SSC CHSL Tier-1 2023: Official Paper (Held On: 04 Aug, 2023 Shift 3) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2023 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. In a certain code language,

A + B means 'A is the mother of B'

A - B means 'A is brother of B'

A × B means 'A is the wife of B'

A ÷ B means 'A is the father of B'

Based on the above, if 'K × L ÷ M + N - O', then how is K related to N?

(a) Brother's wife
(b) Wife's father
(c) Mother's Mother
(d) Father's brother

Q2. Which number will come in place of the question mark (?) to complete the given series?

0, 2, 6, 12, ?, 30, 42

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

Q3. Given below are four number-pairs, out of which three are alike in some manner and one is different. Select the number pair which is different.

(NOTE : Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding /deleting ‘multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

(a) 165 - 150
(b) 134 - 109
(c) 77 - 52
(d) 88 - 63

Q4. If 11 October 1969 is Saturday, then what day of the week will it be on 29 November 1977?

(a) Sunday
(b) Friday
(c) Tuesday
(d) Monday

Q5. Which letter-group should come in place of the question mark (?) in the given series on the basis of English alphabetical order?

CKZ, GOD, KSH, ?, SAP

(a) OWL
(b) PXL

(c) MVN
(d) MVM

Q6. In a certain code language, 'FOX' is written as 'SJA' and 'CRIPPLE' is written as 'VGPIIMT'. How will 'MOVEMENT' be written in that code language?

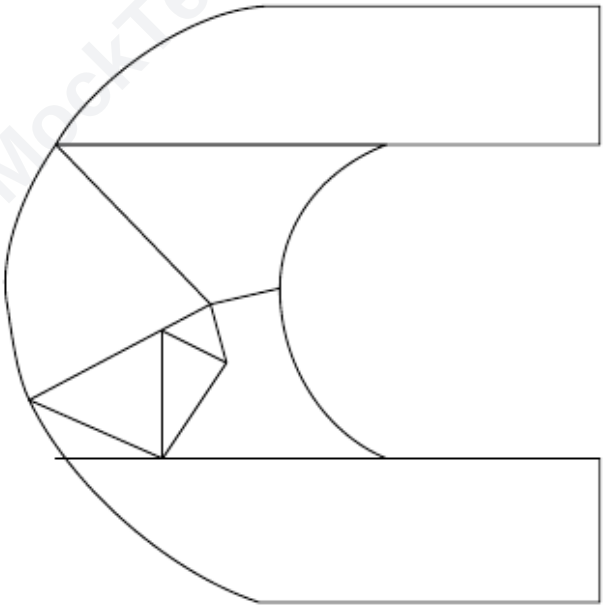
(a) LJCSLTKE
(b) LJCTLTKE
(c) LJCTLTJE
(d) LJCTLTKF

Q7. If '+' and '-' are interchanged and '×' and '÷' are interchanged then what will come in place of (?) in the following equation?

89 ÷ 7 - 42 × 7 + 5 = ?

(a) 246
(b) 624
(c) 426
(d) 264

Q8. How many triangles are there in the figure given below?



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

Q9. According to a certain logic, 23 is related to 45. Following the same logic, 54 is related to 76. Following the same logic, 67 is related to which of the following?

(a) 89
(b) 79
(c) 83
(d) 86

Q10. Select the correct option which when placed in the same order in the blank spaces of the given series will logically complete the series.

B_RG, FK_F, JIX_, NGA_, _EDC

(a) MVEFQ
(b) MUEDR
(c) NVDEQ

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(d) NUFER

Q11. What should come in place of 'x' in the given series?

11, 17, 29, 47, 71, X

(a) 95
(b) 100
(c) 99
(d) 101

Q12. Select the triad in which the numbers are related in the same way as the numbers in the following triads are related.

4 - 18 - 5

7 - 20 - 3

(NOTE : Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding /deleting ‘multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

(a) 6 - 16 - 2
(b) 7 - 12 - 8
(c) 8 - 11 - 3
(d) 5 - 21 - 8

Q13. Select the pair of letter-clusters which follows the same pattern as the two sets of pairs of letter-clusters given below. Both pairs of letter-clusters follow the same pattern.

AHK : ZSP

PSW : KHD

(a) JNO : QML
(b) ABC : TWV
(c) SVM : IFY
(d) JDE : QPO

Q14. If each letter of the word TANGLED is arranged in English alphabetical order, then the position of how many letters will remain unchanged?

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

Q15. M is married to N. N is the daughter of U. U is married to S. S is sister of P. P is the son of Q. R is mother of S. How is N related to Q?

(a) daughter's daughter
(b) sister's daughter
(c) son's daughter
(d) daughter

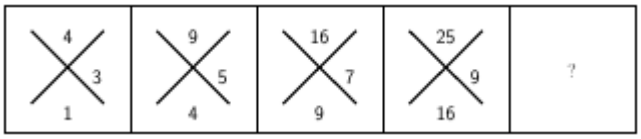
Q16. If '+' and '-' are interchanged and '×' and '÷' are interchanged, then what will come in place of the question mark (?) in the following equation?

9 ÷ 6 - 136 × 8 + 13 = ?

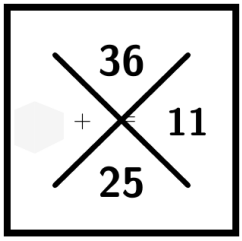
(a) 40
(b) 26
(c) 58
(d) 52

Q17. Identify the figure given in the options which when placed in place of the question mark (?) will logically complete the series.

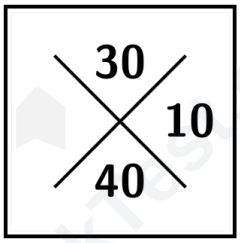
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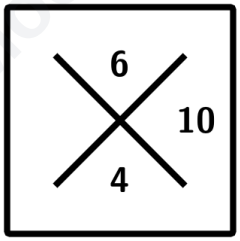
(a)



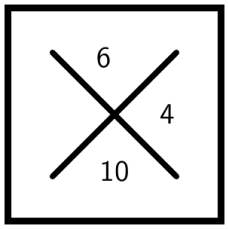
(b)



(c)

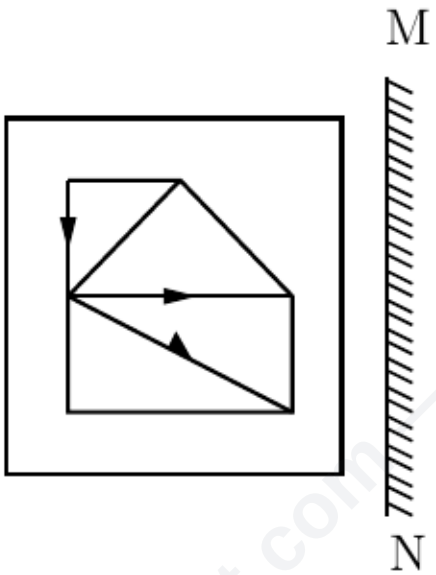


(d)



Q18. Select the correct mirror image of the given figure which will be formed when the mirror is placed on MN as shown below.

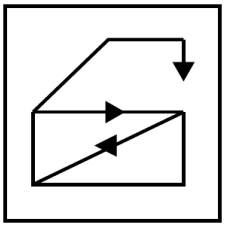
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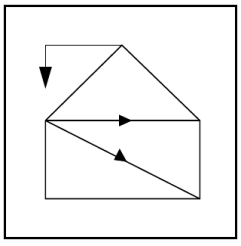
(a)



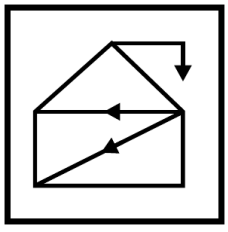
(b)



(c)



(d)



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Q19. Select the number from the given options which can come in place of the question mark (?) in the following series?

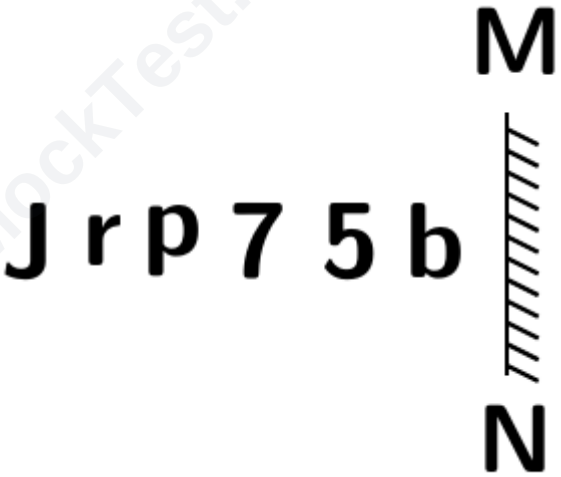
976, 488, 244, 122, ?

(a) 60
(b) 62
(c) 58
(d) 61

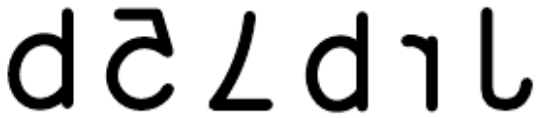
Q20. Three of the following four letter-clusters are alike in a certain way and thus form a group. Which of the following letter cluster does not belong to that group?

(a) JMA
(b) CFI
(c) LOR
(d) UXA

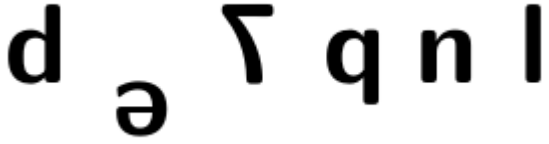
Q21. Select the correct mirror image of the given figure which will be formed when the mirror is placed on MN as shown below.



(a)



(b)



(c)



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(d)



Q22. Read the statements and conclusions given below carefully. You have to believe that the given statements are true even if they seem to be at variance from commonly known facts. You have to decide which of the conclusions logically follows from the given statements.

Statements: Some erasers are paper. Some papers are clips. All clips are hair.

conclusion:

(I) All paper is hair.

(II) Some erasers are clips.

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

Q23. From the given alternatives, select the term which can come in place of the question mark (?) in the following series on the basis of English alphabetical order.

QNR, WRU, CVX, IZA, ?

(a) OHD
(b) ODD
(c) PND
(d) PHD

Q24. AFHD is related to DIKG in a certain way based on the English alphabetical order. Similarly GLNJ is related to JOQM. Following the same logic, MRTP is related to which of the following?

(a) PVUS
(b) PUVS
(c) PUWS
(d) PVWS

Q25. ETL is related to CVN in a certain way based on the English alphabetical order. Similarly, BOI is related to DMG. Following the same logic, JUN is related to which of the following?

(a) LWP
(b) ITM
(c) LSP
(d) HSL

GENERAL INTELLIGENCE

Q26. _____ is an organization representing the entire cooperative movement in India.

(a) NCUI
(b) TRIFED
(c) NFCSF
(d) NABARD

Q27. Which of the following is the largest ethnic group in Myanmar?

(a) Bamar
(b) Karen
(c) Shan
(d) Rohingya

Q28. Kudremukh mines are located in which of the following states?

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

Q29. R Muthukannammal was awarded the Padma Shri 2022 for which of the following dance styles?

(a) Sadir
(b) Sattriya
(c) Mohiniyattam
(d) Kathakali

Q30. Who founded the Tuluva dynasty of Vijayanagara Empire?

(a) Krishnadev Rai
(b) Narasa Nayaka
(c) Dev Rai I
(d) Achyut Dev Rai

Q31. The Second Anglo-Mysore War ended with the signing of which of the following treaties?

(a) Treaty of Mangalore
(b) Treaty of Arcot
(c) Treaty of Wandiwash
(d) Treaty of Madras

Q32. What is the other name of black cotton soil found in Maharashtra?

(a) Cumulose soil
(b) Reh
(c) Chernozem
(d) Regur

Q33. Where was the first jute mill established in India?

(a) Rishra
(b) Chennai
(c) Haryana
(d) Mumbai

Q34. The traditional singing 'Nat' is related to _____ dance.

(a) Chhau
(b) Odissi
(c) Kathak
(d) Manipuri

Q35. The Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Amendment Bill 2022 has amended in _____.

(a) Weapons, Hazardous Chemicals and Destruction Act, 2010
(b) Prohibition of Dangerous Weapons of Mass Destruction Act, 2014
(c) Prohibition of Biochemical Mass Destruction Act, 2007
(d) Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act, 2005

Q36. Who among the following stalwarts of Indian music has been awarded the Bharat Ratna?

(a) Asha Bhosle
(b) Kishore Kumar
(c) Lata Mangeshkar
(d) Usha Utthup

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Q37. Which of the following words is not mentioned in the Indian Constitution?

(a) Federalism
(b) Secular
(c) Socialist
(d) Republic

Q38. Who among the following started the Shivaji Mahotsav to awaken the feeling of nationalism among the common people?

(a) Aurobindo Ghosh
(b) Lokmanya Tilak
(c) Gopal Krishna Gokhale
(d) Surendranath Banerjee

Q39. Which of the following statements is incorrect regarding microfinance?

(a) Micro finance organizations (MFIs), are Banks that provide micro financial services.
(b) Other than Banks, Micro finance organizations (MFIs) are organizations that provide micro financial services.
(c) Micro finance has the provision of giving loans to micro, small and medium enterprises.
(d) RBI is the regulatory body for micro finance institutions (MFIs).

Q40. The price of wheat in flour can be included in the _____ method of measuring national income.

(a) Value Added
(b) Expenditure
(c) Income
(d) Cyclical Income

Q41. The term 'leg bye' is related to _____.

(a) Cricket
(b) Hockey
(c) Badminton
(d) Football

Q42. Who among the following Indian cricketers won the ICC Men's T20I Cricketer of the Year award for 2022?

(a) Surya Kumar Yadav
(b) Ishan Kishan
(c) Shubhman Gill
(d) Bhuvneshwar Kumar

Q43. In 1987, an Action Research Program was started by NABARD with _____, based on which a pilot project was launched to link 500 Self Help Groups (SHGs) with banks.

(a) MYRADA
(b) PFRDA
(c) IREDA
(d) AMFI

Q44. Which five year plan in India was based on the Harrod-Domar model?

(a) First Five Year Plan
(b) Second Five Year Plan
(c) Third Five Year Plan
(d) Fourth Five Year Plan

Q45. In 1937, who along with Sir Christopher Ingold, proposed nucleophilic substitution reactions of alkyl halides and related compounds?

(a) Edward Davies Hughes
(b) Sergei Winogradsky
(c) Jacobus Hendricus

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(d) Victor Grignard

Q46. What is the relationship between atm and bar?

(a) 1 atm = 10^5 bar
(b) 1 atm = 1.013 x 10^5 bar
(c) 1 atm = 1 bar
(d) 1 atm = 1.013 bar

Q47. When were the Fundamental Duties first included in the Indian Constitution?

(a) 1976
(b) 1974
(c) 1975
(d) 1973

Q48. Which of the following states of India has topped the medal tally in the 4th Khelo India Youth Games to be held in 2022?

(a) Uttar Pradesh
(b) Karnataka
(c) Kerala
(d) Haryana

Q49. Nongkrem festival of Meghalaya is celebrated by which of the following tribes?

(a) Aptani Tribe
(b) Khasi tribe
(c) Tutsa Tribe
(d) Galo tribe

Q50. Which chemical compound is used as a food preservative in some sauces and syrups, which retains their natural color and protects them from bacteria?

(a) Potassium meta bisulphite
(b) Monosodium glutamate
(c) Dihydroxy benzene
(d) Hydrazine hydrate

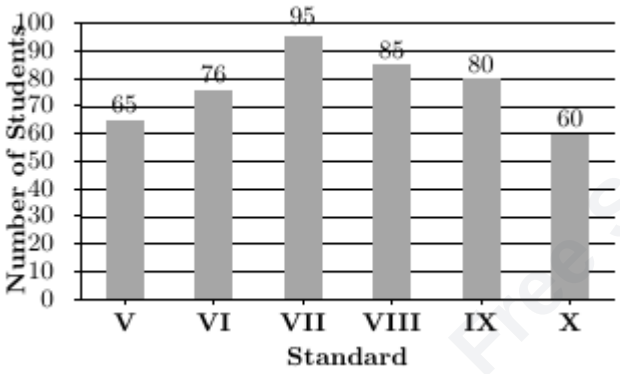
QUANTITATIVE APTITUDE

Q51. If $(x+1/x)=7$ and $x > 1$, then what is the value of $(x^3-1/(x^3))$?

(a) $174\sqrt{5}$
(b) $144\sqrt{5}$
(c) $164\sqrt{5}$
(d) $154\sqrt{5}$

Q52. The following bar graph shows the total number of students in different classes of a school. Read the article carefully and answer the question given below.

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Reference: Number of students, Standard-Classes

The number of students in tenth (Xth) class is what percent less than the number of students in seventh (VIIth) class? (Correct to two decimal places)

(a) 58.33%
(b) 36.84%
(c) 46.84%
(d) 28.33%

Q53. If $\sec\theta + \tan\theta = \sqrt{3}$, then find the positive value of $\sin\theta + \cos\theta$.

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

Q54. Simple interest on Rs. 986 for a certain period is Rs. 62 less than simple interest on Rs. 1,296 for the same period at the rate of 5% simple interest. For how many years was each amount invested?

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

Q55. If $(y-1/y)=9$, then find the value of $(y^3-1/(y^3))$.

(a) 729
(b) 756
(c) 702
(d) 766

Q56. The average weight of a group of 12 children is 66 kg. If 2 children, X and Y, join the group in place of A and B, the new average weight becomes 65 kg. Weight of A = weight of B and weight of X = weight of Y. Another child C is added to the group, and the new average weight remains 65 kg. Weight of C = Weight of X. Find the weight of A.

(a) 67 kg
(b) 69 kg
(c) 71 kg
(d) 72 kg

Q57. If the cost price of a book is 92% of its selling price, then what will be the profit percentage on the sale of the book (correct to two decimal places)?

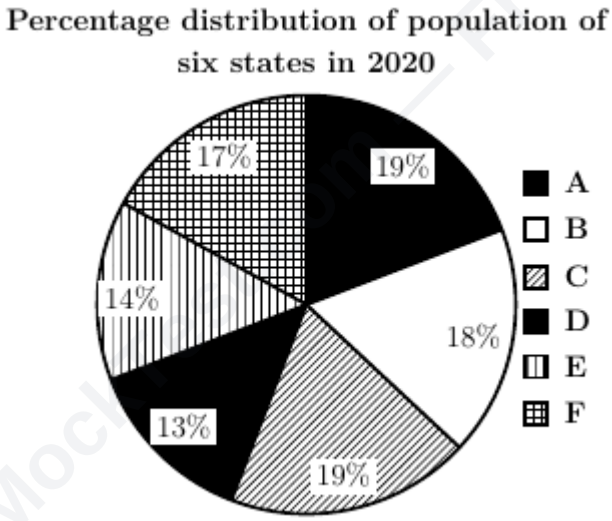
(a) 8.53%
(b) 8.25%
(c) 8.00%
(d) 8.69%

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Q58. Let ABC be a triangle whose angle B is at a right angle. If angle C = 60° and AB = 3 cm, then find the lengths of BC and AC respectively.

(a) 9 cm, 4√3 cm
(b) √3 cm, 4√3 cm
(c) √3 cm, 2√3 cm
(d) 3 cm, 2√3 cm

Q59. The given pie chart shows the percentage distribution of population of six states in 2020. Study the pie chart and answer the question given below.



Reference - Percentage distribution of population of six states in 2020. The percentage distribution of the population of six states in 2020 is given in the following table.

State	Percentage of population working in government jobs
A	42
B	32
C	12
D	30
E	28
F	35

What is the ratio of the population doing government jobs in state E to the population doing government jobs in state A?

(a) 13 : 37
(b) 28 : 57
(c) 29 : 39
(d) 23 : 96

Q60. A student scoring 20% marks in an examination fails by 30 marks. But another student who scores 32% marks scores 42 marks more than the marks required to pass. Find the maximum number of digits.

(a) 600
(b) 700
(c) 500
(d) 400

Q61. A shopkeeper usually makes a large gram flour laddu (circular in shape) of radius 9 cm. How many gram flour laddus of radius 3 cm can be made from this big gram flour laddu? (Use π = 22/7)

(a) 27
(b) 9

(c) 18
(d) 36

Q62. Find the value of (a3 + b3 + c3 - 3abc), where a = 335, b = 215 and c = 180.
(a) 15452630
(b) 14502230
(c) 14472250
(d) 15421320

Q63. Find the value of 8 sec2 45° + 20 sin2 30°+ 15 tan 45°
(a) 43
(b) 28
(c) 32
(d) 36

Q64. PQ is a chord of a circle. The tangent XR at a point X on the circle intersects the extended side PQ at R. If XR = 12 cm, PQ = x cm, QR = x - 2 cm, then find the value of x (in cm).
(a) 10
(b) 6
(c) 7
(d) 14

Q65. A person walks from his home to the supermarket at a speed of 10 kmph and returns back at a speed of 5 kmph. For the entire journey, it takes 1 hour 30 minutes. Find the distance (in km) of the supermarket from his house.
(a) 5
(b) 10
(c) 6
(d) 8

Q66. The following table shows the number of cars rejected by the quality control department and the percentage of cars approved out of the total number of cars assembled by four machines A, B, C, and D.

Machine	Number of cars rejected	Percentage of approved cars
A	840	86
B	600	90
C	550	90
D	1000	80

How many cars assembled by machine C were approved?
(a) 4950
(b) 7560
(c) 5400
(d) 5160

Q67. If 3 : 8 :: x : 12, then find the value of x.
(a) 5
(b) 9/2
(c) 5/2
(d) 9

Q68. Δ ABC ∼ Δ PQR, AB = 12 cm, PQ = 18 cm, and perimeter of Δ ABC is 45 cm. Find the perimeter of Δ PQR.
(a) 30 cm
(b) 70 cm
(c) 67.5 cm
(d) 60 cm

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Q69. MN is the diameter of a circle with center O. P and S are two points situated on the circumference of the circle on either side of MN such that angle PMN = 50° and angle MNS = 35°. What will be the measure of the degree of difference between angle PMS and angle PNS?

(a) 30°
(b) 25°
(c) 55°
(d) 65°

Q70. The distance between the centers of two circles of radii 24 cm and 18 cm respectively is 48 cm. Find the length (in cm) of the transverse/indirect common tangent to both circles.

(a) 6√15
(b) 18√2
(c) 16√2
(d) 10√5

Q71. Ashok invested Rs. 18,000 in a post office for 3 years at 5% compound interest. If the interest is compounded once a year. Then how much amount will he receive after 3 years?

(a) Rs. 22,961.50
(b) Rs. 21,926.00
(c) Rs. 22,6291.75
(d) Rs. 20,837.25

Q72. When a number is divided by 7, the remainder is 1. What will be the remainder when the cube of this number is divided by 7?

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

Q73. If Ashima covers a certain distance in 5 hours at a speed of 80 km/h. Approximately how many hours (rounded to 1 place of decimal) will it take to cover the same distance at a speed of 150 km/h?

(a) 2.7 hours
(b) 8.3 hours
(c) 3 hours
(d) 3.5 hours

Q74. 15 boys can complete a work in 28 days, then in how many days can 21 boys complete the same work?

(a) 18
(b) 24
(c) 20
(d) 21

Q75. A dealer gives a discount of 7% on the marked price and gives 1 article free on every 25 articles purchased and thus earns a profit of 25%. Find the percentage increase in marked price over the cost price (up to two decimal places).

(a) 1.4%
(b) 38.87%
(c) 37.88%
(d) 39.78%

GENERAL AWARENESS

Q76. Direction: Select the most appropriate ANTONYM of the given word.

Liable

(a) Peaceful
(b) Invulnerable

(c) Tending
(d) Responsible

Q77. Direction: Select the most appropriate option to fill in the blank.

The _____ of the crime scene made it difficult for investigators to gather evidence.

(a) cite
(b) set
(c) site
(d) sleight

Q78. Direction: Select the option that can be used as a one-word substitute for the underlined segment.

The company was known for its deserving respect or admiration business practices and honest and fair ethical standards.

(a) honourable
(b) decent
(c) respectable
(d) trustworthy

Q79. Direction: Select the most appropriate ANTONYM to substitute the underlined word in the following sentence.

They realised that the ghost was imperturbable.

(a) exasperating
(b) startling
(c) excitable
(d) contaminating

Q80. Direction: The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error from the given options.

The current state of the literature / on the efficacy under cognitive-behavioural therapy / for individuals with generalised anxiety disorder / suggests that it is a promising treatment option.

(a) on the efficacy under cognitive-behavioural therapy
(b) for individuals with generalised anxiety disorder
(c) The current state of the literature
(d) suggests that it is a promising treatment option.

Q81. Direction: The following sentence has been divided into four parts. One of them contains an error. Select the part that contains the error from the given options.

Honesty / is / a best / policy.

(a) a best
(b) is
(c) Honesty
(d) Policy

Q82. Direction: Select the option that can be used as a one-word substitute for the given group of words.

Done without conscious control; unintentional

(a) Invincible
(b) Involuntary
(c) Invitro
(d) Invoke

Q83. Direction: Select the most appropriate idiom for the given statement.

One who hurries up always gets the best.

(a) Brevity is the soul of wit.
(b) Forewarned is forearmed.
(c) The early bird catches the worm.

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(d) His bark is worse than his bite.

Q84. Direction: Select the option that can be used as a one-word substitute for the underlined group of words in the following sentence.

Denmark has a type of government where power is held by the wealthiest members of society.

(a) democracy
(b) plutocracy
(c) monarchy
(d) oligarchy

Q85. Direction: Identify the INCORRECTLY spelt word in the following sentence.

Staying healthy and exercising daily enhances an athelet's ability.

(a) athelet's
(b) healthy
(c) exercising
(d) enhances

Q86. Direction: Select the option that expresses the given sentence in active voice.

Was the painting stolen by the thief?

(a) Was the thief not stealing the painting?
(b) Did the thief steal the painting?
(c) Was the painting being stolen by the thief?
(d) Did not the thief steal the painting?

Q87. Direction: Parts of a sentence are given below in jumbled order. Select the option that arranges the parts in the correct order to form a meaningful sentence.

A) based on the

B) we live in

C) nation that

D) our nationality is

(a) C, D, A, B
(b) D, A, C, B
(c) A, B, C, D
(d) B, C, A, D

Q88. Direction: Select the most appropriate ANTONYM of the given word.

Despicable

(a) Rational
(b) Deplorable
(c) Admirable
(d) Offensive

Q89. Direction: Select the INCORRECTLY spelt word.

(a) Persistent
(b) Repetition
(c) Overwelming
(d) Audacious

Q90. Direction: Select the most appropriate ANTONYM of the underlined word in the given sentence.

She was in a state of ecstasy when she came to know that her son received a visa on his first attempt.

(a) Abash
(b) Inspiration
(c) Agony
(d) Joyfulness

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Q91. Direction: Select the appropriate ANTONYM of the underlined word to fill in the blank.

I wanted to ask if you have an/a _____ bank account. Mine has been dormant for a year.

(a) inert
(b) side
(c) active
(d) quick

Q92. Direction: Select the most appropriate idiom to fill in the blank.

When I was in Italy for a tour, the tourist guide provided by Azim was _____. Because of him, the whole tour was successful.

(a) worth his weight in gold
(b) armed to the teeth
(c) burning the midnight oil
(d) looking for a needle in a haystack

Q93. Direction: The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

Poonam usually sits / in a first row in the / weekend conference / hall every week.

(a) in a first row in the
(b) hall every week
(c) weekend conference
(d) Poonam usually sits

Q94. Direction: Select the option that expresses the given sentence in passive voice.

You should apply for the job before the deadline.

(a) The deadline should not be crossed for the job application.
(b) The job should be applied for before the deadline.
(c) The job could be applied for after the deadline.
(d) You should be applying for the job before the deadline is.

Q95. Direction: Parts of a sentence are given below in jumbled order. Arrange the parts in the correct order to form a meaningful sentence.

P. that a glance from the window seemed simply to prove

Q. with such dignity of motion

R. the great Pullman was whirling onward

S. that the plains of Texas were pouring eastward

(a) RQPS
(b) PRQS
(c) RPQS
(d) RQSP

Directions

Direction: 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 a busy bus station, there is a little girl sitting all ____ (1) __ on a bench. She stares at the floor as all the busy travellers rush __ (2) __ her. Some of the people are in such a big hurry that they do not __ (3) __ her. Other people look at her, but continue running to where they need to go. After some time, a man stops next to the girl. He is very tired after a long day of work, and he just wants to get to his home as quickly as __ (4) __ so that he can be with his family. But he cannot just leave this little girl alone. He cannot see her __ (5) ____ anywhere. The little girl is no older than his own little daughter.

Q96. Select the most appropriate option to fill in blank number 1.

(a) sole
(b) alone
(c) just

(d) unique

Q97. Select the most appropriate option to fill in blank number 2.

(a) above
(b) on
(c) henceforth
(d) around

Q98. Select the most appropriate option to fill in blank number 3.

(a) inflict
(b) notice
(c) detect
(d) neglect

Q99. Select the most appropriate option to fill in blank number 4.

(a) potential
(b) possible
(c) believable
(d) credible

Q100. Select the most appropriate option to fill in the blank 5.

(a) self
(b) friends
(c) relatives
(d) parents

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) Mother's Mother

Preparing the family tree diagram by using the following symbols:

As per the given information:

A is				
Symbol	•	•	×	÷
Means	Mother	Brother	Wife	Father
of B				

Given expression: 'K × L ÷ M + N - O'

K is the wife of L, L is the father of M, M is the mother of N and N is the brother of O.
Here, K is the mother's mother of N.
Hence, the correct answer is "Option (3)".

Q2. Answer: (c) 20

Given:
0, 2, 6, 12, ?, 30, 42
Logic: Addition of consecutive even numbers.
Here, the missing number is '12'.
Hence, the correct answer is "Option (3)".

Q3. Answer: (a) 165 - 150

Logic: Second no. = [First no. - 25]
Checking all the given options:
(1) 165 - 150 →
=> [165 - 15] = 150
(2) 134 - 109 →
=> [134 - 25] = 109
(3) 77 - 52 →
=> [77 - 25] = 52
(4) 88 - 63 →
=> [88 - 25] = 63
Here, '165 - 150' is different from the rest.
Hence, the correct answer is "Option (1)".

Q4. Answer: (c) Tuesday

Given:
11 October 1969 = Saturday
29 November 1977 = ?
As we know:
Odd days in a normal year = 1
Odd days in a leap year = 2
Odd days up to 29 November 1977 = [1 + 1 + 2 + 1 + 1 + 1 + 2 + 1 + 20 + 29] = 59
Odd days = [59 ÷ 7] = 3 (Sunday, Monday and Tuesday)
29 November 1977 = Tuesday
Hence, the correct answer is "Option (3)".

Q5. Answer: (a) OWL

Here, we use the table given below:

Given:
CKZ, GOD, KSH, ?, SAP
Logic: '4' is added to the positional value of each alphabet.
Here, the missing term is 'OWL'.
Hence, the correct answer is "Option (1)".

Q6. Answer: (b) LJCTLTKE

Here, we use the tables given below:

Logic: (Opposite letter - 2)
FOX is written as SJA →
CRIPPLE is written as VGPIIMT →
Similarly, 'MOVEMENT' will be written as:
Here, 'MOVEMENT' is written as 'LJCTLTKE'.

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Hence, the correct answer is "Option (2)".

Q7. Answer: (b) 624

Here, we use the BODMAS table given below:

Given:

=> 89 ÷ 7 - 42 × 7 + 5 = ?

After interchanging '+' and '-' & '×' and '÷' →

=> 89 × 7 + 42 ÷ 7 - 5

Apply BODMAS rule:

=> 89 × 7 + 6 - 5

=> 623 + 6 - 5

=> 629 - 5 = 624

=> '89 × 7 + 42 ÷ 7 - 5 = 624'

Here, the value of the equation is '624'.

Hence, the correct answer is "Option (2)".

Q8. Answer: (b) 8

The counting of the triangles in the given figure:

Here, the number of triangle is '8'.

Hence, the correct answer is "Option (2)".

Q9. Answer: (a) 89

Logic: Second no. = [First no. + 22]

(1) 23 is related to 45 →

=> [23 + 22] = 45

(2) 54 is related to 76 →

=> [54 + 22] = 76

Similarly, 67 will be written as:

=> [67 + 22] = 89

Here, '67' is related to '89'.

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

Q10. Answer: (b) MUEDR

Here, we use the table given below:

Given:

B_RG, FK_F, JIX_, NGA_, _EDC

Logic: '4' and '3' are added to the positional value of the first and third alphabets, and '2' and '1' are subtracted from the positional value of the second and third alphabets.

Hence, the correct answer is "Option (2)".

Q11. Answer: (d) 101

Given:

11, 17, 29, 47, 71, X

Logic: Addition of consecutive multiple of 6.

Here, the value of the 'X' is '101'.

Hence, the correct answer is "Option (4)".

Q12. Answer: (a) 6 - 16 - 2

Logic: Second no. = [(First no. + Third no.) × 2]

Given:

4 - 18 - 5 →

=> [(4 + 5) × 2]

=> (9 × 2) = 18

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7 - 20 - 3 →
=> [(7 + 3) × 2]
=> (10 × 2) = 20
Checking the given options:
(1) 6 - 16 - 2 →
=> [(6 + 2) × 2]
=> (8 × 2) = 16
(2) 7 - 12 - 8 →
=> [(7 + 8) × 2]
=> (15 × 2) = 30
(3) 8 - 11 - 3 →
=> [(8 + 3) × 2]
=> (11 × 2) = 22
(4) 5 - 21 - 8 →
=> [(5 + 8) × 2]
=> (13 × 2) = 26
Here, '6 - 16 - 2' is similar to the given number pairs.
Hence, the correct answer is "Option (1)".

Q13. Answer: (a) JNO : QML

Here, we use the tables given below:

Logic: The opposite letter is written.
Given:
AHK : ZSP →
PSW : KHD →
Checking the given options:
1. JNO : QML →
2. ABC : TWV →
3. SVM : IFY →
4. JDE : QPO →
Here, 'JNO : QML' is similar to the given letter clusters.
Hence, the correct answer is "Option (1)".

Q14. Answer: (b) Two

Given: 'TANGLED'
After arranging in alphabetical order:
TANGLED → ADEGLNT
The letters G and L's positions are unchanged.
Hence, the correct answer is "Two".

Q15. Answer: (a) daughter's daughter

Preparing the family tree diagram by using the following symbols:
As per the given information:
1. M is married to N and N is the daughter of U.
2. U is married to S and S is the sister of P.
3. P is the son of Q and R is the mother of S.
Here, N is the daughter's daughter of Q.
Hence, the correct answer is "Option (1)".

Q16. Answer: (c) 58

Here, we use the BODMAS table given below:
Given:

=> 9 ÷ 6 - 136 × 8 + 13 = ?

After interchanging '+' and '-' & '×' and '÷' →

=> 9 × 6 + 136 ÷ 8 - 13

Apply BODMAS rule:

=> 9 × 6 + 17 - 13

=> 54 + 17 - 13

=> 71 - 13 = 58

=> '9 × 6 + 136 ÷ 8 - 13 = 58'

Here, the value of the equation is '58'.

Hence, the correct answer is "Option (3)".

Q17. Answer: (a) [figure]

The logic followed in the given figure series is:

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

Q18. Answer: (d) [figure]

The mirror image of the given figure is:

Hence, the correct answer is "Option (4)".

Q19. Answer: (d) 61

Given:

976, 488, 244, 122,?

Logic: Division by '2'.

Here, the missing term is '61'.

Hence, the correct answer is "Option (4)".

Q20. Answer: (a) JMA

Here, we use the table given below:

Logic: '3' is added to the positional value of the first and second alphabet.

Checking the given options:

1. JMA →
2. CFI →
3. LOR →
4. UXA →

Here, 'JMA' is different from the rest.

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

Q21. Answer: (b) [figure]

The mirror image of the given figure is:

Hence, the correct answer is "Option (2)".

Q22. Answer: (c) Neither conclusion (I) nor conclusion (II) follows from the statements.

Statements:

Some erasers are papers, Some papers are clips, and All clips are hair.

The Venn diagram as per the given statements:

Conclusions:

(I) All papers are hair. → Not follow (Because some papers are clips and all clips are hair, which means some papers are hair is definitely true, whereas all papers are hair can be possible but not definitely true)

(II) Some erasers are clips. → Not follow (Because there is no direct relation between erasers and clips, so some erasers are clips can be possible but not definitely true)

Hence, the correct answer is "Neither (I) nor (II) follow".

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Q23. Answer: (b) ODD

Here, we use the table given below:

Given:
QNR, WRU, CVX, IZA, ?
Logic: '6', '4' and '3' are added to the positional value of the first, second and third alphabet respectively.
Here, the missing term is 'ODD'.
Hence, the correct answer is "Option (2)".

Q24. Answer: (c) PUWS

Here, we use the table given below:

Logic: '3' is added to the positional value of each alphabet.
AFHD is related to DIKG →
GLNJ is related to JOQM →
Similarly, 'MRTP' will be related to:
Here, 'MRTP' is related to 'PUWS'.
Hence, the correct answer is "Option (3)".

Q25. Answer: (c) LSP

Here, we use the table given below:

Logic: '2' is added to the positional value of the consonants and '2' is subtracted from the positional value of the vowels.
ETL is related to CVN →
BOI is related to DMG →
Similarly, 'JUN' will be related to:
Here, 'JUN' is related to 'LSP'.
Hence, the correct answer is "Option (3)".

Q26. Answer: (a) NCUI

The correct answer is NCUI.
Key Points
• NCUI:-
• It stands for National Cooperative Union of India and it represents the entire cooperative movement in India.
• It was established in 1929 and is headquartered in Delhi.
• NCUI works towards the promotion and development of cooperative societies in the country.
• It provides various services to its members such as training, consultancy, and advocacy.
Additional Information
• TRIFED:-
• It stands for Tribal Cooperative Marketing Development Federation of India.
• It works towards the socio-economic development of tribal communities in India through marketing of their products.
• NFCSF:-
• It stands for National Federation of Cooperative Sugar Factories.
• It represents the interests of cooperative sugar factories in India.
• NABARD:-
• It stands for National Bank for Agriculture and Rural Development.
• It provides financial and other support to agriculture and rural development in the country.

Q27. Answer: (a) Bamar

The correct answer is Bamar.
Key Points
• Bamar:-
• It is the dominant ethnic group in Myanmar, comprising approximately 68% of the country's population.

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• Myanmar:
• Myanmar, also known as Burma, is a country in Southeast Asia.
• It is bordered by Bangladesh, India, China, Laos, and Thailand.
• The country has a diverse population with over 135 ethnic groups, each with its own language and culture.
• The official language of Myanmar is Burmese, and the majority of the population practices Buddhism.
Additional Information
• Karen:-
• They are also known as Kayin.
• They are the second-largest ethnic group in Myanmar, comprising around 7% of the population.
• Shan:-
• They are the third-largest ethnic group in Myanmar, comprising around 9% of the population.
• They are primarily concentrated in the Shan State.
• Rohingya:-
• They are a minority Muslim ethnic group in Myanmar, comprising around 1% of the population.
• They have faced persecution and violence in Myanmar and have been forced to flee to neighboring countries.

Q28. Answer: (d) Karnataka

The correct answer is Karnataka.
Key Points
• Kudremukh mines:-
• These are located in Karnataka.
• It is a small mining town located in the Western Ghats of Karnataka.
• It is known for its iron ore mines and Kudremukh National Park.
Additional Information
• Maharashtra:-
• It is known for its mineral resources like coal, iron ore, manganese, etc.
• Chhattisgarh:-
• It is also known for its mineral resources like coal, iron ore, bauxite, etc.
• Odisha:-
• It is one of the largest mineral-producing states in India and is known for its deposits of iron ore, coal, bauxite, etc.

Q29. Answer: (a) Sadir

The correct answer is Sadir.
Key Points
• R Muthukannammal:-
• He was a renowned exponent of Bharatanatyam, a classical dance form of India.
• Padma Shri:-
• It is the fourth highest civilian award in India
• It is awarded for exceptional contributions in various fields including arts, literature, and social work.
• Sadir:
• A precursor to Bharatanatyam, practiced mainly in Tamil Nadu and Andhra Pradesh.
Additional Information
• Sattriya:
• A traditional dance form of Assam.
• Mohiniyattam:
• A classical dance form of Kerala, characterized by graceful movements and facial expressions.
• Kathakali:
• A classical dance-drama form of Kerala, known for its elaborate costumes and makeup.

Q30. Answer: (b) Narasa Nayaka

The correct answer is Narasa Nayaka
Key Points
• Vijayanagara Empire:-

• It was founded in 1336 AD by Harihara and Bukka, who were brothers and served as generals in the army of the Kakatiya dynasty.

• Tuluv dynasty:-

• It was a later dynasty that ruled the Vijayanagara Empire from 1491 to 1570 AD

• Narasa Nayaka

• Tuluva Narasa Nayaka was an Indian general and later an Imperial Regent who founded the Tuluva dynasty of the Vijayanagara Empire. He was the father of the Emperors Viranarasimha Raya, Krishnadevaraya and Achyuta Deva Raya

Additional Information

• Krishnadevaraya:-

• He was the most famous king of the Tuluv dynasty and is known for his military conquests, patronage of the arts and literature, and his administration reforms.

• Deva Raya I:-

• He was also a ruler of the Vijayanagara Empire before the Tuluv dynasty and belonged to the Sangama dynasty.

• Achyuta Deva Raya:-

• He was the successor of Krishnadevaraya and ruled the Vijayanagara Empire from 1529 to 1542 AD.

Q31. Answer: (a) Treaty of Mangalore

The correct answer is Treaty Of Mangalore.

Key Points

• Treaty Of Mangalore:-

• It was signed in 1784 between the British East India Company and Tipu Sultan, the ruler of Mysore.

• The treaty ended the Second Anglo-Mysore War, which was fought between 1780 and 1784.

• The treaty allowed Tipu Sultan to keep his territories, but he had to pay a large indemnity to the British.

• The treaty also included provisions for prisoner exchange and the return of captured territories.

Additional Information

• Treaty of Madras:-

• The Treaty of Madras was a peace agreement signed on April 4, 1769, to end the First Anglo-Mysore War. Here's a breakdown of its key points:

• Parties Involved:

• Mysore: Ruled by Hyder Ali at the time.

British East India Company: Represented by Lord Harry Verelst.

• Purpose: To formally end the war that had been ongoing since 1767.

• Key Terms: Exchange of Territories: Both sides agreed to return the territories they had captured during the war.

Mutual Assistance: The treaty included a clause stating that the British would assist Mysore if attacked by its neighbors. This clause became a point of contention later.

Significance:

The Treaty of Madras was a temporary truce. Hyder Ali felt the British didn't uphold their promise of assistance when Mysore faced the Marathas in 1771. This contributed to renewed conflict and the later Anglo-Mysore Wars.

• Treaty of Wandiwash:-

• It was signed in 1760 between the British East India Company and the French East India Company.

• The treaty ended the Third Carnatic War, which was fought between 1756 and 1763.

• The treaty allowed the British to establish their dominance in southern India and marked the beginning of the decline of French influence in India.

• The treaty also included provisions for prisoner exchange and the return of captured territories.

Q32. Answer: (d) Regur

The correct answer is Regur.

Key Points

• Regur soil:-

• It is also known as black soil or black cotton soil and is found in Maharashtra, Gujarat, and some parts of Madhya Pradesh, Karnataka, and Andhra Pradesh.

• Regur soil is formed from the weathering of basalt rocks and is rich in iron, magnesium, calcium, and potassium.

• This type of soil is excellent for agriculture as it can hold moisture for a long time, making it suitable for crops like cotton, sugarcane, and tobacco.

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Additional Information

• Reh soil, also known as red soil, is found in parts of Maharashtra and is formed from the weathering of granite rocks. It is rich in iron and aluminum but is not as fertile as Regur soil.

• Chernozem soil is a type of black soil found in Russia and Ukraine and is rich in organic matter. It is not found in Maharashtra.

• Cumulose soil, also known as peat soil, is formed from the accumulation of organic matter in wetlands and is not found in Maharashtra.

Q33. Answer: (a) Rishra

The correct answer is Rishra.

Key Points

• Rishra:-

• It is a city in the Hooghly district of West Bengal, located on the banks of the Hooghly River.

• Jute:-

• It is a natural fiber that is commonly used to make burlap, twine, and other products.

• The first jute mill was established in Rishra.

Additional Information

• Chennai:-

• It is also known as Madras, is the capital city of the Indian state of Tamil Nadu.

• It is not known for jute production.

• Haryana:-

• It is a state in northern India that is known for its agriculture, but it is not a major producer of jute.

• Mumbai:-

• It is also known as Bombay, is the capital city of the Indian state of Maharashtra.

• It is not known for jute production.

Q34. Answer: (d) Manipuri

The correct answer is Manipuri.

Key Points

• 'Nat':-

• It is a traditional form of singing that is associated with various dance forms in India.

• Nat is often associated with Manipuri dance, which is a classical dance form from Manipur, a state in northeastern India.

• Manipuri:-

• It is a classical dance form from Manipur, which is known for its gentle, fluid movements and devotion to Lord Krishna.

• It is often performed to the accompaniment of Nat singing, which is an integral part of Manipuri culture.

Additional Information

• Chhau:-

• It is a semi-classical dance form from eastern India, which is known for its acrobatic movements and masks.

• Odissi:-

• It is a classical dance form from Odisha, a state in eastern India.

• It is known for its graceful movements and intricate footwork.

• While Odissi dance often uses Nat singing, it is not exclusively associated with it.

• Kathak:-

• It is a classical dance form from northern India, which is known for its fast footwork and spins.

• It uses various forms of singing, including thumri, dadra, and ghazal, but not Nat singing.

Q35. Answer: (d) Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act, 2005

The correct answer is Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act, 2005.

Key Points

• Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Amendment Bill 2022:-

• The Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Amendment Bill 2022 was amended on 6th August 2022.

• The Bill was introduced in the Lok Sabha on April 5, 2022, and was passed by both houses of Parliament with a voice vote.

• The Act amends the Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act, 2005, to:

• Prohibit the financing of any activity related to weapons of mass destruction (WMDs) and their delivery systems.

• Empower the government to seize, freeze, or attach the economic resources and financial assets of those engaged in prohibited activities.

• Provide for integrated legal measures to control the export of materials, equipment, and technologies related to WMDs and their delivery systems.

• Prevent the transfer of WMDs and their delivery systems to non-State actors or terrorists

Q36. Answer: (c) Lata Mangeshkar

The correct answer is Lata Mangeshkar.

Key Points

• Lata Mangeshkar.:-

• She is a renowned playback singer in the Indian music industry.

• Lata Mangeshkar has been honored with numerous awards and accolades throughout her career, including the Bharat Ratna, India's highest civilian award, in 2001.

Additional Information

• Asha Bhosle:-

• She is also a legendary playback singer and has been honored with several awards, including the National Film Award and the Padma Vibhushan. However, she has not been awarded the Bharat Ratna.

• Kishore Kumar:-

• He was a versatile singer, actor, and composer, and has been honored with several awards, including the National Film Award and the Filmfare Award. However, he has not been awarded the Bharat Ratna.

• Usha Uthup:-

• He is a popular Indian pop and jazz singer, known for her unique voice and style. However, she has not been awarded the Bharat Ratna.

Q37. Answer: (a) Federalism

The correct answer is Federalism.

Key Points

• Federalism:-

• It is a complex and fascinating system of government.

• It's like a tightrope walk, constantly trying to balance the competing needs of a unified nation with the diverse aspirations of its constituent parts.

• Federalism is the only word not mentioned in the Indian Constitution.

Additional Information

• Secular:

• The word "secular" was added to the Preamble by the 42nd Amendment in 1976.

• Socialist:

• Though not explicitly mentioned, the principles of socialism like social justice, equality, and economic welfare are enshrined in the Constitution.

• Republic:

• India is defined as a "Sovereign Socialist Secular Democratic Republic" in the Preamble itself.

Q38. Answer: (b) Lokmanya Tilak

The correct answer is Lokmanya Tilak.

Key Points

• Shivaji Mahotsav:-

• It is a cultural festival celebrated in Maharashtra to honor the great Maratha warrior king, Shivaji.

• Tilak initiated the Shivaji festival in 1895 to create a sense of pride and patriotism among the people of Maharashtra and to inspire them to fight against the British.

Additional Information

• Gopal Krishna Gokhale:-

• He was a social reformer and politician who worked towards the upliftment of the lower classes and women in India.

• He was also a mentor to Mahatma Gandhi.

• Arvind Ghosh:-

• He was a revolutionary and nationalist who advocated for complete independence from British rule.

• He was a member of the revolutionary group, Anushilan Samiti.

• Surendranath Banerjee:-

• He was a freedom fighter and one of the earliest Indian political leaders who demanded self-governance and representation for Indians in the British government.

Q39. Answer: (a) Micro finance organizations (MFIs), are Banks that provide micro financial services.

The correct answer is Micro finance organizations (MFIs), are Banks that provide micro financial services.

Key Points

• Microfinance:-

• It is a financial service that provides small loans, savings, and other financial services to low-income individuals or small businesses who do not have access to traditional banking services.

• Microfinance institutions (MFIs) are organizations that offer microfinance services. These organizations can be banks or non-banking institutions.

• Microfinance is important in promoting financial inclusion and reducing poverty by providing access to credit and other financial services to those who are excluded from traditional banking services.

• The Reserve Bank of India (RBI) is the regulatory body for MFIs in India.

Q40. Answer: (a) Value Added

The correct answer is Value Added.

Key Points

• Value added method:-

• The value-added method is an economic measure that calculates the national income by adding the value added at each stage of production.

• In the case of wheat, the value added would be the difference between the price of the wheat and the price of the flour.

• This difference represents the value that was added by the milling process.

• The price of wheat into flour is a part of the value added method of measuring national income.

Q41. Answer: (a) Cricket

The correct answer is Cricket.

Key Points

• Leg bye:-

• It is related to cricket.

• It is a type of run scored by the batting team when the ball hits the batsman's body, instead of the bat, and then goes on to touch any part of the field, except the wicket-keeper's gloves. The batting team gets a run for this.

Additional Information

• Hockey:-

• The game involves hitting a ball with a stick and scoring a goal by putting the ball into the opponent's net.

• Badminton:-

• It is a racket sport where players hit a shuttlecock back and forth over a net.

• Football:-

• It is also known as soccer, is a sport where players use their feet to kick a ball into the opponent's goal.

Q42. Answer: (a) Surya Kumar Yadav

The correct answer is Surya Kumar Yadav.

Key Points

• Surya Kumar Yadav:-

• He is a right-handed batsman who plays for Mumbai Indians in the Indian Premier League (IPL).

• He made his T20I debut for India in March 2021 against England.

• In the year 2021, Surya Kumar Yadav had an impressive performance in T20I cricket, scoring 512 runs in 17 matches at an average of 38.23 and a strike rate of 145.02.

Additional Information

• Ishan Kishan:-

• He is also a Mumbai Indians player who made his T20I debut for India in the same match as Surya Kumar Yadav.

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• He had a good start to his T20I career, scoring a half-century on debut.

• Shubman Gill:-

• He is a young Indian opener who made his T20I debut in 2019. He has played 11 T20I matches for India so far, scoring 218 runs at an average of 21.80.

• Bhuvneshwar Kumar:-

• He is an Indian fast bowler who has been a regular member of the Indian cricket team for several years. He has played 50 T20I matches for India, taking 45 wickets at an average of 25.71.

Q43. Answer: (a) MYRADA

The correct answer is MYRADA.

Key Points

• MYRADA (Mysore Resettlement and Development Agency):-

• It is a non-governmental organization that focuses on poverty alleviation and rural development.

• It was one of the partners in the pilot project launched by NABARD in 1987, which aimed to promote financial inclusion through the formation of SHGs and their linkage with banks.

Additional Information

• PFRDA (Pension Fund Regulatory and Development Authority):-

• It is a statutory body that regulates and promotes pension schemes in India.

• IREDA (Indian Renewable Energy Development Agency):-

• It is a financial institution that provides loans and funding for renewable energy projects.

• AMFI (Association of Mutual Funds in India):-

• It is a trade association of mutual funds in India.

Q44. Answer: (a) First Five Year Plan

The correct answer is First Five Year Plan.

Key Points

• Harrod-Domar model:-

• It is an economic theory that explains the relationship between economic growth and investment.

• The model emphasizes the importance of capital formation for economic development.

• First Five-Year Plan:-

• It was launched in 1951, which focused on agriculture, irrigation, power, and transport.

• It was based on the Harrod-Domar model.

• The plan aimed to increase the country's national income and achieve self-sufficiency.

Additional Information

• Third Five-Year Plan:-

• It was implemented in 1961, which aimed to achieve self-sufficiency in food grains, increase industrial production, and develop infrastructure.

• Fourth Five-Year Plan:-

• It was launched in 1969, which aimed to achieve a growth rate of 5.5% per annum, reduce poverty, and create employment opportunities.

Q45. Answer: (a) Edward Davies Hughes

The correct answer is Edward Davies Hughes.

Key Points

• Sir Christopher Ingold

• He was a British chemist who made significant contributions to the field of organic chemistry.

• Alkyl halides are organic compounds that contain a halogen atom (fluorine, chlorine, bromine, or iodine) bonded to an alkyl group (a group of carbon and hydrogen atoms).

• The process of nucleophilic substitution involves the replacement of a halogen atom in an alkyl halide with a nucleophile (an electron-rich species).

• Edward Davies Hughes:-

• He was a Welsh chemist who is known for his work on the synthesis of organic compounds and the study of nucleophilic substitution reactions.

Additional Information

• Sergei Winogradsky:-

• He was a Russian microbiologist who is known for his work on the nitrogen cycle and the discovery of lithotrophs (organisms that can metabolize inorganic compounds).

• Jacobus Hendricus:-

• He was a Dutch chemist who is known for his work on the structure and properties of organic compounds, particularly carbohydrates.

• Victor Grignard:-

• He was a French chemist who is known for his work on organometallic compounds and the development of the Grignard reagent (a reagent used in organic synthesis).

Q46. Answer: (d) 1 atm = 1.013 bar

The correct answer is 1 atm = 1.013 bar.

Key Points

• ATM:-

• It stands for Atmospheric Pressure and is a unit of pressure measurement commonly used in meteorology and engineering.

• BAR:-

• It is a metric unit of pressure measurement that is used in most countries around the world.

• The relationship between atm and bar is 1 atm = 1.013 bar.

Q47. Answer: (a) 1976

The correct answer is 1976.

Key Points

• Fundamental Duties:-

• The Fundamental Duties were first included in the Indian Constitution in 1976. This was through the 42nd Constitutional Amendment, which was enacted during the Emergency period.

• The amendment added ten Fundamental Duties to Part IV-A of the Constitution. These duties were considered to be complementary to the Fundamental Rights, which had been included in the Constitution at its inception in 1950.

• The Fundamental Duties are intended to remind citizens of their obligations to the nation and to each other. They are not legally enforceable, but they are considered to be important moral and ethical principles.

• The 86th Constitutional Amendment, enacted in 2002, added another Fundamental Duty, bringing the total to eleven.

Additional Information

• The eleven Fundamental Duties of Indian citizens:

• Abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem.

• Honour the motherland and its rich heritage, culture and traditions.

• Promote harmony and national integration and the respect for different religions, languages and cultures.

• Render selfless service to the country and to put nation above self.

• Protect public property and abjure violence.

• Strive to achieve excellence in all spheres individual activity.

• Pay taxes honestly and contribute to public savings.

• Protect and improve the natural environment and forests, lakes, mountains and rivers.

• Have compassion for living creatures.

• Uphold the dignity of women and children against exploitation and abuse.

• Provide opportunities for education to his children, as it is the fundamental duty of each parent or guardian.

Q48. Answer: (d) Haryana

The correct answer is Haryana.

Key Points

• Haryana -

• Haryana is a state in northern India.

• It is the eighteenth-largest state by area and the seventeenth-most populous state in India.

• It has hosted the Khelo India Youth Games once - in 2020. In the last edition, it finished at the top position with 68 gold medals.

Additional Information

• Uttar Pradesh -

• Uttar Pradesh is a state in northern India.

• It is the most populous state in India and the fourth-largest state by area.

• It has hosted the Khelo India Youth Games twice - in 2018 and 2020. In the last edition, it finished at the second position with 38 gold medals.

• Karnataka -

• Karnataka is a state in the southwestern region of India.

• It is the sixth-largest state by area and the eighth-most populous state in India.

• It has not hosted the Khelo India Youth Games yet. In the last edition, it finished at the sixth position with 10 gold medals.

• Kerala -

• Kerala is a state on the southwestern coast of India.

• It is the thirteenth-largest state by area and the twelfth-most populous state in India.

• It has hosted the Khelo India Youth Games once - in 2019.

• In the last edition, it finished at the seventh position with 9 gold medals.

Q49. Answer: (b) Khasi tribe

The correct answer is Khasi tribe.

Key Points

• Nongkrem:-

• It is a popular harvest festival celebrated by the Khasi tribe in Meghalaya.

• The festival is observed in the month of November and is dedicated to the Goddess Ka Blei Synshar for a good harvest and prosperity.

• During the festival, traditional dances are performed, and sacrifices are made to appease the deity.

• The festival is also an occasion for the Khasi people to showcase their culture and traditional attire.

Q50. Answer: (a) Potassium meta bisulphite

The correct answer is Potassium meta bisulphite.

Key Points

• Potassium meta bisulphite:-

• It is commonly used as a food preservative and a food additive.

• It helps to maintain the natural color of the food and prevents the growth of bacteria.

Additional Information

• Monosodium glutamate:-

• It is a flavor enhancer that is commonly used in Chinese cuisine.

• Dihydroxy benzene:-

• It is also known as resorcinol and is used in the manufacturing of dyes, pharmaceuticals, and cosmetics.

• Hydrazine hydrate:-

• It is a colorless liquid that is used as a rocket propellant and in the production of polymers and pharmaceuticals.

Q51. Answer: (b) 144√5

Given:

$(x+1/x)=7$

Formula used:

$x - 1/x = \sqrt{[(x+1/x)2 - 4]}$

$(x^3-1/(x^3)) = (x - 1/x)3 + 3 (x - 1/x)$

Calculation:

$(x+1/x)=7$

$x - 1/x = \sqrt{[(x+1/x)^2 - 4]}$

$\Rightarrow \sqrt{45} = 3\sqrt{5}$

$(x^3-1/(x^3)) = (x - 1/x)^3 + 3 (x - 1/x)$

$\Rightarrow 135\sqrt{5} + 9\sqrt{5} = 144\sqrt{5}$

Therefore The correct option is 2

Q52. Answer: (b) 36.84%

Calculation:

The difference between students of Class 10 and 7th is 95 - 60 = 35

The required percentage will be 35/95 × 100 = 36.84 %

Q53. Answer: (d) (1+√3)/2

Shortcut Trick

If sec θ + tan θ = k, then sec θ − tan θ = 1/k.

Given sec θ + tan θ = √3 => sec θ − tan θ = 1/√3.

Adding both: 2 sec θ = √3 + 1/√3 = 4/√3 => sec θ = 2/√3.

This corresponds to the standard angle θ = 30°.

Calculation: sin 30° + cos 30° = 1/2 + √3/2 = (1 + √3)/2.

Therefore The correct answer is ((1+√3))/(2).

Alternate Method

Given: sec θ + tan θ = √3

Formula Used: $sec^2 θ − tan^2 θ = 1$

=> (sec θ + tan θ)(sec θ − tan θ) = 1

=> √3 × (sec θ − tan θ) = 1 => sec θ − tan θ = 1/√3

=> Add the equations: (sec θ + tan θ) + (sec θ − tan θ) = √3 + 1/√3

=> 2 sec θ = 4/√3 => sec θ = 2/√3

=> cos θ = 1/sec θ = √3/2

=> From tan θ = sec θ − 1/√3 = 2/√3 − 1/√3 = 1/√3

=> sin θ = tan θ × cos θ = (1/√3) × (√3/2) = 1/2

=> sin θ + cos θ = 1/2 + √3/2 = (1 + √3)/2

Therefore The correct answer is ((1+sqrt3))/(2).

Additional Information

Fundamental Trigonometric Identities

Standard square relations include $sin^2θ + cos^2θ = 1$, $1 + tan^2θ = sec^2θ$, and $1 + cot^2θ = cosec^2θ$.

Conjugate Pairs in Trigonometry

Pairs like (sec θ + tan θ) and (sec θ − tan θ) are reciprocals of each other because their product equals 1.

Trigonometric Ratios for 30°

At 30°, the ratios are: sin 30° = 1/2, cos 30° = √3/2, tan 30° = 1/√3, and sec 30° = 2/√3.

Q54. Answer: (a) 4

Given:

Principle = Rs 986, Rate of interest = 5%,

Difference = Rs 62

Concept used:

Simple interest = P × R × T / 100 [P = principal, R = rate of interest, T = time]

Calculation:

Let the time = T years

As per the question,

=> 1296 × 5 × T / 100 - 986 × 5 × T / 100 = 62

=> 310 × 5 T = 6200

=> T = 4 years

Therefore The correct option is 1

Q55. Answer: (b) 756

Given:

(y-1/y)=9

Formula used:

$(y^3-1/(y^3)) = (y-1/y)^3 +3 (y-1/y)$

Calculation:

$(y^3-1/(y^3)) = (y - 1/y)3 + 3 (y - 1/y)$

=> $9^3 + 3 \times 9$

=> 729 + 27 = 756(x3−1x3)(x3−1x3)(x3−1x3)(x3−1x3)(x3−1x3)(x3−1x3)(x3−1x3)(x3−1x3)(x3−1x3)(x3−1x3)

The correct option is 2

Q56. Answer: (c) 71 kg

Given:

The average weight of a group of 12 children is 66 kg.

The new average weight = 65 kg

Calculation:

According to the question,

2A - 2X = (66 - 65) × 12

=> A - X = 6

Again,

Total weight of those 12 people and addition of C = 65 kg

So the weight of C = X = 65 kg

weight of A is 65 + 6 = 71 kg.

Therefore The correct option is 3

Q57. Answer: (d) 8.69%

Given:

The Cost price of a book is 92% of its selling price.

Concept used:

Selling price - cost price = profit

Calculation:

Let the selling price is Rs 100

Then cost price is 100 × 92/100 = Rs 92

Profit will be 100 - 92 = Rs 8

Profit percentage,

=> (8/92) × 100 = 8.69%

Therefore The correct option is 4

Q58. Answer: (c) √3 cm, 2√3 cm

Given:

ABC be a triangle whose angle B is at right angle. If angle C = 60° and AB = 3 cm.

Calculation:

In Triangle ABC, AB = 3cm, angle C = 60°

As per the question,

Tan60° = AB /BC

=> BC = 3 /√3

=> BC = √3

Value of AC is $\sqrt{(AB^2 + BC^2)} = \sqrt{(9+3)}$

=> √12 = 2√3 cm

Therefore The correct option is 3

Q59. Answer: (b) 28 : 57

Calculation:

The ratio of the population wil be,

=> 14 × 28 : 19 × 42 = 28 : 57

Therefore The correct option is 2

Q60. Answer: (a) 600

Given:

20% marks = Pass marks - 30 marks.

32% marks = pass marks + 42 marks pass.
Calculation:
Let the total number of exam is 100 units
As per the question,
32 - 20 units = 42+30
=> 12 units = 72
=> 100 units = 600
Therefore The correct option is 1

Q61. Answer: (a) 27

Given:
Radius 9 cm.
Formula used:
Volume of sphere = 4/3 πr^3
Calculation:
So the number of flour laddus will be n
As per the question
=> 4/3 × π × 9 × 9 × 9 = n × 4/3 × π × 3 × 3 × 3
=> n = 27
Therefore The correct option is 1

Q62. Answer: (c) 14472250

Given:
(a3 + b3 + c3 - 3abc), where a = 335, b = 215 and c = 180.
Formula used:
(a3 + b3 + c3 - 3abc) = (a + b + c) × 1/2 × [(a-b)2 + (b-c)2 + (c-a)2]
Calculation:
(a3 + b3 + c3 - 3abc) = (335 + 215 + 180) × 1/2 × $(335-215)^2 + (215-180)^2 + (180-335)^2$
=> 14472250
Therefore The correct option is 3

Q63. Answer: (d) 36

Calculation:
8 sec2 45° + 20 sin2 30° + 15 tan 45°
=> 8 × 2 + 20 × 1/4 + 15
=> 16 +5 + 15 = 36
Therefore The correct option is 4

Q64. Answer: (a) 10

Given:
PQ is a chord of a circle.
XR = 12 cm, PQ = x cm, QR = x - 2 cm
Concept used:
PR/RX = RX/RQ
=> RX^2 = PR × RQ
Calculation:
As per the question,
PR = x + x - 2 = 2x - 2
RQ = x - 2
12^2 = (x - 2) (2x - 2)
144 = (x - 2) (2x - 2)
From that if you put x = 10
Then,

We get, 18 × 8 = 144 cm

Therefore The correct option is 1

Q65. Answer: (a) 5

Given:

The two speeds are 10 km and 5 km respectively.

Time takes 1 hour 30 minutes.

Concept used:

Distance = speed × time

Calculation:

Relative speed for the whole journey,

=> 2 × 10 × 5 / (10+5) = 100/15

=> 20/3

Total Relative distance covered = 20/3 × 3/2

= 10 km

Total distance is 10 / 2 = 5km

Therefore The correct option is 1

Q66. Answer: (a) 4950

Calculation:

The total number of cars assembled by machine C were approved is

=> 550 × 90 /10 = 4950

Q67. Answer: (b) 9/2

Given:

3 : 8 :: x : 12

Calculation:

3 : 8 :: x : 12

=> 8x = 36

=> x = 36/8

=> x = 9/2

Therefore The correct option is 2

Q68. Answer: (c) 67.5 cm

Shortcut Trick

For similar triangles, the ratio of their perimeters is equal to the ratio of their corresponding sides.

Ratio of sides AB : PQ = 12 : 18 = 2 : 3.

Let the perimeter of Δ PQR be x.

=> 45 / x = 2 / 3

=> x = (45 × 3) ÷ 2 = 67.5 cm.

Therefore The correct answer is 67.5 cm.

Alternate Method

Given:

Δ ABC ~ Δ PQR, AB = 12 cm, PQ = 18 cm, and Perimeter(Δ ABC) = 45 cm.

Formula Used:

If two triangles are similar, then the ratio of their perimeters is equal to the ratio of their corresponding sides:

Perimeter(Δ ABC) ÷ Perimeter(Δ PQR) = AB ÷ PQ = BC ÷ QR = AC ÷ PR

Calculations:

=> Let the perimeter of Δ PQR be P2.

=> 45 ÷ P2 = 12 ÷ 18

=> 45 ÷ P2 = 2 ÷ 3

=> 2 × P2 = 45 × 3

=> 2 × P2 = 135

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=> P2 = 135 ÷ 2

=> P2 = 67.5 cm

Therefore The correct answer is 67.5 cm.

Additional Information

Properties of Similar Triangles

If Δ ABC ~ Δ PQR, then the ratio of their corresponding altitudes, medians, and angle bisectors is also equal to the ratio of their corresponding sides.

Ratio of Areas

The ratio of the areas of two similar triangles is equal to the square of the ratio of their corresponding sides: Area(Δ ABC) ÷ Area(Δ PQR) = (AB ÷ PQ)².

AA Similarity Criterion

If two angles of one triangle are respectively equal to two angles of another triangle, then the two triangles are similar (Angle-Angle Similarity).

Q69. Answer: (a) 30°

Given:

MN is the diameter of a circle with center O.

angle PMN = 50° and angle MNS = 35°.

Calculation:

angle P = 90° as an angle in a semi-circle.

So, angle PNM = 90° - 50° = 40°

Similarly angle S = 90° as an angle in semi-circle.

So, angle SMN = 90° - 35° = 55°

So angle PMS = 50° + 55° = 105° and angle PNS = 40° + 35° = 75°

The difference between angle PMS and angle PNS is

=> 105° - 75° = 30°

Therefore The correct option is 1

Q70. Answer: (a) 6√15

Formula used:

Indirect common tangent = √ (distance between the two centers2 - (r1 + r2)2

Calculation:

Indirect common tangent = d cm

As per the formula,

=> d= √ (482 - (24+ 18)2.

Square both sides

=> d2= (482 - (24+ 18)2.

=> d2 = 482 - 42²

=> d² = 90 × 6

=> d = 6√15

Therefore The correct option is 1

Q71. Answer: (d) Rs. 20,837.25

Given:

Total investment = Rs. 18,000, time = 3yrs, rate of interest = 5%

Formula used:

In compound interest,

Amount = Principal × (1 + r / 100)n

Calculation:

As per the question,

Amount = 18000× (1 + 5/ 100)3

18000× (1 + 1/20)3

18000× (21/20)3

=> Rs. 20,837.25

Therefore The correct option is 4

Q72. Answer: (c) 1

Given:

When a number is divided by 7, the remainder is 1.

Calculation:

Let the number is 8 which when divided by 7, the remainder is 1.

So the value of $8^3 = 512$

If we divide 512 by 7 the remainder will be 1

Therefore The correct option is 3

Q73. Answer: (a) 2.7 hours

Given:

Ashima covers a certain distance in 5 hours at a speed of 80 km/h.

Concept used:

Distace = speed × time

Calculation:

Total distance = 80 × 5

=> 400 km

So the time will be, 400 /150 = 2.7 h

Therefore The correct option is 1

Q74. Answer: (c) 20

Given:

15 boys can do it in 28 days

Formula used:

M1D1 = M2D2

Calculation:

28 × 15 = 21 × d

So it would be done by 21 boys by 420/21 = 20 days

Therefore The correct option is 3

Q75. Answer: (d) 39.78%

Given:

A dealer gives a discount of 7% and gives 1 article free on every 25 articles.

The profit = 25%.

Concept used:

Discount is calculated on market price and profit is calculated on cost price.

Calculation:

Let the cost price of each article be 100

then cost price of 26 article is 2600

Selling price of 25 article is

=> 2600 × 125/100 = 3250

So as per the question, value of 93 unit = 3250

Market price is,

=> 3250 × 100 / 93 = 3494.62

The market price of one article is 3494.62 \25 = 139.78

So the market price is 139.78 - 100 = 39.78% high

Therefore The correct option is 4

Q76. Answer: (b) Invulnerable

The solution is in Hindi. Read it online.

Q77. Answer: (c) site

The solution is in Hindi. Read it online.

Q78. Answer: (a) honourable

The solution is in Hindi. Read it online.

Q79. Answer: (c) excitable

The solution is in Hindi. Read it online.

Q80. Answer: (a) on the efficacy under cognitive-behavioural therapy

Here, the erroneous part is "on the efficacy under cognitive-behavioural therapy."

Key Points

• The preposition "under" is incorrect in "on the efficacy under cognitive-behavioural therapy."

• The correct preposition to use is "of."

• Of is a preposition and is commonly introduces prepositional phrases which are complements of nouns, creating the pattern: noun + of + noun.

• Example: Lima is the capital of Peru.

• The sentence should read "on the efficacy of cognitive-behavioural therapy."

• The correct answer is Option 1.

Correct sentence: The current state of the literature on the efficacy of cognitive-behavioural therapy for individuals with generalised anxiety disorder suggests that it is a promising treatment option.

Q81. Answer: (a) a best

Here, the erroneous part is "a best."

Key Points

• The error in the sentence "Honesty is a best policy." lies in the use of the article "a" before the superlative adjective "best."

• In this corrected version, the definite article "the" is used before the superlative adjective "best" to indicate that honesty is the most excellent or advantageous policy among all possible options.

• So "the" should be used instead of "a."

• The correct answer is Option 1.

Correct sentence: Honesty is the best policy.

Q82. Answer: (b) Involuntary

The solution is in Hindi. Read it online.

Q83. Answer: (c) The early bird catches the worm.

The solution is in Hindi. Read it online.

Q84. Answer: (b) plutocracy

The solution is in Hindi. Read it online.

Q85. Answer: (a) athelet's

The solution is in Hindi. Read it online.

Q86. Answer: (b) Did the thief steal the painting?

The correct answer is "Did the thief steal the painting?"

Key Points

• The given sentence is in the Past Continuous Tense and in Passive Voice.

• The rule for changing the Past Continuous Tense from passive to active voice is:

• Interchange the object and subject with each other, i.e., the object of the active sentence becomes the subject of the passive sentence.

• Structure:

• Did + Subject + V1 + Object? (Active Voice)

• Was/were + Object + V3 + by + Subject (Passive Voice)

• Example:

• Did she play the piano? (Active Voice)

• Was the piano played by her? (Passive Voice)

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• The subject of the given sentence is 'painting'.
• The object of the given sentence is 'thief.'
• The subject will be put in place of the object and the object will be put in place of the subject.
• "Piano" is a singular noun, so we must "was" with it.
• Therefore, as per the points mentioned above, we find that the correct answer is Option 2.

Correct Answer: "Did the thief steal the painting?"

Q87. Answer: (b) D, A, C, B

The correct answer is "D, A, C, B."

Key Points

• The sentence is talking about the relationship between our nationality and the nation we live in.
• The sentence should start with the subject, which is "Our nationality" in this case.
• So, the first part is D.
• The next part should be the verb + preposition, which is "based on."
• So, the next part is A.
• Then, we need to add the object, which is "nation that we live in."
• So, the next pair must be CB.
• The sentence is in the present tense in the passive voice.
• The sentence structure is Subject + Verb + Object + Prepositional Phrase.
• The correct answer is Option 2.

Correct sentence: Our nationality is based on the nation that we live in.

Q88. Answer: (c) Admirable

The solution is in Hindi. Read it online.

Q89. Answer: (c) Overwelming

The solution is in Hindi. Read it online.

Q90. Answer: (c) Agony

The solution is in Hindi. Read it online.

Q91. Answer: (c) active

The solution is in Hindi. Read it online.

Q92. Answer: (a) worth his weight in gold

The solution is in Hindi. Read it online.

Q93. Answer: (a) in a first row in the

Here, the erroneous part is "in a first row in the."

Key Points

• The error lies in the part "in a first row in the."
• The error in the sentence is the use of the article "a" before "first row."
• When talking about specific rows, we don't use the indefinite article "a."
• The correct phrase is "in the first row" instead of "in a first row."
• The correct answer is Option 1.

Correct sentence: Poonam usually sits in the first row in the weekend conference hall every week.

Q94. Answer: (b) The job should be applied for before the deadline.

The correct answer is "The job should be applied for before the deadline."

Key Points

• The rule for changing the given sentence from the Active voice to Passive voice:
• Interchange the object and subject with each other, i.e. object of the active sentence becomes the subject of the passive sentence.
• Structure:
• Subject + should + V1 + object (Active Voice)
• Object + should + be + V3 + by Subject (Passive Voice)

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• Example:

• Esha should sing a song. (Active Voice)

• A song should be sung by Esha. (Passive Voice)

• "Should" is a modal verb.

• They are used with the base form of the main verb (They should go; I should ask her).

• Therefore, the correct answer is Option 2.

Correct sentence: The job should be applied for before the deadline.

Q95. Answer: (a) RQPS

The correct answer is "RQPS."

Key Points

• While arranging the parts of the sentence given in options, we have to find some grammatical or contextual connections between them, so let's find out.

• In this sentence, we can see that there are different parts like Subject, indirect object, subject of subordinating clause and verb, indirect object, and direct object.

• The sentence talks about the view from a moving train in Texas.

• The first part of the sentence is "the great Pullman was whirling onward" which sets the scene.

• The second part is "with such dignity of motion" which describes the movement of the train.

• The third part is "that the plains of Texas were pouring eastward" which describes the view from the train window.

• The fourth part is "that a glance from the window seemed simply to prove" which suggests that the view was so spectacular that a mere glance was enough to appreciate it.

• The correct answer is Option 1.

Correct sentence: The great Pullman was whirling onward with such dignity of motion that a glance from the window seemed simply to prove that the plains of Texas were pouring eastward.

Q96. Answer: (b) alone

The solution is in Hindi. Read it online.

Q97. Answer: (d) around

The solution is in Hindi. Read it online.

Q98. Answer: (b) notice

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Q99. Answer: (b) possible

The solution is in Hindi. Read it online.

Q100. Answer: (d) parents

The solution is in Hindi. Read it online.

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