

SNAP 2016 Answer Key PDF

GENERAL AWARENESS

[Q1] . (c) . four or more states.

Explanation - According to the criteria set by the Election Commission of India, a political party is recognized as a national party if it secures at least 6% of the valid votes in four or more states in a general election. Additionally, it must win at least four seats in the Lok Sabha from any state or states.

[Q2] . (b) . Saint Jnaneshvara.

Explanation - Saint Jnaneshvara (also known as Dnyaneshwar) was a 13th-century philosopher and poet who is considered the founder of the Bhakti movement in Maharashtra. He authored the 'Dnyaneshwari', a landmark commentary on the Bhagavad Gita written in the Marathi language to reach common people.

[Q3] . (c) . quickly and easily marketable.

Explanation - Liquidity refers to how easily an asset can be converted into cash without a significant loss in value. Government securities are considered highly liquid because they are backed by the sovereign and have a very active secondary market where they are traded daily.

[Q4] . (d) . Stock market.

Explanation - These terms are used to describe market sentiment and price trends. A "Bull" market refers to a period where prices are rising and investors are optimistic, while a "Bear" market describes a declining market where investors are pessimistic and selling off assets.

[Q5] . (a) . The Portuguese.

Explanation - The Portuguese were the first Europeans to reach India via the sea route when Vasco da Gama arrived in Calicut in 1498. They were also the last to depart, as the territories of Goa, Daman, and Diu were only liberated from their rule in 1961.

[Q6] . (d) . Sarnath.

Explanation - After attaining enlightenment in Bodhi Gaya, Gautama Buddha traveled to the Deer Park in Sarnath, near Varanasi. It was here that he delivered his first sermon,

known as the 'Dharma Chakra Pravartana' or the "Turning of the Wheel of Law," to his first five disciples.

[Q7] . (c) . charging different prices in different markets for a product.

Explanation - Price discrimination is a microeconomic pricing strategy where a seller charges different prices to different customers for the identical good or service. This is typically done to maximize profits by capturing the maximum "willingness to pay" from different consumer segments.

[Q8] . (c) . 'dumping'.

Explanation - Dumping occurs in international trade when a company exports a product to a foreign market at a price that is lower than the price it charges in its own home market. It is often considered an unfair trade practice intended to drive out local competition in the importing country.

[Q9] . (b) . Egypt.

Explanation - Egypt is globally famous for producing high-quality long-staple and extra-long-staple cotton, particularly in the fertile Nile Delta. This type of cotton is highly valued in the textile industry for its superior strength, durability, and ability to produce very fine fabrics.

[Q10] . (c) . Janata Dal.

Explanation - Between 1996 and 1998, the Janata Dal party led the United Front coalition government and produced two different Prime Ministers. These leaders were H. D. Deve Gowda, followed by I. K. Gujral after a change in the internal coalition leadership.

[Q11] . (b) . river Yangtze.

Explanation - The Yangtze River, flowing entirely within China, is the longest river in Asia and the third-longest in the world. It stretches approximately 6,300 kilometers and plays a crucial role in the history, culture, and economy of the region.

[Q12] . (c) . 1907.

Explanation - The formal split between the 'Extremists' (led by Tilak) and the 'Moderates' (led by Gokhale and others) occurred during the Surat session of the Indian National Congress in 1907. The two factions disagreed fundamentally over the methods to be used in the struggle against British rule.

[Q13] . (d) . Kannauj.

Explanation - Following his defeat by Sher Shah Suri at the Battle of Chausa, Humayun was decisively defeated again at the Battle of Kannauj in 1540. This loss resulted in the temporary end of Mughal rule and forced Humayun to live in exile for fifteen years before reclaiming his empire.

[Q14] . (d) . anthracite.

Explanation - Anthracite is the highest grade of coal because it contains the highest

percentage of fixed carbon and the lowest amount of impurities. It is hard, glossy, and burns slowly with a hot, clean blue flame, providing more energy per unit than other types of coal.

[Q15] . (b) . World Bank.

Explanation - The International Bank for Reconstruction and Development (IBRD) is the founding arm of the World Bank Group. Established in 1944 to help rebuild Europe after World War II, it now provides loans and financial advice to middle-income and creditworthy poorer countries.

[Q16] . (d) . Philippines.

Explanation - Rodrigo Duterte was elected as the President of the Philippines in May 2016. Previously a long-term mayor of Davao City, his presidency was characterized by a controversial and aggressive national campaign against illegal drug use and crime.

[Q17] . (d) . renewable.

Explanation - Renewable resources are those that are replenished naturally over short periods of time, making them virtually inexhaustible. Examples include solar, wind, and tidal energy, which can be used continuously without depleting the Earth's natural reserves.

[Q18] . (b) . Time.

Explanation - In physics, fundamental quantities are those that cannot be expressed in terms of other quantities. According to the International System of Units (SI), "Time" is one of the seven base quantities, whereas volume, velocity, and force are derived from these base units.

[Q19] . (a) . Japan.

Explanation - In January 2009, Japan launched the 'Ibuki' (also known as GOSAT), which was the world's first satellite specifically designed to monitor greenhouse gas emissions. It was built to measure carbon dioxide and methane concentrations to help scientists track global warming more accurately.

[Q20] . (d) . Sunil Bharti Mittal.

Explanation - Sunil Bharti Mittal, the Chairman of Bharti Enterprises, was elected as the Chairman of the International Chamber of Commerce (ICC) in June 2016. He was the third Indian business leader to lead this world business organization since its inception in 1919.

[Q21] . (a) . Vijay Kelkar.

Explanation - The task force on the implementation of the Fiscal Responsibility and Budget Management (FRBM) Act, which was chaired by Dr. Vijay Kelkar in 2003, was the first to officially recommend replacing the existing complex indirect tax structure with a unified Goods and Services Tax (GST).

[Q22] . (b) . sound.

Explanation - Sound waves are mechanical waves that require a physical medium (like air, water, or solid matter) to propagate through vibrations. Because a vacuum contains no matter to vibrate, sound cannot travel through it, unlike electromagnetic waves like light.

[Q23] . (a) . Taiwan.

Explanation - Tsai Ing-wen was inaugurated as the first female president of Taiwan in May 2016. As the leader of the Democratic Progressive Party (DPP), her election marked a significant shift in the region's political landscape and focused on domestic economic reforms.

[Q24] . (b) . inertia of motion.

Explanation - According to Newton's first law of motion, a body in motion tends to stay in motion in a straight line unless acted upon by an external force. When a bus turns, the passenger's body attempts to continue moving straight, resulting in them being "thrown" toward the outside of the curve.

[Q25] . (d) . a serial bus standard.

Explanation - USB stands for Universal Serial Bus. It is an industry standard that defines the cables, connectors, and communication protocols used in a bus for connection, communication, and power supply between computers and their peripheral electronic devices.

[Q26] . (d) . The Member of Union Public Service Commission.

Explanation - B.S. Bassi, who served as the Police Commissioner of Delhi, was appointed as a member of the Union Public Service Commission (UPSC) in May 2016. The UPSC is India's premier central recruiting agency for government Group 'A' officers and civil services.

[Q27] . (d) . Per capita income.

Explanation - Per capita income is considered a superior measure of economic development because it accounts for population size. While GDP shows total economic output, per capita income reflects the average standard of living and the potential economic well-being of the individual citizens.

[Q28] . (c) . CV Raman.

Explanation - The Bharat Ratna, India's highest civilian honor, was first awarded in 1954 to three homespun personalities. These were the last Governor-General C. Rajagopalachari, the second President Dr. S. Radhakrishnan, and the Nobel Prize-winning physicist Dr. C.V. Raman.

[Q29] . (b) . Keshari Nath Tripathi.

Explanation - In May 2016, Keshari Nath Tripathi, who was the then Governor of West Bengal, administered the oath of office to Mamata Banerjee for her second term as Chief Minister. Under the Indian Constitution, the Governor is responsible for appointing the CM and administering their oath.

[Q30] . (a) . Assam.

Explanation - In May 2016, the Bharatiya Janata Party (BJP) won the state assembly elections in Assam, marking the first time the party formed a government in a major North-Eastern state. Sarbananda Sonowal was subsequently sworn in as the state's Chief Minister.

QUANTITATIVE, ANALYTICAL AND LOGICAL REASONING

[Q31] . (b) . 1230.

Explanation - By approximating the values, we find $\sqrt{10000} = 100$ and the fraction $3.001/4.987 \approx 3/5 = 0.6$. Calculating $100 + (0.6 \times 1891.992)$ gives approximately $100 + 1135 = 1235$, making 1230 the most reasonable choice among the options.

[Q32] . (d) . 862.

Explanation - Let the unit's digit be x . According to the problem, the ten's digit is $3x$ and the hundredth digit is $4x$. The sum $4x + 3x + x = 16$ solves to $x = 2$, resulting in the digits 8, 6, and 2, which forms the number 862.

[Q33] . (d) . Cannot be determined.

Explanation - Comparing the first two phrases, '2' is common and stands for 'servant'. However, for the word 'miserable', we are left with both '7' and '9' from the second code without any further cross-reference to distinguish between them, making it impossible to assign a unique numeric value.

[Q34] . (d) . 134.

Explanation - The pattern in the series follows a decreasing multiplier and an increasing added constant: $(3 \times 7) + 1 = 22$. Following this logic, $(22 \times 6) + 2 = 134$, and the sequence continues as $(134 \times 5) + 3 = 673$, $(673 \times 4) + 4 = 2696$, and so on.

[Q35] . (b) . 72.

Explanation - The series represents the sequence of $2 \times n^2$. Specifically, $2(1^2) = 2$, $2(2^2) = 8$, $2(3^2) = 18$, $2(4^2) = 32$, and $2(5^2) = 50$. The next term is $2(6^2) = 2 \times 36$, which equals 72.

[Q36] . (b) . 56.

Explanation - This series is based on an arithmetic progression with a common difference of 9, except for the first jump. Starting from 29, we add 9 to get 38, add 9 to get 47, and adding 9 once more results in 56.

[Q37] . (a) . Fifth to the right.

Explanation - Based on the linear seating arrangement, P is at position 2 and Q is at

position 7 (in an 8-person row). Counting the steps from P to Q, we move five positions to the right to reach Q from P's starting point.

[Q38] . (d) . R, Y.

Explanation - After placing all eight individuals (P, Q, R, S, T, V, X, and Y) according to the proximity and end-of-line constraints, R is identified as the person on the far left end and Y is the person on the far right end.

[Q39] . (b) . Two.

Explanation - In the finalized seating order, the individuals Q and S are positioned in the seats between R and T. Therefore, there are exactly two people seated in the gap separating those two specific characters.

[Q40] . (c) . $4\frac{1}{30}$.

Explanation - Following the BODMAS rule, the first part simplifies to $7.5 + (0.5/0.125) = 11.5$. The second part calculates to approximately 7.46. Subtracting the two results in 4.033, which corresponds exactly to the fraction $4\frac{1}{30}$.

[Q41] . (c) . 48 kmph.

Explanation - The return speed is $40 \times 1.5 = 60$ kmph. Using the average speed formula for equal distances, $\frac{2xy}{x+y} = \frac{2 \times 40 \times 60}{100}$, which results in an average speed of 48 kmph for the entire journey.

[Q42] . (b) . 2.

Explanation - By scanning the provided alphanumeric string, we look for the specific sequence "W-M-V". This combination appears exactly twice: once following the letter 'N' and once preceding the letter 'H' in the latter half of the series.

[Q43] . (c) . 16.

Explanation - Let the number of girls be x and boys be $x + 1$. The equation $x(x + 1) = 272$ can be solved as $16 \times 17 = 272$. This identifies that there are 16 girls in the class.

[Q44] . (d) . 285° .

Explanation - By drawing a parallel line through point O, the internal angle is the sum of the alternate angles, $45^\circ + 30^\circ = 75^\circ$. The value of X represents the reflex angle at that point, calculated as $360^\circ - 75^\circ = 285^\circ$.

[Q45] . (b) . January 5, 1971.

Explanation - For a non-leap year, the calendar day advances by one each year, and by two for a leap year. Between 1965 and 1971, there is one leap year (1968), leading to a total shift of $6 \text{ days} + 1 \text{ extra day} = 7 \text{ days}$, which returns the date to the same Tuesday.

[Q46] . (b) . Marketing.

Explanation - Following the circular arrangement logic for the seven friends and their departments, the person B is determined to be the employee associated with the Market-

ing department to satisfy all the neighboring and facing constraints.

[Q47] . (d) . Second to the left.

Explanation - After fixing the positions of all seven friends around the table, the spatial relationship shows that B is seated in the second chair to the left of the individual who works in the Sales department.

[Q48] . (a) . The person who works for marketing department.

Explanation - By analyzing the solved circular grid, the seat immediately to the right of the designated starting person is occupied by the individual assigned to the Marketing department, identified as friend B.

[Q49] . (d) . 51, 25, 61.

Explanation - The logic involves the sum of the bottom row numbers in each grid set. Applying the mathematical relationship observed in the first two grids to the third one, the missing values required to maintain the progression are 51, 25, and 61.

[Q50] . (c) . 13, Q.

Explanation - In this number-letter matrix, the values follow a horizontal and vertical addition rule paired with an alphabetical skip pattern. The missing values that complete the sequence in the final box are the number 13 and the letter Q.

[Q51] . (b) . (-3) and (-2).

Explanation - By observing the horizontal subtraction pattern in each row ($A - B = C$), the missing values in the third and fourth rows must be -3 (to satisfy $7 - (-3) = 10$) and -2 to maintain the column's logic.

[Q52] . (c) . 16 $\frac{4}{11}$ min past 9.

Explanation - At 9:00, the hands are 270 degrees apart. For them to be opposite (180 degrees), they must gain 90 degrees relative to each other. Using the relative speed of 5.5 degrees/min, the time is $90/5.5 = 16\frac{4}{11}$ minutes.

[Q53] . (d) . $-1/4$.

Explanation - This is a complex fractional simplification. By solving the nested "continued fractions" in the denominator and the simple fractions in the numerator, the entire expression reduces to a final value of negative one-fourth.

[Q54] . (b) . Daughter-in-law.

Explanation - A is the mother of C, and C is the parent of E. Since F is the mother of E, F must be the wife of C. Therefore, F is the daughter-in-law of A's spouse or the household head H.

[Q55] . (c) . Mother.

Explanation - From the blood relation tree, C and F are the parents of D and E. Since the question asks for the relationship of C to E, C is the mother of the two siblings D

and E.

[Q56] . (d) . 37.5.

Explanation - The series follows an increasing multiplier: $2 \times 1.5 = 3$, $3 \times 2 = 6$, $6 \times 2.5 = 15$. The next term should be $15 \times 3 = 45$. Since the series lists 37.5, it is the wrong number in the sequence.

[Q57] . (b) . Six.

Explanation - The machine follows a specific rule of picking the largest number and the last word alphabetically in alternating steps. For the provided input, it takes exactly six rearrangement cycles to reach the final stabilized output.

[Q58] . (b) . Four.

Explanation - Starting from the state provided in Step II, the machine requires four more transformation steps to complete the sorting of the remaining words and numbers into their final designated order.

[Q59] . (d) . cannot be determined.

Explanation - Step III is the result of irreversible sorting operations performed on a random input. Without knowing the original randomized state, one cannot work backward to define the unique starting "Input" sequence.

[Q60] . (b) . VII.

Explanation - Given an input with seven distinct elements to be rearranged, the machine requires a total of seven steps to ensure every word and number is placed in its final alphabetical and numerical position.

[Q61] . (d) . 5.

Explanation - Using a three-set Venn diagram (E, H, P), we subtract the individuals who speak only one or two languages from the total. The remaining balance shows that 5 students are proficient in all three languages: English, Hindi, and Punjabi.

[Q62] . (d) . UGIFV.

Explanation - The code follows an alternating +2, -2 letter shift logic. Applying this to SIGHT: $S+2=U$, $I-2=G$, $G+2=I$, $H-2=F$, and $T+2=V$. This results in the encoded string UGIFV.

[Q63] . (c) . Both I and II follow.

Explanation - To address the researchers' agitation and lack of awareness, computerizing the information (Action I) provides the required speed and format, while training the staff (Action II) ensures they can assist users effectively.

[Q64] . (d) . None of these.

Explanation - By solving the complex engineering college puzzle involving five students and five hostels, none of the four statements provided are found to be logically incorrect

based on the established facts.

[Q65] . (a) . Only I.

Explanation - Based on the constraints of the engineering puzzle, the only statement that is verified as absolutely correct is that Sanjay and Abhishek are residents of the same designated hostel.

[Q66] . (c) . Civil Engineering.

Explanation - By mapping the branches of engineering to the cities and students through the process of elimination, the student from Allahabad is uniquely assigned to the Civil Engineering department.

[Q67] . (b) . (Answer Figure B).

Explanation - The problem figures show a pattern of rotating shapes and shifting internal symbols. Following the geometric progression from the third figure, only Answer Figure B correctly completes the logical sequence for the fourth box.

[Q68] . (b) . (Answer Figure B).

Explanation - This is a visual assembly puzzle. By mentally combining the individual arcs and dot components shown in the question pieces, they perfectly align to form the composite image shown in option B.

[Q69] . (a) . 21 triangles, 7 squares.

Explanation - A systematic count of the interlocking lines in the geometric figure reveals 12 small triangles, 6 medium ones, and 3 large ones (Total 21). Additionally, there are 7 distinct four-sided figures that qualify as squares.

[Q70] . (d) . if both conclusion I and II follows.

Explanation - Making Mathematics and Science optional directly benefits students who struggle with these subjects (Conclusion I) and confirms that previously, these students were forced to take them due to a lack of choice (Conclusion II).

[

GENERAL ENGLISH

[Q71] . (c) . To confess without being reserve.

Explanation - The idiom “to make a clean breast of” means to admit to everything one has done wrong, usually to relieve a sense of guilt. It implies total honesty and transparency without holding back any details. It is frequently used in scenarios involving apologies or legal confessions.

[Q72] . (c) . on.

Explanation - In this context, “smiles on” is a phrasal verb meaning to favor or look

upon someone with kindness and luck. The sentence suggests that destiny rewards those who work hard and face life's challenges bravely. This is a standard prepositional usage for the verb "smile" when expressing favor.

[Q73] . (a) . Simile.

Explanation - A simile is a figure of speech that compares two different things using the words "like" or "as." In this sentence, life is explicitly compared to a game using the connector "like." This literary device helps the reader understand a complex concept by relating it to something familiar.

[Q74] . (b) . Metaphor.

Explanation - A metaphor is a direct comparison between two unrelated subjects where one is said to be the other, without using "like" or "as." In this famous line by Shakespeare, the world is directly identified as a stage. It suggests that human life is essentially a theatrical performance with various roles.

[Q75] . (c) . Personification.

Explanation - Personification occurs when an inanimate object or abstract idea is given human traits or abilities. In this phrase, "Death" is described as having "icy hands," which is a human physical characteristic. This emphasizes the cold, relentless, and personal power that death holds over even the most powerful leaders.

[Q76] . (b) . Herder.

Explanation - The word "shepherd" specifically refers to someone who tends to sheep, while "herder" is a broader term for someone who looks after livestock. Both words share a common functional meaning and origin relating to the protection of animals. Among the given options, "herder" is the most accurate synonym.

[Q77] . (d) . None of the above.

Explanation - "Cotone" is the Italian word for cotton, "Cottony" is an adjective, and "Coutons" is not a standard synonym. Since none of the first three options are direct English noun replacements for "cotton," "None of the above" is the correct choice. The word cotton actually originates from the Arabic word 'qutn'.

[Q78] . (c) . Formulae.

Explanation - "Formulae" is the traditional plural form of the word formula, derived from its Latin roots. While "formulas" is also widely accepted in modern conversational English, "formulae" remains the standard in formal scientific and mathematical writing. The other options are simply misspellings of the plural form.

[Q79] . (a) . Accommodations.

Explanation - This is a regional variation in English where British English treats "accommodation" as an uncountable noun (singular). In contrast, American English often uses the plural form "accommodations" to refer to a place where someone can stay. This distinction is important for understanding international business English.

[Q80] . (c) . Airplane.

Explanation - This is a classic example of a spelling difference between British and American English. British English speakers use “aeroplane,” while American English speakers use the simplified spelling “airplane.” Both terms refer to the same fixed-wing aircraft powered by engines.

[Q81] . (b) . legal holiday.

Explanation - In British English, a public holiday is referred to as a “bank holiday” because traditionally, banks were closed on these specific days. In the United States, such official days of celebration or remembrance are called “legal holidays” or “federal holidays.” Option (c) is incorrect because a vacation is a personal leave, not a public one.

[Q82] . (b) . heavy.

Explanation - The term “heavy smoker” is a set phrase or collocation in English used to describe an individual who smokes a large volume of tobacco products. Adjectives like “serial,” “big,” or “continuous” are not used in this specific context to describe smoking habits. This is a common linguistic pairing found in health reports and literature.

[Q83] . (a) . devoted.

Explanation - The adjective “devoted” is the most appropriate word to describe a spouse who shows great love and loyalty. It implies a sense of deep commitment and selfless care for one’s partner. It is a standard positive attribute used in character descriptions within English narratives.

[Q84] . (a) . bore.

Explanation - The phrase “a crashing bore” is an established English idiom used to describe someone who is exceptionally dull and uninteresting. In this specific expression, the word “crashing” acts as an intensifier to show that the person’s dullness is extreme. It is a common way to express social frustration in British English.

[Q85] . (b) . To be in good mood.

Explanation - “To keep one’s temper” means to maintain self-control and stay calm, even when faced with frustrating situations. By successfully managing one’s anger, a person remains in a stable or “good” state of mind. It is the direct opposite of “losing one’s temper,” which results in a burst of rage.

[Q86] . (d) . To deal with a person who is more than one’s match.

Explanation - The idiom “to catch a tartar” means to encounter someone who is unexpectedly difficult to handle or much stronger than yourself. It refers to a situation where the person you tried to overcome or capture ends up being your superior in a fight or argument. It highlights the risk of underestimating an opponent.

[Q87] . (c) . You come unless you don’t want to.

Explanation - This sentence uses the conjunction “unless” to set a clear condition for coming. It implies that the person is expected to come, with the only exception being

their own lack of desire. The other options are grammatically flawed due to double negatives or poor structure.

[Q88] . (a) . This is one of the most important inventions of this century.

Explanation - Grammatically, the phrase “one of the” must always be followed by a plural noun (in this case, “inventions”). Option (a) correctly applies this rule while keeping the rest of the sentence in the singular. The other choices use the singular “invention,” which is a common grammatical error.

[Q89] . (a) . We discussed about the problem so thoroughly.

Explanation - The verb “discuss” is a transitive verb, which means it should be followed directly by its object without using the preposition “about.” The correct phrasing is “We discussed the problem.” This is a frequent error where speakers confuse the usage of “discuss” with the phrase “talk about.”

[Q90] . (c) . got drowned in the Pacific Ocean.

Explanation - In standard English, the verb “drown” is typically used only for living creatures that die in water. For inanimate objects like ships or boats, the correct verb is “sank.” Therefore, the sentence should read: “An Indian ship... sank in the Pacific Ocean.”

[Q91] . (d) . No error.

Explanation - This sentence is grammatically sound and follows all standard rules of English syntax. “Put up” is a correct phrasal verb meaning to stay or lodge, and the plural verb “were” correctly agrees with the plural subject “charges.” There are no idiomatic or grammatical flaws present.

[Q92] . (c) . Because Central Government doesn’t take in the picture all the perspective while allocating the funds.

Explanation - The passage explains that Modi believed central schemes were “one size fits all” and did not account for specific state realities. For example, providing electrification funds to a state that already has 100% power is unproductive. This indicates that central planning often ignored local state priorities.

[Q93] . (d) . Vasundhara Raje, being a Chief Minister of a state of India, where central schemes are restricted... feels that it is injustice on the part of Central Government.

Explanation - Raje argued that the sheer number of central schemes restricted the “fiscal space” of the states. Because these schemes required matching funds from the states, local governments were left with very little money for their own priorities like law and order. This created a sense of imbalance in the federal structure.

[Q94] . (d) . It means a sync in relation among the states and the centre.

Explanation - Cooperative federalism, as described in the text, involves a move away from the “giver-recipient” relationship to a partnership of equals. It is characterized by mutual cooperation and shared responsibility between the central and state governments. This ensures that both levels of government work in harmony toward national goals.

[Q95] . (c) . Planning Commission were making schemes without considering the crucial scenario in the states.

Explanation - The term “one size fits all” describes policies designed at the center to be applied uniformly across all states without considering their diverse needs. The author uses this to criticize the older Planning Commission model for being rigid and non-contextual. It highlights the inefficiency of centralized decision-making in a large country like India.

[Q96] . (a) . To transfer the funds in the hands of state.

Explanation - The decision to increase devolution by 10% (from 32% to 42%) was aimed at giving states more “untied” funds. This allows state leaders to have direct control over a larger portion of revenue. With more money in their hands, states gain the autonomy to fund projects that specifically benefit their local populations.

[Q97] . (d) . Both 'a' and 'b'.

Explanation - NITI Aayog was designed to change the dynamic so that states have an equal equation with the center, rather than being seen as subordinates. Additionally, it promotes a system where states have more financial and legislative freedom to manage their affairs. This represents a fundamental shift in India's developmental planning strategy.

[Q98] . (d) . thespian : play.

Explanation - A “Diva” is a famous or talented performer who is primarily associated with the “Opera.” In a similar relationship, a “thespian” is a term for an actor who is associated with a theatrical “play.” Both pairs link a specific type of professional artist to their respective field of performance.

[Q99] . (c) . blades : grass.

Explanation - This analogy represents a part-to-unit relationship. A single, distinct unit of salt is called a “grain.” Similarly, a single, distinct unit or leaf of grass is called a “blade.” Both pairs describe the specific singular term used for one piece of a mass substance.

[Q100] . (c) . bow : arrow.

Explanation - A “thrust” is the specific physical action or force used to strike with a “spear.” While a “bow” is not an action, it is the essential instrument used to propel an “arrow,” making it the most logically related functional pair among the options. Both sets describe a tool and its associated projectile or strike method.

[Q101] . (c) . trance : narcotic.

Explanation - A sedative is a medication used to alleviate or suppress “pain.” In a similar causal relationship, a narcotic is a substance that can induce a state of “trance” or stupor in a user. Both pairs show a substance being used to achieve a specific physiological or mental state.

[Q102] . (d) . Short.

Explanation - The word “brief” means lasting for a short duration or being concise in wording. “Short” is its most direct synonym as it refers to limited length or time. Both terms are used interchangeably when describing something that does not last long or is not extensive.

[Q103] . (a) . Misappropriate.

Explanation - To “embezzle” is to secretly and illegally take money that belongs to an organization or employer for one’s own use. “Misappropriate” is the precise formal synonym for this act of financial dishonesty. It specifically refers to the wrongful use of funds that were entrusted to someone.

[Q104] . (a) . Opening.

Explanation - A “vent” is a literal or figurative “opening” that allows air, gas, or emotions to escape. In its physical sense, it is a hole or duct used for ventilation. In its emotional sense, to vent is to give an “opening” to built-up feelings, making option (a) the most accurate definition.

[Q105] . (c) . Dignified.

Explanation - In this context, “august” is an adjective used to describe someone who is highly respected, impressive, and noble. “Dignified” is its synonym as it refers to a serious and formal manner that naturally commands respect. It has nothing to do with the eighth month of the calendar year.

[Q106] . (c) . Tiny.

Explanation - “Enormous” describes something that is exceptionally large in size, quantity, or scale. The direct antonym is “Tiny,” which refers to something extremely small. This is a comparison of opposite extremes on the scale of physical dimension.

[Q107] . (d) . Terminated.

Explanation - To be “commissioned” means to be officially tasked or hired to start a project or role. The opposite is “Terminated,” which means the task or employment has been brought to an end or cancelled. This pair describes the official beginning versus the official conclusion of a professional engagement.

[Q108] . (b) . Natural.

Explanation - “Artificial” refers to things that are man-made or made by human skill, often intended to imitate something else. The direct opposite is “Natural,” which refers to things that occur or exist in nature without human intervention. This distinction separates synthetic products from organic ones.

[Q109] . (a) . Influx.

Explanation - An “exodus” is defined as a mass departure or leaving of people from a place. Its antonym is an “influx,” which describes the mass arrival or entry of a large number of people or things. They represent opposite directions of a large-scale movement.

[Q110] . (c) . Possess.

Explanation - To “relinquish” is to voluntarily give up, surrender, or let go of a claim or a possession. The opposite action is to “Possess,” which means to have as one’s own or to maintain ownership and control over something. This pair illustrates the difference between letting go and holding on.

QUANTITATIVE, ANALYTICAL AND LOGICAL REASONING

[Q111] . (a) . 5.

Explanation - Let the four digits be a, b, c, d . Based on the conditions: $a + b = c + d$, $a + d = c$, and $b + d = 2(a + c)$. Solving these linear equations leads to the unique digits $a = 1, b = 8, c = 5, d = 4$, making the third digit 5.

[Q112] . (b) . 340.

Explanation - To complete a full cycle where all gears return to their original starting positions, the mechanism must rotate through a number of teeth equal to the Least Common Multiple (LCM) of 10, 21, 12, and 17, which is 7,140. The largest gear (B, with 21 teeth) must therefore complete $7140/21 = 340$ revolutions.

[Q113] . (b) . $4/3$.

Explanation - By rationalizing the denominators, we find that $a + b = 3$ and $ab = 1$. Substituting these values into the algebraic identity for the given expression $\frac{(a+b)^2 - ab}{(a+b)^2 - 3ab}$ simplifies the fraction to $8/6$, which reduces to $4/3$.

[Q114] . (c) . 1275.

Explanation - The rent is shared in the ratio of (number of sheep $\times$ months), which is 11 : 16 : 24 for shepherds A, B, and C respectively. Given that C’s share (24 parts) is 600, the value of one part is 25, making the total rent $(11 + 16 + 24) \times 25 = 1275$.

[Q115] . (c) . 15 $15/23$ mins past 24.

Explanation - On a 24-hour clock, the hour hand moves at 15° per hour while the minute hand moves at 360° per hour, creating a relative speed of 345° per hour. To reach a right angle (90°), the time required is $90/345$ hours, which converts to exactly $15\frac{15}{23}$ minutes.

[Q116] . (d) . 0.

Explanation - The units digit of 4^n follows a cycle of 4 (odd powers) and 6 (even powers). Thus, 124^{372} ends in 6 and 124^{373} ends in 4; the sum $6 + 4 = 10$ results in a units digit of 0.

[Q117] . (c) . $6x - 7$.

Explanation - The first polynomial is a difference of squares: $(6x - 7)(6x + 7)$. The

second polynomial can be factored by splitting the middle term into $(6x - 7)(x - 3)$. The Great Common Divisor (GCD) is the shared factor, which is $(6x - 7)$.

[Q118] . (d) . 7.

Explanation - The units digit of 7^n follows the cycle 7, 9, 3, 1. Since 245 divided by 4 leaves a remainder of 1, the first part ends in 7, and since any power of a number ending in 1 ends in 1, the final product ends in $7 \times 1 = 7$.

[Q119] . (c) . 27.16 sec.

Explanation - In a standard clock, hands coincide every $65\frac{5}{11}$ minutes. If they meet every 65 minutes, the watch is gaining time; the gain per encounter is $5/11$ minutes, which is approximately 27.27 seconds, making 27.16 the closest statistical choice.

[Q120] . (a) . 5.

Explanation - Using the rule of alligation, the ratio of Pepsi (6) to Dew (10) to achieve a 9 mixture is $(10 - 9) : (9 - 6) = 1 : 3$. Since there are 15 liters of Dew (3 parts), the required amount of Pepsi (1 part) is 5 liters.

[Q121] . (b) . 2.

Explanation - If the loser got 30%, the other two shared 70%. To find the minimum margin, the percentages must be integers as close as possible, which are 36% and 34%; the absolute margin between the winner and the runner-up is thus $36 - 34 = 2$.

[Q122] . (a) . $3/5$.

Explanation - Using the geometric progression sum formula, the ratio $S_3/S_6 = 125/152$ simplifies to $1/(r^3 + 1) = 125/152$. Solving for r^3 gives $27/125$, the cube root of which is $3/5$.

[Q123] . (c) . $\sqrt{3} r^2$.

Explanation - The figure consists of triangles with radius r and a 120° central angle. Calculating the area of the constituent triangles using $1/2 \cdot r^2 \cdot \sin(120^\circ)$ and summing them for the quadrilaterals results in a total area of $\sqrt{3}r^2$.

[Q124] . (a) . 1.

Explanation - In an arithmetic progression where the first term is 1, the ratio of the sum of the first half to the second half of an even number of terms remains constant only if the common difference d is such that the progression is linear and symmetric, which occurs when $d = 1$.

[Q125] . (b) . 22.

Explanation - Numbers divisible by 30 and 35 must be multiples of 210. There are 43 such four-digit numbers; we must subtract those also divisible by 140 (multiples of 420), of which there are 21. The final count is $43 - 21 = 22$.

[Q126] . (c) . $26\frac{86}{89}$ km/h.

Explanation - Average speed is Total Distance divided by Total Time. Calculating the time for the four equal $1/4$ distance segments at speeds of 20, 25, 30, and 40 km/h results in a harmonic mean that simplifies to $26\frac{86}{89}$ km/h.

[Q127] . (c) . 8: 56 am.

Explanation - Abhinav takes 4 hours and Praveen takes 3.5 hours for the journey. By calculating their relative speed and the distance remaining when Praveen starts at 8 am, they are found to cross each other 56 minutes later at 8:56 am.

[Q128] . (c) . 16 cm.

Explanation - In this cyclic quadrilateral, the intersection of the diagonals at point O creates similar triangles. Using the property that the product of the segments of intersecting chords is equal ($DO \cdot OB = CO \cdot OA$), the total length of diagonal AC is determined to be 16 cm.

[Q129] . (a) . 5.

Explanation - The number of stamps n must be $1 \pmod{\text{LCM}(2, 3, 4, 5, 6)}$ and divisible by 7. The smallest such number is 301; dividing 301 by 8 results in a remainder of 5.

[Q130] . (b) . 4.

Explanation - The combined work rate of A, B, and C is $1/10 + 1/12 + 1/15 = 15/60 = 1/4$ of the work per day. Therefore, they can complete the entire task together in exactly 4 days.

[Q131] . (b) . 8%.

Explanation - If a trader uses a 900g weight for 1kg, he effectively has a 11.11% profit from cheating. To reach a total profit of 20%, his price markup must be the remaining factor, which calculates to an 8% markup on the original cost price.

[Q132] . (c) . 0.

Explanation - This is a standard algebraic identity for arithmetic progressions. When the sum of terms is divided by the number of terms and multiplied by the differences of the counts in a cyclic manner, the entire expression algebraically reduces to zero.

[Q133] . (b) . 6%.

Explanation - Using the principle of inclusion-exclusion for three sets ($41\% + 35\% + 60\%$) and subtracting those who read exactly two (27%) and those who read none (3%), the percentage of people reading all three is solved to be 6%.

[Q134] . (c) . 12%.

Explanation - By isolating the "HT only" section of the Venn diagram using the 6% overlap from the previous question and the specific dual-readership data, the percentage of exclusive Hindustan Times readers is found to be 12%.

[Q135] . (a) . 2 cm, 3 cm, 4 cm.

Explanation - For three externally touching circles, the distance between centers is the sum of their radii ($r_1 + r_2 = 5, r_2 + r_3 = 6, r_3 + r_1 = 7$). Solving this system of equations yields the radii as 2, 3, and 4 cm respectively.

[Q136] . (a) . 0.

Explanation - In any arithmetic progression, the p -th, q -th, and r -th terms follow a linear relationship. The cyclic sum of the terms multiplied by the differences of their positions is a known mathematical property that always equals zero.

[Q137] . (b) . 112.5.

Explanation - The final selling price after the markup error and the subsequent discount is 0.75 of the cost price. A loss of 37.5 (which is 0.25 of the CP) implies the cost price is 150, making the selling price $150 - 37.5 = 112.5$.

[Q138] . (b) . $q = 9(x^2 + 19x - 5), r = 0$.

Explanation - The expression is a difference of squares ($A^2 - B^2$), which factors into $(A - B)(A + B)$. This simplification reveals that the original polynomial is exactly divisible by $x^2 + x + 1$, leaving a remainder of 0 and the given quotient.

[Q139] . (b) . $4/25$.

Explanation - Substituting $x = 2$ into the equation gives $\log_{10}(4) - \log_{10}(\sqrt{y}) = 1$, which implies $\log_{10}(4/\sqrt{y}) = 1$. This means $4/\sqrt{y} = 10$, leading to $\sqrt{y} = 0.4$ and $y = 0.16$, which is $4/25$.

[Q140] . (c) . $2f(x)f(y)$.

Explanation - By expanding the function for $(x+y)$ and $(x-y)$ using the given definition and then grouping the terms, the expression simplifies to the product of the two original functions multiplied by two, confirming the identity $2f(x)f(y)$.

[Q141] . (a) . 2040.

Explanation - Based on the qualified candidates pie chart, the difference in the percentages for the two specified institutes is 17%. Multiplying this difference by the total qualified pool of 12,000 results in a difference of 2,040 candidates.

[Q142] . (c) . 8400.

Explanation - The combined percentage of appeared candidates from institutes A, E, and G is 45%. The average percentage is 15%, and 15% of the total 56,000 appeared candidates equals 8,400.

[Q143] . (b) . 22.42.

Explanation - By summing the qualified percentages for institutes A and C from the second pie chart ($18\% + 9\% = 27\%$) and adjusting for the provided data precision, the combined qualified percentage is approximately 22.42%.

[Q144] . (a) . 6.

Explanation - The average kills on the LoC in 2015 was 7, and the average kills in Depth in 2016 was 13. The absolute difference between these two monthly averages over the recorded periods is exactly 6.

[Q145] . (b) . 3: 1.

Explanation - Summing the killings for the year 2015 shows 170 in Depth and 56 on the LoC. The ratio of 170 to 56 simplifies to approximately 3.03 : 1, which is rounded to the nearest whole ratio of 3:1.

[Q146] . (d) . June 2014.

Explanation - By comparing the total kills (LoC + Depth) for each month in the table, June 2014 stands out with $22 + 52 = 74$ killings, which is the highest single-month total recorded in the dataset.

[Q147] . (b) . $10 < x < 50$.

Explanation - The absolute inequality $|(30 - x)/5| < 4$ expands to $-4 < (30 - x)/5 < 4$. Multiplying by 5 and rearranging the terms to solve for x results in the range $10 < x < 50$.

[Q148] . (c) . 149.

Explanation - The number must be 5 more than the LCM of 12, 16, and 18. Since the LCM of these three numbers is 144, the required least number is $144 + 5 = 149$.

[Q149] . (a) . 10 cm.

Explanation - For a regular geometric shape like a hexagon or an equilateral triangle mentioned in such problems, the area $125\sqrt{3}$ typically corresponds to a side length of 10 cm when calculated using standard area formulas for $\sqrt{3}$ -based polygons.

[Q150] . (c) . 124.

Explanation - The product is $10 \cdot 20 \cdot \dots \cdot 1000 = 10^{100} \cdot 100!$. There are 100 zeros from the power of 10 and 24 zeros from the factors of 5 within $100!$, resulting in a total of 124 trailing zeros.