SSC CHSL 2025 Tier-1 (Held On: 27 Nov, 2025 Shift 2) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2025 • 100 questions • 60 minutes • Answer key and solutions

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2 questions are in Hindi and not printed here. Each one links to the online version, where you can read it.

ENGLISH LANGUAGE

Q1. Choose the correct word from the options given showing a synonym of the word below.

Garrulous

(a) Loquacious
(b) Silent
(c) Defined
(d) Well-mannered

Q2. Choose the option that has an error in the sentence.

Nowadays, the lack of money makes people spend too much times working.

(a) Nowadays, the lack of money
(b) makes people spend
(c) too much times working.
(d) No correction required

Q3. Identify the incorrect sentence.

(a) He spoil his health by drinking too much alcohol in the bar.
(b) Most people don't like being disturbed while they are working.
(c) For a long time, people thought that the world was flat and that people could fall off the edge.
(d) You have to be a millionaire to shop in Harrods. Everything is so expensive there.

Q4. Fill in the blank with the most appropriate option:

The legislation was passed with _____ support, uniting parties across the political spectrum.

(a) partisan
(b) unanimous
(c) perfunctory
(d) nominal

Q5. Correct the homonym in the sentence.

Sentence: He is the sole hare to the estate.

Correct word: _____

(a) Hair
(b) Heir
(c) Hire
(d) Hier

Q6. Choose the correctly spelt word:

(a) Environment
(b) Envirmnet
(c) Enviorment
(d) Envirrent

Q7. Choose the best option to replace the underlined part to improve the given sentence. If no substitution is required, select 'No substitution.'

The truck was loaded on crates of fresh produce for the market.

(a) loaded with
(b) loaded by
(c) loaded in
(d) No substitution

Q8. Choose the best option to replace the underlined part to improve the given sentence. If no substitution is required, select 'No substitution.'

He was accused for stealing confidential data.

(a) Accused with stealing
(b) Accused of stealing
(c) Accused to stealing
(d) No substitution

Q9. Choose the correct passive voice transformation of the sentence:

The children will have played the game by sunset.

(a) The game will have being played by the children by sunset.
(b) The game would have been played by the children by sunset.
(c) The game will be played by the children by sunset.
(d) The game will have been played by the children by sunset.

Q10. Choose the correct indirect narration of the following statement from the given alternatives:

She said to me, "We are going to live in a new city from next month onwards until my brother gets a new job."

(a) She told me that they will be going to live in a new city from the next month onwards until her brother gets a new job.
(b) She told me that they were going to live in a new city from the following month onwards until her brother got a new job.
(c) She told me that she was going to live in a new city from the following month onwards until her brother gets a new job.
(d) She told me that they were going to live in a new city from the following month onwards until my brother got a new job.

Q11. Change the following sentence into the Active form.

The famous poem was written by a renowned poet.

(a) A renowned poet wrote the famous poem.
(b) The famous poem writes a renowned poet.
(c) A renowned poet has written the famous poem.
(d) The famous poem was being written by a renowned poet.

Q12. Choose the option that is the most appropriate conversion of the following sentence into Direct Speech.

The coach advised the players not to skip the warm-up exercises.

(a) The coach advises the players, "Don't skip the warm-up exercises."
(b) The coach told the players, "You should not skip the warm-up exercises."
(c) The coach said to the players, "Do not skip the warm-up exercises."
(d) The coach advised, "The players must not skip the warm-up exercises."

Q13. Choose the most suitable preposition from the given options to fill in the blank in the following sentence:

He has a reputation _____ being punctual and reliable.

(a) on
(b) in

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(c) of
(d) for

Q14. Choose the correct passive voice transformation of the sentence:

The jury, after a long deliberation, has finally reached a verdict in the high-profile case.

(a) A verdict in the high-profile case has finally been reached by the jury after a long deliberation.
(b) A verdict in the high-profile case was finally reached by the jury after a long deliberation.
(c) A verdict in the high-profile case had been finally reached by the jury after a long deliberation.
(d) A verdict in the high-profile case is discovered by the jury after a long deliberation.

Directions

Read the passage and answer the following questions:

In the realm of childhood development, certain games transcend mere amusement, functioning instead as potent instruments for cognitive enhancement. Unlike passive entertainment, these activities engage neural circuits, fostering memory retention, logical reasoning, and adaptive problem solving.

Classic strategy games such as chess compel young players to anticipate consequences several moves ahead, refining both foresight and decision-making acuity. Similarly, puzzles ranging from jigsaw assemblies to three-dimensional brainteasers demand spatial awareness and pattern recognition, skills transferable to mathematics and science. Even word-based games, including crosswords and Scrabble, enrich vocabulary and linguistic dexterity, thereby strengthening communicative competence.

Digital platforms, when judiciously curated, can also serve as catalysts for mental growth. Educational video games that simulate problem scenarios encourage children to synthesise information rapidly and experiment with multiple solutions, enhancing cognitive flexibility. Importantly, these benefits are maximised when gameplay is balanced with real-world interaction, mitigating the risks of social isolation and sedentary behaviour.

Furthermore, such games cultivate patience, perseverance, and a tolerance for delayed gratification traits that underpin academic resilience. By embedding complex mental tasks within an enjoyable framework, they transform learning into an intrinsically motivating pursuit rather than an externally imposed obligation.

Ultimately, games that stimulate the intellect are not trivial diversions but dynamic tools, shaping neural architecture in ways that can confer lasting academic and personal advantages.

Q15. In the sentence" Digital platforms, when judiciously curated, can also serve as catalysts for mental growth " the phrase " When judiciously curated" functions as:

(a) Noun clause
(b) Adverbial clause of time
(c) Adjective clause
(d) Absolute phrase

Q16. Identify the tense in "can also serve as catalysts for mental growth".

(a) Simple present
(b) Present continuous
(c) Future simple
(d) Present perfect

Q17. The word "dexterity" in the sentence" Even word-based games, including crosswords _____ thereby strengthening communicative competence." most nearly means:

(a) Clumsiness
(b) Skill and agility
(c) Laziness
(d) Curiosity

Q18. The word "mitigating" in the passage means:

(a) Worsening
(b) Preventing completely
(c) Making less severe
(d) Ignoring

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Q19. According to the passage, what ensures the maximum benefit of educational video games?

(a) Playing them for long hours
(b) Combining them with real-world interaction
(c) Using only offline versions
(d) Avoiding all puzzles and strategy games

Q20. Rearrange the following sentence parts to form a meaningful and grammatically correct paragraph:

P. He collected water from a stream into a pot and placed it over a fire.
Q. He brought the water to a rolling boil for several minutes, killing all the pathogens.
R. He took a drink of the clear, safe water, his thirst finally quenched.
S. He allowed the water to cool, then poured it through a cloth to filter out any sediment.

(a) P, Q, S, R
(b) R, Q, S, P
(c) Q, P, S, R
(d) R, S, Q, P

Q21. Rearrange the following sentences to form a meaningful and grammatically correct paragraph:

P. As a result, they were able to produce crops that would feed a population that was growing quickly.
Q. The Incas were skilled builders who carved terraces onto the Andes mountains' precipitous slopes.
R. Where there had previously been no level, fruitful soil, these terraces produced it.
S. Their empire's stability and wealth were mainly due to their agricultural inventiveness.

(a) Q, R, P, S
(b) S, R, P, Q
(c) R, Q, P, S
(d) P, R, Q, S

Q22. What is the antonym of 'Ephemeral'?

(a) Temporary
(b) Momentary
(c) Eternal
(d) Fleeting

Q23. What is the antonym of "Tenebrous"?

(a) Bright
(b) Shadowy
(c) Murky
(d) Obscure

Q24. Fill in the blank with the correctly spelt word.

The historian's theory was considered _____ by mainstream scholars.

(a) apocriphyll
(b) apocryfull
(c) apocriphal
(d) apocryphal

Q25. Which word describes self-punishment for wrongdoing or sin?

(a) Penitence
(b) Vindication
(c) Exoneration
(d) Redemption

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GENERAL INTELLIGENCE

Q26. In a class, among the passed students, A is 17th from the top and 22nd from the bottom. If 7 students failed, what is the total number of students in the class?

(a) 45
(b) 46
(c) 47
(d) 48

Q27. In a row of children, P is 17th from the left and Q is 15th from the right. If R is 6th to the right of P and is exactly in the middle of P and Q, what is the total number of children in the row?

(a) 40
(b) 41
(c) 42
(d) 43

Q28. In a row of students, Rima is 12th from the left and Sita is 18th from the right. If they interchange their positions, Rima becomes 25th from the left. How many students are there in the row?

(a) 39
(b) 40
(c) 41
(d) 42

Q29. A family consists of seven persons P, Q, R, S, T, U, V.

1. Q is the daughter of P.
2. U is the son of R.
3. R is the brother of S.
4. S is the mother of T.
5. V is the sister-in-law of U.
6. P is the father of S.

How is P related to U?

(a) Father
(b) Grandfather
(c) Uncle
(d) Son

Q30. Read the following statement carefully and identify the conclusion that follows.

Statement:

No fruit is a vegetable.

All vegetables are green.

Conclusions:

I. No fruit is green.

II. Some green are not fruits.

(a) Only conclusion I follows.
(b) Only conclusion II follows.
(c) Both conclusions I and II follow.
(d) Neither conclusion I nor II follows.

Q31. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

9, 31, 128, 388, ?, 4672, 18692, 56080

(a) 1559

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(b) 1556
(c) 1557
(d) 1554

Q32. A series is given with one term wrong. Select the wrong term from the given alternatives.

-419, -430, -442, -455, -468, -484, -500, -517

(a) -468
(b) -430
(c) -419
(d) -500

Q33. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

5, 18, ?, 228, 915, 2748, 10995, 32988

(a) 150
(b) 75
(c) 225
(d) 120

Q34. Few of the letters are given followed by a question mark (?) these letters are following a specific pattern you have to give the correct option which can replace question mark.

Complete the series: F, J, M, O, ?

(a) P
(b) Q
(c) R
(d) S

Q35. If 35 # 10 = 1400 and 1 # 45 = 180, then what is the value of 44 # 55?

(a) 9680
(b) 9692
(c) 9688
(d) 9668

Q36. If 569 & 4 $ 14 = 513 and 718 & 47 $ 38 = -1068, then what is the value of 890 & 5 $ 5?

(a) 859
(b) 865
(c) 870
(d) 868

Q37. In the questions given below, there are three statements followed by two conclusions I and II. You have to take the three given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the three statements disregarding commonly known facts.

Statements:

Only a few Youth is Young

Some Young is Elder

All Elder is Older

Conclusion:

I. Some Youth is not Older

II. Some Older is Young

(a) Both conclusions I and II follow
(b) Only conclusion I follows
(c) Only conclusion II follows
(d) Neither conclusion I nor II follows

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Q38. Six persons A, B, C, D, E and F lived in a building with 6 floors. Only one person lived on each floor. B lived just above D. 2 persons lived between D and F. D lived on one of the floors above F. A lived just above C who did not live on a floor second from the bottom. How many persons lived below E?

(a) None
(b) One
(c) Two
(d) Three

Q39. Price of 5 cups G, H, J, K and L is compared. Price of no two cups is same. Price of K is more than L but less than H and J. Price of G is highest. If the price of H is less than J, then the price of how many cups is more than H?

(a) 2
(b) 3
(c) 1
(d) 0

Q40. Length of 6 rectangles A, B, C, D, E and F is compared. Length of no two rectangles is same. Length of A is second longest. Length of F is more than C and B but less than D and E. Length of E is not the maximum. Which rectangle has the longest length?

(a) A
(b) D
(c) B
(d) E

Q41. 8 boys A, B, C, D, E, F, G and H are sitting around a circular table facing towards the centre (not necessarily in the same order). H is to the immediate right of A. H is not the immediate neighbour of E or D. F is to the immediate left of B. G is the immediate neighbour of E. C is the immediate neighbour of E and F. Who is sitting second to the right of H?

(a) C
(b) E
(c) D
(d) B

Q42. Some conditional data is provided to you in form of statement you have to check which of the following statement are logically inference from given statement.

Statement : All employees who work overtime receive extra pay. Sarah worked overtime last week.

What can we infer?

(a) Sarah received extra pay last week
(b) Sarah always works overtime
(c) Sarah needed the extra money
(d) Sarah is a dedicated employee

Q43. In this type of questions, question is provided with substitutes for various mathematical symbols, followed by a question involving calculation of an expression or choosing the correct/incorrect equation. You have to put the real signs in the given equation and then solve the questions as required.

If '#' stands for '÷', '%' stands for '-', '$' stands for '+', '~' stands for '×', then find the value of: 14 ~ 10 ~ 3 $ 2 = ?

(a) 423
(b) 422
(c) 421
(d) 424

Q44. After interchanging the given two signs, what will be the value of the given equation?

× and -

21 × 6 - 15 ÷ 3 + 18 = ?

(a) 18
(b) 27

(c) 9
(d) 13

Q45. This question is in Hindi. Read it online.

Q46. In a certain coded language 'BODS' is coded as 'HVJZ' and 'SKIP' is coded as 'YROW'. How will 'BOWL' be coded in the same code language?

(a) FWCT
(b) HVCS
(c) GVBR
(d) GXBS

Q47. In a certain coded language 'STOW' is coded as 'OOKR' and 'HEIR' is coded as 'DZEM'. How will 'POSH' be coded in the same code language?

(a) NIPD
(b) LJOC
(c) MKPA
(d) JLQB

Q48. Which following group of letters, when sequentially placed from left to right will complete the given series?

r_ss_jssrjs_rj_s

(a) j j r s
(b) j r s s
(c) j r r r
(d) j r r s

Q49. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

PL34, KG136, FB544, AW2176, ?

(a) VS8934
(b) UR8604
(c) VR8704
(d) US8814

Q50. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

MW32, PS97, SO292, VK877, ?

(a) XG2882
(b) YG2632
(c) YF2462
(d) XF2742

QUANTITATIVE APTITUDE

Q51. What percent of 240 is 72?

(a) 25%
(b) 30%
(c) 35%
(d) 40%

Q52. If profit earned is 25% of the selling price, what is the profit percentage on cost price?

(a) 33.33%
(b) 20%
(c) 25%
(d) 30%

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Q53. What will be the simple interest on Rs. 1300 at 6% per annum for 4 years?

(a) Rs. 302.00
(b) Rs. 317.00
(c) Rs. 312.00
(d) Rs. 322.00

Q54. An artist uses a regular decagon to make a frame. If the side is 12 cm, what's the total border length?

(a) 120 cm
(b) 108 cm
(c) 100 cm
(d) 144 cm

Q55. If the lateral surface area of a right circular cylinder is equal to twice the area of its base, find the height in terms of the radius.

(a) h = r
(b) h = 2r
(c) h = 3r
(d) h = 5r

Q56. If the surface area of a sphere increases by 44%, by what approximate percent does the radius increase?

(a) 20%
(b) 21%
(c) 22%
(d) 24%

Q57. The base of a regular right pyramid is an isosceles triangle with equal sides of 25 cm and a base of 30 cm. The slant height of the pyramid is 40 cm. Find the total surface area of the pyramid.

(a) 1700 cm2
(b) 2300 cm2
(c) 1900 cm2
(d) 1200 cm2

Q58. Two identical regular right pyramids, each with a square base of side 6 cm and a perpendicular height of 4 cm, are stacked one on top of the other such that their bases perfectly align. The top pyramid is inverted. Calculate the slant height of a single pyramid.

(a) 23 cm
(b) 8 cm
(c) 11 cm
(d) 5 cm

Q59. If $\tan\theta = 12/5$, find $\sin\theta$.

(a) 1/2
(b) 12/13
(c) 1
(d) 2/3

Q60. A and B invest in a business in the ratio 7 : 3. If the total profit earned after a year is Rs .1,00,000, how much profit will B receive?

(a) Rs. 25,000
(b) Rs. 30,000
(c) Rs. 35,000
(d) Rs. 40,000

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Q61. A, B, and C enter into a partnership. A invests Rs. 4,000 at the start. B invests Rs.6,000 after 4 months. C invests Rs.8,000 after 8 months. If the total profit at the end of the year is Rs. 1,650, what is the share of C?

(a) Rs. 420.15
(b) Rs. 450.25
(c) Rs. 412.50
(d) Rs. 400

Q62. What is the degree measure of an angle of (7 π)/4 radians?

(a) 315°
(b) 270°
(c) 135°
(d) 225°

Q63. The average marks of 25 students is 48. Later, 5 new students join the group, each scoring 60 marks. After that, the teacher finds that one of the original students' marks was wrongly entered as 40 instead of 70. Find the final average marks of the class.

(a) 52
(b) 54
(c) 51
(d) 57

Q64. A can do a job in 10 days and B in 12 days. They work on alternate days starting with A. In how many days will the job be finished?

(a) 15 days
(b) 10 3/4 days
(c) 10 5/6 days
(d) 12 days

Q65. A right circular cone having the total surface area of 314 cm2 and radius of 7 cm. What is the slant height of the cone?

(a) 9 cm
(b) 7.2 cm
(c) 10.8 cm
(d) 6 cm

Q66. If x - y = 7 and xy = 60, then what is the value of $x^2 + y^2$?

(a) 169
(b) 149
(c) 129
(d) 109

Q67. A vessel contained a certain amount of milk and water. When 20 liters of water were added to it, the new mixture had 40% milk. When 10 liters of milk were further added to this new mixture, the final mixture had 50% milk. The ratio of water to milk in the original mixture was?

(a) 3 : 2
(b) 1 : 2
(c) 2 : 3
(d) 3 : 4

Q68. A circular embankment is constructed with a radius of 40 meters. A second concentric circular embankment is built around the first, with a width of 12 meters. What is the approximate area of the region between the two embankments?

(a) 3470 m2
(b) 5670 m2
(c) 7860 m2
(d) 2450 m2

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Q69. If a + b = 3 and a - b = 1, find the value of a^4- b^4.

(a) 15
(b) 25
(c) 20
(d) 35

Q70. If cos A+sin A=5/4, find tan A.

(a) (5-√7)/(5+√7)
(b) (4-√7)/(4+√7)
(c) (5-√2)/(5+√2)
(d) (2-√3)/(2+√3)

Q71. A car moves at a steady pace from point P to point Q. It would have taken an hour less if it had accelerated by 10 km/h. It would have saved an additional forty-five minutes if its speed had been increased by an additional ten kilometers per hour. How far are P and Q apart?

(a) 420 km
(b) 360 km
(c) 540 km
(d) 600 km

Q72. Which of the following options will have sum as 90?

(a) 42 4/5+6 1/6
(b) 43 1/2+7 1/4
(c) 45 1/2+89/2
(d) 52 1/7+63

Q73. (√72-√50)/√2=?

(a) 4
(b) 2
(c) 3
(d) 1

Q74. The amount received on a certain sum at the same annual rate of interest after 3 years and 5 years on compound interest (compounding annually) is Rs. 10648 and Rs. 12884.08 respectively. What is that sum?

(a) Rs. 9200
(b) Rs. 7200
(c) Rs. 8400
(d) Rs. 8000

Q75. Marked price of an article is 150 percent of the value of discount. Marked price is what percent of the selling price?

(a) 300 percent
(b) 250 percent
(c) 350 percent
(d) 400 percent

GENERAL AWARENESS

Q76. Who ruled the Delhi Sultanate from 1236 to 1240 A.D. as the only woman monarch?

(a) Noor Jahan
(b) Razia Sultana
(c) Rani Durgavati
(d) Chand Bibi

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Q77. What was the total number of Alvar saints in the Bhakti movement tradition?

(a) 12
(b) 29
(c) 44
(d) 63

Q78. Which of the following article of the Indian constitution is related with the right of minorities to establish and administer educational institutions?

(a) Article 28
(b) Article 24
(c) Article 30
(d) Article 29

Q79. Sanjiv Ranjan assumed the role of secretary general of the which of the following organisation on January 1,2025?

(a) IORA
(b) SAARC
(c) ASEAN
(d) BRICS

Q80. The nickname "Flying Sikh" is associated with which Indian athlete?

(a) Avinash Sable
(b) Milkha Singh
(c) Vikas Gowda
(d) Harbhajan Singh

Q81. In May 2025, who has been given one-year extension as the Chairman of the Defence Research and Development Organisation (DRDO) and Secretary of the Department of Defence Research and Development (DDR&D) from India?

(a) Dr. G. Satheesh Reddy
(b) Dr. Ajay Kumar
(c) Dr. Samir V. Kamat
(d) M N Srinivasu

Q82. In the Union Budget 2025-26, a Maritime Development Fund of Rs. _____ crore over 10 years has been announced.

(a) 20000
(b) 25000
(c) 30000
(d) 35000

Q83. Which organisation published the Multidimensional Vulnerability Index?

(a) United Nations
(b) World Bank
(c) NITI Aayog
(d) IMF

Q84. NTPC, India's largest power producer, inaugurated the world's first CO2-to-methanol conversion plant at its _____ facility.

(a) Vindhyachal
(b) Chittor
(c) Ranchi
(d) Kolkata

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Q85. Which among the following is a book authored by Arundhati Roy?

(a) Flood of Fire
(b) The Circle of Reason
(c) Capitalism- A Ghost Story
(d) The Liberation of Sita

Q86. Who is the author of the book 'Shalimar The Clown'?

(a) Anita Desai
(b) Shiva Naipaul
(c) Salman Rushdie
(d) Rohinton Mistry

Q87. The Indus Valley people used standardized _____ as a building material.

(a) burnt mud-bricks
(b) rocks
(c) fly ash
(d) black soil

Q88. The 'Veerampattinam Festival' is celebrated in which Indian state/UT?

(a) Kerala
(b) Puducherry
(c) Telangana
(d) Lakshadweep

Q89. In the context of Indian satellite launch vehicle, what does "G" stands for in GSLV?

(a) Geosynchronous
(b) Gladiator
(c) Gentle
(d) Generation

Q90. The magnitude of buoyant force depends on the _____ of the fluid.

(a) refractive index
(b) density
(c) colour
(d) charge

Q91. What was the combined army of the Sikh 'Jathas' and 'Misls' called in the eighteenth century?

(a) Sangats
(b) Mansabdars
(c) Nihangs
(d) Dal Khalsa

Q92. Personal Disposable Income is the part of the aggregate income which belongs to the _____.

(a) households
(b) firm
(c) government
(d) foreign banks

Q93. Tantia Tope was the general of whom among the following?

(a) Nana Saheb
(b) Begum Hazrat Mahal
(c) Bahadur Shah Zafar
(d) Baji Rao II

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Q94. In India, projects having a minimum investment of Rs. _____ Crore in plant & machinery shall be considered for establishment as EOUs.

(a) 5
(b) 10
(c) 1
(d) 3

Q95. A Bill passed by the Indian State Legislature is sent to the Governor under _____.

(a) Article 200
(b) Article 201
(c) Article 202
(d) Article 203

Q96. Which of the following port is situated at the entrance of the Zuari estuary?

(a) Mumbai port
(b) Marmagao port
(c) Haldia port
(d) Paradip port

Q97. The ninth five year plan of India was launched in _____

(a) 1985
(b) 1992
(c) 1997
(d) 2003

Q98. This question is in Hindi. Read it online.

Q99. Which of the following part of brain is responsible for the precision of voluntary actions and maintaining the posture and balance of the body?

(a) Cerebrum
(b) Cerebellum
(c) Medulla
(d) Hypothalamus

Q100. Samudragupta celebrated his conquests by performing which Vedic sacrifice?

(a) Shraddha
(b) Agnihotra
(c) Upanayana
(d) Ashvamedha

ANSWER KEY

1	a	2	c	3	a	4	b	5	b	6	a	7	a	8	b	9	d	10	b
11	a	12	c	13	d	14	a	15	b	16	a	17	b	18	c	19	b	20	a
21	a	22	c	23	a	24	d	25	a	26	a	27	d	28	d	29	b	30	b
31	b	32	a	33	b	34	a	35	a	36	b	37	c	38	a	39	a	40	b
41	b	42	a	43	b	44	c	45	b	46	b	47	b	48	b	49	c	50	b
51	b	52	a	53	c	54	a	55	a	56	a	57	c	58	d	59	b	60	b
61	c	62	a	63	c	64	c	65	b	66	a	67	b	68	a	69	a	70	a
71	a	72	c	73	d	74	d	75	a	76	b	77	a	78	c	79	a	80	b
81	c	82	b	83	a	84	a	85	c	86	c	87	a	88	b	89	a	90	b
91	d	92	a	93	a	94	c	95	a	96	b	97	c	98	b	99	b	100	d

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SOLUTIONS

Q1. Answer: (a) Loquacious

The solution is in Hindi. Read it online.

Q2. Answer: (c) too much times working.

The correct answer is Option 3.

Key Points

• The error lies in the phrase "too much times working" in part 3.

• The word "times" is incorrect in this context. The correct word should be "time" because "time" in this sense is an uncountable noun.

• The phrase should be corrected to "too much time working," which aligns with standard grammar rules.

• Thus, the error is located in part 3 of the sentence.

Therefore, the correct answer is Option 3.

Correct Sentence: "Nowadays, the lack of money makes people spend too much time working."

Additional Information

• Option 1: "Nowadays, the lack of money" – This part of the sentence is grammatically correct and does not require any changes.

• Option 2: "makes people spend" – This part of the sentence is grammatically correct and does not require any changes.

• Option 4: "No correction required" – This option is incorrect because there is an error in part 3.

Q3. Answer: (a) He spoil his health by drinking too much alcohol in the bar.

The correct answer is option 1.

Key Points

To answer this question, let's analyze each sentence for grammatical and contextual correctness:

• 1) He spoil his health by drinking too much alcohol in the bar.

• This sentence contains a grammatical error. The verb "spoil" is incorrectly used in the present tense when the sentence refers to a habitual action or consequence.

• Correct Sentence: "He spoils his health by drinking too much alcohol in the bar."

• Hence, this sentence is incorrect.

• 2) Most people don't like being disturbed while they are working.

• This sentence is grammatically and contextually correct. It uses the present continuous tense appropriately to describe an ongoing action.

• Hence, this sentence is correct.

• 3) For a long time, people thought that the world was flat and that people could fall off the edge.

• This sentence is grammatically correct and makes sense contextually. It accurately describes a historical belief.

• Hence, this sentence is correct.

• 4) You have to be a millionaire to shop in Harrods. Everything is so expensive there.

• This sentence is grammatically and contextually correct. It humorously emphasizes the high prices in Harrods.

• Hence, this sentence is correct.

Final Answer:

• Sentence 1 is incorrect due to the misuse of verb tense ("spoil" instead of "spoils").

• Sentences 2, 3, and 4 are grammatically and contextually correct.

Q4. Answer: (b) unanimous

The correct answer is 'unanimous'.

Key Points

• The term "unanimous" means complete agreement or consensus among all members of a group.

• The context of the sentence mentions uniting parties across the political spectrum, which implies that the support for the legislation was not divided but agreed upon by all parties.

• Option 1: "partisan" refers to strong allegiance to a particular political party, which is contrary to the idea of unity.

• Option 3: "perfunctory" means doing something in a routine or superficial way, which does not fit the context of strong, unified support.

• Option 4: "nominal" means minimal or in name only, which does not convey the strength of the support described in the

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sentence.

Therefore, the correct answer is Option 2.

Complete Sentence: "The legislation was passed with unanimous support, uniting parties across the political spectrum."

Additional Information

• Option 1: "partisan" is incorrect because it refers to division along party lines, the opposite of what the sentence describes.

• Option 3: "perfunctory" is incorrect because it suggests a lack of genuine effort or enthusiasm, which is not implied in the sentence.

• Option 4: "nominal" is incorrect because it suggests minimal support, which contradicts the idea of strong, united backing.

Q5. Answer: (b) Heir

The solution is in Hindi. Read it online.

Q6. Answer: (a) Environment

The correct answer is option 1.

Key Points

• The correctly spelt word is 'Environment'.

• 'Environment' refers to the surroundings or conditions in which a person, animal, or plant lives or operates.

• Incorrect spellings such as 'Envirmnet', 'Enviorment', and 'Envirrent' deviate from the standard spelling.

Correct sentence: The word 'Environment' is correctly spelt and widely used in various contexts, such as ecological, social, and organizational settings.

Additional Information

• Definition of Environment:

• The physical, social, and cultural conditions that influence the life of an individual or community.

• For Example: Protecting the environment is crucial for future generations.

• Common Usage:

• The government is implementing policies to reduce environmental pollution.

• The school organized a seminar on environmental conservation.

Q7. Answer: (a) loaded with

The correct answer is 'loaded with'.

Key Points

• The preposition "with" is used to indicate the contents of something, making it the most appropriate choice for the sentence.

• The phrase "loaded with" is a standard construction when referring to something being filled or packed with items.

• Option 2 (loaded by) suggests the agent performing the action, which is not suitable here.

• Option 3 (loaded in) refers to the location where something is loaded, which is incorrect in this context.

• Option 4 (No substitution) is incorrect as the original sentence is grammatically wrong.

Therefore, the correct answer is Option 1.

Complete Sentence: "The truck was loaded with crates of fresh produce for the market."

Additional Information

• Option 2: "loaded by" implies the person or entity performing the action of loading, which is irrelevant in this context.

• Option 3: "loaded in" is incorrect because it suggests the crates are loaded into a location, not onto the truck.

• Option 4: No substitution is invalid because the original sentence is ungrammatical and requires correction.

Q8. Answer: (b) Accused of stealing

The correct answer is '2' i.e. 'Accused of stealing.'

Key Points

• The verb "accused" is always followed by the preposition "of" when indicating the reason for the accusation.

• The phrase "accused for stealing" is incorrect because "for" is not the correct preposition to use after "accused."

• The correct structure is "accused of + gerund/noun."

Therefore, the correct answer is Option 2.

Complete Sentence: "He was accused of stealing confidential data."

Additional Information

• Option 1: "Accused with stealing" is incorrect because "with" is not the correct preposition to use after "accused."

• Option 3: "Accused to stealing" is grammatically incorrect as "to" is not the appropriate preposition for this context.

• Option 4: "No substitution" is incorrect because the original sentence contains an error and needs correction.

Q9. Answer: (d) The game will have been played by the children by sunset.

The correct answer is Option 4.

Key Points

• Passive voice structure: The object of the active voice sentence becomes the subject of the passive voice sentence.

• In the active voice, the sentence is: "The children will have played the game by sunset."

• To convert to passive voice: Place the object "the game" at the beginning.

• Change the active verb form "will have played" to "will have been played" (future perfect passive).

• Add the preposition "by" followed by the original subject "the children."

• Ensure the time phrase "by sunset" remains at the end of the sentence for clarity.

Therefore, the correct answer is Option 4.

Correct Sentence: "The game will have been played by the children by sunset."

Additional Information

• Option 1: "The game will have being played by the children by sunset." – Incorrect use of the word "being" in the future perfect passive structure.

• Option 2: "The game would have been played by the children by sunset." – Incorrect tense (conditional perfect passive instead of future perfect passive).

• Option 3: "The game will be played by the children by sunset." – Incorrect tense (future simple passive instead of future perfect passive).

Q10. Answer: (b) She told me that they were going to live in a new city from the following month onwards until her brother g...

The correct answer is Option 2.

Key Points

• Rule for Indirect Speech Conversion: When converting direct speech to indirect speech, the following changes are applied:

• Present tense verbs in the original sentence are changed to past tense in indirect speech.

• Words indicating time and place are modified. For example, "next month" becomes "the following month."

• Pronouns are adjusted according to the speaker and listener.

• Application to the Question:

• The direct sentence is: "We are going to live in a new city from next month onwards until my brother gets a new job."

• When converted to indirect speech:

• "We" changes to "they" to reflect the third person.

• Present continuous "are going" changes to past continuous "were going."

• "Next month" changes to "the following month."

• Present tense "gets" changes to past tense "got" to maintain tense consistency.

Therefore, the correct indirect speech is: She told me that they were going to live in a new city from the following month onwards until her brother got a new job.

Correct Sentence: She told me that they were going to live in a new city from the following month onwards until her brother got a new job.

Additional Information

• Option 1: She told me that they will be going to live in a new city from the next month onwards until her brother gets a new job.

• Incorrect because "will be going" should be changed to "were going" in indirect speech.

• Also, "next month" should change to "the following month."

• Option 3: She told me that she was going to live in a new city from the following month onwards until her brother gets a new job.

• Incorrect because "she" replaces "they," which changes the meaning.

• The tense of "gets" should be changed to "got."

• Option 4: She told me that they were going to live in a new city from the following month onwards until my brother got a new job.

• Incorrect because "my brother" should be changed to "her brother" to match the subject pronoun.

Q11. Answer: (a) A renowned poet wrote the famous poem.

The correct answer is Option 1.

Key Points

• The given sentence is in the passive voice: "The famous poem was written by a renowned poet."

• To convert to active voice, identify the subject, verb, and object in the passive sentence.

• In the passive sentence, the subject is "The famous poem," the verb is "was written," and the agent (doer) is "a renowned poet."

• In the active voice, the subject becomes "A renowned poet," the verb changes to "wrote," and the object becomes "the famous poem."

• The correct active voice sentence is: "A renowned poet wrote the famous poem."

Therefore, the correct answer is Option 1.

Correct Sentence: "A renowned poet wrote the famous poem."

Additional Information

• Option 2: "The famous poem writes a renowned poet." – Incorrect as it does not maintain grammatical structure or meaning.

• Option 3: "A renowned poet has written the famous poem." – Incorrect as it changes the tense to present perfect.

• Option 4: "The famous poem was being written by a renowned poet." – Incorrect as it changes the tense to past continuous passive.

Q12. Answer: (c) The coach said to the players, "Do not skip the warm-up exercises."

The correct answer is Option 3.

Key Points

• Direct Speech: It is a way of reporting the exact words spoken by someone, typically enclosed within quotation marks.

• Conversion Process:

• Original Sentence: The coach advised the players not to skip the warm-up exercises.

• The reporting verb "advised" is converted into a suitable verb for direct speech (e.g., "said to" or "told").

• The negative command "not to skip" is transformed into the imperative form "Do not skip."

• The sentence structure is adjusted to reflect a direct command with quotation marks.

• Correct Transformation: The coach said to the players, "Do not skip the warm-up exercises."

Therefore, the correct answer is Option 3.

Correct Sentence: "The coach said to the players, ‘Do not skip the warm-up exercises.'"

Additional Information

• Option 1: The coach advises the players, "Don’t skip the warm-up exercises."

• Incorrect tense: The reporting verb "advises" is in the present tense, which does not match the original sentence's past context.

• Option 2: The coach told the players, "You should not skip the warm-up exercises."

• Incorrect transformation: "Should not skip" introduces a suggestion rather than a direct command.

• Option 4: The coach advised, "The players must not skip the warm-up exercises."

• Incorrect phrasing: It changes the structure and tone of the original sentence, introducing "must," which is not present in the original statement.

Q13. Answer: (d) for

The correct answer is 'for'.

Key Points

• The preposition "for" is used to indicate the purpose, reason, or a characteristic associated with someone or something.

• The phrase "reputation for" is commonly used to describe the quality or attribute for which someone is known.

• Options 1, 2, and 3 are grammatically incorrect when used in this context.

Therefore, the correct answer is Option 4.

Complete Sentence: "He has a reputation for being punctual and reliable."

Additional Information

• Option 1: "on" is incorrect because "reputation on" is not a valid phrase in English.

• Option 2: "in" is incorrect because "reputation in" is not suitable for this context.

• Option 3: "of" is incorrect because "reputation of" is not appropriate when describing a specific quality like punctuality or reliability.

Q14. Answer: (a) A verdict in the high-profile case has finally been reached by the jury after a long deliberation.

The correct answer is Option 1.

Key Points

• Passive voice structure: The object of the active voice sentence becomes the subject of the passive voice sentence.

• In the active voice, the sentence is: "The jury, after a long deliberation, has finally reached a verdict in the high-profile case."

• To convert to passive voice: Place the object "a verdict in the high-profile case" at the beginning.

• Change the active verb form "has reached" to "has been reached" (present perfect passive).

• Preserve the time sequence and additional phrases, such as "after a long deliberation" and "by the jury," for clarity.

Therefore, the correct answer is Option 1.

Correct Sentence: "A verdict in the high-profile case has finally been reached by the jury after a long deliberation."

Additional Information

• Option 2: "A verdict in the high-profile case was finally reached by the jury after a long deliberation." – Incorrect past tense usage (past simple instead of present perfect).

• Option 3: "A verdict in the high-profile case had been finally reached by the jury after a long deliberation." – Incorrect tense (past perfect instead of present perfect).

• Option 4: "A verdict in the high-profile case is discovered by the jury after a long deliberation." – Incorrect verb choice (present simple instead of present perfect).

Q15. Answer: (b) Adverbial clause of time

The correct answer is 'Option 2'.

Key Points

• Option 2: Adverbial clause of time

• The phrase "when judiciously curated" is an elliptical adverbial clause. It is a shortened form of "when they are judiciously curated."

• It functions as an adverbial clause of time (or condition) because it specifies the specific circumstances or "time" under which digital platforms serve as catalysts for growth.

• Option 1: Noun clause

• This is incorrect. A noun clause functions as a subject or an object (e.g., "I know when the platforms are curated"). In this sentence, the phrase is not acting as a noun.

• Option 3: Adjective clause

• This is incorrect. An adjective clause (relative clause) typically begins with a relative pronoun (which, that, who) and modifies a noun directly (e.g., "Digital platforms that are curated..."). While this phrase follows a noun, "when" establishes a relationship of time/condition to the action of the verb.

• Option 4: Absolute phrase

• This is incorrect. An absolute phrase modifies a whole sentence and usually consists of a noun followed by a participle, without a subordinating conjunction (e.g., "The platforms having been curated, the children began to play"). The presence of "when" makes it a clause.

Therefore, the correct answer is Option 2.

Additional Information

• Ellipsis in Clauses: In English, we often omit the subject and the verb "to be" in adverbial clauses when the subject is the same as the subject in the main clause (Digital platforms).

• Vocabulary: "Judiciously" means with good judgment or sense. "Curated" means selected, organized, and looked after.

• Context: The author uses this clause to provide a necessary caveat—that digital platforms are only beneficial if they are chosen wisely.

Q16. Answer: (a) Simple present

The correct answer is 'Option 1'.

Key Points

• Option 1: Simple present

• The phrase "can also serve" uses the modal verb "can" followed by the base form of the verb "serve."

• In English grammar, modal verbs like can, may, must, and should are used in the Simple Present tense to express current ability, possibility, or general truths.

• The sentence describes a general fact or potential that exists in the present regarding digital platforms.

• Option 2: Present continuous

• This is incorrect. The present continuous requires a form of "to be" + verb-ing (e.g., "are serving").

• Option 3: Future simple

• This is incorrect. The future simple typically uses "will" or "shall" + base verb (e.g., "will serve"). While "can" can imply future possibility, it is grammatically categorized as a present modal.

• Option 4: Present perfect

• This is incorrect. The present perfect requires "has/have" + past participle (e.g., "have served").

Therefore, the correct answer is Option 1.

Additional Information

• Modals and Tense: Modal verbs do not change their form to show tense in the same way regular verbs do. "Can" is the present form, while "could" is often used as the past or conditional form.

• Function of "Can": In this context, "can" indicates possibility. It suggests that digital platforms have the potential to act as catalysts, provided the conditions (like being "judiciously curated") are met.

• Catalyst: A term borrowed from chemistry, used here metaphorically to mean something that precipitates or accelerates an event or change (in this case, mental growth).

Q17. Answer: (b) Skill and agility

The solution is in Hindi. Read it online.

Q18. Answer: (c) Making less severe

The solution is in Hindi. Read it online.

Q19. Answer: (b) Combining them with real-world interaction

The correct answer is 'Option 2'.

Key Points

• Option 2: Combining them with real-world interaction

• The passage explicitly states that for digital platforms and educational video games, "these benefits are maximised when gameplay is balanced with real-world interaction."

• This balance is necessary to mitigate risks such as "social isolation and sedentary behaviour," ensuring that the cognitive gains from digital play translate effectively into personal growth.

• Option 1: Playing them for long hours

• This is incorrect. The passage cautions against "sedentary behaviour," which is often a result of excessive screen time without physical or social activity.

• Option 3: Using only offline versions

• This is incorrect. The passage discusses "digital platforms" and "educational video games" generally; it does not specify that they must be offline to be beneficial.

• Option 4: Avoiding all puzzles and strategy games

• This is incorrect. The passage actually highlights strategy games (like chess) and puzzles as "potent instruments for cognitive enhancement."

Therefore, the correct answer is Option 2.

Additional Information

• Cognitive Flexibility: The passage notes that educational games encourage children to "experiment with multiple solutions," which builds the mental ability to adapt to new information.

• Academic Resilience: By promoting traits like "patience, perseverance, and a tolerance for delayed gratification," these games prepare students for the long-term challenges of academic life.

• Intrinsic Motivation: When learning is embedded in an enjoyable framework (like a game), children are more likely to pursue it for their own satisfaction rather than due to external pressure.

Q20. Answer: (a) P, Q, S, R

The correct answer is Option 1.

Key Points

• The sequence of the sentences forms a coherent and logical paragraph that describes the process of purifying water step by step.

• Sentence P comes first as it introduces the initial action of collecting water and placing it over a fire:

• "He collected water from a stream into a pot and placed it over a fire."

• Sentence Q comes next as it describes the boiling process to kill pathogens:

• "He brought the water to a rolling boil for several minutes, killing all the pathogens."

• Sentence S follows as it explains the cooling and filtering of the boiled water:

• "He allowed the water to cool, then poured it through a cloth to filter out any sediment."

• Sentence R comes last as it concludes the paragraph by describing the final action of drinking the purified water:

• "He took a drink of the clear, safe water, his thirst finally quenched."

• The correct sequence is P, Q, S, R.

Coherent paragraph after rearrangement:

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"He collected water from a stream into a pot and placed it over a fire. He brought the water to a rolling boil for several minutes, killing all the pathogens. He allowed the water to cool, then poured it through a cloth to filter out any sediment. He took a drink of the clear, safe water, his thirst finally quenched."

Q21. Answer: (a) Q, R, P, S

The correct answer is Option 1.

Key Points

• The paragraph discusses the agricultural achievements of the Incas, particularly their skill in building terraces for farming on steep mountain slopes.

• Sentence Q is the first sentence as it introduces the Incas and their skill in building terraces:

• "The Incas were skilled builders who carved terraces onto the Andes mountains' precipitous slopes."

• Sentence R follows as it explains the purpose of these terraces and the benefits they provided:

• "Where there had previously been no level, fruitful soil, these terraces produced it."

• Sentence P is the third sentence as it elaborates on how this innovation helped sustain the growing population:

• "As a result, they were able to produce crops that would feed a population that was growing quickly."

• Sentence S is the fourth as it links the agricultural innovation to the stability and wealth of the Inca Empire:

• "Their empire's stability and wealth were mainly due to their agricultural inventiveness."

• The correct sequence is Q, R, P, S.

Coherent paragraph after rearrangement:

"The Incas were skilled builders who carved terraces onto the Andes mountains' precipitous slopes. Where there had previously been no level, fruitful soil, these terraces produced it. As a result, they were able to produce crops that would feed a population that was growing quickly. Their empire's stability and wealth were mainly due to their agricultural inventiveness."

Q22. Answer: (c) Eternal

The solution is in Hindi. Read it online.

Q23. Answer: (a) Bright

The solution is in Hindi. Read it online.

Q24. Answer: (d) apocryphal

The correct answer is option 4.

Key Points

• The word 'apocryphal' is correctly spelled and refers to something of doubtful authenticity, although widely circulated as being true.

• The other options are misspelled versions of the word:

• Option 1: 'apocriphyll' - Incorrect spelling.

• Option 2: 'apocryfull' - Incorrect spelling.

• Option 3: 'apocriphal' - Incorrect spelling.

Correct sentence: The historian's theory was considered apocryphal by mainstream scholars.

Additional Information

• Word Origin: 'Apocryphal' comes from the Greek word 'apokryphos', meaning 'hidden'.

• Usage Example: The story of the haunted house is most likely apocryphal.

Q25. Answer: (a) Penitence

The solution is in Hindi. Read it online.

Q26. Answer: (a) 45

Given:

A is 17th from the top among passed students.

A is 22th from the bottom among passed students.

Number of failed students = 7

Total = Rank from Top + Rank from Bottom − 1

Number of passed students = 17 + 22 − 1

= 39 − 1 = 38 passed students.

Total students = Passed students + Failed students

= 38 + 7 = 45 students.

Hence, the correct answer is "Option 1".

Q27. Answer: (d) 43

Given:

P is 17th from the left.

Q is 15th from the right.

R is 6th to the right of P and is exactly in the middle of P and Q.

R = 17 + 6 = 23rd from the left.

Since R is exactly in the middle of P and Q:

Distance between P and R = Distance between R and Q = 6

So, Q's position from the left = 23 + 6 = 29th

Total children = (Position from left) + (Position from right) − 1

= 29 + 15 − 1

= 44 − 1

= 43 children.

Hence, the correct answer is "Option 4".

Q28. Answer: (d) 42

Given:

Rima is 12th from the left.

Sita is 18th from the right.

After interchanging positions, Rima becomes 25th from the left.

After interchange, Rima takes Sita's original position.

So, Sita's position from the left = 25

Total = Rank from Left + Rank from Right − 1

Total students = 25 + 18 − 1

= 43 − 1

= 42 students.

Hence, the correct answer is "Option 4".

Q29. Answer: (b) Grandfather

Family tree,

P is Grandfather of U.

Hence, the correct answer is "Option 2".

Q30. Answer: (b) Only conclusion II follows.

Statement:

No fruit is a vegetable.

All vegetables are green.

Conclusions:

I. No fruit is green → Does not follow (There is no direct relation given between fruit and green. so, it is possible not definite).

II. Some green are not fruits → Follow (As all vegetables are green and no fruit is vegetable. so, green which are vegetable are never be fruit).

Only conclusion II follows.

Hence, the correct answer is "Option 2".

Q31. Answer: (b) 1556

Logic followed here is,

9 × 3 + 4 = 31

31 × 4 + 4 = 128

128 × 3 + 4 = 388

388 × 4 + 4 = 1556

1556 × 3 + 4 = 4672

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4672 × 4 + 4 = 18692
18692 × 3 + 4 = 56080
Hence, the correct answer is “Option 2”.

Q32. Answer: (a) -468

Logic followed here is,
-419 - 11 = -430
-430 - 12 = -442
-442 - 13 = -455
-455 - 14 = -469 ≠ -468
-469 - 15 = -484
-484 - 16 = -500
-500 - 17 = -517
Hence, the correct answer is “Option 1”.

Q33. Answer: (b) 75

Logic followed here is,
5 × 3 + 3 = 18
18 × 4 + 3 = 75
75 × 3 + 3 = 228
228 × 4 + 3 = 915
915 × 3 + 3 = 2748
2748 × 4 + 3 = 10995
10995 × 3 + 3 = 32988
Hence, the correct answer is “Option 2”.

Q34. Answer: (a) P

F + 4 = J
J + 3 = M
M + 2 = O
O + 1 = P
Hence, the correct answer is “Option 1”.

Q35. Answer: (a) 9680

Logic: a # b = a × b × 4
35 # 10 = 1400 →
35 × 10 × 4 = 1400
1 # 45 = 180 →
1 × 45 × 4 = 180
Similarly,
44 # 55 →
44 × 55 × 4 = 9680
Hence, the correct answer is “Option 1”.

Q36. Answer: (b) 865

Logic: a & b $ c = a - (b × c)
569 & 4 $ 14 = 513 →
569 - 4 × 14 = 569 - 56 = 513
718 & 47 $ 38 = -1068 →
718 - 47 × 38 = 718 - 1786 = -1068
Similarly,
890 & 5 $ 5 = ? →
890 - 5 × 5 = 890 - 25 = 865
Hence, the correct answer is “Option 2”.

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Q37. Answer: (c) Only conclusion II follows

Statements:

Only a few Youth is Young

Some Young is Elder

All Elder is Older

Conclusions:

I. Some Youth is not Older → Does not follow (There is no direct relation given between youth and older. so, it is possible not definite).

II. Some Older is Young → Follow (As all elder are older and some young is Elder. so, some older are definitely young).

Only conclusion II follows.

Hence, the correct answer is “Option 3”.

Q38. Answer: (a) None

Six persons A, B, C, D, E and F lived in a building with 6 floors. Only one person lived on each floor.

1. B lived just above D.
2. 2 persons lived between D and F.
3. D lived on one of the floors above F.
4. A lived just above C who did not live on a floor second from the bottom.

Floor 6	**B**
Floor 5	D
Floor 4	A
Floor 3	C
Floor 2	F
Floor 1	E

No one lived below E.

Hence, the correct answer is “Option 1”.

Q39. Answer: (a) 2

Price of K is more than L but less than H and J.

J/H > K > L

Price of G is highest.

G > _ > _ > _ > _

If the price of H is less than J.

J > H

Combining all the information,

G > J > H > K > L

Price of two cups is more than H.

Hence, the correct answer is “Option 1”.

Q40. Answer: (b) D

Given that there are 6 rectangles A, B, C, D, E and F with different lengths.

From the clues, we can deduce the following relationships:

1. Length of A is second longest.

→ Only one rectangle is longer than A.

2. Length of F is more than C and B but less than D and E.

→ D, E > F > C, B

3. Length of E is not the maximum.

→ E is not the longest.

4. Since A is second longest, the longest rectangle must be someone above A.
5. From condition (2), D and E are above F.

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But E is not the maximum, so E cannot be the longest.

→ Therefore, D must be the longest rectangle.

Combining all these facts, we get:

→ D > A > E > F > C/B (order of C and B not fixed)

Thus, the rectangle with the longest length is D.

Hence, the correct answer is “Option 2”.

Q41. Answer: (b) E

8 boys A, B, C, D, E, F, G and H are sitting around a circular table facing towards the centre (not necessarily in the same order).

1. H is to the immediate right of A.
2. H is not the immediate neighbour of E or D.
3. F is to the immediate left of B.
4. G is the immediate neighbour of E.
5. C is the immediate neighbour of E and F.

E is sitting second to the right of H.

Hence, the correct answer is “Option 2”.

Q42. Answer: (a) Sarah received extra pay last week

Statement	Correctness	Reasoning
Sarah received extra pay last week	Correct	From the given statement, anyone who works overtime receives extra pay, and Sarah worked overtime, so she must have received extra pay.
Sarah always works overtime	Incorrect	The statement only mentions Sarah worked overtime last week, not that she always does.
Sarah needed the extra money	Incorrect	There is no information about her financial needs or reasons for working overtime.
Sarah is a dedicated employee	Incorrect	Working overtime once does not necessarily prove dedication; no such conclusion is given.

• Qualities projected in this situation: (Logical Reasoning and Analytical Ability)

The correct answer is "option (1)".

Q43. Answer: (b) 422

Given Equation: 14 ~ 10 ~ 3 $ 2 = ?

BODMAS Rule:

Decoding the given information:

Symbol	#	%	$	~
Meaning	÷	–	•	×

Now replacing the signs using BODMAS Rule, we get:

=> 14 × 10 × 3 + 2

=> 140 × 3 + 2

=> 420 + 2

=> 422

Hence, the correct option is "Option 2".

Q44. Answer: (c) 9

Given equation:

21 × 6 - 15 ÷ 3 + 18

Step 1: Interchange × and -

New equation: 21 - 6 × 15 ÷ 3 + 18

Step 2: Apply BODMAS rule
= 21 - 6 × 15 ÷ 3 + 18
= 21 - 6 × 5 + 18
= 21 - 30 + 18
= 39 - 30
= 9
Hence, the correct answer is "Option 3".

Q45. Answer: (b)

BODMAS Rule:
According to the question: Interchange numbers 3 and 5
I. Given equation: 2 × 5 + 3 - 8 ÷ 2 = 7
After interchanging 3 and 5:
=> 2 × 3 + 5 - 8 ÷ 2
Apply BODMAS:
=> 2 × 3 + 5 - 8 ÷ 2
=> 6 + 5 - 4
=> 11 - 4
=> 7
LHS = RHS => 7 = 7 (Correct)
II. Given equation: 7 × 5 + 3 - 9 ÷ 1 = 15
After interchanging 3 and 5:
=> 7 × 3 + 5 - 9 ÷ 1
Apply BODMAS:
=> 7 × 3 + 5 - 9 ÷ 1
=> 21 + 5 - 9
=> 26 - 9
=> 17
LHS ≠ RHS => 17 ≠ 15 (Incorrect)
Thus, only equation II is not correct.
Hence, the correct answer is "Option 2".

Q46. Answer: (b) HVCS

'BODS' is coded as 'HVJZ'
'SKIP' is coded as 'YROW'
Similarly,
'BOWL' be coded as,
Hence, the correct answer is “Option 2”.

Q47. Answer: (b) LJOC

'STOW' is coded as 'OOKR'
'HEIR' is coded as 'DZEM'
Similarly,
'POSH' be coded as,
Hence, the correct answer is “Option 2”.

Q48. Answer: (b) j r s s

Given series: r_ss_jssrjs_rj_s
(1) j j r s
rjss/ jjss/ rjsr/ rjss
(2) j r s s
rjss/ rjss/ rjss/ rjss (Repeat the pattern rjss)
(3) j r r r

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rjss/ rjss/ rjsr/ rjrs
(4) j r r s
rjss/ rjss/ rjsr/ rjss
Hence, the correct answer is “Option 2”.

Q49. Answer: (c) VR8704

Pattern followed here is,
Hence, the correct answer is “Option 3”.

Q50. Answer: (b) YG2632

Pattern followed here is,
Hence, the correct answer is “Option 2”.

Q51. Answer: (b) 30%

Given:
Value = 72
Total = 240
Formula used:
Percentage = (Value ÷ Total) × 100
Calculations:
=> Percentage = (72 ÷ 240) × 100
=> = (3 ÷ 10) × 100
=> = 30%
Therefore Final Answer = 30%

Q52. Answer: (a) 33.33%

Given:
Profit = 25% of selling price
Formula Used:
Profit % on cost price = (Profit ÷ Cost Price) × 100
Selling Price = Cost Price + Profit
Calculation:
=> Let Selling Price = 100
=> Profit = 25% of 100 = 25
=> Cost Price = Selling Price - Profit = 100 - 25 = 75
=> Profit % on Cost Price = (25 ÷ 75) × 100
=> Profit % on Cost Price = 33.33%
Therefore The correct answer is 33.33%.

Q53. Answer: (c) Rs. 312.00

Given:
Principal = Rs. 1300
Rate = 6% per annum
Time = 4 years
Formula Used:
Simple Interest (SI) = (Principal × Rate × Time) ÷ 100
Calculation:
=> SI = (1300 × 6 × 4) ÷ 100
=> SI = (31200) ÷ 100
=> SI = 312
Therefore The correct answer is Rs. 312.00.

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Q54. Answer: (a) 120 cm

Given:

Number of sides = 10

Side length = 12 cm

Formula Used:

Total border length = Number of sides × Side length

Calculation:

=> Total border length = 10 × 12

=> Total border length = 120 cm

Therefore The correct answer is 120 cm.

Q55. Answer: (a) h = r

Shortcut Trick

Ratio of Lateral Surface Area to Base Area = 2 π rh : π r²

Given: Lateral Surface Area = 2 × Base Area

=> 2 π rh = 2 × π r²

Cancelling 2 π r from both sides: h = r

Therefore The correct answer is h = r.

Alternate Method

Given:

Let the radius of the cylinder be r and the height be h.

Formulas Used:

Lateral Surface Area (LSA) of a cylinder = 2πrh

Area of the circular base = πr²

Calculation:

According to the problem statement:

=> Lateral Surface Area = 2 × Base Area

=> 2 π r h = 2 × (π r²)

=> 2 π r h = 2 π r²

Dividing both sides by 2 π r:

=> h = r² ÷ r

=> h = r

Therefore The correct answer is h = r.

Additional Information

Total Surface Area of Cylinder

The total surface area includes the lateral surface area and the area of both circular bases: TSA = 2πrh + 2πr² = 2πr(h + r).

Volume of Cylinder

The volume represents the space occupied by the cylinder: Volume = πr²h.

Curved Surface Area vs Lateral Surface Area

For a cylinder, the Curved Surface Area (CSA) is the same as the Lateral Surface Area (LSA), excluding the top and bottom bases.

Q56. Answer: (a) 20%

Given:

Increase in surface area = 44%

Formula used:

Surface area of sphere prop. to r²

Calculations:

New surface area = 1.44 × original

=> r_(new)² = 1.44 r_(old)²

=> r_(new) = √1.44 × r_(old)

=> r_(new) = 1.2 r_(old)

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=> Increase = (1.2 − 1) × 100 = 20%

Therefore Radius increases by approximately 20%

Q57. Answer: (c) 1900 cm2

Given:

Base is an isosceles triangle with equal sides = 25 cm

Base of the triangle = 30 cm

Slant height of the pyramid = 40 cm

Formula Used:

Area of base = 1/2 × base × height

Lateral surface area of pyramid = 1/2 × Perimeter of base × Slant height

Total surface area = Area of base + Lateral surface area

Calculation:

=> Height of triangle = $\sqrt{(25^2 - (30 \div 2)^2)}$

=> Height of triangle = $\sqrt{(625 - 225)}$

=> Height of triangle = $\sqrt{400}$

=> Height of triangle = 20 cm

=> Area of base = 1/2 × 30 × 20

=> Area of base = 300 cm^2

=> Perimeter of base = 25 + 25 + 30

=> Perimeter of base = 80 cm

=> Lateral surface area = 1/2 × 80 × 40

=> Lateral surface area = 1600 cm^2

=> Total surface area = 300 + 1600

=> Total surface area = 1900 cm^2

Therefore The correct answer is 1900 cm^2.

Q58. Answer: (d) 5 cm

Given:

Side of square base = 6 cm

Perpendicular height = 4 cm

Formula Used:

Slant height = $\sqrt{(\text{base radius}^2 + \text{perpendicular height}^2)}$

Calculation:

Base radius = side of square base ÷ 2

=> Base radius = 6 ÷ 2

=> Base radius = 3 cm

Slant height = $\sqrt{(3^2 + 4^2)}$

=> Slant height = $\sqrt{(9 + 16)}$

=> Slant height = $\sqrt{25}$

=> Slant height = 5 cm

Therefore The correct answer is 5 cm.

Q59. Answer: (b) 12/13

Given:

tan θ = 12/5

Formula Used:

tan θ = opposite/adjacent

sin θ = opposite/hypotenuse

hypotenuse = $\sqrt{(\text{opposite}^2 + \text{adjacent}^2)}$

Calculation:

=> Opposite = 12, Adjacent = 5

=> Hypotenuse = $\sqrt{(12^2 + 5^2)}$

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=> Hypotenuse = √(144 + 25)

=> Hypotenuse = √169

=> Hypotenuse = 13

=> sin θ = 12/13

Therefore The correct answer is 12/13.

Q60. Answer: (b) Rs. 30,000

Shortcut Trick

The ratio of investment is given as 7 : 3.

Total units of profit = 7 + 3 = 10 units.

Given, 10 units = Rs. 1,00,000 → 1 unit = Rs. 10,000.

B's profit share = 3 units = 3 × 10,000 = Rs. 30,000.

Therefore The correct answer is Rs. 30,000.

Alternate Method

Given:

Ratio of investment (A : B) = 7 : 3

Total Profit earned = Rs. 1,00,000

Formula Used:

Individual Profit Share = (Individual Ratio Part / Sum of Ratios) × Total Profit

Calculations:

=> Sum of ratio parts = 7 + 3 = 10

=> B's share in profit = (3 / 10) × 1,00,000

=> B's share in profit = 3 × 10,000

=> B's share in profit = 30,000

Therefore The correct answer is Rs. 30,000.

Additional Information

Profit Sharing Rule

In a partnership, if the time period of investment is the same for all partners, the profit is distributed in the direct ratio of their capital investments.

Variable Time Investment

If partners invest for different durations, the profit ratio is calculated as: Profit Ratio = (Capital1 × Time1) : (Capital2 × Time2).

Working Partner

A partner who manages the business is a working partner and may receive an additional salary or percentage before the remaining profit is divided.

Q61. Answer: (c) Rs. 412.50

Given:

A's investment = Rs. 4,000

B's investment = Rs. 6,000 (after 4 months)

C's investment = Rs. 8,000 (after 8 months)

Total profit = Rs. 1,650

Formula Used:

Profit share = (investment × time) ÷ total ratio

Time calculation = months invested ÷ 12

Calculation:

=> A's ratio = 4,000 × 12 = 48,000

=> B's ratio = 6,000 × 8 = 48,000

=> C's ratio = 8,000 × 4 = 32,000

=> Total ratio = 48,000 + 48,000 + 32,000 = 128,000

=> C's profit share = (32,000 ÷ 128,000) × 1,650

=> C's profit share = 0.25 × 1,650 = Rs. 412.50

Therefore The correct answer is Rs. 412.50.

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Q62. Answer: (a) 315°

Given:

Angle in radians: 7π47π4

Conversion factor: 180?=π radians180?=π radians

Formula Used:

Degrees = Radians × 180π180π

Calculation:

=> Degrees = 7π47π4

× 180π180π

=> Degrees = 7×18047×1804

=> Degrees = 1260412604

=> Degrees = 315

Therefore The correct answer is 315°.

Q63. Answer: (c) 51

Shortcut Trick

Initial average of 25 students = 48.

Net surplus from 5 new students (avg 60) = 5 × (60 − 48) = +60.

Mark correction surplus = 70 − 40 = +30.

Total surplus spread over 30 students = (60 + 30) ÷ 30 = +3.

Final Average = 48 + 3 = 51.

Therefore The correct answer is 51.

Alternate Method

Given:

Total original students = 25, Original average = 48.

New students joined = 5, Marks per new student = 60.

Data correction: Wrongly entered 40 instead of 70.

=> Total marks of 25 students = 25 × 48 = 1200

=> Total marks after 5 new students join = 1200 + (5 × 60) = 1200 + 300 = 1500

=> Final sum after correcting error = 1500 − 40 + 70 = 1530

=> Total students in the class = 25 + 5 = 30

=> Final average marks = 1530 ÷ 30 = 51

Therefore The correct answer is 51.

Additional Information

Arithmetic Mean

Average = Sum of all observations ÷ Total number of observations.

Weighted Average Formula

Final Average = (n1 × A1 + n2 × A2) ÷ (n1 + n2), where n is count and A is average.

Correction in Average

New Average = Old Average + (Correct Value − Incorrect Value) ÷ Total Strength.

Q64. Answer: (c) 10 5/6 days

Shortcut Trick

Total Work = LCM(10, 12) = 60 units.

Efficiency: A = 6 units/day, B = 5 units/day.

Work done in 1 cycle (2 days) = 6 + 5 = 11 units.

For 5 cycles (10 days), work done = 11 × 5 = 55 units.

Remaining work (60 − 55 = 5 units) completed by A in 5/6 days.

Therefore The correct answer is 10 5/6 days.

Alternate Method

Given: A can complete the work in 10 days and B in 12 days. They work on alternate days starting with A.

Person	Days	Total Work	Efficiency

A	10	60	6
B	12	5	

=> Total Work = LCM(10, 12) = 60 units.

=> Efficiency of A = 60 ÷ 10 = 6 units/day.

=> Efficiency of B = 60 ÷ 12 = 5 units/day.

=> Work done in the first 2 days (Day 1: A, Day 2: B) = 6 + 5 = 11 units.

=> Work done in 5 such cycles (10 days) = 11 × 5 = 55 units.

=> Remaining work = 60 − 55 = 5 units.

=> On the 11^(th) day, it is A's turn. Time taken by A to finish 5 units = 5 ÷ 6 days.

=> Total time = 10 days + 5/6 days = 10 5/6 days.

Therefore The correct answer is 10 5/6 days.

Additional Information

Total Work and Efficiency

Total Work = Efficiency × Time. When work is constant, Efficiency is inversely proportional to Time.

Alternate Day Concept

Calculate work done in one complete cycle (usually 2 days) and find how many full cycles fit into the total work before calculating the remaining part.

Remaining Work Calculation

Time taken for remaining work = (Remaining Work) ÷ (Efficiency of the person whose turn it is).

Q65. Answer: (b) 7.2 cm

Given:

Total surface area = 314 cm²

Radius = 7 cm

Formula Used:

Total surface area = πr(l + r)

π = 3.14

Calculation:

=> 314 = 3.14 × 7 × (l + 7)

=> 314 = 21.98 × (l + 7)

=> 314 ÷ 21.98 = l + 7

=> 14.28 = l + 7

=> l = 14.28 - 7

=> l = 7.28 cm

=> Rounded value of l = 7.2 cm

Therefore The correct answer is 7.2 cm.

Q66. Answer: (a) 169

Given:

x - y = 7

xy = 60

Formula Used:

$x^2 + y^2 = (x - y)^2 + 2xy$

Calculation:

=> $x^2 + y^2 = (7)^2 + 2 \times 60$

=> $x^2 + y^2 = 49 + 120$

=> $x^2 + y^2 = 169$

Therefore The correct answer is 169.

Q67. Answer: (b) 1 : 2

Given:

Milk in original mixture = M liters

Water in original mixture = W liters
When 20 liters of water are added, milk = 40% of total
When 10 liters of milk are added, milk = 50% of total
Formula Used:
Total mixture = Milk + Water
Percentage of milk = (Milk ÷ Total mixture) × 100
Calculation:
=> M ÷ (M + W + 20) = 40 ÷ 100
=> 5M = 2(M + W + 20)
=> 5M = 2M + 2W + 40
=> 3M = 2W + 40
=> (M + 10) ÷ (M + W + 30) = 50 ÷ 100
=> 2(M + 10) = M + W + 30
=> 2M + 20 = M + W + 30
=> M = W + 10
Substitute M = W + 10 in 3M = 2W + 40:
=> 3(W + 10) = 2W + 40
=> 3W + 30 = 2W + 40
=> W = 10
=> M = W + 10
=> M = 10 + 10 = 20
Water : Milk = W : M
=> Water : Milk = 10 : 20
=> Water : Milk = 1 : 2
Therefore The correct answer is 2.

Q68. Answer: (a) 3470 m2

Given:
Radius of inner embankment = 40 m
Width of outer embankment = 12 m
Formula Used:
Area of a circle = π × radius²
Area between two concentric circles = Area of outer circle - Area of inner circle
Calculation:
=> Radius of outer embankment = 40 + 12 = 52 m
=> Area of inner circle = π × 40² = 3.14 × 1600 = 5024 m²
=> Area of outer circle = π × 52² = 3.14 × 2704 = 8490.56 m²
=> Area between two embankments = 8490.56 - 5024 = 3466.56 m²
=> Approximate area = 3470 m²
Therefore The correct answer is 3470 m².

Q69. Answer: (a) 15

Shortcut Trick
Identify values of a and b directly from the given sum and difference.
Sum (a + b) = 3, Difference (a − b) = 1
Value of a = (3 + 1) ÷ 2 = 2
Value of b = (3 − 1) ÷ 2 = 1
Value of a^4 − b^4 = 2^4 − 1^4 = 16 − 1 = 15
Therefore The correct answer is 15.
Alternate Method
Given: a + b = 3 and a − b = 1
Formula Used: a^4 − b^4 = (a² − b²)(a² + b²)

=> $a^2 - b^2 = (a + b)(a - b)$

=> $a^2 - b^2 = 3 \times 1 = 3$

=> $(a + b)^2 + (a - b)^2 = 2(a^2 + b^2)$

=> $3^2 + 1^2 = 2(a^2 + b^2)$

=> $10 = 2(a^2 + b^2) \Rightarrow a^2 + b^2 = 5$

=> a^4 − b^4 = $(a^2 - b^2)(a^2 + b^2) = 3 \times 5 = 15$

Therefore The correct answer is 15.

Additional Information

Difference of Squares

The formula $x^2 - y^2 = (x - y)(x + y)$ can be applied iteratively for higher powers like a^4 − b^4.

Algebraic Relationship

The relation between sum, difference, and squares is given by $(a + b)^2 + (a - b)^2 = 2(a^2 + b^2)$.

Product of Squares

The identity $(a + b)^2 - (a - b)^2 = 4ab$ is useful for finding the product ab if required.

Q70. Answer: (a) (5-√7)/(5+√7)

Shortcut Trick

Given sin A + cos A = 5/4.

Squaring both sides: 1 + sin 2A = 25/16 => sin 2A = 9/16.

We know that sin 2A = 2 tan A / (1 + $\tan^2$ A).

Substituting values: 9/16 = 2t / (1 + t^2) => $9t^2 - 32t + 9 = 0$.

Solving for tan A: t = (16 − 5√7)/9, which is equivalent to (5 − √7)/(5 + √7).

Therefore The correct answer is (5 − √7)/(5 + √7).

Alternate Method

Given: cos A + sin A = 5/4

Formula Used: $(\sin A + \cos A)^2 = 1 + \sin 2A$; sin 2A = 2 tan A / (1 + $\tan^2$ A)

=> $(\cos A + \sin A)^2 = (5/4)^2$

=> $\cos^2 A + \sin^2 A + 2 \sin A \cos A = 25/16$

=> $1 + \sin 2A = 25/16$

=> $\sin 2A = 25/16 - 1 = 9/16$

=> 2 tan A / (1 + $\tan^2$ A) = 9/16

=> $32 \tan A = 9 + 9 \tan^2 A$

=> $9 \tan^2 A - 32 \tan A + 9 = 0$

=> Using Quadratic Formula: $\tan A = [32 \pm \sqrt{(32^2 - 4 \times 9 \times 9)}] / (2 \times 9)$

=> $\tan A = [32 \pm \sqrt{(1024 - 324)}] / 18 = [32 \pm \sqrt{700}] / 18$

=> $\tan A = [32 \pm 10\sqrt{7}] / 18 = (16 \pm 5\sqrt{7}) / 9$

=> To match the options, Rationalize (5 − √7)/(5 + √7):

=> $[(5 - \sqrt{7}) \times (5 - \sqrt{7})] / [(5 + \sqrt{7}) \times (5 - \sqrt{7})] = (25 + 7 - 10\sqrt{7}) / (25 - 7) = (32 - 10\sqrt{7}) / 18 = (16 - 5\sqrt{7}) / 9$

Therefore The correct answer is (5 − √7)/(5 + √7).

Additional Information

Trigonometric Pythagorean Identity

For any angle A, the sum of the squares of sine and cosine is always 1: $\sin^2 A + \cos^2 A = 1$.

Double Angle Formulas in terms of tan A

sin 2A = 2 tan A / (1 + $\tan^2$ A) and cos 2A = (1 − $\tan^2$ A) / (1 + $\tan^2$ A).

Sum and Product of Roots

For the equation $ax^2 + bx + c = 0$, the roots are given by $x = [-b \pm \sqrt{(b^2 - 4ac)}] / 2a$.

Q71. Answer: (a) 420 km

Given:

Speed 1 = S

Distance = D

Time taken at speed 1 = T

Speed 2 = S + 10 km/h
Time taken at speed 2 = T - 1 hour
Speed 3 = S + 20 km/h
Time taken at speed 3 = T - 1 hour - 45 minutes
Formula Used:
Time = Distance ÷ Speed
LCM method for time
Calculation:
=> T = D ÷ S
=> T - 1 = D ÷ (S + 10)
=> T - 1.75 = D ÷ (S + 20)
=> D ÷ S - D ÷ (S + 10) = 1
=> D ÷ (S + 10) - D ÷ (S + 20) = 0.75
Take LCM of (S), (S + 10), and (S + 20):
=> LCM = S × (S + 10) × (S + 20)
Use substitution and solve:
=> D = 420 km
Therefore The correct answer is 420 km.

Q72. Answer: (c) 45 1/2+89/2

Given:
Check which option gives sum = 90
Formula used:
Convert mixed fractions into improper form and add
Calculations:
Option 1:
42 4/5+6 1/6
=> 42 + 4/5 + 6 + 1/6
=> 48 + (24/30 + 5/30)
=> 48 + 29/30 ≠ 90
Option 2:
43 1/2+7 1/4
=> 43 + 1/2 + 7 + 1/4
=> 50 + 3/4 = 50.75 ≠ 90
Option 3:
45 1/2+89/2
=> 45.5 + 44.5
=> = 90 Yes
Option 4:
52 1/7+63
=> 115 1/7 ≠ 90
Therefore Correct answer = 45 1/2+89/2

Q73. Answer: (d) 1

Given:
(√72 - √50)/√2
Formula used:
√a / √b = √(a/b)
Calculations:
=> √72/√2 - √50/√2
=> √(72/2) - √(50/2)
=> √36 - √25

=> 6 − 5 = 1

Therefore Final Answer = 1

Q74. Answer: (d) Rs. 8000

Shortcut Trick

Identify the multiplier for the 2-year gap (from 3 to 5 years): Ratio = 12884.08 ÷ 10648 = 1.21.

Since it is Compound Interest, the 1-year multiplier (1 + r) = √1.21 = 1.1.

The Principal (Sum) is the amount at year 3 divided by the 3-year multiplier: P = 10648 ÷ $(1.1)^3$.

Calculation: P = 10648 ÷ 1.331 = 8000.

Therefore The correct answer is Rs. 8000.

Alternate Method

Given:

Amount after 3 years (A3) = Rs. 10648

Amount after 5 years (A5) = Rs. 12884.08

Formula Used:

$A = P(1 + r/100)^n$

=> (A5 / A3) = [P(1 + r/100)^5] / [$P(1 + r/100)^3$]

=> 12884.08 / 10648 = $(1 + r/100)^2$

=> 1.21 = $(1 + r/100)^2$

=> 1 + r/100 = √1.21 = 1.1

=> Now, A3 = $P(1 + r/100)^3$

=> 10648 = P × $(1.1)^3$

=> 10648 = P × 1.331

=> P = 10648 / 1.331 = 8000

Therefore The correct answer is Rs. 8000.

Additional Information

Compound Interest Rate from Two Amounts

If amounts after t and (t+n) years are given, the rate r is found by $(1 + r/100)^n$ = A_(t+n) / A_t.

Successive Percentage Change

Compound interest is essentially a successive percentage increase on the principal and the interest accumulated.

Effective Annual Rate

For a rate of 10% compounded annually, the effective rate for 2 years is 21% and for 3 years is 33.1%.

Q75. Answer: (a) 300 percent

Shortcut Trick

Ratio of Marked Price to Discount = 150 : 100 => 3 : 2.

Selling Price = Marked Price − Discount = 3 − 2 = 1 unit.

Required Percentage = (Marked Price / Selling Price) × 100 = (3 / 1) × 100 = 300%.

Therefore The correct answer is 300 percent.

Alternate Method

Given:

Marked Price = 150% of Discount

Formula Used:

Selling Price = Marked Price − Discount

Required % = (Marked Price / Selling Price) × 100

Calculations:

=> Let the Discount = 100 units.

=> Marked Price = 150% of 100 = 150 units.

=> Selling Price = Marked Price − Discount

=> Selling Price = 150 − 100 = 50 units.

=> Required Percentage = (150 / 50) × 100

=> Required Percentage = 3 × 100 = 300%

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Therefore The correct answer is 300 percent.

Additional Information

Discount and Selling Price

The Selling Price is always calculated as Marked Price − Discount. If Discount is 0, then Selling Price equals Marked Price.

Mark-up Percentage

Mark-up % = [(Marked Price − Cost Price) / Cost Price] × 100. It shows how much the price is increased over the cost.

Percentage of Base Change

To find what percent A is of B, the formula is (A/B) × 100. In this question, the base is the Selling Price.

Q76. Answer: (b) Razia Sultana

The correct answer is Razia Sultana.

Key Points

• Razia Sultana was the first and only woman to rule the Delhi Sultanate, reigning from 1236 to 1240 A.D.. She was the daughter of Sultan Iltutmish, a ruler of the Slave Dynasty.

• Her accession to the throne marked a significant event in Indian history, as she was chosen by her father over her brothers due to her administrative skills and leadership capabilities.

• Razia broke gender barriers by dressing in male attire, leading her troops into battle, and taking an active role in the governance of her empire. This was a bold move in a patriarchal society.

• Her administration was marked by efforts to strengthen the central government and promote trade and commerce. She also focused on maintaining law and order within her empire.

• Razia's rule was cut short due to internal conspiracies and opposition from nobles who were unwilling to accept a female ruler. She was eventually defeated and killed in 1240 A.D.

Additional Information

• Slave Dynasty:

• The Slave Dynasty, also known as the Mamluk Dynasty, was the first dynasty of the Delhi Sultanate, established by Qutb-ud-din Aibak in 1206 A.D.

• It is called the Slave Dynasty because its rulers were originally slaves who rose to power through military achievements and administrative skills.

• Notable rulers of this dynasty include Qutb-ud-din Aibak, Iltutmish, and Razia Sultana.

• Challenges faced by Razia Sultana:

• Razia faced strong resistance from the Turkish nobility (Chahalgani), who opposed the idea of a female ruler.

• Her close association with her Abyssinian slave and advisor, Jamal-ud-Din Yaqut, caused further dissent among the nobles.

• Her reign was marked by constant power struggles, which eventually led to her downfall and assassination.

• Other options:

• Noor Jahan: She was the wife of Mughal Emperor Jahangir and played a significant role in the Mughal court but was never a ruler.

• Rani Durgavati: A queen of Gondwana, she was a warrior known for her resistance against the Mughals but not a ruler of the Delhi Sultanate.

• Chand Bibi: She was a regent of Ahmednagar and Bijapur Sultanates and known for her resistance against the Mughal invasion, but she did not rule the Delhi Sultanate.

• Legacy of Razia Sultana:

• Razia Sultana is remembered as a symbol of women’s empowerment and as a ruler who challenged societal norms of her time.

• Her story has been celebrated in literature, films, and plays, making her an iconic figure in Indian history.

Important Points

• Razia's Reforms:

• She focused on strengthening the central administration and sought to reduce the power of the nobility.

• Razia appointed capable administrators and promoted merit over birth in her court and military.

• Historical Significance:

• Razia Sultana was the first Muslim woman to rule over Delhi and remains a pioneering figure in Indian history.

• Her reign is seen as a testament to her courage, intelligence, and determination to overcome societal barriers.

Q77. Answer: (a) 12

The correct answer is 12.

Key Points

• The Alvar saints were a group of 12 Tamil poet-saints who were devoted to the worship of the Hindu god Vishnu.

• Their devotional hymns, composed between the 6th and 9th centuries CE, are collectively known as the Nalayira Divya Prabandham, consisting of 4,000 verses.

• The Alvars played a crucial role in the Bhakti movement, promoting devotion (bhakti) to Vishnu as a personal and direct form of worship.

• Prominent Alvar saints include Andal (the only female Alvar), Nammalvar, and Thirumangai Alvar, among others.

• The Alvars' teachings emphasized equality and devotion, rejecting social hierarchies and fostering a sense of universal brotherhood in spirituality.

Additional Information

• Role of Alvars in Bhakti Movement:

• The Bhakti movement emerged as a significant reformist movement in medieval India, emphasizing individual devotion over ritualistic practices.

• The Alvars contributed to the spread of the Bhakti ideals in South India, especially in Tamil Nadu, through their accessible and emotive hymns.

• Their compositions were written in Tamil, making spiritual teachings accessible to the common people.

• Notable Alvars and Their Contributions:

• Nammalvar: Considered the greatest of the Alvars, he composed works like Tiruvaimozhi, expressing intense devotion and love for Vishnu.

• Andal: The only female Alvar, her hymns, particularly the Tiruppavai, are still recited in temples and during festivals.

• Periyalvar: Known for his hymns celebrating the childhood of Lord Krishna.

• Key Themes in Alvar Hymns:

• Devotion to Vishnu as the supreme deity.

• Rejection of caste-based discrimination and promotion of spiritual equality.

• Focus on surrender (Prapatti) as the path to salvation.

• Legacy of Alvars:

• The hymns of the Alvars were collected and compiled by Nathamuni in the 10th century into the Nalayira Divya Prabandham.

• The Alvars' contributions significantly shaped the Sri Vaishnavism tradition, which later influenced the teachings of philosophers like Ramanuja.

• Their works continue to inspire festivals, temple rituals, and cultural practices in South India.

Important Points

• Terminology:

• Alvar: Derived from the Tamil word "Azhwar," meaning "one who is immersed" in devotion.

• Bhakti: Refers to devotion and love for a personal god, central to the teachings of the Alvars.

• Temples Associated with Alvars:

• The Alvars are closely associated with the 108 Divya Desams (sacred Vishnu temples) mentioned in their hymns.

• These temples, spread across India, are significant pilgrimage sites for devotees of Vishnu.

• Modern Relevance:

• The Alvars' teachings continue to resonate with followers of Vaishnavism, emphasizing devotion, compassion, and equality.

• Their hymns are integral to religious practices and cultural traditions in South India.

Q78. Answer: (c) Article 30

The correct answer is Article 30.

Key Points

• Article 30 of the Indian Constitution grants minorities the right to establish and administer educational institutions of their choice.

• It ensures the protection of cultural, linguistic, and educational rights of minorities and is a significant provision under the Fundamental Rights.

• The term "minorities" under Article 30 refers to both religious and linguistic minorities as interpreted by the Supreme Court of India.

• The article allows minorities to preserve their unique culture and heritage by running educational institutions that cater to their specific needs.

• The State cannot discriminate against any minority educational institution in granting aid, ensuring equality and inclusivity in educational opportunities.

Additional Information

• Article 28:

• It prohibits religious instruction in educational institutions wholly maintained by state funds.

• However, it allows educational institutions established by trusts or endowments to provide religious instruction if required by the trust's objectives.

• Article 24:

• This article prohibits the employment of children below the age of 14 years in factories, mines, or any other hazardous employment.

• It is aimed at protecting children from exploitation and ensuring their right to education and safe childhood.

• Article 29:

• It provides the right to protection of language, script, and culture to any section of citizens residing in India.

• It ensures that no citizen shall be denied admission to educational institutions based on religion, race, caste, or language.

• Significance of Article 30:

• Ensures that minorities can establish institutions to preserve their cultural identity.

• Provides the right to receive government aid without discrimination.

• Strengthens the secular fabric of India by promoting diversity in education.

Important Points

• Definition of Minority:

• The Supreme Court of India, in the T.M.A. Pai Foundation case (2002), defined minorities as those based on religion or language, assessed at the state level.

• For example, Muslims, Christians, and Sikhs are considered minorities in India.

• Constitutional Safeguards:

• Articles 29 and 30 together ensure the protection and promotion of minority rights.

• These provisions are part of the Fundamental Rights enshrined in the Indian Constitution.

• Challenges:

• Despite constitutional safeguards, minority educational institutions face issues like bureaucratic hurdles and limited resources.

• Efforts are needed to ensure effective implementation of these rights to promote equality and inclusivity.

Q79. Answer: (a) IORA

The correct answer is IORA (Indian Ocean Rim Association).

Key Points

• Sanjiv Ranjan, a seasoned diplomat, assumed the role of Secretary General of the Indian Ocean Rim Association (IORA) on January 1, 2025.

• The Indian Ocean Rim Association (IORA) is an intergovernmental organization that promotes regional cooperation and sustainable development within the Indian Ocean region.

• The IORA was established in 1997 and comprises 23 member states that share a coastline along the Indian Ocean, including countries such as India, Australia, South Africa, and Indonesia.

• The role of the Secretary General involves overseeing policy implementation, fostering cooperation among member states, and facilitating dialogue on issues such as maritime security, trade, and disaster risk management.

• The appointment of Sanjiv Ranjan to this position reflects India's growing commitment to enhancing its engagement within the Indian Ocean region.

Additional Information

• IORA (Indian Ocean Rim Association):

• The IORA was established on March 7, 1997, in Port Louis, Mauritius, following the vision of promoting sustainable growth and balanced development in the Indian Ocean region.

• The organization focuses on six priority areas: maritime safety and security, trade and investment facilitation, fisheries management, disaster risk management, academic and scientific cooperation, and tourism promotion.

• IORA's Secretariat is based in Ebene, Mauritius.

• The organization's members include countries from Asia, Africa, and Oceania, such as India, Australia, Indonesia, South Africa, and Kenya.

• Sanjiv Ranjan:

• He is a senior Indian diplomat with extensive experience in foreign policy and international relations.

• Prior to his appointment as the Secretary General of IORA, he served in various capacities within the Indian Foreign Service (IFS), including as Ambassador to Colombia and Mexico.

• Other Regional Organizations:

• SAARC (South Asian Association for Regional Cooperation): Established in 1985, SAARC focuses on regional cooperation in

South Asia, comprising countries like India, Pakistan, Nepal, and Sri Lanka.

• ASEAN (Association of Southeast Asian Nations): Established in 1967, ASEAN promotes economic and political cooperation among Southeast Asian nations such as Indonesia, Malaysia, and Thailand.

• BRICS: An acronym for Brazil, Russia, India, China, and South Africa, BRICS focuses on economic collaboration among emerging economies.

Important Points

• IORA's Importance:

• The Indian Ocean is a vital trade route, handling approximately 70% of the world's oil shipments and 50% of global container traffic.

• IORA plays a crucial role in ensuring maritime security and addressing challenges such as piracy, illegal fishing, and climate change.

• India's Role in IORA:

• India has been an active member of IORA, advocating for regional cooperation and contributing to initiatives like the Blue Economy and disaster risk management.

• India's maritime strategy aligns with IORA's goals, emphasizing the importance of the Indian Ocean Region (IOR) in global geopolitics.

Q80. Answer: (b) Milkha Singh

The correct answer is Milkha Singh.

Key Points

• Milkha Singh, popularly known as the "Flying Sikh," was one of India's most celebrated athletes and a national sports icon.

• He earned the nickname "Flying Sikh" after his outstanding performance in the 1960 Rome Olympics and his incredible speed and stamina in track events.

• Milkha Singh was a four-time Asian Games gold medalist and represented India in the 1956, 1960, and 1964 Olympics.

• His most notable performance came during the 1960 Rome Olympics, where he finished fourth in the 400 meters final, narrowly missing a medal.

• Milkha Singh's story of resilience and determination, particularly in overcoming the traumas of the Partition of India, has inspired millions of Indians and was immortalized in the Bollywood biopic "Bhaag Milkha Bhaag" released in 2013.

Additional Information

• Milkha Singh's Achievements:

• He won the gold medal in the 1958 Commonwealth Games, becoming the first Indian male athlete to achieve this feat.

• He clinched four gold medals in the Asian Games: two in the 1958 Games (200m and 400m) and two in the 1962 Games (400m and 4x400m relay).

• Nickname Origin:

• The title "Flying Sikh" was reportedly given to him by the then President of Pakistan, General Ayub Khan, after Milkha Singh's victory in a race against Pakistan's Abdul Khaliq in 1960.

• Early Life:

• Milkha Singh was born on 20 November 1929, in Govindpura, a village now in Pakistan.

• He witnessed the horrors of the Partition of India, during which he lost his parents and several family members.

• He joined the Indian Army in 1951, which marked the beginning of his career in athletics.

• Legacy:

• Milkha Singh passed away on 18 June 2021, but his legacy continues to inspire budding athletes in India and abroad.

• His autobiography, "The Race of My Life," co-written with his daughter, provides insights into his journey of struggle and success.

Important Points

• Avinash Sable:

• An Indian track and field athlete specializing in 3000m steeplechase.

• He holds the national record in steeplechase and represented India in multiple international events.

• Vikas Gowda:

• An Indian discus thrower and shot putter who has won medals at Commonwealth Games and Asian Games.

• He was the first Indian male athlete to win a gold medal in discus throw at the 2014 Commonwealth Games.

• Harbhajan Singh:

• A renowned Indian cricketer who played as an off-spinner in the Indian cricket team.

• He is one of the most successful bowlers in Indian cricket history and played a pivotal role in India's victory in the 2007 ICC T20

World Cup and 2011 ICC Cricket World Cup.

Q81. Answer: (c) Dr. Samir V. Kamat

The correct answer is Dr. Samir V. Kamat.

Key Points

• Dr. Samir V. Kamat has been given a one-year extension as the Chairman of the Defence Research and Development Organisation (DRDO) and Secretary of the Department of Defence Research and Development (DDR&D) in May 2025.

• Dr. Kamat is a distinguished scientist known for his contributions to materials engineering and advanced technologies in defense applications.

• He initially assumed the position of DRDO Chairman in August 2022, succeeding Dr. G. Satheesh Reddy.

• DRDO plays a vital role in India’s defense sector, focusing on research and development of advanced technologies for military applications, including missiles, radar systems, and combat aircraft.

• The extension ensures continuity in leadership for ongoing critical defense projects and strengthens India's defense capabilities.

Additional Information

• Defence Research and Development Organisation (DRDO):

• DRDO is headquartered in New Delhi and functions under the Ministry of Defence, Government of India.

• Founded in 1958, DRDO focuses on developing military technologies such as missiles, avionics, electronics, and combat systems.

• It operates through a network of over 50 laboratories and research centers across India.

• DRDO's notable projects include the development of the Agni missile series, BrahMos missile, and the Tejas Light Combat Aircraft.

• Dr. Samir V. Kamat:

• Dr. Kamat specializes in materials science and has contributed significantly to the development of advanced metals and alloys for defense technologies.

• He completed his doctoral studies at the Indian Institute of Science (IISc), Bengaluru.

• Before becoming DRDO Chairman, he served as the Director General of the Naval Systems and Materials Division at DRDO.

• Recent Developments:

• Under Dr. Kamat's leadership, DRDO has intensified efforts towards achieving self-reliance in defense manufacturing and promoting the Make in India initiative.

• Key projects include indigenization of military equipment and collaboration with private defense companies.

• Importance of Leadership in DRDO:

• The Chairman plays a pivotal role in steering research priorities, ensuring project deadlines, and collaborating with international defense organizations.

• Leadership continuity is crucial for the success of long-term strategic programs such as the Integrated Guided Missile Development Program (IGMDP).

Important Points

• Extension of DRDO Leadership: Leadership extensions are often granted to ensure continuity in critical defense projects that require consistent oversight and strategic direction.

• DRDO Achievements: DRDO has developed cutting-edge technologies, including the Ballistic Missile Defense System and Advanced Towed Artillery Gun Systems.

• India's Defense Goals: India aims to be a global leader in defense production, reducing dependency on foreign imports and enhancing indigenous capabilities.

Q82. Answer: (b) 25000

The correct answer is 25000 crore.

Key Points

• The Maritime Development Fund was announced in the Union Budget 2025-26 with a fund allocation of Rs. 25,000 crore to be utilized over a period of 10 years.

• The purpose of this fund is to enhance the development of the maritime sector, which includes ports, shipping, and waterways infrastructure in India.

• This fund aims to support initiatives such as modernization of ports, expansion of shipping facilities, and development of inland waterways to improve logistics efficiency.

• The maritime sector is critical for India's economy as it handles about 95% of the country's trade by volume and contributes significantly to reducing transportation costs.

• The creation of the Maritime Development Fund aligns with the government's vision of transforming India into a global maritime

hub under the Sagarmala Programme.

Additional Information

• Importance of the Maritime Sector:

• India has a coastline of about 7,517 kilometers, making the maritime sector essential for trade and logistics.

• The sector supports employment generation, boosts exports, and strengthens international trade partnerships.

• Ports like Mumbai, Chennai, and Kolkata are key contributors to India's export-import activities.

• Sagarmala Programme:

• This flagship initiative was launched by the Government of India to enhance port-led development.

• It focuses on port modernization, connectivity improvement, port-linked industrialization, and coastal community development.

• The Sagarmala Programme aims to reduce logistics costs for both domestic and EXIM (Export-Import) cargo.

• Inland Waterways Development:

• India has about 14,500 kilometers of navigable inland waterways.

• The government has been promoting the use of waterways for cargo transportation through projects like National Waterway-1 (NW-1) on the Ganga River.

• This mode of transport is environmentally friendly and cost-effective compared to road and rail transportation.

• Global Maritime Trends:

• Many countries are investing in green shipping, automation, and digitalization of ports to enhance efficiency and sustainability.

• India's Maritime Development Fund aligns with these global trends by promoting modern infrastructure and eco-friendly practices.

Important Points

• Maritime India Vision 2030:

• This document outlines the strategic roadmap for India's maritime sector till 2030.

• It includes plans for port capacity expansion, digital transformation, and integration of sustainable practices.

• The Maritime Development Fund will play a crucial role in achieving the goals set under this vision.

• Economic Impact:

• Investments in the maritime sector can significantly contribute to India's GDP growth.

• Efficient ports and waterways reduce logistics costs, making Indian exports more competitive globally.

• This fund supports the government's aim to achieve a $5 trillion economy.

Q83. Answer: (a) United Nations

The correct answer is United Nations.

Key Points

• The Multidimensional Vulnerability Index (MVI) is an initiative developed and published by the United Nations (UN).

• The UN introduced the MVI to measure vulnerability across multiple dimensions, particularly focusing on the challenges faced by Small Island Developing States (SIDS) and other vulnerable nations.

• This index goes beyond traditional economic metrics, incorporating factors like environmental vulnerability, climate change risks, and social challenges to provide a comprehensive understanding of a nation's vulnerabilities.

• The MVI aims to assist in better allocation of global resources and support for countries disproportionately impacted by factors such as natural disasters, economic shocks, and health emergencies.

• This tool is particularly important in the context of the Sustainable Development Goals (SDGs), as it helps to highlight areas requiring urgent intervention and global cooperation.

Additional Information

• United Nations (UN):

• The United Nations is an international organization established on 24 October 1945 after the end of World War II.

• The UN works to promote global peace, security, and cooperation among nations. It currently has 193 member states.

• The organization addresses various issues, including human rights, environmental sustainability, economic development, and international law.

• Its headquarters is located in New York City, USA.

• Small Island Developing States (SIDS):

• SIDS are a group of 58 low-lying coastal countries, primarily located in the Caribbean, Pacific, and Indian Ocean regions.

• These nations face unique vulnerabilities, such as climate change, rising sea levels, and economic dependence on limited resources.

• The MVI helps to highlight these vulnerabilities and advocate for specific global assistance tailored to their needs.

• Sustainable Development Goals (SDGs):

• The SDGs are a set of 17 global goals adopted by the UN in 2015 to address global challenges like poverty, inequality, climate change, environmental degradation, and peace.

• The MVI aligns with the SDGs by helping to identify areas of vulnerability that require targeted interventions for sustainable development.

• Environmental Vulnerability:

• This refers to the risks and challenges posed by environmental changes, such as climate change, natural disasters, and resource scarcity.

• The MVI incorporates environmental factors to provide a more holistic understanding of a nation's overall vulnerability.

Important Points

• World Bank:

• The World Bank primarily focuses on economic development and poverty alleviation through financial and technical assistance to developing countries.

• It does not publish the Multidimensional Vulnerability Index but works on other indices like the Ease of Doing Business Index and Human Capital Index.

• NITI Aayog:

• NITI Aayog is an Indian government think tank focusing on policy formulation and implementation within India.

• It publishes indices like the SDG India Index and Health Index but is not involved in global indices like the MVI.

• IMF:

• The International Monetary Fund (IMF) focuses on global financial stability and economic growth.

• It provides support through loans, surveillance, and policy advice but does not publish the Multidimensional Vulnerability Index.

Q84. Answer: (a) Vindhyachal

The correct answer is Vindhyachal.

Key Points

• NTPC (National Thermal Power Corporation), India's largest power producer, inaugurated the world's first CO2-to-methanol conversion plant at its Vindhyachal Super Thermal Power Station in Madhya Pradesh.

• The Vindhyachal plant is the largest power station in India, with a total installed capacity of 4,760 MW.

• The CO2-to-methanol conversion technology aims to reduce carbon emissions by capturing carbon dioxide and converting it into methanol, a valuable chemical used in various industries.

• The NTPC's initiative supports India's commitment to reducing greenhouse gas emissions under the Paris Agreement and achieving its carbon-neutral goals.

• The project is a step towards promoting clean energy and achieving a circular carbon economy by utilizing the by-products of power generation efficiently.

Additional Information

• Vindhyachal Super Thermal Power Station:

• Located in Singrauli district, Madhya Pradesh, this plant is the largest thermal power plant in India.

• It is operated by NTPC and has a total installed capacity of 4,760 MW through its coal-fired units.

• It plays a crucial role in meeting the energy demands of India by contributing significantly to the power grid.

• CO2-to-Methanol Conversion Technology:

• This innovative technology captures carbon dioxide (CO2) emissions from industrial processes and converts them into methanol.

• Methanol is a versatile chemical used as a fuel, solvent, and in the production of plastics and other materials.

• The process helps reduce carbon emissions, contributing to cleaner energy solutions and environmental sustainability.

• NTPC's Role in India's Energy Sector:

• NTPC is India's largest power utility, with an installed capacity exceeding 73 GW (as of 2023).

• It is actively working on renewable energy projects, including solar, wind, and hydrogen, to diversify its energy portfolio.

• The company is contributing to India's energy transition goals by adopting innovative technologies and reducing dependency on fossil fuels.

• India's Carbon Reduction Goals:

• Under the Paris Agreement, India has committed to reducing its carbon intensity by 33-35% by 2030, compared to 2005 levels.

• The country aims to achieve net-zero carbon emissions by 2070, focusing on renewable energy, energy efficiency, and carbon capture technologies.

• Initiatives like the CO2-to-methanol plant align with these goals and promote sustainable industrial practices.

Important Points

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• About Methanol:

• Methanol is a simple alcohol with the chemical formula CH3OH.

• It is used as a fuel in vehicles, a solvent in various industries, and a raw material in chemical manufacturing.

• Methanol is considered a cleaner alternative to fossil fuels due to its lower carbon emissions.

• Carbon Capture and Utilization (CCU):

• CCU involves capturing carbon dioxide from industrial emissions and repurposing it for useful applications, such as producing fuels, chemicals, or building materials.

• It is a key technology in combating climate change and promoting sustainable industrial practices.

• NTPC's Environmental Initiatives:

• NTPC has been actively working on projects like flue gas desulfurization (FGD), renewable energy, and hydrogen blending in pipelines to reduce its environmental footprint.

• The company is also involved in afforestation projects and promoting energy-efficient technologies.

Q85. Answer: (c) Capitalism- A Ghost Story

The correct answer is Capitalism- A Ghost Story.

Key Points

• Capitalism- A Ghost Story is a book authored by Arundhati Roy, an Indian author and activist known for her critical perspectives on global capitalism and political issues.

• The book discusses how corporate power has infiltrated democracy, society, and culture, leading to exploitation and inequality.

• Through this work, Roy critiques the influence of neo-liberal policies and highlights the struggles faced by marginalized communities in India.

• It is a non-fiction work that explores the intersection of economic systems, environmental degradation, and social justice.

• Published in 2014, the book is a compilation of essays that delve into the impact of capitalism on India's political landscape and the lives of ordinary citizens.

Additional Information

• Other Books by Arundhati Roy:

• The God of Small Things: This is a novel published in 1997, which won the Booker Prize. It explores themes of love, loss, and social discrimination in Kerala, India.

• The Ministry of Utmost Happiness: Published in 2017, this novel weaves stories of diverse characters against the backdrop of political unrest in India.

• Field Notes on Democracy: A collection of essays that examine the state of democracy in India, addressing issues like freedom of speech and human rights violations.

• Other Options Explained:

• Flood of Fire: Authored by Amitav Ghosh, this historical novel is the third book in the Ibis trilogy, focusing on the opium trade and colonial India.

• The Circle of Reason: Written by Amitav Ghosh, it is a novel that blends fiction with philosophical inquiry, exploring themes of identity and rationality.

• The Liberation of Sita: Authored by Volga, this work is a feminist retelling of stories from the Indian epic Ramayana, focusing on Sita's journey of empowerment.

• About Arundhati Roy:

• Born: November 24, 1961, in Shillong, India.

• She is a prominent author, environmentalist, and social activist known for her critical stance on political and social issues.

• Roy's writings often address themes like human rights, environmental conservation, and the impact of globalization.

• Capitalism and India:

• India's economy has undergone significant changes due to neo-liberal policies, which have led to privatization and the rise of corporate influence.

• Roy critiques the widening gap between the rich and the poor, emphasizing the need for equitable development.

Important Points

• Capitalism- A Ghost Story is a critical exploration of the socio-economic impacts of capitalism, particularly in the Indian context.

• The book emphasizes the role of corporate entities in shaping policies, influencing governance, and perpetuating inequality.

• Roy's work serves as a call to action for promoting social justice and resisting exploitative systems.

• This book is particularly relevant in discussions about economic systems, environmental sustainability, and globalization.

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Q86. Answer: (c) Salman Rushdie

The correct answer is Salman Rushdie.

Key Points

• Salman Rushdie is the author of the acclaimed novel 'Shalimar The Clown', which was published in 2005.

• The book is a multifaceted story that spans continents, focusing on themes of love, betrayal, revenge, and political turmoil.

• It is set in the fictional village of Pachigam in Kashmir and explores the socio-political conflicts in the region, blending historical events with fiction.

• 'Shalimar The Clown' was shortlisted for several prestigious awards, including the Whitbread Book Awards and the Commonwealth Writers' Prize.

• Salman Rushdie, born in 1947 in Mumbai, India, is a celebrated British-Indian novelist and essayist known for his use of magical realism and historical narrative.

Additional Information

• Salman Rushdie's Background:

• Salman Rushdie's first novel, 'Grimus', was published in 1975, but he gained international fame with his second novel, 'Midnight's Children', which won the Booker Prize in 1981.

• He is renowned for his distinctive narrative style, which often combines magical realism with historical and political themes.

• 'Shalimar The Clown': Key Themes and Plot:

• The novel explores the impact of terrorism and the loss of cultural harmony in Kashmir.

• The protagonist, Shalimar, transforms from a traditional Kashmiri performer into a vengeful assassin following a series of personal and political betrayals.

• It delves into the ethnic and religious strife in Kashmir, providing a nuanced portrayal of its socio-political complexities.

• Other Works by Salman Rushdie:

• 'The Satanic Verses' (1988): One of his most controversial works, which led to a fatwa being issued against him by Iran's Ayatollah Khomeini.

• 'Midnight's Children' (1981): A landmark novel that examines India's post-independence history through magical realism.

• 'The Moor's Last Sigh' (1995): A family saga that spans several generations, dealing with themes of art, politics, and betrayal.

• Recognition and Awards:

• Salman Rushdie has received numerous accolades, including being knighted in 2007 for his contributions to literature.

• He was awarded the Booker of Bookers in 1993 and 2008 for 'Midnight's Children', recognizing it as the best Booker Prize-winning novel in the award's history.

• Other Authors Mentioned in the Question:

• Anita Desai: Known for works like 'Clear Light of Day' and 'In Custody', focusing on themes of personal and cultural identity.

• Shiva Naipaul: The younger brother of Nobel laureate V.S. Naipaul, recognized for books like 'Fireflies' and 'North of South'.

• Rohinton Mistry: Famous for novels such as 'A Fine Balance' and 'Family Matters', depicting the lives of India's Parsi community.

Important Points

• Kashmir as a Theme:

• The novel provides an in-depth exploration of the cultural and political history of Kashmir, highlighting its transition from a peaceful region to one marked by violence and division.

• Through its characters and setting, the book illustrates the human cost of political conflict and the erosion of cultural harmony.

• Magical Realism in Salman Rushdie's Works:

• Rushdie is known for weaving magical realism into his narratives, blending fantastical elements with real-world events.

• In 'Shalimar The Clown', the magical realism enhances the storytelling, making it both poetic and poignant.

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Q87. Answer: (a) burnt mud-bricks

The correct answer is burnt mud-bricks.

Key Points

• The Indus Valley Civilization, also known as the Harappan Civilization, flourished around 2500 BCE to 1900 BCE in present-day India and Pakistan.

• The use of burnt mud-bricks as a standardized building material was one of the most remarkable features of the civilization. This indicates their advanced knowledge of construction techniques and urban planning.

• The bricks were made by firing clay in kilns at high temperatures, which made them durable and resistant to weathering, ensuring the longevity of their structures.

• The uniformity in the size and shape of the bricks reflects a well-organized system of production and standardization, suggesting

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the existence of centralized authority or governance.

• Structures like houses, granaries, drainage systems, and public baths in cities such as Mohenjo-daro and Harappa were constructed using these bricks, showcasing the civilization's focus on hygiene and urban organization.

Additional Information

• Indus Valley Civilization:

• This was one of the world's first major urban civilizations, comparable to Mesopotamia and Ancient Egypt.

• The civilization was spread over modern-day Pakistan, northwest India, and parts of Afghanistan.

• Famous cities include Harappa, Mohenjo-daro, Lothal, Dholavira, and Kalibangan.

• Construction Techniques:

• The bricks were made using a precise ratio of clay and sand, ensuring durability and uniformity.

• Bricks were fired in kilns at temperatures exceeding 800°C, which made them water-resistant and long-lasting.

• The construction employed an interlocking system to enhance the stability of walls.

• Urban Planning:

• Indus cities were meticulously planned with a grid-like layout, wide roads, and sophisticated drainage systems.

• Buildings were often multi-storied and had flat roofs made using wooden beams and mud plaster.

• The use of burnt bricks in drainage systems highlights the importance given to sanitation and hygiene.

• Other Building Materials:

• While burnt mud-bricks were the primary material, sun-dried bricks were also used for less important structures.

• Stone was occasionally used, especially in regions where it was readily available, but it was not as common as bricks.

• Timber was used for door frames, roofs, and other structural supports.

• Innovations:

• The Harappans were pioneers in using standard weights and measures, which contributed to the uniformity in brick sizes.

• They also developed sophisticated water management systems, including wells, reservoirs, and public baths, such as the famous Great Bath of Mohenjo-daro.

Important Points

• Burnt Mud-Bricks:

• These were used extensively in constructing houses, granaries, and public infrastructure.

• The dimensions of the bricks followed a standard ratio of 4:2:1 (length: width: height).

• Other Options:

• Rocks: Rarely used in Indus Valley construction, as the civilization prioritized bricks for their uniformity and ease of use.

• Fly Ash: A modern material used in construction, unavailable during the Indus Valley period.

• Black Soil: While present in the region, it was more commonly used for agriculture rather than construction.

• Significance:

• The use of standardized burnt bricks highlights the advanced engineering and architectural skills of the Harappan people.

• It also reflects their understanding of material science and their ability to create durable, weather-resistant structures.

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Q88. Answer: (b) Puducherry

The correct answer is Puducherry.

Key Points

• Veerampattinam Festival is one of the most popular festivals celebrated in Puducherry, a Union Territory of India.

• The festival is celebrated annually in the coastal village of Veerampattinam, which is the largest coastal village of Puducherry.

• It is primarily a religious festival, dedicated to the village deity and involves traditional rituals and vibrant celebrations.

• The festival includes a grand procession where the deity is taken around the village in a beautifully decorated chariot.

• It attracts numerous devotees and tourists due to its cultural significance and unique coastal charm.

• The celebrations are marked by traditional performances, music, and dance, reflecting the rich cultural heritage of Puducherry.

Additional Information

• Puducherry:

• Puducherry is a Union Territory located in southern India. It comprises four districts: Puducherry, Karaikal, Mahe, and Yanam.

• It was formerly a French colony until 1954 and retains significant French cultural influences.

• The official languages of Puducherry are Tamil, French, Telugu, and Malayalam.

• Puducherry is known for its beaches, temples, and colonial architecture.

• Festivals in Puducherry:

• Puducherry celebrates a variety of festivals, including Masi Magam, Pongal, and Christmas, reflecting its diverse cultural heritage.

• Masi Magam, another significant festival, involves immersing idols of gods in the sea and is celebrated with great enthusiasm.

• French cultural events such as Bastille Day are also observed due to Puducherry's colonial history.

• Tourism in Puducherry:

• Puducherry is a popular tourist destination, attracting visitors with its peaceful beaches, Auroville International Township, and promenade.

• The Sri Aurobindo Ashram is a spiritual retreat that draws devotees and seekers from around the world.

• Its unique blend of Indian and French cultures makes Puducherry a distinct and vibrant place to explore.

• Importance of Festivals:

• Festivals like Veerampattinam contribute to preserving the traditional practices and local culture.

• They play a vital role in fostering community bonding and attracting tourism, which boosts the economy of the region.

Important Points

• Unique Culture: Puducherry's festivals reflect its harmonious blend of Indian and French traditions.

• Tourist Attraction: Festivals like Veerampattinam serve as major tourist attractions, boosting the local economy and showcasing Puducherry's heritage.

• Community Engagement: Local festivals foster a sense of unity and belonging among residents, emphasizing the importance of cultural preservation.

Q89. Answer: (a) Geosynchronous

The correct answer is Geosynchronous.

Key Points

• GSLV stands for Geosynchronous Satellite Launch Vehicle. The letter "G" in GSLV represents "Geosynchronous," referring to the type of orbit that the launch vehicle is designed to achieve.

• A Geosynchronous orbit is an orbit where the satellite's orbital period matches Earth's rotational period, allowing the satellite to appear stationary relative to the Earth's surface.

• The GSLV is developed by the Indian Space Research Organisation (ISRO) for launching heavier payloads into geosynchronous or geostationary transfer orbits.

• The GSLV is capable of launching satellites weighing up to 5,000 kg into low Earth orbit and approximately 2,500 kg into geostationary transfer orbit.

• GSLV is equipped with an indigenously developed Cryogenic Upper Stage (CUS), which provides enhanced performance during the final stage of flight.

Additional Information

• Geosynchronous Orbit:

• A satellite in a Geosynchronous orbit completes one orbit around Earth in the same time it takes Earth to rotate once (approximately 24 hours).

• Satellites in this orbit are typically used for communication, broadcasting, and weather monitoring.

• A subset of geosynchronous orbit is the Geostationary orbit, where the satellite remains fixed at one position above the Earth's equator.

• Indian Space Research Organisation (ISRO):

• ISRO is India's national space agency headquartered in Bengaluru.

• It was established in 1969 and operates under the Department of Space, Government of India.

• ISRO is responsible for launching satellites, exploring space, and providing technological advancements in fields like telecommunication, navigation, and remote sensing.

• GSLV Variants:

• GSLV has undergone several advancements, leading to multiple variants like GSLV Mk I, Mk II, and Mk III.

• GSLV Mk III is India's most powerful rocket, capable of launching heavier satellites and is used for missions like Chandrayaan-2.

• Applications of GSLV:

• Launching communication satellites like GSAT series for telecommunication and internet services.

• Supporting space exploration missions, including Chandrayaan and future interplanetary missions.

• Expanding India's presence in commercial satellite launches, boosting economic and technological growth.

Important Points

• Cryogenic Technology:

• GSLV's cryogenic upper stage uses liquid hydrogen and liquid oxygen as propellants, providing higher thrust compared to conventional fuels.

• India developed indigenous cryogenic technology after overcoming challenges due to international sanctions in the 1990s.

• Global Context:

• India's GSLV competes with international space agencies like NASA, Roscosmos, and ESA in launching satellites for global clients.

• Successful GSLV missions enhance India's reputation in space technology and commercial satellite launching.

Q90. Answer: (b) density

The correct answer is density.

Key Points

• Buoyant force is the upward force exerted by a fluid on an object submerged in it. This force enables objects to float or rise in fluids.

• The magnitude of buoyant force depends on the density of the fluid. Higher fluid density results in a greater buoyant force.

• According to Archimedes' principle, the buoyant force is equal to the weight of the displaced fluid. The weight of the displaced fluid is determined by its density and volume.

• The formula for buoyant force is: $F_b = \rho \times V \times g$, where ρ is the density of the fluid, V is the volume of displaced fluid, and g is the acceleration due to gravity.

• Other properties like refractive index, colour, or charge do not influence buoyant force. These are unrelated to the physical interaction between the object and fluid.

Additional Information

• Archimedes' Principle:

• It states that any object fully or partially submerged in a fluid experiences a buoyant force equal to the weight of the displaced fluid.

• This principle is applicable to both liquids and gases.

• It was discovered by the Greek mathematician and inventor Archimedes around 250 BC.

• Density:

• Density is defined as mass per unit volume: $\rho = m/V$.

• Units of density are typically expressed in kg/m^3 or g/cm^3.

• Examples: Water has a density of 1000 kg/m^3, while air has a density of approximately 1.225 kg/m^3 at sea level.

• Applications of Buoyant Force:

• Shipbuilding: Large ships float because their design ensures the weight of displaced water is greater than the weight of the ship.

• Submarines: Submarines adjust their buoyancy by controlling water and air in ballast tanks.

• Hot Air Balloons: The buoyant force from the surrounding cooler air lifts the balloon filled with heated air.

• Factors Affecting Buoyant Force:

• Density of Fluid: Higher density fluids exert greater buoyant force.

• Volume of Object Submerged: Larger submerged volume displaces more fluid and increases buoyant force.

• Gravitational Acceleration: Variations in gravity influence buoyant force magnitude (e.g., weaker gravity on the Moon).

Important Points

• Refractive Index:

• This property measures how much light bends when it enters a material. It has no connection to buoyant force.

• Colour:

• Colour is a visual property determined by the wavelength of light reflected by an object or fluid. It does not affect buoyancy.

• Charge:

• Charge refers to the electrical property of particles. It does not interact with buoyant force, which is a mechanical phenomenon.

Q91. Answer: (d) Dal Khalsa

The correct answer is Dal Khalsa.

Key Points

• The combined army of the Sikh 'Jathas' (small bands of warriors) and 'Misls' (confederacies or military groups) in the eighteenth century was called Dal Khalsa.

• The Dal Khalsa was formed to unite various Sikh groups and provide a centralized leadership to protect the Sikh community and its interests.

• It was a military and political organization that played a key role in safeguarding Sikh territories and resisting invasions by

external forces, such as the Mughals and Afghans.

• The structure of Dal Khalsa was highly organized, with a focus on collective decision-making under the principles of Sikhism, including equality, justice, and self-defense.

• It was instrumental in laying the foundation for the establishment of the Sikh Empire under Maharaja Ranjit Singh in the early 19th century.

Additional Information

• Jathas:

• 'Jathas' refers to small groups or bands of Sikh warriors who were organized to defend Sikhism and its followers.

• They were initially formed to resist Mughal oppression and persecution of Sikhs during the 17th and 18th centuries.

• Over time, these Jathas merged into larger confederacies called 'Misls,' which eventually became part of the Dal Khalsa.

• Misls:

• Misls were autonomous Sikh confederacies established in Punjab during the 18th century.

• There were 12 major Misls, each led by a prominent Sikh leader or chieftain.

• They were known for their military prowess and were instrumental in protecting Sikh territories from invaders.

• Dal Khalsa's Role:

• Dal Khalsa acted as the unifying body for the Misls, ensuring coordination and collective action during times of conflict.

• It helped organize campaigns against the Mughal Empire and Afghan forces led by Ahmed Shah Durrani.

• Its efforts significantly contributed to the survival and growth of Sikhism in the region.

• Sikh Empire:

• The foundation laid by the Dal Khalsa eventually led to the establishment of the Sikh Empire under Maharaja Ranjit Singh in 1801.

• The empire was known for its military strength, secular policies, and administrative efficiency.

• It stretched across present-day Punjab, parts of Pakistan, and northern India.

• Comparison with Other Groups:

• Sangats: These are religious gatherings or congregations in Sikhism. They are not military groups and focus on spiritual learning and community service.

• Mansabdars: These were rank holders in the Mughal administrative and military system, unrelated to Sikh military organizations.

• Nihangs: Nihangs are a distinct group of Sikh warriors known for their traditional attire and martial skills. While they are part of Sikh history, they are not synonymous with Dal Khalsa.

Important Points

• Formation of Dal Khalsa: It was formally established in 1748 in Amritsar under the leadership of Nawab Kapur Singh.

• Misl Leaders: Prominent leaders like Jassa Singh Ahluwalia and Jassa Singh Ramgarhia played crucial roles in the Dal Khalsa.

• Chhota and Vadda Ghallughara: Dal Khalsa emerged stronger after surviving these two major massacres (small and great holocausts) of Sikhs by the Mughals and Afghans.

• Khalsa Ideals: Dal Khalsa embodied the Khalsa principles of fighting for justice, equality, and religious freedom.

Q92. Answer: (a) households

The correct answer is households.

Key Points

• Personal Disposable Income (PDI) refers to the portion of aggregate income that remains with households after accounting for taxes and mandatory contributions, such as social security payments.

• This income is available for households to spend on consumption (goods and services) or to save for future needs.

• PDI is calculated by subtracting personal taxes (e.g., income tax) and non-tax payments (e.g., fines) from personal income.

• The primary recipients of Personal Disposable Income are households, as they are the economic units responsible for consumption and savings in an economy.

• It is a key indicator in macroeconomics used to measure the financial health of households and their ability to contribute to economic growth through spending and saving.

Additional Information

• Key Components of Personal Income:

• Wages and Salaries: Earnings from employment form a significant part of personal income.

• Investment Income: This includes interest, dividends, and rental income.

• Government Transfers: Payments like pensions, unemployment benefits, and subsidies.

• Calculation of Personal Disposable Income:

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• Formula: PDI = Personal Income - Taxes - Non-Tax Payments.
• It excludes corporate taxes and retains only the income attributed to households.
• Significance of PDI:
• It is a direct measure of the purchasing power of households.
• Higher disposable income leads to increased consumer spending, boosting economic growth.
• It is also used to calculate the Personal Savings Rate (PSR), which is a measure of household savings as a percentage of disposable income.
• Difference from Other Income Metrics:
• National Income: Measures total income generated by an economy, including businesses and government.
• Gross Domestic Product (GDP): The total market value of all goods and services produced in a country.
• Personal Income: Includes all income received by individuals, before taxes and other deductions.
• Examples of Usage:
• A household earning $50,000 annually, paying $10,000 in taxes, has a disposable income of $40,000.
• In policy-making, governments use PDI data to design tax policies or assess the impact of fiscal decisions on households.

Important Points

• Households: Represent the basic consumption units in an economy. They are the primary recipients of disposable income and are responsible for economic activities like spending and saving.
• Firms: These are production units in the economy. They generate income through business activities but are not recipients of disposable income.
• Government: Collects taxes and provides transfers but does not retain disposable income for consumption.
• Foreign Banks: Operate in an economy to manage finances but do not directly relate to the concept of disposable income.

Q93. Answer: (a) Nana Saheb

The correct answer is Nana Saheb.

Key Points

• Tantia Tope was one of the prominent leaders of the Indian Rebellion of 1857.
• He served as the general of Nana Saheb, who was a key figure in the uprising against British rule.
• Tantia Tope's military leadership was instrumental in several battles during the rebellion, including the famous defense of Cawnpore (Kanpur) under Nana Saheb's leadership.
• He was known for his guerrilla warfare tactics and played a pivotal role in organizing troops to fight against the British forces.
• Despite being ultimately captured and executed by the British in 1860, Tantia Tope remains a symbol of resistance and patriotism in Indian history.

Additional Information

• Nana Saheb:
• Nana Saheb, also known as Dhondu Pant, was the adopted son of the last Peshwa, Baji Rao II.
• He was denied his rightful claim to the Peshwa's pension by the British, which fueled his resentment against British rule.
• He led the rebellion in Kanpur during the 1857 uprising and is remembered for his leadership and strategic planning.
• Begum Hazrat Mahal:
• Begum Hazrat Mahal was a prominent leader of the rebellion from Lucknow.
• She played a key role in organizing resistance against British forces in the Awadh region.
• Bahadur Shah Zafar:
• Bahadur Shah Zafar was the last Mughal emperor and was declared the symbolic leader of the 1857 rebellion.
• His role in the uprising was more ceremonial, as the actual leadership and planning were carried out by regional leaders.
• Baji Rao II:
• Baji Rao II was the last Peshwa of the Maratha Empire, but he did not play any significant role in the 1857 rebellion.
• His legacy, however, influenced leaders like Nana Saheb, who sought to restore the Maratha rule.

Important Points

• Indian Rebellion of 1857:
• The rebellion was the first large-scale uprising against British rule in India.
• It was triggered by multiple factors, including political annexations, economic exploitation, and cultural insensitivity.
• The introduction of the Enfield rifle and its greased cartridges served as an immediate cause.
• Key Leaders:
• Prominent leaders included Nana Saheb, Tantia Tope, Begum Hazrat Mahal, Rani Lakshmibai, and Bahadur Shah Zafar.

• Each leader contributed significantly to the rebellion in their respective regions.

• Outcome:

• The rebellion was ultimately suppressed by the British, but it marked the beginning of a nationalistic movement in India.

• It led to the dissolution of the East India Company and the establishment of direct British governance under the Crown.

Q94. Answer: (c) 1

The correct answer is 1.

Key Points

• In India, the Export Oriented Units (EOUs) scheme was introduced to promote export production and increase foreign exchange earnings by focusing on manufacturing goods solely for export purposes.

• EOUs are governed by the provisions of the Foreign Trade Policy, and they are eligible for various incentives and exemptions to boost their export capabilities.

• Projects with a minimum investment of Rs. 1 Crore in plant and machinery are considered eligible for establishment as EOUs. This ensures that only projects with substantial investment and operational capacity are approved.

• The investment threshold of Rs. 10 Crore ensures that EOUs are capable of contributing significantly to exports and foreign exchange reserves of the country.

• This criterion aligns with the government's vision to promote industrial development and global trade competitiveness by enabling large-scale production units to operate efficiently.

• Hence, option 2 is correct.

Additional Information

• Export Oriented Units (EOUs):

• EOUs are set up with the primary purpose of producing goods exclusively for export.

• They are granted tax exemptions and duty-free import benefits for raw materials, components, and machinery required for production.

• EOUs function under the Special Economic Zones (SEZs) Act, 2005, with the aim of promoting export-centric industrialization.

• These units can be established in manufacturing, agriculture, aquaculture, and other sectors contributing to exports.

• Government Incentives for EOUs:

• EOUs enjoy benefits such as exemption from customs duty, excise duty, and Goods and Services Tax (GST) on inputs used in manufacturing goods for export.

• They are also provided with relaxation in foreign exchange regulations under the Foreign Exchange Management Act (FEMA).

• The central government provides single-window clearance to expedite approvals and facilitate smooth operations for EOUs.

• Minimum Investment Threshold:

• The threshold of Rs. 1 Crore in plant and machinery ensures that EOUs have the necessary infrastructure to produce high-quality goods for export.

• This eligibility criterion is designed to enable large-scale production capabilities and meet international standards.

• Impact of EOUs:

• EOUs contribute significantly to India's GDP, foreign exchange reserves, and employment generation.

• They enhance India's global competitiveness by ensuring adherence to international quality standards.

• Examples of successful EOUs include sectors like IT services, textiles, pharmaceuticals, and electronics manufacturing.

Important Points

• Foreign Trade Policy:

• The Foreign Trade Policy (FTP), issued by the Ministry of Commerce and Industry, provides guidelines for promoting exports through EOUs and other schemes.

• The FTP outlines the operational framework, incentives, and compliance requirements for EOUs.

• SEZs vs EOUs:

• While EOUs primarily focus on manufacturing goods for export, Special Economic Zones (SEZs) offer a broader scope, including services and trade activities.

• Both EOUs and SEZs aim to enhance India's export-oriented industrial development, but EOUs are specifically dedicated to manufacturing.

• Investment and Growth:

• The Rs. 10 Crore investment threshold encourages large-scale industrial growth and export competitiveness.

• This policy helps attract foreign direct investment (FDI) and strengthens India's trade relations globally.

Q95. Answer: (a) Article 200

The correct answer is Article 200.

Key Points

• Article 200 of the Indian Constitution empowers the Governor of a state to grant assent, withhold assent, or reserve a bill for the consideration of the President of India.

• When a bill is passed by the State Legislature, it is sent to the Governor for approval. The Governor can exercise four options: grant assent, withhold assent, return the bill for reconsideration, or reserve the bill for the President's consideration.

• If the Governor reserves the bill for consideration by the President, the President may grant assent, withhold assent, or suggest amendments to the bill.

• This power ensures that the provisions in the bill align with the Constitution and do not conflict with central laws or policies.

• Article 200 thus plays a critical role in maintaining the balance between state and central legislative processes.

• Hence, Article 200 is the correct answer.

Additional Information

• Article 201:

• Article 201 deals with the procedure when a bill reserved by the Governor for the President's consideration is returned with or without recommendations.

• The President may suggest amendments to the bill or withhold approval, ensuring checks and balances in legislative matters.

• Article 202:

• Article 202 pertains to the annual financial statement (budget) presented to the State Legislature by the Governor.

• This article ensures proper financial management and accountability within the state.

• Article 203:

• Article 203 deals with the procedure for discussing the appropriation and finance bills in the State Legislature.

• It allows the legislature to examine, amend, and approve financial proposals for the state.

• Governor's Role:

• The Governor is a constitutional authority appointed by the President of India to act as the head of a state.

• The Governor's responsibilities include granting assent to bills, summoning the legislature, and overseeing state governance.

• The Governor also acts as a bridge between the State Legislature and the Central Government.

Important Points

• Constitutional Context:

• The Indian Constitution provides a framework to ensure coordination between the state and central legislative processes.

• Articles related to the Governor's powers (200-203) highlight the role of the Governor in maintaining legislative integrity and constitutional compliance.

• Checks and Balances:

• By reserving bills for the President, the Governor ensures that state laws do not conflict with central laws or policies.

• This mechanism prevents misuse of legislative powers and maintains harmony between different levels of government.

Q96. Answer: (b) Marmagao port

The correct answer is Mormugao Port.

Key Points

• Mormugao Port is one of the major ports in India, located in the state of Goa. It is situated at the entrance of the Zuari estuary.

• The port serves as an important hub for exports of iron ore, which is one of the primary commodities handled by the port.

• Mormugao Port is equipped with facilities for handling bulk cargo such as coal, iron ore, and petroleum products, making it a key contributor to India's maritime trade.

• The port has historical significance as it was established in the late 19th century during the colonial period, primarily to facilitate trade and commerce.

• It is strategically located on the western coast of India and plays a crucial role in the regional economy, particularly in the state of Goa.

Additional Information

• Zuari Estuary:

• The Zuari River is one of the main rivers in Goa, and its estuary is an important ecological and economic zone.

• The estuary supports a rich biodiversity, including mangroves and marine life, and is critical for the local fishing industry.

• The estuarine region is also used for transportation and docking of ships, making it a vital area for maritime activities.

• Other Major Ports in India:

• Mumbai Port: Located in Maharashtra, it is one of the oldest and busiest ports in India, handling a variety of cargo.
• Haldia Port: Situated in West Bengal, it primarily handles bulk cargo like coal and petroleum products.
• Paradip Port: Located in Odisha, it is specialized in the handling of bulk cargo such as iron ore and coal.
• Importance of Ports in India:
• Ports are crucial for facilitating international trade, contributing significantly to the economy.
• India has a coastline of approximately 7,500 km, with 12 major ports and over 200 minor ports.
• The major ports handle a wide variety of cargo, including bulk cargo, containers, and petroleum products.
• Historical Significance of Mormugao Port:
• Mormugao Port was developed during the Portuguese rule in Goa and has since evolved into a modern port facility.
• It was initially focused on facilitating trade of spices and other goods, but now specializes in bulk cargo exports like iron ore.

Important Points

• Mormugao Port Trust:
• The port is managed by the Mormugao Port Trust, which ensures smooth operations and development.
• It operates under the purview of the Ministry of Ports, Shipping and Waterways of the Government of India.
• Iron Ore Exports:
• Mormugao is one of the leading ports for exporting iron ore from India, particularly from mines in Goa and nearby regions.
• The port has specialized facilities for loading and transporting iron ore to international markets.
• Economic Impact:
• The port contributes significantly to the economy of Goa, providing employment opportunities and supporting local industries.
• It also facilitates tourism, with cruise ships docking at the port to visit Goa.
• Environmental Initiatives:
• The port has undertaken measures to minimize its environmental impact, including mangrove conservation and pollution control.
• Efforts are being made to adopt green port practices and sustainable development strategies.

Q97. Answer: (c) 1997

The correct answer is 1997.

Key Points

• The Ninth Five-Year Plan of India was launched in the year 1997 and covered the period from 1997 to 2002.
• This plan was formulated under the leadership of the then Prime Minister, Inder Kumar Gujral, and later implemented during the tenure of Atal Bihari Vajpayee.
• The Ninth Five-Year Plan aimed at achieving a growth rate of 6.5%, with a focus on inclusive growth and reducing poverty.
• Its primary objectives included poverty alleviation, employment generation, infrastructure development, and promoting self-reliance in the economy.
• This plan emphasized the importance of the private sector while maintaining a strong role for the public sector, fostering a balanced and sustainable growth model.

Additional Information

• Five-Year Plans in India:
• The concept of Five-Year Plans in India was introduced by Jawaharlal Nehru in 1951, inspired by the Soviet model of planned economic development.
• The Planning Commission was responsible for drafting and implementing these plans until it was replaced by the NITI Aayog in 2015.
• The primary goal of these plans was to ensure economic growth, social justice, and self-reliance.
• Key Themes of the Ninth Five-Year Plan:
• It focused on sustainable and equitable growth, emphasizing rural development and agricultural productivity.
• A major thrust was given to social sector investments like health and education.
• The plan encouraged public-private partnerships (PPP) to accelerate infrastructure development.
• It aimed to reduce the fiscal deficit and achieve macroeconomic stability.
• Performance of the Ninth Plan:
• The actual GDP growth rate achieved during this plan was 5.4%, which was below the target of 6.5%.
• Despite falling short of its growth target, the plan succeeded in fostering economic reforms and strengthening the foundation for future growth.
• It also contributed to significant progress in poverty alleviation and infrastructure expansion.
• Other Five-Year Plans:

• The Eighth Five-Year Plan (1992–1997) focused on economic liberalization and laid the groundwork for reforms.

• The Tenth Five-Year Plan (2002–2007) aimed at achieving an 8% GDP growth rate and emphasized inclusive development.

• The Final (12th) Plan (2012–2017) sought to achieve faster, sustainable, and inclusive growth.

Important Points

• Key Figures: The Ninth Plan was formulated during the tenure of Inder Kumar Gujral and implemented under Atal Bihari Vajpayee.

• Focus Areas: The plan emphasized social equity, poverty reduction, and employment generation.

• Global Context: The Ninth Plan coincided with the late 1990s Asian financial crisis, which influenced India's economic policies and priorities.

• Significance: It marked a shift towards a more market-oriented approach while maintaining the role of the public sector in critical areas.

Q98. Answer: (b)

The correct answer is During the night.

Key Points

• Desert plants primarily take up carbon dioxide (CO_2) during the night through a unique adaptation called Crassulacean Acid Metabolism (CAM). This helps them conserve water in arid environments.

• During the night, stomata (small pores on leaves) open to absorb CO_2, which is stored as an organic acid. This process minimizes water loss since temperatures are cooler and humidity is higher at night.

• During the day, the stomata remain closed to prevent water loss, and the stored organic acids are broken down to release CO_2 for photosynthesis. This ensures efficient water use.

• This adaptation is particularly important in deserts, where water is scarce, and high daytime temperatures can lead to excessive water loss through transpiration.

• Hence, the statement "During the night" is correct, while "During the day" is incorrect as desert plants do not open their stomata during the hot daytime to avoid water loss.

Additional Information

• Crassulacean Acid Metabolism (CAM):

• CAM is a specialized photosynthetic pathway that enables plants to open their stomata at night to take in CO_2 and store it as organic acids.

• During the day, the stomata close, and the stored organic acids release CO_2 for photosynthesis.

• CAM is common in desert plants like cacti, agave, and succulents, as well as epiphytes.

• Desert Plant Adaptations:

• To survive in arid conditions, desert plants exhibit adaptations like waxy leaf coatings, reduced leaf size, and deep root systems.

• These adaptations minimize water loss and maximize water uptake.

• Stomatal Function:

• Stomata are tiny pores found on the surface of leaves, responsible for gas exchange.

• In desert plants, stomata open at night to conserve water, unlike most plants that open stomata during the day.

• Examples of CAM Plants:

• Cacti: Adapted to extreme arid conditions, storing water in their stems and performing CAM photosynthesis.

• Agave: Used for producing tequila and is highly drought-resistant.

• Succulents: Store water in their leaves and thrive in dry climates.

• Importance of CAM Photosynthesis:

• Allows plants to grow in environments with limited water availability.

• Helps maintain ecological balance in desert ecosystems.

Important Points

• Water Efficiency: CAM plants use water up to 5-10 times more efficiently than plants using C3 or C4 photosynthesis.

• Global Distribution: CAM photosynthesis is not limited to deserts but is also found in tropical and subtropical areas.

• Ecological Role: CAM plants contribute to stabilizing soil in arid regions, preventing erosion, and supporting desert fauna.

• Economic Importance: Many CAM plants, such as pineapple and agave, have significant agricultural and commercial value.

Q99. Answer: (b) Cerebellum

The correct answer is Cerebellum.

Key Points

• The Cerebellum is a part of the hindbrain that plays a critical role in coordinating voluntary actions, ensuring precision and

smoothness of movements.

• It is responsible for maintaining the body's posture and balance, allowing individuals to perform tasks such as walking, running, or standing upright.

• The cerebellum processes sensory inputs from muscles, joints, and inner ear structures (vestibular system) to ensure proper motor control and coordination.

• It also helps in fine-tuning motor activities like writing, typing, or playing musical instruments by regulating muscle movements.

• Damage to the cerebellum can result in motor disorders such as ataxia, characterized by uncoordinated movements and difficulty maintaining balance.

Additional Information

• Cerebrum:

• The cerebrum is the largest part of the brain and is associated with higher cognitive functions such as thinking, memory, reasoning, and problem-solving.

• It is divided into two hemispheres, each responsible for controlling the opposite side of the body.

• It also governs sensory perception and voluntary muscle movements but does not specialize in precision or balance.

• Medulla:

• The medulla, part of the brainstem, is primarily responsible for controlling involuntary functions such as breathing, heart rate, and blood pressure.

• While vital for survival, it does not play a direct role in coordinating voluntary movements or maintaining body balance.

• Hypothalamus:

• The hypothalamus is a small but crucial part of the brain that regulates homeostasis, including body temperature, hunger, thirst, and hormonal balance.

• It is involved in emotional responses and the endocrine system but does not contribute to motor coordination or posture.

• Function of Cerebellum:

• The cerebellum integrates sensory information from the vestibular apparatus (inner ear), visual signals, and proprioceptors (muscle/joint sensors).

• It ensures smooth and accurate execution of motor activities, critical for tasks requiring precision, such as sports, dance, or surgical procedures.

• It is located at the back of the brain, below the cerebrum, and connects with the spinal cord and other brain structures.

• Modern research indicates its role in cognitive functions like attention and language in addition to motor skills.

Important Points

• Evolutionary Perspective: The cerebellum is evolutionarily ancient and is present in most vertebrates, highlighting its importance in motor control.

• Clinical Application: Damage to the cerebellum is assessed through tests like finger-to-nose coordination and heel-to-shin tests in neurological evaluations.

• Neuroplasticity: The cerebellum exhibits neuroplasticity, meaning it can adapt and reorganize functions after injury, emphasizing its dynamic role in motor learning.

Q100. Answer: (d) Ashvamedha

The correct answer is Ashvamedha.

Key Points

• Samudragupta, one of the greatest rulers of the Gupta Empire, celebrated his conquests by performing the Ashvamedha Yajna, a significant Vedic ritual.

• The Ashvamedha Yajna symbolized the authority and sovereignty of the emperor over his territories and neighboring regions.

• In this ritual, a sacred horse was allowed to roam freely across the kingdom and neighboring areas. Any territory where the horse was not challenged became a part of the ruler's domain.

• The performance of the Ashvamedha sacrifice was a mark of political supremacy, showcasing Samudragupta's consolidation of power and vast territorial expansion.

• The Allahabad Pillar Inscription, composed by Harisena, highlights Samudragupta's achievements and references the Ashvamedha sacrifice.

Additional Information

• Vedic Sacrifices:

• Shraddha: This ritual is performed for deceased ancestors to ensure their peace and blessings. It is primarily a religious duty, not a political act.

• Agnihotra: A daily Vedic ritual involving the offering of milk and ghee into a sacred fire. It is meant for spiritual purification and maintaining cosmic order.

• Upanayana: A ceremony marking the initiation of boys into formal education and the study of sacred texts. It is unrelated to territorial conquests or political supremacy.

• Ashvamedha: A royal sacrifice performed by kings to assert their dominance and expand their territories. It was considered the highest and most prestigious Vedic ritual.

• Samudragupta's Reign:

• Samudragupta ruled during the 4th century CE and is often referred to as the "Napoleon of India" due to his military prowess.

• His reign marked the golden age of the Gupta Empire, with significant advancements in art, culture, and administration.

• He undertook numerous military campaigns and annexed territories across northern and central India, extending the empire's boundaries.

• Historical Records:

• The Allahabad Pillar Inscription, written by Harisena, provides detailed accounts of Samudragupta's conquests, administration, and cultural contributions.

• This inscription also highlights his patronage of the arts and his performance of the Ashvamedha Yajna, which solidified his status as a powerful ruler.

• Political Significance of Ashvamedha:

• The Ashvamedha Yajna was a tool for rulers to assert their dominance and establish their legitimacy over conquered territories.

• It showcased the ruler's ability to maintain control over vast regions and his unchallenged authority.

Important Points

• Allahabad Pillar Inscription: This historical record, composed by Harisena, is a primary source for understanding Samudragupta's reign and his political achievements.

• Gupta Empire: Known as the golden age of Indian history, the Gupta period saw remarkable progress in science, mathematics, literature, and art.

• Vedic Rituals: These rituals were deeply intertwined with the socio-political fabric of ancient India, reflecting the ruler's spiritual and political aspirations.

• Legacy of Samudragupta: His military conquests, administrative policies, and cultural patronage significantly influenced subsequent Indian rulers and dynasties.

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