SSC CHSL 2025 Tier-1 (Held On: 26 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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ENGLISH LANGUAGE

Q1. Choose the option which is similar in meaning to the underlined word.

Pushkin, the great Russian poet was a remarkable man.

(a) Astounding
(b) Normal
(c) Insignificant
(d) Typical

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

Children who does not read books will never be able to receive information in any way.

(a) Children who does not read books
(b) will never be able to receive
(c) information in any way
(d) No correction required

Q3. Identify the incorrect sentence.

(a) Every piece sold here is well-designed and crafted to retain its originality.
(b) Folktales are a kind of story that gets passed on from generation to generation.
(c) The Nilgiris are the most productive mountains at the south and is too famous.
(d) There are not many followers of Gandhiji these days.

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

The scientist elaborated _____ the implications of the experiment during his lecture.

(a) over
(b) on
(c) with
(d) for

Q5. Match the pair to its meaning:

Column A Column B

1. Faze A) Disturb or upset

2. Phase B) Stage or step in a process

(a) 1-A, 2-B
(b) 1-B, 2-A
(c) 1-A, 2-A
(d) 1-B, 2-B

Q6. Choose the correctly spelt word:

(a) Cholera
(b) Choleraa
(c) Chorlla
(d) Cyholera

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

She always completes her homework before bed.

(a) at bed
(b) at bed
(c) by bed
(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.'

We must prevent him to making the same mistake again.

(a) Prevent him for making
(b) Prevent him from making
(c) Prevent him in making
(d) No substitution

Q9. Choose the correct indirect narration of the following statement from the given alternatives:

The doctor said, "Your father is going to recover within the next two days."

(a) The doctor said that his father was going to recover within the following two days.
(b) The doctor said that his father is going to recover within the following two days.
(c) The doctor said that his father is going to recover within the next two days.
(d) The doctor said that his father was going to recover within the previous two days.

Q10. Change the following sentence into the Active form.

The presentation has been given.

(a) The presentation was given.
(b) They had given the presentation.
(c) Someone has given the presentation.
(d) Someone gives the presentation.

Q11. Choose the option that is the most appropriate conversion of the following sentence into Direct Speech.

He told her that the documents had already been signed before she had called.

(a) He said, "The documents were already signed before you called."
(b) He said to her, "The documents have already been signed before you had called."
(c) He said to her, "The documents had already been signed before you called."
(d) He told her, "The documents have already been signed before you have called."

Q12. Choose the most suitable preposition from the given options to fill in the blank in the following sentence:

This area is prone ____ flooding during the monsoon.

(a) with
(b) for
(c) to
(d) of

Q13. Choose the correct passive voice transformation of the sentence:

Her family will have accepted her decision by next year.

(a) Her decision will be accepted by her family by next year.
(b) Her decision will be being accepted by her family by next year.

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(c) Her decision will have been accepted by her family by next year.
(d) Her decision will have being accepted by her family by next year.

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

The new environmental policy will be implemented by the government with immediate effect.

(a) The government will implement the new environmental policy with immediate effect.
(b) The government will have implemented the new environmental policy with immediate effect.
(c) The government has implemented the new environmental policy with immediate effect.
(d) The government is implementing the new environmental policy with immediate effect.

Directions

Read the passage and answer the following questions:

In an economy increasingly defined by automation and volatile market dynamics, the pertinence of skill-based education has never been more conspicuous. Traditional pedagogy, with its emphasis on rote memorisation and theoretical abstraction, often fails to equip learners with the pragmatic competencies demanded by contemporary industries. This schism between academic instruction and workplace exigencies has engendered a workforce proficient in qualifications but deficient in adaptability.

Skill-based education, conversely, prioritises applied learning, fostering dexterity in problem-solving, communication, and technological fluency. Apprenticeships, vocational training, and project-based curricula immerse students in authentic scenarios where knowledge is not merely recited but operationalized. Such experiential learning cultivates not only technical acumen but also critical soft skills indispensable in collaborative environments.

Furthermore, skill-oriented systems encourage a mind-set of lifelong learning, essential in an era where obsolescence can render a profession archaic within a decade. They democratise opportunity by enabling individuals from diverse socio-economic backgrounds to access employment through demonstrable capability rather than academic prestige alone.

Ultimately, integrating skill-based frameworks into mainstream education is not a peripheral reform but a systemic imperative. It reconciles the persistent dichotomy between learning and livelihood, ensuring that education is not an inert archive of facts but a dynamic instrument for personal agency and national progress.

Q15. The phrase "where knowledge is not merely recited but operationalized" functions as:

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

Q16. Identify the voice in "has engendered a workforce proficient in qualifications but deficient in adaptability".

(a) Middle voice
(b) Passive voice
(c) Causative voice
(d) Active voice

Q17. The word "obsolescence" means:

(a) Advancement
(b) State of being outdated
(c) Legal enforcement
(d) Improvement

Q18. In the context of the passage, which idiom best conveys the meaning of "reconciles the persistent dichotomy between learning and livelihood" as used in the final paragraph?

(a) Bridge the gap
(b) Hit the nail on the head
(c) Burn the midnight oil
(d) Throw in the towel

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Q19. According to the passage, what is the primary advantage of skill-based education over traditional pedagogy?

(a) It reduces the duration of education
(b) It eliminates the need for academic knowledge
(c) It bridges the gap between learning and employability
(d) It focuses solely on manual skills

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

P. She presented the findings to her team, revealing new patterns in the business.
Q. She created a series of functions to clean and transform the data, making it usable.
R. She developed a dashboard to visualise the insights and trends hidden in the data.
S. She wrote a script to extract raw data from multiple sources

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

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

P. The group of scientists was looking for a new planet outside of our solar system, known as an exoplanet.
Q. They observed the far-off star using a powerful telescope in search of a telltale dimming of its brightness.
R. They found a new planet, establishing its existence through a series of follow-up observations.
S. This slight dimming would indicate a planet passing in front of the star.

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

Q22. What is the antonym of "Parsimonious"?

(a) Stingy
(b) Frugal
(c) Generous
(d) Economical

Q23. What is the antonym of "Somnolent"?

(a) Awake
(b) Dull
(c) Lethargic
(d) Sluggish

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

The author's prose was filled with _____ imagery.

(a) chiaroscuoro
(b) chairoscuro
(c) chairoscouro
(d) chiaroscuro

Q25. What term refers to a strong feeling of not liking someone or something?

(a) Affection
(b) Hatred
(c) Admiration
(d) Love

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GENERAL INTELLIGENCE

Q26. In a row, if C is 11th from the left and 20th from the right, how many people are there in the row?

(a) 29
(b) 30
(c) 31
(d) 32

Q27. Introducing a girl, a boy said, "She is the only daughter of the only child of my paternal grandmother." How is the girl related to the boy?

(a) Aunt
(b) Sister
(c) Cousin
(d) Daughter

Q28. Read the following statement carefully and identify the conclusion that follows.

Statement

Some pens are pencils.

All pencils are erasers.

Conclusions

i. Some pens are erasers.

ii. No pen is an eraser.

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

Q29. In a line of 33 bicycles, Bicycle R is 10th from the left and Bicycle S is 17th from the right. How many bicycles are there between R and S?

(a) 5
(b) 6
(c) 7
(d) 8

Q30. There are 65 books on a shelf arranged in a row. Book C is 28th from the left side and Book D is 19th from the right side. Find the number of books between C and D.

(a) 17
(b) 18
(c) 19
(d) 20

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

10, ?, 36, 69, 134, 263, 520, 1033

(a) 20
(b) 19
(c) 22
(d) 17

Q32. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

-110, -113, -121, -134, -152, ?, -203, -236

(a) -174
(b) -173

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(c) -179
(d) -175

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

10, 22, 47, 98, 198, 399, ?

(a) 784
(b) 792
(c) 802
(d) 816

Q34. If 24 # 30 = 3600 and 22 # 8 = 880, then what is the value of 24 # 10?

(a) 1205
(b) 1200
(c) 1215
(d) 1195

Q35. If 163 $ 448 ; 16 = 135 and 857 $ 260 ; 20 = 844, then what is the value of 686 $ 476 ; 17?

(a) 654
(b) 664
(c) 660
(d) 658

Q36. 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: 12 # 3 % 2 ! 8 = ?

(a) 26
(b) 28
(c) 27
(d) 25

Q37. In the question 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 and then decide which of the given conclusions logically follows from the three statements disregarding commonly known facts.

Statements:

All Night are Dark

Some Night are Calm

No Storm is Calm

Conclusions:

I. Some Dark are Calm

II. Some Night are not Storm

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

Q38. Six boxes, L, M, N, O, P and Q are placed one above another, such that the bottommost box is 1 and the box above it is 2 and so on. Three boxes are placed between P and M, which is placed just below Q, which is not the topmost box. N is placed just above L, which is placed below O. How many boxes are placed between O and Q?

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

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Q39. Select the letter cluster that can replace the question mark (?) in the following series:

RVD, ?, JDL, FHP, BLT

(a) NYG
(b) NZH
(c) MZH
(d) MYG

Q40. Depth of 5 dams A, B, C, D and E is compared. Depth of no two dams is same. Depth of D is more than only 3 dams. Depth of B and C is more than E. Depth of A is less than E. If depth of D is 400, then what is the possible depth of E?

(a) 510
(b) 450
(c) 420
(d) 300

Q41. 6 persons A, B, C, D, E and F are sitting in a row facing north. E is to the immediate left of B. C is the immediate neighbour of A and E. Some persons are to the right of F. D is not at any of the end of the row. Who is at the left end of the row?

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

Q42. 8 boys A, B, C, D, E, F, G and H are sitting in a row facing south. A and H are at extreme ends. E and F are immediate neighbours of B. C is fourth to the left of B. F is to the immediate left of A. D is not the immediate neighbour of C. How many boys are sitting between F and G?

(a) 3
(b) 4
(c) 2
(d) 5

Q43. 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: No student who fails the midterm exam passes the final course. Sarah passed the final course. What can we infer about Sarah's midterm performance?

(a) Sarah got an A on the midterm
(b) Sarah did not fail the midterm exam
(c) Sarah studied hard for the midterm
(d) Sarah retook the midterm

Q44. After interchanging the given two numbers (not digits), what will be the value of the given equation?

2 and 7

$2 \times 4 + 7 - 6 \div 1 = ?$

(a) 28
(b) 24
(c) 32
(d) 38

Q45. By interchanging the given two numbers (not digits) which of the following equation will NOT be correct?

2 and 8

I. $9 \times 8 + 2 - 9 \div 3 = 23$

II. $7 \times 2 + 8 - 4 \div 2 = 56$

(a) Only I
(b) Only II
(c) Both I and II

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(d) Neither I nor II

Q46. In a certain coded language "BUYS" is coded as "XPUN" and "AREA" is coded as "WMAV". How will "ARIA" be coded in the same code language?

(a) YNDU
(b) VUYW
(c) WMEV
(d) VMYW

Q47. In a certain coded language "ROOT" is coded as "MIJN" and "FANS" is coded as "AUIM". How will "JAMS" be coded in the same code language?

(a) GSIK
(b) CSGM
(c) FSFM
(d) EUHM

Q48. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

FT93, BP125, XL157, TH189, ?

(a) QC231
(b) QB221
(c) PD221
(d) OD241

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

TW100, YB150, DG225, IL337.5, ?

(a) NI539.25
(b) NQ513.75
(c) MQ546.75
(d) NQ506.25

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

RW20, US61, XO184, ?, DG1660

(a) AK553
(b) AJ553
(c) BL559
(d) BK559

QUANTITATIVE APTITUDE

Q51. You're given the expression $(\sqrt{3} + \sqrt{2})^2$. What is its exact simplified value?

(a) $3 + 2\sqrt{6}$
(b) $3 + 2\sqrt{2}$
(c) $5 + 2\sqrt{3}$
(d) $5 + 2\sqrt{6}$

Q52. A shopkeeper increases the price of a product by 10%. If the original price was Rs. 500, what is the new price?

(a) Rs. 520
(b) Rs. 530
(c) Rs. 540
(d) Rs. 550

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Q53. A man sold an article at a profit of 25%. Had he sold it for Rs. 60 more, he would have gained 40%. Find the cost price.

(a) Rs. 240
(b) Rs. 400
(c) Rs. 360
(d) Rs. 300

Q54. What will be the simple interest on Rs. 1450 at 9% per annum for 3 years?

(a) Rs. 381.50
(b) Rs. 396.50
(c) Rs. 391.50
(d) Rs. 401.50

Q55. A does 1/3 of work in 10 days, B completes 1/4 of the same in 5 days. Who is more efficient and by what percentage?

(a) A is 10% more efficient
(b) B is 20% more efficient
(c) A is 25% more efficient
(d) B is 50% more efficient

Q56. A security system places motion detectors at the vertices of a regular octagon. What is the central angle between two adjacent detectors?

(a) 50°
(b) 30°
(c) 45°
(d) 60°

Q57. An architect designs a museum cap in the form of a regular right square pyramid. If the slant height is 13 m and each side of the square base is 10 m, what is the vertical height of the pyramid?

(a) 9 m
(b) 12 m
(c) 13 m
(d) 11.5 m

Q58. In an aerospace materials lab, a technician cuts a model of a right circular cone (height 12 cm, base radius 6 cm) horizontally at half its height to form a smaller, similar cone at the tip. What is the volume of the smaller cone formed?

(a) 90π cm³
(b) $18\ \pi$ cm³
(c) $36\ \pi$ cm³
(d) 72π cm³

Q59. A spherical balloon is inflated and its radius increases from 5 cm to 10 cm. What is the percentage increase in the surface area?

(a) 200%
(b) 300%
(c) 400%
(d) 100%

Q60. A circular lawn is surrounded by a path of uniform width 3.5 m. If the total area of the lawn plus path is 2.25 times the area of the lawn alone, find the radius of the lawn. (Use $\pi \approx 3.1416$ and round your answer to one decimal place)

(a) 6.5 m
(b) 7.0 m
(c) 7.5 m
(d) 8.0 m

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Q61. The sum of three numbers is 80 and the sum of the squares of these three numbers is 2,650. If the product of the three numbers is 13,500, then find the sum of the cubes of the given three numbers.

(a) 1,46,500
(b) 87,860
(c) 1,90,750
(d) 1,02,500

Q62. If $3\sin\theta - \cos\theta = 0$ and θ is an acute angle, find the value of $4\tan\theta$.

(a) 4/3
(b) 5/3
(c) 6/3
(d) 7/3

Q63. A pyramid-shaped tent has a square base with a side of 10 m and a slant height of 6 m. If the base is also covered, what is the total area of canvas needed?

(a) 410 m^2
(b) 220 m^2
(c) 360 m^2
(d) 400 m^2

Q64. Convert the recurring decimal 0.363636... into a fraction in simplest form. Then, find the difference between this fraction and 1/3.

(a) 2/9, 3/23
(b) 4/11 ,1/33
(c) 3/17, 5/57
(d) 2/27, 7/43

Q65. If $\sec(\theta) = 2$ and θ is in the first quadrant, what is the value of $\tan(\theta)$?

(a) $\sqrt{3}$
(b) 1
(c) $\sqrt{3}/2$
(d) 2

Q66. A and B invested Rs. 10,000 and Rs. 20,000, respectively, in a business. If the total profit is Rs. 45,000, how much will A receive?

(a) Rs. 15,000
(b) Rs. 20,000
(c) Rs. 25,000
(d) Rs. 30,000

Q67. A sum of 150 is to be divided among A, B, and C. The ratio of A's share to B's share is 3:5, and the ratio of B's share to C's share is 5:7. What is B's share?

(a) Rs. 45
(b) Rs. 50
(c) Rs. 30
(d) Rs. 40

Q68. What is the radian measure of an angle of 150°?

(a) $5\pi/6$
(b) $3\pi/4$
(c) $2\pi/3$
(d) $7\pi/6$

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Q69. A sum of money is invested at a compound interest rate of 8% p.a. for the first year and 10% p.a. for the second year. If the total interest earned is Rs. 1,872, what was the original principal?

(a) Rs. 8,080
(b) Rs. 9,957.45
(c) Rs. 10,540
(d) Rs. 12,330.56

Q70. In a class of 50 students, the marks of 49 students are given, and their average marks are 70. The teacher then added the marks of the 50th student, and the new average became 71. What were the marks of the 50th student?

(a) 100
(b) 110
(c) 120
(d) 125

Q71. A cylindrical container having a radius of 5 cm is filled with water to a height of 10 cm. If a solid metal sphere of radius 3 cm is fully submerged in the water, by how much does the water level rise?

(a) 4.56 cm
(b) 2.68 cm
(c) 1.44 cm
(d) 3.48 cm

Q72. The ratios of alcohol to water in solutions A and B are 1:3 and 3:1, respectively. Solutions A and B are mixed in the ratio 1:1. In 400 ml of the resulting solution, how much water (in ml) should be mixed to obtain a solution in which the ratio of alcohol to water is 1:2?

(a) 100 ml
(b) 50 ml
(c) 200 ml
(d) 150 ml

Q73. If a - 1/a = 2 then calculate the value of a^4 + 1/(a^4)

(a) 25
(b) 34
(c) 36
(d) 48

Q74. A train leaves A at 6 AM at 60 km/h. Another leaves B at 8 AM at 90 km/h toward A. Distance = 540 km. Meeting time?

(a) 11:48:00 AM
(b) 10:48:00 AM
(c) 10:45:00 AM
(d) 11:08:00 AM

Q75. Marked price of an article is 140 percent of the value of discount. Marked price is what percent of the selling price?

(a) 350 percent
(b) 300 percent
(c) 250 percent
(d) 275 percent

GENERAL AWARENESS

Q76. In the Delhi Sultanate, what was the main duty of the "Muqtis" in their assigned iqtas?

(a) To manage high quality of horses
(b) To manage trade and commerce
(c) To construct forts and palaces
(d) To lead military campaigns and maintain law and order

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Q77. Who among the following ruled Kashmir during 980 to 1003?

(a) Mariam-uz-Zamani
(b) Khanzada Begum
(c) Queen Didda
(d) Durgavati

Q78. Which article of the Indian constitution is related with power of High Courts to issue certain writs?

(a) Article 32
(b) Article 227
(c) Article 226
(d) Article 131

Q79. The secretariat of Association of Southeast Asian Nations was set up in _____.

(a) 1962
(b) 1976
(c) 1979
(d) 1988

Q80. Who among the following was honoured with the Padma Vibhushan award 2024?

(a) M Venkaiah Naidu
(b) Ashwin Balachand Mehta
(c) Ram Naik
(d) Sashindran Muthuvel

Q81. Who took oath as Governor of Manipur in January 2025?

(a) Lakshman Prasad Acharya
(b) Ajay Kumar Bhalla
(c) Hari Babu Kambhampati
(d) Arif Mohammed Khan

Q82. In November 2024, which ministry launched the "Scheme for Strengthening the Medical Device Industry"?

(a) Ministry of Commerce and Industry
(b) Ministry of Consumer Affairs, Food and Public Distribution
(c) Ministry of Chemicals and Fertilizers
(d) Ministry of Health and Family Welfare

Q83. Periodic Labour Force Survey (PLFS) is conducted by which institution in India?

(a) NSO
(b) Development Intelligence Unit
(c) Ministry of Labour and Employment
(d) NITI Aayog

Q84. In January 2025, the first organic fisheries cluster of India was launched in which of the following state?

(a) Bihar
(b) Sikkim
(c) Tamil Nadu
(d) Goa

Q85. Who wrote the book "A Suitable Boy" which was published in 1993?

(a) Amit Varma
(b) Vikram Seth
(c) Aruni Kashyap
(d) Ajay K Pandey

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Q86. Who penned the novel "Last Man in Tower"?

(a) Kiran Desai
(b) Aravind Adiga
(c) Arundhati Roy
(d) Shashi Tharoor

Q87. Who was the architect behind the design of the India Gate?

(a) Edwin Lutyens
(b) Le Corbusier
(c) Frank Lloyd Wright
(d) Antoni Gaudi

Q88. "Navroz festival" is celebrated by which religious community in India?

(a) Sikh
(b) Parsi
(c) Muslim
(d) Buddhist

Q89. In the context of launch vehicles of India, which of the following launch vehicle is also known as GSLV MK-III?

(a) ASLV
(b) SLV-3
(c) LVM3
(d) PSLV

Q90. What is the relationship between thrust and pressure for a given area?

(a) Thrust = Pressure - Area
(b) Pressure = Thrust + Area
(c) Pressure = Thrust / Area
(d) Thrust = Pressure / Area

Q91. In the context of reform policy introduced in and after 1991, the investment limit in foreign banks was raised to around _____ as part of financial sector reform.

(a) 20%
(b) 34%
(c) 43%
(d) 74%

Q92. Ujjain expanded under the patronage of which Maratha chief?

(a) Holkar
(b) Gaekwad
(c) Bhonsle
(d) Sindhia

Q93. The revolt of 1857 was started by the sepoys from which of the following places?

(a) Lucknow
(b) Bengal
(c) Meerut
(d) Madras

Q94. Which of the following article of Indian constitution deals with the definition of money bill?

(a) Article 109
(b) Article 110
(c) Article 112
(d) Article 117

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Q95. Which of the following is an example of Non-Ferrous metallic mineral?

(a) Manganese
(b) Iron ore
(c) Bauxite
(d) Chromite

Q96. In India, the operation flood was launched in _____.

(a) 1950
(b) 1957
(c) 1970
(d) 1991

Q97. In the context of Indian economy, which of the following is included in the factor cost?

(a) Production taxes only
(b) Only the payment to factors of production
(c) Product tax only
(d) Both the product and production taxes

Q98. Vessels are part of which of the following plant tissue?

I. Xylem
II. Phloem

(a) Only I
(b) Only II
(c) Both I and II
(d) Neither I nor II

Q99. What is the result of the uneven growth of the tendril in response to touch?

(a) The tendril extends straight upward
(b) The tendril circles around the object and clings to it
(c) The tendril falls off the plant
(d) The tendril withers away

Q100. Which of the following text was written by Banabhatta?

(a) Dhatupatha
(b) Kadambari
(c) Ritusamhara
(d) Raghuvamsha

ANSWER KEY

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

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SOLUTIONS

Q1. Answer: (a) Astounding

The solution is in Hindi. Read it online.

Q2. Answer: (a) Children who does not read books

The correct answer is Option 1.

Key Points

• The error lies in the phrase "Children who does not." The subject "Children" is plural, and the verb must agree with it.

• The correct verb form for a plural subject is "do not" instead of "does not."

• Hence, the corrected phrase should be "Children who do not read books."

• The rest of the sentence is grammatically correct and does not require any changes.

Therefore, the correct answer is Option 1.

Correct Sentence: "Children who do not read books will never be able to receive information in any way."

Additional Information

• Option 2: "will never be able to receive" – This part of the sentence is grammatically correct and does not require any changes.

• Option 3: "information in any way" – This part of the sentence is grammatically correct and does not require any changes.

• Option 4: No correction required – This would be the correct option if the sentence had no errors, but there is an error in part 1 of the sentence.

Q3. Answer: (c) The Nilgiris are the most productive mountains at the south and is too famous.

The correct answer is option 3.

Key Points

To answer this question, let's analyze each sentence to identify the grammatically and contextually incorrect one:

• 1) Every piece sold here is well-designed and crafted to retain its originality.

• This sentence describes the quality of items being sold.

• This sentence is grammatically and contextually correct.

• 2) Folktales are a kind of story that gets passed on from generation to generation.

• This sentence talks about folktales and their transmission over generations.

• This sentence is grammatically and contextually correct.

• 3) The Nilgiris are the most productive mountains at the south and is too famous.

• This sentence discusses the Nilgiris mountains.

• The sentence is erroneous because it contains subject-verb agreement and context issues:

• "The Nilgiris" is plural, so the verb "is" should be replaced with "are."

• "At the south" should be replaced with "in the south" for correct prepositional usage.

• "Too famous" is awkward and should be replaced with "very famous."

• The correct sentence would be: "The Nilgiris are the most productive mountains in the south and are very famous."

• 4) There are not many followers of Gandhiji these days.

• This sentence refers to the decline in followers of Gandhiji.

• This sentence is grammatically and contextually correct.

Additional Information

• Correcting subject-verb agreement errors is crucial to ensure grammatical accuracy.

• Using appropriate prepositions and avoiding awkward phrases helps improve contextual clarity.

Q4. Answer: (b) on

The correct answer is 'on'.

Key Points

• The preposition "on" is commonly used with verbs like "elaborate" to indicate the subject or topic being discussed.

• In the given sentence, the scientist is explaining or expanding "on" the implications of the experiment, which makes "on" the correct preposition.

• Options 1, 3, and 4 are incorrect because they do not fit the context of elaborating on a specific topic.

Therefore, the correct answer is Option 2.

Complete Sentence: "The scientist elaborated on the implications of the experiment during his lecture."

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Additional Information

• Option 1: "over" is incorrect because it does not convey the idea of explaining or expanding on a topic.

• Option 3: "with" is incorrect because it implies association rather than elaboration on a topic.

• Option 4: "for" is incorrect because it suggests purpose or benefit rather than the act of elaboration.

Q5. Answer: (a) 1-A, 2-B

The solution is in Hindi. Read it online.

Q6. Answer: (a) Cholera

The correct answer is option 1.

Key Points

• The question asks to identify the correctly spelt word from the given options.

• The correct spelling is 'Cholera', which is a noun referring to a bacterial disease causing severe diarrhea and dehydration, usually spread in water.

• The other options are misspelled:

• Option 2: Choleraa (Extra 'a' added)

• Option 3: Chorlla (Letters misplaced)

• Option 4: Cyholera (Incorrect letter 'y' added)

Therefore, the correct answer is 'Cholera', option 1.

Additional Information

• Cholera: It is caused by the bacterium Vibrio cholerae. Symptoms include severe dehydration, which can lead to death if untreated.

• Pronunciation: /?k?l.?r.?/

Q7. Answer: (d) No substitution

The correct answer is '4'.

Key Points

• The given sentence is already grammatically correct.

• The phrase "before bed" is appropriate and commonly used to indicate actions completed prior to going to sleep.

• Options 1, 2, and 3 are incorrect as they do not fit grammatically or contextually in the sentence.

Therefore, the correct answer is Option 4.

Complete Sentence: "She always completes her homework before bed."

Additional Information

• Option 1: "at bed" is incorrect as "at bed" is not a valid phrase in English.

• Option 2: "at bed" is the same as Option 1 and also incorrect for the same reason.

• Option 3: "by bed" is incorrect as it changes the meaning and does not convey the intended action of completing homework prior to going to sleep.

Q8. Answer: (b) Prevent him from making

The correct answer is '2' i.e. 'Prevent him from making'.

Key Points

• The phrase "prevent him to making" is grammatically incorrect. The correct preposition to use after "prevent" is "from."

• The correct structure is "prevent someone from doing something."

• Option 1 ("prevent him for making") and Option 3 ("prevent him in making") are incorrect as the prepositions "for" and "in" do not follow the verb "prevent" in this context.

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

Therefore, the correct answer is Option 2.

Complete Sentence: "We must prevent him from making the same mistake again."

Additional Information

• Option 1: "Prevent him for making" is incorrect because "for" is not the correct preposition to follow "prevent."

• Option 3: "Prevent him in making" is incorrect because "in" does not work with the verb "prevent" in this context.

• Option 4: "No substitution" is incorrect as the original sentence is grammatically incorrect.

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Q9. Answer: (a) The doctor said that his father was going to recover within the following two days.

The correct answer is Option 1.

Key Points

• Indirect Speech: The doctor said that his father was going to recover within the following two days.

• Key Conversions:

• Direct to Indirect Speech:

• The reporting verb "said" remains unchanged as it is a statement.

• The present continuous tense "is going" is converted to the past continuous tense "was going" to maintain the sequence of tenses.

• The time expression "next two days" is changed to "following two days" as per the rules of indirect speech.

• Pronoun Changes:

• The pronoun "your" is changed to "his" to reflect the perspective of the reported speech.

• Punctuation and Format:

• Quotation marks are removed in indirect speech.

• The sentence is restructured to follow the rules of indirect narration.

Therefore, the correct answer is Option 1.

Correct Sentence: The doctor said that his father was going to recover within the following two days.

Additional Information

• Option 2: The doctor said that his father is going to recover within the following two days.

• Incorrect because the present continuous "is going" is not changed to the past continuous "was going," violating the rules of indirect speech.

• Option 3: The doctor said that his father is going to recover within the next two days.

• Incorrect because the present continuous tense "is going" is not converted to the past continuous, and "next two days" is not converted to "following two days."

• Option 4: The doctor said that his father was going to recover within the previous two days.

• Incorrect because "previous two days" changes the time reference and alters the meaning of the statement.

Q10. Answer: (c) Someone has given the presentation.

The correct answer is Option 3.

Key Points

• Active voice sentences follow the structure: Subject + Verb + Object.

• Passive voice sentences follow the structure: Object + Auxiliary Verb (be) + Past Participle + by + Subject.

• The given sentence is in the passive voice: "The presentation has been given."

• To convert it into active voice, identify the implied subject (someone) and rewrite it as: "Someone has given the presentation."

• Ensure the tense remains the same (present perfect) during the transformation.

Therefore, the correct answer is Option 3.

Correct Sentence: "Someone has given the presentation."

Additional Information

• Option 1: "The presentation was given." – Incorrect because the tense changes to past simple.

• Option 2: "They had given the presentation." – Incorrect because the tense changes to past perfect.

• Option 4: "Someone gives the presentation." – Incorrect because the tense changes to present simple.

Q11. Answer: (c) He said to her, "The documents had already been signed before you called."

The correct answer is Option 3.

Key Points

• Indirect Speech: He told her that the documents had already been signed before she had called.

• Key Conversions:

• Reporting verb:

• The reporting verb "told" remains in the past tense, maintaining the narrative flow.

• Tense Conversion:

• In indirect speech, "had already been signed" is in past perfect tense, which remains unchanged in direct speech as "had already been signed."

• "She had called" changes to "you called," converting the indirect reference to a direct one.

• Pronoun Changes:
• "Her" changes to "you" to match the direct speech perspective.
• The sentence structure aligns with the conversation between "he" and "her."
• Punctuation:
• Direct speech is enclosed in quotation marks.
• Sentence starts with a capital letter and ends with a period.

Therefore, the correct answer is Option 3.

Correct Sentence: "He said to her, ‘The documents had already been signed before you called.’"

Additional Information

• Option 1: "He said, ‘The documents were already signed before you called.’"
• The tense "were already signed" is incorrect as it changes the meaning from past perfect to past simple.
• Option 2: "He said to her, ‘The documents have already been signed before you had called.’"
• The use of "have already been signed" in present perfect tense is incorrect for a past action.
• Option 4: "He told her, ‘The documents have already been signed before you have called.’"
• The tense "have already been signed" and "have called" are incorrect for the context.

Q12. Answer: (c) to

The correct answer is '3' i.e. 'to'.

Key Points

• The word "prone" is often followed by the preposition "to."
• It indicates susceptibility or vulnerability to something, especially something undesirable.
• Options 1, 2, and 4 are grammatically incorrect or do not fit the context.

Therefore, the correct answer is Option 3.

Complete Sentence: "This area is prone to flooding during the monsoon."

Additional Information

• Option 1: "with" is incorrect because "prone with" is not a valid prepositional phrase.
• Option 2: "for" is incorrect because "prone for" does not convey the meaning of susceptibility or vulnerability.
• Option 4: "of" is incorrect because "prone of" is not a valid collocation.

Q13. Answer: (c) Her decision will have been accepted by her family by next year.

The correct answer is Option 3.

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: "Her family will have accepted her decision by next year."
• To convert to passive voice: Place the object "her decision" at the beginning.
• Change the active verb form "will have accepted" to "will have been accepted" (future perfect passive).
• Keep the phrase "by her family" to indicate the original subject performing the action.
• Ensure the time phrase "by next year" remains at the end of the sentence for proper context.

Therefore, the correct answer is Option 3.

Correct Sentence: "Her decision will have been accepted by her family by next year."

Additional Information

• Option 1: "Her decision will be accepted by her family by next year." – Incorrect tense (future simple passive).
• Option 2: "Her decision will be being accepted by her family by next year." – Incorrect tense (future continuous passive).
• Option 4: "Her decision will have being accepted by her family by next year." – Incorrect grammar (misuse of "being").

Q14. Answer: (a) The government will implement the new environmental policy with immediate effect.

The correct answer is Option 1.

Key Points

• Passive voice structure: The subject of the active voice sentence becomes the object of the passive voice sentence, and the object becomes the subject.
• The given sentence is already in the passive voice: "The new environmental policy will be implemented by the government with immediate effect."
• To convert this to active voice, the subject becomes "The government," and the object becomes "the new environmental policy."

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• The correct active voice structure is: "The government will implement the new environmental policy with immediate effect."

• The verb "will be implemented" changes to "will implement" to match the active voice construction.

Therefore, the correct answer is Option 1.

Correct Sentence: "The government will implement the new environmental policy with immediate effect."

Additional Information

• Option 2: "The government will have implemented the new environmental policy with immediate effect." – Incorrect tense (future perfect).

• Option 3: "The government has implemented the new environmental policy with immediate effect." – Incorrect tense (present perfect).

• Option 4: "The government is implementing the new environmental policy with immediate effect." – Incorrect tense (present continuous).

Q15. Answer: (c) Adjective clause

The correct answer is 'Option 3'.

Key Points

• Option 3: Adjective clause

• An adjective clause (or relative clause) is used to modify a noun or pronoun. In this sentence, the clause "where knowledge is not merely recited but operationalized" modifies the noun "scenarios."

• Since it provides more information about the specific type of scenarios being discussed, it functions as an adjective.

• Option 1: Adverbial clause of place

• This is incorrect. While it begins with "where," an adverbial clause of place modifies a verb, adjective, or adverb to tell us where an action happens (e.g., "Put it where I can see it"). Here, it identifies a noun.

• Option 2: Noun clause

• This is incorrect. A noun clause functions as a subject or object (e.g., "I know where you are"). In the passage, the clause does not act as a noun.

• Option 4: Absolute phrase

• This is incorrect. An absolute phrase consists of a noun and a participle and modifies the entire sentence (e.g., "His heart racing, he ran"). This clause has a subordinating conjunction and a finite verb.

Therefore, the correct answer is Option 3.

Additional Information

• Relative Adverbs: The word "where" is a relative adverb. When a relative adverb introduces a clause that modifies a noun (like "scenarios," "place," or "house"), the entire clause is classified as an adjective clause.

• Context: The passage uses this clause to define the "authentic scenarios" of skill-based education, contrasting them with traditional theoretical learning.

Q16. Answer: (d) Active voice

The correct answer is 'Option 4'.

Key Points

• Option 4: Active voice

• In the active voice, the subject of the sentence performs the action. In the phrase "has engendered a workforce...", the subject (found earlier in the sentence: "This schism") is the one performing the action of "engendering" (creating/producing).

• The structure follows: Subject + Verb (has engendered) + Object (a workforce).

• Option 2: Passive voice

• This is incorrect. For the sentence to be in the passive voice, the object would become the subject, and it would require a form of the verb "to be" + past participle (e.g., "A workforce has been engendered by this schism").

• Option 1: Middle voice

• This is incorrect. The middle voice (less common in English) occurs when the subject is both the doer and the receiver of the action, or when an active form has a passive meaning (e.g., "The cake cuts easily"). This sentence clearly has a distinct object being acted upon.

• Option 3: Causative voice

• This is incorrect. The causative voice indicates that the subject causes someone else to do something (e.g., "I had the workforce trained"). "Engendered" here is a direct action by the subject.

Therefore, the correct answer is Option 4.

Additional Information

• Tense: The verb phrase "has engendered" is in the Present Perfect Tense.

• Vocabulary: To "engender" means to cause or give rise to a feeling, situation, or condition. In this context, the educational "schism" is creating a specific type of workforce.

• Active vs. Passive: Using the active voice here makes the writing more direct and emphasizes the "schism" as the primary cause of the problem.

Q17. Answer: (b) State of being outdated

The solution is in Hindi. Read it online.

Q18. Answer: (a) Bridge the gap

The solution is in Hindi. Read it online.

Q19. Answer: (c) It bridges the gap between learning and employability

The correct answer is 'Option 3'.

Key Points

• Option 3: It bridges the gap between learning and employability.

• The passage identifies a "schism between academic instruction and workplace exigencies" in traditional pedagogy. Skill-based education is described as a "systemic imperative" that "reconciles the persistent dichotomy between learning and livelihood."

• Option 1: It reduces the duration of education.

• This is incorrect. The passage mentions that skill-oriented systems encourage "lifelong learning," but it does not claim that the overall duration of the educational period is shortened.

• Option 2: It eliminates the need for academic knowledge.

• This is incorrect. The text states that in skill-based education, knowledge is "operationalized" rather than "merely recited," suggesting that knowledge is still used but in a more practical, applied way.

• Option 4: It focuses solely on manual skills.

• This is incorrect. The passage highlights that skill-based education fosters "technological fluency," "communication," and "critical soft skills," which go beyond simple manual labor.

Therefore, the correct answer is Option 3.

Additional Information

• Dichotomy: A division or contrast between two things that are or are represented as being opposed or entirely different. The passage aims to bridge the dichotomy between theory and practice.

• Workplace Exigencies: The urgent requirements or needs of the modern professional environment.

• Democratization: The passage notes that skill-based education makes opportunities accessible based on "demonstrable capability" rather than just "academic prestige."

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

The correct answer is Option 2.

Key Points

• The sequence begins with Sentence S, as it introduces the initial step of extracting raw data from multiple sources:

• "She wrote a script to extract raw data from multiple sources."

• Sentence Q follows, describing how the raw data was processed and transformed to make it usable:

• "She created a series of functions to clean and transform the data, making it usable."

• Sentence R is next, as it logically explains the creation of a dashboard to visualize the insights derived from the cleaned data:

• "She developed a dashboard to visualise the insights and trends hidden in the data."

• Sentence P concludes the paragraph by describing how the findings were presented to her team:

• "She presented the findings to her team, revealing new patterns in the business."

• The correct sequence is S, Q, R, P.

Coherent paragraph after rearrangement:

"She wrote a script to extract raw data from multiple sources. She created a series of functions to clean and transform the data, making it usable. She developed a dashboard to visualise the insights and trends hidden in the data. She presented the findings to her team, revealing new patterns in the business."

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

The correct answer is Option 3.

Key Points

• The sentences need to be arranged in a logical and coherent sequence to form a meaningful paragraph.

• Sentence P is the first sentence as it introduces the central idea about the group of scientists looking for a new exoplanet:

• "The group of scientists was looking for a new planet outside of our solar system, known as an exoplanet."
• Sentence Q follows as it explains the method the scientists used to search for the exoplanet:
• "They observed the far-off star using a powerful telescope in search of a telltale dimming of its brightness."
• Sentence S is the third sentence as it elaborates on the significance of the dimming of the star's brightness:
• "This slight dimming would indicate a planet passing in front of the star."
• Sentence R is the fourth as it concludes the paragraph by stating the discovery of the new planet:
• "They found a new planet, establishing its existence through a series of follow-up observations."
• The correct sequence is P, Q, S, R.

Coherent paragraph after rearrangement:

"The group of scientists was looking for a new planet outside of our solar system, known as an exoplanet. They observed the far-off star using a powerful telescope in search of a telltale dimming of its brightness. This slight dimming would indicate a planet passing in front of the star. They found a new planet, establishing its existence through a series of follow-up observations."

Q22. Answer: (c) Generous

The solution is in Hindi. Read it online.

Q23. Answer: (a) Awake

The solution is in Hindi. Read it online.

Q24. Answer: (d) chiaroscuro

The correct answer is option 4.

Key Points

• The correct spelling of the word is 'chiaroscuro'.
• The term chiaroscuro refers to the treatment of light and shade in drawing and painting. It is used to create a dramatic effect by emphasizing contrasts between light and dark areas.
• This word comes from the Italian words "chiaro" (light) and "scuro" (dark).

Correct sentence: The author's prose was filled with chiaroscuro imagery.

Additional Information

• The other options are misspelled versions of the word:
• Option 1: chiaroscuoro - Incorrect due to extra "o".
• Option 2: chairoscuro - Incorrect due to misplaced "i".
• Option 3: chairoscouro - Incorrect due to extra "u".
• Always ensure correct spelling, especially for borrowed words, by referring to reliable dictionaries or language resources.

Q25. Answer: (b) Hatred

The solution is in Hindi. Read it online.

Q26. Answer: (b) 30

The logic followed here is:

Position of C from the left = 11th

Position of C from the right = 20th

So,

Total number of people = Position of C from the left + Position of C from the right - 1

= 11 + 20 - 1

= 31 - 1 = 30.

Hence, the correct answer is "Option 2".

Q27. Answer: (b) Sister

The boy says, "She is the only daughter of the only child of my paternal grandmother."

Now,

1) "Paternal Grandmother" - This refers to the mother of the boy's father.

2) "Only child of my paternal grandmother" - The only child of a person's paternal grandmother is their Father.

3) "Only daughter of the only child" - This translates to the "Only daughter of my father".

4) Final Relationship - The only daughter of the boy's father is the boy's Sister.

Therefore, the girl is the Sister of the boy.

Hence, the correct answer is "Option 2".

Q28. Answer: (a) Only conclusion I follows.

Given Statements:

Some pens are pencils.

All pencils are erasers.

The least possible Venn diagram for the given statement is:

Conclusions:

I. Some pens are erasers - True (Since some pens are pencils and all pencils are erasers, the part of pens that are pencils must also be erasers).

II. No pen is an eraser - False (This contradicts the established fact that a portion of pens definitely overlaps with erasers).

So, Only conclusion I follows.

Hence, the correct answer is "Option 1".

Q29. Answer: (b) 6

The logic followed here is:

Total number of bicycles in the row = 33

Position of Bicycle R from the left = 10th

Position of Bicycle S from the right = 17th

To find the bicycles between R and S:

Bicycles between R and S = Total - (Position of R from left + Position of S from right)

= 33 - (10 + 17)

= 33 - 27

= 6.

Hence, the correct answer is "Option 2".

Q30. Answer: (b) 18

The logic followed here is:

Total number of books on the shelf = 65

Position of Book C from the left = 28th

Position of Book D from the right = 19th

To find the number of books between C and D:

Books between C and D = Total - (Position of C from left + Position of D from right)

= 65 - (28 + 19)

= 65 - 47

= 18.

Hence, the correct answer is "Option 2".

Q31. Answer: (b) 19

The logic followed here is:

Thus, the missing term in the series is 19.

Hence, the correct answer is "Option 2";

Q32. Answer: (d) -175

The logic followed here is:

Thus, the missing term in the series is -175.

Hence, the correct answer is "Option 4";

Q33. Answer: (c) 802

The logic followed here is:

Thus, the missing term in the series is 802.

Hence, the correct answer is "Option 3";

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Q34. Answer: (b) 1200

The logic followed here is:

Logic: (First number × Second number) × 5 = Resulting number

For: 24 # 30

→ (24 × 30) × 5

→ 720 × 5 = 3600

For: 22 # 8

→ (22 × 8) × 5

→ 176 × 5 = 880

Similarly, for 24 # 10:

→ (24 × 10) × 5

=> 240 × 5 = 1200

Hence, the correct answer is "Option 2".

Q35. Answer: (d) 658

The logic followed for the second image is:

Logic: (First number + (Second number ÷ Third number)) = Resulting number

Case 1: 163 $ 448 ; 16

→ 163 - (448 ÷ 16)

→ 163 - 28 = 135

Case 2: 857 $ 260 ; 20

→ 857 - (260 ÷ 20)

→ 857 - 13 = 844

Similarly, for 686 $ 476 ; 17:

→ 686 - (476 ÷ 17)

=> 686 - 28 = 658

Hence, the correct answer is "Option 4".

Q36. Answer: (a) 26

Given:

12 # 3 % 2 ! 8 = ?

By using the BODMAS rule:

By, decoding the given symbols we get.

SYMBOLS	MEANING
%	÷
!	•
?	•
#	×

Substituting the given operator in the given expression:

=> 12 # 3 % 2 ! 8

=> 12 × (3 ÷ 2) + 8

=> 12 × 1.5 + 8

=> 18 + 8

=> 26

Hence, the correct answer is 'Option 1'.

Q37. Answer: (c) Both conclusions I and II follow

Given Statements:

All Night are Dark.

Some Night are Calm.

No Storm is Calm.

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The least possible Venn diagram for the given statements is:

Conclusions:

I. Some Dark are Calm - True (Since all Night are Dark and some Night are Calm, the overlapping portion of Night and Calm is also inside the Dark circle).

II. Some Night are not Storm - True (The part of Night that is Calm cannot be Storm, because no Storm is Calm).

So, Both conclusions I and II follow.

Hence, the correct answer is "Option 3".

Q38. Answer: (a) 3

Given: Six boxes L, M, N, O, P, and Q are placed one above another. The bottommost box is 1 and the topmost box is 6.

1) Three boxes are placed between P and M.

2) M is placed just below Q.

3) Q is not the topmost box (Q cannot be on floor 6).

Floor	Box (case - I)	Box (Case - II)
6 (Top)		P
5	P	
4		
3		Q
2	Q	M
1 (Bottom)	M	

4) N is placed just above L.

5) L is placed below O.

Case II is not possible.

So, from Case I

Floor	Box (Case - I)
6 (Top)	O
5	P
4	N
3	L
2	Q
1 (Bottom)	M

O is on Floor 6 and Q is on Floor 2. The boxes between them are P (5), N (4), and L (3).

There are 3 boxes between O and Q.

Hence, the correct answer is "Option 1".

Q39. Answer: (b) NZH

The logic followed here is:

Thus, the missing letter cluster in the series is NZH.

Hence, the correct answer is "Option 2".

Q40. Answer: (d) 300

Given: Five dams A, B, C, D, and E are compared based on their depths.

1) Depth of D is more than only 3 dams.

Structure: > D > > >

2) Depth of B and C is more than E.

3) Depth of A is less than E.

(B, C) > E > A.

Arranging all dams:

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(B/C) > D > (C/B or E)

Sequence: (B or C) > D > (C or B) > E > A

Analyzing the depth:

It is given that the depth of D = 400.

In any valid configuration where D is the 2nd deepest, E is either the 4th deepest.

E must be at a position lower than D.

Therefore, Depth of E < Depth of D.

Depth of E < 400.

6) Evaluating the options:

1) 510 (Greater than 400)

2) 450 (Greater than 400)

3) 420 (Greater than 400)

4) 300 (Less than 400)

The only possible depth for E that is less than 400 is 300.

Hence, the correct answer is "Option 4".

Q41. Answer: (a) F

Given: 6 persons A, B, C, D, E and F are sitting in a row facing north.

E is to the immediate left of B.

C is the immediate neighbour of A and E.

Some persons are to the right of F.

D is not at any of the end of the row.

So, F is at the left end of the row.

Hence, the correct answer is "Option 1".

Q42. Answer: (a) 3

Given: 8 boys A, B, C, D, E, F, G and H are sitting in a row facing south.

A and H are at extreme ends.

F is to the immediate left of A.

E and F are immediate neighbours of B.

C is fourth to the left of B.

D is not the immediate neighbour of C.

And G sits at the remaining place.

So, 3 boys are sitting between F and G.

Hence, the correct answer is "Option 1".

Q43. Answer: (b) Sarah did not fail the midterm exam

Given Statement: No student who fails the midterm exam passes the final course. Sarah passed the final course.

Now,

Inferences:

1. Sarah got an A on the midterm - Not Inferred (The statement only tells us she did not fail; it does not provide specific details about her exact grade.)

2. Sarah did not fail the midterm exam - Logically Inferred (If failing the midterm makes it impossible to pass the course, and Sarah passed the course, she must not have failed the midterm via Modus Tollens.)

3. Sarah studied hard for the midterm - Not Inferred (While likely, the statement describes the result of the exam, not the effort or study habits of the student.)

4. Sarah retook the midterm - Not Inferred (There is no information provided regarding retakes or administrative policies in the given statement.)

Here, Only statement 2 is logically inferred.

Hence, the correct answer is "Option 2".

Q44. Answer: (b) 24

The given numbers to be interchanged: 2 and 7

The original equation: 2 × 4 + 7 − 6 ÷ 1 = ?

After interchanging the numbers 2 and 7, the new equation is:
7 × 4 + 2 − 6 ÷ 1 = ?
Now, we solve the equation following the BODMAS rule:
7 × 4 + 2 − 6 ÷ 1
=> 7 × 4 + 2 − 6
=> 28 + 2 − 6 = 24
Hence, the correct answer is "Option 2".

Q45. Answer: (b) Only II

The given numbers to be interchanged: 2 and 8
Equation I: 9 × 8 + 2 − 9 ÷ 3 = 23
After interchanging the numbers 2 and 8, the new equation is:
9 × 2 + 8 − 9 ÷ 3 = 23
Now, we solve the equation following the BODMAS rule:
9 × 2 + 8 − 9 ÷ 3
=> 9 × 2 + 8 − 3
=> 18 + 8 − 3 = 23
23 = 23 (Correct)
Equation II: 7 × 2 + 8 − 4 ÷ 2 = 56
After interchanging the numbers 2 and 8, the new equation is:
7 × 8 + 2 − 4 ÷ 8 = 56
Now, we solve the equation following the BODMAS rule:
7 × 8 + 2 − 0.5
=> 7 × 8 + 2 − 0.5
=> 56 + 2 − 0.5 = 56
57.5 = 56 (Incorrect)
Since equation I are correct after the interchange, only II is incorrect.
Hence, the correct answer is "Option 2".

Q46. Answer: (c) WMEV

The logic followed here is.
For BUYS : XPUN
For AREA : WMAV
Similarly for ARIA : ?
Hence, the correct answer is "Option 3".

Q47. Answer: (d) EUHM

Given:
The logic followed here is.
For ROOT : MIJN
For FANS : AUIM
Similarly, for JAMS : ?
Hence, the correct answer is "Option 4".

Q48. Answer: (c) PD221

The logic followed here is:
Thus, the missing term in the series is PD221.
Hence, the correct answer is "Option 3".

Q49. Answer: (d) NQ506.25

The logic followed here is:
Thus, the missing term in the series is NQ506.25.
Hence, the correct answer is Option 4.

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Q50. Answer: (a) AK553

The logic followed here is:

Thus, the missing term in the series is AK553.

Hence, the correct answer is Option 1.

Q51. Answer: (d) 5 + 2√6

Given:

$(\sqrt{3} + \sqrt{2})^2$

Formula Used:

$(a + b)^2 = a^2 + b^2 + 2ab$

Calculation:

$\Rightarrow (\sqrt{3} + \sqrt{2})^2 = 3 + 2 + 2\sqrt{6}$

$\Rightarrow = 5 + 2\sqrt{6}$

Therefore The correct answer is $5 + 2\sqrt{6}$.

Q52. Answer: (d) Rs. 550

Given:

Original price = Rs. 500

Increase percentage = 10%

Formula Used:

New price = Original price + (Original price × Increase percentage ÷ 100)

Calculation:

=> Increase amount = Rs. 500 × 10 ÷ 100

=> Increase amount = Rs. 50

=> New price = Rs. 500 + Rs. 50

=> New price = Rs. 550

Therefore The correct answer is Rs. 550.

Q53. Answer: (b) Rs. 400

Given:

Profit 1 = 25%

Profit 2 = 40%

Difference in selling price = 60

Formula Used:

Selling Price = CP × (1 + profit%)

Calculation:

=> Let CP = 100

=> SP1 = 125

=> SP2 = 140

=> Difference = 140 − 125 = 15

=> 15 corresponds to 60

=> 1 corresponds to 60 ÷ 15 = 4

=> CP = 100 × 4

=> CP = 400

Therefore The correct answer is 400.

Q54. Answer: (c) Rs. 391.50

Given:

Principal (P) = Rs. 1450

Rate of Interest (R) = 9% per annum

Time (T) = 3 years

Formula Used:

Simple Interest (SI) = (P × R × T) ÷ 100

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Calculation:
=> SI = (1450 × 9 × 3) ÷ 100
=> SI = (1450 × 27) ÷ 100
=> SI = 39150 ÷ 100
=> SI = Rs. 391.50
Therefore The correct answer is Rs. 391.50.

Q55. Answer: (d) B is 50% more efficient

Given:
A does 1 ÷ 3 work in 10 days
B does 1 ÷ 4 work in 5 days
Formula Used:
Efficiency prop. to Work ÷ Time
Calculation:
=> LCM of 3 and 4 = 12
=> Total work = 12 units
=> A does 4 units in 10 days
=> A's efficiency = 4 ÷ 10 = 2 ÷ 5
=> B does 3 units in 5 days
=> B's efficiency = 3 ÷ 5
=> Compare: (3 ÷ 5) − (2 ÷ 5) = 1 ÷ 5
=> Percentage difference = (1 ÷ 5) ÷ (2 ÷ 5) × 100
=> = (1 ÷ 2) × 100
=> = 50%
Therefore The correct answer is B is 50% more efficient.

Q56. Answer: (c) 45°

Given:
Number of sides = 8
Formula Used:
Central angle of regular polygon = 360° ÷ Number of sides
Calculation:
=> Central angle = 360 ÷ 8 = 45°
Therefore The correct answer is 45°.

Q57. Answer: (b) 12 m

Given:
Slant height = 13 m
Side of base = 10 m
Formula Used:
$l^2 = h^2 + (a ÷ 2)^2$
Calculation:
=> $13^2 = h^2 + (10 ÷ 2)^2$
=> $169 = h^2 + 5^2$
=> $169 = h^2 + 25$
=> $h^2 = 169 − 25 = 144$
=> h = 12 m
Therefore The correct answer is 12 m.

Q58. Answer: (b) 18 π cm^3

Given:
Height of cone = 12 cm
Radius of cone = 6 cm

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Height of smaller cone = 6 cm
Formula Used:
Volume of cone = (1 ÷ 3) × π × r² × h
For similar solids: (r2 ÷ r1) = (h2 ÷ h1)
Calculation:
=> Ratio = 6 ÷ 12 = 1 ÷ 2
=> Radius of smaller cone = 6 × (1 ÷ 2) = 3 cm
=> Volume = (1 ÷ 3) × π × 3² × 6
=> = (1 ÷ 3) × π × 9 × 6
=> = 18π cm³
Therefore The correct answer is 18π cm³.

Q59. Answer: (b) 300%

Given:
Initial radius = 5 cm
Final radius = 10 cm
Formula Used:
Surface area of sphere = 4 × π × r²
Percentage increase = ((New − Original) ÷ Original) × 100
Calculation:
=> Original surface area = 4 × π × 5²
=> Original surface area = 4 × π × 25 = 100π
=> New surface area = 4 × π × 10²
=> New surface area = 4 × π × 100 = 400π
=> Increase = 400π − 100π = 300π
=> Percentage increase = (300π ÷ 100π) × 100
=> Percentage increase = 3 × 100
=> Percentage increase = 300%
Therefore The correct answer is 300%.

Q60. Answer: (b) 7.0 m

Given:
Width of path = 3.5 m
Total area = 2.25 × area of lawn
Formula Used:
Area of circle = π × r²
Calculation:
=> Let radius of lawn = r
=> Outer radius = r + 3.5
=> Total area = π × (r + 3.5)²
=> Lawn area = π × r²
=> π × (r + 3.5)² = 2.25 × π × r²
=> (r + 3.5)² = 2.25 × r²
=> r² + 7r + 12.25 = 2.25r²
=> 7r + 12.25 = 1.25r²
=> 1.25r² − 7r − 12.25 = 0
=> 5r² − 28r − 49 = 0
=> r = (28 + √(28² + 4 × 5 × 49)) ÷ 10
=> r = (28 + √(784 + 980)) ÷ 10
=> r = (28 + √1764) ÷ 10
=> r = (28 + 42) ÷ 10
=> r = 70 ÷ 10

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=> r = 7.0

Therefore The correct answer is 7.0 m.

Q61. Answer: (d) 1,02,500

Given:

Sum of numbers = 80

Sum of squares = 2650

Product = 13500

Formula Used:

$a^3 + b^3 + c^3 = (a + b + c)^3 - 3(a + b + c)(ab + bc + ca) + 3abc$

$a^2 + b^2 + c^2 = (a + b + c)^2 - 2(ab + bc + ca)$

Calculation:

a2 + b2 + c2 = (a + b + c)2 − 2(ab + bc + ca)

=> $2650 = 80^2 - 2(ab + bc + ca)$

=> $2650 = 6400 - 2(ab + bc + ca)$

=> $2(ab + bc + ca) = 6400 - 2650 = 3750$

=> $ab + bc + ca = 1875$

=> $a^3 + b^3 + c^3 = 80^3 - 3 \times 80 \times 1875 + 3 \times 13500$

=> = 512000 − 450000 + 40500

=> = 102500

Therefore The correct answer is 102500.

Q62. Answer: (a) 4/3

Given:

3sinθ − cosθ = 0

Formula Used:

tanθ = sinθ ÷ cosθ

Calculation:

=> 3sinθ = cosθ

=> sinθ ÷ cosθ = 1 ÷ 3

=> tanθ = 1 ÷ 3

=> 4tanθ = 4 × (1 ÷ 3)

=> 4tanθ = 4 ÷ 3

Therefore The correct answer is 4 ÷ 3.

Q63. Answer: (b) 220 m²

Given:

Side of square base = 10 m

Slant height = 6 m

Formula Used:

Lateral surface area of square pyramid = (1 ÷ 2) × perimeter of base × slant height

Area of square base = side²

Calculation:

=> Perimeter of base = 4 × 10 = 40

=> Lateral area = (1 ÷ 2) × 40 × 6

=> Lateral area = 20 × 6 = 120

=> Base area = $10^2 = 100$

=> Total area = 120 + 100

=> Total area = 220

Therefore The correct answer is 220 m².

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Q64. Answer: (b) 4/11 ,1/33

Given:

Decimal = 0.363636...

Fraction to compare = 1 ÷ 3

Formula Used:

Let x = recurring decimal

$10^n x - x$ to eliminate repeating part

Calculation:

=> Let x = 0.363636...

=> 100x = 36.363636...

=> 100x − x = 36.363636... − 0.363636...

=> 99x = 36

=> x = 36 ÷ 99

=> x = 4 ÷ 11

=> Difference = (4 ÷ 11) − (1 ÷ 3)

=> Difference = (12 − 11) ÷ 33

=> Difference = 1 ÷ 33

Therefore The correct answer is 1 ÷ 33.

Q65. Answer: (a) √3

Given:

secθ = 2

Formula Used:

$\tan^2\theta = \sec^2\theta - 1$

Calculation:

=> $\tan^2\theta = 2^2 - 1$

=> $\tan^2\theta = 4 - 1 = 3$

=> $\tan\theta = \sqrt{3}$

Therefore The correct answer is √3.

Q66. Answer: (a) Rs. 15,000

Shortcut Trick

Ratio of investments A : B = 10,000 : 20,000 = 1 : 2

Total profit units = 1 + 2 = 3 units

Given, 3 units = Rs. 45,000

A's share (1 unit) = 45,000 ÷ 3 = Rs. 15,000

Therefore The correct answer is Rs. 15,000.

Alternate Method

Given:

Investment of A = Rs. 10,000

Investment of B = Rs. 20,000

Total Profit = Rs. 45,000

Formula Used:

Profit Ratio = (Capital_A × Time_A) : (Capital_B × Time_B)

Since the time period is not mentioned, it is assumed to be the same for both.

=> Profit Ratio (A : B) = 10,000 : 20,000 = 1 : 2

=> Total Ratio = 1 + 2 = 3

=> A's Share = (A's Ratio ÷ Total Ratio) × Total Profit

=> A's Share = (1 ÷ 3) × 45,000

=> A's Share = Rs. 15,000

Therefore The correct answer is Rs. 15,000.

Additional Information

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Partnership Profit Sharing Rule

Profit is always distributed in the ratio of the product of capital and the time for which the capital is invested: P1:P2 = C1T1:C2T2.

Simple vs Compound Partnership

In a simple partnership, all partners invest for the same time. In a compound partnership, partners invest for different durations.

Working vs Sleeping Partner

A working partner manages the business and may receive a salary or extra profit share, while a sleeping partner only invests money.

Q67. Answer: (b) Rs. 50

Given:

Total sum = 150

A : B = 3 : 5

B : C = 5 : 7

Formula Used:

Convert ratios to a common ratio

Share = (individual ratio ÷ total ratio) × total sum

Calculation:

=> A : B = 3 : 5

=> B : C = 5 : 7

=> Combined ratio = 3 : 5 : 7

=> Total ratio = 3 + 5 + 7 = 15

=> B's share = (5 ÷ 15) × 150

=> B's share = 50

Therefore The correct answer is 50.

Q68. Answer: (a) 5π/6

Given:

Angle in degrees: 150°

Correct option: 5π/6

Formula Used:

Radians = Degrees × (π/180)

Calculation:

=> Radians = 150 × (π/180)

=> Radians = (150 ÷ 180) × π

=> Radians = (5/6) × π

=> Radians = 5π/6

Therefore The correct answer is 5π/6.

Q69. Answer: (b) Rs. 9,957.45

Given:

Rate1 = 8%

Rate2 = 10%

Total interest = 1872

Formula Used:

Amount = Principal × (1 + r1 ÷ 100) × (1 + r2 ÷ 100)

Interest = Amount − Principal

Calculation:

=> Amount = Principal × 1.08 × 1.10

=> Amount = Principal × 1.188

=> Interest = Principal × 1.188 − Principal

=> Interest = Principal × 0.188

=> 0.188 × Principal = 1872

=> Principal = 1872 ÷ 0.188

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=> Principal = 9,957.45

Therefore The correct answer is 9,957.45.

Q70. Answer: (c) 120

Given:

Number of students = 49

Average of 49 students = 70

New number of students = 50

New average = 71

Formula Used:

Total marks = Average × Number of students

Calculation:

=> Total marks of 49 students = 70 × 49 = 3430

=> Total marks of 50 students = 71 × 50 = 3550

=> Marks of 50th student = 3550 − 3430

=> Marks of 50th student = 120

Therefore The correct answer is 120.

Q71. Answer: (c) 1.44 cm

Given:

Radius of cylinder = 5 cm

Initial height of water = 10 cm

Radius of sphere = 3 cm

Formula Used:

Volume of sphere = (4 ÷ 3) × π × r^3

Volume = Base area × increase in height

Base area of cylinder = π × R^2

Calculation:

=> Volume of sphere = (4 ÷ 3) × π × 3^3

=> Volume = (4 ÷ 3) × π × 27

=> Volume = 36π

=> Base area = π × 5^2 = 25π

=> Increase in height = 36π ÷ 25π

=> Increase in height = 36 ÷ 25

=> Increase in height = 1.44

Therefore The correct answer is 1.44 cm.

Q72. Answer: (c) 200 ml

Given:

Ratio in A = 1 : 3

Ratio in B = 3 : 1

A : B = 1 : 1

Total solution = 400 ml

Final ratio alcohol : water = 1 : 2

Formula Used:

Quantity = Ratio × Total ÷ Sum of ratios

Calculation:

=> In A: alcohol = 1 ÷ 4, water = 3 ÷ 4

=> In B: alcohol = 3 ÷ 4, water = 1 ÷ 4

=> Mixture (1:1): alcohol = (1 ÷ 4 + 3 ÷ 4) ÷ 2 = 1 ÷ 2

=> Mixture (1:1): water = (3 ÷ 4 + 1 ÷ 4) ÷ 2 = 1 ÷ 2

=> Alcohol in 400 ml = 400 × 1 ÷ 2 = 200

=> Water in 400 ml = 400 × 1 ÷ 2 = 200

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=> Let water added = x
=> New ratio: 200 : (200 + x) = 1 : 2
=> 200 × 2 = 200 + x
=> 400 = 200 + x
=> x = 200
Therefore The correct answer is 200.

Q73. Answer: (b) 34

Given:
a - 1/a = 2
Formula Used:
$(a - 1/a)^2 = a^2 + 1/(a^2) - 2$
$(a^2 + 1/(a^2))^2 = a^4 + 1/(a^4) + 2$
Calculation:
=> $(a - 1/a)^2 = 2^2 = 4$
=> $a^2 + 1/(a^2) - 2 = 4 \Rightarrow a^2 + 1/(a^2) = 6$
=> $(a^2 + 1/(a^2))^2 = 6^2 = 36$
=> $a^4 + 1/(a^4) + 2 = 36 \Rightarrow a^4 + 1/(a^4) = 34$
Therefore The correct answer is 34.

Q74. Answer: (b) 10:48:00 AM

Given:
Speed of first train = 60 km/h
Speed of second train = 90 km/h
Time difference = 2 hours
Total distance = 540 km
Formula Used:
Distance = Speed × Time
Relative speed = Sum of speeds
Calculation:
=> Distance covered by first train in 2 hours = 60 × 2 = 120
=> Remaining distance = 540 − 120 = 420
=> Relative speed = 60 + 90 = 150
=> Time to meet after 8 AM = 420 ÷ 150
=> Time = 2.8 hours
=> Time = 2 hours 48 minutes
=> Meeting time = 8:00 AM + 2 hours 48 minutes = 10:48 AM
Therefore The correct answer is 10:48 AM.

Q75. Answer: (a) 350 percent

Given:
Marked Price = 140% of Discount
Formula Used:
Selling Price = Marked Price − Discount
Percentage = (Marked Price ÷ Selling Price) × 100
Calculation:
=> Let Discount = 100
=> Marked Price = 140% of 100 = 140
=> Selling Price = 140 − 100 = 40
=> Percentage = (140 ÷ 40) × 100 = 3.5 × 100 = 350
Therefore The correct answer is 350%.

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Q76. Answer: (d) To lead military campaigns and maintain law and order

The correct answer is To lead military campaigns and maintain law and order.

Key Points

• Role of Muqtis: The primary duty of Muqtis in the Delhi Sultanate was to lead military campaigns, maintain law and order, and ensure the safety of the assigned territories (iqtas).

• The iqta system was introduced by rulers like Iltutmish and developed further by successive sultans. Under this system, territories (iqtas) were allocated to military officers (Muqtis) for governance and revenue collection.

• Muqtis were responsible for collecting revenue and taxes from their iqta. A part of the revenue was sent to the central treasury, while the rest was utilized for administrative and military purposes.

• Muqtis ensured the enforcement of the Sultanate's authority by maintaining law and order and suppressing rebellions or threats within their regions.

• They were often required to lead armies in campaigns against enemies or rebels, contributing to the Sultanate's territorial expansion and stability.

• Muqtis were subject to strict oversight by the Sultan. Mismanagement or failure in duties could lead to their dismissal or punishment.

Additional Information

• - The iqta system was central to the administrative structure of the Delhi Sultanate. It was a system of land revenue and territorial governance that ensured efficient administration and military support.

• The term iqta refers to land grants or assignments made to officials in return for administrative and military services.

• The system was initially borrowed from the Islamic world and adapted by Indian rulers like Iltutmish during the 13th century.

• Muqtis were appointed to manage these iqtas and were tasked with governance, revenue collection, and military defense.

• - During the reign of Alauddin Khilji, the iqta system was reformed to prevent corruption. Muqtis were required to keep detailed accounts of revenues and expenditures.

• In some cases, Muqtis were rotated to different iqtas to ensure loyalty and prevent the establishment of independent power bases.

• - Muqtis were expected to support the Sultan in major campaigns by providing troops and resources from their iqtas.

• They also acted as intermediaries between the local population and the Sultanate's central administration.

• - Under Iltutmish, the iqta system helped consolidate the Sultanate's control over vast territories by delegating responsibilities to trusted officers.

• During Ghiyasuddin Balban's reign, Muqtis played a crucial role in suppressing rebellions and maintaining stability in remote regions.

Important Points

• The Sultanate maintained strict control over Muqtis to ensure loyalty and efficiency. Revenue records were regularly audited, and Muqtis who failed in their duties faced severe penalties.

• The iqta system was a key administrative innovation that enabled the Delhi Sultanate to manage its extensive territories effectively while maintaining a strong military presence.

• The iqta system gradually declined during the later years of the Sultanate due to corruption, inefficiency, and the weakening of central authority.

• Elements of the iqta system influenced subsequent administrative practices in India, including those of the Mughal Empire.

Q77. Answer: (c) Queen Didda

The correct answer is Queen Didda.

Key Points

• Queen Didda ruled Kashmir from 980 to 1003 CE. She was one of the most prominent female rulers in the history of Kashmir.

• She belonged to the Lohara dynasty and was known for her remarkable administrative skills and political acumen.

• Queen Didda successfully consolidated her power by eliminating rivals and suppressing rebellions during her reign.

• Her reign marked a period of relative stability in Kashmir, and she played a significant role in strengthening the kingdom's foundations.

• She was the widow of King Ksemagupta and ruled as regent for her son and grandson before assuming full control of the throne.

Additional Information

• Role in Consolidating Power:

• Queen Didda was known for her ability to manage and eliminate internal threats to her power, including the assassination of officials who posed a challenge to her authority.

• She used her political intelligence to maintain control over the kingdom and ensured that her rule was undisputed.

• Lohara Dynasty:

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• The Lohara dynasty was a prominent ruling dynasty in Kashmir during medieval times, known for its contributions to art, architecture, and governance.
• Queen Didda played a pivotal role in the early consolidation of the dynasty's rule over Kashmir.
• Historical Context:
• Kashmir during Queen Didda's reign was a culturally rich and strategically important region in northern India.
• Her governance helped protect the kingdom from external invasions and internal instability during her time.
• Legacy:
• Queen Didda is remembered as one of the most powerful and influential female rulers in Indian history.
• Her reign is documented in historical texts as a period of effective administration and centralized governance.

Important Points

• Other Options:
• Mariam-uz-Zamani: She was a Mughal queen and mother of Emperor Jahangir. She had no connection with the rule of Kashmir.
• Khanzada Begum: A prominent figure in Mughal history, but she did not rule Kashmir.
• Durgavati: A Gond queen known for her resistance against Mughal forces, but her rule was limited to central India, not Kashmir.
• Historical Significance: Queen Didda’s reign demonstrates the significant role of women in medieval Indian politics and governance.

Q78. Answer: (c) Article 226

The correct answer is Article 226.

Key Points

• Article 226 of the Indian Constitution empowers the High Courts to issue certain writs for the enforcement of fundamental rights and for other purposes.
• Under this article, High Courts can issue writs such as Habeas Corpus, Mandamus, Prohibition, Certiorari, and Quo Warranto to ensure justice and protect individuals' rights.
• This provision is broader than Article 32, as it includes both fundamental rights and other legal rights, which makes it an important judicial tool.
• The jurisdiction of High Courts under Article 226 is wider and not limited to fundamental rights; it extends to any legal right or issue concerning justice.
• High Courts can also exercise this power in cases where the cause of action arises within their territorial jurisdiction, allowing them to address regional legal matters effectively.

Additional Information

• Article 32 of the Constitution:
• It empowers the Supreme Court to issue writs for the enforcement of fundamental rights.
• It is considered the "heart and soul" of the Constitution as described by Dr. B.R. Ambedkar.
• Unlike Article 226, it is limited to the enforcement of fundamental rights only.
• Article 227:
• This article gives the High Courts the power of superintendence over all subordinate courts and tribunals within their territorial jurisdiction.
• It ensures judicial discipline and administrative efficiency in lower courts.
• Article 131:
• It deals with the original jurisdiction of the Supreme Court in disputes between the Government of India and one or more states, or between states.
• It is primarily used for resolving federal disputes rather than individual rights.
• Types of Writs:
• Habeas Corpus: To ensure protection against unlawful detention.
• Mandamus: To compel a public authority to perform its duty.
• Prohibition: To prevent lower courts from exceeding their jurisdiction.
• Certiorari: To transfer a case from a lower court to a higher court or quash an incorrect order.
• Quo Warranto: To challenge the legality of a person's claim to a public office.

Important Points

• High Court's Jurisdiction:
• High Courts under Article 226 can act in matters involving fundamental rights as well as legal rights.
• This makes their jurisdiction broader compared to the Supreme Court under Article 32.

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• Territorial Scope:

• The writ jurisdiction is available within the territorial boundaries of the respective High Court.

• It ensures regional justice and legal accountability.

• Historical Context:

• The concept of writs originated in English Common Law, later adopted into the Indian legal system.

• Writs are a vital tool for upholding the principles of Rule of Law in India.

Q79. Answer: (b) 1976

The correct answer is 1976.

Key Points

• The Association of Southeast Asian Nations (ASEAN) was founded on August 8, 1967, with five founding members: Indonesia, Malaysia, the Philippines, Singapore, and Thailand.

• In 1976, the ASEAN Secretariat was established in Jakarta, Indonesia, to coordinate and facilitate ASEAN's activities and ensure efficient implementation of its policies.

• The Secretariat plays a crucial role in promoting cooperation among member states in areas such as economic growth, cultural development, and regional stability.

• The establishment of the Secretariat marked a significant milestone in ASEAN's institutional development, enhancing its organizational structure and operational efficiency.

• The first Secretary-General of ASEAN was Hartono Dharsono, who served from 1976 to 1978.

Additional Information

• ASEAN Formation:

• ASEAN was created to promote regional peace, stability, and cooperation in Southeast Asia.

• The Bangkok Declaration, signed on August 8, 1967, served as the founding document of ASEAN.

• Over the years, ASEAN has expanded to include 10 member states: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

• Role of the ASEAN Secretariat:

• It coordinates activities among member states and ensures the implementation of ASEAN agreements and decisions.

• The Secretariat also serves as a platform for dialogue and collaboration on issues like trade, security, environment, and education.

• It supports ASEAN's vision of regional integration by facilitating communication between member states and external partners.

• Key ASEAN Agreements:

• The ASEAN Free Trade Area (AFTA), established in 1992, aims to reduce tariffs and promote trade among member states.

• The ASEAN Charter, adopted in 2007, serves as the legal and institutional framework for ASEAN and strengthens its operational capacity.

• Economic and Strategic Importance:

• ASEAN is one of the world's most dynamic regions, with a combined population of over 650 million and a GDP of approximately 3.5 trillion USD.

• It plays a significant role in fostering economic growth and regional stability in Southeast Asia.

Important Points

• The ASEAN Secretariat is headquartered in Jakarta, Indonesia, reflecting Indonesia's pivotal role in the regional organization.

• The Secretary-General of ASEAN is appointed for a term of 5 years and is responsible for overseeing the activities of the Secretariat.

• ASEAN operates on the principle of consensus decision-making, ensuring equal representation and agreement among member states.

• In addition to its member states, ASEAN engages with external partners through frameworks like the ASEAN Regional Forum (ARF) and East Asia Summit (EAS).

Q80. Answer: (a) M Venkaiah Naidu

The correct answer is M Venkaiah Naidu.

Key Points

• M Venkaiah Naidu, the former Vice President of India, was honoured with the prestigious Padma Vibhushan award in 2024 for his exceptional contributions to public service and Indian politics.

• The Padma Vibhushan is the second-highest civilian award in India, recognizing "exceptional and distinguished service" in various fields, including public affairs, arts, science, and social work.

• M Venkaiah Naidu has been an influential leader in Indian politics, serving as the Vice President from 2017 to 2022 and holding

key portfolios such as Minister of Urban Development, Housing, and Parliamentary Affairs.

• He is known for his strong advocacy of rural development, urban planning, and promotion of Indian culture and values.

• The Padma Awards are announced annually on the eve of Republic Day, and recipients are selected based on their notable contributions to society.

Additional Information

• Padma Vibhushan Award:

• The Padma Vibhushan is part of the Padma Awards, which also include the Padma Bhushan and Padma Shri, conferred by the Government of India.

• It is awarded for "exceptional and distinguished service" across various fields such as arts, public affairs, science, sports, and more.

• The award was established in 1954 and is conferred by the President of India.

• M Venkaiah Naidu:

• Born: 1 July 1949, in Andhra Pradesh, India.

• Known for his eloquence and passion for Indian culture, Naidu has been a dedicated member of the Bharatiya Janata Party (BJP).

• He played a pivotal role in urban development initiatives like the Smart Cities Mission and Housing for All.

• Other Awardees in 2024:

• The Padma Awards 2024 also recognized several other prominent personalities for their contributions in diverse fields such as arts, science, medicine, and social work.

• These awards showcase India's recognition of excellence and service to the nation.

• Selection Process:

• The recipients are selected by a committee constituted by the Prime Minister of India.

• Nominations are received from the general public, government bodies, and non-governmental organizations.

Important Points

• Padma Awards 2024:

• The awards were announced on 25 January 2024, recognizing a total of 106 awardees, including 6 Padma Vibhushan, 9 Padma Bhushan, and 91 Padma Shri recipients.

• The awards are a reflection of India's gratitude towards individuals who have made a lasting impact in their respective domains.

• Significance:

• The awards promote the spirit of national service and encourage others to contribute meaningfully to society.

Q81. Answer: (b) Ajay Kumar Bhalla

The correct answer is Hari Babu Kambhampati.

Key Points

• Hari Babu Kambhampati took oath as the Governor of Manipur in January 2025. His appointment follows the tradition of appointing individuals with political and administrative experience to the gubernatorial post.

• The oath ceremony was conducted as per the constitutional provisions outlined in Article 159 of the Constitution of India, which mandates the Governor to take an oath before assuming office.

• Hari Babu Kambhampati is known for his extensive political career and contributions to public administration. He has previously served as a Member of Parliament and has been actively involved in policymaking.

• The Governor plays a crucial role in maintaining constitutional order in the state, ensuring the implementation of laws, and serving as a liaison between the state and central governments.

• The appointment of Hari Babu Kambhampati aligns with the government’s strategy to place experienced individuals in key positions to facilitate smooth governance and administrative oversight in states like Manipur.

Additional Information

• Role of Governors in India:

• Governors are appointed by the President of India under Article 155 of the Constitution.

• They serve as the constitutional head of the state and are responsible for ensuring the state's governance aligns with the Constitution.

• The Governor has the power to summon, prorogue, and dissolve the State Legislative Assembly under Article 174.

• Governors act as a bridge between the state and central governments, ensuring effective coordination and communication.

• Manipur - Key Facts:

• Manipur is located in the northeastern region of India and is known for its rich cultural heritage and biodiversity.

• The state capital is Imphal, and it is famous for the Loktak Lake, the largest freshwater lake in northeastern India.

• Manipur became a full-fledged state of India on January 21, 1972.

• Constitutional Provisions Related to Governors:

• Article 153: Provides for a Governor in each state.

• Article 154: Vests the executive powers of the state in the Governor.

• Article 161: Grants the Governor the power to pardon, reprieve, or commute sentences in certain cases.

• Recent Appointments:

• Governors are appointed based on their administrative experience, political background, and ability to contribute to governance.

• Appointments in states like Manipur are significant due to the state's strategic location and socio-political challenges.

Important Points

• Oath of Office: The Governor takes an oath to preserve, protect, and defend the Constitution of India, as prescribed under Article 159.

• Tenure: The Governor usually serves a term of 5 years, but this can vary based on political decisions and administrative requirements.

• Functions: Governors have legislative, executive, and judicial functions, including assenting to bills, appointing the Chief Minister, and granting pardons.

• Significance: The Governor’s role is particularly critical in states with diverse socio-political landscapes, such as Manipur, where maintaining stability and constitutional order is essential.

Q82. Answer: (c) Ministry of Chemicals and Fertilizers

The correct answer is Ministry of Chemicals and Fertilizers.

Key Points

• The Ministry of Chemicals and Fertilizers launched the "Scheme for Strengthening the Medical Device Industry" in November 2024.

• This scheme aims to promote domestic manufacturing of medical devices and reduce reliance on imports, thereby achieving self-reliance under the vision of Aatmanirbhar Bharat.

• The initiative focuses on creating common infrastructure facilities and providing financial assistance to strengthen the medical device industry in India.

• The scheme is part of the government’s efforts to enhance the competitiveness, quality, and affordability of medical devices produced in India.

• It aligns with the government's commitment to boost the Make in India initiative, specifically targeting the healthcare and medical device sectors.

Additional Information

• Medical Device Industry in India:

• The Indian medical device sector is one of the fastest-growing industries, with an annual growth rate of approximately 15%.

• India ranks among the top 20 global markets for medical devices.

• The sector encompasses a wide range of products, including diagnostic equipment, imaging systems, implants, and surgical instruments.

• The government has been focusing on regulatory reforms to ensure the quality and safety of domestically produced medical devices.

• Make in India Initiative:

• Launched in 2014 by the Government of India, this initiative aims to transform India into a global manufacturing hub.

• The medical device industry is a key focus area under this initiative to reduce import dependency and boost local production.

• Emphasis is placed on promoting research and development (R&D) in the medical device sector.

• Role of the Ministry of Chemicals and Fertilizers:

• The ministry oversees the Pharmaceuticals Department, which is responsible for the medical device sector.

• It plays a crucial role in formulating policies to support domestic industries and regulate imports and exports.

• Through schemes like this, the ministry aims to create a globally competitive ecosystem for medical device manufacturing in India.

• Global Context:

• The global medical device market is expected to reach USD 800 billion by 2030, making this initiative timely and crucial for India’s participation in the global market.

• Countries like the USA, Germany, and Japan lead in medical device manufacturing, but India is emerging as a strong competitor due to its cost advantages.

Important Points

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• Significance of the Scheme:

• The scheme aims to reduce India's 70-80% dependency on imported medical devices.

• It will promote the establishment of medical device parks with state-of-the-art infrastructure to support domestic manufacturers.

• By fostering innovation, the initiative is expected to enhance export potential and improve the global competitiveness of Indian medical devices.

• Challenges Addressed:

• The scheme tackles issues like high import costs, lack of infrastructure, and limited access to advanced technologies in the medical device sector.

• It also encourages collaboration between industry and academia to promote R&D and skill development.

Q83. Answer: (a) NSO

The correct answer is NSO (National Statistical Office).

Key Points

• Periodic Labour Force Survey (PLFS) is conducted by the National Statistical Office (NSO), which functions under the Ministry of Statistics and Programme Implementation (MoSPI) in India.

• The PLFS was launched in April 2017 to provide reliable and timely estimates of key labour market indicators, such as employment and unemployment.

• It replaced the earlier system of quinquennial Employment and Unemployment Surveys (EUS), aiming to provide annual estimates for both rural and urban areas and quarterly estimates for urban areas.

• The survey collects data on the Labour Force Participation Rate (LFPR), Worker Population Ratio (WPR), and Unemployment Rate (UR) in the country.

• The data gathered is crucial for policymaking, employment generation strategies, and understanding the socio-economic conditions of workers in India.

Additional Information

• National Statistical Office (NSO):

• The NSO was formed in 2019 by merging the Central Statistics Office (CSO) and the National Sample Survey Office (NSSO).

• It is the apex body for statistical activities and the official data collection agency of the Government of India.

• Its responsibilities include conducting nationwide surveys, such as the PLFS, Consumer Expenditure Surveys, and Agriculture Surveys.

• Objectives of PLFS:

• To measure the Labour Force Participation Rate (LFPR), which is the percentage of the population actively participating in the labour force.

• To determine the Worker Population Ratio (WPR), which indicates the proportion of employed persons in the population.

• To assess the Unemployment Rate (UR), which refers to the percentage of people in the labour force who are unemployed and actively seeking work.

• Other Options Explained:

• Development Intelligence Unit: This is not a recognized body for conducting labour force surveys in India.

• Ministry of Labour and Employment: While this ministry works on labour laws and employment schemes, it does not conduct the PLFS.

• NITI Aayog: NITI Aayog, being a policy think tank, advises on strategies for national development but does not directly conduct surveys like the PLFS.

• Importance of PLFS Data:

• The data helps in understanding sectoral employment trends, such as agriculture, industry, and services.

• It aids in framing evidence-based policies for addressing unemployment and improving labour market efficiency.

• It provides insights into the gender gap in workforce participation and other socio-economic disparities.

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Q84. Answer: (b) Sikkim

The correct answer is Sikkim.

Key Points

• Sikkim, the northeastern state of India, is known as the first state to launch an organic fisheries cluster in January 2025.

• This initiative aligns with the vision of making Sikkim an organic state, a goal it achieved earlier by becoming the first fully organic state in India in 2016.

• The organic fisheries cluster will focus on promoting sustainable aquaculture practices, ensuring a balance between production and environmental conservation.

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• The project aims to enhance the livelihood of local fish farmers by offering them opportunities to cultivate fish organically, which fetches a premium price in domestic and international markets.

• This move is expected to improve food security, reduce the ecological footprint of traditional aquaculture, and boost the economy of the region.

Additional Information

• Organic Farming in Sikkim:

• Sikkim became India’s first fully organic state in 2016 under the National Programme for Organic Production.

• All farming activities in the state are conducted without the use of synthetic fertilizers and pesticides.

• The state has received international recognition for its efforts, including the Future Policy Gold Award in 2018 from the United Nations.

• Importance of Organic Fisheries:

• Organic aquaculture ensures the use of natural feed, clean water, and sustainable practices that minimize environmental damage.

• It avoids the use of antibiotics and synthetic chemicals, ensuring healthier and safer fish products.

• Organic fish farming supports biodiversity and helps maintain the ecological balance in aquatic ecosystems.

• Other Indian States' Initiatives:

• While Sikkim leads in organic initiatives, states like Kerala, Maharashtra, and Uttarakhand are also promoting organic farming on a large scale.

• These states are implementing policies to encourage farmers to adopt organic practices and reduce dependency on chemical fertilizers.

• Economic Benefits:

• Organic products, including fish, command a higher price in the market due to increasing consumer demand for healthier and eco-friendly options.

• This initiative helps local farmers increase their income while contributing to sustainable development.

• Such clusters open avenues for export opportunities, enhancing India’s global footprint in the organic market.

Important Points

• Government Support:

• The Government of India and the Ministry of Fisheries, Animal Husbandry & Dairying have been actively promoting organic and sustainable aquaculture practices.

• Various schemes and subsidies are provided to encourage farmers to adopt organic fish farming methods.

• Significance of Aquaculture in India:

• India is the second-largest producer of fish in the world, and aquaculture contributes significantly to the GDP of the country.

• Organic fisheries clusters will further strengthen this sector by adding value to the products and ensuring environmental sustainability.

• Future Prospects:

• The success of the organic fisheries cluster in Sikkim can serve as a model for other states to replicate.

• Such initiatives are crucial to achieving the Sustainable Development Goals (SDGs) related to food security, environmental sustainability, and economic growth.

Q85. Answer: (b) Vikram Seth

The correct answer is Vikram Seth.

Key Points

• The book "A Suitable Boy" was authored by Vikram Seth, an Indian novelist and poet, and it was first published in 1993.

• This novel is one of the longest single-volume books ever published in the English language, with nearly 1,500 pages in its paperback edition.

• The story is set in post-Independence, post-Partition India and revolves around the efforts of a mother to find a "suitable boy" for her daughter, Lata.

• The novel explores a wide range of themes, including family, love, politics, religion, and the social changes happening in India during the 1950s.

• "A Suitable Boy" has been acclaimed for its rich character development, detailed portrayal of Indian society, and its ability to weave in complex socio-political issues.

• It was later adapted into a television drama series by the BBC, directed by Mira Nair, and released in 2020.

Additional Information

• Vikram Seth:

• Born: 20 June 1952 in Calcutta, India.

• He is an Indian author widely known for his novels, poetry, and works in other literary genres.

• His other notable works include "The Golden Gate" (a novel in verse) and "An Equal Music".

• He has won several awards, including the Padma Shri in 2001 and the WH Smith Literary Award.

• Plot Summary of A Suitable Boy:

• The novel's central plot revolves around Lata Mehra, a university student, and her mother Rupa's efforts to find her a suitable husband.

• It also delves into the lives of four families: the Mehras, the Kapoors, the Khans, and the Chatterjis.

• It captures the cultural and political atmosphere of India in the early years after Independence, including themes like the rise of socialism and the Hindu-Muslim divide.

• The book emphasizes the importance of individual choice and personal happiness against societal expectations.

• Other Options Explained:

• Amit Varma: An Indian writer and journalist, known for his blog "India Uncut" and the novel "My Friend Sancho," but he is not the author of "A Suitable Boy."

• Aruni Kashyap: An Indian writer and translator known for works like "The House With a Thousand Stories," but not associated with "A Suitable Boy."

• Ajay K Pandey: An Indian author known for writing romance novels like "You Are the Best Wife," but he did not write "A Suitable Boy."

• Critical Reception:

• "A Suitable Boy" was widely praised for its epic scope, intricate storytelling, and its ability to provide a panoramic view of Indian society.

• It has been translated into several languages and remains one of the most celebrated works in Indian-English literature.

• The novel has often been compared to the works of Charles Dickens and Leo Tolstoy for its broad scope and detailed character portrayals.

Q86. Answer: (b) Aravind Adiga

The correct answer is Aravind Adiga.

Key Points

• Aravind Adiga, an acclaimed Indian author, penned the novel "Last Man in Tower," which was published in 2011.

• The book is set in the city of Mumbai and explores themes of urbanization, greed, and morality.

• "Last Man in Tower" revolves around the residents of Vishram Society, a housing cooperative, and their struggle when a real estate developer offers a buyout deal.

• Aravind Adiga is best known for his debut novel "The White Tiger," which won the prestigious Man Booker Prize in 2008.

• The novel showcases Adiga's ability to blend sharp social commentary with compelling storytelling, making him one of the notable voices in contemporary Indian literature.

Additional Information

• Aravind Adiga's Background:

• Born in 1974 in Mangalore, India, Aravind Adiga is an Indian author and journalist.

• He studied at Columbia University and Oxford University, where he excelled in English literature.

• Before becoming a novelist, Adiga worked as a journalist for Time magazine and other publications.

• Key Themes in "Last Man in Tower":

• The novel examines the effects of urbanization and the moral dilemmas faced by individuals in modern India.

• It highlights issues such as class conflict, greed, and the challenges of communal living.

• The narrative is a critique of the rapidly changing socio-economic landscape of Mumbai.

• Other Works by Aravind Adiga:

• The White Tiger (2008): A story about ambition, corruption, and the caste system in India.

• Between the Assassinations (2008): A collection of interlinked short stories set in a fictional South Indian town.

• Selection Day (2016): A novel centered around cricket and societal expectations in India.

• Recognition and Awards:

• Adiga won the Man Booker Prize for "The White Tiger," becoming one of the youngest recipients of the award.

• His works are widely acclaimed for their sharp social insights and engaging narratives.

• Adiga has been praised for his ability to portray the complexities of modern Indian society.

Important Points

• Kiran Desai: Known for her novel "The Inheritance of Loss," which won the Man Booker Prize in 2006.

• Arundhati Roy: Famous for her debut novel "The God of Small Things," which won the Booker Prize in 1997.

• Shashi Tharoor: A renowned Indian politician and author known for his works such as "The Great Indian Novel" and "Inglorious Empire."

• Each of the mentioned authors has made significant contributions to Indian literature, but "Last Man in Tower" is specifically penned by Aravind Adiga.

Q87. Answer: (a) Edwin Lutyens

The correct answer is Edwin Lutyens.

Key Points

• Edwin Lutyens was the architect responsible for designing the India Gate, which is a war memorial located in New Delhi, India.

• The India Gate was built to commemorate the soldiers of the British Indian Army who lost their lives during World War I and the Third Anglo-Afghan War.

• Construction of the India Gate began in 1921 and was completed in 1931. The foundation stone was laid by the then Duke of Connaught.

• The structure is 42 meters high and is made of Bharatpur red sandstone. It is an iconic symbol of colonial architecture in India.

• The design of the India Gate reflects a combination of classical European architecture and elements of Indian art and culture.

Additional Information

• Edwin Lutyens:

• Lutyens was a renowned British architect, celebrated for his role in designing New Delhi, which became the capital of India in 1931.

• He worked extensively on the design of Rashtrapati Bhavan (formerly the Viceroy's House) and several other key buildings in the city.

• Lutyens' architectural style combined classical European influences with elements of Indian design, creating a unique blend that remains iconic today.

• India Gate:

• The India Gate is inscribed with the names of over 13,000 soldiers who perished during World War I and related conflicts.

• In 1971, a structure called Amar Jawan Jyoti (Flame of the Immortal Soldier) was added beneath the arch to honor soldiers who died in the Indo-Pak War of 1971.

• The eternal flame burns continuously, symbolizing the nation's gratitude to its military personnel.

• Le Corbusier:

• Le Corbusier was a Swiss-French architect known for his contributions to modern architecture.

• He designed the city of Chandigarh, India’s first planned city post-independence, but he was not involved in designing the India Gate.

• Frank Lloyd Wright:

• Frank Lloyd Wright was an American architect known for his philosophy of organic architecture.

• He did not contribute to the design of any structures in India.

• Antoni Gaudi:

• Antoni Gaudi was a Spanish architect famous for his modernist and Catalan Gothic designs, such as the Sagrada Familia in Barcelona.

• He had no connection with the India Gate or Indian architecture.

Important Points

• Historical Context:

• The India Gate was built during British rule in India and serves as a symbol of sacrifice and honor for Indian soldiers who fought under British command.

• It is often compared to the Arc de Triomphe in Paris, reflecting its monumental style.

• Architectural Significance:

• India Gate is an example of Imperial War Memorial architecture, which was prevalent during the early 20th century.

• The intricate carvings and symmetrical design reflect the neoclassical style adapted to Indian aesthetics.

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Q88. Answer: (b) Parsi

The correct answer is Parsi.

Key Points

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• Navroz, also known as Nowruz, is the New Year festival celebrated by the Parsis in India and Zoroastrians worldwide.

• The festival marks the beginning of the Persian New Year and is celebrated on the spring equinox, usually falling on March 20 or 21.

• It has its roots in Zoroastrianism, one of the world's oldest religions, which originated in ancient Persia (modern-day Iran).

• Navroz is considered a time of renewal, joy, and purification. It celebrates the arrival of spring and the renewal of nature.

• In India, the Parsi community observes Navroz with prayers, feasts, and charitable activities. They visit the Fire Temple (Agiary) to offer prayers and seek blessings.

Additional Information

• Zoroastrianism:

• Zoroastrianism is an ancient religion founded by Prophet Zoroaster in Persia around the 6th-7th century BCE.

• The religion emphasizes the concepts of good thoughts, good words, and good deeds.

• Fire is a central element in Zoroastrian worship, symbolizing purity and the presence of God.

• Parsis in India:

• The Parsis are a small yet significant community in India who migrated from Persia to escape religious persecution around the 8th-10th century CE.

• They settled primarily in Gujarat and Mumbai and have contributed immensely to India’s industrial, cultural, and social development.

• Celebrations of Navroz:

• Navroz begins with the cleaning and decoration of homes, symbolizing the removal of negativity and a fresh start.

• A traditional feast includes dishes like sev (sweet vermicelli), pulao, and fish. Special sweets such as ravo and falooda are also prepared.

• People wear new clothes and exchange gifts and greetings to foster community bonding.

• Global Observance:

• Navroz is not limited to Parsis but is also celebrated by other communities such as Kurdish, Persian, and Central Asian cultures.

• The United Nations recognizes March 21 as the International Day of Nowruz.

Important Points

• Religious Significance: Navroz holds deep spiritual significance for Zoroastrians as it symbolizes the triumph of light over darkness and good over evil.

• Preparation: The festival involves rituals like spring cleaning, wearing new clothes, and preparing a table called Haft-Seen with symbolic items like fruits, candles, and mirrors.

• Parsis in India: Despite being a small community, the Parsis have significantly influenced India in fields like business, arts, and philanthropy. Prominent figures include Jamshedji Tata and Dadabhai Naoroji.

Q89. Answer: (c) LVM3

The correct answer is LVM3.

Key Points

• LVM3, also known as GSLV MK-III, is India's heaviest and most advanced launch vehicle developed by the Indian Space Research Organisation (ISRO).

• LVM3 stands for Launch Vehicle Mark-3 and is capable of carrying payloads of up to 4 tons to Geostationary Transfer Orbit (GTO) and 10 tons to Low Earth Orbit (LEO).

• This launch vehicle employs a cryogenic upper stage (C25 engine) that uses liquid hydrogen as fuel and liquid oxygen as an oxidizer, making it highly efficient.

• LVM3 is primarily used for launching heavy communication satellites and has been instrumental in missions like Chandrayaan-2 and Gaganyaan (Human Spaceflight Program).

• The vehicle has three stages: a solid rocket booster (S200), a liquid core stage (L110), and a cryogenic upper stage (C25).

Additional Information

• ASLV (Augmented Satellite Launch Vehicle):

• ASLV was developed by ISRO in the 1980s to bridge the gap between the Satellite Launch Vehicle (SLV) and the Polar Satellite Launch Vehicle (PSLV).

• It was primarily used to demonstrate satellite launch capability in Low Earth Orbit (LEO).

• Its payload capacity was limited to 150 kg, making it suitable for small experimental satellites.

• Though the ASLV program was discontinued, it laid the foundation for more advanced launch vehicles like PSLV and GSLV.

• SLV-3 (Satellite Launch Vehicle-3):

• SLV-3 was India's first experimental satellite launch vehicle, developed in the 1970s and 1980s.

• It successfully launched the satellite Rohini RS-1 in 1980, marking India's entry into space exploration.
• It had a payload capacity of 40 kg to LEO and was powered by solid propulsion technology.
• SLV-3 paved the way for subsequent advancements in India's space program.
• PSLV (Polar Satellite Launch Vehicle):
• PSLV is known as the "workhorse" of ISRO, used primarily for launching satellites into Polar Sun-Synchronous Orbits.
• First launched in 1993, PSLV has an impressive track record, successfully launching more than 300 satellites from various countries.
• It is a versatile vehicle capable of deploying satellites into various orbits, including Geostationary Transfer Orbit (GTO).
• PSLV played a critical role in missions like Mangalyaan (Mars Orbiter Mission) and Chandrayaan-1.
• GSLV (Geosynchronous Satellite Launch Vehicle):
• GSLV is used for launching heavier satellites into Geostationary Transfer Orbit (GTO).
• It incorporates a cryogenic upper stage, making it suitable for deploying communication satellites.
• GSLV has been used in missions like GSAT series satellites and played a key role in Chandrayaan-2.
• It was developed after PSLV to meet India's growing demand for launching heavier payloads.

Important Points

• GSLV MK-III Achievements:
• Successfully launched GSAT-19 in 2017, marking its operational debut.
• Used in the launch of Chandrayaan-2 in 2019, showcasing its capability for interplanetary missions.
• Plays a pivotal role in India's Gaganyaan Program, which aims to send humans to space.
• Its payload capacity makes it comparable to international heavy-lift rockets.
• Key Features of LVM3:
• Incorporates advanced propulsion systems for higher efficiency.
• Offers modular design for flexibility in payload configurations.
• Demonstrates India's capability to compete globally in space technology.
• Supports strategic applications, including national defense and communication.

Q90. Answer: (c) Pressure = Thrust / Area

The correct answer is Pressure = Thrust / Area.

Key Points

• Thrust refers to the force applied perpendicular to a surface. It is measured in units such as Newtons (N).
• Pressure is defined as the force acting per unit area and is mathematically expressed as Pressure = Thrust / Area. It is measured in units like Pascals (Pa).
• The formula indicates that pressure increases if the thrust increases, provided the area remains constant.
• Conversely, if the area increases while the thrust remains constant, the pressure decreases due to the inverse relationship.
• This relationship is widely used in physics and engineering to understand how forces interact with surfaces in applications such as hydraulics, aerodynamics, and material science.

Additional Information

• Thrust:
• It is a vector quantity, meaning it has both magnitude and direction.
• Thrust is commonly used in contexts such as rocketry, aerospace engineering, and marine propulsion.
• Examples include the thrust generated by engines to propel rockets, airplanes, or ships.
• Pressure:
• Pressure can be categorized as absolute pressure, gauge pressure, and atmospheric pressure.
• In everyday applications, pressure is often measured using devices such as manometers or barometers.
• Key applications of pressure include hydraulic systems, pneumatic tools, and fluid mechanics.
• Units of Measurement:
• The standard SI unit for pressure is the Pascal (Pa), where 1 Pa = 1 N/m^2.
• Other units include bar, atmosphere (atm), and millimeter of mercury (mmHg).
• Applications:
• In hydraulics, pressure is used to lift heavy objects using small forces over large areas.
• In aerodynamics, pressure differences help generate lift for airplanes.
• In medical science, pressure measurements are crucial for monitoring blood pressure and respiratory functions.

Important Points

• Inverse Relationship: The formula Pressure = Thrust / Area highlights the inverse relationship between pressure and area. For instance, reducing the contact area increases the pressure exerted, which explains why sharp objects can cut more effectively than blunt ones.

• Real-Life Example: High heels exert greater pressure on the ground compared to flat shoes due to the smaller area of contact.

• Scientific Context: This principle is applied in designing devices such as pressure gauges, hydraulic presses, and aerodynamic models.

• Engineering Applications: In construction and material science, understanding pressure is essential for ensuring structures can withstand forces acting over their surfaces.

Q91. Answer: (d) 74%

The correct answer is 0.74.

Key Points

• As part of the financial sector reforms introduced in and after 1991, the Indian government liberalized several policies to attract foreign investment and improve the efficiency of the financial system.

• One significant reform was raising the foreign investment limit in the banking sector, specifically for foreign banks operating in India.

• The investment cap for foreign banks was increased to 74%, allowing greater foreign participation in the Indian banking sector.

• This policy change aimed to modernize the banking sector, increase competition, and bring in global expertise in banking operations.

• The decision to allow up to 74% foreign direct investment (FDI) was regulated under the automatic route, requiring minimal bureaucratic intervention.

• The reform was part of the New Economic Policy of 1991, which focused on liberalization, privatization, and globalization (LPG).

Additional Information

• Foreign Direct Investment (FDI) in Banking:

• FDI in the banking sector is allowed under two segments: private sector banks and public sector banks.

• For private sector banks, FDI up to 74% is permitted under the automatic route, subject to Reserve Bank of India (RBI) approval in certain cases.

• For public sector banks, FDI is restricted to 20%, and this requires government approval.

• The policy aims to infuse foreign capital, increase global expertise, and enhance operational efficiency.

• New Economic Policy of 1991:

• Introduced by the then Finance Minister Dr. Manmohan Singh under the leadership of Prime Minister P.V. Narasimha Rao.

• The reforms emphasized liberalization, privatization, and globalization (LPG model).

• The policy aimed to address the balance of payments crisis and improve the economic growth rate by reducing state control over industries and encouraging private sector participation.

• Reserve Bank of India (RBI) Regulations:

• The RBI plays a key role in regulating FDI in the banking sector to ensure financial stability.

• It monitors compliance with the Banking Regulation Act, 1949, and other relevant legislations.

• RBI approval is required for certain banking activities involving foreign investment, particularly for mergers, acquisitions, and setting up new branches.

• Impact of Increasing FDI Limit:

• Allowed foreign banks to establish a stronger presence in India, fostering global competition in the domestic market.

• Improved access to advanced banking technology and international best practices.

• Enhanced the availability of financial services, especially in urban areas, while creating a more competitive and efficient banking environment.

Important Points

• Automatic Route: This refers to a process where foreign investors do not require prior approval from the government or RBI for making investments in certain sectors.

• Banking Regulation Act, 1949: The law that governs all banking operations in India, ensuring sound financial practices and protecting depositors' interests.

• Liberalization: The process of reducing government-imposed restrictions and regulations to encourage private sector investment and economic growth.

• Globalization: The integration of domestic economies with the global economy, leading to an increase in cross-border trade, investment, and cultural exchange.

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Q92. Answer: (d) Sindhia

The correct answer is Sindhia.

Key Points

• Ujjain, an ancient city located in Madhya Pradesh, expanded significantly under the patronage of the Maratha chief Daulat Rao Sindhia. He was a prominent leader of the Sindhia dynasty and played a crucial role in the city's development.

• The Sindhia dynasty held significant influence over the Malwa region, which includes Ujjain, during the late 18th and early 19th centuries. Ujjain became a major cultural and administrative center during their reign.

• Daulat Rao Sindhia's patronage contributed to the enhancement of Ujjain's infrastructure, including the development of roads, temples, and administrative buildings. His efforts helped in modernizing the city.

• Under Sindhia's rule, Ujjain regained its prominence as a center of Hindu pilgrimage, with the reconstruction of several temples and the promotion of religious activities.

• The Sindhias were known for their association with art, culture, and architecture, which was reflected in the city's growth during their reign. Ujjain flourished economically and culturally under their leadership.

Additional Information

• Holkar Dynasty:

• The Holkars were another prominent Maratha dynasty based in Indore, Madhya Pradesh. Although they contributed to the development of various regions, their influence was primarily centered around Indore, rather than Ujjain.

• The Holkar rulers, such as Ahilyabai Holkar, were known for their contributions to temple construction and social welfare, but Ujjain's major development is attributed to Sindhia.

• Gaekwad Dynasty:

• The Gaekwads ruled over Baroda (modern-day Vadodara) in Gujarat and were known for their contributions to the region's prosperity. Their influence did not extend to Ujjain.

• They were recognized for their efforts in promoting education and public welfare in their territory.

• Bhonsle Dynasty:

• The Bhonsle dynasty was centered around Nagpur and had significant influence in Maharashtra. Their contributions were largely confined to their domain and did not directly impact Ujjain's development.

• They were known for their military prowess and administrative capabilities.

• Sindhia Dynasty:

• The Sindhia dynasty emerged as a powerful Maratha clan with control over large parts of northern and central India, including the Malwa region, where Ujjain is located.

• They were instrumental in the political and cultural development of Ujjain, making it a key center during their reign.

• Daulat Rao Sindhia's tenure was marked by significant infrastructural improvements and cultural revival in the city.

• The Sindhias were also notable for their diplomatic relations with the British during the colonial era.

Important Points

• Ujjain's historical significance:

• Ujjain has been one of the most important cities in Indian history, particularly as a center of trade, religion, and learning.

• It is famous for being the location of the Mahakaleshwar Jyotirlinga, one of the twelve sacred Jyotirlingas in Hindu tradition.

• The city has been a major hub for astronomy and mathematics, with historical figures such as Varahamihira and Brahmagupta associated with it.

• Role of Maratha Chiefs:

• The Maratha chiefs, including Sindhia, Holkar, Gaekwad, and Bhonsle, played key roles in shaping the history and development of central and western India.

• Each of these dynasties contributed uniquely to their respective regions, focusing on infrastructure, art, culture, and governance.

• The Sindhia dynasty's influence over Ujjain stands out due to their strategic and cultural investments in the city.

Q93. Answer: (c) Meerut

The correct answer is Meerut.

Key Points

• The Revolt of 1857, also known as India’s First War of Independence, began on May 10, 1857, in the town of Meerut, located in present-day Uttar Pradesh.

• The revolt was triggered by the grievances of the sepoys (Indian soldiers) employed under the British East India Company, particularly due to the introduction of the controversial Enfield rifle.

• The new rifle cartridges were rumored to be greased with cow and pig fat, which offended both Hindus (who consider the cow sacred) and Muslims (who regard the pig as unclean).

• In Meerut, 85 sepoys of the 3rd Bengal Light Cavalry refused to use the cartridges and were subsequently court-martialed and imprisoned. This act of punishment outraged their comrades and sparked a rebellion.

• On the night of May 10, 1857, the sepoys in Meerut rose in rebellion, broke into the jail to free their comrades, and marched towards Delhi, where they declared the Mughal Emperor Bahadur Shah II as their leader.

Additional Information

• Causes of the Revolt:

• Political Causes: The annexation policies of the British (e.g., the Doctrine of Lapse) alienated many Indian rulers.

• Economic Causes: Heavy taxation, the destruction of traditional industries, and the exploitation of resources led to widespread poverty.

• Social and Religious Causes: The British imposed reforms and practices that were perceived as an attack on Indian social and religious traditions.

• Military Causes: Discrimination in pay, promotion, and treatment of Indian sepoys compared to their British counterparts created resentment.

• Course of the Revolt:

• After starting in Meerut, the revolt spread to various parts of northern and central India, including Delhi, Kanpur, Jhansi, and Lucknow.

• Key leaders included Rani Lakshmibai of Jhansi, Begum Hazrat Mahal of Awadh, and Tantia Tope.

• Despite initial successes, the lack of coordination, resources, and modern weaponry led to the revolt's failure by 1858.

• Consequences of the Revolt:

• The British Crown assumed direct control over India, ending the rule of the East India Company.

• The policy of annexation was abandoned, and greater respect was given to Indian customs and traditions.

• Reforms were introduced in the Indian Army to prevent future revolts, including increasing the proportion of British soldiers.

Important Points

• Significance of Meerut: The revolt in Meerut marked the beginning of a widespread anti-colonial movement and was a turning point in Indian history.

• Delhi’s Role: The sepoys’ decision to march to Delhi and proclaim Bahadur Shah II as the Emperor of India symbolized a unifying attempt to restore Indian rule.

• British Response: The British took about a year to suppress the rebellion, deploying reinforcements and employing brutal measures to crush resistance.

• Legacy: Although the revolt failed, it sowed the seeds for future movements for independence, inspiring subsequent generations of freedom fighters.

Q94. Answer: (b) Article 110

The correct answer is Article 110.

Key Points

• Article 110 of the Indian Constitution defines a Money Bill. It specifies the provisions under which a Bill can be classified as a Money Bill.

• A Money Bill includes provisions related to taxation, borrowing of money by the government, expenditure from the Consolidated Fund of India, or custody of funds in the Public Account of India.

• A Bill shall be deemed to be a Money Bill only if it deals exclusively with matters listed in Article 110, including the imposition, abolition, remission, alteration, or regulation of taxes.

• The Speaker of the Lok Sabha has the exclusive authority to decide whether a Bill is a Money Bill or not, and their decision is considered final.

• Money Bills can only be introduced in the Lok Sabha, not in the Rajya Sabha, and the Rajya Sabha cannot amend or reject a Money Bill. It can only make recommendations, which the Lok Sabha may or may not accept.

Additional Information

• Difference Between Money Bill and Financial Bill:

• A Money Bill is defined under Article 110 and deals exclusively with matters specified therein. A Financial Bill, on the other hand, has provisions related to revenue but does not exclusively deal with matters listed under Article 110.

• While a Money Bill can only be introduced in the Lok Sabha, Financial Bills can be introduced in either House of Parliament.

• The Speaker certifies a Bill as a Money Bill, while Financial Bills do not require such certification.

• Constitutional Provisions for Money Bill:

• Article 109: Discusses the procedure for passing a Money Bill in Parliament.

• Article 117: Deals with Financial Bills other than Money Bills.

• Article 112: Refers to the Annual Financial Statement (Budget), which may include Money Bills.

• Process of Passing Money Bill:

• Introduced only in the Lok Sabha.

• Once passed by the Lok Sabha, it is sent to the Rajya Sabha, which can only make recommendations within 14 days.

• The Lok Sabha can accept or reject the recommendations, and the Bill is considered passed even if the Rajya Sabha does not return it within 14 days.

• After being passed by both Houses (or only the Lok Sabha effectively), the Bill is sent for the President's assent.

• Important Examples of Money Bills:

• The Goods and Services Tax (GST) Bill was passed as a Money Bill in 2017.

• Other examples include Bills related to income tax amendments, appropriation of funds, and public borrowing.

Important Points

• Article 110 is crucial for maintaining the separation of powers between the Lok Sabha and Rajya Sabha regarding financial legislation.

• The Speaker's decision on classifying a Bill as a Money Bill is final and cannot be challenged in court.

• This provision ensures that financial matters remain under the control of the directly elected representatives of the people in the Lok Sabha.

• Money Bills are an integral part of India's parliamentary democracy, where the government requires legislative approval to impose taxes or spend public funds.

• Understanding the provisions of Article 110 is essential for comprehending the legislative process concerning financial matters in India.

Q95. Answer: (c) Bauxite

The correct answer is Bauxite.

Key Points

• Bauxite is a prime example of a non-ferrous metallic mineral. It is an ore of aluminum, which is a non-ferrous metal.

• Non-ferrous metals like aluminum are characterized by the absence of iron, making them resistant to corrosion and lightweight.

• Bauxite is primarily composed of minerals such as gibbsite, boehmite, and diaspore, which are rich in aluminum content.

• This mineral is extensively used in industries for manufacturing aircraft, automobiles, electrical appliances, packaging materials, and construction.

• Bauxite deposits are found in various countries, with India being a major producer. Significant bauxite reserves in India are located in Odisha, Gujarat, Maharashtra, and Jharkhand.

Additional Information

• Non-Ferrous Metals:

• Non-ferrous metals are metals that do not contain iron. Examples include aluminum, copper, lead, zinc, nickel, titanium, and precious metals like gold and silver.

• These metals are known for their lightweight, corrosion resistance, and high conductivity, making them essential in various industries.

• Characteristics of Bauxite:

• Age: Bauxite deposits are often formed through laterization during tropical and subtropical conditions over millions of years.

• Location: Globally, bauxite reserves are found in countries like Australia, Guinea, Brazil, and India.

• Uses: Primarily used for aluminum production; also used in refractory materials, abrasives, and cement industries.

• Other Mineral Examples:

• Manganese: A ferrous metallic mineral used in steel production and as an alloying element.

• Iron Ore: A ferrous metallic mineral used in the manufacturing of steel and iron products.

• Chromite: A ferrous metallic mineral used in the production of stainless steel and as a refractory material.

• India's Bauxite Production:

• India ranks among the top producers of bauxite globally, contributing significantly to the aluminum industry.

• Major bauxite mines include Panchpatmali in Odisha, Kolhapur in Maharashtra, and Kutch in Gujarat.

Important Points

• Bauxite Mining Process:

• Bauxite is mined through open-pit mining techniques.

• The process involves stripping the topsoil and extracting bauxite ore from deposits.

• Post-extraction, bauxite undergoes refining to produce alumina, followed by smelting to obtain aluminum.

• Global Reserves:

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• Australia is the largest producer of bauxite, with significant reserves in Guinea, Brazil, and India.
• Guinea holds the world's largest bauxite reserves, accounting for over 40 billion metric tons.
• Environmental Impact:
• Bauxite mining can lead to deforestation, loss of biodiversity, and soil erosion.
• Reclamation efforts and sustainable practices are crucial to mitigate environmental damage.

Q96. Answer: (c) 1970

The correct answer is 1970.

Key Points

• Operation Flood was launched in 1970 by the National Dairy Development Board (NDDB) of India.
• It is considered one of the largest initiatives aimed at increasing milk production and making India the largest producer of milk globally.
• The program was spearheaded by Dr. Verghese Kurien, known as the "Father of the White Revolution" in India.
• It involved the creation of a nationwide milk grid, which connected rural milk producers with urban markets to ensure a consistent supply of milk and dairy products.
• Operation Flood played a vital role in transforming India from a milk-deficient country to a self-sufficient and leading exporter of dairy products.

Additional Information

• Phases of Operation Flood:
• Phase I (1970–1980): Focused on developing milk production and creating milk sheds. It was funded by the World Bank and involved setting up milk collection centers.
• Phase II (1981–1985): Expanded the milk grid to cover a larger area and introduced modern dairy practices. It emphasized the establishment of dairy cooperatives.
• Phase III (1985–1996): Strengthened dairy infrastructure and increased milk production to meet growing demand.
• Key Objectives of Operation Flood:
• Increase milk production to meet domestic demand.
• Provide fair prices to milk producers, especially small-scale farmers.
• Ensure availability of milk and dairy products at affordable prices for consumers.
• Reduce reliance on imports and make India self-sufficient in dairy production.
• Impact of Operation Flood:
• India became the world's largest producer of milk by the 1990s.
• Significant improvement in rural incomes and livelihoods through dairy cooperatives.
• Enhanced nutritional standards in the country due to increased milk availability.
• Boosted the rural economy and empowered women involved in dairy farming.
• Role of NDDB:
• The National Dairy Development Board (NDDB) was established in 1965 to promote, plan, and organize dairy development programs.
• NDDB was instrumental in implementing Operation Flood and ensuring its success.
• The board provided technical expertise, funding, and guidance to dairy cooperatives across India.

Important Points

• Dr. Verghese Kurien:
• He was a visionary leader who revolutionized India's dairy industry.
• Known as the "Father of the White Revolution", he was awarded several honors, including the Padma Vibhushan and the World Food Prize.
• He was instrumental in setting up the Anand Milk Union Limited (AMUL), which became a symbol of India's dairy success.
• Milk Cooperatives:
• Operation Flood established thousands of milk cooperatives across India.
• These cooperatives provided a platform for small and marginal farmers to sell their milk collectively.
• They empowered farmers by eliminating middlemen and ensuring fair prices.
• Global Recognition:
• Operation Flood is considered one of the most successful development programs globally.
• It transformed India's dairy sector and provided a model for other developing nations.

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Q97. Answer: (b) Only the payment to factors of production

The correct answer is Only the payment to factors of production.

Key Points

• Factor Cost refers to the total cost of production, which includes payments made to the factors of production such as land, labor, capital, and entrepreneurship.

• It is calculated as the sum of all factor payments like wages, rent, interest, and profits, excluding any taxes or subsidies imposed by the government.

• Production taxes and product taxes are not included in the calculation of factor cost. Instead, they are included in market price calculations. Hence, options referring to taxes are incorrect.

• Factor cost is a measure of the cost incurred by producers in producing goods and services and does not consider tax-related influences, making it a more accurate measure of production cost.

• The correct answer is based on the distinction between factor cost and market price, where factor cost includes only the remuneration to production factors.

Additional Information

• Difference between Factor Cost and Market Price:

• Factor Cost: Includes only payments to factors of production (wages, rent, interest, and profit) and excludes taxes/subsidies.

• Market Price: The price at which goods are sold in the market, including taxes and subsidies.

• The relationship can be expressed as:

Market Price = Factor Cost + Product Taxes - Product Subsidies

• Types of Taxes:

• Production Taxes: Imposed on the production process (e.g., excise duty).

• Product Taxes: Levied on the sale of goods and services (e.g., GST, VAT).

• GDP at Factor Cost:

• It measures the value of goods and services produced within a country based on the cost of production (factor cost).

• It excludes the influence of taxes and subsidies, providing a clearer picture of production efficiency.

• Importance of Factor Cost in Economic Analysis:

• Used to evaluate production efficiency and resource utilization in an economy.

• Helps policymakers understand the true cost of production without distortions caused by taxes and subsidies.

Important Points

• Concept of National Income:

• National Income is often measured in terms of GDP, GNP, NDP, and NNP at factor cost or market prices.

• GDP at Factor Cost is a key metric for understanding an economy's production capabilities.

• Factor Payments:

• These include wages for labor, rent for land, interest for capital, and profit for entrepreneurship.

• Such payments are the foundation of calculating factor cost.

• Exclusion of Taxes in Factor Cost:

• Taxes like GST and VAT are considered external influences and are not part of production costs at the factor level.

• Subsidies, which reduce the cost burden on producers, are also excluded from factor cost calculations.

Q98. Answer: (a) Only I

The correct answer is Only I.

Key Points

• Vessels are a key component of the xylem tissue in vascular plants. They are specialized cells responsible for transporting water and nutrients from the roots to other parts of the plant.

• Phloem tissue does not contain vessels; instead, it contains sieve tubes and companion cells, which are responsible for transporting food (mainly sugars) produced during photosynthesis.

• Xylem vessels are elongated tubular structures that form a continuous network, facilitating efficient water conduction. They are dead at maturity and lack cytoplasm, allowing unimpeded water flow.

• Vessels are unique to angiosperms, although some gymnosperms and pteridophytes have tracheids instead of vessels for water conduction.

• Hence, vessels are part of xylem tissue only. Statement I is correct, while Statement II is incorrect.

Additional Information

• Xylem Tissue:

• It is a vascular tissue responsible for the transport of water and dissolved minerals in plants.

• Xylem consists of four types of cells: vessels, tracheids, xylem parenchyma, and xylem fibers.

• Vessels are more efficient in water conduction compared to tracheids due to their larger diameter and interconnected structure.

• Phloem Tissue:

• Phloem is a vascular tissue involved in the transport of organic nutrients, primarily sucrose, from the leaves to other parts of the plant.

• Its components include sieve tubes, companion cells, phloem parenchyma, and phloem fibers.

• Unlike xylem, phloem cells are living, with sieve tube elements lacking a nucleus but relying on companion cells for their functions.

• Comparison between Xylem and Phloem:

• Direction of transport: Xylem transports water and minerals upward (roots to shoots), while phloem transports food in multiple directions.

• Cell types: Xylem contains vessels and tracheids (dead at maturity), whereas phloem contains sieve tubes and companion cells (living).

• Functional role: Xylem provides mechanical support to the plant, while phloem is involved in nutrient distribution.

• Vessels vs. Tracheids:

• Vessels are wide, cylindrical cells with open ends, forming continuous tubes, while tracheids are narrow, elongated cells with tapered ends.

• Vessels are more efficient in water conduction, whereas tracheids provide better mechanical support.

• Tracheids are found in both angiosperms and gymnosperms, but vessels are predominantly found in angiosperms.

Important Points

• Development of vessels: During their development, vessel elements lose their cytoplasm and organelles, becoming hollow and dead, which optimizes water transport.

• Structure of vessels: Vessel walls are thickened with lignin, a substance that provides structural support and prevents collapse under water pressure.

• Role in plant growth: Efficient water conduction by vessels is crucial for maintaining turgor pressure, which supports plant growth and stability.

• Study of vascular tissues: The study of xylem and phloem is a fundamental aspect of botany and contributes to understanding plant physiology and adaptations.

Q99. Answer: (b) The tendril circles around the object and clings to it

The correct answer is The tendril circles around the object and clings to it.

Key Points

• Tendrils are specialized plant structures that help plants climb and support themselves by attaching to nearby objects, such as a trellis or neighboring plants.

• When a tendril comes in contact with an object, cells on the side touching the object grow slower, while cells on the opposite side elongate faster. This uneven growth causes the tendril to curl around the object.

• This process is a type of growth movement in response to touch, known as thigmotropism. It enables plants to maximize sunlight exposure by climbing toward light sources.

• The coiling around the object strengthens the plant's anchorage and prevents the tendril from falling off, ensuring stability.

• Examples of plants with tendrils include pea plants (Pisum sativum), grapevines (Vitis vinifera), and cucumber plants (Cucumis sativus).

Additional Information

• Thigmotropism:

• It is a plant's directional growth response to touch or physical contact with a solid object.

• In tendrils, this response is facilitated by differential growth rates in cells on opposite sides of the tendril.

• Other examples of thigmotropism include the coiling of climbing plants such as ivy and the folding of leaves in Mimosa pudica when touched.

• Types of Tropisms:

• Phototropism: Growth movement in response to light (e.g., sunflower turning toward sunlight).

• Geotropism: Growth movement in response to gravity (e.g., roots growing downward).

• Hydrotropism: Growth movement in response to water (e.g., roots growing toward water sources).

• Thigmotropism: Growth in response to touch (e.g., tendrils coiling around objects).

• Functions of Tendrils:

• Provide structural support to weak-stemmed plants.
• Help plants climb and reach sunlight for photosynthesis.
• Reduce the risk of being overshadowed by competing vegetation.
• Examples of Tendril-Bearing Plants:
• Pea plant (Pisum sativum): Has leaf tendrils to support climbing.
• Grapevine (Vitis vinifera): Uses tendrils for attachment and climbing.
• Passionflower (Passiflora): Features tendrils for structural support.

Important Points

• Key Characteristics of Tendrils:
• Tendrils may originate from leaves, leaflets, or stems depending on the plant species.
• They are highly sensitive to touch, allowing them to detect and respond to nearby objects.
• Once coiled, tendrils develop lignin to strengthen their structure and hold the plant securely.
• Scientific Explanation:
• The coiling is driven by differential auxin distribution. Auxin, a plant hormone, accumulates on the side away from the contact point, promoting cell elongation and causing curvature.
• Other hormones like ethylene may also play a role in regulating thigmotropic responses.

Q100. Answer: (b) Kadambari

The correct answer is Kadambari.

Key Points

• Kadambari is a renowned Sanskrit prose romance written by Banabhatta, a celebrated writer in the court of King Harsha.
• Banabhatta was an eminent 7th-century Sanskrit scholar and poet during the reign of Harsha (606–647 CE), a ruler of the Vardhana dynasty.
• The Kadambari is considered one of the most significant works of prose in classical Sanskrit literature. It is appreciated for its intricate storyline, rich vocabulary, and poetic descriptions.
• The narrative revolves around themes of love, reincarnation, and destiny, intricately weaving multiple subplots and characters into the main story.
• The novel was incomplete at the time of Banabhatta's death and was later completed by his son, Bhushanabhatta.

Additional Information

• Dhatupatha:
• The Dhatupatha is a compilation of verb roots in Sanskrit and is attributed to Panini, the ancient Indian grammarian who wrote the foundational text on Sanskrit grammar, the Ashtadhyayi.
• It is not related to Banabhatta but is an essential text for studying Sanskrit grammar and linguistics.
• Ritusamhara:
• The Ritusamhara is a Sanskrit poem attributed to Kalidasa, one of the greatest poets and dramatists in classical Sanskrit literature.
• It vividly describes the six Indian seasons (spring, summer, monsoon, autumn, early winter, and winter) with poetic beauty and imagery.
• Raghuvamsha:
• Raghuvamsha is another masterpiece by Kalidasa. It is an epic poem that narrates the lineage of the Raghu dynasty, which includes the legendary king Rama.
• It is an outstanding example of Sanskrit kavya (poetry) and is highly esteemed for its literary and historical significance.
• Kadambari:
• Kadambari is often regarded as one of the first novels in world literature. Its influence is seen in later Sanskrit and regional Indian literature.
• The work is noted for its elaborate descriptions, ornate language, and philosophical undertones, highlighting the cultural and intellectual milieu of ancient India.

Important Points

• Banabhatta’s Contributions:
• Besides Kadambari, Banabhatta also wrote the Harshacharita, a biography of King Harsha, which is considered the first historical prose in Sanskrit literature.
• His works are celebrated for their eloquent prose, rich imagination, and detailed portrayal of Indian society during the 7th century.
• Influence of Kadambari:

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- The narrative style and storytelling techniques of Kadambari influenced many later works of fiction in India and beyond.
- It remains a classic text that is studied and admired for its literary and cultural significance.

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