SSC CHSL Tier-1 2024: Official Paper (Held On: 03 Jul, 2024 Shift 1) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2024 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. 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. If you don't find any error, mark 'No error' as your answer.

Ramya is working / hardly / to get good marks.

(a) hardly
(b) Ramya is working
(c) to get good marks
(d) No error

Q2. Parts of the following sentence have been given as options. Select the option that contains an error.

His mother's transfer from a small town to Delhi brought up a huge change in his schooling.

(a) His mother's transfer
(b) from a small town to Delhi
(c) brought up a huge change
(d) in his schooling.

Q3. Identify the error in the given sentence and select the correct sentence from the given options.

Petrified wood is type of fossilised wood that exhibits the original details of the wood.

(a) Petrified wood is a type of fossilised wood that exhibits the original details of the wood.
(b) A petrified wood is type of fossilised wood that exhibits an original details of the wood
(c) The petrified wood is the type of fossilised wood that exhibits a original details of the wood.
(d) Petrified wood is the type of fossilised wood that exhibits a original details of the wood.

Q4. 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. If you don't find any error, mark 'No error' as your answer.

Mrs. Meera and family / received his letter / a week ago.

(a) No error
(b) received his letter
(c) Mrs. Meera and family
(d) a week ago

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.

On the afternoon of 30 March 1981, many Americans experienced a (i)_____ of déjà-vu. Déjà-vu is a name given to the feeling that a person has seen or experienced an event before. Many Americans could not help having that feeling on this day. The (ii) ____ hit TVs and radios immediately. President Ronald Raegan had been shot. He was leaving a hotel in Washington DC, turned to wave at some of the people gathered to see him, and fell towards the ground. Before he could hit the ground, his Secret Service Agents (iii) ____ him into the car and rushed to the nearest hospital. This same story had been heard before. On 22 November 1963 President John F Kennedy was riding in a motorcade through Dallas, Texas. He smiled and waved to the crowd

that had gathered to see him. (iv) ____ rang out from a nearby building. The President collapsed into the backseat of the car and was immediately taken to the nearest hospital. He was (v) _____ dead at the hospital. Now, just seventeen years later, the news sounded eerily the same.

Q5. Select the most appropriate option to fill in blank No. (i).

(a) feeling
(b) blinking
(c) recalling
(d) dealing

Q6. Select the most appropriate option to fill in blank No. (ii).

(a) news
(b) arrow
(c) sceptre
(d) ball

Q7. Select the most appropriate option to fill in blank No. (iii).

(a) whisked
(b) pulled
(c) pushed
(d) called

Q8. Select the most appropriate option to fill in blank No. (iv).

(a) Alarm
(b) Music
(c) Prayers
(d) Shots

Q9. Select the most appropriate option to fill in blank No. (v).

(a) shot
(b) pronounced
(c) acting
(d) almost

Q10. Select the INCORRECTLY spelt word.

(a) Aspirant
(b) Ommision
(c) License
(d) Autonomous

Q11. Select the most appropriate option that can substitute the underlined segment in the given sentence

The woman lost much to her body weight due to diabetes.

(a) from her body weight due to
(b) of her body weight due to
(c) for her body weight due to
(d) off her body weight due to

Q12. Select the appropriate meaning of the given idiom.

Last resort

(a) Last course of action
(b) Last hotel on the way
(c) Last friend remaining
(d) Last ride

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Q13. Select the most appropriate synonym of the given word.

Abscond

(a) Stay
(b) Flee
(c) Avoid
(d) Annoy

Q14. Select the most appropriate synonym of the given word.

Confidential

(a) Limited
(b) Secret
(c) Open source
(d) Public

Q15. Select the most appropriate option that can substitute the underlined segment in the given sentence.

Gulliver hear his watch ticking in his pocket.

(a) could hear his watch ticked
(b) watch ticking
(c) could hear his watch ticking
(d) heard his watch tickling

Q16. Identify the most appropriate ANTONYM of the given word.

Lenient

(a) Strict
(b) Kind
(c) Rowdy
(d) Rude

Q17. Select the most appropriate spelling of the underlined word in the given sentence.

Nobody could move on after such a scandlous allegation is made on them.

(a) scandalous
(b) scendolous
(c) skandelous
(d) scandelous

Q18. Select the most appropriate option that can substitute the underlined segment in the given sentence.

In every country of the world, primary caregivers are the women of children and elders.

(a) women are the primary caregivers of
(b) primary caregivers women are of the
(c) women are the caregivers primary of
(d) the women primary caregivers are of

Q19. Select the most appropriate synonym of the bracketed word in the following sentence to fill in the blank.

Lead paint is an environmental _____ (danger) and can harm children.

(a) conflict
(b) hazard
(c) empathy
(d) toil

Q20. Select the most appropriate synonym of the given word.

Interpret

(a) Complicate
(b) Clarify
(c) Cleanse

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(d) Celebrate

Q21. Select the most appropriate ANTONYM of the given word.

Adverse

(a) Striking
(b) Propitious
(c) Critical
(d) Listless

Q22. Read the sentence carefully and select the synonym of the underlined word from the given alternatives.

The Television show was hosted by a young and vivacious woman called Laura.

(a) Liberal
(b) Legendary
(c) Energetic
(d) Atrocious

Q23. Choose the most appropriate meaning of the given idiom.

Ace in the hole

(a) A second chance to do something
(b) A lot to do
(c) On the point of
(d) A hidden advantage

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

She _____ gracefully and greeted the interview committee with respect.

(a) leered
(b) grinned
(c) smiled
(d) smirked

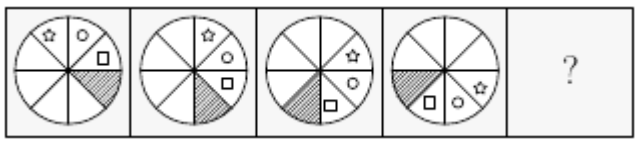
Q25. Select the most appropriate option that can substitute the underlined segment in the given sentence.

I will require a quiet room to work at.

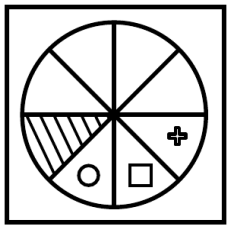
(a) with
(b) about
(c) on
(d) in

GENERAL INTELLIGENCE

Q26. Identify the figure in the options that when put in place of the question mark (?) will logically complete the series?

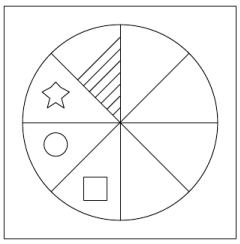


(a)

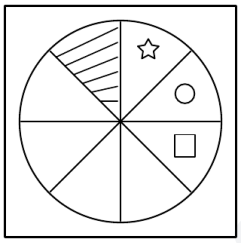


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(b)



(c)



(d)



Q27. 'Z + Y' means 'Z is the father of Y'
'Z – Y' means 'Z is the mother of Y'
'Z × Y' means 'Z is the brother of Y
' 'Z ÷ Y' means 'Z is the sister of Y'.
What does 'A × B – C' mean?

(a) A is the father's father of C
(b) A is the father's brother of C
(c) A is the father of C
(d) A is the mother's brother of C

Q28. If 15 January 2019 was a Tuesday, then what day of the week was it on 29 January 2020?

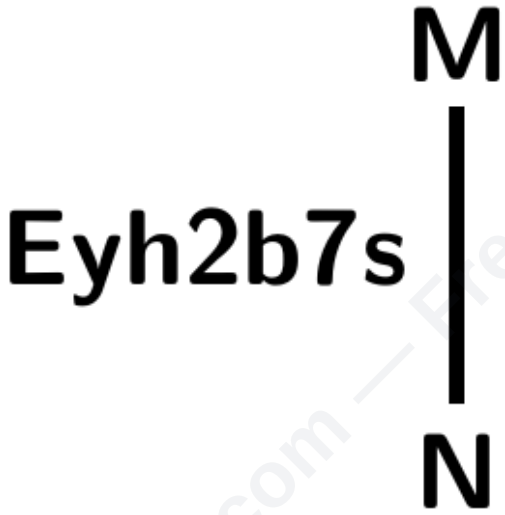
(a) Friday
(b) Tuesday
(c) Wednesday
(d) Thursday

Q29. HJKN is related to EGHK in a certain way based on the English alphabetical order. In the same way, QSTW is related to NPQT. To which of the following is IKLO related, following the same logic?

(a) FHIL
(b) FGIL
(c) FHIK
(d) FHJL

Q30. Select the correct mirror image of the given figure when the mirror is placed at MN as shown below.

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(a)



(b)



(c)



(d)



Q31. Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(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.)

(10, 20, 4)

(15, 30, 6)

(a) (20, 40, 8)
(b) (20, 30, 8)
(c) (20, 40, 6)
(d) (10, 40, 8)

Q32. What will come in the place of '?" in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

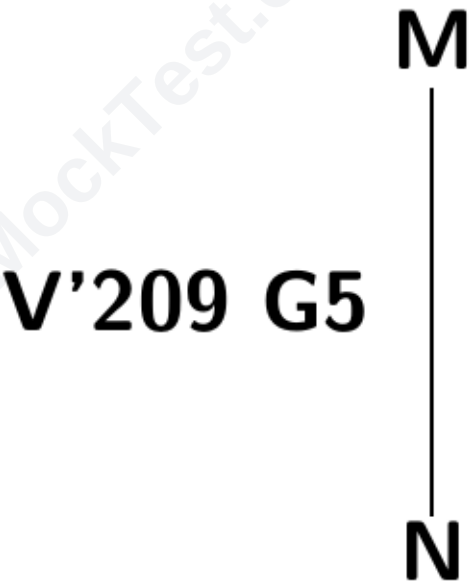
66 × 11 - 26 + 3 ÷ 9 = ?

(a) 15
(b) 5
(c) 8
(d) 11

Q33. In a certain code language. 'MENIAL' is coded as 'NIEAML' and 'INCOME' is coded as 'CONMIE'. What is the code for 'FOREGO' in the given code language?

(a) OGEROF
(b) OFOREG
(c) FOGERO
(d) REOGFO

Q34. Select the correct mirror image of the given figure when the mirror is placed at MN as shown below.



(a)



(b)



(c)



(d)

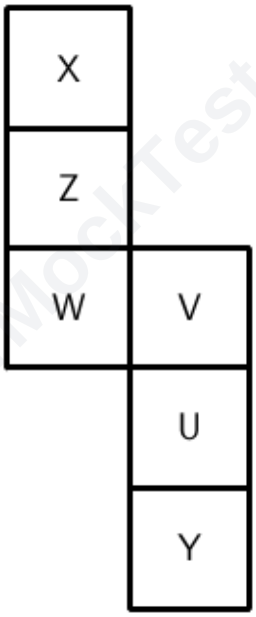


Q35. What should come in place of the question mark (?) in the given series?

499, 498, 490, 463, 399, ?

(a) 274
(b) 276
(c) 273
(d) 275

Q36. What is opposite to 'V' when the given figure is folded to form a cube?



(a) Y
(b) Z
(c) X
(d) W

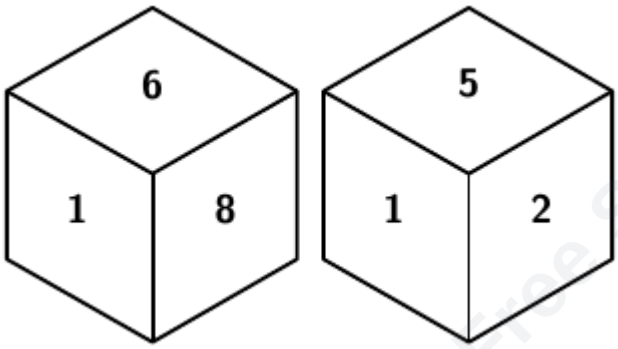
Q37. What will come in the place of the question mark (?) in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

333 × 3 + 11 - 5 ÷ 5 = ?

(a) 175
(b) 192
(c) 152
(d) 125

Q38. Six numbers 1, 2, 5, 6, 8 and 9 are written on different faces of a dice. Two positions of this dice are shown in the figure, Which is the number on the face opposite to the face containing 8?

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(a) 5
(b) 9
(c) 2
(d) 1

Q39. Which of the following letter numeric clusters will replace the question mark (?) in the given series to make it logically complete?

JX 26, KY 31,?, PD47, TH58

(a) NB 37
(b) MA 38
(c) MB 37
(d) NA 38

Q40. Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the letter-cluster that is different.

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

(a) RWVU
(b) PUTS
(c) AFED
(d) IMNL

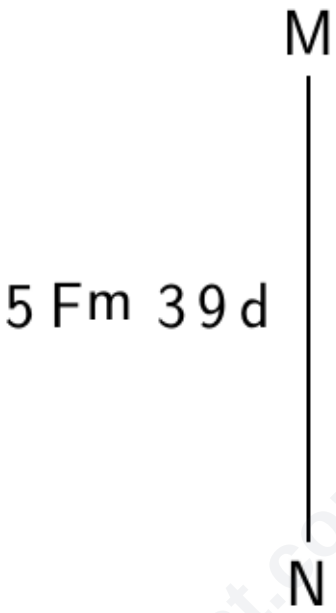
Q41. Select the correct option that when filled in the blanks in the same sequence will make the series logically complete.

TRIC_TRI_KT_IWK_R_TK

(a) KZRTI
(b) KIRTA
(c) KBTIR
(d) KATIR

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

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(a)



(b)

(c)

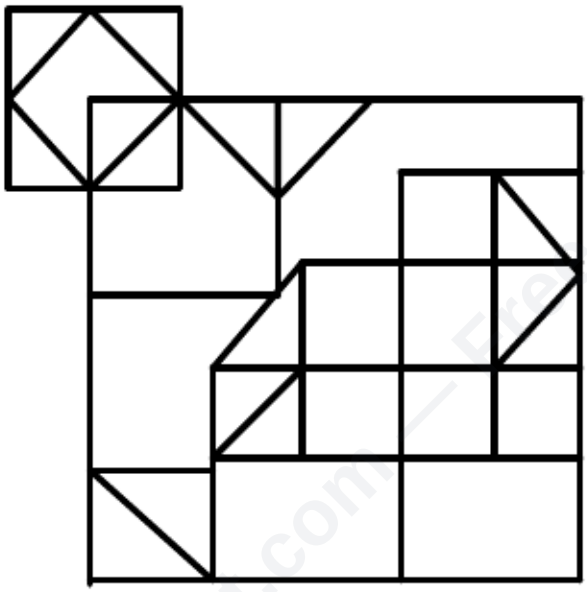


(d)



Q43. How many triangles are there in the given figure?

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(a) 13
(b) 14
(c) 11
(d) 12

Q44. Which of the following numbers will replace the question mark (?) in the given series?

549 482 439 372 329 262 219 ?

(a) 132
(b) 162
(c) 152
(d) 149

Q45. In a certain code language, ‘mobile switched off” is written as ‘rq mg or’ and ‘turn off light’ is written as ‘my cp rq’. How is ‘off’ written in the given language?

(a) cp
(b) mg
(c) rq
(d) cr

Q46. 72 is related to 96 following a certain logic. Following the same logic, 66 is related to 88. Which of the following numbers is related to 104 using the same logic?

(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 / subtracting/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) 80
(b) 78
(c) 75
(d) 77

Q47. Three statements are followed by conclusions numbered I, II. You have to consider these statements to be true, even if they seem to be at variance with commonly known facts. Decide which of the given conclusions logically follow/s from the given statement.

Statements:

All paints are houses.

All houses are wood.

Some streets are wood.

Conclusion (I): Some streets are houses.

Conclusion (II): All paints are wood.

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

Q48. What should come in place of the question mark (?) in the given series based on the English alphabetical order?

ECZ, HFC, KIF, NLI, ?

(a) QLO
(b) OQL
(c) QOL
(d) OLQ

Q49. If 3 April 1996 was Wednesday, then what was the day of the week on 7 April 2001?

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

Q50. What will come in the place of the question mark (?) in the following equation. if '+' and '÷' are interchanged and '×' and '-' are interchanged?

16 - 33 + 11 ÷ 22 × 5 = ?

(a) 65
(b) 60
(c) 62
(d) 69

QUANTITATIVE APTITUDE

Q51. In a circle with centre O, ABC is a secant intersecting the circle at A and B and DC is a tangent to the circle at D. If DC = 12 cm and BC = 6 cm, then the length of AB is equal to:

(a) 20 cm
(b) 22 cm
(c) 18 cm
(d) 16 cm

Q52. A retail fruit vendor buys a score of apples for Rs. 400 and retails them for Rs. 264 at a dozen. What was his loss/gain per cent? (a score = 20 no's)

(a) 10% profit
(b) 20% profit
(c) 10% loss
(d) 5% loss

Q53. The marked price of an article is Rs. 600. A shopkeeper purchased it on two successive discounts of 10% and 20%. He spent Rs. 68 on transportation and sold the article for Rs. 600. Find his gain or loss percentage.

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

Q54. A and B are centres of two circles of radii 32 cm and 8 cm, respectively. CD is a direct common tangent to the circles. If the length of AB = 30 cm, then the length of CD will be:

(a) 20 cm
(b) 18 cm

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(c) 10 cm
(d) 9 cm

Q55. The following table shows the production of cars in a company from 2016 to 2020.

Years	2016	2017	2018	2019	2020
A	30	23	39	25	18
B	16	10	14	12	8
C	15	18	19	25	30
D	31	12	21	19	20

There was a continuous increase in the production of cars of which type during the period 2016 ta 2020?

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

Q56. If the radius of a sphere is doubled, then the volume of the sphere becomes _____ times the previous volume.

(a) two
(b) four
(c) eight
(d) one

Q57. The length of the portion of the straight line 5x + 12y = 60 intercepted between the axes is:

(a) 12
(b) 13
(c) 17
(d) 5

Q58. In an election between two candidates, a candidate who gets 78% of the votes is elected by a majority of 448 votes. What is the total number of votes polled?

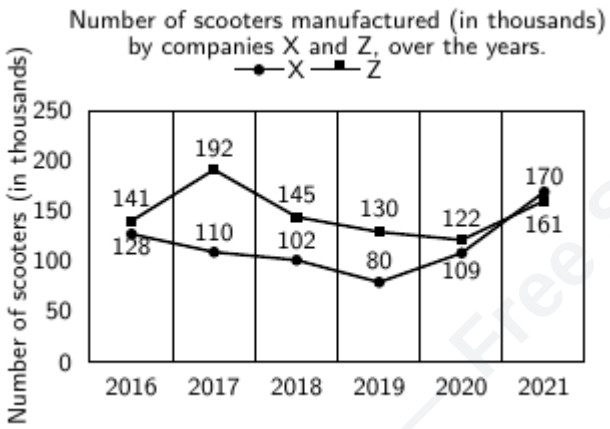
(a) 850
(b) 700
(c) 750
(d) 800

Q59. An 8 digit number is divisible by 99. If the digits are shuffled, then the number is always divisible by _____.

(a) 6
(b) 5
(c) 11
(d) 9

Q60. The given line graph shows the number of scooters manufactured (in thousands) by companies X and Z, over the years.

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What is the approximate difference between the total production by companies X and Z in the given years?

(a) 292000
(b) 205000
(c) 210000
(d) 192000

Q61. When a number is divided by 512 it leaves a remainder 67. If the same number is divided by 32, then what will be the remainder?

(a) 4
(b) 0
(c) 5
(d) 3

Q62. In an election between two candidates, the defeated candidate secured 42% of the valid votes polled and lost the election by 2545800 votes. If 365500 votes were declared invalid and 30% people did not cast their vote, what was the approximate number of people (in millions) in the electorate who did NOT cast their votes?

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

Q63. $(\cot\theta + \tan\theta)(\text{cosec}\,\theta - \sin\theta)(\cos\theta - \sec\theta)$ = _____.

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

Q64. Two stations T1 and T2 300 km apart. A car starts from station T1 at 8 am and moves towards station T2 at a speed of 45 km/hr. and at 10 am another car starts from station T2 towards T1 at a speed of 60 km/hr. Then the cars will meet at:

(a) 1:00 p.m.
(b) 10:00 a.m.
(c) 12:00 p.m.
(d) 11:00 a.m.

Q65. Monthly expenditure of Ritvik decreases from Rs. 12,800 to Rs. 11,712. Find the percentage decrease in his expenditure.

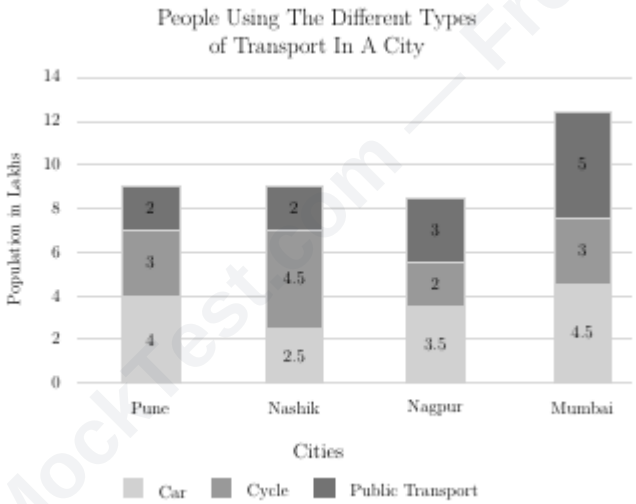
(a) 8.5%
(b) 9.25%
(c) 6.25%
(d) 7.7%

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Q66. A bus driver must complete a 240 km trip in 4 hours. If he averages 70 km an hour for the first 3 hours of his trip. how fast must he travel (in km/h) in the last/final hour?

(a) 35
(b) 50
(c) 30
(d) 60

Q67. Study the given chart based on the population using different types of transport in the given cities. Assuming that no person uses more than one type of transport, answer the question that follows.



What is the percentage of people using all types of transportation in Pune to the total number of people using all types of transportation in all cities?

(a) 33.08%
(b) 23.08%
(c) 28.08%
(d) 22.08%

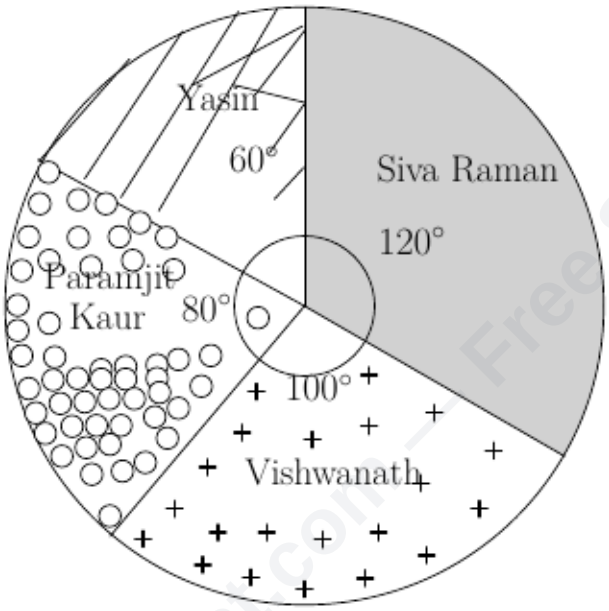
Q68. What is the present worth of Rs. 2,400 due in 4 years at a rate of 5% simple interest per annum?

(a) Rs. 2,200
(b) Rs. 2,240
(c) Rs. 2,456
(d) Rs. 2,000

Q69. Study the given pie-chart and answer the question that follows.

The pie-chart represents the total number of valid votes obtained by four students who contested for school leadership. The total number of valid votes polled was 720.

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What is the minimum number of votes obtained by any candidate?

(a) 160
(b) 200
(c) 240
(d) 120

Q70. Joey completed the school project in 15 days. How many days will Tim take to complete the same work if he is 25% more efficient than Joey?

(a) 12 days
(b) 10 days
(c) 8 days
(d) 16 days

Q71. If a circle whose centre is (2, 3) touches the line 4x + 3y - 7 = 0, then the radius of the circle is:

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

Q72. Among the ratios 3 : 4, 5 : 8, 1 : 2, 6 : 9 which is the greatest?

(a) 5 : 8
(b) 1 : 2
(c) 6 : 9
(d) 3 : 4

Q73. In ΔPQR, S and T are points on PQ and PR, respectively, such that ST || QR and ST divides the ΔPQR into two parts of equal areas. Then the ratio of PS and QS is:

(a) 1 : √2
(b) 1 : 1
(c) 1 : √2 + 1
(d) 1 : √2 - 1

Q74. The heights of two cones are in the ratio of 5 : 3 and their radii are in the ratio 6 : 5. Find the ratio of their volumes.

(a) 13 : 5
(b) 11 : 5
(c) 12 : 5
(d) 10 : 5

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Q75. The internal length, breadth and height of a cardboard box are 6 cm, 10 cm and 12 cm, respectively. How many boxes are needed in which cubes whose volume is 2160 cm^3 can be packed?

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

GENERAL AWARENESS

Q76. Which of the following Indian classical dances has originated from Andhra Pradesh?

(a) Kathakali
(b) Kuchipudi
(c) Odissi
(d) Mohiniattam

Q77. Which of the following statements is correct with respect to the Badminton game and match length?

(a) A match consists of the best of four games of 21 points.
(b) A match consists of the best of three games of 21 points.
(c) A match consists of the best of two games of 21 points.
(d) A match consists of the best of five games of 21 points.

Q78. Who was the first female Indian wrestler to win Gold at the Commonwealth Games?

(a) Geeta Phogat
(b) Babita Phogat
(c) Sakshi Malik
(d) Alka Tomar

Q79. Which state is introduced India's first 'Right to Health Care Act, 2022'?

(a) Rajasthan
(b) Chhattisgarh
(c) Kerala
(d) Assam

Q80. In 2000-01, NABARD instituted Micro Finance Development Fund with a corpus of _____.

(a) Rs. 189 crores
(b) Rs. 150 crores
(c) Rs. 245 crores
(d) Rs. 100 crores

Q81. Jamshedi Navroz is a festival of _____ community.

(a) Jain
(b) Parsi
(c) Hindu
(d) Christian

Q82. _____ Fundamental Duties were added in Part-IV-A of the Constitution under Article 51-A in the year 1976 through the 42^(nd) Constitutional Amendment.

(a) Ten
(b) Twelve
(c) Nine
(d) Eight

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Q83. Which folk music of Jammu and Kashmir is sung in wedding ceremonies?

(a) Panihari
(b) Alha
(c) Wanawun
(d) Baul

Q84. Which from following unemployment scheme was extended by the government of India for a period of two years from July 2022 to June 2024?

(a) Atal Beemit Vyakti Kalyan Yojana
(b) Aatmanirbhar Bharat Rojgar Yojana
(c) Pradhan Mantri Berojgari Bhatta Yojana
(d) Grameen Udyami Yojana

Q85. The Ghadar Party was founded in _____ by Sohan Singh Bhakna, Kanshi Ram, Harnam Singh Tundilat, Lala Har Dayal and others.

(a) 1901
(b) 1913
(c) 1910
(d) 1905

Q86. Which is the largest part of the northern plains and is formed of older alluvium?

(a) Khadar
(b) Bhangar
(c) Terai
(d) Bhabar

Q87. Match the following names of primitive forms of cultivation in different states correctly.

States	Name of Primitive form of cultivation		
1.	Madhya Pradesh	a.	Penda
2.	Andhra Pradesh	b.	Bewar
3.	Odisha	c.	Kuruwa
4.	Jharkhand	d.	Bringa

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

Q88. Which of the following statements about climate is INCORRECT?

(a) ‘Monsoon’ type of climate is found mainly in south and southeast Asia.
(b) India’s climate has characteristics of tropical as well as subtropical climates.
(c) Coastal areas of India experience less contrasts in temperature conditions as compared to the interior of the country.
(d) India experiences comparatively stronger winters as compared to central Asia.

Q89. The Yakshagana is the dance-drama primarily associated with which of the following states?

(a) Karnataka
(b) Bihar
(c) Himachal Pradesh
(d) Odisha

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Q90. According to the Census of India, who are considered to be literates?

(a) Person aged five and above, who can both read and write with understanding in any language
(b) Person aged fifteen and above, who can both read and write with understanding in any language
(c) Person aged eighteen and above, who can both read and write with understanding in any language
(d) Person aged seven and above, who can both read and write with understanding in any language

Q91. What kind of technology is most frequently used to manage and digitise e-land records?

(a) Geographic Information System (GIS)
(b) Augmented Reality (AR)
(c) Virtual Reality (VR)
(d) Blockchain

Q92. According to Census of India 2011, which of the following states recorded the least population?

(a) Gujarat
(b) Sikkim
(c) Tamil Nadu
(d) Punjab

Q93. Certiorari comes under the:

(a) right against exploitation
(b) right to religious freedom
(c) right to constitutional remedies
(d) right to equality

Q94. What is the main sense organ that virtual reality displays are aiming for?

(a) Touch
(b) Taste
(c) Smell
(d) Vision

Q95. Balban followed the tradition of ‘Sijda and Pabos’ from which of following traditions?

(a) Chinese
(b) Persian
(c) Mangol
(d) Roman

Q96. Which of the following statements are true?

i. The First Five-Year Plan was based on the PC Mahalanobis model.
ii. The First Five-Year Plan laid emphasis on agriculture development.
iii. The Five-Year planning model in India was borrowed from Russia.

(a) i, ii and iii
(b) Only i and iii
(c) Only ii and iii
(d) Only i and ii

Q97. In May 2023, the Supreme Court of India issued a set of directions to strengthen the POSH Act. To which of the following is this Act related?

(a) Sexual harassment of women at workplace
(b) Child trafficking
(c) Food security
(d) Amenities in jails

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Q98. Indian athlete Shaili Singh won bronze medal in women's long jump at the Golden Grand Prix 2023 athletics meet held at _____.

(a) Singapore
(b) Malaysia
(c) Japan
(d) South Korea

Q99. Which of the following enzymes are essential of DNA replication in an animal cell?

(a) Reverse transcriptase, DNA polymerase, Ligase
(b) Reverse transcriptase, RNA polymerase, Ligase
(c) Topoisomerase, DNA ligase, DNA polymerase, DNA primase
(d) Reverse transcriptase, DNA polymerase, DNA primase

Q100. In which year did Hans Christian Oersted discover that a compass needle gets deflected when an electric current passes through a metallic wire placed nearby?

(a) 1826
(b) 1820
(c) 1824
(d) 1822

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (a) hardly

The correct answer is Option 1.

Key Points

• The primary issue in the sentence is the use of the word "hardly."
• The word "hardly" means "barely" or "scarcely," which does not fit the context of the sentence.
• The correct word should be "hard" to convey that Ramya is putting in a lot of effort.
• Thus, the error is located in Option 1 of the sentence.

Therefore, the correct answer is Option 1.

Correct Sentence: "Ramya is working hard to get good marks."

Additional Information

• Ramya is working – This part of the sentence is grammatically correct and does not require any changes.
• to get good marks – This part of the sentence is grammatically correct and does not require any changes.
• No error – This would be the correct option if there were no mistakes in the sentence, but there is an error in Option 1.

Q2. Answer: (c) brought up a huge change

The correct answer is Option 3.

Key Points

• The phrase "brought up a huge change" is incorrect.

• The correct phrase should be "brought about a huge change."

• "Brought about" is the correct phrasal verb to indicate causing something to happen.

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

Therefore, the correct answer is Option 3.

Correct Sentence: "His mother’s transfer from a small town to Delhi brought about a huge change in his schooling."

Additional Information

• Option 1: "His mother’s transfer," – This part of the sentence is grammatically correct and does not require any changes.

• Option 2: "from a small town to Delhi," – This part of the sentence is grammatically correct and does not require any changes.

• Option 4: "in his schooling." – This part of the sentence is grammatically correct and does not require any changes.

Q3. Answer: (a) Petrified wood is a type of fossilised wood that exhibits the original details of the wood.

The correct answer is Option 1.

Key Points

• The primary issue in the sentence is the omission of the article "a" before the term "type of fossilised wood."

• Singular countable nouns typically require an article ("a" or "an").

• The correct phrase should be "a type of fossilised wood," ensuring grammatical correctness and clarity.

• Thus, the error is located in the original sentence.

Therefore, the correct answer is Option 1.

Correct Sentence: "Petrified wood is a type of fossilised wood that exhibits the original details of the wood."

Additional Information

• Option 2: "A petrified wood is type of fossilised wood that exhibits an original details of the wood" – This option contains multiple errors, including the use of "A petrified wood" and "an original details."

• Option 3: "The petrified wood is the type of fossilised wood that exhibits a original details of the wood." – This option incorrectly uses "The petrified wood" and "a original details."

• Option 4: "Petrified wood is the type of fossilised wood that exhibits a original details of the wood." – This option incorrectly uses "the type" and "a original details."

Q4. Answer: (a) No error

The correct answer is Option 1.

Key Points

• The sentence, "Mrs. Meera and family received his letter a week ago," is grammatically correct.

• All parts of the sentence are properly constructed and there is no grammatical error.

• Therefore, there is no correction needed in any part of the sentence.

Therefore, the correct answer is No error.

Correct Sentence: "Mrs. Meera and family received his letter a week ago."

Additional Information

• Option 2: "received his letter" – This part of the sentence is grammatically correct and does not require any changes.

• Option 3: "Mrs. Meera and family" – This part of the sentence is grammatically correct and does not require any changes.

• Option 4: "a week ago" – This part of the sentence is grammatically correct and does not require any changes.

Q5. Answer: (a) feeling

The solution is in Hindi. Read it online.

Q6. Answer: (a) news

The solution is in Hindi. Read it online.

Q7. Answer: (a) whisked

The solution is in Hindi. Read it online.

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Q8. Answer: (d) Shots

The solution is in Hindi. Read it online.

Q9. Answer: (b) pronounced

The solution is in Hindi. Read it online.

Q10. Answer: (b) Ommision

The solution is in Hindi. Read it online.

Q11. Answer: (b) of her body weight due to

The correct answer is Option 2.

Key Points

• The preposition "of" correctly connects "lost much" with "her body weight."

• The phrase "much of her body weight" is the idiomatic expression that should be used here.

• The correct construction ensures clarity and correctness in the sentence.

Therefore, the correct answer is Option 2.

Correct Sentence: "The woman lost much of her body weight due to diabetes."

Additional Information

• Option 1: "from her body weight due to" – "From" is not a suitable preposition in this context.

• Option 3: "for her body weight due to" – "For" is not a suitable preposition in this context.

• Option 4: "off her body weight due to" – "Off" is not a suitable preposition in this context.

Q12. Answer: (a) Last course of action

The solution is in Hindi. Read it online.

Q13. Answer: (b) Flee

The solution is in Hindi. Read it online.

Q14. Answer: (b) Secret

The solution is in Hindi. Read it online.

Q15. Answer: (c) could hear his watch ticking

The correct answer is Option 3)

Key Points

• The primary issue in the sentence is that it is missing the auxiliary verb "could" to correctly convey the past ability to hear the watch ticking.

• The correct form should be "could hear his watch ticking" to ensure grammatical correctness.

• The use of "could" indicates a past ability, which aligns with the context of the sentence.

Therefore, the correct answer is Option 3.

Correct Sentence: "Gulliver could hear his watch ticking in his pocket."

Additional Information

• Option 1: "could hear his watch ticked" – Incorrect because "ticked" is the past tense form and does not fit here.

• Option 2: "watch ticking" – Incorrect because it does not resolve the issue of the missing auxiliary verb "could."

• Option 4: "heard his watch tickling" – Incorrect because "tickling" is the wrong verb form and changes the meaning of the sentence.

Hence, the correct statement is: "Gulliver could hear his watch ticking in his pocket."

Q16. Answer: (a) Strict

The solution is in Hindi. Read it online.

Q17. Answer: (a) scandalous

The correct answer is: Scandalous.

Key Points

• "Scandalous" is the correct spelling of the word in the given sentence.

• The word "scandalous" refers to something that causes public outrage or shock due to its improper or immoral nature.

• Example: Nobody could move on after such a scandalous allegation is made on them.

Therefore, the correct answer is: Option 1 i.e. scandalous.

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Additional Information

Here are the other options explained along with their Hindi meanings and example sentences:

• Scendolous: This is an incorrect spelling and does not have a meaning.

• Skandelous: This is an incorrect spelling and does not have a meaning.

• Scandelous: This is an incorrect spelling and does not have a meaning.

Q18. Answer: (a) women are the primary caregivers of

The correct answer is 'women are the primary caregivers of'.

Key Points

• The primary issue in the sentence is the incorrect placement of the words, which affects the clarity and grammatical structure.

• The correct phrase should be "women are the primary caregivers of," ensuring grammatical correctness and clarity.

• Thus, the error is located in the original underlined segment of the sentence.

Therefore, the correct answer is Option 1.

Correct Sentence: "In every country of the world, women are the primary caregivers of children and elders."

Additional Information

• Option 2: "primary caregivers women are of the" – This option is grammatically incorrect as it disrupts the logical flow of the sentence.

• Option 3: "women are the caregivers primary of" – This option is also grammatically incorrect due to improper word order.

• Option 4: "the women primary caregivers are of" – This option is grammatically incorrect and awkward in structure.

Q19. Answer: (b) hazard

The solution is in Hindi. Read it online.

Q20. Answer: (b) Clarify

The solution is in Hindi. Read it online.

Q21. Answer: (b) Propitious

The solution is in Hindi. Read it online.

Q22. Answer: (c) Energetic

The solution is in Hindi. Read it online.

Q23. Answer: (d) A hidden advantage

The solution is in Hindi. Read it online.

Q24. Answer: (c) smiled

The solution is in Hindi. Read it online.

Q25. Answer: (d) in

The correct answer is in.

Key Points

• The primary issue in the sentence is the use of the preposition "at" with the verb "work."

• The correct preposition to use in this context is "in," indicating the place where the work will take place.

• The correct phrase should be "to work in."

• Thus, the error is located in the prepositional phrase of the sentence.

Therefore, the correct answer is Option 4.

Correct Sentence: "I will require a quiet room to work in."

Additional Information

• Option 1: "with" – This preposition does not fit the context of the sentence and would be grammatically incorrect.

• Option 2: "about" – This preposition does not fit the context of the sentence and would be grammatically incorrect.

• Option 3: "on" – This preposition is often used with tasks or projects but not with the place where work is done.

Q26. Answer: (d) [figure]

The logic followed here is :

1) For '

' element → Rotating in the anti-clockwise direction subsequently.

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Thus, the final series is :

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

Q27. Answer: (d) A is the mother's brother of C

Decoding the Symbols:

Z is				
Symbol	•	•	×	÷
Meaning	Father	Mother	Brother	Sister
to Y				

Given : A × B – C

A × B → A is the brother of B.

B – C → B is the mother of C.

So,

Option - (1): A is the father's father of C → Incorrect, as A is the maternal uncle of C.

Option - (2): A is the father's brother of C → Incorrect, as A is the maternal uncle of C.

Option - (3): A is the father of C → Incorrect, as A is the maternal uncle of C.

Option - (4): A is the mother's brother of C → Correct

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

Q28. Answer: (c) Wednesday

Given: 15 January 2019 was Tuesday.

Now,

2019 to 2020 = 1 Year (1 Ordinary Year).

And, In 1 Year = 1 Ordinary Year.

then, 15 January 2020 will be Tuesday + 1 = Wednesday.

Now, the number of days between 15 January 2020 to 29 January 2020

= 14 days.

= 14 days → 14/7 = 2 weeks and 0 odd day.

So, 29 January 2020 will be Wednesday.

Hence, the correct answer is "Option 3".

Q29. Answer: (a) FHIL

The logic followed here is: (3) is subtracted from the position values according to the English alphabetic series.

So,

HJKN is related to EGHK

And,

QSTW is related to NPQT

Similarly,

IKLO is related to

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

Q30. Answer: (d) [figure]

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 4".

Q31. Answer: (a) (20, 40, 8)

The logic followed here is : [(1st number × 2) + 2nd number] ÷ 10 = 3rd number

Given :

(10, 20, 4)

[(10 × 2) + 20] ÷ 10 = 4

[20 + 20] ÷ 10 = 4

40 ÷ 10 = 4

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4 = 4 (LHS = RHS)
And,
(15, 30, 6)
[(15 × 2) + 30] ÷ 10 = 6
[30 + 30] ÷ 10 = 6
60 ÷ 10 = 6
6 = 6 (LHS = RHS)
So,
Option - (1) : (20, 40, 8)
[(20 × 2) + 40] ÷ 10 = 8
[40 + 40] ÷ 10 = 8
80 ÷ 10 = 8
8 = 8 (LHS = RHS)
Option - (2) : (20, 30, 8)
[(20 × 2) + 30] ÷ 10 = 6
[40 + 30] ÷ 10 = 6
70 ÷ 10 = 6
7 ≠ 6 (LHS ≠ RHS)
Option - (3) : (20, 40, 6)
[(20 × 2) + 40] ÷ 10 = 6
[40 + 40] ÷ 10 = 6
80 ÷ 10 = 6
8 ≠ 6 (LHS ≠ RHS)
Option - (4) : (10, 40, 8)
[(10 × 2) + 40] ÷ 10 = 8
[20 + 40] ÷ 10 = 8
60 ÷ 10 = 8
7 ≠ 8 (LHS ≠ RHS)
Hence, "Option - (1)" is the correct answer.

Q32. Answer: (b) 5

Given : 66 × 11 - 26 + 3 ÷ 9 = ?
After '+' and '-' are interchanged and '×' and '÷' are interchanged then,
=> 66 ÷ 11 + 26 - 3 × 9 = ?
=> 6 + 26 - 3 × 9 = ?
=> 32 - 27 = 5.
Hence, "Option 2" is the correct answer.

Q33. Answer: (d) REOGFO

Logic: No specific pattern is followed here, letters are shifted randomly within the word.
So,
'MENIAL' is coded as 'NIEAML'

And,
'INCOME' is coded as 'CONMIE'

Similarly,
'FOREGO' is coded as

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

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Q34. Answer: (c) [figure]

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 3".

Q35. Answer: (a) 274

Logic : Cubes of increasing number series are subtracted subsequently.

Hence, "274" is the correct answer.

Q36. Answer: (a) Y

The faces opposite to each other are shown below:

=> As the alternate positions become opposite to each other, the remaining two faces become opposite to each other.

So, opposite pairs are:

X → W

Z → U

V → Y

Therefore, 'Y' is the opposite of 'V'.

Hence, "Y" is the correct answer.

Q37. Answer: (d) 125

Given :333 × 3 + 11 - 5 ÷ 5 = ?

According to the question, after replacing the signs :

'+' and '-' are interchanged and,

'×' and '÷' are interchanged

So,

333 × 3 + 11 - 5 ÷ 5 = ? => 333 ÷ 3 - 11 + 5 × 5 = ?

333 ÷ 3 - 11 + 5 × 5 = ?

111 - 11 + 5 × 5 = ?

111 + 25 - 11 = ?

136 - 11 = 125

Hence, "125" is the correct answer.

Q38. Answer: (c) 2

The logic followed here is:-

From the given two different cubes the adjacent sides are as shown below :

As 1 is common on both the dice, it is clear that 6, 8, 5, and 2 are adjacent to it and the remaining number i.e., 3 will be opposite to it.

Opposite pairs:

6 → 5

8 → 2

1 → 9

So, the opposite side of "8" will be side "2".

Hence, the correct answer is "2".

Q39. Answer: (b) MA 38

The logic followed here is:

First two letters → Increasing number series is added to the position values according to the English alphabetic series.

Numbers → Odd number series is added to the given numeric series.

So,

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

Q40. Answer: (d) IMNL

Logic:

First and second letter → (5) is added to the position value according to the English alphabetic series.

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Second and third letter → (1) is subtracted from the position value according to the English alphabetic series.
Third and fourth letter → (1) is subtracted from the position value according to the English alphabetic series.
So,
Option - (1): RWVU
Option - (2): PUTS
Option - (3): AFED
Option - (4): IMNL
Thus, out of all the options "IMNL" is the odd one out.
Hence, "Option - (4)" is the correct answer.

Q41. Answer: (a) KZRTI

Given :TRIC_TRI_KT_IWK_R_TK
By checking options :
Option 1) KZRTI → TRICK / TRIZK / TRIWK / TRITK → (It follows the pattern)
Option 2) KIRTA → TRICKTRIIKTRIWKTRATK → (It doesn't Follow the pattern)
Option 3) KBTIR → TRICKTRIBKTTIWKIRRTK → (It doesn't Follow the pattern)
Option 4) KATIR → TRICKTRIAKTTIWKIRRTK → (It doesn't Follow the pattern)
So, out of all the options "Option - (1)" follows the pattern.
Hence, "Option 1" is the correct answer.

Q42. Answer: (a) [figure]

The correct mirror image of the given figure is:
Hence, the correct answer is "Option 1".

Q43. Answer: (a) 13

The number of triangles in the given figure is shown below :
Here, as marked there are a total of 13 triangles.
Hence, "13" is the correct answer.

Q44. Answer: (c) 152

Logic : Alternately (67) and (43) are subtracted subsequently.
Hence, "152" is the correct answer.

Q45. Answer: (c) rq

According to the given information,
Thus, according to the given codes 'rq' is the code for the word 'off'.
Hence, the correct answer is "rq".

Q46. Answer: (b) 78

The logic followed here is:
Logic: 1st number + (1st number ÷ 3) = 2nd number.
Now,
For, 72 : 96
=> 72 + (72 ÷ 3)
= 72 + 24 = 96.
For, 66 : 88
=> 66 + (66 ÷ 3)
= 66 + 22 = 88.
Similarly, for 78 : 104
=> 78 + (78 ÷ 3) = 104
=> 78 + 26 = 104.
Hence, the correct answer is "Option 2".

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Q47. Answer: (a) Only conclusion (II) follows.

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

Conclusions:

I. Some streets are houses → Does not follow (As all paints are houses, all houses are wood and some streets are wood. So, it is possible but not definitely true)

II. All paints are wood → Follow (As all paints are houses and all houses are wood. So, as whole paints comes in houses which whole comes in wood therefore it is true)

Therefore Here, Only conclusion (II) follows.

Hence, the correct answer is "Only conclusion (II) follows"

Q48. Answer: (c) QOL

The logic followed here is: (3) is added to the position values according to the English alphabetic series.

So,

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

Q49. Answer: (c) Saturday

Given: 3 April 1996 was Wednesday.

Now,

1996 to 2001 = 5 Years (4 Ordinary Year and 1 Leap Year).

And, In 5 Years = 1 Leap year and 4 Ordinary Year.

So, 1 Leap Year has 2 odd days,

And, 4 Ordinary Year has 4 odd days.

Total odd days = 2 + 4 = 6.

then, 3 April 2001 will be Wednesday + 6 = Tuesday.

Now, the number of days between 3 April 2001 to 7 April 2001 = 4 days.

So, 7 April 2001 will be Tuesday + 4 = Saturday.

Hence, the correct answer is "Option 3".

Q50. Answer: (a) 65

Given : 16 - 33 + 11 ÷ 22 × 5 = ?

According to the question, after replacing the signs :

‘+’ and ‘÷’ are interchanged and,

‘×’ and ‘-’ are interchanged

So,

16 - 33 + 11 ÷ 22 × 5 = ? => 16 × 33 ÷ 11 + 22 - 5 = ?

16 × 33 ÷ 11 + 22 - 5 = ?

16 × 3 + 22 - 5 = ?

48 + 22 - 5 = ?

70 - 5 = ?

65 = ?

Hence, "65" is the correct answer.

Q51. Answer: (c) 18 cm

Given:

DC = 12 cm and BC = 6 cm

Concept:

According to the tangent-secant theorem, the square of the length of the tangent segment (DC) is equal to the product of the lengths of the secant segment (BC) and its external segment (AC).

Formula Used:

$DC^2 = BC \times (BC + AB)$

Calculation:

We have,

=> DC = 12 cm and BC = 6 cm

=> $DC^2 = BC \times (BC + AB)$

=> $12^2 = 6 \times (6 + AB)$

=> $144 = 6 \times (6 + AB)$

=> $144 = 36 + 6AB$

=> $144 - 36 = 6AB$

=> $108 = 6AB$

=> $AB = 108 / 6$

=> $AB = 18$ cm

Therefore The length of AB is 18 cm.

Q52. Answer: (a) 10% profit

Given:

A retail fruit vendor buys a score of apples for Rs. 400 and retails them for Rs. 264 at a dozen. (a score = 20 no's)

Concept:

To find the profit or loss percentage, we need to compare the cost price (CP) and selling price (SP) of the apples.

Formula Used:

Profit or Loss Percentage = [(SP - CP) / CP] × 100

Calculation:

We have,

=> Cost Price (CP) of 20 apples = Rs. 400

=> Selling Price (SP) of 1 dozen (12) apples = Rs. 264

=> Selling Price (SP) of 1 apple = Rs. 264 / 12 = Rs. 22

=> Selling Price (SP) of 20 apples = Rs. 22 × 20 = Rs. 440

=> Profit = SP - CP = Rs. 440 - Rs. 400 = Rs. 40

=> Profit Percentage = (Profit / CP) × 100

=> Profit Percentage = (Rs. 40 / Rs. 400) × 100

=> Profit Percentage = 10%

Therefore The vendor makes a 10% profit.

Q53. Answer: (b) 20% Profit

Given:

Marked price (MP) of the article = Rs. 600

Two successive discounts = 10% and 20%

Transportation cost = Rs. 68

Selling price (SP) = Rs. 600

Concept:

To find the cost price (CP) after successive discounts and add transportation cost to find the total CP. Then, compare CP with SP to find gain or loss percentage.

Formula Used:

Successive discount formula:

Effective Discount = d1 + d2 - (d1 × d2) / 100

Gain or Loss Percentage = [(SP - CP) / CP] × 100

Calculation:

Step 1: Calculate the effective discount:

=> Effective Discount = 10% + 20% - (10% × 20%) / 100

=> Effective Discount = 30% - 2%

=> Effective Discount = 28%

Step 2: Calculate the cost price after discount:

=> Discount Amount = (28 / 100) × 600

=> Discount Amount = 168

=> CP after discount = MP - Discount Amount

=> CP after discount = 600 - 168

=> CP after discount = 432

Step 3: Add transportation cost to the CP:

=> Total CP = CP after discount + Transportation cost

=> Total CP = 432 + 68

=> Total CP = 500

Step 4: Calculate the gain or loss percentage:

=> Gain or Loss = SP - Total CP

=> Gain or Loss = 600 - 500

=> Gain or Loss = 100

=> Gain Percentage = (100 / 500) × 100

=> Gain Percentage = 20%

Therefore The shopkeeper made a 20% profit.

Q54. Answer: (b) 18 cm

Given:

Radius of the first circle (r1) = 32 cm

Radius of the second circle (r2) = 8 cm

Distance between the centers of the two circles (AB) = 30 cm

Formula used:

Length of the direct common tangent (L) is given by:

$L = \sqrt{(d^2 - (r1 - r2)^2)}$

Calculations:

Substitute the given values:

=> $L = \sqrt{(30^2 - (32 - 8)^2)}$

=> $L = \sqrt{(900 - (24)^2)}$

=> $L = \sqrt{(900 - 576)}$

=> $L = \sqrt{324}$

=> L = 18 cm

Therefore The length of CD is 18 cm.

Q55. Answer: (a) C

Given:

The table shows the production of cars in a company from 2016 to 2020:

Years	2016	2017	2018	2019	2020
A	30	23	39	25	18
B	16	10	14	12	8
C	15	18	19	25	30
D	31	12	21	19	20

There was a continuous increase in the production of cars of which type during the period 2016 to 2020?

Concept:

To determine the type of car with a continuous increase in production over the years, we need to compare the production values for each type across the given years.

Calculation:

Production of cars of type A: 30, 23, 39, 25, 18

=> No continuous increase.

Production of cars of type B: 16, 10, 14, 12, 8

=> No continuous increase.

Production of cars of type C: 15, 18, 19, 25, 30

=> Continuous increase.

Production of cars of type D: 31, 12, 21, 19, 20

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=> No continuous increase.

Therefore The type of car with a continuous increase in production from 2016 to 2020 is C.

Q56. Answer: (c) eight

Shortcut Trick

Volume of a sphere is proportional to the cube of its radius (V prop. to r^3).

Initial radius ratio = 1 : 2

Volume ratio = $1^3 : 2^3$

Volume ratio = 1 : 8

The volume becomes 8 times the previous volume.

Therefore The correct answer is eight.

Alternate Method

Given:

Initial radius = r1

Final radius = r2 = 2 × r1

Formula Used:

Volume of Sphere (V) = (4/3) × π × r^3

r V1 = (4/3)πr^3 r → 2r 2r V2 = (4/3)π$(2r)^3$ = 8V1

Calculations:

=> Let initial volume be V1 = (4/3) × π × $r1^3$

=> Let final volume be V2 = (4/3) × π × $r2^3$

=> Substitute r2 = 2r1 in the volume formula:

=> V2 = (4/3) × π × $(2r1)^3$

=> V2 = (4/3) × π × $8r1^3$

=> V2 = 8 × [(4/3) × π × $r1^3$]

=> V2 = 8 × V1

Therefore The correct answer is eight.

Additional Information

Surface Area of Sphere

The total surface area of a sphere is given by A = 4 × π × r^2. If radius is doubled, the surface area becomes 4 times.

Volume of Hemisphere

The volume of a hemisphere is exactly half of a sphere: V = (2/3) × π × r^3.

Hemisphere Surface Areas

Curved Surface Area (CSA) = 2 × π × r^2 | Total Surface Area (TSA) = 3 × π × r^2.

Q57. Answer: (b) 13

Given:

Equation of a straight line: 5x + 12y = 60

Concept used:

The intercept form of a straight-line equation: x/a + y/b = 1

Where a and b are x and y intercepts respectively.

Calculation:

5x + 12y = 60

Dividing by 60 on both sides,

=> 5x/60+12y/60 =60/60

=> x/12+y/5 =1

Here,

x-intercept = a = 12

y-intercept = b = 5

Now,

The length of the line segment intercepted between the axes is given by the distance between the intercepts:

Length = √(a^2+b^2)

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=> Length = √(12²+5²)

=> Length = √(144+25)

=> Length = √169 = 13 cm

Therefore The correct answer is option (2).

Q58. Answer: (d) 800

Given:

Percentage of votes received by the winning candidate = 78%

Majority = 448 votes

Formula used:

Majority = Votes received by the winner - Votes received by the loser

Total votes polled = Votes received by the winner + Votes received by the loser

Calculation:

=> Votes received by the winner = (78/100) × Total votes

=> Votes received by the loser = (22/100) × Total votes

=> Majority = (78/100) × Total votes - (22/100) × Total votes

=> 448 = [(78 - 22)/100] × Total votes

=> 448 = (56/100) × Total votes

=> Total votes = (448 × 100) / 56

=> Total votes = 800

Therefore The total number of votes polled is 800.

Q59. Answer: (d) 9

Given:

An 8 digit number is divisible by 99. If the digits are shuffled, then the number is always divisible by _____.

Concept:

A number is divisible by 99 if and only if it is divisible by both 9 and 11.

Divisibility by 9: A number is divisible by 9 if the sum of its digits is divisible by 9.

Divisibility by 11: A number is divisible by 11 if the difference between the sum of the digits in the odd positions and the sum of the digits in the even positions is divisible by 11.

Calculation:

Given that the 8-digit number is divisible by 99, it must be divisible by both 9 and 11.

When the digits of a number are shuffled, the sum of its digits remains the same, and so does the difference between the sum of the digits in the odd positions and the sum of the digits in the even positions.

=> The sum of the digits remains divisible by 9.

=> The difference between the sum of the digits in the odd positions and the sum of the digits in the even positions remains divisible by 11.

Therefore, the number formed by shuffling the digits will also be divisible by both 9 and 11.

Therefore The number is always divisible by 9.

Q60. Answer: (d) 192000

Calculation:

The total production by companies X = 128000 + 110000 + 102000 + 80000 + 109000 + 170000

=> 699000

The total production by companies Y = 141000 + 192000 + 145000 + 130000 + 122000 + 161000

=> 891000

The approximate difference between the total production by companies X and Z in the given years

=> 891000 - 699000

=> 192000

Therefore The approximate difference between the total production by companies X and Z in the given years is 192000.

Q61. Answer: (d) 3

Shortcut Trick

Check if the first divisor is completely divisible by the second divisor.

=> 512 ÷ 32 = 16 (completely divisible).

To find the new remainder, simply divide the first remainder by the second divisor.

=> 67 ÷ 32 leaves a remainder of 3.

Therefore The correct answer is 3.

Alternate Method

Given:

A number leaves a remainder 67 when divided by 512.

Formula Used:

Dividend = Divisor × Quotient + Remainder

Calculation:

Let the number be N and the quotient be q.

=> N = 512q + 67

We need to find the remainder when N is divided by 32.

Rewrite the equation in terms of 32:

=> N = (32 × 16q) + (32 × 2) + 3

=> N = 32(16q + 2) + 3

Let (16q + 2) = k, where k is an integer.

=> N = 32k + 3

This shows that when N is divided by 32, the quotient is k and the remainder is 3.

Therefore The correct answer is 3.

Additional Information

Division Algorithm

For any given integers a and b (where b > 0), there exist unique integers q and r such that a = bq + r, where 0 ≤ r < b.

Remainder Property in Successive Divisions

If a number leaves a remainder R1 when divided by D1, then dividing the same number by D2 (where D2 is a factor of D1) will give the exact same remainder as dividing R1 by D2.

Q62. Answer: (b) 7

Given:

The defeated candidate secured 42% of the valid votes polled and lost by 2545800 votes.

365500 votes were declared invalid.

30% of people did not cast their vote.

Concept:

To determine the total electorate, we need to calculate the total number of votes and account for the percentage of people who did not vote.

Formula Used:

Total Valid Votes = Votes secured by defeated candidate / Percentage secured by defeated candidate

Total Votes Polled = Total Valid Votes + Invalid Votes

Total Electorate = Total Votes Polled / (1 - Percentage of people who did not vote)

People who did not cast their votes = Total Electorate × Percentage of people who did not vote

Calculation:

=> Let the total valid votes be V.

=> Defeated candidate secured 42% of valid votes, so:

=> V × 42% = 0.42V

=> Winning candidate secured (100% - 42%) = 58% of valid votes, so:

=> V × 58% = 0.58V

=> The difference in votes between the winning and defeated candidate is 2545800:

=> 0.58V - 0.42V = 2545800

=> 0.16V = 2545800

=> V = 2545800 / 0.16

=> V = 15911250

=> Total Votes Polled = V + Invalid Votes

=> Total Votes Polled = 15911250 + 365500

=> Total Votes Polled = 16276750

=> Total Electorate = Total Votes Polled / (1 - Percentage of people who did not vote)

=> Total Electorate = 16276750 / (1 - 0.30)

=> Total Electorate = 16276750 / 0.70

=> Total Electorate ≈ 23252500

=> People who did not cast their votes = Total Electorate × Percentage of people who did not vote

=> People who did not cast their votes = 23252500 × 0.30

=> People who did not cast their votes ≈ 6975750

Therefore The approximate number of people (in millions) in the electorate who did NOT cast their votes is 7 million.

Q63. Answer: (b) -1

Shortcut Trick

For symmetric trigonometric expressions, substitute a standard angle like θ = 45°.

Substituting θ = 45°: (cot 45° + tan 45°) × (cosec 45° − sin 45°) × (cos 45° − sec 45°)

=> (1 + 1) × (√2 − 1/√2) × (1/√2 − √2)

=> 2 × (1/√2) × (−1/√2) = 2 × (−1/2) = −1.

Therefore The correct answer is -1.

Alternate Method

Given: Expression = (cot θ + tan θ)(cosec θ − sin θ)(cos θ − sec θ)

Formula Used: cot θ = cos θ/sin θ, tan θ = sin θ/cos θ, cosec θ = 1/sin θ, sec θ = 1/cos θ

=> First part: (cos θ/sin θ + sin θ/cos θ) = (cos² θ + sin² θ)/(sin θ cos θ) = 1/(sin θ cos θ)

=> Second part: (1/sin θ − sin θ) = (1 − sin² θ)/sin θ = cos² θ/sin θ

=> Third part: (cos θ − 1/cos θ) = (cos² θ − 1)/cos θ = −sin² θ/cos θ

=> Expression = [1/(sin θ cos θ)] × [cos² θ/sin θ] × [−sin² θ/cos θ]

=> Expression = [−sin² θ cos² θ] / [sin² θ cos² θ] = −1.

Therefore The correct answer is -1.

Additional Information

Fundamental Trigonometric Identities

1. sin² θ + cos² θ = 1 | 2. 1 + tan² θ = sec² θ | 3. 1 + cot² θ = cosec² θ.

Reciprocal Relations

cosec θ = 1/sin θ, sec θ = 1/cos θ, and cot θ = 1/tan θ.

Ratio Formulas

tan θ = sin θ/cos θ and cot θ = cos θ/sin θ.

Value Substitution Method

To simplify complex identities, angles like 0°, 45°, or 90° can be substituted provided the terms remain defined (not infinite).

Q64. Answer: (c) 12:00 p.m.

Given:

Two stations T1 and T2 are 300 km apart. A car starts from station T1 at 8 am towards T2 at 45 km/hr. At 10 am, another car starts from station T2 towards T1 at 60 km/hr.

Concept:

To find the meeting time of two moving objects, we calculate the time when the sum of the distances covered by both objects equals the total distance between them.

Formula Used:

Distance = Speed × Time

Calculation:

1. Calculate the distance covered by the first car by 10 am:

=> Distance_(first car) = Speed × Time

=> Distance_(first car) = 45 km/hr × 2 hrs

=> Distance_(first car) = 90 km

2. Remaining distance to be covered after 10 am:

=> Remaining Distance = Total Distance - Distance_(first car)

=> Remaining Distance = 300 km - 90 km

=> Remaining Distance = 210 km

3. Combined speed of both cars:

=> Combined Speed = Speed_(first car) + Speed_(second car)

=> Combined Speed = 45 km/hr + 60 km/hr

=> Combined Speed = 105 km/hr

4. Time taken to cover the remaining distance:

=> Time = Distance / Combined Speed

=> Time = 210 km / 105 km/hr

=> Time = 2 hrs

5. Time when the cars will meet:

=> Meeting Time = 10 am + 2 hrs

=> Meeting Time = 12:00 p.m.

Therefore The cars will meet at 12:00 p.m.

Q65. Answer: (a) 8.5%

Given:

Initial expenditure of Ritvik = Rs. 12,800

New expenditure of Ritvik = Rs. 11,712

Concept Used:

Percentage decrease in expenditure is calculated using the formula:

Formula Used:

Percentage Decrease = ((Initial Expenditure - New Expenditure) / Initial Expenditure) × 100

Calculation:

We have,

=> Initial Expenditure = Rs. 12,800

=> New Expenditure = Rs. 11,712

=> Decrease in Expenditure = Rs. 12,800 - Rs. 11,712

=> Decrease in Expenditure = Rs. 1,088

=> Percentage Decrease = (Rs. 1,088 / Rs. 12,800) × 100

=> Percentage Decrease = 0.085 × 100

=> Percentage Decrease = 8.5%

Therefore The percentage decrease in Ritvik's expenditure is 8.5%.

Q66. Answer: (c) 30

Given:

A bus driver must complete a 240 km trip in 4 hours. He averages 70 km/h for the first 3 hours of his trip.

Concept:

To find the required speed for the last hour, we need to determine the remaining distance and then calculate the speed needed to cover that distance in the remaining time.

Calculation:

Total distance to be covered = 240 km

Total time available = 4 hours

Distance covered in the first 3 hours:

=> Distance = Speed × Time

=> Distance = 70 km/h × 3 hours

=> Distance = 210 km

Remaining distance to be covered in the final hour:

=> Remaining distance = Total distance - Distance covered in the first 3 hours

=> Remaining distance = 240 km - 210 km

=> Remaining distance = 30 km

Speed required to cover the remaining distance in the final hour:

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=> Speed = Distance / Time

=> Speed = 30 km / 1 hour

=> Speed = 30 km/h

Therefore The bus driver must travel at 30 km/h in the last hour.

Q67. Answer: (b) 23.08%

Calculation:

The people using all types of transportation in Pune

=> 4 + 3 + 2

=> 9

The total number of people using all types of transportation in all cities

=> (Pune + Nasik + Nagpur + Mumbai)

=> (9 + 9 + 8.5 + 12.5)

=> 39

The percentage of people using all types of transportation in Pune to the total number of people using all types of transportation in all cities

=> (9/39)× 100

=> 23.08%

Therefore The percentage of people using all types of transportation in Pune to the total number of people using all types of transportation in all cities is 23.08%.

Q68. Answer: (d) Rs. 2,000

Given:

Amount = 2400, Time = 4 years, and Rate = 5%

Formula Used:

SI = PRT/100

Amount = P + SI

Calculation:

According to the question,

2400 = P(1 + RT/100)

2400 = P (1 + 20/100)

P = 2400/(6/5)

P = 2000

Therefore The correct answer is 2000.

Q69. Answer: (d) 120

Calculation:

According to the graph Yasin minimum number of votes obtained

=> (60/360)× 720

=> 120

Therefore The minimum number of votes obtained by any candidate is 120.

Q70. Answer: (a) 12 days

Given:

Joey completed the school project in 15 days.

Tim is 25% more efficient than Joey.

Concept:

Efficiency and time are inversely proportional.

If a person is more efficient, they will take less time to complete the same work.

Formula Used:

Time taken by Tim = (Time taken by Joey) / (1 + Efficiency increase)

Calculation:

We have,

=> Time taken by Joey = 15 days
=> Efficiency increase = 25% = 0.25
=> Time taken by Tim = 15 / (1 + 0.25)
=> Time taken by Tim = 15 / 1.25
=> Time taken by Tim = 12 days
Therefore Tim will take 12 days to complete the same work.

Q71. Answer: (a) 2 unit

Given:
Center of the circle = (2, 3)
Equation of the line = 4x + 3y - 7 = 0
Formula used:
Distance from a point (x1, y1) to a line ax + by + c = 0 is:
Distance = |a x1 + b y1 + c| / √(a² + b²)
Calculations:
Substitute (x1, y1) = (2, 3) and the line equation 4x + 3y - 7 = 0 into the formula:
Distance = |(4 × 2) + (3 × 3) - 7| / √(4² + 3²)
=> Distance = |8 + 9 - 7| / √(16 + 9)
=> Distance = |10| / √25
=> Distance = 10 / 5
=> Distance = 2
Therefore The radius of the circle is 2 units.

Q72. Answer: (d) 3 : 4

Given:
Ratio 1: 3 : 4
Ratio 2: 5 : 8
Ratio 3: 1 : 2
Ratio 4: 6 : 9
Formula Used:
To compare ratios, convert them to fractions and find their decimal values.
Calculation:
Convert each ratio to a fraction:
3 : 4 => 3/4
5 : 8 => 5/8
1 : 2 => 1/2
6 : 9 => 6/9
Convert fractions to decimal values:
3/4 = 0.75
5/8 = 0.625
1/2 = 0.5
6/9 = 0.6667
Compare the decimal values:
0.75 > 0.625 > 0.6667 > 0.5
The greatest ratio is 3 : 4.

Q73. Answer: (d) 1 : √2 - 1

Given:
In ΔPQR, S and T are points on PQ and PR, respectively, such that ST || QR and ST divides the ΔPQR into two parts of equal areas.
Formula Used:
Area of similar triangles ratio = (corresponding sides ratio)²
Calculation:

Since ST || QR and ST divides ΔPQR into two parts of equal areas, the area of ΔPST is half of the area of ΔPQR.
Let the ratio of the areas be 1:2. Therefore, the ratio of the sides will be √1:√2.
Thus, PS : PQ = 1 : √2
Let PQ = PS + QS.
Since PS : PQ = 1 : √2, we have:
PS = x
PQ = x + QS
PS / PQ = 1 / √2
x / (x + QS) = 1 / √2
=> √2 × x = x + QS
=> QS = (√2 - 1) × x
Therefore, the ratio PS : QS is 1 : (√2 - 1).
The correct answer is option 4.

Q74. Answer: (c) 12 : 5

Given:
The heights of two cones are in the ratio 5:3.
The radii of two cones are in the ratio 6:5.
Formula Used:
Volume of a cone = 1/3 π r² h
Calculation:
Let the height of the first cone be 5h and the height of the second cone be 3h.
Let the radius of the first cone be 6r and the radius of the second cone be 5r.
Volume of the first cone = 1/3 π (6r)² (5h)
Volume of the first cone = 1/3 π (36r²) (5h)
Volume of the first cone = 1/3 π (180r²h)
Volume of the first cone = 60 π r²h
Volume of the second cone = 1/3 π (5r)² (3h)
Volume of the second cone = 1/3 π (25r²) (3h)
Volume of the second cone = 1/3 π (75r²h)
Volume of the second cone = 25 π r²h
Ratio of volumes = (Volume of the first cone) / (Volume of the second cone)
Ratio of volumes = (60 π r²h)/(25 π r²h)
Ratio of volumes = 60/25
Ratio of volumes = 12/5
The ratio of their volumes is 12:5.

Q75. Answer: (b) 3

Given:
Internal length of the cardboard box = 6 cm
Internal breadth of the cardboard box = 10 cm
Internal height of the cardboard box = 12 cm
Volume of each cube = 2160 cm³
Formula Used:
Volume of the cardboard box = Length × Breadth × Height
Number of boxes needed = Volume of each cube / Volume of one cardboard box
Calculation:
Volume of the cardboard box = 6 × 10 × 12
Volume of the cardboard box = 720 cm³
Number of boxes needed = 2160 / 720
=> Number of boxes needed = 3
The number of boxes needed is 3.

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Q76. Answer: (b) Kuchipudi

The correct answer is Kuchipudi

Key Points

• Kuchipudi is a classical Indian dance form that originated in Andhra Pradesh.

• This dance style is known for its graceful movements and strong narrative/dramatic character.

• It is named after the village of Kuchipudi in the Indian state of Andhra Pradesh where it developed.

• Unlike other classical dances, Kuchipudi requires both dancing and singing by the performer.

• The dance form combines fast rhythms with fluid movements, creating a unique blend of control and abandon, strength and delicacy.

Additional Information

• Kathakali is from Kerala and is known for its elaborate costumes and makeup.

• Odissi hails from Odisha and is characterized by its fluid movements and sculpturesque poses.

• Mohiniattam is another classical dance from Kerala, known for its graceful and feminine movements.

• Each of these dance forms has its own unique history, style, and cultural significance, contributing to the rich tapestry of Indian classical dance.

Q77. Answer: (b) A match consists of the best of three games of 21 points.

The correct answer is A match consists of the best of three games of 21 points

Key Points

• A match in badminton consists of the best of three games of 21 points.

• The first player or pair to reach 21 points wins the game, provided there is a minimum lead of 2 points.

• If the score reaches 20-20, the game continues until one player or pair gains a 2-point lead (e.g., 22-20, 23-21).

• If the score reaches 29-29, the first player or pair to reach 30 points wins the game.

• The winner of a match is the first to win two games.

Additional Information

• Badminton is governed by the Badminton World Federation (BWF).

• The sport can be played in singles (one player per side) or doubles (two players per side).

• Badminton became an Olympic sport in 1992 at the Barcelona Games.

• The court dimensions for singles and doubles are different, with the doubles court being wider.

• Players must serve diagonally across the court to their opponent.

• The serve must be underhand and the shuttlecock must be hit below the server's waist.

Q78. Answer: (a) Geeta Phogat

The correct answer is Geeta Phogat

Key Points

• Geeta Phogat is the first female Indian wrestler to win Gold at the Commonwealth Games.

• She achieved this historic win in the 2010 Commonwealth Games held in Delhi.

• Geeta Phogat's victory was a significant milestone for Indian wrestling, especially for women in the sport.

• Her achievement has inspired many young female wrestlers in India to pursue the sport professionally.

Additional Information

• Geeta Phogat hails from a family of wrestlers, with her father Mahavir Singh Phogat being a former wrestler and her coach.

• Her life and achievements were notably portrayed in the Bollywood film "Dangal", where her character was played by actress Fatima Sana Shaikh.

• Geeta's sister, Babita Phogat, is also a renowned wrestler and has won multiple medals at international events.

• The Phogat sisters have contributed significantly to raising the profile of women's wrestling in India.

Q79. Answer: (a) Rajasthan

The correct answer is Rajasthan

Key Points

• Rajasthan is the first state in India to introduce the 'Right to Health Care Act, 2022'.

• The act aims to provide equitable access to quality healthcare services to all residents of the state.

• It includes provisions for free diagnostics, medicines, and emergency treatment in both government and private hospitals.

• The act is a significant step towards ensuring the right to health as a fundamental right for the citizens of Rajasthan.

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Additional Information

• The 'Right to Health Care Act, 2022' was passed by the Rajasthan Legislative Assembly.

• It is part of the state's efforts to improve public health infrastructure and services.

• Under the act, a grievance redressal mechanism has been established to address complaints related to healthcare services.

• The act is expected to benefit millions of residents by making healthcare more accessible and affordable.

Q80. Answer: (d) Rs. 100 crores

The correct answer is Rs. 100 crores

Key Points

• Rs. 100 crores was the initial corpus amount instituted by NABARD for the Micro Finance Development Fund in 2000-01.

• The Micro Finance Development Fund was established to support and promote the microfinance sector in India.

• The fund aims to provide financial services to the underprivileged sections of society, particularly in rural areas.

• NABARD, or the National Bank for Agriculture and Rural Development, is the apex development bank in India with a focus on the rural sector.

Additional Information

• NABARD was established on 12 July 1982 to implement the National Bank for Agriculture and Rural Development Act 1981.

• It plays a crucial role in the development of the agriculture sector, cottage and village industries, and other rural crafts.

• NABARD also provides refinance support for building rural infrastructure and aims to bring about rural prosperity.

• The institution has been instrumental in promoting sustainable and equitable agriculture and rural development through participative financial and non-financial interventions, innovations, technology, and institutional development.

Q81. Answer: (b) Parsi

The correct answer is Parsi

Key Points

• Jamshedi Navroz is celebrated by the Parsi community.

• It marks the Persian New Year and is celebrated with great enthusiasm among Parsis.

• The festival falls on the spring equinox, around March 21st, and symbolizes rebirth, renewal, and rejuvenation.

• Parsis observe this day by cleaning their homes, wearing new clothes, and preparing special meals.

• The celebrations often include visiting the fire temple to offer prayers and seek blessings.

Additional Information

• The Parsi community in India is primarily concentrated in Mumbai and Gujarat.

• Jamshedi Navroz is named after the legendary King Jamshed of Persia, who is credited with starting the Parsi calendar.

• The festival is also known as Nowruz in other parts of the world, including Iran and Central Asia.

• It is a day for Parsis to reflect on the past year and make new resolutions for the coming year.

• Traditional Parsi dishes such as patra ni machhi (steamed fish), ravo (sweet semolina pudding), and falooda (a sweet drink) are commonly prepared for the occasion.

Q82. Answer: (a) Ten

The correct answer is Ten

Key Points

• Ten Fundamental Duties were added to the Constitution of India in Part-IV-A under Article 51-A in the year 1976 through the 42nd Constitutional Amendment.

• These duties are intended to serve as a constant reminder to every citizen that while enjoying their rights, they also have obligations towards their country, society, and fellow citizens.

• The Fundamental Duties include respecting the national symbols, cherishing the noble ideals of the freedom struggle, and upholding and protecting the sovereignty, unity, and integrity of India.

• Other duties encompass promoting harmony and the spirit of common brotherhood, protecting the environment, and striving towards excellence in all spheres of individual and collective activities.

Additional Information

• The 42nd Amendment Act, also known as the "Mini-Constitution," brought several other significant changes to the Indian Constitution.

• It attempted to reduce the power of the judiciary and increase the power of the central government.

• The Fundamental Duties were borrowed from the Constitution of the former Soviet Union and were intended to inculcate a sense of discipline and commitment among citizens.

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• Initially, there were ten Fundamental Duties listed in Article 51-A, but an eleventh duty was added by the 86th Constitutional Amendment in 2002.
• The eleventh duty is to provide opportunities for education to children between the ages of six and fourteen years.

Q83. Answer: (c) Wanawun

The correct answer is - Wanawun

Key Points

• Wanawun
• Wanawun is a traditional folk music genre from Jammu and Kashmir.
• It is primarily sung during wedding ceremonies.
• The songs in Wanawun are often celebratory and filled with blessings for the newlyweds and their families.
• This type of music creates a joyful atmosphere, enhancing the overall wedding experience.

Additional Information

• Panihari
• Panihari is a type of folk music from Rajasthan.
• It is traditionally sung by women while fetching water from wells or performing other daily chores.
• The songs often reflect the daily struggles, joys, and social issues faced by women in rural Rajasthan.
• Alha
• Alha is a form of ballad singing from the Bundelkhand region in Uttar Pradesh and Madhya Pradesh.
• It involves narrating tales of bravery and heroism, often recounting the exploits of the legendary warriors Alha and Udal.
• Alha is not typically associated with wedding ceremonies but rather with festivals and gatherings.
• Baul
• Baul is a form of mystic folk music from Bengal (West Bengal in India and Bangladesh).
• Baul songs are characterized by their spiritual and philosophical themes, often focusing on love and devotion to God.
• This genre is more about individual spirituality and is not typically linked to wedding celebrations.

Q84. Answer: (a) Atal Beemit Vyakti Kalyan Yojana

The correct answer is Atal Beemit Vyakti Kalyan Yojana

Key Points

• Atal Beemit Vyakti Kalyan Yojana was extended by the Government of India for a period of two years from July 2022 to June 2024.
• This scheme is aimed at providing financial assistance to unemployed individuals who have lost their jobs due to various reasons.
• The scheme is implemented by the Employees' State Insurance Corporation (ESIC) and provides relief to workers covered under the ESI scheme.
• Under this scheme, eligible unemployed individuals receive a cash benefit for up to 90 days during their unemployment period.

Additional Information

• The Atal Beemit Vyakti Kalyan Yojana was initially introduced in 2018 as a pilot scheme for two years.
• The scheme was extended for the first time from July 2020 to June 2022 before the latest extension.
• To avail the benefits, the unemployed individual must have been in insurable employment for a minimum of two years.
• The individual must have contributed to the ESI scheme for at least 78 days in each of the four contribution periods immediately preceding the unemployment.
• This scheme is part of the government’s efforts to provide social security to workers in the organized sector.
• The financial assistance provided under the scheme is equivalent to 50% of the average daily earnings of the individual.

Q85. Answer: (b) 1913

The correct answer is 1913

Key Points

• The Ghadar Party was founded in the year 1913.
• It was established by Sohan Singh Bhakna, Kanshi Ram, Harnam Singh Tundilat, Lala Har Dayal, and other prominent leaders.
• The party aimed at securing India's independence from British rule through revolutionary means.
• The Ghadar Party was headquartered in San Francisco, USA, and played a crucial role in mobilizing the Indian diaspora for the cause of India's freedom.

Additional Information

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• The name "Ghadar" means "revolt" or "rebellion" in Urdu and Punjabi, reflecting the party's revolutionary objectives.

• The Ghadar Party published a newspaper called "Ghadar" which spread revolutionary messages and ideas among Indians worldwide.

• The party's activities included organizing uprisings, disseminating anti-British propaganda, and establishing contacts with other revolutionary groups.

• The Ghadar movement significantly influenced the Indian independence struggle, inspiring future generations of freedom fighters.

Q86. Answer: (b) Bhangar

The correct answer is Bhangar

Key Points

• Bhangar is the largest part of the northern plains and is formed of older alluvium.

• The northern plains of India are divided into four regions: Bhabar, Terai, Bhangar, and Khadar.

• Bhangar represents the upland alluvial tract and is composed of older alluvium, known as Bangar.

• It lies above the floodplains of rivers and is characterized by a higher concentration of calcium carbonate nodules, known as 'Kankar'.

• This region is less fertile compared to the newer alluvium found in the Khadar region, but it is still significant for agriculture.

Additional Information

• Khadar refers to the newer, younger alluvium found in the floodplains of rivers, which is very fertile and replenished annually by river floods.

• Bhabar is the narrow belt lying along the foothills of the Shiwaliks, characterized by coarse alluvium and pebbles.

• Terai is the marshy tract lying next to the Bhabar region, known for its high water table and dense forests.

• The northern plains are crucial for India's agriculture, providing fertile land for the cultivation of various crops.

Q87. Answer: (b) 1-b, 2-a, 3-d, 4-c

The correct answer is 1-b, 2-a, 3-d, 4-c

Key Points

• The correct match for primitive forms of cultivation in different states is:

• Madhya Pradesh - Bewar

• Andhra Pradesh - Penda

• Odisha - Bringa

• Jharkhand - Kuruwa

• These traditional forms of cultivation are part of the indigenous agricultural practices specific to these states.

Additional Information

• Primitive forms of cultivation often involve techniques like slash-and-burn, shifting cultivation, and other methods that are adapted to the local environmental conditions.

• These methods are typically employed by tribal and rural communities and have been passed down through generations.

• Understanding these practices is essential for recognizing the cultural and agricultural heritage of the regions.

Q88. Answer: (d) India experiences comparatively stronger winters as compared to central Asia.

The correct answer is India experiences comparatively stronger winters as compared to central Asia.

Key Points

• Monsoon type of climate is found mainly in south and southeast Asia.

• India's climate has characteristics of tropical as well as subtropical climates.

• Coastal areas of India experience less contrasts in temperature conditions as compared to the interior of the country.

• Central Asia experiences stronger winters compared to India due to its continental climate, which is characterized by more extreme seasonal temperature variations.

Additional Information

• India's climate is significantly influenced by the Himalayas and the Thar Desert, which moderate the temperature and create monsoon conditions.

• The Himalayas act as a barrier to the frigid katabatic winds flowing down from Central Asia, keeping most of the Indian subcontinent warmer than most locations at similar latitudes.

• The Thar Desert plays a crucial role in attracting the moisture-laden southwest summer monsoon winds that bring most of India's rainfall during the year.

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• India's diverse climate ranges from the tropical climate in the south to a more temperate climate in the north, and alpine in the higher Himalayan regions.

Q89. Answer: (a) Karnataka

The correct answer is Karnataka

Key Points

• Yakshagana is a traditional dance-drama form that originated in the state of Karnataka.

• This art form combines dance, music, dialogue, costume, make-up, and stage techniques with a unique style and form.

• Yakshagana is traditionally presented from dusk to dawn and is associated with the coastal and Malnad regions of Karnataka.

• The themes of Yakshagana are usually drawn from Hindu epics such as the Ramayana, Mahabharata, and Puranas.

Additional Information

• The word Yakshagana literally means the song (gana) of the Yaksha (nature spirits).

• It is believed to have evolved from pre-classical music and theatre during the Bhakti movement.

• Yakshagana performances are known for their vibrant costumes, elaborate headgear, and face painting, which are integral elements of the art form.

• There are different styles of Yakshagana, such as Badagutittu and Tenkutittu, which are distinguished by variations in dance, music, and costume.

Q90. Answer: (d) Person aged seven and above, who can both read and write with understanding in any language

The correct answer is Person aged seven and above, who can both read and write with understanding in any language

Key Points

• According to the Census of India, a literate is a person aged seven and above who can both read and write with understanding in any language.

• This definition ensures that literacy is measured consistently across different regions and populations within the country.

• The literacy rate is an important indicator of educational attainment and socio-economic development.

• Efforts to improve literacy rates are crucial for the overall progress and empowerment of individuals and communities.

Additional Information

• The literacy rate is calculated as the percentage of literates to the total population aged seven and above.

• Efforts by the government, non-governmental organizations, and international bodies have been ongoing to improve literacy rates in India.

• Literacy programs often focus on marginalized groups, including women, rural populations, and economically disadvantaged communities.

• Higher literacy rates contribute to better economic opportunities, improved health outcomes, and greater civic participation.

Q91. Answer: (a) Geographic Information System (GIS)

The correct answer is Geographic Information System (GIS)

Key Points

• Geographic Information System (GIS) is the most frequently used technology to manage and digitize e-land records.

• GIS allows for the integration of various data types, which helps in creating detailed and accurate land records.

• This technology is essential for mapping, visualizing, and analyzing spatial data, which is crucial for land management and planning.

• GIS provides tools for querying, analyzing, and visualizing spatial data, making it easier for authorities to manage land records efficiently.

• It enhances transparency, reduces disputes related to land ownership, and improves the overall administration of land records.

Additional Information

• Augmented Reality (AR) and Virtual Reality (VR) are immersive technologies primarily used for interactive experiences and simulations, not for managing land records.

• Blockchain technology, while beneficial for ensuring the security and immutability of records, is not as widely used for the actual management and digitization of e-land records as GIS.

• The integration of GIS in land records management projects has shown significant improvement in the accuracy and accessibility of land records.

• Many countries and states have adopted GIS-based systems for better land management, indicating its effectiveness and reliability.

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Q92. Answer: (b) Sikkim

The correct answer is Sikkim

Key Points

• Sikkim recorded the least population according to the Census of India 2011.

• The Census of India is conducted every ten years by the Office of the Registrar General and Census Commissioner, under the Ministry of Home Affairs.

• It is one of the most comprehensive sources of demographic data in India, covering various aspects such as population size, density, distribution, and various socio-economic indicators.

• Sikkim, being a small state in the northeastern part of India, has a significantly lower population compared to other states like Gujarat, Tamil Nadu, and Punjab.

• The low population can be attributed to its geographical terrain, limited land area, and other demographic factors.

Additional Information

• The Census of India 2011 was the 15th National Census since 1871 and marked the first time biometric information was collected.

• The total population of India according to the 2011 Census was over 1.21 billion.

• States with larger populations typically have more urban centers and industrial activities compared to smaller states like Sikkim.

• Understanding population distribution is crucial for planning and development, policy formulation, and resource allocation by the government.

• The next Census of India is scheduled to be conducted in 2021, which will provide updated demographic data.

Q93. Answer: (c) right to constitutional remedies

The correct answer is Right to constitutional remedies

Key Points

• Certiorari is a type of writ issued by a superior court to a lower court or tribunal either to transfer the matter to it or to quash the order of the lower court.

• This writ is issued to ensure that the jurisdiction of an inferior court or tribunal is properly exercised and that it does not exceed its jurisdiction.

• Certiorari comes under the right to constitutional remedies, which is enshrined in Article 32 of the Indian Constitution.

• Article 32 provides the right to individuals to move the Supreme Court to seek justice when they feel that their rights are 'unduly deprived'.

• It ensures the protection of fundamental rights by allowing the Supreme Court to issue writs like Habeas Corpus, Mandamus, Prohibition, Quo-Warranto, and Certiorari.

Additional Information

• Right to Constitutional Remedies is often referred to as the 'heart and soul' of the Indian Constitution by Dr. B.R. Ambedkar.

• It empowers citizens to stand up for the enforcement of their fundamental rights against any entity that violates them.

• This right is fundamental in ensuring the rule of law in the country.

• Other writs under Article 32 include:

• Habeas Corpus – to release a person who has been unlawfully detained.

• Mandamus – to direct a public authority to perform its duty.

• Prohibition – to prohibit a lower court from exceeding its jurisdiction.

• Quo-Warranto – to challenge the legality of a person's claim to a public office.

• The right to constitutional remedies also extends to the High Courts under Article 226 of the Constitution.

Q94. Answer: (d) Vision

The correct answer is Vision

Key Points

• Vision is the primary sense organ targeted by virtual reality (VR) displays.

• VR displays are designed to create immersive visual experiences, making the user feel as if they are present in a virtual environment.

• High-resolution screens and advanced optics are used in VR headsets to enhance the visual experience.

• While other senses like touch and hearing are also important in VR, vision remains the main focus to achieve immersion.

Additional Information

• Virtual Reality (VR) technology has applications in various fields such as gaming, education, healthcare, and training simulations.

• VR systems typically include a headset, motion controllers, and sometimes additional sensors to track the user's movements.

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• Recent advancements in VR technology focus on improving visual fidelity, reducing latency, and increasing user comfort.

• Future developments in VR may also incorporate more advanced haptic feedback and sensory integration to enhance the overall immersive experience.

Q95. Answer: (b) Persian

The correct answer is Persian

Key Points

• Balban followed the tradition of 'Sijda and Pabos' from the Persian tradition.

• 'Sijda' refers to the act of prostration or bowing down, and 'Pabos' means kissing the feet of the ruler.

• These practices were adopted to demonstrate absolute loyalty and subservience to the Sultan.

• Balban implemented these traditions to strengthen the authority of the Sultan and maintain strict discipline in the court.

• The adoption of these Persian court customs was part of Balban's efforts to reinforce the centralization of power and establish a strong, authoritative rule.

Additional Information

• Balban, also known as Ghiyas ud din Balban, was the Sultan of the Delhi Sultanate from 1266 to 1287.

• He was a member of the Mamluk dynasty and served as the regent before ascending to the throne.

• Balban's reign is noted for his strong military campaigns and administrative reforms that aimed at consolidating the Sultanate's power.

• His policies and court etiquettes were influenced by Persian culture, reflecting his desire to emulate the grandeur and administrative efficiency of the Persian empires.

Q96. Answer: (c) Only ii and iii

The correct answer is Only ii and iii

Key Points

• The First Five-Year Plan in India was launched in 1951 and primarily focused on the development of the agricultural sector.

• The Five-Year planning model in India was inspired by the planning model of the Soviet Union (Russia).

• The PC Mahalanobis model was actually used for the Second Five-Year Plan, not the first.

Additional Information

• The First Five-Year Plan was based on the Harrod-Domar model and emphasized on agricultural development to address the food crisis and inflationary pressures.

• The Second Five-Year Plan introduced the PC Mahalanobis model which focused on industrialization and aimed at building a strong public sector.

• India adopted the Soviet-style planning model, which involved centralized and integrated national economic programs.

Q97. Answer: (a) Sexual harassment of women at workplace

The correct answer is Sexual harassment of women at workplace

Key Points

• The POSH Act stands for the Prevention of Sexual Harassment at Workplace Act.

• It was enacted in 2013 to ensure a safe and secure working environment for women.

• The Act mandates the formation of an Internal Complaints Committee (ICC) at all workplaces with ten or more employees to address complaints of sexual harassment.

• The Act also outlines the redressal mechanism and the penalties for non-compliance by employers.

• In May 2023, the Supreme Court of India issued directions to strengthen the implementation of the POSH Act, emphasizing the need for active and effective ICCs.

Additional Information

• The POSH Act was formulated based on the guidelines laid down by the Supreme Court in the Vishaka case in 1997.

• The Act covers not only traditional workplaces but also extended workplaces such as transportation provided by the employer, places visited by employees during the course of employment, etc.

• Employers are required to conduct regular sensitization programs and workshops to educate employees about the provisions of the Act and the importance of a harassment-free workplace.

• The Act also provides protection against victimization of the complainant and witnesses.

• Non-compliance with the POSH Act can lead to penalties, including fines and cancellation of business licenses.

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Q98. Answer: (c) Japan

The correct answer is Japan

Key Points

• Indian athlete Shaili Singh won the bronze medal in the women's long jump at the Golden Grand Prix 2023 athletics meet.

• The event was held in Japan.

• This achievement adds to Shaili Singh's growing list of accolades in the field of athletics.

• The Golden Grand Prix is a renowned athletics meet that attracts top athletes from around the world.

Additional Information

• Shaili Singh has been a promising athlete in the field of long jump, often being compared to her mentor, Anju Bobby George.

• She has consistently performed well in national and international events, making her one of the rising stars in Indian athletics.

• The Golden Grand Prix is part of the World Athletics Continental Tour, which includes various levels of competitions around the globe.

• Winning a medal in such a prestigious event is a significant milestone in Shaili Singh's career.

Q99. Answer: (c) Topoisomerase, DNA ligase, DNA polymerase, DNA primase

The correct answer is Topoisomerase, DNA ligase, DNA polymerase, DNA primase

Key Points

• Topoisomerase, DNA ligase, DNA polymerase, DNA primase are essential enzymes involved in the process of DNA replication in an animal cell.

• Topoisomerase helps in relieving the tension generated during the unwinding of the DNA helix.

• DNA ligase is responsible for joining Okazaki fragments on the lagging strand to create a continuous DNA strand.

• DNA polymerase synthesizes new DNA strands by adding nucleotides to a pre-existing strand.

• DNA primase synthesizes short RNA primers that provide a starting point for DNA polymerase to begin synthesis.

Additional Information

• Reverse transcriptase is not involved in DNA replication but is used in the process of reverse transcription, primarily in retroviruses.

• RNA polymerase is involved in the transcription process where RNA is synthesized from a DNA template.

• The coordination of these enzymes ensures the accurate and efficient replication of the DNA, which is crucial for cell division and the maintenance of genetic information.

Q100. Answer: (b) 1820

The correct answer is 1820

Key Points

• 1820 is the year when Hans Christian Oersted discovered that a compass needle gets deflected by an electric current passing through a nearby metallic wire.

• Hans Christian Oersted was a Danish physicist and chemist who is known for this discovery, which showed a direct relationship between electricity and magnetism.

• This experiment laid the foundation for the field of electromagnetism, significantly influencing future scientific research and technological advancements.

• The discovery was a pivotal moment in the study of electromagnetism and led to the development of various technologies like electric motors and generators.

Additional Information

• Hans Christian Oersted's discovery was accidental; he noticed the deflection of the compass needle while preparing for a lecture demonstration.

• This phenomenon demonstrated the fundamental connection between electric currents and magnetic fields, which was later formulated into Ampère's circuital law by André-Marie Ampère.

• Oersted's work was part of the broader 19th-century scientific movement that included contributions from other prominent scientists such as Michael Faraday and James Clerk Maxwell.

• The unit of magnetic field strength, the oersted (Oe), is named in his honor.

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