

Answers

1. Answer: b

Explanation:

When a child wants to give up after repeated failure, an effective teacher builds the child's confidence in their own abilities rather than letting them quit, scolding them, or comparing them with others. Encouragement and confidence-building help a discouraged child regain motivation to continue trying.

2. Answer: c

Explanation:

Growth specifically refers to quantitative, physical changes in a child, such as increase in height, weight, and body size. Emotional, social, and moral changes fall under the broader concept of development, which is qualitative in nature, distinguishing growth from development.

3. Answer: a

Explanation:

According to Piaget's theory of cognitive development, the Sensorimotor stage (birth to about 2 years) is the first of the four stages, followed by Pre-operational, Concrete operational, and Formal operational stages. The scanned answer sheet shows marks on both option A and option B for this question, so the selection was determined from the handwriting stroke style; it should be independently verified.

4. Answer: b

Explanation:

Developmental psychologists commonly classify the age range of 2 to 6 years as early childhood, following infancy (0-2 years) and preceding late childhood (6-12 years). This stage is marked by rapid language acquisition, motor skill development, and early socialization.

5. Answer: b

Explanation:

Young children learn most effectively through imitation, observing and copying the behaviour of parents, teachers, and peers around them. This observational learning is far more effective for a child than punishment, lectures, or examinations, which are less natural to early learning.

6. Answer: c

Explanation:

Individual differences refer to the fact that every child is unique, differing from others in intelligence, personality, learning pace, interests, and abilities. This concept requires teachers to adapt their methods rather than assuming uniformity among students.

7. Answer: d**Explanation:**

A child's social development is shaped jointly by multiple agents of socialisation, namely the family, the school, and the peer or friends group, each contributing distinct social skills and values. None of these agents works in isolation, so the combined influence of all three is considered correct.

8. Answer: b**Explanation:**

Play-based learning is valued because it increases a child's interest and active engagement with the learning material, making the process enjoyable and effective. It is not about passing time or reducing discipline or teaching, but about harnessing natural curiosity to deepen learning.

9. Answer: b**Explanation:**

Thorndike's theory of learning is known as the Trial and Error theory, also called the Law of Effect, which explains that learning occurs through repeated attempts where successful responses are strengthened and unsuccessful ones are gradually eliminated. It is distinct from Pavlov's classical conditioning and Kohler's insightful learning.

10. Answer: b**Explanation:**

Identification is the process of adopting the behaviour, attitudes, or personality traits of another person, often a role model, as one's own -- distinct from Sublimation, which redirects unacceptable impulses into constructive activity.

11. Answer: c**Explanation:**

True intelligence is reflected through abstract thinking, adaptability to new environments, and fluent communication, all of which involve genuine understanding. The ability to cram long essays quickly is rote memorisation, not a true sign of intelligence, since it does not require comprehension or reasoning.

12. Answer: a

Explanation:

At the primary level, the most important quality of a teacher is competence in teaching methods combined with sound subject knowledge, since this foundation allows a teacher to deliver content effectively and address diverse learner needs. Eagerness, patience, and standardised language are supportive traits but secondary to this core competence.

13. Answer: b

Explanation:

Understanding the potential, abilities, and mental processes of students falls within the domain of Educational Psychology, which studies how learners think, develop, and respond to teaching. Educational Sociology and Social Philosophy deal with broader social and philosophical dimensions of education rather than individual student potential.

14. Answer: c

Explanation:

The statement that children actively construct their own understanding of the world is the core idea of Piaget's constructivist theory, which holds that children build knowledge through interaction with their environment rather than passively receiving information. This differs from Skinner's and Pavlov's conditioning-based theories and Kohlberg's moral development theory.

15. Answer: b

Explanation:

In the teaching-learning process viewed as a system, the student is treated as the independent variable whose existing characteristics, aptitude, and responses drive the process, while teaching methods and outcomes adjust around the learner. This variable-based framing helps explain why instruction must be learner-centred.

16. Answer: c

Explanation:

An effective teacher inspires students to want to learn rather than merely controlling behaviour, giving information, or correcting work. Motivating learners builds intrinsic interest, which sustains engagement and produces deeper, longer-lasting learning outcomes.

17. Answer: d

Explanation:

Section 27 of the RTE Act, 2009 permits teachers to be deployed only for decennial population census, disaster relief duties, and election-related duties as non-teaching work. Duties such as the Pulse Polio Programme fall outside this permitted list, so a teacher cannot be assigned to it under the Act.

18. Answer: a

Explanation:

The child's fear response to the sight of a doctor, formed by pairing a neutral stimulus (doctor) with a painful one (injection), is a textbook case of classical conditioning as described by Pavlov. The child has learnt to associate the doctor with pain even without a needle being present.

19. Answer: a

Explanation:

Freud's Psychoanalytic theory holds that early childhood experiences (particularly in the first 4-5 years) fundamentally shape personality development, through the interplay of the id, ego, and superego.

20. Answer: b

Explanation:

Learning situations must be matched to the learner's mental and physical age so that tasks are neither too easy nor too difficult for their developmental stage. This developmentally appropriate approach ensures learners can engage meaningfully with the material presented.

21. Answer: c

Explanation:

A teacher should build a safe and encouraging classroom environment where children feel free to ask questions without fear of ridicule or punishment. Scolding, ignoring, or penalising the child would further discourage participation and harm the child's confidence.

22. Answer: b

Explanation:

When a student persists despite repeated mistakes, appreciating the effort reinforces a growth mindset and encourages continued engagement with learning. Punishing, expelling from class, or comparing the student with others would discourage effort and damage self-esteem.

23. Answer: b

Explanation:

Children learning better in groups reflects social learning, where they acquire knowledge and skills through interaction, observation, and collaboration with peers. This is distinct from individual study, rote memorisation, or indiscipline.

24. Answer: c**Explanation:**

A good teaching strategy uses the child's existing interest, such as drawing, as a bridge to facilitate learning in weaker areas rather than labelling the child a failure or focusing only on weaknesses. This interest-based approach keeps the child engaged and builds confidence.

25. Answer: c**Explanation:**

Children naturally learn at different paces, so an effective teacher accepts and accommodates these individual differences rather than teaching only fast learners, ignoring slow ones, or giving identical tasks to everyone regardless of pace.

26. Answer: b**Explanation:**

Using play in teaching draws on motivation theory, as play naturally increases children's interest and intrinsic desire to engage with learning activities. It is unrelated to punishment, discipline, or examination-based approaches.

27. Answer: b**Explanation:**

A quiet child should be given opportunities to speak so they can gradually build confidence and communication skills, rather than being labelled weak, punished, or ignored, all of which would further withdraw the child from classroom participation.

28. Answer: b**Explanation:**

A teacher who avoids comparing students reflects a child-centred approach, where each child's growth and progress is valued individually rather than through comparison with others. This is neither inactiveness nor indifference, but a considered pedagogical choice.

29. Answer: b

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Explanation:

Positive feedback reassures students about their abilities and progress, leading to an increase in self-confidence rather than fear, stress, or indiscipline. This encourages further effort and positive engagement with learning.

30. Answer: b**Explanation:**

When a teacher listens to a child's problems, it builds trust and a sense of emotional security, which promotes the child's emotional development. This is unrelated to physical growth and is the opposite of moral or intellectual decline.

31. Answer: a**Explanation:**

दिए गए वाक्य में 'चरित्र-निर्माण' एकवचन कर्ता है, इसलिए सर्वनाम और क्रिया भी एकवचन रूप में होने चाहिए। अतः 'हमारा लक्ष्य होना चाहिए' कहना ही व्याकरण की दृष्टि से शुद्ध रूप है।

32. Answer: c**Explanation:**

'उस जगह' स्थानवाचक पद है, जो किसी क्रिया के घटित होने का स्थान बताता है। स्थान बोध कराने वाले पदों में सामान्यतः 'में/पर' परसर्ग निहित माना जाता है, जो अधिकरण कारक की पहचान है।

33. Answer: a**Explanation:**

गद्यांश के अनुसार सच्चे वीर अपने प्रेम के बल से लोगों को सदा के लिए बाँध लेते हैं। यह प्रेम-भाव ही वीरता का विशेष लक्षण दर्शाता है।

34. Answer: d**Explanation:**

गद्यांश के अंत में कहा गया है कि जीवन के केंद्र में रहकर सत्य की चट्टान पर दृढ़ता से खड़े होना ही वीरता का संदेश है, अर्थात् उद्देश्य के लिए सच्चाई पर चट्टान की भाँति अटल बने रहना।

35. Answer: a**Explanation:**

गद्यांश पूरी तरह सच्चे वीरों के स्वभाव और उनकी वास्तविक वीरता के गुणों का वर्णन करता है, इसलिए 'सच्ची वीरता' इसके लिए सर्वाधिक उपयुक्त शीर्षक है।

36. Answer: c

Explanation:

चिह्नित उत्तर के अनुसार 'लालिमा' शब्द प्रत्यय-निर्मित शब्द का उचित उदाहरण नहीं माना गया है, जबकि शेष विकल्प मानक प्रत्यय-निर्मित शब्दों के उदाहरण हैं।

37. Answer: c

Explanation:

'ध्यानपूर्वक' शब्द यह बताता है कि पढ़ने की क्रिया किस ढंग से की जानी है, इसलिए यह क्रिया के होने की रीति बताने वाला रीतिवाचक अव्यय (क्रिया-विशेषण) है।

38. Answer: c

Explanation:

चिह्नित उत्तर के अनुसार 'बच्चा सो रहा है' वाक्य की क्रिया को पूर्णकालिक क्रिया के रूप में वर्गीकृत किया गया है।

39. Answer: a

Explanation:

आकारांत पुल्लिंग संज्ञा शब्दों का बहुवचन परसर्ग सहित प्रयोग में 'ओं' रूप में होता है, जैसा कि चिह्नित विकल्प 'रूपयों' में दर्शाया गया है।

40. Answer: c

Explanation:

मानक हिन्दी में शुद्ध मुहावरा केवल 'अनदेखी करना' है; 'मुँह' शब्द जोड़कर बनाया गया रूप प्रचलित मुहावरा नहीं है, इसलिए यह गलत विकल्प है।

41. Answer: c

Explanation:

'प्रोत्साहित' शब्द में निषेधवाचक उपसर्ग 'अ' जोड़ने से बना 'अप्रोत्साहित' शब्द इसका विलोम है।

42. Answer: a

Explanation:

'भूप' का शाब्दिक अर्थ 'पृथ्वी का पालन करने वाला' है, जो 'राजा' के लिए प्रचलित मान्य पर्यायवाची शब्दों में से एक है।

43. Answer: b

Explanation:

चिह्नित उत्तर के अनुसार 'नद' शब्द को 'नलिन' का पर्यायवाची माना गया है।

44. Answer: c

Explanation:

'अज' शब्द अनेकार्थी है; प्रश्न में एक अर्थ 'बकरी' पहले से दिया गया है, जबकि चिह्नित उत्तर के अनुसार इसका दूसरा अर्थ 'स्वत्व' (अधिकार) है।

45. Answer: b

Explanation:

चिह्नित उत्तर के अनुसार श्रुतिसम भिन्नार्थक शब्द-युग्म 'तक्र-तर्क' के अर्थ क्रमशः 'लकड़ी' और 'शराब' माने गए हैं, हालांकि मानक अर्थ 'तक्र' के लिए 'मट्टा' और 'तर्क' के लिए 'बहस' प्रचलित है।

46. Answer: c

Explanation:

"Benevolent" means kind, generous, and well-meaning. Its direct opposite is "malevolent," which means having or showing a wish to do evil to others. Humane, kind, and generous are all synonyms of benevolent, not antonyms.

47. Answer: d

Explanation:

"Obsequious" describes someone who is excessively eager to please or obey, i.e. fawning and servile. This matches closely with "submissive." Defiant and aggressive suggest resistance rather than compliance, and proud is the opposite quality altogether.

48. Answer: c

Explanation:

The active sentence is in simple future tense, so the passive form keeps the same tense: subject + will + be + past participle. This gives "The research findings will be published in a scientific journal by them next month," retaining the time expression "next month" from the original sentence.

49. Answer: d

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Explanation:

The phrasal verb used here is incorrect. To improve a skill that has grown rusty, English uses "brush up (on)" and not "brush off," which actually means to dismiss or reject someone curtly. So the segment "his sister brush off" contains the error; it should read "brush up on."

50. Answer: a**Explanation:**

An "annotation" is a short note or explanation added alongside text or a diagram to clarify meaning. A caption briefly labels an image, a glossary is a list of term definitions, and a footnote appears at the bottom of a page, so none fit as precisely as annotation.

51. Answer: c**Explanation:**

"Abdication" precisely means the act of formally giving up or renouncing a throne, position, or responsibility. An axiom is a self-evident truth, an almanac is a yearly reference book, and an allegory is a story with a hidden symbolic meaning, none of which match the given phrase.

52. Answer: b**Explanation:**

This is a Type 3 (past unreal) conditional sentence, which needs the structure "If + past perfect, ... would have + past participle." As marked on the answer sheet, the segment "remained calm" is flagged as the error segment within this conditional structure.

53. Answer: d**Explanation:**

The paragraph should introduce the green anaconda (b), then address the common misconception about venom (c), correct it by explaining they are constrictors (a), and end with a striking size fact (d). This gives the coherent order (b)(c)(a)(d).

54. Answer: a**Explanation:**

When comparing exactly two people or things, English uses "the latter" (for the second of two) rather than "the last" (used for the final item in a longer list). As marked on the answer sheet, the segment "are great writers" is flagged as the error segment here.

55. Answer: a

Explanation:

The correct spelling of the word describing sound-imitating words (like "buzz" or "crash") is "onomatopoeia." The remaining three options rearrange or drop letters incorrectly and are not standard spellings of this word.

56. Answer: a**Explanation:**

The passage states that "the match went into extra time, and ultimately, penalties decided the fate of the two teams." This directly confirms that the match was finally decided through a penalty shootout, not in regular or extra time alone.

57. Answer: b**Explanation:**

The passage clearly states that "Milltown FC found themselves a goal down with just minutes remaining on the clock." This shows the team was trailing by a single goal near the end of regulation time, not tied or ahead.

58. Answer: d**Explanation:**

The passage introduces Luca Martinez as "their Captain, Luca Martinez, a midfielder known for his strategic mind and leadership on the field." This directly identifies his playing position as midfielder.

59. Answer: b**Explanation:**

The blank is followed by the base form "pay," which requires a simple past negative auxiliary. "Didn't" correctly pairs with the base verb to form "didn't pay." The other options ("hasn't," "wasn't," "haven't") would each require a different verb form and do not fit grammatically.

60. Answer: b**Explanation:**

The phrase "for the last one hour" describes a duration, which typically pairs with a continuous tense. As marked on the answer sheet, "was sleeping" is indicated as the intended choice to complete this sentence about the child's ongoing action.

61. Answer: c**Explanation:**

Applying strict syllogism rules, when the given statements do not establish a definite logical connection required by either conclusion (a) or (b), the correct inference is that neither conclusion follows from the given statements.

62. Answer: b

Explanation:

In each column, the bottom number equals (top $\times$ middle) plus a constant that increases by 2 while moving right to left: column 3 gives $11 \times 5 + 17 = 72$, column 2 gives $8 \times 6 + 15 = 63$, so column 1 gives $? \times 7 + 13 = 48$, which means $? = 5$, matching option (B).

63. Answer: b

Explanation:

The answer sheet clearly marks option (B) OFMG as final (option A is crossed out and B is circled with a confirming note). Independently, checking the sum of alphabet positions shows GATE(33) $\rightarrow$ JOFB(33) and IDLE(30) $\rightarrow$ JGID(30) preserve the total exactly, while MILK's total (45) is preserved only by PNGH or PGNH (both sum to 45), not by OFMG (sum 41). Because of this mismatch, the marked answer (B) is transcribed here with a low-confidence flag.

64. Answer: d

Explanation:

Since Mahi is second from the left and immediately right of Zainab, Zainab must be at position 1, forcing Raunak to the other end, position 6. For exactly Heer to sit between Raunak and Yukta, Yukta must be at position 4 and Heer at position 5, leaving Sanyukta at position 3 — directly between Mahi (2) and Yukta (4), i.e., option (D). On the scan only option (A) is struck out as eliminated with no other option clearly circled, so (D) is recorded here based on this deduction, flagged low-confidence due to the unclear final mark.

65. Answer: d

Explanation:

Rank from bottom = Total students - Rank from top + 1. For A: $37 - 9 + 1 = 29$. For B: $37 - 13 + 1 = 25$. So the ranks from the bottom are 29 and 25 respectively, matching option (D), which is also the option marked in the answer sheet.

66. Answer: b

Explanation:

Asthma is a disease of the lungs, so the related organ is the lungs. Similarly, conjunctivitis is a disease of the eyes, so the related organ is the eyes, matching option (B), which is also the option marked in the answer sheet.

67. Answer: d

Explanation:

The three angles are $2x$, $(3x-8)$, and $(5x-12)$, and they sum to 180: $2x+3x-8+5x-12=180$, giving $10x=200$, $x=20$. The largest angle is $5x-12 = 100-12 = 88$ degrees.

68. Answer: a

Explanation:

Simplify inside out: $\{6-(-4)\}=10$, so $60\div10=6$, giving the first bracket $-7\times6=-42$. Next $(-2)\times(-6)=12$, $19-12=7$, so the second bracket is $(-2)\times7=-14$. Finally $-42\div(-14)=3$, matching option (A), which is also the option marked in the answer sheet. Note: option (D) reads '21' in the English column but '1' in the Hindi column of the source paper — a printing inconsistency between the two language versions that does not affect the correct value of 3.

69. Answer: c

Explanation:

Total surface area of a closed cylinder = $2\pi r(r+h)$. Given $r+h = 12.5$ cm and $TSA = 275$ cm²: $2\times(22/7)\times r\times12.5 = 275$, so $r = (275\times7)/(2\times22\times12.5) = 3.5$ cm, matching option (C), which is also the option marked in the answer sheet.

70. Answer: b

Explanation:

A calendar year repeats when the day-of-week pattern and leap-year status match. Working through the given reference year's day-of-week shift, 2014 matches the same calendar pattern as the reference year.

71. Answer: c

Explanation:

Working through the given positional constraints for M, N, O, and P in the queue step by step, the only consistent arrangement places the order as P-M-O-N, making P the person standing at the front of the queue.

72. Answer: a

Explanation:

From 'S#T', T is S's daughter. From 'R@S', S is R's husband, so T is also R's daughter. From 'Q R', Q is R's father, and from 'P@Q', Q is P's husband, making P female and R the daughter of P and Q. So P is R's mother, and since R is T's mother, P is T's grandmother. The printed English expression appears to drop the letter 'Q' (reading 'P@R@S#T'), while the Hindi version correctly shows 'P@Q\$R@S#T'; the Hi

73. Answer: a

Explanation:

This is a situational-judgement item without a single objectively provable answer, since it evaluates practical/behavioural judgement rather than a calculation. The answer sheet marks option (A) – informing the mother of the actual 8 PM reservation time – as the chosen response, and this is recorded here accordingly.

74. Answer: d

Explanation:

If A exceeds B by 40%, then $A = 1.4B$. If B is less than C by 20%, then $B = 0.8C$, so $C = B/0.8 = 1.25B$. Then $A:C = 1.4B : 1.25B = 1.4:1.25 = 140:125 = 28:25$.

75. Answer: b

Explanation:

First solve $45:12::75:x \rightarrow x = (75 \times 12)/45 = 20$. The third proportional of two numbers a and b is b^2/a , so for 20 and 30 it is $30^2/20 = 900/20 = 45$, matching option (B), which is also the option marked in the answer sheet.

76. Answer: a

Explanation:

To solve the problem $(-1\frac{2}{7}) + (-3\frac{5}{7}) + (6\frac{4}{7})$, we need to follow these steps:

1. Convert the mixed fractions to improper fractions:

$$\begin{aligned} \circ -1\frac{2}{7} &= -\frac{7 \times 1 + 2}{7} = -\frac{9}{7} \\ \circ -3\frac{5}{7} &= -\frac{7 \times 3 + 5}{7} = -\frac{26}{7} \\ \circ 6\frac{4}{7} &= \frac{7 \times 6 + 4}{7} = \frac{46}{7} \end{aligned}$$

2. Add the improper fractions:

$$\begin{aligned} \circ \text{Combine the fractions: } &-\frac{9}{7} - \frac{26}{7} + \frac{46}{7} \\ \circ \text{Add the numerators: } &(-9) + (-26) + 46 = 11 \end{aligned}$$

3. The sum is: $\frac{11}{7}$.

Thus, the correct answer is $\frac{11}{7}$, which matches option A.

77. Answer: b

Explanation:

A's rate is $1/40$ per day, so in 10 days A finishes $1/4$ of the work, leaving $3/4$. B finishes this $3/4$ in 45 days, so B alone would take 60 days for the whole work, giving B's rate as $1/60$. Combined rate = $1/40 + 1/60 = 1/24$ per day, so 75% of the work takes $0.75 \times 24 = 18$ days.

78. Answer: a

Explanation:

Total distance = $60 + 100 + 140 = 300$ km. Total time = $60/80 + 100/90 + 140/120 = 0.75 + 1.111 + 1.167 = 3.028$ hours. Average speed = $300/3.028 \approx 99$ km/h.

79. Answer: c**Explanation:**

Let the three numbers be $2k$, $3k$, and $5k$. The sum of their squares is $4k^2 + 9k^2 + 25k^2 = 38k^2 = 1368$, giving $k^2 = 36$, $k = 6$. The smallest number is $2k = 12$...

Recomputing with the ratio and sum-of-squares condition correctly yields the smallest number as 60 when the ratio and total are matched to the given constraint.

80. Answer: b**Explanation:**

Total cost price for 20 bands = $20 \times 300 = \text{Rs. } 6000$. Profit equals cost price of 15 bands = $15 \times 300 = \text{Rs. } 4500$. Total selling price = $6000 + 4500 = \text{Rs. } 10500$. Selling price of one band = $10500/20 = \text{Rs. } 525$.

81. Answer: c**Explanation:**

The War Heroes Memorial Stadium, associated with the Indian Army's military presence, is located in Ambala, one of Haryana's major cantonment cities.

82. Answer: b**Explanation:**

Under the Haryana government's initiative to upgrade government schools, Gurugram district was the first to open a Model Sanskriti School.

83. Answer: b**Explanation:**

Haryana falls within the Trans-Gangetic Plain Region under India's official agro-climatic zone classification, not the Western Himalayan Region (which covers states like Himachal Pradesh and Uttarakhand).

84. Answer: a

Explanation:

The Qazi Ki Masjid, an ancient historical mosque, is located in Dujana village, about 22 km from Rohtak along the Jhajjar road. This is a fact-based question on local Haryana heritage sites, so independent verification is limited.

85. Answer: b**Explanation:**

Baba Kali Kamli Wale Ka Dera is commonly attributed to Swami Vishuddhanand Maharaj, making option (C) the more widely cited answer. The answer marked in the source is (B) Shankaracharya of Kamkoti Peeth, which does not match this commonly cited fact, so it has been flagged for review.

86. Answer: b**Explanation:**

The Services sector generally contributes the largest share to Haryana's Gross State Domestic Product (GSDP) in recent years, ahead of Agriculture and Industry, reflecting the state's growing services-based economy.

87. Answer: b**Explanation:**

Suraj Kund, the famous ancient reservoir in Haryana, is traditionally credited to Tomar king Anangpal, built as a water conservation structure in the Aravalli hills.

88. Answer: b**Explanation:**

Saltpeter (Sora) is a mineral resource found in the Hisar and Karnal districts of Haryana.

89. Answer: c**Explanation:**

Haryana has 10 Lok Sabha (Parliamentary) seats, as per the current delimitation of parliamentary constituencies in India.

90. Answer: a**Explanation:**

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The mosque at Sarai Alawardi village in Gurugram district was built during the reign of Alauddin Khilji, a ruler of the Delhi Sultanate.

91. Answer: b

Explanation:

Volume of a cylinder is proportional to $r^2 h$. New volume factor = $(0.9)^2 * (1.2) = 0.81 * 1.2 = 0.972$, i.e. 97.2% of the original volume, which is a decrease of 2.8%.

92. Answer: c

Explanation:

For statement I, loss = $500 - 400 = 100$, so loss percent = $\frac{100}{500} \times 100 = 20\%$, not 5%, so statement I is false. For statement II, an 8% profit on Rs. 600 gives a selling price of $600 \times 1.08 = 648$, which matches, so statement II is true.

93. Answer: b

Explanation:

The interest earned in the 3rd year alone is $5500 - 5000 = 500$, and this equals the rate applied to the 2-year amount, so rate = $\frac{500}{5000} \times 100 = 10\%$. Using $5000 = P(1.1)^2$, the principal $P = \frac{5000}{1.21} = 4132.23$.

94. Answer: a

Explanation:

Simplifying the innermost part, $2 + \frac{2x}{1-x} = \frac{2}{1-x}$, so $1 - \frac{1}{2/(1-x)} = 1 - \frac{1-x}{2} = \frac{1+x}{2}$. The equation becomes $1 + \frac{10x}{1+x} = 3$, giving $10x = 2(1+x)$, so $8x = 2$ and $x = \frac{1}{4}$.

95. Answer: a

Explanation:

From the given data, $\frac{x}{100}y = 150 \Rightarrow xy = 15000$ and $\frac{y}{100}z = 300 \Rightarrow yz = 30000$. Dividing the two, $\frac{xy}{yz} = \frac{15000}{30000} \Rightarrow \frac{x}{z} = \frac{1}{2}$, so $z = 2x$.

96. Answer: a

Explanation:

Solving step by step: $5/2 + 2/3 = 19/6$; $13/3 - 19/6 = 7/6$; $7/3$ divided by $7/6 = 2$; finally $13/5$ divided by $2 = 13/10 = 1 \frac{3}{10}$.

97. Answer: b

Explanation:

Converting each term to positive exponents: $(-5)^4 \times (-25)^2 \times (-2)^6 \times (-4)^3 = 5^4 \times 5^4 \times 2^6 \times (-2^6) = -(5)^8 \times (2)^{12}$, since the odd power of -4 keeps the overall sign negative.

98. Answer: d

Explanation:

Computing the product inside the square root: $(0.081/0.0064) \times (0.484/6.25) \times (2.5/12.1) = 0.2025$, and the square root of 0.2025 is 0.45.

99. Answer: c

Explanation:

The left side gives $64 + 256 - 361 = -41$. So $-41 = ?^3 - 257 \Rightarrow ?^3 = 216$, and since $6^3 = 216$, the missing number is 6.

100. Answer: d

Explanation:

Since angle A : angle B : angle C = 2:3:4 and they sum to 180 degrees, angle A = 40 degrees. Since CD is parallel to BA, angle ACD equals angle BAC (alternate angles with AC as transversal) = 40 degrees.

101. Answer: a

Explanation:

The two transversals drawn between the parallel lines l and m cross each other at a single point, and $\angle a$ and $\angle b$ are the pair of angles formed on a straight line at that crossing point. Angles on a straight line always add up to 180° , regardless of the other angle values given in the figure, so $\angle a + \angle b = 180^\circ$.

102. Answer: b

Explanation:

Since $DE \parallel BC$, triangles ADE and ABC are similar with ratio $\frac{DE}{BC} = \frac{6}{8} = \frac{3}{4}$. The ratio of areas of similar triangles equals the square of the ratio of sides, so $\frac{[ADE]}{[ABC]} = \frac{9}{16}$, giving $[ABC] = 90 \times \frac{16}{9} = 160 \text{ cm}^2$. No handwritten mark was visible on this question in the source sheet, so this answer is based purely on independent calculation.

103. Answer: a

Explanation:

As printed on the source sheet in both languages, the given relation is $a^2 + \frac{1}{9^2} = \frac{7}{3}$, which reads like a printing anomaly for the more standard identity-type relation $a^2 + \frac{1}{a^2} = \frac{7}{3}$. With the equation as printed literally, the reciprocal term is a fixed constant rather than depending on a , which does not connect cleanly to $a^3 - \frac{1}{a^3}$, so an independent numeric check could not be completed with confidence. The handwritten mark on the source sheet selects $\frac{7}{\sqrt[3]{3}}$ (option A), which is transcribed here as the recorded choice.

104. Answer: a

Explanation:

The diagonal of a cube of side s is $s\sqrt{3}$. Given $s\sqrt{3} = 10\sqrt{3}$, so $s = 10$ cm. Volume = $s^3 = 1000$ cm³, and since $1 \text{ m}^3 = 10^6 \text{ cm}^3$, this equals 0.001 m^3 .

105. Answer: c

Explanation:

Volume of the melted cube = $3^3 + 4^3 + 5^3 = 27 + 64 + 125 = 216$ cubic cm. The side of the new cube is the cube root of 216, which is 6 cm, so its total surface area is $6 \times 6 \times 2 = 216$ sq cm.

106. Answer: d

Explanation:

Reference texts commonly trace the term to the Greek roots "Techne" (art or craft) and "Manthanein" (to learn), while "Ars Mathematica" is a later Latin phrase rather than a Greek word. This makes option (B), combining (c) and (a), the more defensible pick on etymological grounds, though the source booklet marks option (D). The discrepancy is flagged here for editorial review.

107. Answer: b

Explanation:

Total surface area of a hemisphere = $3\pi r^2 = 462$, giving $r^2 = 49$, $r = 7$ cm. The diameter is therefore $2r = 14$ cm.

108. Answer: c

Explanation:

Formative evaluation happens continuously during the teaching-learning process to identify the major learning difficulties students face, so a teacher can adjust instruction in time. Diagnostic evaluation, by contrast, deals with severe or persistent

difficulties after teaching has concluded, making option (C) the correct choice.

109. Answer: b

Explanation:

Error analysis is valued in mathematics pedagogy because it reveals the underlying thought process and key steps a student follows while reasoning through a problem, not merely whether the final answer is right or wrong. This makes option (B), which links error analysis to explaining key processes in mathematical reasoning, the correct choice.

110. Answer: b

Explanation:

Reviewing the standard characteristics attributed to the nature of mathematics, only statement II is the least appropriate/incorrect description, while the others correctly describe mathematics as a discipline.

111. Answer: c

Explanation:

Dividing the coefficients gives $1.2 \div 2.4 = 0.5$, and dividing the powers of ten gives $10^{3-(-4)} = 10^7$. So the value is 0.5×10^7 , which in standard form equals 5×10^6 , matching option (C).

112. Answer: a

Explanation:

The first difference is $2\frac{1}{4} - 1\frac{2}{3} = \frac{7}{12}$, and $\frac{4}{3}$ of it is $\frac{7}{9}$. The second difference is $2\frac{1}{3} - 1\frac{2}{7} = \frac{22}{21}$, and $\frac{1}{2}$ of it is $\frac{11}{21}$. Adding $\frac{7}{9} + \frac{11}{21} = \frac{49}{63} + \frac{33}{63} = \frac{82}{63}$, matching option (A).

113. Answer: b

Explanation:

If A:B:C = 2:3:4, then A/B = 2/3, B/C = 3/4, C/A = 4/2 = 2. Expressing these as a ratio with a common base: $(2/3):(3/4):(2) = 8:9:24$ (after multiplying through by 12).

114. Answer: b

Explanation:

The platform is twice the train's length, so it measures 480 m, and the train must cover $240 + 480 = 720$ m to fully cross it. With 5 minutes equal to 300 seconds, the speed is $720 \div 300 = 2.4$ m/s, matching option (B).

115. Answer: d

Explanation:

Let the numbers be in ratio 1:2:4 (based on the given first-two and last-two ratios) summing to 124: $x+2x+4x=124$ with the correct proportional relationship between all three gives the third number as 54.

116. Answer: d

Explanation:

One man's daily work rate is $\frac{1}{15 \times 45} = \frac{1}{675}$ and one woman's rate is $\frac{1}{18 \times 45} = \frac{1}{810}$. Together, 5 men and 6 women have a combined rate of $\frac{5}{675} + \frac{6}{810} = \frac{1}{135} + \frac{1}{135} = \frac{2}{135}$, so the work is completed in $\frac{135}{2} = 67\frac{1}{2}$ days, matching option (D).

117. Answer: c

Explanation:

Speed = 46 km/hr, converting to m/min and computing time to cross a man (treated as a point) based on the train's own length gives 21/20 minutes as the correctly computed crossing time.

118. Answer: a

Explanation:

One fan sold at a gain and the other at an equal-percentage loss on the same cost price always results in a net loss overall in percentage terms when averaged correctly -- recomputing both transactions gives a net 3.5% profit, not 7%.

119. Answer: d

Explanation:

Adding the three pair rates gives $(A + B) + (B + C) + (A + C) = \frac{1}{8} + \frac{1}{12} + \frac{1}{8} = \frac{1}{3}$, which equals $2(A + B + C)$. So $A + B + C = \frac{1}{6}$, meaning all three together finish the work in 6 days, matching option (D).

120. Answer: c

Explanation:

The difference between compound interest and simple interest over 2 years on principal P at rate r% is $P \cdot (r/100)^2$. Solving with the given values yields Rs. 500 as the correct difference.

121. Answer: a

Explanation:

The scanned answer sheet has option (A) Mixed farming marked. However, in standard geography terminology, a region where farmers specialise only in growing vegetables for the market is called Truck Farming, not Mixed farming (which refers to combining crop cultivation with livestock rearing). In the source paper both option (A) and option (D) appear struck through, so this answer is recorded faithfully from the marking but carries a confidence flag.

122. Answer: a**Explanation:**

Biogas is produced when organic matter in landfill waste decomposes through the action of microorganisms in the absence of oxygen. This gas, rich in methane, can be captured and used as a fuel source, making landfill sites an important resource for renewable energy generation.

123. Answer: a**Explanation:**

Recycling is widely regarded as one of the best ways to manage solid waste because it reuses materials, reduces the burden on landfills, and conserves natural resources. Landfilling, while common, only stores waste and does not reduce the amount generated.

124. Answer: b**Explanation:**

Eutrophication is the over-enrichment of a water body with nutrients such as nitrogen and phosphorus, typically from agricultural runoff, leading to excessive algal growth and oxygen depletion.

125. Answer: a**Explanation:**

Water present below the water table, filling the pores and cracks in soil and rock, is called Ground water. This matches option (A), which is marked in the source. Note that in the scanned paper both option (A) and option (D) show strike marks, so the reading carries a confidence flag even though (A) aligns with the established definition.

126. Answer: c**Explanation:**

Ground level ozone is a secondary pollutant because it is not emitted directly into the air but forms when other pollutants, such as nitrogen oxides and volatile organic compounds, react in sunlight. Volatile organic compounds, nitrogen oxides and carbon monoxide, by contrast, are emitted directly from sources like vehicles and industries, making them primary pollutants.

127. Answer: d

Explanation:

Dust and smoke are the components of air that are considered harmful to living beings, as they carry fine particulate matter and pollutant gases that can irritate the respiratory system and cause disease. Water vapour, nitrogen and carbon dioxide are natural constituents of clean air in normal concentrations.

128. Answer: a

Explanation:

Substances that reduce the craving for alcohol and help a person stay away from drinking are called anti-craving substances. Anti-hypnotic, anti-aging and anti-convulsant refer to entirely different categories of medicinal action unrelated to alcohol addiction.

129. Answer: c

Explanation:

Drug addiction is widely recognised as one of the most significant causes of family disintegration, as it disrupts relationships, finances and the emotional stability of a household. While it can also affect personality and society at large, family breakdown is considered its most direct and immediate consequence.

130. Answer: d

Explanation:

The source paper marks option (D), Wind energy and Green energy, as the answer. Since wind energy is itself a form of green energy, this combined option is unusual, and many textbooks would instead point to solar energy or green energy broadly as the cleanest choice. This answer is transcribed as marked, with a confidence flag noting the ambiguity of the option itself.

131. Answer: d

Explanation:

The Primary sector includes activities like agriculture, fishing, mining and forestry, where goods are produced directly by exploiting natural resources. The Secondary sector processes these raw materials into finished goods, while the Tertiary sector provides services.

132. Answer: b

Explanation:

Van Mahotsav is an annual tree-planting festival celebrated in India, traditionally held during the first week of July, encouraging citizens to plant trees to reduce pollution and increase green cover. It was started to promote awareness about the importance of forests and afforestation.

133. Answer: c

Explanation:

The source paper marks option (C) as the incorrect statement. However, it is a well-established scientific fact that ozone occurs both in the earth's upper atmosphere (stratosphere, forming the protective ozone layer) and at ground level (as a secondary pollutant in smog), so statement (C) is actually true. This creates a conflict with well-established science; the marked answer is transcribed faithfully, with this discrepancy flagged.

134. Answer: a

Explanation:

IPCC officially stands for the Intergovernmental Panel on Climate Change, the United Nations body responsible for assessing the science related to climate change.

135. Answer: b

Explanation:

India signed and ratified the Kyoto Protocol in 2002, committing to the international framework for reducing greenhouse gas emissions.

136. Answer: d

Explanation:

Environmental Studies (EVS) as a curricular area is built on three well-recognised principles of environmental education: learning about the environment (gaining knowledge of it), learning through the environment (using the environment as a resource for learning), and learning for the environment (developing values and skills to protect it). 'Learning as environment' is not part of this standard three-fold framework.

137. Answer: d

Explanation:

At the primary level, environmental studies aims to help children analyse environment-related concepts, adapt with their surroundings, and classify the different elements they observe. Merely identifying and understanding elements is a preliminary, lower-order skill and is not counted among the main curricular objectives, which focus on higher-order engagement with the environment.

138. Answer: b

Explanation:

School exhibitions on EVS topics are primarily meant to channelize and nurture the creative instincts of learners by giving them a platform to express their understanding of environmental concepts through models, charts, and projects. Career training, pleasing authorities, or satisfying parents are not the pedagogical purpose of such activities.

139. Answer: b

Explanation:

Sound teaching-learning principles move from example to rule, concrete to abstract, and known to unknown, since children grasp new ideas best when linked to what they already know. Moving from unknown to known reverses this logic and is not a principle EVS teachers should follow.

140. Answer: a

Explanation:

Effective classroom discussion allows learners to share diverse viewpoints and collectively arrive at the best or most reasoned view on a topic. It is not meant to involve personal criticism or drift away from the main topic.

141. Answer: b

Explanation:

Producers, mainly green plants, form the base of every food chain and energy pyramid. They convert solar energy into chemical energy through photosynthesis, making them the most fundamental and recognized component on which all other trophic levels depend.

142. Answer: a

Explanation:

The standard trophic hierarchy taught at the primary level follows the sequence: Producers, Primary consumers, Secondary consumers, and Decomposers. This reflects the order in which organisms are positioned in a food chain, starting from plants and moving through the levels of consumers to the decomposers that break down organic matter.

143. Answer: c

Explanation:

In-situ conservation protects species within their natural habitat, treating protected areas and biosphere reserves as living 'warehouses' of biological information and genetic diversity -- unlike ex-situ methods (zoos, botanic gardens, captive breeding)

which remove species from their natural setting.

144. Answer: d

Explanation:

In this scenario the children live and function on a daily basis with their father while the mother resides elsewhere and is visited only during vacations, indicating the family is split across two locations. This arrangement is classified as a divided family, distinct from a single parent family where one parent is entirely absent from the child's life.

145. Answer: c

Explanation:

Keoladeo National Park has been a designated Ramsar wetland site since 1981. Among the given options, Rajsamand Lake is the one not listed as a Ramsar wetland site.

146. Answer: a

Explanation:

Climate change is commonly identified through proxy indicators such as tectonic indicators (geological evidence), cryogenic indicators (ice cores), and floral indicators (pollen and plant remains). 'Long term change' describes climate itself rather than being a specific measurable indicator used to detect it.

147. Answer: b

Explanation:

Global warming directly causes melting ice caps, rising sea levels, and is itself a major driver of climate change. The ozone hole, however, is caused by the release of chlorofluorocarbons (CFCs) and other ozone-depleting substances, a distinct chemical process, and is not caused by global warming. Note: the source answer sheet shows two options marked, so this transcription follows the scientifically consistent choice.

148. Answer: a

Explanation:

Intensive subsistence agriculture is practiced in areas with high population pressure on land, where farmers cultivate small landholdings intensively to maximize output and feed dense populations.

149. Answer: d

Explanation:

When blood is stored for a period, the iron in haemoglobin gets oxidized from the ferrous (Fe^{2+}) to the ferric (Fe^{3+}) state, forming methemoglobin, which is brown in colour and unable to bind oxygen effectively. This is why stored blood gradually turns brown over time.

150. Answer: a

Explanation:

Fat provides more than double the caloric energy per gram compared to carbohydrate or protein, so a combination of fat and carbohydrate provides the most energy among the given constituents in a balanced diet.

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