SSC CHSL 2025 Tier-1 (Held On: 21 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. Identify the part of the sentence that contains a grammatical error.

A. Having been a part of the team for five years, B. the promotion to manager was C. unexpected but much appreciated D. by him.

(a) Having been a part of the team for five years,
(b) the promotion to manager was
(c) unexpected but much appreciated
(d) by him.

Q2. Fill in the blank with the most appropriate preposition:

She is proficient ____ several programming languages, including Python and Java.

(a) at
(b) on
(c) in
(d) with

Q3. Fill in the blank with the most appropriate conjunction:

You can take the early train, _____ you'll have to wait for the afternoon one.

(a) and
(b) unless
(c) otherwise
(d) although

Q4. Select the most appropriate synonym of the word: QUIXOTIC

(a) Practical
(b) Idealistic
(c) Realistic
(d) Sensible

Q5. Choose the correctly spelt word:

(a) Colonel
(b) Collonel
(c) Colonal
(d) Cornel

Q6. Select the most appropriate antonym of the word: Trivial

(a) Insignificant
(b) Minor
(c) Important
(d) Commonplace

Q7. Choose the correct one-word substitute for:

A person who writes dictionaries.

(a) Editor
(b) Novelist
(c) Lexicographer
(d) Author

Q8. Choose the most suitable option to replace the highlighted part of the sentence: Paresh eats hardly only food.

(a) hardly any food
(b) any hardly food
(c) food hardly any
(d) food not hardly

Q9. Select the most appropriate antonym of the word: Ebullient

(a) Depressed
(b) Cheerful
(c) Joyful
(d) Enthusiastic

Q10. Choose the option that is the most appropriate conversion of the following sentence into Direct Speech.

He said that while he had been writing the report, his laptop suddenly shut down.

(a) He said, "While I wrote the report, my laptop suddenly shut down."
(b) He said, "While I was writing the report, my laptop suddenly shut down."
(c) He said, "While I am writing the report, my laptop suddenly shuts down."
(d) He said, "While I had been writing the report, my laptop had shut down."

Q11. Fill in the blank with the correctly spelled word:

"The scientist emphasized that the _____ effects of small daily habits can significantly influence long-term health outcomes."

(a) cumulattive
(b) cumalative
(c) cumulative
(d) cumulutive

Q12. Change the following sentence into the Active form.

Is the new policy expected to be implemented immediately across all departments?

(a) Are they expecting to implement the new policy immediately across all departments?
(b) Is the new policy implementing immediately across all departments?
(c) Do they expect to implement the new policy immediately across all departments?
(d) They expect to implement the new policy immediately across all departments?

Q13. Select the option that expresses the given sentence in indirect voice.

My mother said, "I will help you with your homework."

(a) My mother said that she would help me with my homework.
(b) My mother said that she will help me with my homework.
(c) My mother said that she would have helped me with my homework.
(d) My mother said that she helped me with my homework.

Q14. Choose the most suitable option to replace the highlighted part of the sentence :

The dessert is a dry piece of land.

(a) desert
(b) dissert
(c) daisert
(d) desertive

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Q15. Choose the correct passive voice transformation of the sentence:

Who painted the Mona Lisa?

(a) By whom was the Mona Lisa painted?
(b) Who was the Mona Lisa painted by?
(c) The Mona Lisa was painted by whom?
(d) By whom the Mona Lisa was painted?

Directions

Read the passage and answer the following questions:

in contemporary India, the accounting profession, particularly Chartered Accountants (CAs), is witnessing an alarming surge in fatalities attributed primarily to excessive work-related stress. The profession's demanding nature-characterized by protracted hours, stringent deadlines, and intense mental exertion-has precipitated grave health repercussions. Despite being pivotal to the country's financial ecosystem, many CAs endure chronic sleep deprivation and psychological strain, culminating in life-threatening conditions such as cardiac arrests and strokes.

The deleterious effects of incessant work pressures are exacerbated during the fiscal year-end and tax filing seasons, where the workload intensifies manifold. The compulsion to deliver flawless outputs within unforgiving timeframes frequently compels professionals to forsake personal well-being. Moreover, the COVID-19 pandemic further aggravated these conditions by transitioning most work to virtual platforms, blurring the boundaries between professional and personal life, and extending working hours indefinitely.

Compounding this predicament is the societal stigma attached to seeking psychological assistance, which dissuades many from obtaining necessary mental health support. The regulatory bodies and firms, albeit cognizant of this crisis, have been slow to implement effective measures to mitigate occupational hazards.

In essence, the burgeoning mortality among Indian CAs is a clarion call for systemic reforms, encompassing workload management, mental health awareness, and institutional accountability, to safeguard the professionals who underpin India's economic stability.

Q16. Identify the voice of the verb phrase in the sentence:

"The compulsion to deliver flawless outputs within unforgiving timeframes frequently compels professionals to forsake personal well-being."

(a) Active voice
(b) Passive voice
(c) Causative voice
(d) Subjunctive mood

Q17. In the following sentence, identify the finite verb(s):

"The pandemic further aggravated these conditions by transitioning most work to virtual platforms, blurring the boundaries between professional and personal life, and extending working hours indefinitely."

In the above sentence, identify the finite verb(s):

(a) Aggravated
(b) Transitioning, blurring, extending
(c) Pandemic
(d) Aggravated, transitioning

Q18. The word "deleterious" in the sentence "The deleterious effects of incessant work pressures are exacerbated during the fiscal year-end and tax filing seasons, where the workload intensifies manifold" most nearly means:

(a) Beneficial
(b) Harmful
(c) Insignificant
(d) Controversial

Q19. The phrase "a clarion call" in the passage most nearly means:

(a) A gentle suggestion
(b) A loud and clear demand
(c) An ambiguous statement
(d) A quiet warning

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Q20. According to the passage, which factor does NOT contribute to the high mortality rate among Indian CAS?

(a) Chronic sleep deprivation
(b) Transition to virtual work platforms
(c) Strict regulatory enforcement of workload limits
(d) Societal stigma around psychological help

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

P. He took a very thin slice of a tissue sample and placed it on a glass slide.
Q. He added a single drop of a staining solution to make the cells visible.
R. He carefully placed a thin cover slip over the sample to protect it.
S. He placed the slide under the microscope to begin his examination.

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

Q22. Rearrange the following sentences to form a meaningful and grammatically correct paragraph:

P. A robot built to tackle a challenging challenge served as the students' final assignment.
Q. The code that would enable the machine to traverse a maze was written over weeks.
R. Their engineering, programming, and design abilities came together to create it.
S. The robot's faultless performance demonstrated their commitment and cooperation.

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

Q23. Which word is nearest in meaning to client?

The astrologer knew that the man in front of him was no ordinary client.

(a) Leader
(b) Stranger
(c) Rival
(d) Customer

Q24. Which of the following pairs of homonyms can be used to fill in the blanks most suitably?

She __ the obligation of attending the kitty party with patience, but soon the mindless chatter began to __ her.

(a) bore, boar
(b) boar, boar
(c) boar, bore
(d) bore, bore

Q25. Which of the following terms refers to the absence of government?

(a) Anarchy
(b) Democracy
(c) Monarchy
(d) Oligarchy

GENERAL INTELLIGENCE

Q26. In a row of 45 students, Aman is 21st from the left end. What is his position from the right end?

(a) 24th
(b) 25th
(c) 26th
(d) 27th

Q27. A student scored 75 out of 120 marks in an exam. What is the student's percentage score?

(a) 60.5%
(b) 62.5%
(c) 65%
(d) 70%

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

Statement:

No dog is a cat.

No cat is a bird.

Conclusions:

I. No dog is a bird.

II. Some birds are not dogs

(a) Only conclusion I follows.
(b) Only conclusion II follows.
(c) Either conclusion I or II follows.
(d) Neither conclusion I nor II follows.

Q29. Candles are arranged in a row. The middle candle is 8th from both ends. How many candles are there in total?

(a) 15
(b) 16
(c) 14
(d) 17

Q30. A person walks 6 km west, then 8 km north, and finally 6 km east. In which direction is he from his starting point?

(a) North
(b) South
(c) East
(d) West

Q31. A person walks 6 km north, then 8 km east, and finally 6 km south. What is the shortest distance between his starting point and ending point?

(a) 6 km
(b) 8 km
(c) 10 km
(d) 12 km

Q32. If 544~361" 19 = 563 and 882~231" 21 = 893, then what is the value of 627~133" 7?

(a) 646
(b) 644
(c) 648
(d) 642

Q33. Few of the letters are given followed by a question mark (?) these letters are following a specific pattern you have to give the correct option which can replace question mark.

Choose the next in: E, H, K, N, Q, ?

(a) S
(b) T
(c) U
(d) V

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Q34. In this type of questions, question is provided with some issues/disputes/problem, followed by few methods to resolve the problem in statement choosing the appropriate problem solving method that can be implemented.

A shopkeeper's supplier delays deliveries causing shortages. What should he do to maintain customer trust?

(a) Stop selling affected items
(b) Blame supplier publicly
(c) Raise prices and hide shortage
(d) Inform customers transparently and offer alternatives

Q35. In three of the following pairs are same by same pattern except one pair. Which pair does not follow this pattern?

(a) 18 : 9
(b) 14 : 7
(c) 30 : 14
(d) 22 : 11

Q36. Directions: Select the related word from the given alternatives.

Keyboard: Typing :: Paintbrush:?

(a) Palette
(b) Drawing
(c) Painting
(d) Wall

Q37. Direction: Choose the correct options from the alternative-

1101 : 1011 :: 2125:?

(a) 5122
(b) 2125
(c) 2215
(d) 2015

Q38. Complete the following series from the given options.

m_nnm_nnnm_nnn_

(a) nmmn
(b) nmmm
(c) nmnm
(d) mmmm

Q39. Instructions: For the question below, analyse the given information and conditions. Based on your understanding of relative positions and rankings, determine the correct order or position and answer the question.

Scenario: In a queue, Ram is 15th from the front and Shyam is 18th from the back. If there are 7 people between them.

Question: What is the maximum possible number of people in the queue?

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

Q40. Instructions: For the question below, analyse the given information and conditions. Based on your understanding of relative positions and rankings, determine the correct order or position and answer the question.

Scenario: In a row of 60 cars, a green car is 25th from the left.

Question: What is its position from the right end?

(a) 35th
(b) 36th
(c) 37th
(d) 34th

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Q41. Instructions: Carefully examine the Reference Statement. Then, identify the single option among the four alternatives (a, b, c, d) that is an EXACT AND COMPLETE REPLICATION of the Reference Statement. Pay exceptionally close attention to every character, number, symbol, space, and punctuation mark.

Reference: Jaipur. Mar. 20th, 2026 (Thursday).

(a) Jaipur. Mar. 20th, 2026 (Thursday).
(b) Jaipur. Mar. 20th, 2026 (Thrusday).
(c) Jaipur. Mar 20th, 2026 (Thursday).
(d) Jaip_ur. Mar. 20th, 2026 (Thursday).

Q42. Instructions: For the question below, carefully examine the Reference Statement. Then, identify the single option among the four alternatives (a, b, c, d) that is an EXACT AND COMPLETE REPLICATION of the Reference Statement. Pay exceptionally close attention to every character, number, symbol, space, and punctuation mark.

Reference: Lima, Peru. 28 July 1821.

(a) Lima, Peru. 28 July 1821.
(b) Lima, Peru: 28 July 1821.
(c) Limma, Peru. 28 July 1821.
(d) Lima, Peru. 28 Jully 1821.

Q43. Directions: Choose the related word from the given alternatives

Propeller: Airplane:: ?: Radio

(a) Speaker
(b) Handle
(c) Antenna
(d) Disk

Q44. Find the next number in the sequence.

2, 4, 12, 14, 42, 44, ?

(a) 132
(b) 130
(c) 128
(d) 126

Q45. Find the next number.

100, 25, 6.25, 1.5625, ?

(a) 0.391275
(b) 0.390625
(c) 0.3725
(d) 0.39125

Q46. 8 boys A, B, C, D, E, F, G and H are sitting in a row facing south (not necessarily in the same order). A and H are at extreme ends of the row. 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. Who is sitting third to the right of E?

(a) B
(b) C
(c) A
(d) H

Q47. W started walking straight from her office to go her home. During her journey she turned 9 times right and 8 times left. She is finally walking towards south to reach her home. In which direction she started walking?

(a) South
(b) North
(c) West
(d) East

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Q48. P walks 40 km towards north. He turns right and walks 80 km. He again turns right and walks 40 km. How far (in km) and in which direction is he now from the starting point?

(a) 80, East
(b) 80, West
(c) 60, West
(d) 60, East

Q49. Assuming that the data given in the statement are definitely true which of the following conclusions can be logically deducted.

Statement: Every student who studies regularly passes the exam. Maria passed the exam.

Which conclusion is valid?

(a) Maria studies regularly
(b) Maria might have studied regularly
(c) Only students who study regularly pass exams
(d) Maria is the only student who passed

Q50. By interchanging the given two numbers (not digits) which of the following equation will NOT be correct?

3 and 7

I. 7 × 9 + 3 - 8 ÷ 2 = 30

II. 2 × 3 + 7 - 4 ÷ 1 = 13

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

QUANTITATIVE APTITUDE

Q51. The average of 8 numbers is 26. If one number is excluded, the average becomes 25. Find the excluded number.

(a) 34
(b) 40
(c) 33
(d) 32

Q52. If √15 = 3.88, find the value of √(5/3)

(a) 1.2933
(b) 1.111
(c) 1.001
(d) 1.493

Q53. If $x = (\sqrt{2}+\sqrt{1})/(\sqrt{2}-\sqrt{1})$, $y = (\sqrt{2}-\sqrt{1})/((\sqrt{2}+\sqrt{1}))$, find the value of (x^2+y^2)

(a) 34
(b) 38
(c) 37
(d) 32

Q54. A, B, and C invest in the ratio 2:3:5. If the total profit is Rs. 10,000, find B's share.

(a) Rs. 3000
(b) Rs. 3500
(c) Rs. 2000
(d) Rs. 2500

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Q55. A, B, C invest in 2:3:5. If profit is Rs. 10000, find A's share.

(a) Rs. 2000
(b) Rs. 2500
(c) Rs. 3000
(d) Rs. 4000

Q56. If A:B = 2:3 and B:C = 4:5, then what is A:B:C?

(a) 8:12:15
(b) 2:3:5
(c) 4:6:5
(d) 6:9:10

Q57. If the average of 4, 6, x, and 10 is 8, find the value of x.

(a) 12
(b) 14
(c) 16
(d) 10

Q58. The average of four numbers is 44. The average of the first and second is 40, and that of the third and fourth is 48. What is the second number if the first is 36?

(a) 44
(b) 46
(c) 40
(d) 38

Q59. A student scored 72 marks in a test. If this was 60% of the total, what were the maximum marks?

(a) 110
(b) 115
(c) 120
(d) 125

Q60. A shopkeeper buys an article for Rs. 100 and sells it for Rs. 120. What is the profit percentage?

(a) 10%
(b) 15%
(c) 20%
(d) 25%

Q61. An item bought for Rs. 250 is sold at Rs. 300. Find the profit percentage.

(a) 15%
(b) 18%
(c) 20%
(d) 25%

Q62. A shopkeeper provides two consecutive discounts of 20% and 10% on an item. Calculate the single discount rate that is equivalent to these successive discounts.

(a) 28%
(b) 30%
(c) 32%
(d) 25%

Q63. In what ratio must a 30% acid solution be mixed with a 60% acid solution to obtain a 50% acid solution?

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

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Q64. A sum of Rs. 5750 earns Rs. 2620.50 as simple interest in 5 years. Find the approximate rate of interest.

(a) 8.11%
(b) 9.11%
(c) 10.11%
(d) 11.11%

Q65. A company manufactures hemispherical brass bells of radius 2 cm. If polishing costs Rs. 0.75 per square cm, find the cost of polishing the outer surface of one bell.

(a) Rs. 18.85
(b) Rs. 17.65
(c) Rs. 16.95
(d) Rs. 15.9

Q66. A satellite has solar panels shaped as regular polygons with 9 sides. What is the total of all internal angles?

(a) 1800°
(b) 1620°
(c) 1440°
(d) 1260°

Q67. A biochip's cover is designed as a regular polygon such that each interior angle is 165°. Find the number of sides.

(a) 20
(b) 22
(c) 18
(d) 24

Q68. A construction engineer designs a cone and a hemisphere, both with radius r, to be built from the same volume of concrete. If the volumes are equal, what is the height of the cone in terms of r?

(a) r
(b) 2r
(c) 3r
(d) (4/3)r

Q69. A spherical water tank with a radius of 4 meters is drained and refilled into 64 identical smaller spherical tanks. Assuming no water is lost in the transfer, what is the radius of each smaller tank?

(a) 1 m
(b) 2.5 m
(c) 1.26 m
(d) 1.58 m

Q70. A currency converter displays the exchange rate of 1 USD = 0.090909... JPY. A finance analyst wants the exact fractional form for calculation purposes. What is the correct fraction?

(a) 9/100
(b) 1/10
(c) 1/11
(d) 10/99

Q71. A logistics company charges Rs. 15 per km for the first 80 km and Rs. 12.5 per km thereafter. A consignment was transported for a total of 132.5 km and the total cost was split in the ratio 2:3 between the sender and receiver. What amount did the receiver pay?

(a) Rs. 1200
(b) Rs. 1350
(c) Rs. 1444.2
(d) Rs. 1113.75

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Q72. A signal tower forms an elevation such that tan θ = 3/4. Compute sin 2θ.

(a) 24/25
(b) 12/25
(c) 7/25
(d) 9/25

Q73. If x:y = 3:4 and y:z = 2:5, find x:z.

(a) 3:10
(b) 6:20
(c) 3:5
(d) 4:10

Q74. What simple interest rate will cause a sum of money to double in 15 years?

(a) 6.67%
(b) 7.67%
(c) 5.16%
(d) 4.19%

Q75. If cos2A= 1/2, what is sin2A?

(a) √3/2
(b) 1/4
(c) √3/4
(d) 1/√2

GENERAL AWARENESS

Q76. Who was the revenue minister of Akbar?

(a) Raja Bharmal
(b) Birbal
(c) Raja Man Singh
(d) Todar Mal

Q77. As of 31st July 2025, which of the following is the official language of the Shanghai Cooperation Organisation?

I. Russian
II. Hindi

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

Q78. The East Asia Summit process was initiated in _____.

(a) 1999
(b) 2002
(c) 2003
(d) 2005

Q79. Who wrote 'The Jungle Book' in 1894?

(a) Rudyard Kipling
(b) William Shakespeare
(c) Stephen Alter
(d) Edgar Allan Poe

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Q80. _____ assumed the office of Director General of Defence Estates on May 31, 2025.

(a) Alok Joshi
(b) Shailendra Nath Gupta
(c) Mayank Sharma
(d) Justice Arun Palli

Q81. How many authors are to be selected under the PM-YUVA 3.0?

(a) 30
(b) 50
(c) 60
(d) 65

Q82. How many sections does the Bharatiya Nyaya Sanhita (BNS), 2023 contain?

(a) 358
(b) 558
(c) 258
(d) 458

Q83. As the Atal Pension Yojana completed 10 years in May 2025, which age group is eligible to enroll in the scheme?

(a) 18-40 years
(b) 21-50 years
(c) 18-60 years
(d) 25-65 years

Q84. What was the rank of Harvard University in Global University Employability Ranking 2025?

(a) 1st
(b) 2nd
(c) 3rd
(d) 4th

Q85. In which of the following Summer Olympics did Neeraj Chopra win the gold medal?

(a) 2016
(b) 2020
(c) 2024
(d) 2008

Q86. Strokes, Starts and Turns are some of the Techniques of which of the following sports?

(a) Swimming
(b) Baseball
(c) Golf
(d) Badminton

Q87. To protect one-horned rhinos from poachers which state has launched the Operation Falcon in August 2025?

(a) Assam
(b) Uttarakhand
(c) Madhya Pradesh
(d) Karnataka

Q88. The Umred-Pauni-Karhandla Sanctuary, is in _____.

(a) Maharashtra
(b) Gujarat
(c) Uttarakhand
(d) Punjab

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Q89. The National Marathon in February 2025, was held in _____.

(a) New Delhi
(b) Chennai
(c) Chandigarh
(d) Kolkata

Q90. 'Dewar Geet', sung as entertainment songs, are associated with which Indian state?

(a) Goa
(b) Maharashtra
(c) Haryana
(d) Chhattisgarh

Q91. The diameter of the bamboo flutes is usually about _____ cm.

(a) 1.9
(b) 4.1
(c) 4.8
(d) 3.8

Q92. What were the cities of the Indus Valley generally enclosed with?

(a) Wooden fences
(b) Fortified walls with gateways
(c) Stone barricades
(d) Moats and drawbridges

Q93. Which of the following states practices the folk dance form 'Hai-Hak'?

(a) Tripura
(b) Gujarat
(c) Bihar
(d) Kerala

Q94. The International Space Station circles Earth roughly _____ times a day.

(a) 36
(b) 8
(c) 16
(d) 24

Q95. Why does a matchstick catch fire when struck against a rough surface?

(a) Because it contains petrol
(b) Because friction produces heat
(c) Because the stick is hollow
(d) Because it absorbs moisture

Q96. In February 2025, which US pharma firm announced a $200 million investment in its technology center in Hyderabad, focusing on AI and data science?

(a) Pfizer
(b) Amgen
(c) Merck
(d) Johnson & Johnson

Q97. Which crop did the British force the peasants of Assam to produce?

(a) Cotton
(b) Tea
(c) Wheat
(d) Rice

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Q98. The Indira Gandhi Canal originates at Harike barrage in _____.

(a) Punjab
(b) Rajasthan
(c) Uttarakhand
(d) Haryana

Q99. Which religious community had the second-largest population in India as per Census 2011?

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

Q100. The philosophical concept that everything in the universe is one divine essence is called _____.

(a) Samiti
(b) Yajna
(c) Purandar
(d) Brahman

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (b) the promotion to manager was

The correct answer is '2' i.e. the promotion to manager was.

Key Points

• The grammatical error lies in part 2, "the promotion to manager was".

• The sentence starts with "Having been a part of the team for five years,", which sets the context for the subject of the sentence. However, part 2 incorrectly makes "the promotion" the subject.

• Instead, the subject should be "he" or the person being referred to, as the promotion is related to him.

Correct sentence: Having been a part of the team for five years, he found the promotion to manager unexpected but much appreciated.

Additional Information

• Subject-Verb Agreement: Ensure the subject of the sentence aligns correctly with the verb.

• Misplaced Modifiers: Avoid making the wrong part of the sentence the subject when a modifier sets a different context.

• Clarity: Revising for clarity ensures the sentence conveys the intended meaning accurately.

Q2. Answer: (c) in

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

Key Points

• The sentence requires the most appropriate preposition to complete the statement logically and grammatically.

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• The preposition "in" is used to indicate proficiency or expertise in a particular field or area.
• The word "proficient" is commonly followed by "in" when referring to skills or knowledge areas.
Correct sentence: She is proficient in several programming languages, including Python and Java.
Additional Information
• Usage of other options:
• "at": Typically used for indicating location or specific points in time, not for proficiency.
• "on": Used for indicating position or topics but not for proficiency.
• "with": Used for tools or instruments, but "proficient with" is less commonly used than "proficient in."
• Prepositions often depend on the context and the verb or adjective used in the sentence.

Q3. Answer: (c) otherwise

The correct answer is '3' i.e. otherwise.
Key Points
• The given sentence is a conditional sentence that presents two choices: taking the early train or waiting for the afternoon one.
• The most appropriate conjunction to fill in the blank is "otherwise", as it implies a consequence or alternative action.
• Using "otherwise" helps establish the relationship between the choices effectively.
Correct sentence: You can take the early train, otherwise you'll have to wait for the afternoon one.
Additional Information
• Conjunctions Explained:
• And: Used to connect similar ideas or actions. Example: I like tea and coffee.
• Unless: Indicates a condition under which something will happen. Example: You won't pass unless you study.
• Otherwise: Indicates an alternative or consequence. Example: Hurry up; otherwise, you'll miss the train.
• Although: Used to show contrast. Example: Although it was raining, we went out.

Q4. Answer: (b) Idealistic

The correct answer is '2' i.e. Idealistic.
Key Points
• The word quixotic means exceedingly idealistic, unrealistic, and impractical.
• Option 2, Idealistic, is the closest synonym of the word quixotic as it refers to being visionary or having high ideals, often without considering practicality.
• Options 1, 3, and 4—Practical, Realistic, and Sensible—are antonyms of quixotic, as they describe grounded and pragmatic qualities.
Correct sentence: The most appropriate synonym of "quixotic" is idealistic.
Additional Information
• Synonyms: Words with similar meanings to quixotic include "romantic," "visionary," and "unrealistic."
• Antonyms: Words opposite in meaning to quixotic include "practical," "realistic," and "sensible."
• Usage in a sentence: His plans to build a utopian society were dismissed as quixotic by the critics.

Q5. Answer: (a) Colonel

The correct answer is '1' i.e. Colonel.
Key Points
• Option 1, Colonel, is the correct spelling of the word.
• It refers to a rank in the military.
• The other options are incorrect spellings:
• Collonel (Option 2): Incorrect as it contains an extra 'l'.
• Colonal (Option 3): Incorrect as the vowel 'o' is misplaced.
• Cornel (Option 4): Incorrect as it is a completely different spelling.
Additional Information
• Colonel is pronounced as “k?r-n?l”, which is different from its spelling.
• The word originated from the French word “colonel” and the Italian word “colonnello”, leading to the unique pronunciation.

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Q6. Answer: (c) Important

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

Key Points

• The word "Trivial" means something of little importance or value.

• To find the antonym, we need to select the word that conveys the opposite meaning, i.e., something significant or of great importance.

• Among the given options:

• Option 1: Insignificant - Synonym of "trivial," meaning something unimportant. (Incorrect)

• Option 2: Minor - Similar in meaning to "trivial," also meaning less important. (Incorrect)

• Option 3: Important - Opposite of "trivial," meaning something of great significance. (Correct)

• Option 4: Commonplace - Similar to "trivial," meaning something ordinary or not special. (Incorrect)

Correct Answer: Important, as it is the most appropriate antonym of "Trivial".

Additional Information

• Antonyms are words that have opposite meanings. For example:

• Bright and Dark

• Fast and Slow

• Synonyms are words with similar meanings. For example:

• Happy and Joyful

• Trivial and Insignificant

Q7. Answer: (c) Lexicographer

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

Key Points

• The word 'Lexicographer' refers to a person who compiles or writes dictionaries.

• It is derived from the word 'lexicon', which means a dictionary or a collection of words.

• Other options do not correctly describe someone who writes dictionaries:

• Editor: A person who edits content, typically books, articles, or other forms of written work.

• Novelist: A person who writes novels.

• Author: A general term for someone who writes books, articles, or other pieces of literature.

Correct definition: A Lexicographer is a person who compiles and writes dictionaries.

Additional Information

• Usage of Lexicography:

• Lexicography is the art or craft of writing dictionaries.

• It involves the selection of words, their definitions, examples of usage, and other relevant linguistic information.

Q8. Answer: (a) hardly any food

The correct answer is '1' i.e. hardly any food.

Key Points

• The given sentence highlights the incorrect placement of the words "hardly" and "only" in the phrase, making it grammatically incorrect.

• The word "hardly" is an adverb and should be followed by "any food" to correctly express the idea of eating very little food.

• The correct phrase is "hardly any food," which makes the sentence grammatically accurate and meaningful.

Correct sentence: Paresh eats hardly any food.

Additional Information

• Hardly: This word is used to mean "almost not" or "barely." When used, it is typically followed by a noun or a pronoun.

• The placement of "hardly" is crucial in a sentence, as incorrect placement can lead to ambiguity or grammatical errors.

• The phrase "hardly any food" is commonly used to indicate that someone consumes very little food.

Q9. Answer: (a) Depressed

The correct answer is '1' i.e. Depressed.

Key Points

• The word ebullient means extremely enthusiastic, cheerful, or joyful.

• To find the antonym, we need a word that conveys the opposite meaning. The correct antonym for "ebullient" is "depressed."

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• Depressed refers to a state of sadness or lack of enthusiasm, which is the opposite of ebullient.

Correct sentence: The most appropriate antonym of the word "ebullient" is depressed.

Additional Information

• Synonyms of Ebullient:

• Cheerful

• Joyful

• Enthusiastic

• Antonyms of Ebullient:

• Depressed

• Sad

• Melancholy

Q10. Answer: (b) He said, "While I was writing the report, my laptop suddenly shut down."

The correct answer is '2' i.e. He said, "While I was writing the report, my laptop suddenly shut down."

Key Points

• The given sentence is in Reported Speech, which needs to be converted into Direct Speech.

• In the Direct Speech format, the tense used depends on the context and the tense of the original statement.

• From the sentence in Reported Speech:

• Original tense: "had been writing" (past perfect continuous) → converted to "was writing" (past continuous) for Direct Speech.

• The event "laptop suddenly shut down" is in simple past tense ("shut down").

• Option 2 correctly reflects the tense consistency and retains the original meaning of the sentence.

Correct sentence: He said, "While I was writing the report, my laptop suddenly shut down."

Additional Information

• Direct Speech:

• Direct Speech is used to quote the exact words of the speaker.

• It is enclosed in quotation marks (" ").

• Example: He said, "I am going to the market."

• Reported Speech:

• Reported Speech is used to convey the meaning of what the speaker said, without quoting their exact words.

• It typically involves a shift in tense and no quotation marks.

• Example: He said that he was going to the market.

Q11. Answer: (c) cumulative

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

Key Points

• The word "cumulative" is correctly spelled and represents something that increases or builds up over time by accumulation.

• All other options (1, 2, and 4) are misspelled forms of the word "cumulative."

• The correct sentence reads: "The scientist emphasized that the cumulative effects of small daily habits can significantly influence long-term health outcomes."

Additional Information

• The word "cumulative" is derived from the Latin word "cumulare," meaning "to heap up."

• It is often used in contexts relating to the accumulation of effects, data, or results over time.

• For example:

• The cumulative rainfall this year exceeded last year's levels.

• Her cumulative efforts over the semester earned her a high grade.

Q12. Answer: (c) Do they expect to implement the new policy immediately across all departments?

The correct answer is '3' i.e. Do they expect to implement the new policy immediately across all departments?.

Key Points

• The given sentence is in the passive voice. To change it to the active voice, we need to identify the implied subject, which in this case is “they.”

• The sentence structure in active voice should follow the pattern: Subject + Verb + Object.

• The correct option, Option 3, rephrases the sentence in the active form as: Do they expect to implement the new policy

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immediately across all departments?

• The other options are incorrect because:

• Option 1: Are they expecting to implement the new policy immediately across all departments? - Incorrect because it uses the present continuous, which is not needed here.

• Option 2: Is the new policy implementing immediately across all departments? - Incorrect because it remains in the passive form and is grammatically incorrect.

• Option 4: They expect to implement the new policy immediately across all departments? - Incorrect because it is not in the interrogative form as required by the original question.

Correct sentence: Do they expect to implement the new policy immediately across all departments?.

Additional Information

• Active vs Passive Voice:

• Active voice: The subject performs the action (e.g., “They expect to implement the policy.”).

• Passive voice: The subject receives the action (e.g., “The policy is expected to be implemented.”).

• While changing from passive to active voice, always identify the doer of the action and restructure the sentence accordingly.

Q13. Answer: (a) My mother said that she would help me with my homework.

The correct answer is '1' i.e. My mother said that she would help me with my homework.

Key Points

• The given sentence is in direct speech and needs to be converted into indirect speech.

• In indirect speech, the tense of the verb changes to reflect the fact that the statement is being reported.

• Here, the direct speech statement “I will help you with your homework” is in the future tense.

• When converting to indirect speech, the future tense ‘will’ changes to ‘would’.

• Thus, the correct indirect speech sentence is “My mother said that she would help me with my homework.”

Correct sentence: My mother said that she would help me with my homework.

Additional Information

• Rules for Changing Direct to Indirect Speech:

• Pronouns: Pronouns are adjusted based on the subject and object of the reporting sentence.

• Verb Tense: The verb tense is shifted back one step in time (e.g., present to past, future to conditional).

• Time and Place Words: Words indicating time and place are changed to match the perspective of the speaker (e.g., “now” becomes “then,” “here” becomes “there”).

• Examples:

• Direct: She said, “I am going to the market.”

• Indirect: She said that she was going to the market.

• Direct: He said, “I will finish the project tomorrow.”

• Indirect: He said that he would finish the project the next day.

Q14. Answer: (a) desert

The correct answer is '1' i.e. desert.

Key Points

• In the given sentence, the word "dessert" is mistakenly used in place of "desert".

• Dessert refers to a sweet dish served at the end of a meal.

• Desert refers to a dry, barren area of land, usually covered with sand and having little or no vegetation.

• Since the sentence is describing "a dry piece of land," the correct word is "desert."

Correct sentence: The desert is a dry piece of land.

Additional Information

• Common Confusion:

• Dessert: A sweet course or dish typically eaten at the end of a meal.

• Desert: A barren, dry region with little vegetation.

• Example:

• I love eating chocolate cake for dessert. (Correct usage of "dessert")

• The Sahara is the world's largest hot desert. (Correct usage of "desert")

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Q15. Answer: (a) By whom was the Mona Lisa painted?

The correct answer is '1' i.e. By whom was the Mona Lisa painted?

Key Points

• The sentence given in the active voice is “Who painted the Mona Lisa?”.

• To transform it into the passive voice, the subject becomes the object, and the verb form is adjusted.

• In passive voice, the structure becomes By whom was the Mona Lisa painted?, correctly following the grammar rules.

• Options 2, 3, and 4 are grammatically incorrect or awkward in construction.

Correct sentence: By whom was the Mona Lisa painted?

Additional Information

• Active Voice: The subject performs the action of the verb. Example: Who painted the Mona Lisa?

• Passive Voice: The subject receives the action of the verb. Example: By whom was the Mona Lisa painted?

• When converting a question in active voice to passive voice, the question format should remain intact while restructuring the sentence grammatically.

Q16. Answer: (a) Active voice

The correct answer is Option 1.

Key Points

• Active Voice Identification: In the active voice, the subject of the sentence performs the action. Here, "The compulsion..." is the subject acting upon the object, "professionals".

• Verb Analysis: The verb "compels" is in its active form. It does not use auxiliary verbs like "is/are" combined with a past participle (e.g., "are compelled"), which would indicate a passive construction.

• Sentence Structure: The sentence follows a clear Subject + Verb + Object pattern, emphasizing the direct impact of work pressure on individuals.

Additional Information

• Passive Conversion: To change this to passive voice, the object would become the subject: "Professionals are frequently compelled by the compulsion to deliver...".

• Contextual Meaning: The passage highlights the deleterious effects of incessant work, such as cardiac arrests and strokes, which are often ignored due to societal stigma.

• Clarion Call: The author concludes that the rising mortality among CAs is a clarion call for systemic reforms and institutional accountability.

Q17. Answer: (a) Aggravated

The correct answer is Option 1.

Key Points

• Finite Verb Definition: A finite verb is a verb that has a specific subject and shows tense (past, present, or future) and number (singular or plural). It acts as the main verb of a clause.

• Analysis of "Aggravated": In the sentence, "aggravated" is the finite verb because it is the main action performed by the subject ("The pandemic") and is in the simple past tense.

• Non-Finite Verbs: The words transitioning, blurring, and extending are present participles (gerunds/participles acting as objects of the preposition "by"). They do not show tense on their own and do not have a direct subject-verb agreement in this structure, making them non-finite.

Additional Information

• Identifying Finite Verbs: You can identify a finite verb by checking if it changes when you change the tense (e.g., "The pandemic aggravates...") or the subject number.

• Contextual Vocabulary: The word "aggravated" in the passage means to make a problem or injury worse or more serious.

• Sentence Structure: The subject is "The pandemic," the finite verb is "aggravated," and the rest of the sentence provides additional information through participial phrases.

Q18. Answer: (b) Harmful

The correct answer is Option 2.

Key Points

• Contextual Meaning: In the passage, the word "deleterious" is used to describe the effects of incessant work pressures that lead to grave health repercussions like cardiac arrests and strokes. These consequences are inherently negative and damaging.

• Definition: Deleterious means causing harm or damage. It is often used in formal or technical contexts to describe something that has a destructive effect on health or systems.

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• Synonyms: Common synonyms include harmful, detrimental, injurious, and damaging. In this context, "harmful" is the most direct and accurate substitute.

Additional Information

• Antonym: The opposite of deleterious is beneficial (Option 1) or advantageous, which clearly does not fit the context of life-threatening health conditions.

• Insignificant: Option 3 is incorrect because the passage emphasizes that these effects are "grave" and "life-threatening," making them highly significant.

• Usage in Passage: The author uses strong vocabulary like exacerbated (made worse) and deleterious to underscore the severity of the crisis facing Chartered Accountants in India.

Q19. Answer: (b) A loud and clear demand

The correct answer is Option 2.

Key Points

• Definition: A "clarion call" is a strong, clear, and loud request or demand for action to be taken regarding a specific situation.

• Etymology: Historically, a "clarion" was a shrill-sounding trumpet used in war to signal soldiers. In a modern literary context, it signifies an urgent appeal that cannot be ignored.

• Contextual Application: In the passage, the author uses this phrase to emphasize that the rising mortality among CAs is not just a minor issue but an urgent demand for systemic reforms and institutional accountability.

Additional Information

• Incorrect Options: "Gentle suggestion" (Option 1) and "quiet warning" (Option 4) lack the intensity and urgency required by the word "clarion." "Ambiguous statement" (Option 3) is the opposite of a clarion call, which must be unmistakably clear.

• Tone of the Passage: The author uses powerful adjectives such as "alarming," "deleterious," and "burgeoning" to set a serious tone, making a "loud and clear demand" the most appropriate meaning.

• Synonyms: Other synonyms for a clarion call include an ultimatum, a battle cry, or an urgent appeal.

Q20. Answer: (c) Strict regulatory enforcement of workload limits

The correct answer is Option 3.

Key Points

• Regulatory Inaction: The passage explicitly states that regulatory bodies and firms have been "slow to implement effective measures to mitigate occupational hazards." This indicates that there is a lack of strict enforcement of workload limits.

• Contributing Factors: Options 1, 2, and 4 are all directly mentioned as contributing to the crisis:

• Chronic sleep deprivation: Mentioned as a result of "protracted hours" and "intense mental exertion".

• Virtual work platforms: The transition to virtual work during the pandemic blurred personal-professional boundaries and extended hours.

• Societal stigma: Described as a factor that "dissuades many from obtaining necessary mental health support".

Additional Information

• Financial Ecosystem: The text highlights that despite being "pivotal" to India's financial stability, the well-being of these professionals is frequently forsaken.

• Fiscal Year Pressures: Workloads are noted to intensify "manifold" during specific periods like tax filing seasons.

• Call for Reform: The author suggests that "institutional accountability" and "systemic reforms" are needed to change this high-pressure landscape.

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

The correct answer is '2' i.e. P, Q, R, S.

Key Points

• The sentence parts need to be arranged in a sequence that forms a meaningful and coherent paragraph.

• Step 1 (P): The paragraph begins with the action of taking a thin slice of a tissue sample and placing it on a glass slide.

• Step 2 (Q): Following this, a single drop of staining solution is added to make the cells visible.

• Step 3 (R): After that, a thin cover slip is carefully placed over the sample to protect it.

• Step 4 (S): Finally, the slide is placed under the microscope to begin the examination.

Correct paragraph: He took a very thin slice of a tissue sample and placed it on a glass slide. He added a single drop of a staining solution to make the cells visible. He carefully placed a thin cover slip over the sample to protect it. He placed the slide under the microscope to begin his examination.

Additional Information

• When rearranging sentences, it is important to identify the logical sequence of actions or events.

• In this case, the sequence follows the steps of a process, starting from the preparation of the sample to its examination under the microscope.

Q22. Answer: (d) P, R, Q, S

The correct answer is '4' i.e. P, R, Q, S.

Key Points

• The paragraph describes the creation of a robot by students as part of their final assignment.

• The logical sequence starts with introducing the robot's purpose (P).

• Next, their combined engineering, programming, and design abilities (R) are highlighted.

• The process of coding over weeks (Q) is mentioned afterward.

• Finally, the robot's flawless performance (S) showcases their commitment and teamwork.

Correct sequence: P, R, Q, S.

Additional Information

• In questions related to rearranging sentences, always look for a logical flow or connection between ideas.

• Identify introductory sentences (often providing context) and concluding sentences (highlighting outcomes or results).

• Ensure grammatical correctness and coherence in the final arrangement.

Q23. Answer: (d) Customer

The correct answer is '4' i.e. Customer.

Key Points

• The word "client" refers to someone who purchases goods or services from a professional or a business.

• In the given context, the sentence mentions a man approaching an astrologer, which implies a professional-client relationship.

• Among the options provided:

• Leader: Refers to someone who guides or inspires others.

• Stranger: Refers to someone unknown or unfamiliar.

• Rival: Refers to a competitor or opponent.

• Customer: Refers to someone who buys goods or services, which is closest in meaning to "client."

Correct Explanation: The astrologer knew that the man in front of him was no ordinary client. Here, "client" is synonymous with "customer," which fits the context of the sentence..

Additional Information

• Understanding Synonyms:

• Synonyms are words with similar meanings.

• Choosing the correct synonym depends on the context in which the word is used.

• Examples of "Client" Usage:

• The lawyer discussed the case with her client.

• The IT firm provided services to international clients.

Q24. Answer: (d) bore, bore

The correct answer is '4' i.e. bore, bore.

Key Points

• The sentence uses two different meanings of the homonym “bore” to complete the blanks.

• The first “bore” is used as the past tense of the verb “bear,” meaning to endure or tolerate patiently.

• The second “bore” means to cause someone to feel weary or uninterested.

• For example:

• She bore the obligation of attending the kitty party with patience.

• Soon the mindless chatter began to bore her.

• Options 1, 2, and 3 are incorrect because they use the word "boar," which refers to a wild pig and does not fit the context of the sentence.

Correct sentence: She bore the obligation of attending the kitty party with patience, but soon the mindless chatter began to bore her.

Additional Information

• Homonyms:

• Homonyms are words that are spelled or pronounced the same but have different meanings.

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• Examples of homonyms include:

• Bank (a financial institution) and bank (the side of a river).

• Bat (an animal) and bat (a piece of sports equipment).

Q25. Answer: (a) Anarchy

The correct answer is '1' i.e. Anarchy.

Key Points

• The term Anarchy refers to a state of society where there is no governing authority or government.

• It represents complete freedom from rules or laws imposed by a governing body.

• This is distinct from other forms of government like Democracy (rule by the people), Monarchy (rule by a king or queen), or Oligarchy (rule by a small group of individuals).

Correct sentence: The absence of government is referred to as Anarchy.

Additional Information

• Democracy: A form of government where the power lies with the people who elect representatives.

• Monarchy: A system where a monarch (king or queen) rules over the state.

• Oligarchy: A government where a small group of people hold power.

Q26. Answer: (b) 25th

Given: 45 students

Aman is 21st from the left end.

Position from right = Total number of students – Position form left + 1

Position form right = 45 - 21 + 1 = 25

So, Aman’s position from the right end is 25th.

Hence, the correct answer is "Option 2".

Q27. Answer: (b) 62.5%

Student scored 75 out of 120 marks in an exam.

Percentage score = (Obtained marks / Total marks) × 100

= (75 / 120) × 100

= 62.5%

Hence, the correct answer is "Option 2"

Q28. Answer: (d) Neither conclusion I nor II follows.

The least possible Venn diagram for the given statements is as shown below :

Conclusions:

(I) No dog is a bird → Does not follow (As there is no direct relation between dog and bird, so they can be related. It is possible but not definite.)

(II) Some birds are not dogs → Does not follow (As there is no direct relation between bird and dog, so all birds can be dogs. It is possible but not definite.)

Here, Neither conclusion I nor II follows.

Hence, the correct answer is "Option 4".

Q29. Answer: (a) 15

Given, Candles are arranged in a row

The middle candle is 8th from both ends.

Middle candle (8)

So, there are 7 candles on the left of the middle candle and 7 candles on the right of the middle candle.

Total number of candles = 7+1+7 = 15

Hence, the correct answer is "Option 1“.

Q30. Answer: (a) North

6 km west and 6 km east cancel each other

=> Net horizontal displacement = 0

Vertical movement

=> 8 km north

=> Final position = 8 km north of starting point

Therefore He is in the North direction from his starting point.

Q31. Answer: (b) 8 km

6 km north and 6 km south cancel each other

=> Net vertical displacement = 0

Horizontal displacement

=> 8 km east

=> Shortest distance = 8 km

Therefore The shortest distance between starting and ending point is 8 km.

Q32. Answer: (a) 646

Given, 544~361" 19 = 563 and 882~231" 21 = 893.

So, 627~133" 7

The operation can be interpreted as

a ~ b”c = a + b ÷ c

Checking the given equations,

544 +361 ÷ 19 = 544 +19 = 563. The given logic is correct.

882 + 231 ÷ 21 = 882 + 11 = 893. the given logic is correct.

So, 627 + 133 ÷ 7 = 627 + 19 = 646.

Hence, the correct answer is "Option 1“.

Q33. Answer: (b) T

Given, Choose the next in: E, H, K, N, Q, ?

So, follows +3 steps in the alphabet:

E(5) → H(8) → K(11) → N(14) → Q(17) → T(20).

Correct Option – 2 (T)

Hence, the correct answer is "Option 2“.

Q34. Answer: (d) Inform customers transparently and offer alternatives

Reasoning:- Option 1 ignores customers’ needs and can lead to loss of loyalty.

Option 2 shifts blame but doesn’t solve the customer experience.

Option 3 deceives customers and raises prices, damaging trust.

Option 4 builds trust through honesty and provides solutions, keeping customers satisfied.

Hence, the correct answer is "Option 4–(Inform customers transparently and offer alternatives)".

Q35. Answer: (c) 30 : 14

The logic followed here is:

Logic:

The pattern is that in that in three of the pairs the first number is exactly twice the second number. (second number × 2 = first number)

Checking each pair :

Option 1) 18 : 9 = 9 × 2 => 18

Option 2) 14 : 7 = 7 × 2 => 14

Option 3) 30 : 14 = 14 × 2 => 28 ≠ 30

Option 4) 22 : 11 = 11 × 2 => 22

The pair that does not follow the pattern is (3) 30:14

Hence, the correct answer is "Option 3".

Q36. Answer: (c) Painting

Given, Keyboard: Typing :: Paintbrush:?

• A keyboard is a tool used for typing.

• Similarly, a paintbrush is a tool used for painting.

So, the related word is(3). Painting.

The correct option is 3.

Q37. Answer: (c) 2215

The logic followed here is:

Logic: The middle two digits of the first number are interchanged to get the second number.

Now,

For, 1101 : 1011

=> 1 (10) 1 → Interchange middle digits (1,0) → 1 (01) 1 = 1011.

Similarly, for 2125 : ?

=> 2 (12) 5

=> Interchange middle digits (1, 2) → 2 (21) 5

=> 2215

Hence, the correct answer is "Option 3".

Q38. Answer: (b) nmmm

The logic followed here is:

Given Sequence ::m_nnm_nnnm_nnn_:

Now, putting the letters in the blank spaces given in the option one by one:

Option 1). nmmn = mnnnmmnnnmmnnnn

Option 2). nmmm = mnnnmmnnnmmnnnm

Here, 'mnnnm' followed a pattern.

Option 3). nmnm = mnnnmmnnnmnnnnm

Option 4). mmmm = mmnnmmnnnmmnnnm

Hence, the correct answer is "Option 2".

Q39. Answer: (b) 40

In a queue, Ram is 15th from the front and Shyam is 18th from the back. If there are 7 people between them.

Ram (15) Shyam(18)

The Maximum possible number of people in the queue = Possible of Ram + Possible of shyam + Between people

= 15 + 18 + 7 = 40

Hence, the correct answer is "Option 2"

Q40. Answer: (b) 36th

Given, Scenario: In a row of 60 cars, a green car is 25th from the left.

Position from right = Total items – Green car position from left + 1

60 – 25 + 1 = 36

Hence, the correct answer is "Option 2".

Q41. Answer: (a) Jaipur. Mar. 20th, 2026 (Thursday).

The Reference Statement given in the problem is,

Jaipur. Mar. 20th, 2026 (Thursday).

Option	Statement in Option	Matching
(1)	Jaipur. Mar. 20th, 2026 (Thursday).	The statement matches exactly with the Reference Statement.
(2)	Jaipur. Mar. 20th, 2026 (Thrusday).	Spelling mistake: Thursday is written as Thrusday.
(3)	Jaipur. Mar 20th, 2026 (Thursday).	Missing full stop after Mar.
(4)	Jaip_ur. Mar. 20th, 2026 (Thursday).	Extra character _ added in Jaipur.

So, the statement that exactly matches the Reference Statement is option (1).

Hence, the correct answer is "Option (1)".

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Q42. Answer: (a) Lima, Peru. 28 July 1821.

The Reference Statement given in the problem is,

Lima, Peru. 28 July 1821.

Option	Statement in Option	Matching
(1)	Lima, Peru. 28 July 1821.	The statement matches exactly with the Reference Statement.
(2)	Lima, Peru: 28 July 1821.	Full stop (.) is replaced with colon (:) after Peru.
(3)	Limma, Peru. 28 July 1821.	Spelling mistake: Lima is written as Limma.
(4)	Lima, Peru. 28 Jully 1821.	Spelling mistake: July is written as Jully.

So, the statement that exactly matches the Reference Statement is option (1).

Hence, the correct answer is "Option (1)".

Q43. Answer: (c) Antenna

Given:

Propeller: Airplane:: ?: Radia

The analogy is Propeller : Airplane

A propeller is a device that drives or powers an airplane.

Similarly,

An antenna is a device used to transmit or receive signals for a radio.

Correct answer: 3. Antenna.

Q44. Answer: (a) 132

The logic followed here is:

Thus, the missing term in the series is 132.

Hence, the correct answer is "Option 1".

Q45. Answer: (b) 0.390625

The sequence is: 100, 25, 6.25, 1.5625, ?

The logic followed here is:

Logic: 1st number ÷ 4 = 2nd number. 2nd number ÷ 4 = 3rd number.

Now,

100 ÷ 4 = 25

25 ÷ 4 = 6.25

6.25 ÷ 4 = 1.5625

1.5625 ÷ 4 = 0.390625

So, the next number is 0.390625

Hence, the correct answer is "Option 2".

Q46. Answer: (c) A

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 of the row.

F is to the immediate left of A. Since they are facing south, A must be at the left end (from our perspective) so that F can be to his left.

E and F are immediate neighbours of B.

C is fourth to the left of B.

D is not the immediate neighbour of C.

Thus, A is sitting third to the right of E(all are facing south)

Hence, the correct answer is Option 3.

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Q47. Answer: (d) East

To find the direction in which W started walking,

Each left turn cancels out a right turn because they are opposite directions.

Right turns: 9 (right)

Left turns: 8 (left)

Net result: right turns - left turns = 9 - 8 = 1 right turn

This means that after all the walking and turning, W's final direction is the same as if she had started walking and made just one right turn.

We know her final direction is South. To find her starting direction, we need to reverse the net turn (instead of a right turn, we go left from the final direction):

Final Direction: South

Reverse of 1 Right Turn: 1 Left Turn

If you are facing South and turn Left, you will face East.

Hence, the correct answer is "Option 4".

Q48. Answer: (a) 80, East

Given,:

P walks 40 km towards north. He turns right and walks 80 km. He again turns right and walks 40 km.

Thus, he is 80 km away from the starting point in the East direction.

Hence, the correct answer is "Option 1".

Q49. Answer: (b) Maria might have studied regularly

The question is a logical deduction problem.

Statement: Every student who studies regularly passes the exam. Maria passed the exam.

You need to decide which conclusion can be logically deduced.

1. Maria studies regularly – invalid. The statement only says regular study => pass, not pass => regular study.

2. Maria might have studied regularly – valid. Since passing can be due to regular study or other reasons, this is a possible inference.

3. Only students who study regularly pass exams – invalid. The original statement does not imply exclusivity.

4. Maria is the only student who passed – invalid. No information is given about other students.

Correct answer: (2). Maria might have studied regularly.

Q50. Answer: (d) Neither I nor II

BODMAS Rule:

According to the question, we need to interchange the numbers 3 and 7 and identify which of the following equations will NOT be correct.

I. $7 \times 9 + 3 - 8 \div 2 = 30$

New Equation: $3 \times 9 + 7 - 8 \div 2 = ?$

Perform operations according to BODMAS:

$\Rightarrow 3 \times 9 + 7 - (8 \div 2)$

$\Rightarrow (3 \times 9) + 7 - 4$

$\Rightarrow (27 + 7) - 4$

$\Rightarrow 34 - 4$

$\Rightarrow 30$

$30 = 30$ (Equation I is Correct)

II. $2 \times 3 + 7 - 4 \div 1 = 13$

New Equation: $2 \times 7 + 3 - 4 \div 1 = ?$

Perform operations according to BODMAS:

$\Rightarrow 2 \times 7 + 3 - (4 \div 1)$

$\Rightarrow (2 \times 7) + 3 - 4$

$\Rightarrow (14 + 3) - 4$

$\Rightarrow 17 - 4$

$\Rightarrow 13$

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13 = 13 (Equation II is Correct)

Since both equations I and II are correct after the interchange, neither of them is "not correct".

Hence, the correct answer is "Option 4".

Q51. Answer: (c) 33

Given:

Average of 8 numbers = 26

Average of 7 numbers (excluding one number) = 25

Formula Used:

Sum of numbers = Average × Number of terms

Excluded number = Total sum of 8 numbers - Total sum of 7 numbers

Calculation:

=> Total sum of 8 numbers = 26 × 8 = 208

=> Total sum of 7 numbers = 25 × 7 = 175

=> Excluded number = 208 - 175 = 33

Therefore The correct answer is 33.

Q52. Answer: (a) 1.2933

Given:

√15 = 3.88

Formula Used:

√(a ÷ b) = √a ÷ √b

√(a × b) = √a × √b

Calculation:

=> √(5 ÷ 3) = √5 ÷ √3

=> √15 = √(5 × 3)

=> √15 = √5 × √3

=> 3.88 = √5 × √3

=> √5 = 3.88 ÷ √3

=> √(5 ÷ 3) = (3.88 ÷ √3) ÷ √3

=> √(5 ÷ 3) = 3.88 ÷ (√3 × √3)

=> √(5 ÷ 3) = 3.88 ÷ 3

=> √(5 ÷ 3) = 1.2933

Therefore The correct answer is 1.2933.

Q53. Answer: (a) 34

Given:

$x = (\sqrt{2} + 1) \div (\sqrt{2} - 1)$

$y = (\sqrt{2} - 1) \div (\sqrt{2} + 1)$

Formula Used:

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

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

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

Calculation:

=> $x \times y = ((\sqrt{2} + 1) \div (\sqrt{2} - 1)) \times ((\sqrt{2} - 1) \div (\sqrt{2} + 1))$

=> $x \times y = 1$

=> $x + y = ((\sqrt{2} + 1) \div (\sqrt{2} - 1)) + ((\sqrt{2} - 1) \div (\sqrt{2} + 1))$

=> $x + y = ((\sqrt{2} + 1)^2 + (\sqrt{2} - 1)^2) \div ((\sqrt{2} - 1)(\sqrt{2} + 1))$

=> $(\sqrt{2} + 1)^2 = 2 + 1 + 2\sqrt{2}$

=> $(\sqrt{2} - 1)^2 = 2 + 1 - 2\sqrt{2}$

=> Numerator = $(3 + 2\sqrt{2}) + (3 - 2\sqrt{2})$

=> Numerator = 6

=> Denominator = 2 − 1

=> Denominator = 1
=> x + y = 6
=> $x^2 + y^2 = (x + y)^2 - 2xy$
=> $x^2 + y^2 = 6^2 - 2 \times 1$
=> $x^2 + y^2 = 36 - 2$
=> $x^2 + y^2 = 34$
Therefore The correct answer is 34.

Q54. Answer: (a) Rs. 3000

Given:
Investment ratio of A, B, and C = 2:3:5
Total profit = Rs. 10,000
Formula Used:
B's share = (B's ratio ÷ Total ratio) × Total profit
Calculation:
=> Total ratio = 2 + 3 + 5 = 10
=> B's share = (3 ÷ 10) × 10,000
=> B's share = 3,000
Therefore The correct answer is Rs. 3,000.

Q55. Answer: (a) Rs. 2000

Given:
Investment ratio = 2:3:5
Total profit = Rs. 10000
Formula Used:
A's share = (A's ratio ÷ Total ratio) × Total profit
Calculation:
=> Total ratio = 2 + 3 + 5 = 10
=> A's share = (2 ÷ 10) × 10000
=> A's share = 0.2 × 10000
=> A's share = Rs. 2000
Therefore The correct answer is Rs. 2000.

Q56. Answer: (a) 8:12:15

Given:
A : B = 2 : 3
B : C = 4 : 5
Formula Used:
If A : B = m : n and B : C = p : q, make the common term equal by multiplying with LCM.
Calculation:
=> B values are 3 and 4
=> LCM of 3 and 4 = 12
=> Multiply 2 : 3 by 4
=> A : B = 8 : 12
=> Multiply 4 : 5 by 3
=> B : C = 12 : 15
=> A : B : C = 8 : 12 : 15
Therefore The correct answer is 8 : 12 : 15.

Q57. Answer: (a) 12

Shortcut Trick
Total sum of 4 numbers = Average × Total count
Total sum = 8 × 4 = 32

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Sum of known numbers = 4 + 6 + 10 = 20
Value of x = Total sum − Sum of known numbers = 32 − 20 = 12
Therefore The correct answer is 12.
Alternate Method
Given: Numbers are 4, 6, x, 10 and their Average is 8.
Formula Used: Average = (Sum of all observations) ÷ (Total number of observations)
=> Average = (4 + 6 + x + 10) ÷ 4
=> 8 = (20 + x) ÷ 4
=> 8 × 4 = 20 + x
=> 32 = 20 + x
=> x = 32 − 20
=> x = 12
Therefore The correct answer is 12.
Additional Information
Sum of Deviations
The sum of the deviations of all observations from their arithmetic mean is always zero. For example: (4−8) + (6−8) + (12−8) + (10−8) = −4 − 2 + 4 + 2 = 0.
Weighted Average
When groups have different sizes, the combined average is calculated as (n1×A1 + n2×A2) ÷ (n1 + n2).
Effect of Constant
If a constant 'k' is added to or subtracted from every observation, the new average will also increase or decrease by 'k'.

Q58. Answer: (a) 44

Given:
Average of four numbers = 44
Average of first and second numbers = 40
Average of third and fourth numbers = 48
First number = 36
Formula Used:
Average = (Sum of values) ÷ (Number of values)
Sum of values = Average × Number of values
Calculation:
=> Sum of four numbers = 44 × 4 = 176
=> Sum of first and second numbers = 40 × 2 = 80
=> Sum of third and fourth numbers = 48 × 2 = 96
=> Second number = Sum of first and second numbers − First number
=> Second number = 80 − 36 = 44
Therefore The correct answer is 44.

Q59. Answer: (c) 120

Given:
Marks scored = 72
Percentage = 60%
Formula Used:
Total marks = (Marks scored × 100) ÷ Percentage
Calculation:
=> Total marks = (72 × 100) ÷ 60
=> Total marks = 7200 ÷ 60
=> Total marks = 120
Therefore The correct answer is 120.

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Q60. Answer: (c) 20%

Given:
Cost Price (CP) = Rs. 100
Selling Price (SP) = Rs. 120
Formula Used:
Profit = SP - CP
Profit Percentage = (Profit ÷ CP) × 100
Calculation:
=> Profit = 120 - 100
=> Profit = 20
=> Profit Percentage = (20 ÷ 100) × 100
=> Profit Percentage = 20%
Therefore The correct answer is 20%.

Q61. Answer: (c) 20%

Given:
Cost Price (CP) = Rs. 250
Selling Price (SP) = Rs. 300
Formula Used:
Profit = SP - CP
Profit Percentage = (Profit ÷ CP) × 100
Calculation:
=> Profit = 300 - 250
=> Profit = 50
=> Profit Percentage = (50 ÷ 250) × 100
=> Profit Percentage = 0.2 × 100
=> Profit Percentage = 20%
Therefore The correct answer is 20%.

Q62. Answer: (a) 28%

Given:
First discount = 20%
Second discount = 10%
Formula Used:
Equivalent single discount = 100 - [(100 - d1) × (100 - d2) ÷ 100]
Calculation:
=> Equivalent single discount = 100 - [(100 - 20) × (100 - 10) ÷ 100]
=> Equivalent single discount = 100 - [80 × 90 ÷ 100]
=> Equivalent single discount = 100 - [7200 ÷ 100]
=> Equivalent single discount = 100 - 72
=> Equivalent single discount = 28%
Therefore The correct answer is 28%.

Q63. Answer: (b) 1:2

Given:
First solution concentration = 30%
Second solution concentration = 60%
Required concentration = 50%
Formula Used:
Required ratio = (Higher concentration − Mean concentration) : (Mean concentration − Lower concentration)
Calculation:
=> Ratio = (60 − 50) : (50 − 30)
=> Ratio = 10 : 20

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=> Ratio = 1 : 2

Therefore The correct answer is 1 : 2.

Q64. Answer: (b) 9.11%

Given:

Principal (P) = Rs. 5750

Simple Interest (SI) = Rs. 2620.50

Time (T) = 5 years

Formula Used:

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

Rate of Interest (R) = (SI × 100) ÷ (P × T)

Calculation:

=> R = (2620.50 × 100) ÷ (5750 × 5)

=> R = 262050 ÷ 28750

=> R ≈ 9.11%

Therefore The correct answer is 9.11%.

Q65. Answer: (a) Rs. 18.85

Shortcut Trick

Outer surface area (CSA) of a hemispherical bell = $2\pi r^2$.

Total Cost = Area × Rate = $(2 \times \pi \times 2^2) \times 0.75$.

Cost = $8 \times \pi \times 0.75 = 6 \times \pi = 6 \times 3.14159 \approx$ Rs. 18.85.

Therefore The correct answer is Rs. 18.85.

Alternate Method

Given:

Radius (r) = 2 cm

Polishing Rate = Rs. 0.75 per cm^2

Formula Used:

Curved Surface Area (CSA) of Hemisphere = $2\pi r^2$

Total Polishing Cost = CSA × Rate

Calculations:

=> CSA = $2 \times (22/7) \times 2 \times 2$

=> CSA = $2 \times (22/7) \times 4 = 176/7$ cm^2

=> Total Cost = $(176/7) \times 0.75$

=> Total Cost = $(176/7) \times (3/4)$

=> Total Cost = $(44 \times 3) / 7 = 132/7$

=> Total Cost ≈ Rs. 18.857...

Therefore The correct answer is Rs. 18.85.

Additional Information

Total Surface Area (TSA) of a Hemisphere

The TSA includes the curved surface and the flat circular base: TSA = $3\pi r^2$.

Volume of a Hemisphere

The amount of space occupied by a hemisphere: Volume = $(2/3)\pi r^3$.

Sphere Formulas

For a full sphere, Surface Area = $4\pi r^2$ and Volume = $(4/3)\pi r^3$.

Q66. Answer: (d) 1260°

Shortcut Trick

The sum of all internal angles of a regular polygon is calculated as $(n - 2) \times 180°$.

For a 9-sided polygon (n = 9):

Sum = $(9 - 2) \times 180°$

Sum = $7 \times 180° = 1260°$.

Therefore The correct answer is 1260°.

Alternate Method
Given:
Number of sides of the regular polygon (n) = 9
Formula Used:
Total sum of internal angles = (n − 2) × 180°
Calculations:
=> Total sum = (9 − 2) × 180°
=> Total sum = 7 × 180°
=> Total sum = 1260°
Therefore The correct answer is 1260°.
Additional Information
Sum of Exterior Angles
The sum of the exterior angles of any convex polygon is always 360°, regardless of the number of sides.
Individual Interior Angle
For a regular polygon with n sides, each interior angle is given by [(n − 2) × 180°] ÷ n.
Interior and Exterior Relationship
At any vertex of a polygon, the sum of the interior angle and its corresponding exterior angle is always 180° (Linear Pair).

Q67. Answer: (d) 24

Given:
Each interior angle = 165°
Formula Used:
Sum of interior angles of a polygon = (n - 2) × 180°
Each interior angle = Sum of interior angles ÷ n
Calculation:
=> Each interior angle = (n - 2) × 180° ÷ n
=> 165 = (n - 2) × 180 ÷ n
=> 165n = 180(n - 2)
=> 165n = 180n - 360
=> 180n - 165n = 360
=> 15n = 360
=> n = 360 ÷ 15
=> n = 24
Therefore The correct answer is 24.

Q68. Answer: (b) 2r

Given:
Radius of cone = r
Radius of hemisphere = r
Volume of cone = Volume of hemisphere
Formula Used:
Volume of cone = (1 ÷ 3) × π × r^2 × h
Volume of hemisphere = (2 ÷ 3) × π × r^3
Calculation:
=> (1 ÷ 3) × π × r^2 × h = (2 ÷ 3) × π × r^3
=> π × r^2 × h = 2 × π × r^3
=> r^2 × h = 2 × r^3
=> h = 2r
Therefore The correct answer is 2r.

Q69. Answer: (a) 1 m

Given:
Radius of large sphere = 4 m

Number of smaller spheres = 64
Formula Used:
Volume of sphere = (4 ÷ 3) × π × r^3
Calculation:
=> Volume of large sphere = (4 ÷ 3) × π × 4^3
=> Volume of large sphere = (4 ÷ 3) × π × 64
=> Let radius of smaller sphere = r
=> Volume of one smaller sphere = (4 ÷ 3) × π × r^3
=> Total volume of 64 smaller spheres = 64 × (4 ÷ 3) × π × r^3
=> (4 ÷ 3) × π × 64 = 64 × (4 ÷ 3) × π × r^3
=> 4^3 = 64r^3
=> 64 = 64r^3
=> r^3 = 1
=> r = 1
Therefore The correct answer is 1 m.

Q70. Answer: (c) 1/11

Given:
Decimal number = 0.090909...
Formula Used:
If x = 0.a (repeating), then x = a ÷ 9
For two-digit repeating decimal, x = repeating digits ÷ 99
Calculation:
=> Let x = 0.090909...
=> 100x = 9.090909...
=> 100x − x = 9.090909... − 0.090909...
=> 99x = 9
=> x = 9 ÷ 99
=> x = 1 ÷ 11
Therefore The correct answer is 1/11.

Q71. Answer: (d) Rs. 1113.75

Shortcut Trick
Total cost = (80 × 15) + (52.5 × 12.5) = 1200 + 656.25 = Rs. 1856.25.
Ratio of Sender to Receiver = 2 : 3 (Total = 5 parts).
Receiver share = (3 ÷ 5) × 1856.25 = 0.6 × 1856.25 = Rs. 1113.75.
Therefore The correct answer is Rs. 1113.75.
Alternate Method
Given:
Total Distance = 132.5 km
Rate 1 (upto 80 km) = Rs. 15 per km
Rate 2 (above 80 km) = Rs. 12.5 per km
Split Ratio (Sender : Receiver) = 2 : 3
Calculations:
=> Cost for first 80 km = 80 × 15 = Rs. 1200
=> Remaining distance = 132.5 − 80 = 52.5 km
=> Cost for remaining distance = 52.5 × 12.5 = Rs. 656.25
=> Total transportation cost = 1200 + 656.25 = Rs. 1856.25
=> Total ratio parts = 2 + 3 = 5 parts
=> Value of 1 part = 1856.25 ÷ 5 = Rs. 371.25
=> Amount paid by receiver (3 parts) = 3 × 371.25 = Rs. 1113.75
Therefore The correct answer is Rs. 1113.75.

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Additional Information

Ratio Distribution

To find a specific share from a total, multiply the total by (target ratio ÷ sum of all ratio parts).

Tiered Pricing Calculation

In tiered systems, each segment of the quantity is multiplied by its specific rate before summing them up for the final total.

Weighted Average Price

The average cost per km can be found by Total Cost ÷ Total Distance, which is useful for comparing different logistics providers.

Q72. Answer: (a) 24/25

Shortcut Trick

In a right-angled triangle, if tan θ = 3/4, the Pythagorean triplet is 3, 4, and 5.

Here, the perpendicular (p) = 3, base (b) = 4, and hypotenuse (h) = 5.

Calculate sin θ = p/h = 3/5 and cos θ = b/h = 4/5.

Apply the identity: sin 2θ = 2 × sin θ × cos θ.

=> sin 2θ = 2 × (3/5) × (4/5) = 24/25.

Therefore The correct answer is 24/25.

Alternate Method

Given:tan θ = 3/4

Formula Used:sin 2θ = (2 tan θ) / (1 + tan² θ)

Calculations:

=> sin 2θ = [2 × (3/4)] / [1 + (3/4)²]

=> sin 2θ = (3/2) / [1 + 9/16]

=> sin 2θ = (3/2) / [(16 + 9) / 16]

=> sin 2θ = (3/2) / (25/16)

=> sin 2θ = (3/2) × (16/25)

=> sin 2θ = (3 × 8) / 25

=> sin 2θ = 24/25

Therefore The correct answer is 24/25.

Additional Information

Double Angle Identities

The double angle formula for sine is sin 2θ = 2sin θ cos θ and for cosine is cos 2θ = cos² θ − sin² θ.

Tangent Half-Angle Substitution

Sine and cosine can be expressed in terms of tangent: sin 2θ = 2tan θ / (1 + tan² θ) and cos 2θ = (1 − tan² θ) / (1 + tan² θ).

Pythagorean Triplets

Common triplets like (3, 4, 5), (5, 12, 13), and (8, 15, 17) frequently appear in trigonometry problems to simplify calculations.

Q73. Answer: (a) 3:10

Given:

x : y = 3 : 4

y : z = 2 : 5

Formula Used:

If a : b = m : n and b : c = p : q, make the common term equal by multiplying with LCM.

Calculation:

=> y values are 4 and 2

=> LCM of 4 and 2 = 4

=> Multiply 2 : 5 by 2

=> y : z = 4 : 10

=> x : y = 3 : 4

=> x : z = 3 : 10

Therefore The correct answer is 3 : 10.

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Q74. Answer: (a) 6.67%

Given:

Principal (P): Original sum of money.

Time (T): 15 years.

Final Amount (A): Double the principal (2P).

Formula Used:

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

Final Amount (A): A = P + SI

Calculation:

=> A = 2P

=> SI = A - P = 2P - P = P

=> SI = P × R × T ÷ 100

=> P = P × R × 15 ÷ 100

=> R × 15 ÷ 100 = 1

=> R = 100 ÷ 15

=> R = 6.67%

Therefore The correct answer is 6.67%.

Q75. Answer: (a) √3/2

Shortcut Trick

In trigonometry, we know that if cos θ = 1/2, then the angle θ = 60°.

Here, let θ = 2A. Therefore, 2A = 60°.

The question asks for the value of sin 2A.

Substituting the value of 2A: sin 2A = sin 60°.

From the standard trigonometric table, sin 60° = √3 / 2.

Therefore The correct answer is √3 / 2.

Alternate Method

Given: cos 2A = 1/2

Formula Used: $\sin^2\theta + \cos^2\theta = 1$

=> $\sin^2 2A + \cos^2 2A = 1$

=> $\sin^2 2A + (1/2)^2 = 1$

=> $\sin^2 2A + 1/4 = 1$

=> $\sin^2 2A = 1 - 1/4$

=> $\sin^2 2A = 3/4$

=> $\sin 2A = \sqrt{(3/4)}$

=> sin 2A = √3 / 2

Therefore The correct answer is √3 / 2.

Additional Information

Trigonometric Identity

The fundamental identity $\sin^2\theta + \cos^2\theta = 1$ is valid for all real values of θ.

Double Angle Formulas

Other useful forms for cos 2A include $1 - 2\sin^2 A$ and $2\cos^2 A - 1$.

Standard Angle Values

Standard values for sine and cosine include sin 30° = 1/2, sin 45° = 1/√2, and cos 30° = √3/2.

Q76. Answer: (d) Todar Mal

The correct answer is Todar Mal.

Key Points

• Raja Todar Mal was the Finance Minister or Revenue Minister in the court of Mughal Emperor Akbar. He is renowned for his administrative and revenue reforms.

• He introduced the Zabt system, which is considered one of the most systematic land revenue systems in Indian history. This system ensured uniformity and fairness in tax collection.

• Todar Mal played a key role in the implementation of the land survey and measurement system. This involved dividing

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agricultural land into units based on productivity and fixing revenue rates accordingly.

• He standardized the revenue collection process, ensuring that farmers were not exploited by local officials. The revenue was collected in cash or kind depending on the region's agricultural produce.

• The reforms introduced by Todar Mal under Akbar's administration greatly enhanced the efficiency of the empire's financial system, contributing significantly to the prosperity of the Mughal Empire.

Additional Information

• Zabt System:

• Under Todar Mal's guidance, the Zabt system was implemented, which calculated revenue based on the measured productivity of the land. This system was used in areas where agricultural output was uniform and predictable.

• Land was categorized into three types: Polaj (cultivated annually), Parauti (cultivated intermittently), and Chachar (cultivated after long intervals).

• The system ensured accurate measurement of land and proper documentation of land ownership and revenue liabilities.

• Akbar's Administrative Reforms:

• Akbar introduced several administrative reforms to centralize and strengthen the Mughal Empire. Todar Mal's revenue reforms were a cornerstone of this effort.

• The administrative system was divided into provinces or Subahs, each headed by a governor, ensuring efficient governance and tax collection.

• Other Ministers in Akbar's Court:

• Birbal: Known for his wit and intelligence, Birbal was one of the nine jewels (Navratnas) in Akbar’s court. He advised Akbar on matters of diplomacy and cultural integration.

• Raja Man Singh: A trusted general and statesman, Raja Man Singh was instrumental in expanding Akbar's empire through military conquests.

• Raja Bharmal: Raja Bharmal was the father of Akbar's wife, Jodha Bai, and played a role in establishing alliances between the Mughal Empire and Rajput states.

• Significance of Todar Mal's Reforms:

• The revenue system introduced by Todar Mal served as a model for subsequent rulers in India, including the British colonial administration.

• It emphasized transparency, accountability, and fairness, which reduced corruption and exploitation in the collection of taxes.

Important Points

• Comparison with Other Revenue Systems:

• The Zabt system was based on accurate measurement and documentation, unlike earlier systems that relied on arbitrary assessments.

• It laid the foundation for modern revenue systems and inspired the British Revenue Settlement during their rule in India.

• Historical Legacy:

• Todar Mal's reforms are considered a landmark in the history of Indian administration. His contribution to Akbar’s reign established a legacy of efficient governance.

• His reforms ensured that peasants were not burdened unnecessarily, and the state received consistent revenue, fostering economic stability.

Q77. Answer: (a) Only I

The correct answer is Only I.

Key Points

• Statement I: Russian is one of the official languages of the Shanghai Cooperation Organisation (SCO). The SCO was established in 2001, and Russian has remained a key language for communication and documentation within the organization. Hence, Statement I is correct.

• Statement II: Hindi is not an official language of the SCO. While India became a full member of the SCO in 2017, Hindi has not been designated as an official language for communication or documentation within the organization. Hence, Statement II is incorrect.

• The two official languages of the SCO are Russian and Chinese. These languages are used for all official communication and documentation within the organization.

• The use of Russian as an official language reflects the historical influence of Russia and its central role in the organization.

• India, despite its active participation in SCO activities, does not have Hindi as an official language in the organization. Instead, India contributes using English for most international engagements.

Additional Information

• Shanghai Cooperation Organisation (SCO):

• The SCO is an intergovernmental organization founded in 2001 in Shanghai, China.
• Its founding members include China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan.
• The organization focuses on regional security, counter-terrorism, economic cooperation, and cultural exchange.
• India and Pakistan became full members of the SCO in 2017.
• The SCO has expanded its scope over the years, addressing issues such as cybersecurity, trade, and connectivity.
• Official Languages of SCO:
• The official languages of the SCO are Russian and Chinese.
• Russian is widely used due to the historical and political influence of Russia in the region.
• Chinese reflects China's role as a founding member and its growing global influence.
• These languages are used for official documents, meetings, and communication within the SCO.
• India's Role in SCO:
• India joined the SCO as a full member in June 2017 during the Astana summit.
• India's involvement in the SCO focuses on regional security, counter-terrorism, economic development, and connectivity projects.
• Despite being a full member, Hindi is not recognized as an official language within the organization.
• India actively participates in SCO discussions using English or other accepted mediums.
• Important Points:
• The SCO's official languages reflect the geopolitical influence of its founding members, Russia and China.
• Efforts to introduce additional languages require approval from all member states, which is a complex process.
• India has proposed initiatives within the SCO framework to address terrorism, energy security, and trade but has not sought to make Hindi an official language.

Q78. Answer: (d) 2005

The correct answer is 2005.

Key Points

• The East Asia Summit (EAS) was established in 2005 as a forum for regional cooperation and dialogue in the Asia-Pacific region.
• The inaugural East Asia Summit was held on 14 December 2005 in Kuala Lumpur, Malaysia.
• It was initiated as a platform for leaders from the Asia-Pacific region to discuss strategic, political, and economic issues of mutual interest and concern.
• The EAS comprises 18 members: the ten ASEAN countries (Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam), along with China, Japan, South Korea, India, Australia, New Zealand, the United States, and Russia.
• The Summit focuses on strategic cooperation in areas such as energy, trade, disaster management, global health, and maritime security.

Additional Information

• Historical Context:
• The EAS was first proposed by ASEAN (Association of Southeast Asian Nations) during its summit in 2004.
• The Summit reflects the growing importance of Asia-Pacific in global geopolitics and aims to foster regional integration and cooperation.
• Membership criteria include significant global influence, economic interdependence with the region, and active participation in ASEAN-led mechanisms.
• Objectives of the EAS:
• The Summit works on strengthening regional security and stability.
• It aims to enhance cooperation in areas such as economic growth, environmental sustainability, energy, and disaster management.
• The EAS also addresses pressing global challenges like climate change, terrorism, and public health crises.
• Key Developments:
• Over time, the EAS has expanded its scope to include partnerships in education, connectivity, and sustainable development.
• In 2010, the United States and Russia officially joined the EAS, enhancing its strategic importance.
• In recent years, the Summit has emphasized maritime security and the Indo-Pacific strategy, reflecting global shifts in geopolitics.
• Important Facts:
• The ASEAN Secretariat plays a pivotal role in coordinating the Summit’s agenda.

• The EAS operates as a leaders-led forum, meaning heads of state or government participate directly in discussions.

• Key agreements and initiatives are often developed collaboratively with other regional and global organizations.

Important Points

• ASEAN's Role: The ASEAN nations serve as the foundation of the EAS, ensuring continuity and adherence to regional priorities.

• Strategic Significance: The EAS is seen as a key diplomatic instrument for promoting peace and stability in the Asia-Pacific.

• Economic Impact: The Summit fosters collaboration among major global economies, enhancing regional trade and investment opportunities.

• Annual Meetings: The EAS is held annually, alongside the ASEAN Summit, allowing leaders to discuss pressing issues and formulate collective responses.

• Global Influence: The EAS is instrumental in shaping global policies on issues like climate change, sustainable development, and international security.

Q79. Answer: (a) Rudyard Kipling

The correct answer is Rudyard Kipling.

Key Points

• 'The Jungle Book' was written by Rudyard Kipling and published in the year 1894.

• The book is a collection of stories, featuring the adventures of Mowgli, a human child raised by wolves in the jungle.

• Rudyard Kipling was born on 30th December 1865 in Bombay (now Mumbai), India, and is known for his works that explore themes of British colonialism.

• Kipling's mastery in storytelling brought to life the rich fauna of the Indian jungle, such as Bagheera (the panther), Baloo (the bear), and Shere Khan (the tiger).

• The book is widely regarded as a classic of children's literature and has been adapted into numerous films, plays, and animations.

Additional Information

• Rudyard Kipling:

• He was awarded the Nobel Prize in Literature in 1907, making him the youngest recipient of the prize at the time.

• His other famous works include 'Kim', 'The Man Who Would Be King', and poems like 'If—' and 'Gunga Din'.

• Kipling's writing style is characterized by vivid descriptions, moral lessons, and the integration of British imperial themes.

• About 'The Jungle Book':

• The book contains a total of seven stories, many of which revolve around Mowgli, while some feature other characters like Rikki-Tikki-Tavi, a brave mongoose.

• It explores themes such as the importance of family, loyalty, and identity.

• The "Law of the Jungle" is a recurring motif, symbolizing rules and ethics in a complex society.

• Other Options:

• William Shakespeare: He was a famous English playwright and poet from the Elizabethan era, known for works like 'Hamlet', 'Macbeth', and 'Romeo and Juliet'. He did not write 'The Jungle Book'.

• Stephen Alter: An Indian-American author known for books on Himalayan ecology and culture, but he is not connected to 'The Jungle Book'.

• Edgar Allan Poe: An American writer famous for his gothic tales and poems such as 'The Raven' and 'The Tell-Tale Heart'. He did not write 'The Jungle Book'.

Important Points

• Inspiration for 'The Jungle Book': Kipling was inspired by his childhood in India, particularly the wildlife and culture he observed.

• Legacy: Disney adapted 'The Jungle Book' into an animated movie in 1967, and a live-action remake was released in 2016.

• Impact: The book has been used as a teaching tool for children to understand moral values and the importance of coexistence with nature.

Q80. Answer: (b) Shailendra Nath Gupta

The correct answer is Shailendra Nath Gupta.

Key Points

• Shailendra Nath Gupta assumed the office of Director General of Defence Estates on May 31, 2025. This position is critical for managing defence land and cantonments in India.

• The Director General of Defence Estates (DGDE) is the head of the Defence Estates Organization (DEO), which works under the Ministry of Defence in India.

• The DEO is responsible for managing over 17.57 lakh acres of defence land, including cantonments, military stations, and other defence-related establishments.

• Shailendra Nath Gupta's appointment reflects his vast experience and expertise in handling administrative and defence-related matters.

• The DGDE also plays a key role in ensuring compliance with policies related to land acquisition, leasing, and urban planning within cantonment areas.

Additional Information

• Director General of Defence Estates (DGDE):

• The DGDE is the apex authority in the Defence Estates Organization (DEO), which was established in 1926.

• It oversees the management, planning, and administration of all defence lands and cantonments across the country.

• The DGDE also ensures that defence lands are utilized effectively and in accordance with the national interest.

• Responsibilities of the Defence Estates Organization (DEO):

• Management of defence lands, including acquisitions and disposals.

• Implementation of urban development policies in 62 cantonments across India.

• Ensuring compliance with environmental and land-use regulations in defence areas.

• Providing governance and civic amenities for residents in cantonments.

• Cantonment Boards:

• Cantonment Boards are autonomous bodies under the Ministry of Defence, tasked with municipal administration in cantonments.

• They provide essential services like water supply, sanitation, education, and healthcare for civilians and military personnel residing in these areas.

• There are four categories of cantonment boards (I, II, III, and IV), depending on the population size.

• Significance of Defence Land Management:

• Efficient management of defence land ensures optimal utilization for military operations and infrastructure development.

• Proper maintenance of cantonments contributes to the welfare of defence personnel and their families.

• The DGDE plays a key role in preventing encroachments and unauthorized use of defence land.

Important Points

• Eligibility for DGDE: The appointment of the Director General of Defence Estates is typically made from senior officers with substantial experience in administration and land management.

• Related Legislative Framework: The functioning of DEO and Cantonment Boards is governed by the Cantonments Act, 2006, which replaced earlier legislations.

• Historical Context: The Defence Estates Organization was established to streamline land management in the colonial era and has undergone significant reforms post-Independence.

• Challenges: Key challenges include preventing illegal encroachments, balancing urban development with defence needs, and addressing environmental concerns.

Q81. Answer: (b) 50

The correct answer is 50.

Key Points

• PM-YUVA 3.0 (Pradhan Mantri Yuva Utsav) is the third edition of the scheme, aimed at promoting young authors in India.

• The initiative is part of the National Education Policy (NEP) 2020, which emphasizes fostering critical thinking, creativity, and writing skills among youth.

• A total of 50 authors will be selected under this program to encourage young talent in the literary field.

• The selected authors will be provided with training and mentorship to develop their literary works, which will also be published.

• This program is targeted at Indian citizens aged 30 and below, ensuring a focus on nurturing young talent across the country.

Additional Information

• Theme of PM-YUVA 3.0:

• The theme for this edition is centered around Indian culture, heritage, and vision for the future.

• The focus is to create a platform for young voices to articulate the rich diversity and traditions of India.

• Eligibility Criteria:

• Applicants must be Indian citizens aged 30 years or younger.

• They should submit a manuscript or concept note for consideration.

• Benefits for Selected Authors:

• The selected participants will receive mentorship from renowned authors and literary experts.

• Their works will be published and promoted by the Government of India.

• A financial grant will be provided for the development of their manuscripts.

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• Implementation:
• The program is being managed by the National Book Trust (NBT), India.
• It aligns with the vision of the Azadi Ka Amrit Mahotsav celebrations to commemorate 75 years of India's independence.
• Significance:
• It aims to cultivate new literary talent in India and promote reading and writing habits among the youth.
• The initiative also helps in fostering a greater appreciation of India's culture and heritage.

Important Points

• Previous Editions:
• PM-YUVA 1.0 and 2.0 focused on identifying young talent and publishing their works across various genres.
• These editions also emphasized inculcating the habit of reading and promoting intellectual growth among youth.
• National Education Policy (NEP) 2020:
• The policy underlines the importance of creative expression and the development of critical thinking.
• It supports programs like PM-YUVA to align with its vision of fostering holistic learning.
• Azadi Ka Amrit Mahotsav:
• This initiative is part of the Government of India's celebrations to mark 75 years of independence.
• It aims to showcase India's rich heritage, achievements, and aspirations for the future.

Q82. Answer: (a) 358

The correct answer is 358.

Key Points

• The Bharatiya Nyaya Sanhita (BNS), 2023 is a significant legal document introduced to replace the colonial-era Indian Penal Code (IPC) of 1860.
• The BNS comprises a total of 358 sections, which aim to modernize and restructure India's criminal justice system to meet contemporary needs.
• The new legislation emphasizes the principles of justice, fairness, and equality while addressing issues with the older IPC that were deemed outdated or inadequate.
• The Government of India introduced this bill as part of broader reforms in criminal laws, including changes to the Code of Criminal Procedure (CrPC) and the Evidence Act.
• The BNS incorporates provisions for stricter punishments for crimes such as terrorism, organized crime, and crimes against women and children, reflecting the evolving socio-political landscape of the country.

Additional Information

• Purpose of the Bharatiya Nyaya Sanhita (BNS):
• The BNS aims to replace the outdated Indian Penal Code, ensuring that legal provisions align with modern societal values and international standards.
• It emphasizes a victim-centric approach, ensuring justice for victims of crime while safeguarding the rights of the accused.
• Clearer definitions of offenses and the inclusion of new categories of crimes address gaps in the previous legal framework.
• Significance of the Reform:
• The IPC was drafted during the British colonial era and reflected the priorities of that time. The BNS seeks to address the present-day needs of Indian society.
• It incorporates provisions for crimes like cybercrimes, financial frauds, and human trafficking, which were not adequately addressed in the IPC.
• The legislation also aims to expedite the legal process, reducing delays in the criminal justice system.
• Comparison with the Indian Penal Code (IPC):
• The IPC had a total of 511 sections, compared to the BNS's 358 sections, reflecting efforts to streamline and simplify the legal framework.
• The BNS eliminates provisions considered obsolete or redundant while introducing new sections for crimes relevant to modern times.
• Impact on Justice Delivery:
• The BNS promotes alternative dispute resolution mechanisms and community policing to reduce the burden on courts.
• Provisions for stricter penalties and reforms in sentencing aim to deter crimes and ensure proportional justice.
• Key Features of BNS:
• Inclusion of provisions for gender equality and protection of marginalized communities.
• Focus on reducing delays through technology-driven solutions like online filing of complaints and virtual court hearings.
• Enhanced safeguards against misuse of laws, ensuring a balance between enforcement and individual rights.

Important Points

• Introduction of the Bill: The BNS, along with two other bills aimed at reforming criminal laws, was introduced in August 2023 by the Union Home Minister.

• Scope of Reforms: The reforms aim to address not just substantive criminal law but also procedural aspects, ensuring a comprehensive overhaul of the criminal justice system.

• Public Participation: The government sought feedback from various stakeholders, including legal experts and the general public, to make the reforms inclusive and representative.

• Implementation Challenges: The transition from the IPC to the BNS requires extensive training for law enforcement agencies and judiciary members.

Q83. Answer: (a) 18-40 years

The correct answer is 18-40 years.

Key Points

• Atal Pension Yojana (APY) is a government-backed pension scheme launched in May 2015 by the Government of India to provide pension benefits to workers in the unorganized sector.

• The eligible age group for enrolling in the scheme is 18-40 years. Hence, individuals within this age bracket can subscribe to the scheme.

• Subscribers to APY are required to contribute regularly to their pension accounts until the age of 60 years to avail of pension benefits.

• The scheme is targeted at individuals who do not have any formal social security benefits, such as workers in the unorganized sector.

• The pension amount provided under APY ranges between Rs. 1,000 to Rs. 5,000 per month, depending on the contribution made during the subscription period.

Additional Information

• Features of Atal Pension Yojana:

• The scheme was launched by Prime Minister Narendra Modi on 9th May 2015, under the Ministry of Finance.

• Under APY, the government guarantees a fixed pension to subscribers after the age of 60 years.

• The scheme is primarily targeted at the unorganized workforce, such as domestic workers, laborers, and self-employed individuals.

• Subscribers can choose their contribution amount based on the desired pension amount (Rs. 1,000, Rs. 2,000, Rs. 3,000, Rs. 4,000, or Rs. 5,000).

• The contributions to the scheme are eligible for tax benefits under Section 80CCD of the Income Tax Act.

• Eligibility Criteria:

• Individuals must be between 18-40 years of age to enroll in APY.

• The subscriber must have a savings bank account or a post office account for contributions.

• Only citizens of India are eligible for this scheme.

• The individual must not be covered under any other statutory social security scheme.

• Government Contribution:

• For eligible subscribers, the government contributes 50% of the total contribution or Rs. 1,000 per year, whichever is lower, for a period of 5 years.

• The government contribution is applicable for subscribers who joined APY between June 2015 and December 2015.

• Significance of APY:

• APY aims to address the lack of pension coverage among workers in the unorganized sector.

• The scheme supports financial inclusion and provides old-age security to millions of Indians.

• It helps promote a culture of savings for retirement among the unorganized workforce.

Important Points

• Key Statistics:

• As of October 2023, the Atal Pension Yojana has over 5 crore subscribers, showcasing its widespread adoption.

• The scheme is managed by the Pension Fund Regulatory and Development Authority (PFRDA).

• Nomination Facility:

• Subscribers can nominate a beneficiary under APY, ensuring financial security for their family members.

• Nomination details are required at the time of enrollment.

• Exit Policy:

• Premature exit before 60 years is allowed only under exceptional circumstances, such as death or terminal illness.

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• In such cases, the subscriber's accumulated contributions are returned to the nominee.

Q84. Answer: (d) 4th

The correct answer is 4th.

Key Points

• The Global University Employability Ranking is an annual ranking system that evaluates universities based on their ability to produce employable graduates.

• In the 2025 Global University Employability Ranking, Harvard University secured the 4th position, highlighting its strong academic reputation and industry connections.

• The ranking is determined by surveys conducted with employers worldwide, measuring factors such as academic performance, industry collaboration, and graduate skills.

• The top institutions in this ranking are known for their focus on practical education, internship opportunities, and close ties with the industry.

• The consistent inclusion of Harvard University in the top tier demonstrates its global prestige and the quality of education it imparts to students.

Additional Information

• Global University Employability Ranking:

• This ranking is conducted by Times Higher Education (THE) in collaboration with Emerging HR Consultancy.

• It is based on surveys of over 10,000 recruiters and senior executives from leading companies across 20+ countries.

• The surveys assess criteria such as the relevance of the curriculum, research output, and employability skills of graduates.

• Harvard University:

• Located in Cambridge, Massachusetts, USA, Harvard is one of the oldest and most prestigious universities in the world, established in 1636.

• It offers a range of programs in arts, sciences, engineering, and professional studies.

• Harvard is known for its global alumni network and its focus on innovation, research, and leadership development.

• Rankings and Criteria:

• The top universities in this ranking include MIT, Stanford, and the University of Cambridge, which often compete with Harvard for the top positions.

• Universities are evaluated for their ability to adapt to changing job market trends and provide students with skills for future challenges.

• Other Notable Institutions in 2025 Rankings:

• Massachusetts Institute of Technology (MIT): Known for its focus on technology and engineering, often ranked 1st.

• Stanford University: Renowned for entrepreneurship and innovation, consistently ranked in the top 3.

• University of Cambridge: Recognized for its academic rigor and history, often ranks in the top 5.

Important Points

• Importance of Employability Rankings:

• These rankings provide insights into the quality of education and industry relevance of university programs.

• They help prospective students make informed decisions about their education and career paths.

• Employers use these rankings to identify institutions producing top talent for recruitment.

• Factors Influencing Rankings:

• Criteria such as internship opportunities, research collaborations, and global partnerships play significant roles in determining rankings.

• Universities with strong ties to industries often perform better in these rankings.

Q85. Answer: (b) 2020

The correct answer is 2020.

Key Points

• Neeraj Chopra, an Indian javelin thrower, won the gold medal in the 2020 Summer Olympics, held in Tokyo, Japan. The event was conducted in August 2021 due to the COVID-19 pandemic.

• He achieved this historic feat in the men's javelin throw final on 7th August 2021, with a best throw of 87.58 meters.

• Neeraj Chopra's gold medal was India's first-ever Olympic medal in athletics, marking a historic moment in Indian sports history.

• His performance made him the second Indian individual gold medalist in Olympic history, after Abhinav Bindra, who won gold in shooting in 2008.

• This victory contributed to India's overall performance in the Tokyo Olympics, where the country secured a total of 7 medals, its

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highest-ever tally in the Olympics.

Additional Information

• Neeraj Chopra's Background:

• He was born on 24th December 1997, in Khandra village, Haryana, India.

• Neeraj is a Subedar in the Indian Army, having joined in 2016 under the sports quota.

• He is a World Junior Champion, having won gold at the 2016 IAAF World U20 Championships with a world junior record throw of 86.48 meters.

• The Tokyo 2020 Olympics:

• The Tokyo Olympics were originally scheduled for 2020 but were postponed to 2021 due to the COVID-19 pandemic.

• They were held from 23rd July to 8th August 2021 in Tokyo, Japan.

• India's performance included 1 gold, 2 silver, and 4 bronze medals, marking its best-ever performance in Olympic history.

• Javelin Throw:

• Javelin throw is a track and field event where athletes throw a spear-like implement called the javelin as far as possible.

• The men's javelin weighs 800 grams and measures between 2.6 and 2.7 meters in length.

• The event requires a combination of speed, strength, and technique to achieve long throws.

• India's Olympic History:

• Neeraj Chopra's gold in Tokyo was the first in athletics in India's 121-year Olympic history.

• India's first-ever individual Olympic gold was won by Abhinav Bindra in 2008 (shooting).

• India has a strong Olympic tradition in hockey, having won multiple gold medals between 1928 and 1980.

Important Points

• Neeraj Chopra is the first Asian athlete to win an Olympic gold medal in javelin throw.

• His victory in Tokyo ended India's long wait for an Olympic medal in athletics, a sport in which the country had come close to success several times in the past.

• Neeraj's achievement has inspired a new generation of athletes in India and boosted the popularity of athletics in the country.

• He was awarded the Padma Shri and Major Dhyan Chand Khel Ratna Award in recognition of his historic achievement.

Q86. Answer: (a) Swimming

The correct answer is Swimming.

Key Points

• Strokes, Starts, and Turns are essential techniques in the sport of Swimming. These are fundamental skills used by swimmers to achieve maximum efficiency and speed in water.

• Strokes: Swimming involves various strokes such as freestyle, backstroke, breaststroke, and butterfly. Each stroke has unique movements and techniques designed to optimize propulsion and minimize drag.

• Starts: Swimmers must execute powerful starts, often from a diving block, to enter the water quickly and begin their race effectively. The start technique includes a strong push-off and streamlined body position.

• Turns: In competitive swimming, turns are crucial for maintaining speed during transitions at the end of a lap. Techniques like the flip turn and open turn are commonly used, depending on the stroke.

• These techniques are refined through rigorous training and are essential for competitive swimming events like the Olympics, World Championships, and other international competitions.

Additional Information

• Swimming as a Sport:

• Swimming has been a part of the Olympic Games since 1896. It is one of the most popular and physically demanding sports worldwide.

• Competitive swimming includes events like sprints (50m, 100m), middle-distance (200m, 400m), and long-distance (800m, 1500m).

• Relay events such as the 4x100m freestyle relay involve teams competing together.

• Swimming competitions occur in two types of pools: short course (25m) and long course (50m).

• Techniques in Swimming:

• Freestyle: The most common and fastest stroke, involving alternate arm movements and flutter kicks.

• Backstroke: Swimmers float on their backs, moving arms in a circular motion and performing flutter kicks.

• Breaststroke: A slower stroke that requires simultaneous arm movements and frog-like kicks.

• Butterfly: A challenging stroke requiring both arms to move simultaneously in a circular motion, accompanied by dolphin kicks.

• Starts and Turns: Athletes train to perform explosive starts and efficient turns to save time and maintain momentum.

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• Physical Benefits of Swimming:
• Swimming improves cardiovascular health, muscle strength, and flexibility.
• It is a low-impact activity suitable for individuals of all ages, as it reduces stress on joints.
• Swimming enhances lung capacity and promotes overall endurance and stamina.
• Interesting Facts:
• Michael Phelps, an American swimmer, is the most decorated Olympian of all time with 28 medals, including 23 golds.
• Famous swimming events include the FINA World Championships and Commonwealth Games.
• Swimmers utilize specialized gear like swim caps, goggles, and competitive swimsuits to enhance performance.

Important Points

• Comparison with Other Sports:
• Baseball: Focuses on hitting, pitching, and fielding; has no relation to swimming techniques.
• Golf: Requires precision in swinging and putting; unrelated to water-based activities.
• Badminton: Involves shuttlecock handling and racket skills; entirely different from swimming.
• Training and Coaching:
• Professional swimming training involves regular practice, strength conditioning, and diet monitoring.
• Coaches analyze swimmers' techniques to improve their stroke efficiency and speed.

Q87. Answer: (a) Assam

The correct answer is Assam.

Key Points

• Operation Falcon was launched by the state of Assam in August 2025 to protect the one-horned rhinos, a species that is critically endangered and endemic to the Indian subcontinent.
• Assam is home to the Kaziranga National Park, which is globally renowned for its population of one-horned rhinos and is a UNESCO World Heritage Site.
• The initiative aims to combat poaching activities that threaten the survival of this iconic species. Poachers target these rhinos primarily for their horns, which are highly valued in illegal wildlife markets.
• Operation Falcon involves multiple stakeholders, including local government agencies, forest officials, wildlife experts, and law enforcement authorities, to ensure the comprehensive protection of rhinos.
• Assam's government has also employed advanced technologies such as drone surveillance, GPS tracking, and anti-poaching camps under Operation Falcon to strengthen conservation efforts.

Additional Information

• One-Horned Rhinos:
• The Indian rhinoceros, commonly known as the one-horned rhinoceros, is primarily found in northeastern India and Nepal.
• It is listed as vulnerable on the IUCN Red List, with Assam being one of its last remaining habitats.
• Rhino horns are composed of keratin, the same protein that makes up human nails and hair, and are falsely believed to have medicinal properties, driving illegal trade.
• Kaziranga National Park:
• Located in Assam, Kaziranga National Park is a UNESCO World Heritage Site and a critical habitat for one-horned rhinos.
• The park is renowned for its success in rhino conservation, housing approximately 2,400 rhinos as per recent census data.
• Kaziranga also supports a wide range of biodiversity, including species like tigers, elephants, swamp deer, and wild water buffalo.
• Anti-Poaching Measures:
• Over the years, Assam has intensified its anti-poaching efforts by forming dedicated task forces, establishing anti-poaching camps, and adopting modern technologies like drones and thermal imaging cameras.
• Local communities are actively involved in conservation efforts, providing surveillance and reporting suspicious activities.
• International collaborations, such as partnerships with the WWF and TRAFFIC, have further supported rhino protection.
• Other Rhino Habitats in India:
• Besides Assam, one-horned rhinos are found in Manas National Park, Orang National Park, and Pobitora Wildlife Sanctuary.
• Pobitora Wildlife Sanctuary has one of the highest densities of rhinos in India despite being much smaller in size compared to Kaziranga.

Important Points

• Rhino Census: Assam conducts periodic rhino censuses to monitor population trends and assess the success of conservation efforts.
• Kaziranga National Park Floods: The park faces annual floods due to the Brahmaputra River, which impacts wildlife but also

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regenerates the ecosystem.

• Global Rhino Conservation: International efforts, including the Rhino Impact Bond and campaigns by Save the Rhino International, contribute to rhino protection worldwide.

• Rhino Conservation Challenges: Key challenges include habitat loss, human-wildlife conflict, and the growing demand for rhino horns in Asian markets.

Q88. Answer: (a) Maharashtra

The correct answer is Maharashtra.

Key Points

• The Umred-Pauni-Karhandla Wildlife Sanctuary is located in the state of Maharashtra, India. It is situated near Nagpur and Chandrapur districts, making it easily accessible for wildlife enthusiasts.

• This sanctuary is famous for being a habitat of the Royal Bengal Tigers. It serves as a crucial wildlife corridor linking the Tadoba-Andhari Tiger Reserve (TATR) and other nearby wildlife sanctuaries.

• It is spread across an area of approximately 189 square kilometers, featuring a mix of dense forests, grasslands, and water bodies, which provide a rich habitat for a variety of flora and fauna.

• In addition to tigers, the sanctuary is home to several other species of wildlife, including leopards, wild dogs (dholes), sloth bears, gaurs (Indian bison), and a variety of birds and reptiles.

• This sanctuary plays a significant role in tiger conservation under the Project Tiger initiative, which aims to protect and stabilize tiger populations in their natural habitat.

Additional Information

• Geographical Location:

• The Umred-Pauni-Karhandla Wildlife Sanctuary is located approximately 58 km from Nagpur, which is often referred to as the "Tiger Capital of India."

• The sanctuary serves as a critical wildlife corridor, connecting the Tadoba-Andhari Tiger Reserve and the Pench Tiger Reserve.

• Flora:

• The sanctuary is characterized by dry deciduous forests, which include tree species like Teak, Bamboo, Tendu, and Salai. These forests provide an excellent environment for herbivores and carnivores alike.

• The presence of water bodies within the sanctuary ensures the availability of water, which is vital for sustaining its diverse ecosystem.

• Fauna:

• In addition to tigers, the sanctuary houses a wide variety of mammals, including Jackals, Hyenas, Barking Deer, and Sambar Deer.

• It is also a haven for birdwatchers, with species like Peacocks, Indian Rollers, and Eagles frequently sighted.

• Reptiles, such as Indian Rock Pythons and Monitor Lizards, are also part of the sanctuary's wildlife population.

• Tourism:

• The sanctuary is a popular destination for wildlife tourism, offering jungle safaris that allow visitors to experience its biodiversity up close.

• It is particularly famous for its tiger sightings, attracting photographers and wildlife enthusiasts from across the country.

• The best time to visit the sanctuary is between October and June, as the weather is favorable and wildlife sightings are more frequent during this period.

• Conservation Efforts:

• The sanctuary is part of India's larger tiger conservation efforts under the Project Tiger, launched in 1973 to protect the dwindling population of tigers.

• Efforts include habitat restoration, anti-poaching measures, and community engagement to ensure the sustainability of the sanctuary's ecosystem.

Important Points

• Nearby Attractions:

• The Tadoba-Andhari Tiger Reserve, located nearby, is one of Maharashtra's most prominent tiger reserves and is often visited in conjunction with the Umred-Pauni-Karhandla Wildlife Sanctuary.

• The Pench Tiger Reserve, which inspired Rudyard Kipling's "The Jungle Book," is also located in the vicinity.

• Accessibility:

• The sanctuary is easily accessible by road from Nagpur, which has a well-connected airport and railway station.

• Tourists often use Nagpur as a base to explore the sanctuary and other nearby wildlife reserves.

Q89. Answer: (a) New Delhi

The correct answer is New Delhi.

Key Points

• The National Marathon was conducted in February 2025, and the event was hosted in the national capital of India, New Delhi.

• New Delhi is known for hosting prominent national and international events due to its well-established infrastructure and connectivity.

• This marathon attracted participants from across the country and was organized to promote fitness, health awareness, and sportsmanship among citizens.

• The event also highlighted the importance of environmental sustainability, with efforts made to reduce the carbon footprint during the marathon.

• New Delhi frequently serves as a venue for significant athletic events, including marathons, due to its ability to manage large-scale public gatherings effectively.

Additional Information

• New Delhi:

• New Delhi, the capital city of India, is a hub for political, cultural, and sporting events due to its excellent infrastructure and accessibility.

• It is equipped with wide roads and scenic routes, making it ideal for hosting marathons and other outdoor events.

• The city also has a history of hosting prestigious events such as the Commonwealth Games in 2010.

• National Marathons:

• National marathons are organized to encourage physical fitness and bring together people from diverse backgrounds.

• These events often emphasize themes such as health awareness, unity, and community participation.

• Marathons also contribute to tourism by attracting participants and spectators from different regions.

• Role of Marathons in Society:

• Marathons promote health consciousness and encourage a physically active lifestyle among participants and spectators.

• They serve as platforms for raising awareness about social and environmental issues, including climate change and mental health.

• Such events often have a positive economic impact on host cities due to increased tourism and related activities.

• Sports Culture in India:

• India has been gradually developing a strong sports culture, with increasing participation in events like marathons, cycling races, and triathlons.

• Several initiatives by the government and private organizations aim to promote fitness and sports at the grassroots level.

• Programs like Khelo India and Fit India Movement have significantly contributed to this growth.

Important Points

• New Delhi's Sports Infrastructure:

• New Delhi boasts several world-class stadiums and arenas, including the Jawaharlal Nehru Stadium and the Indira Gandhi Indoor Stadium.

• It is well-connected through its metro and road networks, making it convenient for participants and spectators to commute during large events.

• Significance of February 2025 National Marathon:

• The marathon served as a precursor to India's increasing involvement in global sporting events.

• It also emphasized the importance of public participation in fostering a healthier and more active society.

Q90. Answer: (d) Chhattisgarh

The correct answer is Chhattisgarh.

Key Points

• 'Dewar Geet' is a traditional form of entertainment songs that are popular in the state of Chhattisgarh.

• These songs are an integral part of the rich cultural and folk traditions of the region and are often performed during festivals and social gatherings.

• The themes of Dewar Geet generally revolve around love, social issues, and humor, making them appealing and relatable to the local communities.

• They are sung in the local dialects of Chhattisgarh, contributing to the preservation and promotion of regional languages and cultural heritage.

• Musical instruments such as the harmonium, dholak, and manjira are commonly used to accompany these songs, adding rhythm and melody to the performances.

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Additional Information

• Chhattisgarh's Folk Music:

• Chhattisgarh is known for its diverse and vibrant folk music traditions, which include genres such as Pandwani, Raut Nacha, and Dewar Geet.

• Pandwani is a narrative singing tradition that recounts tales from the Mahabharata.

• Raut Nacha is performed by the Yadav community during the Dev Uthani Ekadashi festival to honor Lord Krishna.

• Chhattisgarh’s Cultural Significance:

• The state is often referred to as the 'Rice Bowl of India' due to its rich agricultural heritage.

• It is home to numerous tribal communities, each with its unique traditions, art forms, and music.

• Musical Instruments in Chhattisgarh:

• Traditional instruments like mandar, nagada, and bansuri are widely used in the folk music of Chhattisgarh.

• These instruments enhance the cultural richness of performances like Dewar Geet and other folk genres.

• Preservation of Folk Music:

• Efforts are being made by the government and cultural organizations to preserve and promote Chhattisgarh's folk music traditions through festivals, workshops, and educational programs.

• These initiatives help in keeping the younger generation connected to their cultural roots.

Important Points

• Other Options:

• Goa: Known for its westernized music culture and Konkani folk songs like Mando and Dekhnni, Goa's musical traditions are distinct from Chhattisgarh.

• Maharashtra: Famous for Lavani and Powada, which are different folk music genres representing the cultural ethos of Maharashtra.

• Haryana: Popular for its Ragnis and folk songs like Phag and Saang, which reflect the agrarian lifestyle of the state.

Q91. Answer: (a) 1.9

The correct answer is 1.9 cm.

Key Points

• The diameter of bamboo flutes is generally around 1.9 cm, which makes them ideal for producing the desired sound and tonal quality.

• Bamboo flutes are known for their simplicity and natural acoustic properties, which are influenced significantly by their diameter and length.

• The 1.9 cm diameter ensures that the airflow and resonance inside the flute create the right musical notes without distortion.

• Flutes with this diameter are easier to handle and are widely used by beginners and professionals alike due to their precision in sound production.

• Choosing the right diameter is crucial as it affects the pitch, tone, and ease of playing the instrument. A flute of 1.9 cm diameter meets these criteria effectively.

Additional Information

• Bamboo Flutes:

• Bamboo flutes are among the oldest musical instruments and are found in various cultures worldwide.

• They are traditionally made from a single piece of bamboo and have finger holes for controlling the pitch and notes.

• The length and diameter of the flute are critical in determining the type of sound it produces.

• Shorter flutes with smaller diameters produce higher-pitched sounds, whereas longer ones with larger diameters produce deeper and mellower tones.

• Importance of Diameter in Flutes:

• The diameter directly impacts the sound waves and resonance inside the flute, which in turn affects the pitch and tone.

• For bamboo flutes, a diameter of around 1.9 cm is ideal for achieving a balance between ease of use and sound quality.

• Larger diameters may produce deeper tones but are harder to play, while smaller ones may lead to sharper and higher pitches.

• Applications of Bamboo Flutes:

• Bamboo flutes are commonly used in traditional and classical music forms in countries like India, China, and Japan.

• In Indian music, the bamboo flute is an integral part of both Hindustani and Carnatic classical music traditions.

• They are also used in meditation and relaxation music due to their soothing and natural sound.

• Other Flute Variations:

• Western flutes are usually made of metal and have a different diameter and mechanism compared to bamboo flutes.

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• Fipple flutes, such as recorders, have a different construction and are primarily used in Western classical and folk music.

Important Points

• Material: Bamboo is preferred for its lightweight, durability, and natural acoustic qualities.

• Historical Use: Bamboo flutes have been used for centuries in cultures worldwide, symbolizing simplicity and spiritual harmony.

• Variants: Other than 1.9 cm diameter flutes, variations exist to suit different musical needs and preferences.

• Maintenance: Bamboo flutes require proper care to avoid cracks and preserve their tonal quality over time.

Q92. Answer: (b) Fortified walls with gateways

The correct answer is Fortified walls with gateways.

Key Points

• The cities of the Indus Valley Civilization were generally enclosed with fortified walls that included gateways, indicating a focus on urban planning and security.

• The fortified walls served multiple purposes such as defense against potential invasions, protection against floods, and demarcation of the city's boundaries.

• These walls were constructed using baked bricks of uniform size, showcasing the advanced engineering skills and standardization techniques of the Indus Valley people.

• Prominent cities like Harappa, Mohenjo-Daro, and Kalibangan were known for having these fortified structures, which often separated the citadel (upper town) from the lower residential area.

• The gateways in the walls were used not only for entry and exit but also for trade, taxation, and monitoring movement. This highlights the economic and administrative sophistication of the civilization.

Additional Information

• Indus Valley Civilization:

• The Indus Valley Civilization (2600-1900 BCE) is one of the world's oldest urban civilizations, thriving in areas of present-day India and Pakistan.

• It is renowned for its meticulous urban planning, with well-laid streets, drainage systems, and large public baths.

• Key cities include Harappa (Punjab, Pakistan), Mohenjo-Daro (Sindh, Pakistan), and Dholavira (Gujarat, India).

• Construction Techniques:

• The walls were primarily made of baked bricks, a notable feature distinguishing the Indus Valley Civilization from other contemporary civilizations.

• The use of standardized brick sizes suggests a centralized authority overseeing construction practices.

• Purpose of Fortified Walls:

• Defense: The walls protected the inhabitants from invaders and natural calamities like floods.

• Urban Organization: The walls demarcated administrative areas (citadel) from residential ones, reflecting a hierarchical society.

• Trade Control: The gateways in the walls allowed for regulation of trade and collection of taxes.

• Other Features of Indus Valley Cities:

• Advanced drainage systems with covered drains and soak pits indicate a focus on hygiene and sanitation.

• Public buildings, granaries, and baths like the Great Bath of Mohenjo-Daro highlight the civilization's architectural achievements.

Important Points

• Option 1: Wooden fences

• Wooden fences were not a feature of Indus Valley cities. Wood was primarily used for making tools, carts, and furniture rather than for constructing large structures.

• Option 3: Stone barricades

• Stone was rarely used in Indus construction. Baked bricks were the dominant material, reflecting the availability of resources like clay in the region.

• Option 4: Moats and drawbridges

• While moats and drawbridges were common in medieval forts, there is no archaeological evidence of such structures in Indus Valley cities.

• Indus Valley's focus on fortified walls with gateways was a unique feature of its urban planning, serving both practical and administrative purposes.

Q93. Answer: (a) Tripura

The correct answer is Tripura.

Key Points

• 'Hai-Hak' is a traditional folk dance form of Tripura, performed by the Halam community, one of the many tribal communities of

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the state.

• This dance is performed during the harvest season and is a mark of gratitude to the deities for a bountiful crop.

• Hai-Hak is characterized by its graceful movements, which symbolize various agricultural activities like sowing, reaping, and harvesting.

• The performers usually wear traditional tribal attire, including colorful costumes adorned with ornaments that reflect their cultural identity.

• Musical instruments such as the drum (dhak) and flute are used during the performance, adding rhythm and melody to the dance.

Additional Information

• Folk Dances of Tripura:

• Tripura, a northeastern state in India, is home to several traditional dances like Garia, Lebang Boomani, and Mamita.

• These dances are closely associated with the tribal culture and festivals of the state.

• They are performed to honor deities, celebrate nature, or mark significant events in the agrarian calendar.

• Significance of Folk Dances:

• Folk dances like Hai-Hak help preserve the cultural heritage of communities and pass it on to future generations.

• They also serve as a medium of storytelling, depicting the lifestyle, beliefs, and traditions of the people.

• Halam Community:

• The Halam community is one of the recognized tribal groups of Tripura, with its own distinct language, customs, and traditions.

• Their traditional dances, like Hai-Hak, are integral to their cultural identity.

• Other Tribal Dances in India:

• Bihu: A folk dance from Assam performed during the Bihu festival.

• Ghoomar: A traditional dance of Rajasthan.

• Chhau: A tribal martial dance from Odisha, Jharkhand, and West Bengal.

Important Points

• Tripura:

• It is a northeastern state in India, bordered by Bangladesh, Assam, and Mizoram.

• Tripura is known for its diverse tribal communities, each with unique cultural practices and traditions.

• The state celebrates several festivals like Garia Puja, Kharchi Puja, and Durga Puja, showcasing its rich cultural heritage.

• Preservation of Tribal Culture:

• The Indian government, along with various NGOs, works towards preserving the tribal culture of northeastern states, including Tripura.

• Steps include organizing cultural festivals, promoting traditional art forms, and providing platforms for tribal artists.

• UNESCO and Folk Arts:

• UNESCO recognizes and works to preserve intangible cultural heritage, including traditional dances and music.

• Efforts are made to document and promote such art forms globally.

Q94. Answer: (c) 16

The correct answer is 16.

Key Points

• The International Space Station (ISS) orbits the Earth at an average altitude of approximately 408 kilometers (253 miles).

• It completes one orbit around the Earth in approximately 90 minutes, traveling at a speed of around 28,000 kilometers per hour (17,500 miles per hour).

• Due to its orbital speed and duration, the ISS circles the Earth about 16 times a day, providing astronauts the chance to witness 16 sunrises and sunsets daily.

• The specific orbital mechanics of the ISS ensure that it maintains a low Earth orbit, allowing it to remain in continuous motion around the Earth.

• This frequency of orbit facilitates various scientific experiments and observations, as the ISS provides multiple views of the Earth's surface in a single day.

Additional Information

• Characteristics of the ISS:

• The ISS is a joint project involving NASA (United States), Roscosmos (Russia), ESA (European Space Agency), JAXA (Japan), and CSA (Canada).

• It serves as a unique microgravity laboratory, enabling scientists to conduct experiments in biology, physics, astronomy, and other fields that require the absence of gravity.

• The ISS has been continuously occupied since November 2000, making it one of the longest-running human spaceflight missions in history.

• The station is modular, with components such as living quarters, laboratories, and storage units assembled in orbit since its launch in 1998.

• The ISS weighs approximately 420,000 kilograms (925,000 pounds) and spans the size of a football field, making it the largest human-made structure in space.

• Orbital Mechanics:

• The ISS orbits in a low Earth orbit (LEO), which ranges between 180 and 2,000 kilometers (111–1,243 miles) above the Earth's surface.

• Its orbit is inclined at an angle of 51.6 degrees to the equator, allowing it to cover most of the Earth's populated areas.

• The speed and altitude of the ISS are carefully maintained to counteract atmospheric drag and gravitational forces, ensuring it stays in orbit.

• Occasional adjustments, known as reboosts, are performed using onboard thrusters or visiting spacecraft to maintain its altitude.

• Astronauts' Perspective:

• Due to the ISS's frequent orbits, astronauts experience 16 sunrises and sunsets daily, providing a unique perspective on Earth's atmosphere and weather patterns.

• The rapid orbital motion enables the station to pass over different continents multiple times in a single day, enhancing global observational capabilities.

• Scientific Contribution:

• The ISS enables groundbreaking research in areas like medicine, climate change, and materials science.

• It acts as a testing ground for technologies that will support future human exploration missions to the Moon, Mars, and beyond.

Q95. Answer: (b) Because friction produces heat

The correct answer is Because friction produces heat.

Key Points

• Friction causes heat: When a matchstick is struck against a rough surface, friction occurs between the matchstick head and the surface. This friction generates heat, which ignites the chemicals present on the matchstick head.

• Matchstick composition: The head of a matchstick contains a mixture of potassium chlorate, sulfur, and other combustible materials. These chemicals are designed to ignite easily when exposed to heat produced by friction.

• Role of the rough surface: The rough surface provides the necessary resistance to create friction, which is essential for producing enough heat to start the combustion process.

• Once the matchstick head is heated, the potassium chlorate breaks down, releasing oxygen, which combines with sulfur to start the flame.

• This principle is used in safety matches to control the ignition process and prevent unintended fires.

Additional Information

• Matchstick composition: The wooden stick is coated with a thin layer of combustible material, while the match head contains chemicals like potassium chlorate, sulfur, and fillers. These chemicals are optimized for ignition during friction.

• Types of matches: There are several types of matches, such as safety matches and strike-anywhere matches. Safety matches require a special striking surface, whereas strike-anywhere matches can be ignited on any rough surface.

• Friction basics: Friction is the resistance encountered when two surfaces move against each other. It converts kinetic energy into heat energy, which is utilized in lighting a matchstick.

• History of matches: The invention of modern matches can be traced back to 1826, when John Walker, an English chemist, developed the first friction match.

• Applications: Matches are widely used for lighting fires, in households, camping, and even in industrial processes requiring controlled ignition.

Important Points

• Safety considerations: Matches should be stored in a dry place and kept away from flammable materials to prevent accidental fires.

• Environmental impact: The production and use of matches involve wood and chemicals, which could impact the environment. Manufacturers are now exploring eco-friendly alternatives.

• Scientific principle: The process of igniting a matchstick demonstrates the conversion of mechanical energy into heat energy, which is a fundamental concept in physics.

Q96. Answer: (b) Amgen

The correct answer is Amgen.

Key Points

• Amgen, a leading US-based biopharmaceutical company, announced a significant $200 million investment in its technology center located in Hyderabad, India, in February 2025.

• The investment focuses on enhancing their AI (Artificial Intelligence) and data science capabilities, which are crucial for advancing drug discovery and development.

• This move aligns with Amgen's global strategy of leveraging cutting-edge technology to improve healthcare solutions and optimize operational efficiency.

• Hyderabad has emerged as a prominent hub for biotechnology and pharmaceutical industries, attracting global firms due to its advanced infrastructure and skilled workforce.

• The initiative is expected to create numerous opportunities for employment and collaborative innovation in India, further enhancing the city's reputation as a major player in the pharma and tech sectors.

Additional Information

• Amgen Overview:

• Amgen, headquartered in Thousand Oaks, California, USA, is one of the world's largest independent biotechnology firms.

• The company specializes in biopharmaceuticals and is known for its innovative therapies targeting serious illnesses like cancer, cardiovascular diseases, and bone health.

• It is committed to utilizing data science and AI-driven technologies to accelerate drug development and improve patient outcomes.

• Hyderabad as a Pharmaceutical Hub:

• Known as the "Genome Valley," Hyderabad is a leading destination for pharmaceutical and biotechnology companies.

• The city offers a robust ecosystem with world-class R&D facilities, skilled professionals, and government support through initiatives like the Telangana Life Sciences Vision 2030.

• Many global companies, including Pfizer, Novartis, and GSK, have established their operations in Hyderabad.

• Role of AI and Data Science in Pharmaceuticals:

• Artificial Intelligence and data science are transforming the pharmaceutical industry by enabling rapid analysis of complex biological data.

• These technologies support drug discovery, personalized medicine, and clinical trials while reducing costs and improving efficiency.

• Companies like Amgen are investing heavily in these areas to maintain a competitive edge and bring innovative therapies to market faster.

• Importance of Foreign Investments in India:

• India's pharmaceutical sector has attracted significant FDI (Foreign Direct Investment), contributing to the growth of domestic industries and technology adoption.

• Government initiatives such as "Make in India" and "Pharma Vision 2020" aim to position India as a global leader in the pharmaceutical and biotech sectors.

• Investments like Amgen's strengthen India's position as an innovation hub and create opportunities for economic growth and skill development.

Important Points

• Pfizer:

• A leading pharmaceutical company headquartered in the USA.

• Specializes in vaccines, oncology, and consumer healthcare.

• While Pfizer has a presence in India, it did not announce the specific $200 million investment in Hyderabad in February 2025.

• Merck:

• Another major pharmaceutical company, known as MSD outside the US and Canada.

• Focuses on innovative medicines, vaccines, and animal health.

• Merck is active in India but was not the company that made this specific investment.

• Johnson & Johnson:

• A globally recognized brand in pharmaceuticals, medical devices, and consumer health products.

• Its investment strategies in India include healthcare infrastructure and innovation, but this specific announcement was not made by J&J.

Q97. Answer: (b) Tea

The correct answer is Tea.

Key Points

• The British forced the peasants of Assam to produce tea because of its high demand in European markets during the colonial period.

• Assam emerged as one of the primary tea-producing regions in India under British colonial rule, with the establishment of plantations in the 19th century.

• The British introduced the plantation system, which involved large-scale tea farming and employed laborers, often under exploitative conditions.

• The Tea Act of 1834 was instrumental in the expansion of tea plantations in India, especially in Assam, as British companies monopolized the industry.

• Tea plantations in Assam significantly contributed to the economic exploitation of Indian resources and labor under British rule.

• The British used the indentured labor system to bring workers from other parts of India to Assam, often under harsh working conditions.

Additional Information

• History of Tea in Assam:

• The discovery of tea plants in Assam by the British is credited to Robert Bruce in 1823, during the colonial period.

• In 1837, the first tea plantation was established in Assam at Chabua, marking the beginning of commercial tea production.

• The Assam Tea Company was formed in 1839 to promote and expand the tea industry in the region.

• Tea Act and Labor Exploitation:

• The Tea Act of 1834 formalized tea production in Assam, granting British companies significant control over the tea industry.

• The indentured labor system brought workers from other parts of India to Assam to work on tea plantations, often under inhumane conditions.

• Laborers were subjected to low wages, long working hours, and poor living conditions, reflecting the exploitative nature of colonial economic policies.

• Economic Importance of Tea:

• Tea became one of the most important cash crops in India during British rule, significantly contributing to the colonial economy.

• By the late 19th century, Assam had become one of the largest tea-producing regions in the world, exporting tea to Europe and other parts of the British Empire.

• Other Crops and British Policies:

• While tea was the primary crop in Assam, the British also promoted the cultivation of indigo, jute, and opium in other parts of India for export purposes.

• These agricultural policies were designed to serve the interests of the British economy, often at the expense of Indian farmers and local economies.

Important Points

• Tea's Global Impact:

• Tea from Assam gained international recognition for its unique flavor and quality, establishing India as a leading tea producer globally.

• The demand for Assam tea continues to grow, contributing significantly to India's agricultural exports even today.

• Legacy of the British Plantation System:

• The plantation system introduced by the British laid the foundation for the modern tea industry in Assam, though it was rooted in exploitation and inequality.

• Today, the tea industry in Assam employs millions of workers and plays a vital role in the region's economy.

Q98. Answer: (a) Punjab

The correct answer is Punjab.

Key Points

• The Indira Gandhi Canal, one of the largest irrigation projects in India, originates from the Harike Barrage, located in the state of Punjab.

• The Harike Barrage is situated at the confluence of two major rivers, the Sutlej and the Beas, which are tributaries of the Indus River system.

• This canal was constructed to provide water to the arid regions of Rajasthan, particularly to the districts of Jaisalmer and Barmer, which face acute water scarcity.

• The Indira Gandhi Canal spans a length of approximately 650 km, making it one of the longest canals in India.

• The canal plays a crucial role in transforming the desert landscape of Rajasthan by supporting agriculture, drinking water needs, and economic activities in the region.

Additional Information

• Indira Gandhi Canal Project:

• The canal was initially called the Rajasthan Canal and later renamed in honor of Prime Minister Indira Gandhi.

• Its primary purpose is to provide irrigation facilities to the arid and semi-arid regions of western Rajasthan.

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• The project is divided into two phases: Phase I (covering Ganganagar, Hanumangarh, and Bikaner districts) and Phase II (covering Jaisalmer and Barmer).

• The canal also supplies drinking water to cities and villages in Rajasthan.

• Harike Barrage:

• The Harike Barrage is located near the town of Harike in the Tarntaran district of Punjab.

• It is a crucial infrastructure project designed to manage the waters of the Sutlej and Beas rivers, ensuring their effective utilization for irrigation and drinking purposes.

• This barrage forms the entry point for the Indira Gandhi Canal.

• Importance of the Canal:

• The canal has transformed vast desert areas into cultivable land, making Rajasthan one of the largest producers of mustard and millet.

• It has also played a significant role in increasing the groundwater levels in the region.

• The water from the canal supports industries, improves the quality of life, and aids in drought management.

• Other Details:

• The project was initiated in 1958 and completed in phases over several decades.

• It showcases India's efforts to achieve water resource management and sustainable development in arid regions.

Important Points

• Other Canals in India:

• The Indira Gandhi Canal is one of India's longest canals, but other significant canals include the Upper Ganga Canal and the Buckingham Canal.

• These canals play a vital role in irrigation, drinking water supply, and transportation.

• Rivers of Punjab:

• Punjab is known as the "Land of Five Rivers", comprising the Sutlej, Beas, Ravi, Chenab, and Jhelum rivers.

• These rivers contribute significantly to the agricultural economy of Punjab and neighboring states.

Q99. Answer: (c) Muslim

The correct answer is Muslim.

Key Points

• The Census 2011 of India recorded the population distribution among various religious communities.

• As per the census, the Hindu community had the largest population, constituting approximately 79.8% of India's total population.

• The Muslim community was identified as the second-largest religious group, accounting for around 14.2% of the population.

• Other religious communities such as Christians (2.3%), Sikhs (1.7%), Buddhists (0.7%), and Jains (0.4%) had smaller proportions in comparison.

• The significant Muslim population in India is concentrated in states like Uttar Pradesh, Bihar, West Bengal, Maharashtra, and Kerala, among others.

Additional Information

• Census 2011:

• The Census of India is conducted every 10 years to collect comprehensive demographic data.

• The 2011 Census was the 15th national census conducted since 1872.

• It provided detailed insights into India's population, literacy rate, sex ratio, urban-rural distribution, and religious composition.

• India's total population as per the 2011 Census was approximately 1.21 billion.

• Muslim Population in India:

• India is home to the third-largest Muslim population in the world, after Indonesia and Pakistan.

• Muslims in India are predominantly Sunni, with a smaller proportion of Shia Muslims.

• Significant Muslim-majority areas include Kashmir and regions in Kerala.

• The community has a rich cultural heritage, contributing to India's art, architecture, literature, and cuisine.

• Other Religious Communities:

• Christians: Representing 2.3% of the population, they are mainly concentrated in states like Kerala, Goa, and the northeastern states.

• Sikhs: Accounting for 1.7%, they predominantly reside in Punjab, with smaller populations in Haryana and Delhi.

• Buddhists: Constituting 0.7%, they are mainly found in Maharashtra due to the Dalit Buddhist movement and regions like Ladakh and Arunachal Pradesh.

• Jains: Representing 0.4%, they are concentrated in states like Rajasthan, Gujarat, and Maharashtra.

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Important Points

• Religious Diversity in India: India is known for its multi-religious and multicultural heritage, fostering coexistence among various communities.

• Government Initiatives: Programs like Prime Minister's 15-Point Programme aim to improve the socio-economic conditions of minority groups, including Muslims.

• Constitutional Provisions: India's Constitution ensures freedom of religion and equal protection under the law for all communities (Article 25-28).

• Population Growth: The growth rates among religious communities have influenced India's demographic trends, with efforts being made to address disparities in education and employment.

• Historical Contributions: Religious communities have significantly shaped India's history, culture, and identity over centuries.

Q100. Answer: (d) Brahman

The correct answer is Brahman.

Key Points

• Brahman is a key concept in Hindu philosophy, representing the ultimate reality or the divine essence that permeates everything in the universe.

• It is described as the eternal, unchanging, infinite, and formless reality, which is the source and foundation of all existence.

• In the Upanishads, Brahman is often discussed as the ultimate truth that transcends the physical world and is beyond human comprehension.

• The concept of Brahman is closely connected to the idea of Atman, which refers to the individual soul. Hindu philosophy often emphasizes the unity of Atman and Brahman, signifying the connection between the self and the universal reality.

• This philosophical idea is a central theme in Advaita Vedanta, a prominent school of Hindu philosophy, which teaches that there is no distinction between Brahman and Atman.

Additional Information

• Samiti:

• Samiti is a term used in ancient Indian history to refer to an assembly or gathering, often for decision-making purposes.

• It is not related to the philosophical concept of divine essence but is significant in the context of governance and social organization in ancient India.

• Yajna:

• Yajna refers to a ritual sacrifice performed in Vedic traditions, involving offerings made to deities through fire.

• It symbolizes the idea of reciprocity between humans and the divine but does not represent the concept of the universe being one divine essence.

• Purandar:

• Purandar is a name associated with the Hindu deity Indra, the king of gods in Vedic mythology.

• It does not align with the philosophical idea of Brahman, which signifies a universal divine essence rather than a specific deity.

• Brahman:

• The concept of Brahman is foundational in Hinduism and is discussed extensively in sacred texts such as the Upanishads and the Bhagavad Gita.

• It is often described as the supreme cosmic spirit or consciousness that is both immanent and transcendent.

• Philosophical schools like Advaita Vedanta interpret Brahman as non-dual, suggesting that the ultimate reality is undivided and singular.

Important Points

• Upanishads:

• These ancient texts are philosophical treatises that explore the nature of reality, self, and the universe.

• The concept of Brahman is central in these texts, often described as the ultimate truth and reality.

• Advaita Vedanta:

• This school of philosophy advocates the non-duality of Brahman and Atman, asserting that there is no distinction between the individual soul and the universal essence.

• It was profoundly developed by Adi Shankaracharya, a key figure in Indian philosophy.

• Vedic Texts:

• While the early Vedic texts primarily focus on rituals and deities, the later texts like Upanishads delve deeper into metaphysical concepts such as Brahman.

• These texts form the basis of much of Hindu philosophy.

• Significance:

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• The understanding of Brahman influences not only religious practices but also philosophical inquiries into the nature of existence, consciousness, and the universe.
• It serves as a unifying principle in Hindu thought, connecting diverse beliefs and practices.

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