 65, C4 = 45, C5 = 85; total = 320 thousand.

Average = $320 \div 5 = 64$ thousand.

Hence, **64**.

90. Answer: c

Explanation:

With a profit of 12.5%, the selling price is 112.5% of the cost price.

$$\text{Cost price} = 522 \times \frac{100}{112.5} = ₹464.$$

$$\text{Half of the cost price} = 464 \div 2 = ₹232.$$

Hence, **₹232**.

91. Answer: b

Explanation:

A markup followed by a discount acts like two successive percentage changes.

$$\text{Net change} = a + b + \frac{ab}{100} \text{ with } a = +33 \text{ and } b = -33.$$

$$\text{Net change} = 33 - 33 - \frac{33 \times 33}{100} = -10.89\%, \text{ and the negative sign means a loss.}$$

Hence, **10.89% loss**.

92. Answer: a

Explanation:

If 11% of the products are defective, the good products make up $100 - 11 = 89\%$ of the total.

89% of the total = 4984, so $1\% = 4984 \div 89 = 56$ and the total = 5600.

Defective products = 11% of 5600 = $11 \times 56 = 616$.

Hence, **616**.

93. Answer: c

Explanation:

Let the salaries be 9k, 11k and 13k.

$\text{Veenu} - \text{Vino} = 13k - 9k = 4k = 200$, so $k = 50$.

Salary of Viji = $11k = 11 \times 50 = ₹550$.

Hence, **550**.

Your Personal Exams Guide

94. Answer: d

Explanation:

Items can be shared equally among n students only when n divides the total, so the number of ways equals the number of factors of 540.

Prime factorisation: $540 = 2^2 \times 3^3 \times 5$.

Number of factors = $(2 + 1)(3 + 1)(1 + 1) = 3 \times 4 \times 2 = 24$.

Hence, 24.

95. Answer: c

Explanation:

Area of a rectangle = length $\times$ breadth, so the percentage changes in its sides combine as successive changes.

Net change = $a + b + \frac{ab}{100}$ with $a = +4$ and $b = -4$.

Net change = $4 - 4 - \frac{16}{100} = -0.16\%$, and the negative sign means a decrease.

Hence, **0.16% decrease**.

96. Answer: a

Explanation:

For a fixed distance, speed is inversely proportional to time, since speed = distance $\div$ time.

Time ratio of Kairo to David = 13 : 21.

So the speed ratio = $\frac{1}{13} : \frac{1}{21} = 21 : 13$.

Hence, **21:13**.

97. Answer: d

Explanation:

The overall average of two equal-sized groups is the simple mean of the two group averages.

Total calls of all 1014 employees = 1014×57 , and the 507 men contribute 507×57 .

Calls by the women = $1014 \times 57 - 507 \times 57 = 507 \times 57$, so the average for a female employee = 57 calls/day.

Hence, 57.

98. Answer: a**Explanation:**

To cross a signboard the train covers its own length, and to cross a bridge it covers its length plus the bridge length.

The extra $59 - 23 = 36$ seconds are spent covering the 396 m bridge, so speed = $396 \div 36 = 11$ m/s.

Length of the train = $11 \times 23 = 253$ m.

Hence, 253 m.

99. Answer: a**Explanation:**

Overall average = total weight $\div$ total number of items.

Total weight = $4 \times 33 + 6 \times 34 = 132 + 204 = 336$ grams.

Overall average = $336 \div 10 = 33.6$ grams.

Hence, **33.6**.

100. Answer: b

Explanation:

The circumference of a circle is $C = 2\pi r$, so it is directly proportional to the radius.

If the radius becomes $7r$, the new circumference = $2\pi(7r) = 7 \times 2\pi r$.

So the new circumference is 7 times the original circumference.

Hence, **7**.

101. Answer: c

Explanation:

Let the common value be k , so the first child gets k , the second gets $\frac{k}{2}$, the third gets $\frac{k}{3}$ and the fourth gets $\frac{k}{4}$.

Total: $k \left(1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4}\right) = \frac{25k}{12} = 450$, so $k = 216$.

The fourth child gets $\frac{216}{4} = 54$ gifts.

Hence, **54**.

102. Answer: d

Explanation:

Each trailing zero of a factorial comes from a factor $10 = 2 \times 5$, and since factors of 2 are more plentiful, we only count the factors of 5.

$$\text{Number of factors of 5 in } 98! = \left\lfloor \frac{98}{5} \right\rfloor + \left\lfloor \frac{98}{25} \right\rfloor = 19 + 3.$$

So $98!$ ends with 22 zeros.

Hence, **22**.

103. Answer: b

Explanation:

$$\text{Overall percentage} = (\text{total marks obtained} \div \text{total maximum marks}) \times 100.$$

$$\text{Marks obtained} = 65 + 75 + 45 + 25 = 210 \text{ and maximum marks} = 80 + 100 + 70 + 50 = 300.$$

$$\text{Percentage} = \frac{210}{300} \times 100 = 70\%.$$

Hence, **70%**.

104. Answer: c

Explanation:

Read the bar values for each branch from the graph and add the two years.

Total sales of C2 = $75 + 85 = 160$ thousand and total sales of C4 = $45 + 95 = 140$ thousand.

Required ratio = $160 : 140 = 8 : 7$.

Hence, **8:7**.

105. Answer: d

Explanation:

Let the numbers of ₹3, ₹4 and ₹5 coins be $12x$, $11x$ and $13x$.

Total value = $3(12x) + 4(11x) + 5(13x) = 36x + 44x + 65x = 145x$.

$145x = 580$ gives $x = 4$, so the number of ₹3 coins = $12 \times 4 = 48$.

Hence, **48**.

106. Answer: c

Explanation:

By BODMAS, evaluate the square roots first, then division, then addition.

$\sqrt{16.81} = 4.1$ and $\sqrt{67.24} = 8.2$.

So the expression = $4.1 + 8.2 \div 2 = 4.1 + 4.1 = 8.2$.

Hence, **8.2**.

107. Answer: c

Explanation:

The diagonal of a cube of side a is $a\sqrt{3}$, so $a = 8$ cm and the volume of the cube = $8^3 = 512$ cm³.

On melting, the volume stays the same, so the cuboid volume = $l \times b \times h = 8 \times 4 \times h = 32h$.

$32h = 512$ gives $h = 16$ cm.

Hence, **16 cm**.

108. Answer: d

Explanation:

For a fixed distance, time is inversely proportional to speed.

If speed becomes $\frac{7}{8}$ of usual, time becomes $\frac{8}{7}$ of the usual time T .

Extra time = $\frac{8T}{7} - T = \frac{T}{7} = 20$ minutes, so $T = 140$ minutes.

Hence, **140 minutes**.

109. Answer: b

Explanation:

The sides of an equilateral triangle are equal, so equal distances are covered at each speed and the average speed is the harmonic mean.

$$\text{Average speed} = \frac{3}{\frac{1}{36} + \frac{1}{30} + \frac{1}{45}}.$$

$$\frac{1}{36} + \frac{1}{30} + \frac{1}{45} = \frac{5+6+4}{180} = \frac{1}{12}, \text{ so average speed} = 3 \times 12 = 36 \text{ kmph.}$$

Hence, **36 kmph.**

110. Answer: a

Explanation:

For any two numbers, the product of the numbers equals the product of their LCM and HCF.

$$\text{Product} = \text{LCM} \times \text{HCF} = 45 \times 10 = 450.$$

Hence, **450.**

111. Answer: c

Explanation:

Under compound interest, if a sum becomes 2 times in 3 years, it becomes 2^n times in $3n$ years.

$$\text{Since } 32 = 2^5, n = 5.$$

$$\text{Required time} = 3 \times 5 = 15 \text{ years.}$$

Hence, **15.**

112. Answer: b

Explanation:

$$\text{Simple interest} = \frac{P \times R \times T}{100} = \frac{4800 \times 8 \times 5}{100} = 1920.$$

$$\text{Amount after 5 years} = 4800 + 1920 = ₹6720.$$

$$\text{Half of it is invested, so the remaining amount} = \frac{6720}{2} = 3360.$$

Hence, 3360.

113. Answer: b

Explanation:

$$\text{Total weight} = \text{number of items} \times \text{average weight}.$$

$$\text{Initial total} = 97 \times 9.7 = 940.9 \text{ kg and new total} = 98 \times 9.8 = 960.4 \text{ kg}.$$

$$\text{Weight of the new notebook} = 960.4 - 940.9 = 19.5 \text{ kg}.$$

Hence, 19.5 kg.

114. Answer: d

Explanation:

$$\text{Using laws of indices, } 5 \div 5^{-2} = 5^{1-(-2)} = 5^3 = 125.$$

$$\text{Also } \sqrt{25} = 5 \text{ and } \sqrt{121} = 11.$$

So the expression = $125 + 5 - 11 = 119$.

Hence, **119**.

115. Answer: d

Explanation:

Use the laws of indices: $(5^4)^2 = 5^8$ and $125^2 = (5^3)^2 = 5^6$.

So the bracket = $\frac{5^8}{5^6} = 5^2 = 25$.

Expression = $25 \times 5 + 12 = 125 + 12 = 137$.

Hence, **137**.

116. Answer: d

Explanation:

For 2 years, $CI - SI = P \left(\frac{R}{100} \right)^2$.

So $36 = P \times \left(\frac{4}{100} \right)^2 = \frac{P}{625}$.

$P = 36 \times 625 = ₹22500$.

Hence, **22500**.

117. Answer: d

Explanation:

Write the number as $N = 54k + 19$.

Since 54 is a multiple of 27, $54k$ leaves no remainder on division by 27.

So the remainder is the remainder of $19 \div 27$, which is 19 itself as 19 is less than 27.

Hence, **19**.

118. Answer: b

Explanation:

Division is performed from left to right, and dividing by $\frac{1}{10}$ is the same as multiplying by 10.

So the expression = $\frac{1}{10} \times 10 \times 10 \times 10 \times 10$.

This equals $\frac{10^4}{10} = 10^3 = 1000$.

Hence, **1000**.

119. Answer: c

Explanation:

Read the 2010 and 2011 bars for each required branch and add them.

$C1 = 50 + 60 = 110$, $C3 = 65 + 75 = 140$ and $C5 = 85 + 45 = 130$ (in thousands).

Combined total = $110 + 140 + 130 = 380$ thousand.

Hence, **380**.

120. Answer: c

Explanation:

Total share given away = $13\% + 14\% + 16\% + 12\% = 55\%$, so the remaining 45% of the salary = ₹25380.

$$\text{Salary} = \frac{25380 \times 100}{45} = 56400.$$

Donation for the medical camp = 12% of 56400 = ₹6768.

Hence, ₹6768.



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