SSC CHSL Tier-1 2021: Official Paper (Held On : 30 May 2022 Shift 3) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2021 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. Select the option that will improve the underlined part of the given sentence.

The South Indian dish was approved by the guests as it was tasty.

(a) accepted by the visitors
(b) gratified by the visitors
(c) doomed by the visitors
(d) condemned by the visitors

Q2. Select the most appropriate option to fill in the blank.

She's been off work with _____ stomach.

(a) an upset
(b) an overset
(c) an agitated
(d) a perturbed

Q3. Select the most appropriate option to fill in the blank.

Rohan is _____ self-sufficient man who needs no assistance.

(a) in
(b) a
(c) the
(d) of

Q4. Select the INCORRECTLY spelt word.

(a) Correspondence
(b) Campaign
(c) Experiment
(d) Accommadation

Q5. Directions: Each of the following questions has underlined idioms/phrases. Each sentence is followed by four options. Choose the option that best describes the meaning of the underlined idiom/phrase.

My friend was playing the devil’s advocate in the discussion.

(a) One who is composed at all times
(b) One who argues against something just for the sake of arguing
(c) One who is good at judgement
(d) One who pits the culprit against the lawyer

Q6. Select the most appropriate ANTONYM of the given word.

Suffice

(a) Excessed
(b) Immatured

(c) Satirize
(d) Dissatisfy

Q7. Select the most appropriate synonym of the given word.
Opulence
(a) View
(b) Sagacity
(c) Recognition
(d) Prosperity

Q8. Select the most appropriate meaning of the given idiom.
Back out
(a) To stand out
(b) To move backwards
(c) To withdraw from
(d) To pull over

Q9. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.
Suchitra will have / to wait another month / before she received / any reply to her letter.
(a) any reply to her letter
(b) to wait another month
(c) Suchitra will have
(d) before she received

Q10. Select the most appropriate option that can substitute the underlined segment in the given sentence.
My mom told me to have cleaning up the kitchen before I go outside.
(a) to have clean out
(b) to clean up
(c) to clean over
(d) to clean out

Q11. Select the INCORRECTLY spelt word.
(a) Protocol
(b) Medal
(c) Opponents
(d) Immitate

Q12. Select the option that will improve the underlined part of the given sentence.
You are so efficient as he
(a) as efficient as he is
(b) far efficient as he
(c) so efficient as himself
(d) also efficient as he

Q13. Select the most appropriate meaning of the given idiom.
Comparing apples with oranges
(a) Calculation of proteins
(b) Comparison between two kinds of fruits
(c) To have a health issue
(d) Unequal comparisons

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Q14. Select the most appropriate option to fill in the blank.

Their new house costed them _____ hundred and fifty-six thousand pounds.

(a) a
(b) the
(c) an
(d) few

Q15. Select the most appropriate meaning of the underlined word in the given sentence.

The new software provides a perfect solution to the complex issues pertaining to pick up and delivery.

(a) Promoting
(b) Denying
(c) Trusting
(d) Referring

Q16. Select the option that will improve the underlined part of the given sentence.

Shrija enquired about his daughter's reputation.

(a) assessed about his daughter's strength
(b) condemned about his daughter's well-being
(c) poked about his daughter's role
(d) asked about his daughter's character

Q17. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

A. In its most humble function, it is a necessary guide without which progress from place to place would be a ceaseless experiment; it is a sustenance without which organised society would be impossible, thus the Road moves and controls all history.

B. The Road is one of the great fundamental institutions of mankind.

C. It is the Road that controls the development of strategies and fixes the sites of battles. It is the Road that gives a framework to all economic development. It is the Road that is the channel of all trade, and, what is more important, of all ideas.

D. Not only is the Road one of the great human institutions, because it is fundamental to social existence, but also because its varied effects appear in every department of the State. It is the Road that determines the sites of many cities, and the growth and nourishment of all.

(a) BDCA
(b) DBAC
(c) CDAB
(d) ABCD

Q18. Select the option that can be used as a one-word substitute for the given group of words.

A sudden unsteady movement ; a stagger

(a) Lupin
(b) Lurch
(c) Lugger
(d) Lumen

Q19. Select the most appropriate ANTONYM of the underlined word.

His poems are recondite in subject matter

(a) brief
(b) simple
(c) mystical
(d) obscure

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Q20. Select the INCORRECTLY spelt word

(a) Absolute
(b) Abscent
(c) Absorb
(d) Abstract

Directions

In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

In everyday language, the phrase ‘sleepwalking’ can be used (1)_____ informally and symbolically to describe a lack of energy or attention. However, for (2)_____ infants and adults, sleepwalking is a genuine disorder with serious (3)_____. Sleepwalking, also known as somnambulism, is a sleep-related behaviour condition that causes people to walk or execute other (4)_____ acts while they are still partly sleeping. It is more (5)_____ in children than in adults, and it is more likely to develop if a person has a family history of the illness, is sleep deprived or has many nightly awakenings.

Q21. Select the most appropriate option to fill in blank number 1.

(a) neither
(b) like
(c) both
(d) to

Q22. Select the most appropriate option to fill in blank number 2.

(a) both
(b) some
(c) few
(d) all

Q23. Select the most appropriate option to fill in blank number 3.

(a) impetus
(b) impulsions
(c) repercussions
(d) causes

Q24. Select the most appropriate option to fill in blank number 4.

(a) comprehensive
(b) complicated
(c) compound
(d) combined

Q25. Select the most appropriate option to fill in blank number 5.

(a) triumphant
(b) prevalent
(c) swift
(d) hidden

GENERAL INTELLIGENCE

Q26. In a certain code language, 'CHILD' is written as ‘6169248' and 'GUEST' is written as '142153840'. How will 'BOOK' be written in that language?

(a) 2303011
(b) 41522
(c) 4151522
(d) 23011

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Q27. Select the option that is related to the fifth number in the same way as the second number is related to the first number and the fourth number is related to the third number.

4 : 80 :: 7 : 392 :: 5 : ?

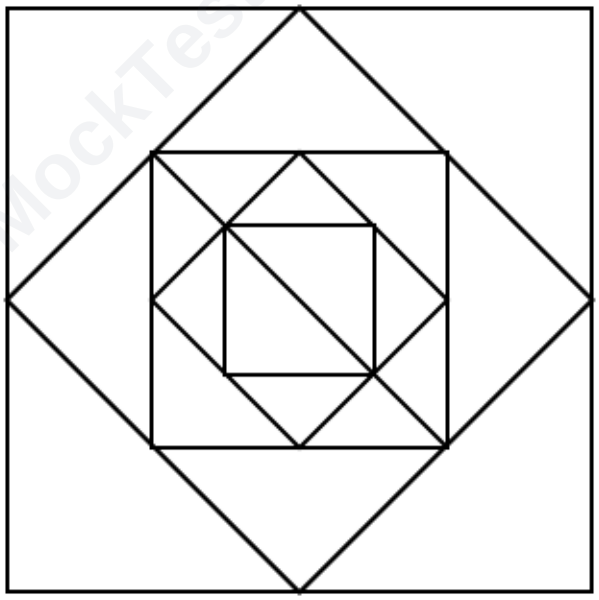
(a) 148
(b) 137
(c) 162
(d) 150

Q28. Which of the following letter-clusters will replace the question mark (?) in the given series to make it logically complete?

YXZ, VUW, SRT, POQ, ?

(a) LMN
(b) MLN
(c) NML
(d) LNM

Q29. How many triangles are there in the given figure?



(a) 25
(b) 28
(c) 24
(d) 22

Q30. Which of the following numbers will replace the question mark (?) in the given series?

4, 8, 5, ?, 15, 90

(a) 18
(b) 13
(c) 22
(d) 20

Q31. Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

GREATLY : ERGAYLT :: MIXTURE : XIMTERU :: TROUBLE : ?

(a) BORTUEL
(b) ORTUEBL
(c) TUELBOR
(d) ORTUELB

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Q32. Select the mirror image of the given combination when the mirror is placed at XY as shown.



(a)



(b)



(c)



(d)



Q33. Which letter-cluster will replace the question mark (?) to complete the given series?

NHMS, HNOU, ?, HNSY, NHUA

(a) HNOX
(b) NHSX
(c) HNPY
(d) NHQW

Q34. Three Statements are given followed by Three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

All towels are cloths.

No cloth is a blanket.

Some blankets are cushions.

Conclusions:

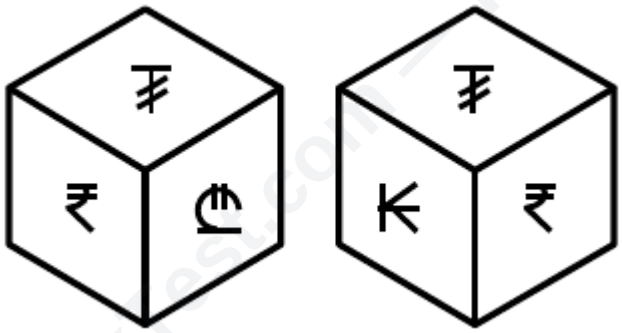
I. Some towels are cushions.

II. No cushion is a cloth.

III. No towel is a blanket.

(a) Only conclusion III follows.
(b) Only conclusion I follows.
(c) Both conclusions I and II follow.
(d) Both conclusions I and III follow.

Q35. Two different positions of the same dice are shown, the six faces of which are marked as €, ?, ?, ?, Rs. , ?. Select the symbol that will be on the face opposite to the one showing '?'.



(a) ?
(b) ?
(c) ?
(d) €

Q36. Select the correct combination of mathematical signs to replace the * signs and to balance the given equation.

43 * 11 * 4 * 71 * 16

(a) −,=,+,×
(b) =,−,+,×
(c) +,×,=,+
(d) −,×,=,+

Q37. Select the correct combination of mathematical signs to sequentially replace the * signs and to balance the given equation.

57 * 35 * 7 * 14 * 2 * 80

(a) –,÷,+,×, =
(b) ×, +, ÷,–, =
(c) +,–, ×,÷, =
(d) +, –, ÷,×, =

Q38. The second number in the given number-pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number-pairs EXCEPT one. Find that odd number-pair.

(a) 16 : 8
(b) 4 : 5
(c) 9 : 6
(d) 36 : 9

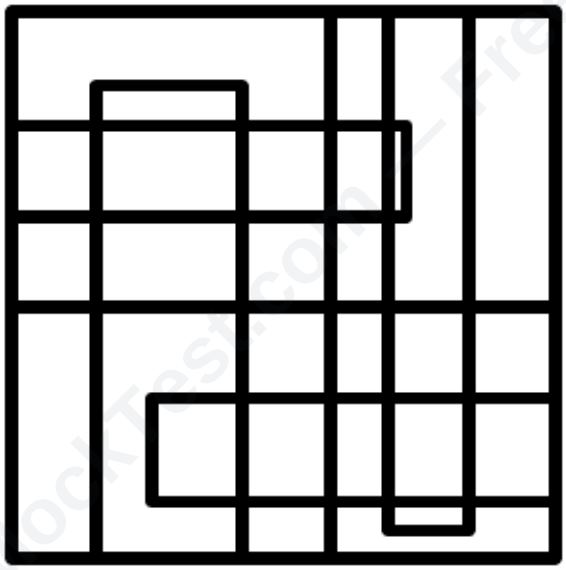
Q39. Select the option that represents the correct order of the given words as they would appear in an English dictionary.

1. Resolve
2. Rodent
3. Resonant
4. Return
5. Respond

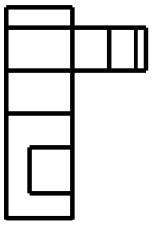
6. Rigidity

(a) 1, 3, 5, 4, 2, 6
(b) 3, 1, 5, 4, 2, 6
(c) 1, 3, 5, 4, 6, 2
(d) 1, 3, 4, 5, 6, 2

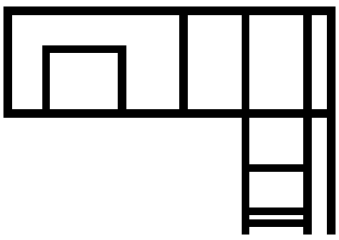
Q40. Select the option that is embedded in the given figure as its part (rotation is not allowed).



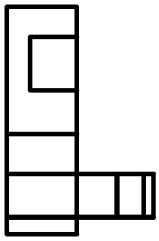
(a)



(b)

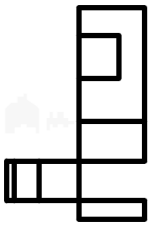


(c)



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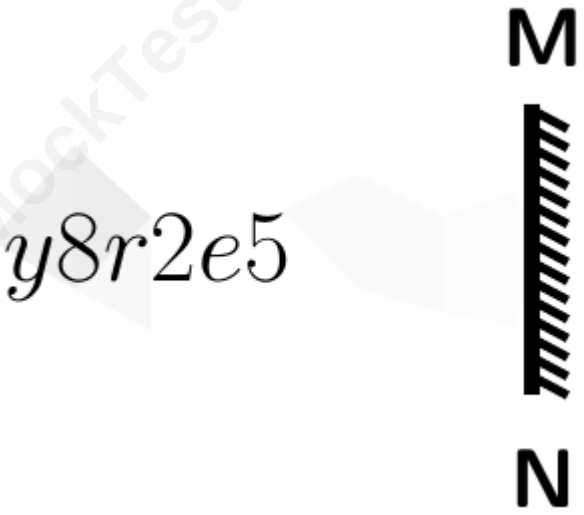
(d)



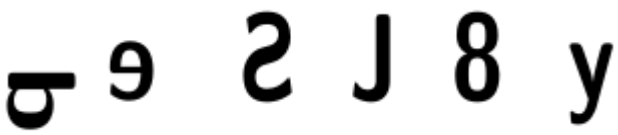
Q41. The second number in the given number pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs except one. Find that odd number pair.

(a) 53 : 2916
(b) 41 : 1765
(c) 23 : 576
(d) 19 : 400

Q42. Select the correct image of the given combination when the mirror is placed at MN as shown



(a)



(b)



(c)



(d)



Q43. Which of the following numbers will replace the question mark (?) in the given series?

13, 25, 38, 62, 88, 124, 163, 211, ?

(a) 253
(b) 263
(c) 235
(d) 236

Q44. Select the option that is related to the fourth term in the same way as the first term is related to the second term and the fifth term is related to the sixth term

7 : 58 :: ? : 370 :: 12 : 153

(a) 20
(b) 18
(c) 21
(d) 19

Q45. Select the option that is related to the fifth term in the same way as the second term is related to the first term and fourth term related to third term.

13 : 130 :: 15 : 180 :: 27 : ?

(a) 649
(b) 658
(c) 650
(d) 648

Q46. Select the option that is related to the fourth term in the same way as the first term is related to the second term and the fifth term is related to the sixth term

64 : 320 :: ? : 70 :: 22 : 110

(a) 12
(b) 14
(c) 8
(d) 17

Q47. In a certain code language, 'RAIN' is written as 'MHZQ' and ‘COAT’ is written as ‘SZNB’.

How will 'ROLE' be written in that language?

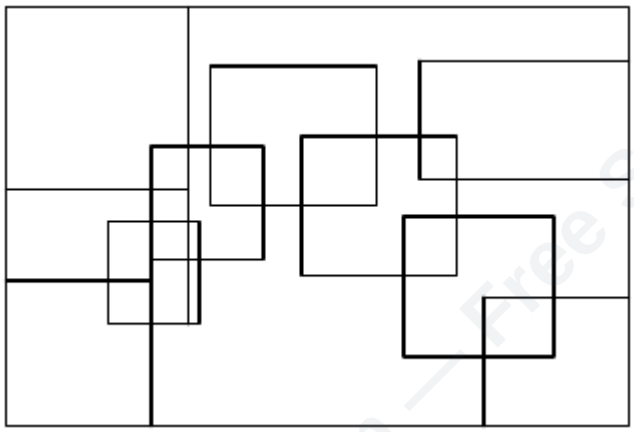
(a) DKNQ
(b) QDKN
(c) KQDN
(d) NDKQ

Q48. In a certain code language, 'SITAR' is written as 'RHSZQ' and ‘BANJO’ is written as ‘AZMIN’. How will 'TABLA' be written in that language?

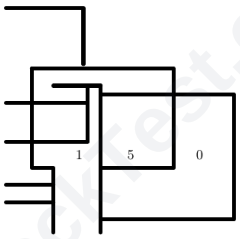
(a) SAZKZ
(b) SZAKZ
(c) SZKAZ
(d) SZAZA

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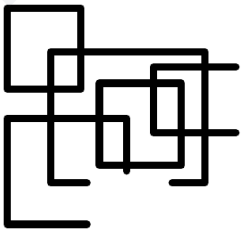
Q49. Select the option figure which is embedded in the given figure as its part (rotation is not allowed).



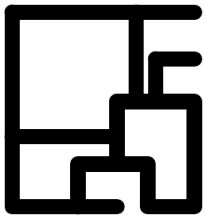
(a)



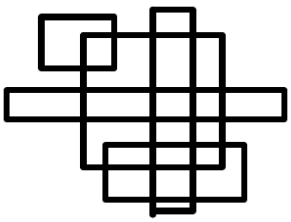
(b)



(c)



(d)



Q50. Pointing to a man, Rahul said," The son of his son is the father of my mother's daughter." How is that person related to Rahul ?

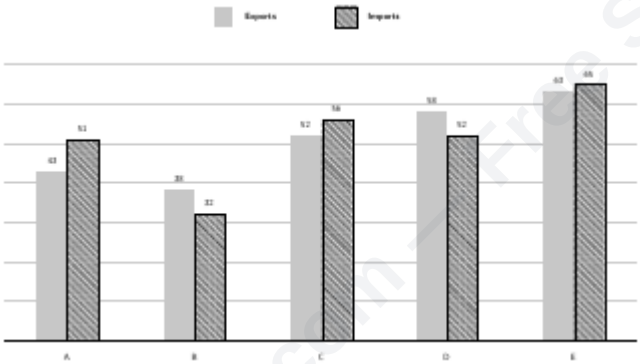
(a) Grandfather
(b) Father's father's brother
(c) Great grandfather
(d) Father's brother

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QUANTITATIVE APTITUDE

Q51. Study the given bar-graph and answer the question that follows.

The given bar-graph shows the exports and imports (in crores of rupees) of five companies in a particular financial year.



Based on the given information, the ratio of exports to imports is highest in company _____.

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

Q52. The average runs scored by Sunil in 17 innings is 37. What is his score in the 17^(th) inning, thereby, increasing his average score by 9 runs?

(a) 81
(b) 108
(c) 181
(d) 167

Q53. In a company, there are only two types of employees: workers and officers. The average monthly salary of an officer is Rs. 78,000 more than the combined average monthly salary of an employee, while the combined average monthly salary of an employee is Rs. 42,000 more than the average monthly salary of a worker. What percentage of all the employees are officers?

(a) 28%
(b) 35%
(c) 30%
(d) 32%

Q54. If α is an acute angle, which of the following options will NOT necessarily be equal to the value of sec α?

(a) 1/cos α
(b) 1/sinα
(c) √(1 + tan²α)
(d) tanα/sinα

Q55. What is the volume of a right circular cylinder whose curved surface area is 12 π cm² and the circumference of its base is 4 π cm?

(a) 48π cm3
(b) 36π cm3
(c) 12π cm3
(d) 24π cm3

Q56. The curved surface area of a right circular cone of radius 28 cm is 4664 cm². What is the slant height of the cone?(Use π=22/7)

(a) 53 cm
(b) 56 cm

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(c) 64 cm
(d) 48 cm

Q57. The number 36 is increased by a certain percentage and becomes 63. Calculate that percentage.
(a) 50%
(b) 75%
(c) 60%
(d) 85%

Q58. Find the third proportion to 16 and 24.
(a) 30
(b) 32
(c) 36
(d) 42

Q59. If $a + b = 25$, then $(a - 15)^3 + (b - 10)^3$ is:
(a) 125
(b) 0
(c) 625
(d) 225

Q60. If $p^3 + 3p^2 + 3p = 26$, then the value of $p^2 + 2p$ is:
(a) 8
(b) 12
(c) 10
(d) 15

Q61. In a triangle ABC, CA is produced to P, angle BAP = 126°. If angle ABC : angle ACB = 5 : 2, the degree measures of angle B and angle C are respectively:
(a) 90° and 36°
(b) 84° and 42°
(c) 78° and 48°
(d) 70° and 56°

Q62. When the price of a watch was reduced by 20%, the number of watches sold is increased by 40%. What was the effect on the sales in percentage?
(a) 12% increase
(b) 30% decrease
(c) 12% decrease
(d) 30% increase

Q63. Study the given table and answer the question that follows.

	Number of Tests per day per Lakh	Positive Cases	Number of Patients for Ventilators
USA	14000	12%	20%
Spain	12000	8%	12.5%
Italy	18000	15%	16%
China	16000	11%	15%

The average number of tests per day per lakh in the four countries is:
(a) 15400
(b) 15500
(c) 15600
(d) 15000

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Q64. Simplify $[(51/2)^2 - (23/4)^2]\sim \div 23/4$.

(a) 8 1/4
(b) 5 1/2
(c) 8 3/4
(d) 2 3/4

Q65. The given table shows the revenue, cost and tax rate for a company for a period of 6 years. The revenue and cost are given in Rs. lakhs.

Year	Revenue	Cost	Tax rate
2015	62	30	15%
2016	75	35	10%
2017	84	38	15%
2018	86	40	20%
2019	90	45	25%
2020	95	50	25%

Profit = Revenue - Cost

Profit after tax for any year = Profit for that year - Tax for that year

Tax for any year = Tax rate for that year x Profit for that year

Find the total sum (in Rs. lakhs) of profit after tax for 2015 to 2020.

(a) 206.6
(b) 192.8
(c) 220.2
(d) 215.3

Q66. Simplify the following : $6 \times \{6 \text{ of } (6 + 6)\} \div \{(6 \div 6) \times (600\% \text{ of } 6)\}$

(a) 12
(b) 15552
(c) 108
(d) 6

Q67. A book is sold for Rs. 1,554 by allowing a discount of 26% on its marked price. Find the marked price of the book.

(a) Rs. 1,854
(b) Rs. 2,100
(c) Rs. 1,750
(d) Rs. 2,000

Q68. Malay walks around a circular field at the rate of 7 rounds per hour, while Neha runs around it at the rate of 11 rounds per hour. They start in the same direction from the same point at 02:45 p.m. They shall first cross each other at:

(a) 03:00 p.m.
(b) 03:05 p.m.
(c) 02:50 p.m.
(d) 03:00 a.m.

Q69. A can do a piece of work alone in 96 days and B can do it alone in 104 days. In how many days can the duo, working together, complete the work?

(a) 49.94
(b) 49.92
(c) 49.96
(d) 49.88

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Q70. The Earth makes a complete rotation about its axis in 24 hours. Through what angle will it turn in 3 hours 30 minutes?

(a) 60°
(b) 65°
(c) 50°
(d) 52.5°

Q71. What is the compound interest on Rs. 20,000 for 9 months at the rate of 4% per annum, when interest is compounded quarterly?

(a) Rs. 610
(b) Rs. 606.02
(c) Rs. 609.05
(d) Rs. 605

Q72. The marked price of a shirt is Rs. 2,150. Let two successive discounts offered by the store be 10% and 'x%'. If the selling price of the shirt is Rs. 1,505, then calculate the value of 'x'. [Give your answer correct to two decimal places.]

(a) 24.44%
(b) 24.24%
(c) 22.22%
(d) 22.42%

Q73. Romesh opened a fixed deposits account in his bank for 3 years by depositing Rs. 80,000.The bank has promised to pay him compound interest annually at the rate of 7% per annum. What is the maturity value of his FDR? (Nearest to a Rs.)

(a) Rs. 98,003
(b) Rs. 98,970
(c) Rs. 98,010
(d) Rs. 98,900

Q74. If the number 5X8146Y is divisible by 88, then what is the value of X?

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

Q75. A man bought a piece of land for Rs. 48,000. He sold two-fifth of it at a loss of 10%. At what gain percentage (rounded off to 1 decimal place) should he sell the remaining land to earn an overall profit of 42%?

(a) 76.7%
(b) 84.3%
(c) 79.5%
(d) 89.8%

GENERAL AWARENESS

Q76. Ustad Bade Ghulam Ali Khan is also known as _____.

(a) Sitar maestro
(b) Alla Rakha
(c) the Bharat Ratna recipient
(d) Tansen of the 20th century

Q77. In which track and field event is the hop used?

(a) Javelin throw
(b) High jump
(c) Triple jump
(d) Broad jump

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Q78. In December 2021, who among the following inaugurated the 'Bharat Darshan Park' in Delhi, which has replicas of major monuments from across the country created by a group of artists?

(a) Amit Shah
(b) Dharmendra Pradhan
(c) Nirmala Sitharaman
(d) Smriti Irani

Q79. Which of the following books is an autobiography of the Indian novelist Khushwant Singh?

(a) My Confession
(b) Truth, Love & A Little Malice
(c) My Story
(d) My Autobiography

Q80. A batsman can be given out in_____ ways.

(a) 6
(b) 8
(c) 10
(d) 5

Q81. The Sangeet Natak Akademi is a body working under which of the following ministries of the Government of India?

(a) Ministry of Education
(b) Ministry of Home Affairs
(c) Ministry of Culture
(d) Ministry of Tourism

Q82. In cell biology, what is a large double-membraned organelle that is sometimes referred to as the 'central unit' of the cell because it contains the chromosomes that bear genetic material?

(a) Peroxisome
(b) Nucleus
(c) Mitochondrion
(d) Lysosome

Q83. Match column A with column B.

Column – A (vitamin)	Column – B (Source)		
i.	Vitamin A	a.	Carrot, mango, papaya
ii.	Vitamin B	b.	Whole grain bread and nuts
iii.	Vitamin C	c.	Citrus fruits, red and green pepper
iv.	Vitamin D	d.	Egg yolk, soya product

(a) i - b, ii - a, iii - c, iv - d
(b) i - c, ii - b, iii - d, iv - a
(c) i - b, ii - c, iii - a, iv - d
(d) i - a, ii - b, iii - c, iv - d

Q84. Lemon juice contains _____ which when mixed with baking soda reacts to form carbon dioxide and sodium citrate causing the liquid to fizz and bubble.

(a) acetic acid
(b) formic acid
(c) citric acid
(d) tartaric acid

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Q85. Rukmini Devi Arundale, awarded with Sangeet Natak Akademi Award in 1957, was a _____ dancer.

(a) Bharatanatyam
(b) Manipuri
(c) Kathak
(d) Kathakali

Q86. 'The Private life of an Indian Prince' is a novel written by whom among the following authors?

(a) Mulk Raj Anand
(b) Ruskin Bond
(c) R K Narayanan
(d) Arvind Adiga

Q87. The valleys lying between the lesser Himalayas and Shivaliks are called:

(a) Duars
(b) Tehri
(c) Terai
(d) Duns

Q88. When was the Lalit Kala Akademi established?

(a) 1965
(b) 1956
(c) 1951
(d) 1954

Q89. The micro finance movement in India was formally launched on a pilot basis by the _____in _____.

(a) National Bank for Agriculture and Rural Development (NABARD); 1992
(b) National Bank for Agriculture and Rural Development (NABARD); 1994
(c) Small Industries Development Bank of India (SIDBI); 1994
(d) Small Industries Development Bank of India (SIDBI); 1992

Q90. When do electrons move for the flow of charges in a conducting metallic wire?

(a) When there is no difference of electric pressure
(b) When the charges stop flowing
(c) Only if there is a difference of electric pressure
(d) Due to gravity

Q91. A Minister who for any period of _____ is not a member of either House of Parliament shall at the expiration of that period cease to be a Minister.

(a) six consecutive months
(b) three consecutive months
(c) four consecutive months
(d) eight consecutive months

Q92. A balanced diet takes care of all the following aspects, EXCEPT one. Identify the aspect.

(a) Promotes a healthy mind
(b) Meets the RDA for all nutrients
(c) Includes nutrients in correct proportions
(d) Includes a variety of food items

Q93. Which of the following novels was written by the Indian author Anuradha Roy?

(a) Tell Her Everything
(b) Sleeping on Jupiter
(c) Midnight's Children
(d) The Illicit Happiness of Other People

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Q94. Which state of India launched the 'Ashirbad' scheme for education, health and maintenance of Covid orphans in June 2021?

(a) Karnataka
(b) Kerala
(c) Maharashtra
(d) Odisha

Q95. As per statistics published by National Crime Records Bureau for 2020, which state tops in total number of crime incidences against senior citizens (60 years and above)?

(a) Maharashtra
(b) Madhya Pradesh
(c) Bihar
(d) Uttar Pradesh

Q96. Ustad Bismillah Khan is best known for playing which of the following instruments?

(a) Tambura
(b) Sitar
(c) Sarod
(d) Shehnai

Q97. Sangeet Natak Akademi Award was constituted in which of the following years?

(a) 1969
(b) 1947
(c) 1952
(d) 1961

Q98. Pandit Ananda Gopal Bandopadhyay was a _____ player of the Banaras gharana.

(a) sarangi
(b) sarod
(c) sitar
(d) tabla

Q99. How is food stored in brown algae?

(a) In the form of glucose
(b) In the form of complex carbohydrates that may be in the form of laminarin or mannitol
(c) In the form of complex lipids
(d) In the form of oil droplets

Q100. Who among the following is credited with building Delhi's Lāl Quilā (Red Fort)?

(a) Akbar
(b) Jahangir
(c) Sher Shah Suri
(d) Shah Jahan

ANSWER KEY

1	a	2	a	3	b	4	d	5	b	6	d	7	d	8	c	9	d	10	b
11	d	12	a	13	d	14	a	15	d	16	d	17	a	18	b	19	b	20	b
21	c	22	b	23	c	24	b	25	b	26	c	27	d	28	b	29	c	30	d
31	d	32	a	33	d	34	a	35	a	36	c	37	a	38	a	39	c	40	a
41	b	42	c	43	b	44	d	45	d	46	b	47	a	48	b	49	c	50	c
51	c	52	c	53	b	54	b	55	c	56	a	57	b	58	c	59	b	60	a
61	a	62	a	63	d	64	a	65	a	66	a	67	b	68	a	69	b	70	d

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71	b	72	c	73	a	74	a	75	a	76	d	77	c	78	a	79	b	80	c
81	c	82	b	83	d	84	c	85	a	86	a	87	d	88	d	89	a	90	c
91	a	92	a	93	b	94	d	95	a	96	d	97	c	98	d	99	b	100	d

SOLUTIONS

Q1. Answer: (a) accepted by the visitors

The solution is in Hindi. Read it online.

Q2. Answer: (a) an upset

The correct answer is "an upset"

Key Points

• Let's look at the meaning of the given words.

• upset:

(of a person's stomach) having disturbed digestion, especially because of something eaten.

• overset:

upset emotionally.

• agitated:

feeling or appearing troubled or nervous.

• perturbed:

feeling anxiety or concern; unsettled.

• As per the meaning of the given words, "upset" is the appropriate word for the given blank.

• The meaning of the given sentence is that she took a leave from work due to an unsettled stomach.

The correct sentence is: She's been off work with an upset stomach.

Hence, the correct answer is option 1.

Q3. Answer: (b) a

The correct answer is "a".

Key Points

• We use the indefinite article "a" before nouns or adjectives with consonant sounds.

• In the given sentence, we need to use the indefinite article "a" before the adjective "self-sufficient".

The correct sentence is: Rohan is a self-sufficient man who needs no assistance.

Hence, the correct answer is option 2.

Q4. Answer: (d) Accommadation

The erroneous spelling is "Accommadation".

Key Points

• Let's look at the correct spelling and meaning of the word.

• Accommodation:

a room, group of rooms, or building in which someone may live or stay.

• Example: The accommodation in the hotel arranged by the hosts of the conference was unpleasant, to say the least.

Hence, the correct answer is option 4.

Additional Information

• Let's look at the meaning of the other words.

• correspondence:

a close similarity, connection, or equivalence.

• campaign:

an organized course of action to achieve a goal.

• experiment: a scientific procedure is undertaken to make a discovery, test a hypothesis, or demonstrate a known fact.

• All the other words are spelled correctly.

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Q5. Answer: (b) One who argues against something just for the sake of arguing

The solution is in Hindi. Read it online.

Q6. Answer: (d) Dissatisfy

The correct answer is "Dissatisfy".

Key Points

• Let's look at the meaning of the given word.

• Suffice:

be enough or adequate.

• Example: Basita said, "I don't think the food we had ordered will suffice the guests."

• Let's look at the meaning of the given options.

• Excessed: more than the usual, proper, or a specified amount.

• Immatured: not fully grown or developed.; deficient in maturity; lacking wisdom, insight, emotional stability, etc.

• Satirize:

deride and criticize by means of satire.

• Dissatisfy:

fail to satisfy (someone).

• As per the meaning of the given words, "dissatisfy" is the antonym of the word "suffice".

• Example: The waiter did not want to dissatisfy the customers so he lied that the food was freshly made.

Hence, the correct answer is option 4.

Q7. Answer: (d) Prosperity

The solution is in Hindi. Read it online.

Q8. Answer: (c) To withdraw from

The correct answer is "To withdraw from"

Key Points

• The meaning of the given idiom is "

withdraw from a commitment."

• We use the given idiom in a situation where "a person has withdrawn from a responsibility or pulled a plug on a venture they were part of."

• Example: Sidharth said, "You can still back out from the play if you like, it's your choice."

Hence, the correct answer is option 3.

Q9. Answer: (d) before she received

The erroneous segment is "before she received".

Key Points

• In the given sentence, the usage of the past tense of the verb 'receive' which is "received" is grammatically incorrect.

• In the given sentence, the subject pronoun "she" should be followed by the conjugation of the verb "receive" which is "receives".

• The given sentence is in the future tense.

The correct sentence is: Suchitra will have to wait another month before she receives any reply to her letter.

Hence, the correct answer is option 4.

Q10. Answer: (b) to clean up

The correct answer is "to clean up ".

Key Points

• In the given sentence, the usage of the auxiliary verb "have" is grammatically incorrect.

• The auxiliary verb "have" is commonly used with the past participle form of the verb to make the present or past perfect tense.

• In the given sentence, the usage of the gerund form of the main verb "cleaning" is also grammatically incorrect as the given sentence is in the past tense.

• We need to use the infinitive form of the verb "to clean up" in the given sentence.

• We use the infinitive form of the verb to show an intention or purpose of an action.

• In the given sentence, the infinitive verb "to clean up" conveys the intention of the speaker's mother that the kitchen should be cleaned before the speaker goes outside.

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The correct sentence is: My mom told me to clean up the kitchen before I go outside.

Hence, the correct answer is option 2.

Q11. Answer: (d) Immitate

The erroneous spelling is "Immitate".

Key Points

• Let's look at the correct spelling and meaning of the marked option.

• Imitate:

copy (a person's speech or mannerisms), especially for comic effect.

• Example: My son imitates his teacher so perfectly.

Hence, the correct answer is option 4.

Additional Information

• Let's look at the meaning of other given words.

• Protocol:

the accepted or established code of procedure or behaviour in any group, organization, or situation.

• Medal :

a metal disc typically of the size of a large coin and bearing an inscription or design, made to commemorate an event or awarded as a distinction to someone such as a soldier or athlete.

• Opponents :

someone who competes with or opposes another in a contest, game, or argument.

• All the other words are spelled correctly.

Q12. Answer: (a) as efficient as he is

The correct answer is: as efficient as he is.

Key Points

• The sentence "You are as efficient as he is." is a grammatically correct comparative sentence, and its correctness can be explained based on comparative structures, subject pronouns, and parallelism in sentence construction.

• Comparative Structure Using "as...as"

• In English grammar, when making comparisons of equality, we use the structure:

• as + adjective/adverb + as + noun/pronoun

• In this case, the adjective "efficient" is used to compare the efficiency of "you" and "he."

• Example:

• "You are as charming as he is."

• The Role of "he" as a Subject Pronoun

• Here, "he" is a subject pronoun that refers to the full clause "he is efficient."

• The Role of "is" in Parallel Structure

• To maintain parallelism, the second part of the sentence should mirror the first part. The verb "is" is necessary to complete the comparison clearly.

• "You are as efficient as he is (efficient)."

Hence, the correct answer is: as efficient as he is.

Additional Information

• Why not "him" in place of 'he'?

• A common mistake in informal English is using an object pronoun like "him" instead of a subject pronoun "he."

• Incorrect: "You are as efficient as him."

• Correct: "You are as efficient as he is."

• Rule: Subject Pronoun Use

• According to standard grammar rules, when making a comparison where the second clause is implied, the subject pronoun must be used because it functions as the subject of an understood verb.

Q13. Answer: (d) Unequal comparisons

The correct answer is "Unequal comparisons".

Key Points

• The meaning of the given idiom is "to compare two things that are fundamentally different and therefore not suited to comparison".

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• We use the given idiom when we compare two things that are not comparable by nature.

• Example: Aditi said, "You can't compare the death of your pet with the death of my nephew, it's like comparing apples and oranges."

Hence, the correct answer is option 4.

Q14. Answer: (a) a

The correct answer is "a".

Key Points

• In the given sentence, we need to use the indefinite article "a" before the countable nouns.

• In the given sentence, the pound is a noun; the number of pounds is countable.

• So, we need to use the indefinite article "a" in the blank.

The correct sentence is: Their new house costed them a hundred and fifty-six thousand pounds.

Hence, the correct answer is option 1.

Q15. Answer: (d) Referring

The solution is in Hindi. Read it online.

Q16. Answer: (d) asked about his daughter’s character

The correct answer is "asked about his daughter’s character. "

Key Points

• Let's look at the meaning of the given words.

• assessed:

evaluate or estimate the nature, ability, or quality of.

• condemned:

sentenced to a particular punishment, especially death.

• poked:

jab or prod (someone or something) with one's finger or a sharp object.

• asked:

say something in order to obtain an answer or some information.

• As per the meaning of the words, "asked" is the appropriate word for the underlined part of the given sentence.

• Options 1, 2, and 3 have different meanings from the given sentence.

• Option 4 has the same meaning as the given sentence.

The correct sentence is: Shrija asked about his daughter’s character.

Hence, the correct answer is option 4.

Q17. Answer: (a) BDCA

The correct answer is "BDCA "

Key Points

• Let's look at the correct sequence of the passage.

• Statement B is the first sentence of the passage as it begins with a general statement which is also the theme of the passage. The opening sentence is about the Road which is one of the great fundamental institutions of mankind.

• Statement D is the second sentence of the passage as it mentions the functions of the Road. The functions are developing strategies and fixing the sites of battles. It is the Road that gives the framework to all economic development. It is the Road that is the channel of all trade, and, what is more important, of all ideas.

• Statement C is the third sentence of the passage as it talks about the significance of the Road to social existence. Its varied effects appear in every department of the State. It is the Road that determines the sites of many cities and the growth and nourishment of all.

• Statement A is the final sentence of the passage as it summarises all the core points of the passage in a sentence. It is mentioned that the Road is a necessary guide, without which progress from place to place would be a ceaseless experiment; it is a sustenance without which organised society would be impossible, Thus the Road moves and controls all history.

Hence, the correct sequence is option 1 i.e BDCA.

Q18. Answer: (b) Lurch

The correct answer is "Lurch"

Key Points

• Let's look at the meaning of the given words.
• Lupin:
a plant of the pea family with deeply divided leaves and tall colorful tapering spikes of flowers.
• Lurch: make an abrupt, unsteady, uncontrolled movement or series of movements; stagger.
• Lugger: a small sailing ship with two or three masts and a lugsail on each.
• Lumen: the cavity of a tubular organ or part
• As per the meaning of the given words, "Lurch" one-word substitute for the given group of words.
• Example: During the trek, Sandhya lost her grip while moving up and lurched forward to avoid falling down.
**Hence, the correct answer is option 2.

Q19. Answer: (b) simple

The correct answer is "simple".
Key Points
• Let's look at the meaning of the given word.
• recondite:
(of a subject or knowledge) little-known; abstruse.
• Example: The Professor of sociology said, " The area of your research deals with economics and finance which are recondite to me."
• Let's look at the meaning of the given options.
• brief: of short duration; not lasting for long.
• simple:
easily understood or done; presenting no difficulty.
• mystical:
having a spiritual symbolic or allegorical significance that transcends human understanding.
• obscure:
not discovered or known about; uncertain.
• As per the meaning of the given words, "simple" is the antonym of the word "recondite".
• Example: The couple decided to have a simple wedding with a limited number of guests.
Hence, the correct answer is option 2.

Q20. Answer: (b) Abscent

The erroneous spelling is "Abscent"
Key Points
• Let's look at the correct spelling and meaning of the word.
• Absent:
not present in a place, at an occasion, or as part of something.
• Example: Aaron doesn't want to be absent on the first day of his new job, so he set an alarm.
Hence, the correct answer is option 2.
Additional Information
• Let's look at the meaning of the other words.
• Absolute:
not qualified or diminished in any way; total.
• Absorb:
take in and understand fully (information, ideas, or experience).
• Abstract:
existing in thought or as an idea but not having a physical or concrete existence.
• All the other words are spelled correctly.

Q21. Answer: (c) both

The correct answer is "both"
Key Points
• Let's try to understand the correct option.
• Option 1 is incorrect, as neither means "none of them", We use neither in a negative sense when we negate two things.

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• Option 2 is incorrect as like means "similar to". It is used to show a degree of similarity with a thing.

• Option 4 is incorrect as the preposition "to" indicates a movement or direction/destination.

• Option 3 is correct, as the pronoun "both" indicates, two things are discussed or talked about.

• In the given sentence, the author is saying that in everyday language sleepwalking can be used in two ways that are informally and symbolically.

Hence, the correct answer is option 3.

The complete passage is: In everyday language, the phrase ‘sleepwalking’ can be used (1) both informally and symbolically to describe a lack of energy or attention. However, for (2)some infants and adults, sleepwalking is a genuine disorder with serious (3)repercussions. Sleepwalking, also known as somnambulism, is a sleep-related behavior condition that causes people to walk or execute other (4) complicated acts while they are still partly sleeping. It is more (5) prevalent in children than in adults, and it is more likely to develop if a person has a family history of the illness, is sleep deprived, or has many nightly awakenings.

Q22. Answer: (b) some

The correct answer is "some".

Key Points

• Let's try to understand the correct option.

• Option 1 is incorrect as the pronoun "both" indicates, two things are discussed or talked about.

• Option 3 is incorrect as the given sentence does not specify the quantity of the noun, so it is an uncountable noun. We use few only with count nouns.

• Option 4 is incorrect as the determiner "all" is used to describe the whole group of people. In the context of sleepwalking disorder, the determiner all is not appropriate for the blank as it does not apply to every person.

• Option 2 is correct as the determiner "some" is used with uncountable nouns, "infants and adults". In the context of sleepwalking disorder, the determine "some" is appropriate for the blank as it applies to certain infants and adults who suffer from it.

Hence, the correct answer is option 2.

The complete passage is: In everyday language, the phrase ‘sleepwalking’ can be used (1) both informally and symbolically to describe a lack of energy or attention. However, for (2)some infants and adults, sleepwalking is a genuine disorder with serious (3)repercussions. Sleepwalking, also known as somnambulism, is a sleep-related behavior condition that causes people to walk or execute other (4) complicated acts while they are still partly sleeping. It is more (5) prevalent in children than in adults, and it is more likely to develop if a person has a family history of the illness, is sleep deprived, or has many nightly awakenings.

Q23. Answer: (c) repercussions

The correct answer is "repercussions"

Key Points

• Let's look at the meaning of the given words.

• impetus: something that makes a process or activity happen or happen more quickly.

• impulsions:

the motive or influence behind an action or process.

• repercussions:

an unintended consequence of an event or action, especially an unwelcome one.

• causes:

a person or thing that gives rise to an action, phenomenon, or condition.

• As per the meaning of the given words, "repercussions" is the appropriate word for the blank.

• Example: The boss warned his employees that there would be serious repercussions for the late comers in the office.

• The implied meaning of the given sentence is that sleepwalking is a genuine disorder with serious consequences for some infants and adults.

Hence, the correct answer is option 3.

The complete passage is: In everyday language, the phrase ‘sleepwalking’ can be used (1) both informally and symbolically to describe a lack of energy or attention. However, for (2)some infants and adults, sleepwalking is a genuine disorder with serious (3)repercussions. Sleepwalking, also known as somnambulism, is a sleep-related behaviour condition that causes people to walk or execute other (4) complicated acts while they are still partly sleeping. It is more (5) prevalent in children than in adults, and it is more likely to develop if a person has a family history of the illness, is sleep deprived or has many nightly awakenings.

Q24. Answer: (b) complicated

The correct answer is "complicated"

Key Points

• Let's look at the meaning of the given words.

• comprehensive:

including or dealing with all or nearly all elements or aspects of something.

• complicated:

consisting of many interconnecting parts or elements; intricate.

• compound :

a thing that is composed of two or more separate elements; a mixture.

• combined:

join or merge to form a single unit or substance.

• As per the meaning of the given words, "complicated" is the appropriate word for the blank.

• Example: The lawyer warned his client," Civil suits are the most complicated legal disputes."

• The implied meaning of the given sentence is that sleepwalking patients are capable of performing difficult and complex acts.

Hence, the correct answer is option 2.

The complete passage is: In everyday language, the phrase ‘sleepwalking’ can be used (1) both informally and symbolically to describe a lack of energy or attention. However, for (2)some infants and adults, sleepwalking is a genuine disorder with serious (3)repercussions. Sleepwalking, also known as somnambulism, is a sleep-related behaviour condition that causes people to walk or execute other (4) complicated acts while they are still partly sleeping. It is more (5) prevalent in children than in adults, and it is more likely to develop if a person has a family history of the illness, is sleep deprived or has many nightly awakenings.

Q25. Answer: (b) prevalent

The correct answer is "prevalent ".

Key Points

• Let's look at the meaning of the given words.

• triumphant:

feeling or expressing jubilation after a victory or achievement.

• prevalent: generally or widely accepted; practiced, or favored;

widespread.

• swift:

happening quickly or promptly.

• hidden: kept out of sight; concealed.

• As per the meaning of the given words, "prevalent" is the appropriate word for the blank.

• Example: The usage of artificial intelligence is more prevalent in our everyday lives, from smart watches to mobile phones.

• The implied meaning of the given sentence is that sleepwalking is more common in children than in adults.

Hence, the correct answer is option 2.

The complete passage is: In everyday language, the phrase ‘sleepwalking’ can be used (1) both informally and symbolically to describe a lack of energy or attention. However, for (2) some *i*nfants and adults, sleepwalking is a genuine disorder with serious (3)repercussions. Sleepwalking, also known as somnambulism, is a sleep-related behaviour condition that causes people to walk or execute other (4) complicated acts while they are still partly sleeping. It is more (5) prevalent in children than in adults, and it is more likely to develop if a person has a family history of the illness, is sleep deprived, or has many nightly awakenings.

Q26. Answer: (c) 4151522

The logic followed here is:

The pattern is:

Only the value of I is not changed because the values of vowels does not change in this pattern.

Thus, CHILD is coded as 6169248

Only the value of U & E is not changed because the values of vowels does not change in this pattern.

Thus, GUEST is coded as 122153840

Similarly,

Only the value of O is not changed because the values of vowels does not change in this pattern.

Thus, BOOK is coded as 4151522

Hence, the correct answer is 4151522.

Q27. Answer: (d) 150

In the given series the pattern followed is:

$(\text{first term})^3 + (\text{first term})^2 = \text{Second term}$

Let's apply the pattern on pair one:
4 : 80
(first term)3 + (first term)2 = Second term
$(4)^3+ (4)^2= 80$
(64) + (16) = 80
80 = 80
Let's apply the pattern on pair two:
7 : 392
(first term)3 + (first term)2 = Second term
(7)3 + (7)2 = 392
(343) + (49) = 392
392 = 392
Let's apply the pattern on pair three:
5 : ?
(first term)3 + (first term)2 = Second term
(5)3 + (5)2 = Second term
(125) + (25) = Second term
150 = Second term
Hence, the correct answer is 150,

Q28. Answer: (b) MLN

The answer is option 2) MLN
SOLUTION:
The pattern followed in the given series is:
The next cluster comes out to be MLN.
Hence, the correct answer is MLN.

Q29. Answer: (c) 24

The given figure can be differentiated into parts so that we can easily find the number of triangles:
Total triangles = 12 + 8 + 2 + 2
Total triangles = 24
Hence, the correct answer is 24.

Q30. Answer: (d) 20

The pattern in the given series is:
Hence, the correct answer is 20.

Q31. Answer: (d) ORTUELB

The pattern followed in the given series is:
• First and third alphabets are interchanged & fifth and seventh alphabets are interchanged.

GREATLY is coded as ERGAYLT
MIXTURE is coded as XIMTERU
TROUBLE is coded as ORTUELB
Hence, the correct answer is ORTUELB.

Q32. Answer: (a) [figure]

The mirror image of the given image is:
Here we can see the given combination which is inverted. Now on comparing the inverted combination with the options,
We get option 1) similar to it.
Hence, the correct answer is option 1)

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Q33. Answer: (d) NHQW

The position of the English alphabet letters is given below:

Hence, the correct answer is "MXJY".

Q34. Answer: (a) Only conclusion III follows.

The least possible Venn Diagram is as follows:

I. Some towels are cushions → False (In the statement it is stated that all towels are clothes and there is no relation between cloth and cushion therefore there is no relation between towels and cushion. It is possible but not definite. Thus, the conclusion I does not follows.)

II. No cushion is a cloth → False (There is no such evidence that gives us the information about cloth not being related to cushion and therefore it us a possibility that cushion relates to cloth. It is possible but not definite. Thus, the conclusion does not follow.)

III. No towel is a blanket → True (In the statement it is clearly said that "all towels are cloths" and "no cloth is a blanket" therefore it is safe to say that there is no relation between towel and blanket. Thus, the conclusion follows.)

Hence, the correct answer is "Only conclusion III follows".

Q35. Answer: (a) ?

The given image :

In the image we can see that the left of Rs. is ? and the right of Rs. is ?.

In a dice the left and right of the same face are placed opposite to each other. And in this case ? and ? are in this position. Therefore

? is the face opposite to ?

Hence, the correct answer is option 1) ?.

Q36. Answer: (c) +,×,=,+

The logic followed here is:

The given equation is:

43 * 11 * 4 * 71 * 16

Let's apply each option and solve the equation using BODMAS rule: Bracket of Division Multiplication Addition Subtraction.

Option 1) −,=,+,×

43 - 11 = 4 + 71 × 16

43 - 11 = 4 + 1136

43 - 11 = 1140

32 = 1140 Incorrect

Option 2) =,−,+,×

43 = 11 - 4 + 71 × 16

43 = 11 - 4 + 1136

43 = 1147 - 4

43 = -1143 Incorrect

Option 3) +,×,=,+

43 + 11 × 4 = 71 + 16

43 + 44 = 71 + 16

87 = 87 Correct

Option 4) −,×,=,+

43 - 11 × 4 = 71 + 16

43 - 44 = 71 + 16

43 - 44 = 87

-1 = 87 Incorrect

Hence, the correct answer is "+,×,=,+"

Q37. Answer: (a) –,÷,+,×, =

The correct answer is option 1) –,÷,+,×, =

SOLUTION:

The given equation is:

57 * 35 * 7 * 14 * 2 * 80

Let's apply each option and solve the equation using BODMAS rule: Bracket of Division Multiplication Addition Subtraction.
Option 1) –,÷,+,×, =
57 - 35 ÷ 7 + 14 × 2 = 80
57 - 5 + 14 × 2 = 80
57 - 5 + 28 = 80
85 - 5 = 80
80 = 80 Correct
Option 2) ×, +, ÷,–, =
57 × 35 + 7 ÷ 14 - 2 = 80
57 × 35 + 0.5 - 2 = 80
1995 + 0.5 - 2 = 80
1995.5 - 2 = 80
1993.5 = 80 Incorrect
Option 3) +,–, ×,÷, =
57 + 35 - 7 × 14 ÷ 2 = 80
57 + 35 - 7 × 7 = 80
57 + 35 - 49 = 80
92 - 49 = 80
43 = 80 Incorrect
Option 4) +, –, ÷,×, =
57 + 35 - 7 ÷ 14 × 2 = 80
57 + 35 - 0.5 × 2 = 80
57 + 35 - 1 = 80
92 - 1 = 80
91 = 80 Incorrect
Hence, the correct answer is "–,÷,+,×, =".

Q38. Answer: (a) 16 : 8

The pattern followed by the given pairs is:
$(\text{Number})^2$: Number + 3
Option 2) 4 : 5
(Number)2 : Number + 3
$(2)^2$: 2 + 3
4 : 5
Option 3) 9 : 6
(Number)2 : Number + 3
(3)2 : 3 + 3
9 : 6
Option 4) 36 : 9
(Number)2 : Number + 3
(6)2 : 6 + 3
36 : 9
But option 1) 16 : 8 does not follow the pattern:
(Number)2 : Number + 3
$(4)^2$: 4 + 3
6 : 7, answer does not match the option. Therefore this is the odd pair.
Hence, the correct answer is "16 : 8".

Q39. Answer: (c) 1, 3, 5, 4, 6, 2

According to the sequence in the English dictionary:
The correct order of the given words is:
1. Resolve

3. Resonant

5. Respond

4. Return

6. Rigidity

2. Rodent

Hence, the correct answer is "1, 3, 5, 4, 6, 2".

Q40. Answer: (a) [figure]

Given:

The image is embedded in given figure is as shown below:

Hence, the correct answer is "Option 1".

Q41. Answer: (b) 41 : 1765

The followed here is:

Here, we need to find the pattern used between the two numbers and see the odd one out from the given options.

Pattern: n : (n × (n+2) + 1)

First, we will check options one by one.

1) 53 : 2916

53 × 55 + 1 = 2916

2) 41 : 1765

41 × 43 + 1 = 1764 ≠ 1765, this is the odd one out

3) 23 : 576

23 × 25 + 1 = 576

4) 19 : 400

19 × 21 + 1 = 400

Thus, the logic here is: Here, we need to add 2 to the 1st term and then this new number is multiplied by the 1st term and the answer is added by 1 to get the final answer.

Hence, the pair '41 : 1765' is the odd one.

Q42. Answer: (c) [figure]

Here, we are given the word and we need to find the mirror image of it.

First keep in mind that, in mirror image the first letter will be the last letter of the given word. Also, the size of the letters will not change i.e. capital letters will appear capital only.

Next, as we can see the given word ends with 5, so the mirror image will have 5 as the first number.

Again, number 5 is water image in option 2, so option 2 is eliminated.

And, the letter r is water image in option 1 and 4, so options 1 and 4 are also eliminated.

Thus, we have only one option left i.e. option 3.

Hence, the mirror image of the given word is 'option 3'.

Confusion Points

Keep in mind what is the difference between mirror image and water image.

Q43. Answer: (b) 263

The logic followed here is:

First we need to find the difference between the two consecutive numbers:

25 - 13 = 12, 38 - 25 = 13, 62 - 38 = 24, 88 - 62 = 26, 124 - 88 = 36, 163 - 124 = 39, 211 - 163 = 48

The pattern is:

25 = 13 + 12

38 = 25 + 13

62 = 38 + (12 × 2)

88 = 62 + (13 × 2)

124 = 88 + (12 × 3)

163 = 124 + (13 × 3)

211 = 163 + (12 × 4)

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Thus, the missing number will be: 211 + (13 × 4) = 263

Hence, the missing number is 263.

Confusion Points

Make a point whenever we solve the pattern question, take out the difference and see we can find any pattern there and also take out the difference of the difference too in the next step, if needed.

Shortcut Trick Observe the pattern in the given series. If the numbers are increasing or decreasing exponentially go for multiplication otherwise go for addition.

Q44. Answer: (d) 19

The logic follows here is as:

Pattern: n : n^2 + 9

So, the pattern is Take the square of odd terms and then add 9 to the answer to get the final answer.

7 × 7 + 9 = 58,

12 × 12 + 9 = 153

Similarly,

we will do: 370 - 9 = 361, which is a square of 19 number.

i.e. 19 × 19 + 9 = 370

Hence, the missing number is 19.

Q45. Answer: (d) 648

The logic here is:

Pattern: n : n × (n - 3)

Term 1:

=> 13 : 13 × (13 - 3)

=> 13 : 13 × 10

=> 13 : 130

Term 2:

n : n × (n - 3)

=> 15 : 15 × (15 - 3)

=> 15 : 15 × 12

=> 15 : 180

Term 3:

n : n × (n - 3)

=> 27 : 27 × (27 - 3)

=> 27 : 27× 24

=> 27 : 648

Hence, the missing number is '648'.

Alternate Method

Each odd term is multiple of the even number.

Seeing the given options, we will divide each of the options numbers by 27.

We see that, the last option 648 divided by 27, we get a whole number.

Hence, the missing number is '648'.

Q46. Answer: (b) 14

The logic followed here is:

Each odd term is multiply by 5, to get the even term.

So,

64 × 5 = 320,

22 × 5 = 110

Thus, we will divide 70 by 5, we will get 14.

Hence, the missing number is 14.

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Q47. Answer: (a) DKNQ

Here, the alphabets and their positions as shown below:

The logic follows here is as:

For the word RAIN:

(Criss cross the arrows while drawing the diagram.)

Next, for the word COAT:

So the pattern here is: We subtract each letter by 1 to get the code letter. Then at the end, write the final answer starting from the last letter of the coded letters.

Thus, for the word ROLE:

Hence, the code word for the word ROLE is 'DKNQ'.

Q48. Answer: (b) SZAKZ

Here, the alphabets and their positions as shown below:

The logic follows here is as:

For the word SITAR:

Next, for the word BANJO:

So, the pattern here is: Each letter is subtracted by 1 to get the coded answer.

Thus, for the word TABLA:

Hence, the word TABLA is coded as 'SZAKZ'.

Q49. Answer: (c) [figure]

The figure is given below:

The shaded portion is the embedded figure.

Hence, 'option 3' is the correct answer.

Q50. Answer: (c) Great grandfather

Family chart:

According to the statement:

The man is Rahul's great grandfather.

Hence, 'option 3' is the correct answer.

Q51. Answer: (c) B

Given:

The bar-graph of the exports and imports (in crores of rupees) of five companies in a particular financial year is given.

Formula used:

Ratio of x to y = x/y

Calculation:

The following are the exports to imports ratios for the five companies.

For company A: 43/51=0.84

For company B: 38/32=1.18

For company C: 52/56=0.92

For company D: 58/52=1.11

For company E: 63/65=0.96

Therefore The ratio of exports to imports is highest in company B.

Q52. Answer: (c) 181

Given:

The average run scored by Sunil in 17 innings = 37.

Formula used:

Average = (sum of the all the observations)/(total no. of observations)

Calculation:

Let Sunil's score in the 17th inning be x.

His average until the 16th inning was = 37 - 9 = 28.

Therefore, his total score after the 16th inning = 16 × 28

=> 448

Then, after the 17th inning,

=> ((16 × 28)+x)/17 = the average of 17th inning

=> (16 × 28) + x = 37 × 17

=> 448 + x = 629

=> x = 629 - 448

=> x = 181

Therefore Sunil scored 181 runs in the 17th inning.

Q53. Answer: (b) 35%

Shortcut Trick

By using the Alligation method, the ratio of Officers to Workers is the inverse ratio of their deviations from the combined average.

Difference (Officers − Combined Avg) = 78,000

Difference (Combined Avg − Workers) = 42,000

Ratio of Officers : Workers = 42,000 : 78,000 = 7 : 13

Percentage of Officers = [7 ÷ (7 + 13)] × 100 = (7 ÷ 20) × 100 = 35%

Therefore The correct answer is 35%.

Alternate Method

Given:

Let the combined average salary of all employees be A.

Average salary of an Officer (O) = A + Rs. 78,000

Average salary of a Worker (W) = A − Rs. 42,000

Calculations:

=> Let the number of Officers be N_o and Workers be N_w.

=> Total Salary = N_o × (A + 78,000) + N_w × (A − 42,000)

=> Combined Average (A) = [N_o(A + 78,000) + N_w(A − 42,000)] ÷ (N_o + N_w)

=> A(N_o + N_w) = AN_o + 78,000N_o + AN_w − 42,000N_w

=> AN_o + AN_w = AN_o + 78,000N_o + AN_w − 42,000N_w

=> 42,000N_w = 78,000N_o

=> N_o ÷ N_w = 42,000 ÷ 78,000 = 7 ÷ 13

=> Total employees = 7 + 13 = 20 units

=> Percentage of Officers = (7 ÷ 20) × 100

=> Percentage of Officers = 35%

Therefore The correct answer is 35%.

Additional Information

Alligation Rule

It is a rule that enables us to find the ratio in which two or more ingredients at the given price must be mixed to produce a mixture of a desired price: (Quantity of Cheaper) ÷ (Quantity of Dearer) = (CP of Dearer − Mean Price) ÷ (Mean Price − CP of Cheaper).

Weighted Average Formula

The combined average of two groups is given by A_(avg) = (n1x1 + n2x2) ÷ (n1 + n2), where n is the number of items and x is the average value.

Ratio to Percentage

To convert the ratio a : b into the percentage of the first part, use the formula: [a ÷ (a + b)] × 100.

Q54. Answer: (b) 1/sinα

Given:

α is an acute angle

Formula used:

If α is an acute angle, then α < 90°

$\sec^2\alpha = 1 + \tan^2\alpha$

$\tan\alpha = \sin\alpha / \cos\alpha$

$\sec\alpha = 1/\cos\alpha$

CALCULATION:

Upon considering option (2), we have:
As, we know that secα = 1/cosα
Hence, it cannot be equal to 1/sin α
So, this value is not necessarily equal to the sec α
Considering option (1) ,we have:
As, we know sec α = 1/cosα
Hence, this is necessarily equal to the value of sec α.
On considering option (3), we have:
As, sec2 α = 1 + tan2 α
=> Sec α = √1 + tan²α
Hence, this is equal to the Sec α
On considering option (4), we have:
tan α/sin α
=> tan α/sin α = (sin α/cos α) × (1/sin α)
=> tan α/sin α = 1/cos α
=> 1/cos α = cos α
Hence, this value is equal to the sec α.
Therefore 1/sin α is necessarily not equal to the sec α.

Q55. Answer: (c) 12π cm3

Shortcut Trick
Find the radius (r) from the circumference: r = 4π ÷ 2π = 2 cm.
The relationship between Volume (V) and Curved Surface Area (CSA) is V = (CSA × r) ÷ 2.
Substitute the values: V = (12π × 2) ÷ 2 = 12π cm³.
Therefore The correct answer is 12π cm³.
Alternate Method
Given:
=> Curved Surface Area (CSA) of cylinder = 12π cm²
=> Circumference of the base = 4π cm
Formulas Used:
=> Circumference = 2πr
=> Curved Surface Area = 2πrh
=> Volume = πr²h
Calculations:
=> 2πr = 4π
=> r = 4π ÷ 2π = 2 cm
=> CSA = 2πrh = 12π
=> (2πr) × h = 12π
=> 4π × h = 12π
=> h = 12π ÷ 4π = 3 cm
=> Volume = π × r² × h
=> Volume = π × (2)² × 3
=> Volume = π × 4 × 3 = 12π cm³
Therefore The correct answer is 12π cm³.
Additional Information
Total Surface Area (TSA) of Cylinder
The sum of curved surface area and the area of two circular bases: TSA = 2πr(h + r).
Volume and CSA Relation
The ratio of the volume to the curved surface area of a cylinder is always r ÷ 2.
Area of Base
The area of the circular base of a cylinder is calculated as πr².

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Q56. Answer: (a) 53 cm

Given:

Curved surface area of a cone = 4664 cm²

radius = 28 cm

Formula used:

Curved surface area of cone = π × r × l

where l = slant height; r = radius

Calculation:

Curved surface area = 4664

=> π × r × l = 4664

=> 22/7 × 28 × l = 4664

=> l = 53 cm

Therefore Slant height i.e. l is 53 cm.

Q57. Answer: (b) 75%

Formula used:

Increased percentage = (increased no. -original no.)/(original no.) × 100

CALCULATION:

Increased percentage = (63-36)/36 × 100

=> 27/36 × 100

=> 75%

Therefore The required percentage is 75%.

Q58. Answer: (c) 36

Shortcut Trick

For two numbers a and b, the third proportion c is calculated as b² ÷ a.

Here, a = 16 and b = 24.

Third proportion = (24 × 24) ÷ 16

Third proportion = 576 ÷ 16 = 36.

Therefore The correct answer is 36.

Alternate Method

Given: First number (a) = 16, Second number (b) = 24.

Formula Used: If a, b, and x are in continued proportion, then a : b :: b : x, where x is the third proportion.

Calculations:

=> 16 : 24 = 24 : x

=> 16 / 24 = 24 / x

=> 2 / 3 = 24 / x (Simplifying 16/24 by 8)

=> 2 × x = 24 × 3

=> 2x = 72

=> x = 72 / 2

=> x = 36

Comparing the result with the given options, we find that Option 3 matches the calculated value.

Therefore The correct answer is 36.

Additional Information

Mean Proportion

The mean proportion between two numbers a and b is √(a × b).

Fourth Proportion

If four numbers a, b, c, and d are in proportion (a:b = c:d), then d is the fourth proportion, calculated as (b × c) ÷ a.

Continued Proportion

Three numbers a, b, c are in continued proportion if a : b = b : c, which implies b² = a × c.

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Q59. Answer: (b) 0

Given:

(a + b) = 25

Formula used:

$(a - b)^3 = a^3 - b^3 - 3ab (a - b)$

Calculation:

a + b = 25.

Now, this can be rewritten as a + b = 10 + 15

=> (a - 15) = (10 - b)

From the question:

$=> (a -15)^3 + (b - 10)^3$

$=> (10 - b)^3 + (b- 10)^3$

$=> 10^3 - b^3 - 30b \times (10 -b) + b^3 - 10^3 - 30b \times (b- 10)$

$=> -300 b + 30 b^2 - 30 b^2 + 300b = 0$

Therefore The value is equal to 0.

Q60. Answer: (a) 8

Given:

$p^3 + 3p^2 + 3p = 26$

Formula used:

$(a + b)^3 = a^3 +b^3 + 3ab (a + b)$

Calculation:

p3 + 3p2 + 3p = 26

Now add 1 to both the sides

p3 + 3p2 + 3p + 1 = 26 + 1

This equation can be written as

$=> p^3 + 1^3 + 3p \times 1 \times (p + 1) = 27$

$=>(p + 1)^3 = 3^3$

=> (p +1) = 3

=> p = 2

Now, $p^2 + 2p = (2^2+ 2 \times 2) = 8$

Therefore The value is 8.

Q61. Answer: (a) 90° and 36°

Shortcut Trick

According to the Exterior Angle Theorem, the exterior angle of a triangle is equal to the sum of the two opposite interior angles.

Sum of interior opposite angles angle B + angle C = Exterior angle BAP = 126°.

Ratio of angle B : angle C = 5 : 2.

Total units = 5 + 2 = 7 units => 126°.

1 unit = 126° ÷ 7 = 18°.

angle B = 5 × 18° = 90° and angle C = 2 × 18° = 36°.

Therefore The correct answer is 90° and 36°.

Alternate Method

Given: Exterior angle BAP = 126° and angle ABC : angle ACB = 5 : 2.

Formula Used: Exterior angle = Sum of interior opposite angles.

Let angle ABC = 5x and angle ACB = 2x.

By the Exterior Angle Theorem in triangle ABC:

=> angle ABC + angle ACB = Exterior angle BAP

=> 5x + 2x = 126°

=> 7x = 126°

=> x = 126° ÷ 7

=> x = 18°

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Now, calculate the measure of each angle:
=> angle B = 5x = 5 × 18° = 90°
=> angle C = 2x = 2 × 18° = 36°
Therefore The correct answer is 90° and 36°.
Additional Information
Exterior Angle Theorem
The measure of an exterior angle of a triangle is equal to the sum of the measures of its two remote (opposite) interior angles.
Angle Sum Property
The sum of all interior angles of a triangle is always 180°. In this case, angle A + angle B + angle C = 54° + 90° + 36° = 180°.
Linear Pair of Angles
Angles on a straight line add up to 180°. Here, interior angle BAC + exterior angle BAP = 180° => 54° + 126° = 180°.

Q62. Answer: (a) 12% increase

Given:
The price of a watch is reduced to 20%
The number of watches sold has increased by 40%
Formula used:
effective percentage change = x + y + (xy/100)
Calculation:
Since first it is reduced to 20% and then it has increased by 40%
Effective percentage change = - x + y - (xy/100)
=> -20 +40 - 800/100 = +12
Here + sign shows an increase in the percentage
Therefore The effect on sales in percentage is a 12% increase.

Q63. Answer: (d) 15000

Given:
No. of tests per day per lakh in different countries
Formula used:
Average = sum of values / number of values × 100
Calculation:
No. of tests per lakh in,
U.S.A = 14000
Spain = 12000
Italy = 18000
China = 16000
Sum = (14000 + 12000 +18000 + 16000)
=> Sum = 60,000
number of countries = 4
=> Average = 60,000/4
=> 15,000
Therefore The average number of tests per lakh in the four countries is 15,000

Q64. Answer: (a) 8 1/4

Given:
=> $[(51/2)^2 - (23/4)^2]\sim \div 23/4$.
Formula used :
BODMAS
Calculation:
=> $[(51/2)^2 - (23/4)^2]\sim \div 23/4$
=> [(121/4)-(121/16)] ÷ 11/4
=> [(484 -121)/16] ÷ 11/4
=> [363 /16] ÷ 11/4

=> (363/16) × (4/11) = 33/4 = 8 1/4

Therefore The value is 8 1/4.

Q65. Answer: (a) 206.6

Calculation:

Profit after tax for 2015

Profit for 2015 = (revenue - cost) = (62 - 30) = 32

Tax for 2015 = (tax rate × profit) = (15% × 32) = 4.8

Hence, profit after tax for 2015 = (profit for 2015 - tax for 2015)

=> (32 - 4.8) = 27.2

Profit after tax for 2016

Profit for 2016 = (75 - 35) = 40

tax for 2016 = (10% × 40) = 4

Hence, profit after tax for 2016 = (40 - 4) = 36

Profit after tax for 2017

Profit for 2017 = (84 -38) = 46

tax for 2017 = (15% × 46) = 6.9

Hence, profit after tax for 2017 = (46 -6.9) = 39.1

Profit after tax 2018

Profit for 2018 = (86- 40) = 46

tax for 2018 = (20% × 46) = 9.2

Hence, profit after tax for 2018 = (46 -9.2) = 36.8

Profit after tax for 2019

Profit for 2019 = (90 -45) = 45

tax for 2019 = (25% × 45) = 11.25)

Hence, profit after tax for 2019 = (45 -11.25) = 33.75

Profit after tax for 2020

Profit for 2020 = (95- 50) = 45

tax for 2020 = (25% × 45) = 11.25

Hence, profit after tax for 2020 = (45 -11.25) = 33.75

Total sum of profit after tax from 2015 to 2020

=> (27.2 +36+39.1 +36.8 +33.75 +33.75)= 206.6

The total sum of profit after tax = 206.6.

Q66. Answer: (a) 12

Given:

6 × {6 of (6+ 6)} ÷ {(6 ÷ 6) × (600 % of 6)}

Formula used:

CALCULATION :

=> 6 × {6 of (6 + 6) } ÷ { (6 ÷ 6) × (600 % of 6) }

=> 6 × { 6 of 12} ÷ {1 × 36}

=> 6 × 72 ÷ 36

=> 6× 2 = 12.

Therefore The correct answer is 12.

Q67. Answer: (b) Rs. 2,100

Given:

S.P of book = Rs.1,554

Discount = 26%

Formula used:

Discount percentage = (marked price - selling price)over marked price × 100

Discount = (marked price - selling price)

CALCULATION :

=> (marked price - selling price)over marked price × 100 = Discount percentage
=> (M.P. -1554)over M.P. × 100 = 26
=> 100 M.P. - 155400 = 26 M.P.
=> 74 M.P. = 155400
=> M.P. = Rs.2100
Therefore Marked price is Rs.2100

Q68. Answer: (a) 03:00 p.m.

GIVEN:
Malay speed round a circular field = 7 rounds per hour.
Neha speed round a circular field = 11 rounds per hour
they start at 2:45 p.m. in the same direction.
FORMULA USED:
Relative speeds when moving in the same direction = difference of speeds.
CALCULATION :
The relative speed between Malay and Neha = 11 - 7 = 4 rounds/h (as they are in the same direction)
Time taken to complete one round at this speed = 1/4 hr
=> (1/4) × 60 min
=> 15 min.
So, 2:45 + 15 min = 3:00 p.m.
Therefore They shall first cross each other after 15 minutes i.e. at 03:00 p.m.

Q69. Answer: (b) 49.92

Shortcut Trick
Combined time for two people = (A × B) ÷ (A + B)
=> (96 × 104) ÷ (96 + 104)
=> 9984 ÷ 200
=> 49.92 days
Therefore The correct answer is 49.92 days.
Alternate Method
Given:
Time taken by A = 96 days
Time taken by B = 104 days
Formula Used:
Total Work = LCM of individual days
Efficiency = Total Work ÷ Time

Person	Days	Total Work	Efficiency
A	96	1248	13
B	104	12	

Calculations:
=> LCM of 96 and 104 = 1248 units (Total Work)
=> Efficiency of A = 1248 ÷ 96 = 13 units/day
=> Efficiency of B = 1248 ÷ 104 = 12 units/day
=> Combined Efficiency of A + B = 13 + 12 = 25 units/day
=> Time taken together = Total Work ÷ Combined Efficiency
=> Time = 1248 ÷ 25
=> Time = 49.92 days
Therefore The correct answer is 49.92 days.
Additional Information
Work and Efficiency Relationship
Efficiency is inversely proportional to the time taken to complete a task. If the ratio of time is x : y, the ratio of efficiency is y : x.

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Combined Work Formula

For three people A, B, and C, the combined time is (A × B × C) ÷ (AB + BC + CA).

Work and Wages

Wages are always distributed in the ratio of the Efficiency of the workers (or the ratio of work done), not the ratio of days taken.

Q70. Answer: (d) 52.5°

GIVEN:

Earth rotates on its axis in 24 hours

CONCEPT USED:

Earth makes a complete rotation in 360°

CALCULATION:

24 hours = (24 × 60) minutes = 1440 minutes

=> 3 hours 30 minutes = (3 × 60 + 30) = 210 minutes

As,

=> 1440 minutes = 360°

=> 1 minute = 360°/1440

=> 210 minutes = (360°/1440) × 210 = 52.5°

Therefore Earth rotate at 52.5 degree angle in 3 hours 30 minutes.

Q71. Answer: (b) Rs. 606.02

Shortcut Trick

For quarterly compounding over 9 months, we have 3 periods (9 ÷ 3) with a rate of 1% (4% ÷ 4).

Using the 3:3:1 ratio method for 3 periods:

1% of 20,000 = 200

1% of 200 = 2

1% of 2 = 0.02

Total Compound Interest = (3 × 200) + (3 × 2) + (1 × 0.02) = 600 + 6 + 0.02 = Rs. 606.02.

Therefore The correct answer is Rs. 606.02.

Alternate Method

Given: Principal (P) = Rs. 20,000, Rate (R) = 4% per annum, Time = 9 months, Compounded Quarterly.

Formula Used: Amount (A) = $P(1 + r/100)^n$; CI = A − P

=> Quarterly Rate (r) = 4% ÷ 4 = 1%

=> Number of quarters (n) = 9 ÷ 3 = 3

=> Amount (A) = $20000(1 + 1/100)^3$

=> A = $20000 \times (1.01)^3$

=> A = 20000 × 1.030301

=> A = Rs. 20606.02

=> CI = 20606.02 − 20000 = Rs. 606.02

Therefore The correct answer is Rs. 606.02.

Additional Information

Quarterly Compounding Formula

When interest is compounded quarterly, the formula becomes A = P[1 + (R/4)/100]^(4n), where R is the annual rate and n is the number of years.

Effective Annual Rate (EAR)

For a quarterly rate 'r', the EAR is given by [(1 + r/100)^4 − 1] × 100. This represents the actual annual interest earned.

CI and SI Difference

The difference between CI and SI for 2 years is $P(R/100)^2$ and for 3 years is $P(R/100)^2 \times (3 + R/100)$.

Q72. Answer: (c) 22.22%

Given:

Marked price = Rs 2,150

two successive discounts = 10% and x%

Selling price = Rs1,505

Formula used:
S.P. = (1- d1/100) × (1- d2/100) × M.P
(Where S.P. and M.P. are Selling price and Marked price respectively)
and d1 and d2 are successive discounts respectively.
Calculation:
=> S.P. = (1 - d1/100) × (1 - d2/100) × M.P.
=> 1,505 = (1 - 10/100) × (1 - x/100) × 2,150
=> (1 - x/100) = 1505 × 10/9 × 1/2150
=> (1-x/100) = 0.77777
=> x/100 = (1 - 0.77777) = 0.22223
=> x = 100 × 0.22223 = 22.223% ≈ 22.22%
Therefore The correct answer is 22.22%.

Q73. Answer: (a) Rs. 98,003

Given:
Principal amount = Rs80,000
Time = 3 years
Rate = 7% per annum
Formula used:
Amount = P × (1 + R/100)^t
Where C.I. = Compound Interest, P = Principal, R= Rate, t = time
Calculation:
Amount = P × (1 + R/100)^t
=> Amount = 80,000 × (1+ 7/100)³
=> Amount = 80,000 × 107/100 × 107/100 × 107/100
=> Amount = 0.08 × 1225043 = Rs.98,003.44 ≈ 98,003
Therefore Maturity value of FDR is Rs98,003.

Q74. Answer: (a) 3

Concept used:
The divisibility of 8 → last three digits must be divisible by 8.
The divisibility of 11 → sum of digits at odd places - sum of digits at even places must be either 0 or a multiple of 11
Calculation:
As, 5X8146Y is divisible by 88
Thus, it is divisible by 8 × 11
Divisibility of 8,
46Y must be divisible by 8,
Hence, Y = 4 as 464, is divisible by 8
Now, the number becomes as, 5X81464
Divisibility of 11
=> (5 +8 +4 +4) - (X + 1 +6)
=> 21 - (7 + X) = 14 - X
Hence, on putting X = 3 ,we will get (14 -3) = 11 ,which is divisible by 11
=> X = 3.
Therefore The correct answer is 3.

Q75. Answer: (a) 76.7%

Shortcut Trick
Target profit units = 5 parts × 42% = 210%
Loss units from first part = 2 parts × (−10%) = −20%
Profit required from remaining 3 parts = 210% − (−20%) = 230%
Required gain % = 230% ÷ 3 = 76.66% ≈ 76.7%
Therefore The correct option is A.

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Alternate Method
Given:
Total Cost Price (CP) = Rs. 48,000
Overall Profit % = 42%
First portion = 2/5 of the land sold at 10% loss
Formula Used:
Selling Price (SP) = CP × (100 ± Profit/Loss%) ÷ 100
Gain % = (Profit ÷ CP) × 100
Total Land CP = Rs. 48,000
2/5 Part
Loss 10%
3/5 Part
Gain x%
Overall Target Profit = 42%
Calculations:
=> CP of 2/5 portion = 48,000 × (2 ÷ 5) = Rs. 19,200
=> SP of 2/5 portion at 10% loss = 19,200 × (90 ÷ 100) = Rs. 17,280
=> Desired overall SP for 42% profit = 48,000 × (142 ÷ 100) = Rs. 68,160
=> SP required from remaining 3/5 portion = 68,160 − 17,280 = Rs. 50,880
=> CP of remaining 3/5 portion = 48,000 − 19,200 = Rs. 28,800
=> Profit needed on remaining portion = 50,880 − 28,800 = Rs. 22,080
=> Required Gain % = (22,080 ÷ 28,800) × 100 = 76.666...%
=> Required Gain % ≈ 76.7%
Therefore The correct option is A.
Additional Information
Weighted Average Profit
Overall profit or loss is the weighted average of individual profit/loss percentages: P_(total) = (w1p1 + w2p2) ÷ (w1 + w2).
Selling Price and Cost Price Relationship
SP = CP × (1 + Gain/100) for profit and SP = CP × (1 − Loss/100) for loss calculations.
Successive Percentage Changes
If a value changes by a% and then by b%, the net change is given by (a + b + ab ÷ 100)%.

Q76. Answer: (d) Tansen of the 20th century

The correct answer is Tansen of the 20th century.
Key Points
• Ustad Bade Ghulam Ali Khan
• Indian Hindustani classical vocalist, from the Patiala Gharana.
• Patiala Gharana was founded in the mid to late 19th century by his great-grandfather Mian Kallu.
• His pen name: Sabrang
• He was awarded by
• Sangeet Natak Akademi Award (1962)
• Sangeet Natak Akademi fellow (1967)
• Padma Bhushan Award (1962)
Additional Information
• Tansen
• Miyan Tan Sen or Ramtanu Pande was a prominent figure of Hindustani classical music.
• He brings down the rains with Raga Megh Malhar and lighting lamps by performing Raga Deepak.
• He was one of the navratna of Emperor Akbar.
• A crater on the planet Mercury has been named in his honour.

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Q77. Answer: (c) Triple jump

The correct answer is Triple jump.

Key Points

• Triple Jump

• Other Names: hop, step, and jump

• In this, an athlete makes a horizontal jump for distance incorporating three distinct, continuous movements.

• Movements are:

• hop: an athlete takes off and lands on the same foot,

• step: landing on the other foot,

• jump: landing in any manner, usually with both feet together. (If a jumper touches the ground with the wrong leg, the jump is disallowed).

• Modern Olympics event since the Games' inception in 1896.

• Current male world record holder: Jonathan Edwards of the United Kingdom (a jump of 18.29 m)

• Current female world record holder: Yulimar Rojas of Venezuela (a jump of 15.74 m).

Additional Information

• Javelin Throw

• Track and field event where the javelin, a spear about 2.5 m in length, is thrown.

• The javelin thrower gains momentum by running within a predetermined area.

• An event of both the men's decathlon and the women's heptathlon.

• The inventor of the modern javelin throwing technique is Eric Lemming from Sweden.

• High Jump

• Track and field event in which competitors must jump unaided over a horizontal bar placed at measured heights without dislodging it.

• Three types of high jump styles: the Fosbury flop, western roll or side roll, and straddle style.

• Broad Jump

• The standing long jump: standing broad jump, an athletics event.

• It was an Olympic event until 1912.

• One of three standing variants of track and field jumping events includes the standing high jump and standing triple jump.

Q78. Answer: (a) Amit Shah

The correct answer is Amit Shah.

Key Points

• Amit Shah

• Amit Anil Chandra Shah is an Indian politician currently serving as the Minister of Home Affairs.

• The first Minister of Co-operation of India.

• He served as the President of the Bharatiya Janata Party from 2014 to 2020.

• He has also served as chairman of the National Democratic Alliance since 2014.

• Bharat Darshan Park

• The South Delhi Municipal Corporation has developed a new park, Bharat Darshan, in the Punjabi Bagh area of west Delhi which has replicas of 21 famous structures from across the country.

• Almost 200 artists worked day and night for 22 months to complete the park.

Additional Information

• Dharmendra Pradhan

• Indian politician serving as the Minister of Education and Minister of Skill Development and Entrepreneurship in the Government of India.

• He has also been the Minister of Petroleum & Natural Gas and Minister of Steel.

• He was promoted to Cabinet Minister on 3 September 2017.

• Nirmala Sitharaman

• Indian economist and politician serving as the Minister of Finance and Corporate Affairs of India since 2019.

• She is a member of the Rajya Sabha, the upper house of the Indian Parliament, since 2014.

• Smriti Irani

• Indian politician and a former television actress and producer.

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• She is a Minister in the Union Cabinet of India since May 2019 currently administrating the Ministries of Women and Child Development and Ministry of Minority Affairs.

Q79. Answer: (b) Truth, Love & A Little Malice

The correct answer is Truth, Love and A little Malice.

Key Points

• Truth, Love & A Little Malice is an autobiography of the Indian novelist Khushwant Singh.

• Indian author, lawyer, diplomat, journalist and politician.

• He experienced the Partition of India, in 1947, which inspired him to write Train to Pakistan in 1956 (his most well-known novel).

• In 1974, he was honoured with the Padma Bhushan by India's President.

• In 2007, Khushwant Singh was awarded the Padma Vibhushan.

• Last Book: The Sunset Club.

Additional Information

• In 1951, Khushwant Singh was hired as a journalist by All India Radio.

• In 1956, he was transferred to UNESCO's Department of Mass Communications in Paris.

• As an editor for a variety of well-known periodicals and magazines: The Hindustan Times, The National Herald, and The Illustrated Weekly of India.

Q80. Answer: (c) 10

The correct answer is 10.

Key Points

• A batsman can be given out in10 ways.

The 10 ways are:

1. Player can be Bowled out.
2. LBW (leg before wicket).
3. Player can get caught out.
4. Hit wicket.
5. Run out.
6. Stumped out.
7. Handling the ball without permission.
8. Double hit (hitting the ball twice).
9. Time out(when players take too long to appear on the field).
10. Obstructing the fielders doing their job like prevents them from executing run out or stumping.

Additional Information

• Dismissal

• Dismissal occurs when a batsman's period of batting is brought to an end by the opposing team.

• It is also known as the batsman is out, the batting side losing a wicket, and the fielding side taking a wicket.

• A team's innings ends if 10 of the 11 team members are dismissed.

Q81. Answer: (c) Ministry of Culture

The correct answer is the Ministry of Culture.

Key Points

• The Sangeet Natak Akademi is a body working under the Ministry of Culture.

• The first national academy of the arts was set up by the Republic of India.

• It was created by a resolution of the Ministry of Education, Government of India, dated 31 May 1952, which was notified in the Gazette of India of June 1952.

• One of the main recommendations of the National Conference on Dance, Drama, and Music, held in New Delhi in 1951.

• Recognizes eight classical dances Bharatanatyam, Kathak, Kuchipudi, Odissi, Kathakali, Sattriya, Manipuri and Mohiniyattam.

Additional Information

• The Ministry of Culture is the Indian government ministry charged with the preservation and promotion of the art and culture of India.

• G. Kishan Reddy is the current Minister of Culture.

• The government has established the National Mission on Libraries India under this ministry.

Q82. Answer: (b) Nucleus

The correct answer is Nucleus.

Key Points

• The nucleus is a large double-membraned organelle that is sometimes referred to as the ‘central unit’ of the cell because it contains the chromosomes that bear genetic material.

• It is a membrane-bound organelle found in eukaryotic cells.

• The main structures making up the nucleus are the nuclear envelope, a double membrane that encloses the entire organelle and isolates its contents from the cellular cytoplasm.

• The nuclear matrix (which includes the nuclear lamina), is a network within the nucleus that adds mechanical support, much like the cytoskeleton supports the cell as a whole.

• It contains DNA arranged in chromosomes.

Additional Information

• Peroxisome

• Peroxisomes are small, membrane-enclosed organelles that contain enzymes involved in a variety of metabolic reactions, including several aspects of energy metabolism.

• Mitochondrion

• Mitochondria are membrane-bound cell organelles that generate most of the chemical energy needed to power the cell's biochemical reactions.

• Chemical energy produced by the mitochondria is stored in a small molecule called adenosine triphosphate (ATP).

• Lysosome

• Membrane-enclosed organelles contain an array of enzymes capable of breaking down all types of biological polymers—proteins, nucleic acids, carbohydrates, and lipids.

Q83. Answer: (d) i - a, ii - b, iii - c, iv - d

The correct answer is i - a, ii - b, iii - c, iv - d.

Key PointsVitamins and their sources

VITAMINS	SOURCES	FUNCTION
A	Carrot, mango, papaya	form and maintain healthy teeth, bones, soft tissue, mucous membranes, and skin
B	Whole grain bread and nuts	important for metabolism
C	Citrus fruits, red and green pepper	promotes healthy teeth and gums
D	Egg yolk, soya product	normal development and maintenance of healthy teeth and bones

Additional Information

• Vitamins are required for the body to work properly.

• There are 13 essential vitamins. They are:

• Vitamin A

• Vitamin C

• Vitamin D

• Vitamin E

• Vitamin K

• Vitamin B1 (thiamine)

• Vitamin B2 (riboflavin)

• Vitamin B3 (niacin)

• Vitamin B6 (pyridoxine)

• Vitamin B12 (cyanocobalamin)

• Pantothenic acid (B5)

• Biotin (B7)

• Folate (folic acid or B9)

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Q84. Answer: (c) citric acid

The correct answer is citric acid.

Key Points

• Lemon juice contains Citric Acid which when mixed with baking soda reacts to form carbon dioxide and sodium citrate causing the liquid to fizz and bubble.

• An organic compound with the chemical formula HOC(CH2CO2H)2.

• colourless weak organic acid.

• occurs naturally in citrus fruits.

• It is used widely as an acidifier, a flavouring, and a chelating agent.

Additional Information Acetic acid

• Also known as ethanoic acid, ethylic acid, vinegar acid, and methane carboxylic acid.

• Chemical formula: CH3COOH.

• It is a byproduct of fermentation and gives vinegar its characteristic odour.

• Vinegar is about 4-6% acetic acid in water.

Formic acid

• The simplest carboxylic acid contains a single carbon.

• Chemical Formula: HCOOH

• Occurs naturally in the venom of bee and ant stings.

• Useful organic synthetic reagent.

• Principally used as a preservative and antibacterial agent in livestock feed.

Tartaric Acid

• A white, crystalline organic acid.

• Chemical Formula: C4H6O6

• occurs naturally in many fruits, most notably in grapes, bananas, tamarinds, and citrus.

• Its salt: potassium bitartrate, commonly known as cream of tartar, develops naturally in the process of fermentation.

Q85. Answer: (a) Bharatanatyam

The correct answer is Bharatnatyam.

Key PointsRukmini Devi Arundale

• Indian theosophist, dancer and choreographer of the Indian classical dance form of Bharatanatyam

• Also an activist for animal welfare.

• She was the first woman in Indian history to be nominated as a member of the Rajya Sabha (the upper house of the Parliament of India).

• She features in India Today's list of '100 People Who Shaped India'.

• Awarded by Padma Bhushan in 1956 and the Sangeet Natak Akademi Award in 1957.

Additional InformationBharatnatyam

• Bala Saraswati is regarded as the queen of Bharatnatyam.

• oldest and most popular forms of classical dance that originated in Tanjore district in Tamil Nadu in South India.

• The origin of this form can be traced to the sage Bharata Muni's Natyasastra.

• Sadir, Chinnamelan and Dasi Attam or Daasiyattam are the original names.

Q86. Answer: (a) Mulk Raj Anand

The correct answer is Mulk Raj Anand.

Key Points

• ‘The Private life of an Indian Prince’ is a novel written by Mulk Raj Anand.

• He is known for his realistic and sympathetic portrayal of the poor in India.

• Awarded by: Sahitya Akademi Award (1971), Padma Bhushan (1967), International Peace Prize(1953).

• His notable works: Coolie and Untouchable.

Additional InformationRuskin Bond

• Eminent contemporary Indian writer of British descent.

• He prolifically authored inspiring children's books.

• He was awarded the Sahitya Akademi Award to honor his work of literature.

• The Room on the Roof was published in 1956, and it received the John Llewellyn Rhys Prize in 1957.

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R K Narayanan

• Indian writer known for his work set in the fictional South Indian town of Malgudi.

• Awarded by: Padma Vibhushan, Padma Bhushan, Filmfare Award for Best Story.

• One of the three leading English language Indian fiction writers, along with Raja Rao and Mulk Raj Anand.

Arvind Adiga

• Indian writer and journalist.

• His debut novel, The White Tiger, won the 2008 Man Booker Prize.

Q87. Answer: (d) Duns

The correct answer is Duns.

Key Points

• The valleys lying between the lesser Himalayas and Shivaliks are called Duns.

• Longitudinal valleys which are formed as a result of folding when Eurasian plate and Indian plate collide.

• These valleys are deposited with coarse alluvium which is brought down by the Himalayan rivers.

Shivaliks

• These are mountain range of the outer Himalayas that stretches from the Indus River about 2,400 km eastwards close to the Brahmaputra River, spanning across the northern parts of the Indian subcontinent.

• It is 10–50 km wide with an average elevation of 1,500–2,000 m.

Additional Information Duars

• The alluvial floodplains in eastern-northeastern India that lie south of the outer foothills of the Himalayas and north of the Brahmaputra River basin.

• This region is about 30 km wide and stretches over about 350 km from the Teesta River in West Bengal to the Dhansiri River in Assam.

Terai

• Lowland region in northern India and southern Nepal that lies south of the outer foothills of the Himalayas, the Sivalik Hills, and north of the Indo-Gangetic Plain.

• This lowland belt is characterised by tall grasslands, scrub savannah, sal forests and clay rich swamps.

Q88. Answer: (d) 1954

The correct answer is 1954.

Key PointsLalit Kala Akademi

• Promotes study and research in the fields of creative arts such as painting, sculpture, graphics, etc.

• Interaction of visual arts with other forms of arts through interregional, intercultural and institutional exchange of ideas.

• Set up by the Government of India as an autonomous body, on 5th August 1954 by the then Honourable Minister for Education, Maulana Abul Kalam Azad.

• The National Lalit Kala Akademi awards are conferred to recognize individuals for their outstanding work in the field of art.

Additional Information

• On 17 May 2018 President Ram Nath Kovind appointed Uttam Pacharne, an artist and sculptor as chairman of the Lalit Kala Akademi.

• Dr Sampoornanand was its first Chairman.

• More than 350 artists have won the award till date.

Q89. Answer: (a) National Bank for Agriculture and Rural Development (NABARD); 1992

The correct answer is National Bank for Agriculture and Rural Development (NABARD); 1992.

Key PointsMicro Finance

• The, loans, insurance, money transfers and other banking services to customers that lack access to traditional financial services, usually because of poverty.

• The programme provided small doses of credit funds to the NGOs all across the country.

• NGOs acted as financial intermediaries and on-lent funds to their clients.

• Limited amount of capacity building grant was also provided to the NGOs.

Additional Information

• Microfinance has a long and distinguished history in India.

• Introduced for the first time by the SEWA Bank, part of the Self Employed Women's Association (SEWA), in Gujarat in 1974.

• It has since become instrumental in extending financial services to many who remained excluded from the economic

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mainstream.

Q90. Answer: (c) Only if there is a difference of electric pressure

The correct answer is only if there is a difference in electric pressure.

Key Points

• Electrons move for the flow of charges in a conducting metallic wire only if there is a difference in electric pressure.

• The amount of electrical potential energy per charge is called the voltage.

• Voltage is the electrical pressure that causes the electrons to move in a conductor.

• Electrons flow from the negative terminal through the conductor to the positive terminal.

• Electrons (the charge carriers in metal wires) and most parts of electric circuits have a negative charge, thus current and electron moves in opposite directions.

Additional Information

• The best conductor of electricity is pure silver.

• The most commonly used metal to conduct electricity is copper.

• Aluminium is another metal known for its high conductivity of electricity.

• Gold is also known for its high conductivity.

Q91. Answer: (a) six consecutive months

The correct answer is six consecutive months.

Key Points

• A Minister who for any period of six consecutive months is not a member of either House of Parliament shall at the expiration of that period cease to be a Minister.

Article 75

• The Prime Minister shall be appointed by the President and the other Ministers shall be appointed by the President on the advice of the Prime Minister.

• The Minister shall hold office during the pleasure of the President.

• The Council of Ministers shall be collectively responsible to the House of the People.

• Before a Minister enters upon his office, the President shall administer to him the oaths of office and of secrecy according to the forms set out for the purpose in the Third Schedule.

• A Minister who for any period of six consecutive months is not a member of either House of Parliament shall at the expiration of that period cease to be a Minister.

• The salaries and allowances of Ministers shall be such as Parliament may from time to time by law determine and, until Parliament so determines, shall be as specified in the Second Schedule The Attorney General for India.

Additional InformationParliament House

• The Parliament House (Sansad Bhavan) in New Delhi is the seat of the Parliament of India.

• It is located on Sansad Marg which crosses the Central Vista and is surrounded by the India Gate, war memorial, prime minister's office and residence, ministerial buildings and other administrative units of the Indian government.

• Its houses are the Lok Sabha and the Rajya Sabha which represent the lower and upper houses respectively in India's bicameral parliament.

Q92. Answer: (a) Promotes a healthy mind

The correct answer is Promotes a healthy mind.

Key Points

• Balance Diet

• A balanced diet consists of a range of meals in the right amounts and ratios to provide the body with all the necessary elements it needs each day.

• These elements include proteins, carbs, fats, vitamins, minerals, water, and fibre.

• Such a diet aids in promoting and maintaining good health and also offers a reserve of nutrients to resist brief periods of deprivation when those nutrients are not provided by the diet.

• The following aspects are taken care of by a balanced diet:

• Meets the RDA for all nutrients

• Includes nutrients in correct proportions

• Includes a variety of food items

• Preserve and promotes good health

• Provides a safety margin for nutrients

Additional Information

• The safety margin covers the days we fast as well as any temporary nutrient deficiencies in our everyday diet.

• The safety margin is already built in if a balanced diet satisfies an individual's Recommended Dietary Allowances (RDAs), as RDAs are created with additional allowances in mind.

• Taking care that each group of foods is present in the meals is one of the simplest strategies to create a balanced diet.

• The Indian Council of Medical Research (ICMR) recommends five fundamental food groups.

• These consist of:

• Products, grains, and cereals

• Pulses and legumes

• Dairy and meat products

• Fruits and vegetables

• Fats and sugars

Q93. Answer: (b) Sleeping on Jupiter

The correct answer is Sleeping on Jupiter.

Key Points

• Sleeping on Jupiter was written by the Indian author Anuradha Roy.

• Anuradha Roy is an editor, author, and journalist from India.

• Rukun Advani, a publisher, is Roy's husband, and they reside in Ranikhet.

• Permanent Black, a publishing company that specialises in academic books and was created in 2000 by Advani and Roy, employs Roy as a designer.

• Roy had previously collaborated with Stree, an independent publisher from India located in Kolkata.

• She left her position as a Commissioning Editor at Oxford University Press, India, in the year 2000.

• Novels by Anuradha Roy

• An Atlas of Impossible Longing (2008)

• The Folded Earth (2011)

• Sleeping on Jupiter (2015)

• All the Lives We Never Lived (2018)

• The Earthspinner (2021)

Additional Information

• Sleeping on Jupiter

• It is her third book and was released on April 15, 2015, by Hachette India.

• It was shortlisted for 2015 The Hindu Literary Prize and longlisted for the 2015 Man Booker Prize.

• The 2016 DSC Prize for South Asian Literature was awarded to it.

Novel	Author	Year
Tell Her Everything	Mirza Waheed	2018
Midnight’s Children	Salman Rushdie	1981
The Illicit Happiness of Other People	Manu Joseph	2012

Q94. Answer: (d) Odisha

The correct answer is Odisha.

Key Points

• Ashirbad Yojana

• Naveen Patnaik, the chief minister of Odisha, announced a brand-new scheme called 'Ashirbad' for the education, maintenance, and health of Covid orphans.

• Children who lost one or both of their parents or the family's primary earner due to COVID-19 on April 1, 2020, or later, will be eligible to be covered under the programme.

• Three categories have been established for these distressed children.

• Those who have lost both of their parents, either their father or their mother, or whose parent who provided the family's primary source of income passed away.

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• The Chief Minister declared that Rs. 2500 will be deposited each month into the bank accounts of family members who have taken custody of the children after their parents' passing.

• The help will last until the child turns 18 years old, or until that point if someone adopts him.

Additional Information

• Under the Biju Swasthya Kalyan Yojana of the state government, the children would receive free medical care.

• Additionally, they will be listed as recipients of the National Food Security Act (NFSA).

• According to the plan's provisions, kids can continue attending the schools they attended before their parents passed away.

• According to the Chief Minister, the district's child welfare committee would work together with the local tahsildar and police to safeguard the orphan children's belongings.

• If necessary, he added, the kids could also receive financial aid from the Juvenile Justice Fund and Biju Sishu Suraksha Yojana.

Q95. Answer: (a) Maharashtra

The correct answer is Maharashtra.

Key Points

• National Crime Records Bureau

• The Indian government's National Crime Records Bureau, also known as NCRB, is in charge of gathering and examining information on crimes as they are described in the Indian Penal Code (IPC) and other Special and Local Laws (SLL).

• The Ministry of Home Affairs (MHA), which is a part of the Indian government, houses NCRB's headquarters in New Delhi.

• Ramphal Pawar (IPS) is the National Crime Record Bureau's current director.

• In order to help investigators to make link between crimes and their perpetrators, NCRB was established in 1986.

• As per statistics published by National Crime Records Bureau for 2020, Maharashtra tops in total number of crime incidences against senior citizens (60 years and above).

• Maharashtra accounts for 4909 number of crime against the senior citizens.

Additional Information

• A total of 24,794 cases of crimes against senior citizens (those over 60) were reported in 2020, a decrease of 10.8% from 2019 (27,804 cases).

• | State | Number of crime against the senior citizens (2020) |

Madhya pradesh	**4602**
Bihar	322
Uttar Pradesh	353

Q96. Answer: (d) Shehnai

The correct answer is Shehnai.

Key Points

• Ustad Bismillah

• Shehnai used to be played by Ustad Bismillah Khan.

• Indian artist Ustad Bismillah Khan, whose real name was Qamaruddin Khan (lived from 1916 to 2006) is credited for making the Shehnai popular.

• The musical instrument shehnai is comparable to the oboe (common in India, Pakistan, and Bangladesh).

• He received various honours, such as;

• Padma Shri in 1961

• Padma Bhushan in 1968

• Padma Vibhushan in 1980

• Bharat Ratna in 2001

• At the first Republic Day event in 1950, he also performed the Shehnai.

• Google honoured him with a Google doodle on the occasion of his 102nd birthday.

Additional Information

Instrument	Famous Player
Tambura	Helen Francis, Indira Sheshadri, Gowrishankar Gurusawmy, Soman Pillai, Prasanna Athlete, and Nellai Krishnan

Sitar	Ravi Shankar, Anoushka Shankar, Ananda Shankar, Nikhil Banerjee, Vilayat Khan, Shahid Parvez, Anoushka Shankar & Karsh Kale
Sarod	Ali Akbar Khan, Ustad Amjad Ali Khan, Ravi Shankar, Buddhadev Das Gupta, and Partho Sarothy

Q97. Answer: (c) 1952

The correct answer is 1952.

Key Points

• Sangeet natak Akademi

• The Indian government established Sangeet Natak Akademi, or The National Academy of Music, Dance, and Drama, as the country's national-level academy for performing arts.

• It was established on May 31, 1952, by the Indian Ministry of Education, and Dr. P. V. Rajamannar was named as its first chairman the following year.

• On January 28, 1953, it was officially opened by Dr. Rajendra Prasad, the country's first president, at a ceremony held in the Parliament Building.

• It serves as the centre for performing arts in India.

• It gives out the Sangeet Natak Akademi Awards, the highest honour bestowed upon practising or performing artists in India.

Additional Information

• Even before the Akademi was established, awards for Hindustani and Carnatic music were established in 1951 and were referred to as Presidential Awards.

• Since the Akademi was established, the Awards have been renamed as Sangeet Natak Akademi Awards, and the Akademi is now in charge of the investiture.

• The list of Sangeet Natak Akademi Awards was subsequently modified to include the Presidential Awards for 1952 and 1953.

Q98. Answer: (d) tabla

The correct answer is tabla.

Key Points

• Pandit Ananda Gopal Bandopadhyay was a tabla player of the Banaras gharana.

• Indian tabla player Ananda Gopal Bandopadhyay lived from April 28, 1942, to May 7, 2021.

• His instructor Mahadev Prasad Mishra instructed him in the Banaras Gharana style.

• Radha Gopal Bandopadhyay, his father, was an amateur singer.

• Bandopadhyay has performed and recorded alone as well as partnered with a number of well-known vocalists.

• He was a former professor at the ITC Sangeet Research Academy in Kolkata and a well-regarded performer for both Doordarshan and All India Radio.

• He received the President's gold medal for taking first place in the All India Radio music competition in 1965.

• He also received a gold medal from the Ethiopian Emperor in 1970, an award rarely bestowed upon foreigners.

• He received the Sangeet Ratna Award from The Salt Lake Music Association in 2012.

Additional Information

• Along with performing in India, he has also appeared in Boston, New York, San Francisco, Los Angeles, and Berlin's World Youth Festival.

• Banaras Gharana

• Pandit Ram Sahai created the Banaras tabla gharana a little more than 200 years ago.

• It is one of the six most popular ways to play the Indian tabla.

• He went into solitude for six months during which he worked to create the Benares baj, or style, of playing the tabla.

• This new tabla playing technique was developed with the idea that it would be adaptable enough to perform both solo and to accompany any style of music or dance.

Q99. Answer: (b) In the form of complex carbohydrates that may be in the form of laminarin or mannitol

The correct answer is In the form of complex carbohydrates that may be in the form of laminarin or mannitol.

Key Points

• Food is stored in brown algae in the form of complex carbohydrates that may be in the form of laminarin or mannitol.

• Algae are a type of organism that bears chlorophyll and have a basic thalloid-like structure and consume food in an autotrophic manner.

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• Aquatic creatures that can exist in both freshwater and saltwater environments include algae.
• The three primary classes of algae are Chlorophyceae, Phaeophyceae, and Rhodophyceae.
• Phaeophyceae
• The Phaeophyceae family includes brown algae.
• They are mostly found in habitats that are marine.
• Complex carbohydrates, such as laminarin or mannitol, are stored in the form of food.
• A few examples are Ectocarpus, Dictyota, Laminaria, Sargassum, and Fucus.

Additional Information

Class	Stored food	Pigment	Cell wall
Chlorophyceae (Green algae)	Starch, Oil droplets	Chlorophyll a and b	Cellulose
Rhodophyceae (Red algae)	Floridian starch	Chlorophyll a, d and phycoerythrin	Cellulose and pectin
Phaeophyceae (Brown algae)	Mannitol and Laminarian	Chlorophyll a, c and fucoxanthin	Cellulose and algin

Q100. Answer: (d) Shah Jahan

The correct answer is Shah Jahan.

Key Points

• Lāl Quilā (Red Fort)
• The Mughal Emperors' primary residence was the Red Fort, also known as Lal Qila, in Old Delhi, Delhi, India.
• When Shah Jahan chose to move his capital from Agra to Delhi on May 12, 1638, he ordered the Red Fort's construction.
• Its original colours were red and white, and architect Ustad Ahmad Lahori, who also built the Taj Mahal, is credited with creating it.
• The fort, built during Shah Jahan's era, is a prime example of Mughal architecture and combines Persianate palace design with Indian customs.
• Nadir Shah's invasion of the Mughal Empire in 1739 resulted in the destruction of the fort's artwork and gems.
• The fort's defensive walls sustained little damage, and it was afterwards used as a garrison.
• The Indian flag was raised over the Lahori Gate on August 15, 1947, by Jawaharlal Nehru, India's first prime minister.

Additional Information

• Every year, the Prime Minister hoisted the Indian tricolour flag at the fort's main entrance and delivers a speech from its ramparts on August 15, which marks India's Independence Day.
• The Red Fort, which is a component of the Red Fort Complex, was designated a UNESCO World Heritage Site in 2007.

Name	Monuments
Akbar	Fatehpur Sikri, Buland Darwaza, Jodhabai Palace
Jahangir	Shalimar Bagh, the Begum Shahi Mosque, and the Bachcha Taj
Sher Shah Suri	Quila-i-kuhna Masjid, Rohtas Fort

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