

Answers

1. Answer: a

Explanation:

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

Gallium (symbol Ga) is a soft, silvery metal placed in Group 13 of the periodic table, just below aluminium.

Each gallium atom has 31 protons, so its atomic number is 31 and its electronic configuration is $[\text{Ar}] 3d^{10} 4s^2 4p^1$.

Gallium is notable for melting at about 29.8 °C, so it can melt in the palm of the hand.

Hence, 31.

2. Answer: d

Explanation:

The Finance Commission is a constitutional body set up under Article 280 by the President every five years to recommend the sharing of tax revenue between the Centre and the States.

The 12th Finance Commission was constituted in 2002 under the chairmanship of Dr. C. Rangarajan, former RBI Governor, and covered the period 2005–2010.

Dr. Vijay Kelkar chaired the 13th, Dr. Y. V. Reddy the 14th and N. K. Singh the 15th Finance Commission.

Hence, Shri C. Rangarajan.

3. Answer: a

Explanation:

The uncertainty principle is a fundamental idea of quantum mechanics.

It states that the position and momentum of a particle cannot both be measured exactly at the same time: $\Delta x \cdot \Delta p \geq \frac{h}{4\pi}$.

It was formulated in 1927 by the German physicist Werner Heisenberg, who received the Nobel Prize in Physics in 1932.

Millikan is known for the oil-drop experiment, S. N. Bose for Bose-Einstein statistics and Newton for the laws of motion.

Hence, **Werner Heisenberg**.

4. Answer: d

Explanation: Four Personal Exams Guide

UNESCO World Heritage Sites are places of outstanding cultural or natural value listed by UNESCO.

Elephanta Caves (1987), Humayun's Tomb, Delhi (1993) and Rani ki Vav, Patan, Gujarat (2014) are all inscribed on the list.

Chand Minar is a 15th-century tower inside Daulatabad Fort, Maharashtra, built by Alauddin Bahmani; it is a protected monument but not a UNESCO World Heritage Site.

Hence, **Chand Minar**.

5. Answer: c

Explanation:

Adam Gilchrist is a former Australian wicketkeeper-batsman, famous for his aggressive batting at the top of the order.

He was popularly known by the nicknames 'Gilly' and 'Churchy'; the name 'Churchy' came from a child who mixed up his surname as 'Eric Gilchurch'.

'God of Cricket' is the popular title of Sachin Tendulkar.

Hence, **Churchy**.

6. Answer: b

Explanation:

The Schedules of the Indian Constitution list specific details referred to in its articles.

The Eighth Schedule contains the languages recognised by the Constitution (Articles 344 and 351); it originally had 14 languages and now has 22.

Fundamental Rights are in Part III, Fundamental Duties in Part IVA, and laws protected from judicial review are placed in the Ninth Schedule.

Hence, **Official Indian languages**.

7. Answer: d

Explanation:

Article 101 of the Constitution deals with vacation of seats in Parliament.

Article 101(1) states that no person shall be a member of both Houses of Parliament at the same time.

If a person is elected to both the Lok Sabha and the Rajya Sabha, he must vacate one seat as provided by law, otherwise his seat in the Rajya Sabha becomes vacant; no emergency changes this rule.

Hence, **No**.

8. Answer: a

Explanation:

Article 53(2) of the Constitution vests the supreme command of the Defence Forces of the Union in the President.

Thus the President of India is the Supreme Commander of the Army, Navy and Air Force, and its exercise is regulated by law.

The Defence Minister heads the Ministry of Defence, while the service chiefs command their individual forces.

Hence, **The President of India**.

9. Answer: c

Explanation:

The Indigo Revolt (Neel Vidroh) of 1859–60 was a peasant uprising against European indigo planters who forced farmers to grow indigo on unfair terms.

It broke out in the Nadia district of Bengal, in present-day West Bengal, led by Digambar Biswas and Bishnu Biswas.

Dinabandhu Mitra's play 'Neel Darpan' highlighted the oppression of the indigo cultivators.

Hence, **West Bengal**.

10. Answer: c

Explanation:

Mars is the fourth planet from the Sun and is called the Red Planet because of iron oxide on its surface.

Its average distance from the Sun (semi-major axis) is about 227.9 million km, or roughly 1.52 astronomical units.

For comparison, Earth orbits at about 149.6 million km from the Sun.

Hence, **227.9 million km**.

11. Answer: d

Explanation:

Article 56(1)(a) of the Constitution provides that the President may resign by writing under his hand addressed to the Vice-President.

The Vice-President must then immediately communicate the resignation to the Speaker of the Lok Sabha.

Similarly, the Vice-President addresses his resignation to the President.

Hence, **The Vice-President**.

12. Answer: a

Explanation:

Ethiopia is a landlocked country in the Horn of Africa.

Its capital and largest city is Addis Ababa, which also hosts the headquarters of the African Union.

Accra is the capital of Ghana, Phnom Penh of Cambodia and Kuala Lumpur of Malaysia.

Hence, **Addis Ababa**.

13. Answer: d

Explanation:

The Thames is the longest river flowing entirely in England, about 346 km long.

It rises in the Cotswold Hills and flows eastward through Oxford and London before entering the North Sea through its estuary.

London, the capital of the United Kingdom, stands on the banks of the Thames.

Hence, **England**.

14. Answer: a

Explanation:

Timo Boll of Germany, Li Xiaoxia of China (2012 Olympic women's singles champion) and Jun Mizutani of Japan are well-known table tennis players.

Magnus Carlsen of Norway is a chess Grandmaster and has been the World Chess Champion since 2013.

So Carlsen is the only one not associated with table tennis.

Hence, **Magnus Carlsen**.

15. Answer: d

Explanation:

'A Century is Not Enough' is the autobiography of former Indian cricket captain Sourav Ganguly.

It was co-written with journalist Gautam Bhattacharya and released in 2018.

Sachin Tendulkar's autobiography is 'Playing It My Way', and Don Bradman wrote 'The Art of Cricket'.

Hence, **Sourav Ganguly**.

16. Answer: d

Explanation:

The posterior pituitary (neurohypophysis) stores and releases hormones made by the hypothalamus.

It releases two hormones: oxytocin, which causes uterine contraction during childbirth and milk ejection, and vasopressin (ADH), which controls water reabsorption in the kidneys.

Progesterone and estrogen come from the ovaries, while melatonin is secreted by the pineal gland.

Hence, **Oxytocin**.

17. Answer: d

Explanation:

Every sport has its own technical terms.

In volleyball, a 'back row attack' is an attack in which a back-row player jumps from behind the 3-metre attack line and hits the ball over the net.

Other volleyball terms include spike, block, dig, libero and set.

Hence, **Volleyball**.

18. Answer: c

Explanation:

Leaves have tiny pores in their epidermis called stomata.

Each stoma is surrounded by two guard cells that open and close it, regulating the

loss of water vapour (transpiration) and the exchange of oxygen and carbon dioxide.

Villi are finger-like projections of the small intestine, and chromatin is the DNA-protein material in the nucleus.

Hence, **Stomata**.

19. Answer: d

Explanation:

The Khonds (Kondh) are one of the largest tribal communities of eastern India.

In the 19th century they lived in the hilly forests of Odisha, practising shifting cultivation, hunting and gathering forest produce.

They are still concentrated mainly in the Kandhamal, Rayagada and Koraput districts of Odisha, and are known for the Khond uprisings against British rule.

Hence, **Odisha**.

20. Answer: c

Explanation:

Under Article 83(2), the Lok Sabha continues for five years from the date of its first meeting, unless dissolved sooner.

Article 85(2)(b) gives the President the power to dissolve the Lok Sabha before its term ends.

The President usually does so on the advice of the Council of Ministers headed by the Prime Minister, but the formal power rests with the President.

Hence, **By the President**.

21. Answer: a

Explanation:

Indian territories are either full states or Union Territories administered by the Centre.

Sikkim, earlier a protectorate, became the 22nd state of India through the 36th Constitutional Amendment Act in 1975.

Chandigarh, Puducherry and Lakshadweep continue to be Union Territories; Puducherry has a legislature but is still not a state.

Hence, **Sikkim**.

22. Answer: d

Explanation:

Bacteriology is the branch of microbiology that studies bacteria and the diseases they cause.

German physician Robert Koch identified the bacteria causing anthrax, tuberculosis (1882) and cholera, and gave Koch's postulates linking a specific microbe to a specific disease.

For this work he is called the father of modern bacteriology; Von Baer is linked with embryology, R. Misra with Indian ecology and Edward Jenner with vaccination.

Hence, **Robert Koch**.

23. Answer: d

Explanation:

Oxalic acid is the simplest dicarboxylic acid, with formula $HOOC - COOH$.

Its parent chain has 2 carbon atoms (eth-), and both ends carry a carboxylic acid group, so the suffix is "-dioic acid".

Combining these gives the IUPAC name ethanedioic acid; methanoic acid is formic acid, butanoic acid is butyric acid and hexanedioic acid is adipic acid.

Hence, **Ethanedioic acid**.

24. Answer: b

Explanation:

The Indian National Congress held its annual session of December 1929 at Lahore on the banks of the Ravi.

It was presided over by Jawaharlal Nehru, and it adopted the resolution of Purna Swaraj (complete independence) as the goal of the national movement.

Following this session, 26 January 1930 was celebrated as Independence Day, and the Karachi session (1931) came later.

Hence, **Lahore**.

25. Answer: c

Explanation:

A Bodhisattva is a being who has attained or is close to enlightenment (bodhi) but delays nirvana to help others.

The ideal is central to Mahayana Buddhism, with figures such as Avalokiteshvara, Manjushri and Maitreya.

The Jataka tales also describe the previous births of the Buddha as a Bodhisattva.

Hence, **Buddhism**.

26. Answer: a

Explanation:

Ocean trenches are long, deep depressions formed where one tectonic plate subducts beneath another.

The Tonga Trench lies in the south-west Pacific Ocean, north-east of New Zealand, where the Pacific Plate subducts under the Tonga Plate.

With a depth of about 10,800 m, it is the second deepest trench in the world after the Mariana Trench, also in the Pacific.

Hence, **Pacific Ocean**.

27. Answer: b

Explanation:

Acetic acid is a weak acid that ionizes only partially: $CH_3COOH \rightleftharpoons CH_3COO^- + H^+$.

Its ionization constant is $K_a = \frac{[CH_3COO^-][H^+]}{[CH_3COOH]}$.

At 298 K, the standard tabulated value of K_a for acetic acid is 1.74×10^{-5} ($pK_a \approx 4.76$), showing it is a weak acid.

Hence, 1.74×10^{-5} .

28. Answer: b

Explanation:

Kakrapar Atomic Power Station is located near Vyara in Tapi district of Gujarat, close to Surat.

It is operated by the Nuclear Power Corporation of India Limited (NPCIL) and its pressurised heavy water reactors draw cooling water from the Kakrapar reservoir on the Tapi river.

Its first unit began commercial operation in 1993.

Hence, **Gujarat**.

29. Answer: d

Explanation:

Momentum is the quantity of motion contained in a moving body.

It is defined as the product of mass and velocity: $p = mv$, a vector quantity with SI unit kg m/s.

Mass $\times$ acceleration gives force ($F = ma$), not momentum.

Hence, **Mass $\times$ Velocity**.

30. Answer: d

Explanation:

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

The border with Afghanistan lies along the Wakhan Corridor in the Gilgit-Baltistan region of Jammu and Kashmir as claimed by India.

The Maldives is an island nation in the Arabian Sea / Indian Ocean, south-west of India, and has only a maritime boundary with India.

Hence, **Maldives**.

31. Answer: b

Explanation:

RTGS stands for Real Time Gross Settlement, an electronic fund transfer system run by the Reserve Bank of India.

In RTGS, each transaction is settled individually (gross) and immediately (real time), without netting.

It was introduced in India in 2004 and is meant mainly for large-value transfers, with a minimum of ₹2 lakh.

Hence, **Real Time Gross Settlement**.

32. Answer: d

Explanation:

Lok Sabha seats are allotted to states broadly in proportion to their population.

Uttar Pradesh, the most populous state, sends 80 members to the Lok Sabha.

It is followed by Maharashtra (48), West Bengal (42), Bihar (40) and Madhya Pradesh (29).

Hence, **Uttar Pradesh**.

33. Answer: b

Explanation:

"The Archaeology of Ancient Indian Cities" was written by the archaeologist Dilip Kumar Chakrabarti and published by Oxford University Press in 1995.

Chakrabarti, a professor at the University of Cambridge, is known for his work on early Indian urbanisation and archaeology.

The book traces the growth of cities in India from the Harappan period to the early historic age.

Hence, **Dilip Kumar Chakrabarti**.

34. Answer: a

Explanation:

The Khajuraho group of temples in Madhya Pradesh was built by the Chandela dynasty between about 950 and 1050 CE in the Nagara style.

The Lakshmana Temple, dedicated to Vishnu (Vaikuntha), was built around 954 CE by the Chandela king Yashovarman.

The Khajuraho temples are a UNESCO World Heritage Site, inscribed in 1986.

Hence, **By the Chandelas.**

35. Answer: c

Explanation:

The Kheda Satyagraha of 1918 took place in Kheda district of Gujarat.

Peasants there could not pay land revenue because crops had failed, and Mahatma Gandhi led a no-tax campaign demanding remission.

Sardar Vallabhbhai Patel emerged as a key leader in this movement, which followed Champaran (Bihar, 1917) and the Ahmedabad mill strike (1918).

Hence, **Gujarat.**

36. Answer: d

Explanation:

Dispur, a locality of Guwahati, is the capital of Assam.

It became the capital in 1973, after Shillong went to the newly formed state of Meghalaya.

Ranchi is the capital of Jharkhand, Itanagar of Arunachal Pradesh and Raipur of Chhattisgarh.

Hence, **Dispur**.

37. Answer: b

Explanation:

The Summer Youth Olympic Games are held every four years for athletes aged 15 to 18.

The third Summer Youth Olympics were held in Buenos Aires, Argentina, from 6 to 18 October 2018.

India won 13 medals there (3 gold, 9 silver, 1 bronze), its best showing at the Youth Olympics.

Hence, **Buenos Aires**.

38. Answer: c

Explanation:

The Wildlife (Protection) Act was passed by the Parliament of India in 1972 to protect wild animals, birds and plants.

It provides for Schedules of protected species, bans hunting of listed animals and allows the creation of national parks and wildlife sanctuaries.

Project Tiger (1973) was launched soon after under this framework.

Hence, 1972.

39. Answer: a

Explanation:

A hard currency is one that is widely accepted in international trade, is freely convertible and comes from a politically and economically stable country.

The US Dollar, the Euro and the Canadian Dollar are widely traded and held as reserve currencies, so they are treated as hard currencies.

The Kuwaiti Dinar, though one of the highest-valued currencies per unit, is not widely used in global trade or reserves, so it is not counted as a hard currency.

Hence, Kuwaiti Dinar.

40. Answer: b

Explanation:

The calotype was an early photographic process using paper negatives, patented by William Henry Fox Talbot in 1841.

The Calotype Society, also known as the Photographic Club, was founded in London in 1847 by enthusiasts of this process.

It was among the first photographic societies in the world and paved the way for the Photographic Society of London (1853).

Hence, 1847 AD.

41. Answer: d

Explanation:

The Indian Parliament consists of the President, the Lok Sabha (House of the People) and the Rajya Sabha (Council of States).

The Lok Sabha is directly elected by the people, and the Council of Ministers is collectively responsible to it under Article 75(3).

Money Bills can be introduced only in the Lok Sabha (Article 109), the Rajya Sabha can only delay them for 14 days, and in a joint sitting the larger strength of the Lok Sabha prevails.

Hence, Lok Sabha.

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42. Answer: a

Explanation:

ECGC Ltd. is a Government of India enterprise under the Ministry of Commerce and Industry that provides export credit insurance to exporters and banks.

It was set up in 1957 to protect Indian exporters against the risk of non-payment by foreign buyers.

Its registered office and headquarters are located at Nariman Point in Mumbai,

Maharashtra.

Hence, **Mumbai**.

43. Answer: c

Explanation:

The Supreme Court of India is the apex judicial body constituted under Article 124 of the Constitution.

It came into existence on 28 January 1950, two days after the Constitution came into force, replacing the Federal Court of India.

Its first sitting was held in the Chamber of Princes in the Parliament House, with H. J. Kania as the first Chief Justice.

Hence, **1950**.

44. Answer: b

Explanation:

A river together with its tributaries drains water from a definite area of land.

The entire area drained by a river and its tributaries is called its drainage basin or river basin, and the boundary separating two basins is the watershed.

For example, the Ganga basin is the largest river basin in India.

Hence, **Basin**.

45. Answer: a

Explanation:

The line where the land surface meets the sea or ocean is known as the coastline or seashore.

A gorge is a narrow, deep valley with steep sides, an island is land surrounded by water, and arid refers to a dry region.

India has a coastline of about 7,516.6 km including its islands.

Hence, **Coastline**.

46. Answer: d

Explanation:

Deuce is a scoring term used in tennis (and also in table tennis and badminton).

In tennis it refers to a score of 40-40 in a game, after which a player must win two consecutive points to win the game.

The point won immediately after deuce is called advantage.

Hence, **Tennis**.

47. Answer: b

Explanation:

Jawaharlal Nehru, India's first Prime Minister, died in office on 27 May 1964.

Gulzarilal Nanda, then the senior-most minister, was sworn in as the acting (interim) Prime Minister and served until Lal Bahadur Shastri took over on 9 June 1964.

Nanda again became acting Prime Minister in January 1966 after the death of Shastri at Tashkent.

Hence, **Shri Gulzarilal Nanda**.

48. Answer: a

Explanation:

The Yoga Sutras are the foundational text of the Yoga school of Indian philosophy.

They were compiled by the sage Patanjali and consist of 196 aphorisms arranged in four chapters (padas), describing the eight-limbed (Ashtanga) path of yoga.

Kanada founded the Vaisheshika school, while Nagasena is known for the Buddhist text Milindapanho.

Hence, **Patanjali**.

49. Answer: b

Explanation:

Colombia is a country in the north-western part of South America with Bogota as its capital.

Its official currency is the Colombian peso (COP), issued by the Banco de la

Republica.

The peso is also the currency name in several other Latin American countries such as Mexico, Chile and Argentina.

Hence, **Colombian Peso**.

50. **Answer: a**

Explanation:

SI prefixes are used to express very large or very small multiples of SI units.

The prefix atto (symbol a) represents 10^{-18} , while exa (E) represents 10^{18} .

Yocto (y) stands for 10^{-24} and yotta (Y) stands for 10^{24} , so they do not match.

Hence, **Atto**.

51. **Answer: a**

Explanation:

In classification, we find the common property shared by four of the items.

Wheel, Brake, Engine and Accelerator are all parts of a vehicle such as a car.

Bark is the outer covering of a tree trunk (or the sound of a dog) and has no relation to a vehicle.

Hence, **Bark**.

52. Answer: d

Explanation:

In passage-based inference questions, a statement is definitely true when it is directly stated in the passage.

The ASSOCHAM report quoted in the passage explicitly mentions "6.3% GDP growth in the second quarter of 2017-18".

The statement repeats exactly this fact, so it is definitely true and not merely probable.

Hence, A.

53. Answer: d

Explanation:

Break the relation step by step from the husband's side.

The girl's husband's father is the husband's father.

The father of the husband's father is the husband's paternal grandfather, so the man is the grandfather of the girl's husband.

Hence, **Grandfather**.

54. Answer: a

Explanation:

Number the seats 1 to 5 from West to East; Row 1 faces South (their left is East) and Row 2 faces North (their left is West).

B is second to the left of E and E is at an end, so $E = 1$ and $B = 3$, with $Q = 3$ opposite B; P is not next to Q and not opposite E, so $P = 5$, and S between P and Q gives $S = 4$ with $A = 4$ opposite.

C and D occupy 2 and 5 in Row 1 and T, R occupy 1 and 2 in Row 2; the diagonal condition for C and T places $T = 1$, so $R = 2$.

Third to the left of P (seat 5, facing North) is seat 2, occupied by R.

Hence, R.

55. Answer: b

Explanation:

Track the two elements of the figure separately.

The "=" sign moves anticlockwise along the border by half a side each step: top-left, middle-left, bottom-left, bottom-middle, bottom-right, so next it goes to middle-right.

The pentagon moves anticlockwise from corner to corner: bottom-left, bottom-right, top-right, top-left, bottom-left, so next it goes to bottom-right and remains unshaded.

The next figure therefore has the "=" sign at the middle of the right side and an unshaded pentagon at the bottom-right corner.

Hence, the figure with "=" at middle-right and the pentagon at bottom-right.

56. Answer: c

Explanation:

Each term is obtained by multiplying the previous term by an increasing number and adding the next number.

$$17 \times 1 + 2 = 19, 19 \times 2 + 3 = 41, 41 \times 3 + 4 = 127, 127 \times 4 + 5 = 513.$$

Following the pattern, the next term = $513 \times 5 + 6 = 2565 + 6 = 2571$.

Hence, **2571**.

57. Answer: d

Explanation:

A conclusion follows only if it can be derived directly from the statement.

The statement advises buying Nick's product if one wants to pay less, which clearly implies that the product is economically priced, so conclusion i follows.

Nothing is said about the quality of the product, so conclusion ii does not follow; therefore only conclusion i follows.

Hence, **A**.

58. Answer: a

Explanation:

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

So the letters of BROWSER keep their left-to-right order; B, O and E look nearly the same, W turns into an M shape, S is flipped upside down, and each R appears with its leg pointing upward.

The option with both R's inverted upside down (not laterally reversed) and the word not reversed left to right is the correct water image.

Hence, the vertically inverted BROWSER with both R's flipped upside down.

59. Answer: b

Explanation:

Some feet are inches and all inches are yards, so those feet are definitely yards; conclusion i follows.

Meters are linked to yards only through feet, and the part of feet that are inches may or may not include meters, so neither ii nor iii follows definitely.

However, ii (some meters are yards) and iii (no meter is a yard) form a complementary pair covering all possibilities, so either ii or iii follows; iv does not follow since no definite link exists between meters and inches.

Hence, Only i, and either ii or iii.

60. Answer: a

Explanation:

Decode the expression symbol by symbol.

PQ means P is the brother of Q , QR means Q is the brother of R , and $R@S$ means R is the mother of S .

So P is a brother of R , who is the mother of S ; the brother of one's mother is one's maternal uncle.

Hence, **Uncle**.

61. Answer: a

Explanation:

The differences between consecutive terms form a pattern of perfect squares.

$$127 - 126 = 1 = 1^2, 131 - 127 = 4 = 2^2, 140 - 131 = 9 = 3^2, 156 - 140 = 16 = 4^2.$$

So the next difference is $5^2 = 25$, giving $156 + 25 = 181$.

Hence, **181**.

62. Answer: c

Explanation:

A right-angled triangle is formed wherever the diagonal cuts across a rectangle bounded by straight sides.

The diagonal divides the large upper rectangle into 2 right triangles and the lower rectangle into 2 right triangles.

It also divides the small overlapping rectangle in the middle into 2 right triangles; the curved lines do not form any triangle.

Total right-angled triangles = $2 + 2 + 2 = 6$.

Hence, 6.

63. Answer: d

Explanation:

Count the squares level by level, starting from the largest.

The outer square gives 1 and its four quadrants give 4 more.

Each small grid has 4 tiny squares plus the grid's own boundary square, i.e. 5 squares, and there are 2 such grids, giving 10.

Total squares = $1 + 4 + 10 = 15$.

Hence, 15.

64. Answer: b

Explanation:

To form a complete square, the pieces must fit edge to edge with their curved and slanted edges matching.

Piece 3 has a long straight base and a curved right edge, which matches the curved edge of piece 1 on one side and piece 5 on the other.

The slanted edges of pieces 1 and 5 then meet to close the top of the square, while the plain triangles 2 and 4 have no matching curved edges.

So pieces 1, 3 and 5 together make a complete square.

Hence, **1, 3, 5**.

65. Answer: d

Explanation:

Only straight lines are counted; the curved outlines around the two arrows are not straight lines.

The long vertical line and the long horizontal line at the centre of the figure cross each other, so this crossing is counted as 4 separate lines.

To these are added the two slanting edges of each arrowhead, the short horizontal lines at the base of each arrowhead and the vertical sides of the two arrow shafts.

Counting all these straight lines together gives a total of 16.

Hence, **16**.

66. Answer: b

Explanation:

The four boxes form a symmetrical pattern: the top-left and top-right boxes are mirror images about the vertical line, and the top-right and bottom-right boxes are mirror images about the horizontal line.

The top-left box has its meeting point near the bottom-right, joined to its top-left, top-right and bottom-left corners.

The missing bottom-left box must be the mirror image of the top-left box about the horizontal line, so its meeting point lies near the top-right, joined to the top-left, bottom-left and bottom-right corners, with no extra small square.

This matches the figure with the meeting point near the top-right and no extra small square.

Hence, the figure that is the top-left box flipped top to bottom.

67. Answer: c

Explanation:

Check the gaps between consecutive letters using alphabet positions.

AEI: $A(1) + 4 E(5) + 4 I(9)$; MQU: $M + 4 Q + 4 U$; CGK: $C + 4 G + 4 K$; LPT: $L + 4 P + 4 T$.

KNS: $K(11) + 3 N(14) + 5 S(19)$, which breaks the +4, +4 pattern.

So KNS is the odd one out.

Hence, KNS.

68. Answer: a

Explanation:

The differences alternate in sign and their sizes are consecutive prime numbers.

$199 + 3 = 202$, $202 - 5 = 197$, $197 + 7 = 204$, $204 - 11 = 193$.

The next step is $+ 13$, so $193 + 13 = 206$.

Hence, **206**.

69. Answer: b

Explanation:

The first pair links an animal to the name of its young one.

The young one of a cat is called a kitten.

Similarly, the young one of a cow is called a calf; a bull is the male, a lamb is the young of a sheep and bleat is the sound of a sheep or goat.

Hence, **Calf**.

70. Answer: d

Explanation:

Compare the letters of READING with FJWILSN position by position.

The letters at the 2nd, 4th and 6th positions are each shifted forward by 5: $E \rightarrow J$, $D \rightarrow I$, $N \rightarrow S$.

Applying the same rule to FORMULA: $O \rightarrow T$, $M \rightarrow R$, $L \rightarrow Q$, so the code must have T, R and Q at the 2nd, 4th and 6th positions.

Only WTKRFQZ satisfies this, so it is the code for FORMULA.

Hence, WTKRFQZ.

71. Answer: c

Explanation:

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

$B + 2 = D$ and $T + 2 = V$, so BT becomes DV.

Applying the same rule, $L + 2 = N$ and $X + 2 = Z$, so LX becomes NZ.

Hence, NZ.

72. Answer: b

Explanation:

A has a husband B, so A is a woman.

M is the only son-in-law of A, which means M is married to A's daughter.

N is the wife of M, so N is A's daughter, and therefore A is N's mother.

Hence, **Mother**.

73. Answer: a

Explanation:

A mirror placed to the right of a word reverses left and right but keeps top and bottom unchanged.

So the letters appear in reverse order T, P, Y, G, E, and each letter is flipped sideways.

Symmetric letters T and Y look the same, while P, G and E appear laterally inverted and stay upright.

Upright, sideways-flipped letters in the order T P Y G E form the correct mirror image.

Hence, **the correct mirror image of EGYPT.**

74. Answer: b

Explanation:

Red appears in both views; it is adjacent to purple and white in the first and to orange and green in the second, so gray must be opposite red.

Reading each visible corner in the same rotational order (top, front, right), the first view gives red followed by purple and white, and the second gives red followed by orange and green.

Hence the four faces around red occur in the cyclic order purple, white, orange, green, so opposite faces are purple-orange and white-green.

Therefore the face opposite green is white.

Hence, **White.**

75. Answer: c

Explanation:

Combine the given inequalities along the chain and check each conclusion.

For conclusion I: $B \geq L = K$ gives $B \geq K$, so it follows.

For conclusion II: $L = K < T = J$ gives $L < J$, so it also follows.

Since both conclusions follow, the correct choice is the statement 'both i and ii follow'.

Hence, E.

76. Answer: b

Explanation:

Number the seats 1 to 5 from west to east; row 1 faces south, so its left is east, and row 2 faces north, so its left is west.

E is at an end and B is second to his left, so $E = 1$ and $B = 3$, with $Q = 3$ opposite B; P is not next to Q and not opposite E, so $P = 5$, $S = 4$ between them and $A = 4$ opposite S.

C and T are diagonally opposite, giving $C = 2$, $T = 1$, $D = 5$ and $R = 2$; the original rows are E C B A D and T R Q S P.

After swapping E with A, D with C and S with Q, row 1 is A D B E C and row 2 is T R S Q P, so S is at seat 3 facing north and T at seat 1 is second to the left of S.

Hence, T is **second to the left of S**.

77. Answer: b

Explanation:

Link the letters of each conclusion through a common chain of the statements.

For i: $K = D > T > U = Q$, so $K > Q$ is definitely true.

For ii: $B \geq T > Q < C$, and for iii: $C > Q < T < D = K$; the signs point in opposite directions, so no definite relation exists between B and C or between C and K.

Thus only conclusion i is true.

Hence, **Only i**.

78. Answer: c

Explanation:

A statement can be judged true or false only if the passage gives information about it.

The passage links the 7 percent growth estimate to government focus on rural conditions before the 2019 elections, and mentions inflation and the monsoon.

It says nothing about the foreign exchange rate or its stability, so the passage neither supports nor contradicts the statement.

Therefore the statement cannot be evaluated from the given passage.

Hence, **C**.

79. Answer: a

Explanation:

The first pair links a medical specialist to the body part he treats.

A dentist treats teeth.

Similarly, an ophthalmologist is a doctor who specialises in the eyes, while ears, bones and muscles are treated by other specialists.

Hence, **Eyes**.

80. Answer: b**Explanation:**

The second number of each pair is the sum of the digits of the first number.

$$1 + 4 + 6 + 8 = 19.$$

Similarly, $2 + 2 + 2 + 4 = 10.$

Hence, **10**.

81. Answer: c**Explanation:**

Write the place value of each letter in the English alphabet.

$$R = 18, Z = 26, B = 2, N = 14 \text{ and } U = 21.$$

R, Z, B and N all have even place values, while U is the only letter with an odd place

value (21).

So U does not belong to the group.

Hence, U.

82. Answer: d

Explanation:

Look at the differences between consecutive terms.

$$308 - 295 = 13, 327 - 308 = 19, 352 - 327 = 25 \text{ and } 383 - 352 = 31.$$

The differences increase by 6 each time, so the next difference is $31 + 6 = 37$.

$$\text{Next term} = 383 + 37 = 420.$$

Hence, 420.

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83. Answer: a

Explanation:

Number the seats 1 to 5 from west to east; row 1 faces south, so the left of a row-1 person is towards the east.

E sits at an end and B is second to the left of E, so $E = 1$ and $B = 3$; Q faces B, so $Q = 3$. P is not a neighbour of Q and not opposite E, so $P = 5$, and S (between P and Q) = 4, with A opposite S at 4.

C and T are diagonally opposite at the ends, giving row 1: E, D, B, A, C and row 2: T, R,

Q, S, P.

After the swaps, row 1 becomes A, C, B, E, D and row 2 becomes T, R, S, Q, P, so S is now at seat 3, directly opposite B.

Hence, B.

84. Answer: d

Explanation:

Combine the statements: some cats are dogs and every dog is a rat, so the cats that are dogs are also rats.

Therefore some cats are rats, which by conversion means some rats are cats; conclusion i follows.

Nothing says that every rat is a cat, since rats may exist outside the cat group, so conclusion ii does not follow.

Only conclusion i follows.

Hence, A.

85. Answer: d

Explanation:

Each letter is replaced by its opposite letter in the alphabet, i.e. the pair whose positions add up to 27.

$Y(25) \rightarrow B(2)$, $E(5) \rightarrow V(22)$, $L(12) \rightarrow O(15)$, $L \rightarrow O$, $O(15) \rightarrow L(12)$, $W(23) \rightarrow D(4)$, giving

BVOOLD.

Applying the same rule to GREEN: $G(7) \rightarrow T(20)$, $R(18) \rightarrow I(9)$, $E(5) \rightarrow V(22)$, $E \rightarrow V$, $N(14) \rightarrow M(13)$.

So GREEN is coded as TIVVM.

Hence, TIVVM.

86. Answer: d

Explanation:

Use the laws of exponents $(a^m)^n = a^{mn}$ and $\frac{a^m}{a^n} = a^{m-n}$.

$(4^4)^2 = 4^8$ and $64^2 = (4^3)^2 = 4^6$, so the bracket becomes $\frac{4^8}{4^6} = 4^2 = 16$.

Squaring gives $16^2 = 256$, and adding 10 gives $256 + 10 = 266$.

Hence, 266.

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87. Answer: a

Explanation:

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

Time ratio of Binoy to Kairo = 15 : 16.

So the speed ratio = $1/15 : 1/16 = 16 : 15$.

Hence, 16:15.

88. Answer: d

Explanation:

The combined average is total weight divided by total number of items.

Weight of first 4 bangles = $4 \times 30 = 120$ gm and weight of remaining 6 bangles = $6 \times 31 = 186$ gm.

Total weight = $120 + 186 = 306$ gm, so the average = $306 \div 10 = 30.6$ gm.

Hence, 30.6.

89. Answer: a

Explanation:

Trailing zeros in $n!$ equal the number of factors of 5 in $n!$, found by adding the integer parts of $n/5$, $n/25$, $n/125$ and so on.

For $76!$: $[76/5] = 15$ and $[76/25] = 3$, while $[76/125] = 0$.

Number of trailing zeros = $15 + 3 = 18$.

Hence, 18.

90. Answer: d

Explanation:

For successive percentage changes $a\%$ and $b\%$, net change = $a + b + ab/100$.

Here $a = +3$ and $b = -3$, so net change = $3 - 3 + (3 \times (-3))/100 = -0.09\%$.

The negative sign shows the area decreases by 0.09%.

Hence, **0.09% decrease**.

91. Answer: c**Explanation:**

The diagonal of a cube of side a is $a\sqrt{3}$, and on melting the volume remains the same.

$a\sqrt{3} = 7\sqrt{3}$ gives $a = 7$ cm, so the volume of the cube = $7^3 = 343$ cm³.

For the cuboid, $7 \times 3.5 \times h = 343$, so $24.5h = 343$.

$h = 343 \div 24.5 = 14$ cm.

Hence, **14 cm**.

92. Answer: c**Explanation:**

Find each square root first and then apply BODMAS, doing division before addition.

$\sqrt{19.36} = 4.4$ and $\sqrt{77.44} = 8.8$.

$8.8 \div 2 = 4.4$, so the expression $= 4.4 + 4.4 = 8.8$.

Hence, **8.8**.

93. Answer: c

Explanation:

Simple interest $SI = P \times R \times T \div 100$ and amount $= P + SI$.

$SI = 4600 \times 8 \times 5 \div 100 = ₹1840$, so the amount after 5 years $= 4600 + 1840 = ₹6440$.

Half of this goes to the share market, so the remaining amount $= 6440 \div 2 = ₹3220$.

Hence, **3220**.

94. Answer: b

Explanation:

Read the 2010 bars from the graph: $C1 = 58$, $C2 = 72$, $C3 = 66$, $C4 = 76$ and $C5 = 48$ (in thousands).

Total sales in 2010 $= 58 + 72 + 66 + 76 + 48 = 320$ thousand.

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

Hence, **64**.

95. Answer: c

Explanation:

When the second divisor is a factor of the first divisor, the new remainder is the old remainder divided by the new divisor.

The number can be written as $42k + 13$, and $42k$ is divisible by 14 because $42 = 14 \times 3$.

So the remainder is the remainder of $13 \div 14$, which is 13.

Hence, 13.

96. Answer: a

Explanation:

Weight of the new item = new total - old total.

Old total = $95 \times 9.5 = 902.5$ kg and new total = $96 \times 9.6 = 921.6$ kg.

Weight of the new notebook = $921.6 - 902.5 = 19.1$ kg.

Hence, 19.1 kg.

97. Answer: c

Explanation:

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

89% of total = 2047, so the total = $2047 \times 100 \div 89 = 2300$.

Defective products = $2300 - 2047 = 253$ (or 11% of 2300 = 253).

Hence, **253**.

98. Answer: d

Explanation:

Add the 2010 and 2011 sales of the required branches from the graph.

$C1 = 58 + 68 = 126$, $C3 = 66 + 72 = 138$ and $C5 = 48 + 73 = 121$ (in thousands).

Total = $126 + 138 + 121 = 385$ thousand.

Hence, **385**.

99. Answer: b

Explanation:

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

Average speed = $3 \div (1/20 + 1/24 + 1/30)$.

$1/20 + 1/24 + 1/30 = (6 + 5 + 4)/120 = 15/120 = 1/8$.

Average speed = $3 \times 8 = 24$ kmph.

Hence, **24 kmph**.

100. Answer: d

Explanation:

Cost price $CP = SP \times 100 \div (100 + \text{profit}\%)$.

$12.5\% = 1/8$, so $SP = CP \times 9/8$ and $CP = 819 \times 8 \div 9 = ₹728$.

Half of the cost price $= 728 \div 2 = ₹364$.

Hence, ₹364.

101. Answer: c

Explanation:

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

Original circumference $= 2\pi r$; new radius $= 6r$, so new circumference $= 2\pi(6r) = 6 \times 2\pi r$.

Thus the new circumference is 6 times the original circumference.

Hence, 6.

102. Answer: a

Explanation:

When the price is first raised by $x\%$ and then reduced by $x\%$, the net effect is always a loss of $\frac{x^2}{100}\%$.

Let CP = 100. Marked price = 132 and selling price = $132 \times 0.68 = 89.76$.

Loss = $100 - 89.76 = 10.24$, i.e. $\frac{32^2}{100} = 10.24\%$ loss.

Hence, **10.24% loss**.

103. Answer: d

Explanation:

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

Product of the numbers = LCM $\times$ HCF.

Product = $30 \times 9 = 270$.

Hence, **270**.

104. Answer: d

Explanation:

Use the law $a^{-n} = \frac{1}{a^n}$ and follow BODMAS.

$4 \div 4^{-2} = 4 \times 4^2 = 64$.

$\sqrt{81} = 9$ and $\sqrt{25} = 5$, so the value = $64 + 9 + 5 = 78$.

Hence, **78**.

105. Answer: a

Explanation:

Let the numbers of coins be $12k$, $13k$ and $11k$; the total value is the sum of number $\times$ face value.

$$\text{Total value} = 3(12k) + 4(13k) + 5(11k) = 36k + 52k + 55k = 143k.$$

$$143k = 572 \Rightarrow k = 4, \text{ so the number of ₹3 coins} = 12 \times 4 = 48.$$

Hence, 48.

106. Answer: c

Explanation:

Find the total percentage spent, then use the remaining amount to get the full salary.

$$\text{Total given away} = 14 + 16 + 12 + 13 = 55\%, \text{ so the remaining } 45\% = ₹24570.$$

$$\text{Salary} = \frac{24570 \times 100}{45} = ₹54600, \text{ and } 12\% \text{ of it} = \frac{12 \times 54600}{100} = ₹6552.$$

Hence, ₹6552.

107. Answer: a

Explanation:

Division is performed from left to right, and dividing by $\frac{1}{9}$ is the same as multiplying by 9.

$$\frac{1}{9} \div \frac{1}{9} = 1.$$

Then $1 \times 9 \times 9 \times 9 = 729$.

Hence, **729**.

108. Answer: a

Explanation:

Let the first child get x gifts; then the shares are $x, \frac{x}{2}, \frac{x}{3}$ and $\frac{x}{4}$.

$$x + \frac{x}{2} + \frac{x}{3} + \frac{x}{4} = 350 \Rightarrow \frac{25x}{12} = 350.$$

$$x = \frac{350 \times 12}{25} = 168.$$

Hence, **168**.

109. Answer: d

Explanation:

The number of ways of equal distribution equals the number of divisors (factors) of 480.

$$480 = 2^5 \times 3^1 \times 5^1, \text{ and the number of divisors} = (5 + 1)(1 + 1)(1 + 1).$$

$$\text{Number of divisors} = 6 \times 2 \times 2 = 24.$$

Hence, **24**.

110. Answer: a

Explanation:

Under compound interest, if a sum becomes k times in n years, it becomes k^m times in mn years.

$16 = 2^4$, so the sum must double 4 times.

Required time = $4 \times 3 = 12$ years.

Hence, 12.

111. Answer: a

Explanation:

The overall average equals the weighted average of the two groups.

Total calls = 1010×55 and calls by men = 505×55 .

Calls by women = $1010 \times 55 - 505 \times 55 = 505 \times 55$, so each woman averages 55 calls/day.

Hence, 55.

112. Answer: c

Explanation:

For a fixed distance, time is inversely proportional to speed, so at $\frac{6}{7}$ of the speed the time becomes $\frac{7}{6}$ of the usual time.

$$\text{Extra time} = \frac{7}{6}T - T = \frac{T}{6} = 14 \text{ minutes.}$$

$$T = 84 \text{ minutes} = 1 \text{ hour } 24 \text{ minutes.}$$

Hence, **1 hour 24 minutes**.

113. Answer: a

Explanation:

The difference in travel times at the two speeds equals $9 + 8 = 17$ minutes $= \frac{17}{60}$ hour.

$$\frac{d}{20} - \frac{d}{24} = \frac{17}{60} \Rightarrow \frac{d}{120} = \frac{17}{60}.$$

$$d = 34 \text{ km.}$$

Hence, **34 km**.

114. Answer: d

Explanation:

Let the salaries be $7k$, $9k$ and $11k$.

$$\text{Shri} - \text{Sam} = 11k - 7k = 4k = 320 \Rightarrow k = 80.$$

$$\text{Sai's salary} = 9 \times 80 = 720.$$

Hence, **720**.

115. Answer: d

Explanation:

Read the 2010 and 2011 bars of each required branch from the graph and add them.

Branch C2: $72 + 88 = 160$ thousand; branch C4: $76 + 84 = 160$ thousand.

Required ratio = $160 : 160 = 1 : 1$.

Hence, 1:1.

116. Answer: b

Explanation:

Let the cost price be C ; profit = $1512 - C$ and loss = $C - 879$.

Profit is 11% more than loss: $1512 - C = 1.11(C - 879)$.

$$1512 + 975.69 = 2.11C \Rightarrow C = \frac{2487.69}{2.11} = 1179.$$

Hence, ₹1179.

117. Answer: d

Explanation:

Crossing a signboard covers only the train's length L ; crossing a bridge covers $L + 342$.

The speed is the same, so $\frac{L}{19} = \frac{L+342}{57}$.

$$3L = L + 342 \Rightarrow L = 171 \text{ m.}$$

Hence, 171 m.

118. Answer: c

Explanation:

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

$$32 = P \times \left(\frac{4}{100} \right)^2 = P \times \frac{16}{10000}.$$

$$P = \frac{32 \times 10000}{16} = 20000.$$

Hence, 20000.

119. Answer: c

Explanation:

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

$$\text{Marks obtained} = 68 + 78 + 48 + 28 = 222; \text{ maximum marks} = 80 + 100 + 70 + 50 = 300.$$

$$\text{Percentage} = \frac{222}{300} \times 100 = 74\%.$$

Hence, 74%.

120. Answer: c

Explanation:

Side of a square = $\sqrt{\text{area}}$, and the 5 cm gap lies on both sides of the glass along the table's length.

Side of glass = $\sqrt{484} = 22$ cm.

Length of table = $22 + 2 \times 5 = 32$ cm.

Hence, **32 cm**.

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