SSC CHSL Tier-1 2024: Official Paper (Held On: 04 Jul, 2024 Shift 4) (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. Parts of the following sentence have been given as options. Select the option that contains an error.

I will be study around 7 o'clock.

(a) I
(b) around 7 o'clock
(c) be study
(d) will

Q2. The following sentence has been divided into four segments. Identify the segment that contains a grammatical error.

She were singing / beautifully in / the concert hall / last night.

(a) the concert hall
(b) last night.
(c) She were singing
(d) beautifully in

Q3. The given sentence is divided into four segments. Select the option that has the segment with the grammatical error.

My daughter participate / in the dance competition / that is organised every year / by the Lion's Club.

(a) My daughter participate
(b) that is organised every year
(c) in the dance competition
(d) by the Lion's Club.

Q4. Identify the error in the following sentence and select the option with the correct use of the phrasal verb.

The police inspector was trying to give out the contradicting stories in the scene of the accident.

(a) The police inspector was trying to lighten up the contradicting stories in the scene of the accident.
(b) The police inspector was trying to rush out the contradicting stories in the scene of the accident.
(c) The police inspector was trying to sign up the contradicting stories in the scene of the accident.
(d) The police inspector was trying to sort out the contradicting stories in the scene of the accident.

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.

Nutrition experts have researched the bad effects of junk food and have come to the (1)_____ that junk food manufacturing companies are fooling the people by (2)___ deceptive advertisements that show junk food as healthy. We must substitute junk food with (3)___ food like fruits and vegetables. So the next time you think of (4)___ that burger, hotdog, pizza, samosa, kachori or even ice cream in a restaurant, eating joint or a party, stop your instincts and look for some healthier food (5)_____ instead.

Q5. Select the most appropriate option to fill in blank number 1.

(a) conclusion
(b) assumption
(c) derivation
(d) solution

Q6. Select the most appropriate option to fill in blank number 2.

(a) observing
(b) showing
(c) assuming
(d) blowing

Q7. Select the most appropriate option to fill in blank number 3.

(a) expensive
(b) cleaner
(c) powerful
(d) healthier

Q8. Select the most appropriate option to fill in blank number 4.

(a) skipping
(b) grabbing
(c) building
(d) turning

Q9. Select the most appropriate option to fill in blank number 5.

(a) options
(b) chances
(c) comparisons
(d) additions

Q10. Select the most appropriate synonym of the given word.

Desire

(a) Loathing
(b) Aversion
(c) Longing
(d) Disgust

Q11. Select the most appropriate ANTONYM of the underlined word.

The growth of the cell wall is very rarely uniform.

(a) Fixed
(b) Paired
(c) Balanced
(d) Variegated

Q12. Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.

I had to write a letter of mistake to my father for the blunder I made.

(a) circumstance
(b) gratitude
(c) apology
(d) No substitution required

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Q13. Select the most appropriate option that can substitute the underlined word in the given sentence.

A newer, more effective computer system was installed in place of the obsolete one.

(a) modern
(b) advanced
(c) current
(d) outdated

Q14. Select the INCORRECTLY spelt word.

(a) Physiologist
(b) Gracious
(c) Contagious
(d) Couragious

Q15. Select the INCORRECTLY spelt word in the given sentence.

Shreya prefers wearing green coloured saree on marriage funcktions.

(a) Marriage
(b) Funcktions
(c) Prefers
(d) Wearing

Q16. Select the most appropriate ANTONYM of the underlined word in the given sentence.

The performance of the team in the lost match was dismal.

(a) Sadden
(b) Cheap
(c) Luminous
(d) Dainty

Q17. Select the most appropriate ANTONYM of the given word.

Noble

(a) Grand
(b) Common
(c) Indescribable
(d) Magical

Q18. Select the most appropriate meaning of the given idiom.

A bolt from the blue

(a) Raining heavily
(b) Thunder and rain in a storm
(c) A sudden and unexpected event
(d) A spontaneous but expected event

Q19. Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.

She was thinking at the fun they had.

(a) No substitution required
(b) beside
(c) by
(d) about

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

Vehement

(a) Mild
(b) Reliable
(c) Passionate

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(d) Smashed

Q21. Select the most appropriate option of the given word to fill in the blank.

The new construction sites have _____ attack by the environmentalists.

(a) come under
(b) come off
(c) come upon
(d) come out

Q22. Select the most appropriate ANTONYM of the given word.

Benevolent

(a) Happy
(b) Patient
(c) Harmless
(d) Cruel

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

Walk a tightrope

(a) To walk on a narrow road
(b) To try and balance yourself
(c) To be tensed about something
(d) To act carefully in a difficult situation

Q24. Select the most appropriate option that can substitute the underlined segment in the given sentence.

He takes his always dog for a walk in the park.

(a) his dog for a walk always takes
(b) always takes his dog for a walk
(c) takes his dog for always a walk
(d) takes his dog for an always walk

Q25. Identify the most appropriate ANTONYM of the underlined word in the following sentence.

There is no transparency in the procedure followed by the company.

(a) Reliability
(b) Opacity
(c) Coherence
(d) Clarity

GENERAL INTELLIGENCE

Q26. The position of how many letters will remain unchanged if each of the letters in the word ‘COUNTED’ is arranged in English alphabetical order?

(a) More than three
(b) None
(c) Three
(d) Two

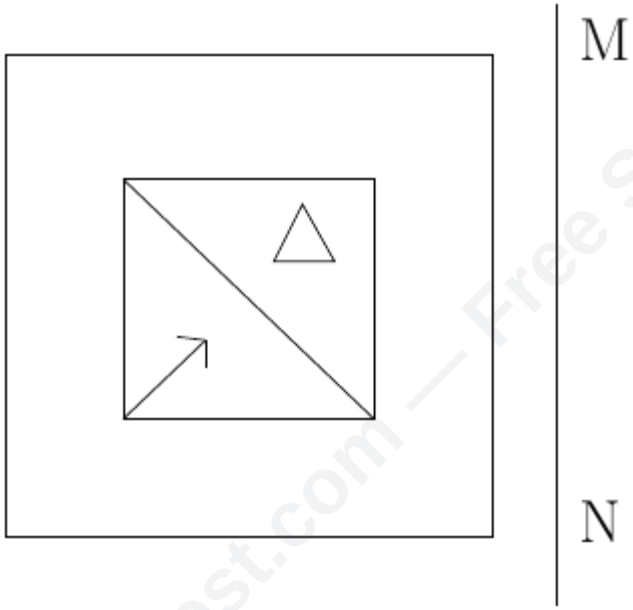
Q27. Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the letter-cluster that is different.

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

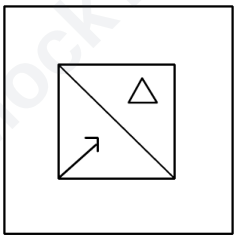
(a) KEAY
(b) SMIG
(c) CWSR
(d) MGCA

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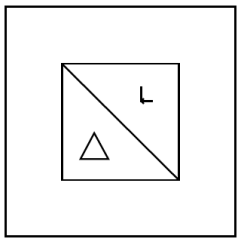
Q28. Select the correct mirror image of the given figure when the mirror is placed at MN, as shown.



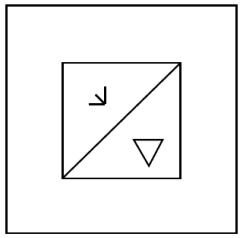
(a)



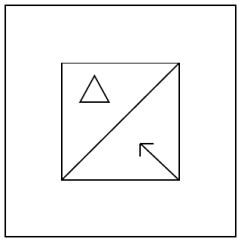
(b)



(c)



(d)



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Q29. If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '-', what will come in place of the question mark (?) in the following equation?

26 B 3 C 5 D 120 A 4 = ?

(a) 51
(b) 55
(c) 53
(d) 57

Q30. If 'T' stands for '+', 'P' stands for '÷', 'Q' stands for '×' and 'R' stands for '-', what will come in place of the question mark (?) in the following equation?

24 T 36 P 48 Q 32 R 40 T 53 = ?

(a) 48
(b) 31
(c) 73
(d) 61

Q31. If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '–', then the resultant of which of the following will be 652?

(a) 109 B 6 D 16 A 2 C 6
(b) 109 A 6 D 16 B 2 C 6
(c) 109 B 6 A 16 D 2 C 6
(d) 109 C 6 D 16 A 2 B 6

Q32. What should come in place of the question mark (?) in the given series?

512, 1000, 1728, 2744, 4096, 5832, ?

(a) 9261
(b) 6000
(c) 8000
(d) 4000

Q33. In a certain language, 'How are you' is written as 'Co De Ki' and 'you look happy' is written as 'Th De Mo'. How is 'you' written in the given language?

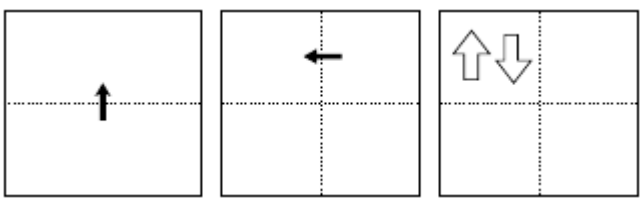
(a) Co
(b) Ki
(c) De
(d) Mo

Q34. Which of the following letter-clusters will replace the question mark (?) in the given series to make it logically complete?

LPT, ?, BBF, JUL, RNR

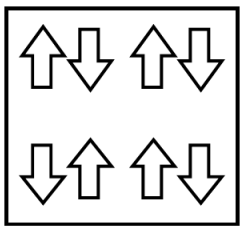
(a) FIZ
(b) UTL
(c) COD
(d) TIZ

Q35. A square sheet of paper is folded along the dotted line successively along the directions shown and is then punched in the last. How would the paper look when unfolded?

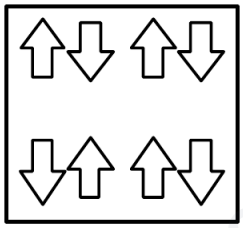


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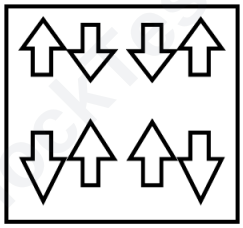
(a)



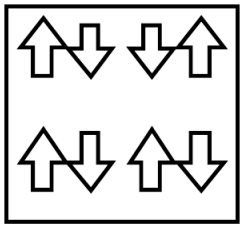
(b)



(c)



(d)



Q36. Select the word-pair that best represents a similar relationship to the one expressed in the pair of words given below.

(The words must be considered as meaningful English words and must not be related to each other based on the number of letters/number of consonants/vowels in the word.)

Dogs - Bark

(a) Snakes - Roar
(b) Donkeys - Bray
(c) Cats - Hiss
(d) Cows - Oink

Q37. Select the set in which the numbers are related in the same way as are the numbers of the following sets.

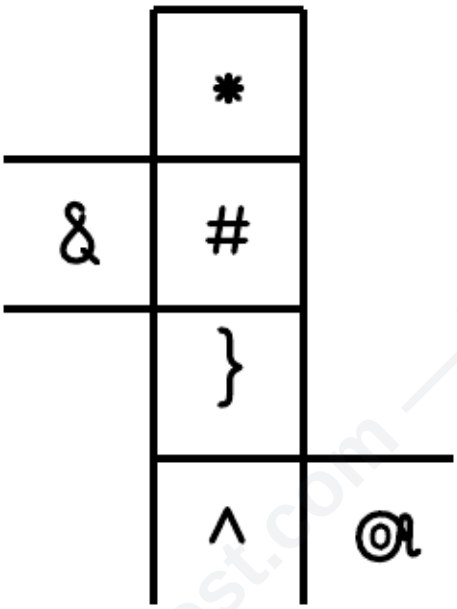
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and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

(35, 5, 7) (108, 12, 9)

(a) (118, 15, 9)
(b) (254, 17, 7)
(c) (91, 13, 7)
(d) (114, 14, 8)

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Q38. What would be the symbol on the opposite side of '*' if the given sheet is folded to form a cube?



(a) ^
(b) }
(c) @
(d) &

Q39. Select the word-pair that best represents a similar relationship to the one expressed in the pair of words given below.

(The words must be considered as meaningful English words and must not be related to each other based on the number of letters/number of consonants/vowels in the word)

Pleasure : Pain

(a) Angry : Furious
(b) Smart : Intelligent
(c) Fast : Quick
(d) Gentle : Brutal

Q40. The position of how many letters will remain unchanged if each of the letters in the word ‘POWDERS’ is arranged in English alphabetical order?

(a) One
(b) Three
(c) More than three
(d) None

Q41. Choose the alternative which closely resembles the mirror image of the given combination.

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(a)



(b)



(c)



(d)

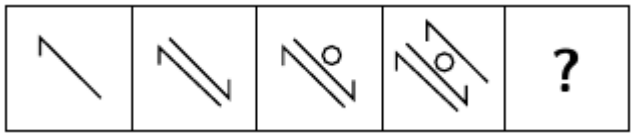


Q42. What should come in place of? in the given series?

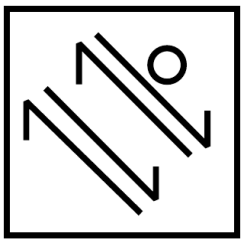
119 128 137 146 155 ?

(a) 162
(b) 164
(c) 163
(d) 161

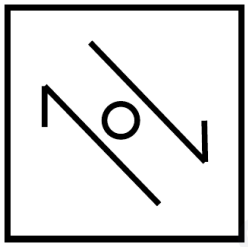
Q43. Identify the figure given in the options which when put in place of the question mark (?) will logically complete the series?



(a)



(b)



(c)



(d)



Q44. 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 :

Some bags are paper.

All wood is paper.

Some bags are dolls.

Conclusion (I) : All dolls are paper.

Conclusion (II) : Some bags are wood.

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

Q45. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

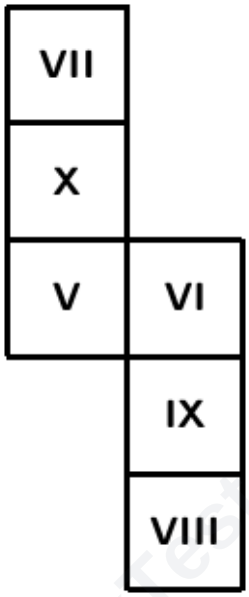
PQRSO_TT_UV_MW_V

(a) NTUY
(b) SNUX
(c) TSUX

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(d) XTUS

Q46. What would be the Roman numeral on the opposite side of 'VI' if the given sheet is folded to form a cube?

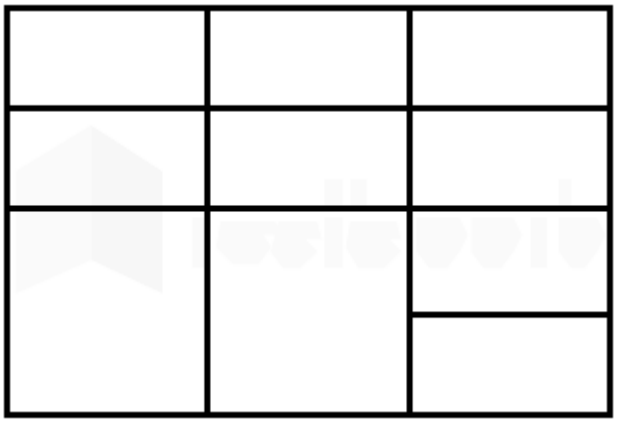


(a) X
(b) VIII
(c) VII
(d) V

Q47. In a certain code language, 'now or never' is coded as 'ak bj ut' and 'never be late' is coded as 'bj tl cv'. How is 'never' coded in that language?

(a) cv
(b) tl
(c) bj
(d) ak

Q48. How many rectangles are there in the given figure?



(a) 33
(b) 34
(c) 32
(d) 31

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Q49. In a certain code language,

'P + Q' means 'P is the wife of Q'.

'P − Q' means 'P is the brother of Q'.

'P / Q' means 'P is the son of Q'.

'P × Q' means 'P is the father of Q'.

If 'V / K × T + M × O', then how is K related to O?

(a) Mother's father
(b) Father's mother
(c) Mother
(d) Father

Q50. 17 is related to 136 following a certain logic. Following the same logic, 23 is related to 184. To which of the following is 29 related following 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) 232
(b) 230
(c) 234
(d) 228

QUANTITATIVE APTITUDE

Q51. A student has 5 subjects in an examination. The distribution of hard work of 16 hours a day over 5 subjects and marks obtained 400 out of 500 are shown in the charts.



How much time did the student spend on Math and how much marks were obtained in math?

(a) 6.4 hrs and 90 marks
(b) 40 hrs and 21 marks
(c) 9.6 hrs and 84 marks
(d) 6.4 hrs and 84 marks

Q52. Simplify the given expression.

[3 × 6 - 3 {2 (2 ÷ 1/2 - 2) + 2 ÷ 1/2} - 18]

(a) -18
(b) 18
(c) 24
(d) -24

Q53. If the height of a solid right circular cylinder is 27 cm and diameter of its base is 30 cm, the total surface area (in cm^2) of the right circular cylinder is: Take $\pi = 22/7$

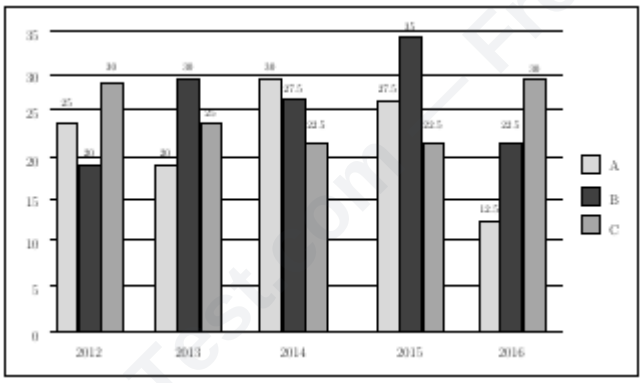
(a) 3960
(b) 3964
(c) 3978
(d) 3976

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Q54. Akhil can complete a piece of work in 24 days. Shyam can complete the same piece of work in 12 days. If both of them work together, in how many days can they complete the same piece of work?

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

Q55. The following bar graph represents the production of three types of buses by a company over the years (in thousands).

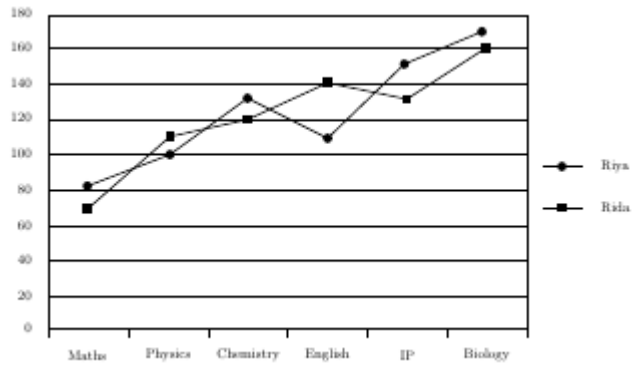


In which of the following years was the percentage production of B type buses to C type buses, the maximum?

(a) 2013
(b) 2014
(c) 2015
(d) 2016

Q56. Study the given graph and answer the question that follows.

The graph shows the marks obtained by Riya and Rida in six subjects in the CBSE 12th exam. The maximum marks in Maths, Physics and Chemistry are 140, and that in English, IP, Biology are 180



What is the percentage of marks obtained by Riya in Chemistry?

(a) 92.86%
(b) 95.87%
(c) 99.38%
(d) 92.68%

Q57. From a circle, a sector with a central angle of 30° is cut off. If the length of the arc of this sector is 5.5 cm, then find the radius (in cm) of the circle. [Use π = 22/7]

(a) 11
(b) 10
(c) 10.5
(d) 12

Q58. In a circle, O is the centre and AOB is the diameter. AT is a tangent to the circle. Line TB intersects the circle at Q. Given that angle AOQ = 94°, find angle ATQ.

(a) 133°
(b) 86°
(c) 47°
(d) 43°

Q59. An amount of Rs. 8,000 was invested for 2 years, partly in scheme 1 at the rate of 5% simple interest per annum and the rest in scheme 2 at the rate of 4% simple interest per annum. The total interest received at the end was Rs. 720. The amount of money invested in scheme 1 is:

(a) Rs. 7,200
(b) Rs. 3,640
(c) Rs. 4,400
(d) Rs. 4,000

Q60. If the price of tea is increased by 40%, by how what percentage must the consumption of tea be decreased so as not to increase the expenditure?

(a) 284/7 %
(b) 359/2 %
(c) 152/9 %
(d) 313/5 %

Q61. What is the smallest number that must be added to 19487161 so that it is divisible by 11?

(a) 5
(b) 11
(c) 16
(d) 10

Q62. Two parallel chords of length 5 units and 8 units are on opposite sides of the center of a circle of radius 7 units. What is the distance between the chords? (round your answer to two decimal places)

(a) 12.28 units
(b) 12.82 units
(c) 11.28 units
(d) 11.82 units

Q63. If $\cot\theta = 3/4$, θ is an acute angle, then $\sin\theta + \cos\theta - \tan\theta$ is equal to :

(a) 1/15
(b) 1/13
(c) 1/18
(d) 1/11

Q64. A mixture contains alcohol and water in the ratio of 12 : 5. On adding 14 liters of water, the ratio of alcohol to water becomes 4 : 3. The quantity of alcohol in the mixture is:

(a) 30 L
(b) 42 L
(c) 28 L
(d) 18 L

Q65. The ratio of the lateral surface area to the total surface area of a cylinder with base diameter 60 cm and height 10 cm is:

(a) 1 : 3
(b) 1 : 9
(c) 1 : 7
(d) 1 : 4

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Q66. Ramu used to spend 72% of his income. His income has increased by 12%, and he increases his expenditure by 5%. If Ramu earlier saved y and after the increases he now saves x, then what is the value of ((x-y)/y× 100) %?

(a) 22%
(b) 27%
(c) 25%
(d) 30%

Q67. For what positive values of k do the following pair of linear equations have infinitely many solutions?

kx + 3y – (k – 3) = 0

12x + ky – k = 0

(a) 12
(b) 6
(c) 4
(d) 2

Q68. In a 100-m race. A beats B by 20 m and B beats C by 5 m. In the same race, find the distance by which A beats C.

(a) 22 m
(b) 25 m
(c) 24 m
(d) 26 m

Q69. 3 solid spheres of diameters 6 cm, 8 cm and 10 cm are melted together to form a single solid sphere. Find its radius.

(a) 6 cm
(b) 12 cm
(c) 3 cm
(d) 9 cm

Q70. In a triangle ABC, AB = AC. BC is extended to D such that CD = AB and the angle ADC is 30°. What are the angles of triangle ABC?

(a) 50°, 60°, 70°
(b) 45°, 60°, 75°
(c) 30°, 60°, 90°
(d) 60°, 60°, 60°

Q71. A man bought 4 books for Rs. 50 each, 5 books for Rs. 60 each and 6 books for Rs. 70 each. The average cost of a book for the man is (round up to two decimal places):

(a) Rs. 60.33
(b) Rs. 36.33
(c) Rs. 50.33
(d) Rs. 61.33

Q72. A shopkeeper buys 1800 kg wheat for Rs. 32,400. If 20% of this wheat is spoiled due to rain, at what rate (Rs. /kg) should he sell the rest to earn 20%?

(a) 26
(b) 29
(c) 27
(d) 25

Q73. A 35% profit is made when a discount of 35% is given on the marked price of an item. When the discount is 45%, then the profit percentage will be:

(a) 171/13 %
(b) 113/13 %
(c) 143/13 %
(d) 133/17 %

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Q74. If the income of Neha is 5% more than that of Monica, then the income of Monica is what percentage less than that of Neha?

(a) 45/21 %
(b) 413/21 %
(c) 411/21 %
(d) 416/21 %

Q75. The following table shows the production of food grains in a country over the five years.

Year	Production (in ten lakh tonnes)			
Wheat	Rice	Maize	Other grains	
2016-17	650	250	200	450
2017-18	800	440	240	400
2018-19	680	390	220	500
2019-20	700	400	260	480
2020-21	640	440	300	520

The difference between the average production (in ten lakh tonnes) of wheat and maize over the years is:

(a) 450
(b) 140
(c) 224
(d) 310

GENERAL AWARENESS

Q76. On the basis of highest population growth rate (Census, 2011), select the option that arranges the following states in descending order.

A) Bihar
B) Arunachal Pradesh
C) Meghalaya

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

Q77. Which of the following tribes does NOT live in India?

(a) Gond
(b) Maasai
(c) Santhal
(d) Tharu

Q78. Who was the first to use the term 'horsepower' that refers to the power produced by an engine?

(a) Amedeo Avogadro
(b) John Dalton
(c) James Watt
(d) Albert Einstein

Q79. Which of the following is NOT an alignment option for text in a cell?

(a) Justified
(b) Left
(c) Center

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(d) Right

Q80. Which of the following pairs of state and folk dance is correctly paired?

(a) Gujarat – Bihu dance
(b) Haryana – Garia or Goria dance
(c) Punjab – Bhangra dance
(d) Kerala – Ghoomar dance

Q81. _____ is one of the well-known schemes sponsored by the Union Government of India. It was launched in November 2015 with the aim of rescuing the country's ailing electricity distribution companies.

(a) One Nation, One Grid
(b) Integrated Power Development Scheme (IPDS)
(c) Deendayal Upadhyaya Gram Jyoti Yojana
(d) Ujwal DISCOM Assurance Yojana

Q82. In a symport:

(a) a molecule moves across a membrane dependent of other molecules
(b) both molecules cross the membrane in the same direction
(c) a molecule moves across a membrane independent of other molecules
(d) both molecules cross the membrane in the opposite direction

Q83. Which of the following committees had recommended the inclusion of a chapter on the Fundamental Duties in the Constitution of India and stressed that the citizens should become conscious that, in addition to the enjoyment of rights, they also have certain duties to perform?

(a) Balwant Rai Mehta Committee (1976)
(b) JR Varma Committee (1996)
(c) Swaran Singh Committee (1976)
(d) Ashok Mehta Committee (1977)

Q84. Which of the following persons was sworn in as chief of the Central Information Commission of India in November 2023?

(a) Bimal Julka
(b) Divya Prakash Sinha
(c) Yashovardhan Azad
(d) Heeralal Samariya

Q85. Which of the following is NOT a moon of Jupiter?

(a) Callisto
(b) Triton
(c) Ganymede
(d) Europa

Q86. National income at constant prices means:

(a) income estimated at base year prices
(b) income estimated at any year prices
(c) income estimated for next year prices
(d) income estimated at current year prices

Q87. Which of the following is the most dominant species of the Tropical Deciduous Forests?

(a) Coconut
(b) Rubber
(c) Teak
(d) Mulberry

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Q88. The Kailasha temple at Ellora near Aurangabad in Maharashtra was built by a king from the _____ Dynasty.

(a) Pratihara
(b) Gurjara Pratihara
(c) Chandella
(d) Rashtrakuta

Q89. Who composed the music of the patriotic song ‘Maa Tujhe Salaam’?

(a) Anu Malik
(b) AR Rahman
(c) Shankar Mahadevan
(d) Himesh Reshammiya

Q90. The birthday of _____ is celebrated as the International Day of Non-Violence.

(a) Sardar Vallabhbhai Patel
(b) Rabindranath Tagore
(c) Mahatma Gandhi
(d) Bhimrao Ambedkar

Q91. The Braj festival in _____ is held every year for two days in the Shukla Paksha of the Phalgun month, a few days before Holi.

(a) Rajasthan
(b) Haryana
(c) Himachal Pradesh
(d) Madhya Pradesh

Q92. Where and when was India’s first Senior National Archery Championship held?

(a) Chennai, 1973
(b) Chennai, 1975
(c) Delhi, 1973
(d) Delhi, 1975

Q93. Which of the following statements is/are FALSE about the Special Economic Zones (SEZs) of India?

i. One of the main objectives of the Zones Act was promotion of exports of goods and services.
ii. The Government of India announced the Special Economic Zones (SEZs) Policy in the year 2011.
iii. The SEZ Rules provided for different minimum land requirement for different classes of SEZs.

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

Q94. Former Union Minister _____ from Manipur was awarded Padma Shri in 2023 by the Union government for his contribution in public affairs in the last four decades.

(a) Thokchom Radheshyam Singh
(b) Thounaojam Chaoba
(c) Yumnam Joykumar
(d) Okram Ibobi Singh

Q95. The Thomas Cup is associated with which of the following sports?

(a) Badminton female
(b) Tennis male
(c) Badminton male
(d) Tennis female

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Q96. Under the discretionary power of which Article of the Indian Constitution did the SC of India recognise sex work as a profession?

(a) Article 142
(b) Article 140
(c) Article 141
(d) Article 143

Q97. Where did the indigenous sport ‘Gatka’ originate from?

(a) Manipur
(b) Punjab
(c) Rajasthan
(d) Jammu and Kashmir

Q98. Which of the following song did AR Rahman record with Michael Jackson?

(a) You are my destiny
(b) Infinity Love
(c) Ekam Satyam
(d) The Oracle

Q99. How can we add text to a slide in MS-PowerPoint?

(a) Note box
(b) Textbox
(c) Dialogue box
(d) Notes page

Q100. Which part of the Constitution of India deals with ‘Citizenship’?

(a) Part III
(b) Part IV
(c) Part I
(d) Part II

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) be study

The correct answer is: Option 3.

Key Points

• The primary issue in the sentence is the incorrect verb form "be study."

• The correct verb form should be "be studying" to indicate the continuous tense.

• The correct phrase should be "I will be studying around 7 o'clock," ensuring grammatical correctness and clarity.

Therefore, the correct answer is Option 3.

Correct Sentence: "I will be studying around 7 o'clock."

Q2. Answer: (c) She were singing

The correct answer is '3' i.e. this part of the sentence has an error.

Key Points

• In the third part of the given sentence, the plural form of the verb 'were' is incorrect.

• In the given sentence, the subject 'She' is singular and should be followed by the singular form of the verb 'was'.

• The correct sentence should use the singular form of the verb to match the singular subject.

• Therefore, the singular form of the verb 'was' should be used in place of the plural form 'were'.

Correct sentence: She was singing beautifully in the concert hall last night.

Q3. Answer: (a) My daughter participate

The correct answer is Option 1.

Key Points

• The primary issue in the sentence is the use of the verb "participate" without the correct subject-verb agreement.

• Since the subject is singular ("My daughter"), the verb should be in the singular form.

• The correct verb form should be "participates" (singular verb).

• Thus, the error is located in part A of the sentence.

Therefore, the correct answer is A.

Correct Sentence: "My daughter participates in the dance competition that is organised every year by the Lion's Club."

Q4. Answer: (d) The police inspector was trying to sort out the contradicting stories in the scene of the accident.

The correct answer is Option 4.

Key Points

• In the 4th sentence, the correct phrasal verb should be "sort out" which means to organize or resolve something.

• The phrase "sort out the contradicting stories" makes sense in the context of the police inspector trying to resolve or make sense of the conflicting information.

Therefore, the correct answer is Option 4.

Correct Sentence: "The police inspector was trying to sort out the contradicting stories in the scene of the accident."

Additional Information

• Option 1: "lighten up" means to make something less serious, which is not suitable in this context.

• Option 2: "rush out" means to produce something quickly, which does not fit the context.

• Option 3: "sign up" means to register or enlist, which is irrelevant here.

Q5. Answer: (a) conclusion

The solution is in Hindi. Read it online.

Q6. Answer: (b) showing

The solution is in Hindi. Read it online.

Q7. Answer: (d) healthier

The solution is in Hindi. Read it online.

Q8. Answer: (b) grabbing

The solution is in Hindi. Read it online.

Q9. Answer: (a) options

The solution is in Hindi. Read it online.

Q10. Answer: (c) Longing

The solution is in Hindi. Read it online.

Q11. Answer: (d) Variegated

The solution is in Hindi. Read it online.

Q12. Answer: (c) apology

The solution is in Hindi. Read it online.

Q13. Answer: (d) outdated

The solution is in Hindi. Read it online.

Q14. Answer: (d) Couragious

The solution is in Hindi. Read it online.

Q15. Answer: (b) Funcktions

The solution is in Hindi. Read it online.

Q16. Answer: (c) Luminous

The solution is in Hindi. Read it online.

Q17. Answer: (b) Common

The solution is in Hindi. Read it online.

Q18. Answer: (c) A sudden and unexpected event

The solution is in Hindi. Read it online.

Q19. Answer: (d) about

The solution is in Hindi. Read it online.

Q20. Answer: (a) Mild

The solution is in Hindi. Read it online.

Q21. Answer: (a) come under

The correct answer is: come under.

Key Points

• The context tells us that environmentalists have launched an attack on the new development sites.

• The phrase "come under attack" is an idiomatic expression meaning to be criticized or targeted.

• None of the other options fit the context of the sentence as appropriately as "come under."

Hence, the correct sentence is: The new construction sites have come under attack by the environmentalists.

Additional Information

• "Come off" usually means to succeed or to happen as planned, which doesn't fit here.

• "Come upon" means to find or discover by chance, which is also not suitable.

• "Come out" means to be revealed or released, which does not fit the context either.

Q22. Answer: (d) Cruel

The solution is in Hindi. Read it online.

Q23. Answer: (d) To act carefully in a difficult situation

The solution is in Hindi. Read it online.

Q24. Answer: (b) always takes his dog for a walk

The correct answer is Option 2.

Key Points

• The phrase "always takes his dog for a walk" is the grammatically correct order of words.

• The placement of "always" (adverb) before "takes" (verb) ensures the sentence flows correctly and logically.

• None of the other options provide a grammatically correct or natural-sounding sentence.

Correct Sentence: "He always takes his dog for a walk in the park."

Q25. Answer: (b) Opacity

The solution is in Hindi. Read it online.

Q26. Answer: (d) Two

Given word: 'COUNTED'

After arranged in alphabetical order:

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Alphabets	C	O	U	N	T	E	D
Alphabetical order	C	D	E	N	O	T	U

Now,

there are Two alphabets "C" and "N" that will remain unchanged if each of the letters in the word 'COUNTED' is arranged in English alphabetical order.

Hence, the correct answer is "Option 4".

Q27. Answer: (c) CWSR

The logic followed here is:

For, KEAY

For, SMIG

For, CWSR

If we two letters backwards from S we have Q but here it is R, so it dose not follows the pattern.

For, MGCA

So all the options except CWSR follows the pattern.

Hence the correct answer is "Option 3".

Q28. Answer: (d) [figure]

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 4".

Q29. Answer: (c) 53

Given Equation: 26 B 3 C 5 D 120 A 4 = ?

BODMAS Rule:

Decoding the given information:

Alphabet	A	B	C	D
Meaning	÷	×	•	•

Now replacing the sign from left to right using BODMAS Rule, we get:

=> 26 × 3 + 5 - 120 ÷ 4 = ?

=> 26 × 3 + 5 - 30 = ?

=> 78 + 5 - 30 = ?

=> 83 - 30 = 53

Hence, the correct option is "Option 3".

Q30. Answer: (d) 61

Given Equation: 24 T 36 P 48 Q 32 R 40 T 53 = ?

BODMAS Rule:

Decoding the given information:

Alphabet	T	P	Q	R
Meaning	•	÷	×	•

Now replacing the sign from left to right using BODMAS Rule, we get:

=> 24 + 36 ÷ 48 × 32 - 40 + 53 = ?

=> 24 + 24 - 40 + 53 = ?

=> 101 - 40 = 61.

Hence, the correct option is "Option 4".

Q31. Answer: (a) 109 B 6 D 16 A 2 C 6

BODMAS table

Given equation: If ‘A’ stands for ‘÷’, ‘B’ stands for ‘×’, ‘C’ stands for ‘+’ and ‘D’ stands for ‘–’

Option 1) 109 B 6 D 16 A 2 C 6

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Putting the sign in equation
=>109 x 6 - 16 ÷ 2 + 6
=>109 x 6 - 8 + 6
=>654 - 8 + 6
=>660 - 8
=>652
Option2) 109 A 6 D 16 B 2 C 6
=>109 ÷ 6 - 16 x 2 + 6
=>18.16 - 16 x 2 + 6
=>18.16 - 32 + 6
=>24.16 - 32
=>-7.84
Option3) 109 B 6 A 16 D 2 C 6
=>109 x 6 ÷ 16 - 2 + 6
=>109 x 0.375 - 2 + 6
=>40.875 - 2 + 6
=>46.875 - 2
=>44.875
Option 4) 109 C 6 D 16 A 2 B 6
=>109 + 6 - 16 ÷ 2 x 6
=>109 + 6 - 8 x 6
=>109 + 6 - 48
=>115 - 48
=>67
Hence the correct answer is "Option 1".

Q32. Answer: (c) 8000

The logic followed here is :
So, 8000 is the missing number of the series.
Hence the correct answer is "Option 3".

Q33. Answer: (c) De

The logic followed here is:
'How are you' is coded as 'Co De Ki'
'you look happy' is coded as 'Th De Mo'
Here you is coded as - De
How / are - Co / Ki
look / happy - Th / Mo
Hence the correct answer is "Option 3".

Q34. Answer: (d) TIZ

The logic followed here is:
So, 'TIZ' is the missing letter cluster of the series.
Hence the correct answer is "Option 4".

Q35. Answer: (c) [figure]

The paper after unfolded will be
Hence, the correct answer will be "Option 3".

Q36. Answer: (b) Donkeys - Bray

The logic followed here is:
Logic: Animals and the sounds they make.
Here,
Dogs : Bark → Dogs make the sound Bark.

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Similarly,

Donkeys : Bray → Donkeys make the sound Bray.

Hence, the correct answer is "Option 2".

Q37. Answer: (c) (91, 13, 7)

The logic followed here is:

Logic: 2nd number × 3rd number = 1st number.

Now,

For, (35, 5, 7)

=> 5 × 7 = 35

For, (108, 12, 9)

=> 12 × 9 = 108

Similarly, for (91, 13, 7)

=> 13 × 7 = 91

Hence, the correct answer is "Option 3".

Q38. Answer: (b) }

From the given open dice:

} is the opposite side of *

^ is the opposite side of #

& is the opposite side of @.

Hence the correct answer is "Option 2".

Q39. Answer: (d) Gentle : Brutal

The logic followed here is:

Logic: Opposites/Antonyms.

Here,

Pleasure : Pain → Pleasure and Pain are antonyms (opposites).

Similarly,

Gentle : Brutal → Gentle and Brutal are antonyms (opposites).

Hence, the correct answer is "Option 4".

Q40. Answer: (d) None

Given word: 'POWDERS'

After arranged in alphabetical order:

Alphabets	P	O	W	D	E	R	S
Alphabetical order	D	E	O	P	R	S	W

Now,

there are no alphabets that will remain unchanged if each of the letters in the word 'POWDERS' is arranged in English alphabetical order.

Hence, the correct answer is "Option 4".

Q41. Answer: (a) [figure]

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 1".

Q42. Answer: (b) 164

The logic followed here is:

So, '164' is the missing term of the series.

Hence, the correct answer is "Option 2".

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Q43. Answer: (c) [figure]

The logic followed here is: The new element is added in each next step

hence the correct answer is "Option 3".

Q44. Answer: (c) Neither conclusion (I) nor (II) follows.

The least possible venn diagram for the given statement is as follows:

(I) All dolls are paper - FALSE (Only some bag is doll and some bag is paper, so all doll are paper dose not follows)

(II) Some bags are wood - FALSE (Some part of bag is paper and all paper is wood but some part of bag is also doll, so it may be a posiibility but not definitely true case.)

So, neither conclusion I nor II follows

Hence, the correct answer is "Option 3".

Q45. Answer: (b) SNUX

The logic followed here is:

So, 'SNUX' will be the correct alternative that will complete the series.

Hence, the correct answer is "Option 2".

Q46. Answer: (b) VIII

From the given open dice

VIII is the opposite side of VI

IX is the opposite side of X

V is the opposite side of VII

Hence, the correct answer is "Option 2".

Q47. Answer: (c) bj

The logic followed here is:

'now or never' is coded as 'ak bj ut'

'never be late' is coded as 'bj tl cv'

Here, the codes for

now / or - ak / ut

be / late - tl / cv

So, the code for 'never' is 'bj'

Hence, the correct answer is "Option 3".

Q48. Answer: (d) 31

The number of rectangles in the given figure is shown below:

1) Number of rectangles = ((2×(2+1))/2)×((3×(3+1))/2)) = ((2×3)/2)×((3×4)/2) = (6/2)×(12/2) = 3 × 6 =>18

2) Total number of rectangles = 13

As marked, there are a total of (18 + 13) = 31 rectangles.

Hence, "Option 4" is the correct answer.

Additional InformationFormula used:

Number of rectangles = ((n×(n+1))/2)×((m×(m+1))/2)

Where,

number of rows = n

number of columns = m

Q49. Answer: (a) Mother’s father

Decoding the codes:

Symbol	•	•	/	x
Meaning	Wife	Brother	Son	Father

Given: V / K × T + M × O

It means V is the son of K, T is the daughter of K, T is the wife of M, and O is the child of M

So, K is O's mothers father.

Hence, the correct answer is "Option 1".

Q50. Answer: (a) 232

The logic followed here is:

Logic: (1st number × 8) = 2nd number.

Now,

For, 17 : 136

=> 17 × 8 = 136

For, 23 : 184

=> 23 × 8 = 184.

Similarly, for 29 : ?

=> 29 × 8 = 232

Hence, the correct answer is "Option 1".

Q51. Answer: (d) 6.4 hrs and 84 marks

Given:

The student worked for 16 hours a day over 5 subjects, and the total marks obtained are 400 out of 500.

The distribution of time spent and marks obtained are shown in the pie charts.

Time spent on Math = 40% of 16 hours

Marks obtained in Math = 21% of 400 marks

Formula used:

Time spent on Math = (Percentage of time spent on Math) × (Total time in hours)

Marks obtained in Math = (Percentage of marks in Math) × (Total marks obtained)

Calculation:

For time spent on Math:

=> Time spent = 40% × 16 hours

=> Time spent = (40/100) × 16

=> Time spent = 6.4 hours

For marks obtained in Math:

=> Marks obtained = 21% × 400 marks

=> Marks obtained = (21/100) × 400

=> Marks obtained = 84 marks

Therefore The student spent 6.4 hours on Math and obtained 84 marks in Math.

Q52. Answer: (d) -24

Given:

Simplify the given expression.

Formula used:

Order of operations (PEMDAS/BODMAS): Parentheses, Exponents (or Orders), Multiplication and Division (left-to-right), Addition and Subtraction (left-to-right)

Calculation:

[3 × 6 - 3 { 2 (2 ÷ (1)/(2) - 2) + 2 ÷ (1)/(2) } - 18]

=> [3 × 6 - 3 { 2 (2 ÷ 0.5 - 2) + 2 ÷ 0.5 } - 18]

=> [3 × 6 - 3 { 2 (4 - 2) + 4 } - 18]

=> [3 × 6 - 3 { 2 × 2 + 4 } - 18]

=> [3 × 6 - 3 { 4 + 4 } - 18]

=> [3 × 6 - 3 × 8 - 18]

=> [18 - 24 - 18]

=> -24

Therefore The correct answer is option (4).

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Q53. Answer: (a) 3960

Given:

Height (h) = 27 cm

Diameter (d) = 30 cm

Radius (r) = d/2 = 15 cm

π = 22/7

Formula used:

Total Surface Area (TSA) of a right circular cylinder = 2πr(h + r)

Calculation:

TSA = 2 × 22/7 × 15 × (27 + 15)

=> TSA = 2 × 22/7 × 15 × 42

=> TSA = 2 × 22 × 15 × 6

=> TSA = 3960 cm^2

Therefore The correct answer is option 1.

Q54. Answer: (c) 8 days

Shortcut Trick

Total work = LCM(24, 12) = 24 units.

Akhil's efficiency = 24 ÷ 24 = 1 unit/day.

Shyam's efficiency = 24 ÷ 12 = 2 units/day.

Combined efficiency = 1 + 2 = 3 units/day.

Time taken together = Total work ÷ Combined efficiency = 24 ÷ 3 = 8 days.

Therefore The correct answer is 8 days.

Alternate Method

Given:

Time taken by Akhil = 24 days

Time taken by Shyam = 12 days

Formula Used:

Total Work = LCM of given days

Efficiency = Total Work ÷ Time taken

Person	Days	Total Work	Efficiency
Akhil	24	24	24 ÷ 24 = 1
Shyam	12	24 ÷ 12 = 2	

Calculations:

=> Total Efficiency of Akhil and Shyam = 1 + 2 = 3 units/day

=> Time taken to complete the work together = Total Work ÷ Total Efficiency

=> Time taken = 24 ÷ 3 = 8 days

Therefore The correct answer is 8 days.

Additional Information

Direct Formula for 2 Persons

If person A takes x days and person B takes y days to finish a task, time taken together = (x × y) ÷ (x + y) days.

Pipes and Cisterns

Operates on the same logic as Time & Work. An inlet pipe has positive efficiency (adds to total work) while an outlet pipe has negative efficiency (subtracts from total work).

Work and Wages

Total wages earned are always distributed in the exact ratio of the total work done by each individual. If they work for the same duration, wages are split purely based on their efficiency ratio.

Alternate Days Working

Find the combined work done in one complete cycle (e.g., A works day 1, B works day 2 → 1 cycle = 2 days). Divide total work by cycle work to find the number of cycles, then add remaining days as needed.

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Q55. Answer: (c) 2015

Given:

The bar graph shows the production of three types of buses (A, B, and C) over the years.

We are required to find the year in which the percentage production of B type buses to C type buses is the maximum.

Formula used:

Percentage = (Production of B type buses / Production of C type buses) × 100

Calculation:

For 2013:

=> Percentage = (30 / 25) × 100 = 120%

For 2014:

=> Percentage = (27.5 / 22.5) × 100 = 122.22%

For 2015:

=> Percentage = (35 / 22.5) × 100 = 155.56%

For 2016:

=> Percentage = (22.5 / 30) × 100 = 75%

The maximum percentage of B type buses to C type buses is in the year 2015, which is 155.56%.

Therefore The correct answer is option (3): 2015.

Q56. Answer: (a) 92.86%

Given:

The graph shows the marks obtained by Riya and Rida in six subjects in the CBSE 12th exam.

The maximum marks in Maths, Physics, and Chemistry are 140, and in English, IP, and Biology are 180.

We need to find the percentage of marks obtained by Riya in Chemistry.

Formula used:

Percentage = (Marks obtained / Maximum marks) × 100

Calculation:

Marks obtained by Riya in Chemistry = 130

Maximum marks in Chemistry = 140

=> Percentage = (130 / 140) × 100

=> Percentage = 92.86%

Therefore The percentage of marks obtained by Riya in Chemistry is 92.86%.

Q57. Answer: (c) 10.5

Shortcut Trick

The arc length of a sector is proportional to its central angle.

For 30°, arc length = 5.5 cm.

For 360° (full circle), Circumference = 5.5 × (360 / 30) = 5.5 × 12 = 66 cm.

2 × (22 / 7) × r = 66 => r = (66 × 7) / 44 = 1.5 × 7 = 10.5 cm.

Therefore The correct answer is 10.5 cm.

Alternate Method

Given:

Central angle (θ) = 30°

Arc length (l) = 5.5 cm

π = 22/7

Formula Used:

Length of arc (l) = (θ / 360°) × 2πr

Calculations:

=> 5.5 = (30 / 360) × 2 × (22 / 7) × r

=> 5.5 = (1 / 12) × (44 / 7) × r

=> 5.5 = (44 / 84) × r

=> r = (5.5 × 84) / 44

=> r = (1 / 8) × 84

=> r = 10.5 cm

Therefore The correct answer is 10.5 cm.

Additional Information

Area of a Sector

The area of a sector with central angle θ is given by (θ / 360°) × πr² or (1 / 2) × arc length × radius.

Circumference and Area of Circle

For a circle of radius r, the Circumference = 2πr and the Area = πr².

Radian Measure

If θ is in radians, the arc length is simply l = r × θ, where 180° = π radians.

Q58. Answer: (d) 43°

Given:

Line AB is the straight line, and AT is a tangent.

angle AOQ = 94°

angle BOQ = 180° - angle AOQ = 180° - 94° = 86°

angle BAT = 90° (Radius is perpendicular to the tangent line)

Formula used:

In ΔBOQ, OB = OQ (radii of the circle) => angle OQB = angle OBQ

angle OBQ + angle OQB + angle BOQ = 180° (sum of angles in a triangle)

Calculations:

=> angle OBQ + angle OQB + angle BOQ = 180°

=> 86° + 2angle OBQ = 180°

=> 2angle OBQ = 180°- 86°

=> 2angle OBQ = 94°

=> angle OBQ = 47°

In ΔABT, angle ABT + angle BAT + angle ATQ = 180° (sum of angles in a triangle)

=> angle ATQ = 180° - (47° + 90°)

=> angle ATQ = 180° - 137°

=> angle ATQ = 43°

Therefore angle ATQ = 43°.

Q59. Answer: (d) Rs. 4,000

Given:

Principal total (P_(total)) = Rs. 8,000

Time (t) = 2 years

Interest received = Rs. 720

Rate of interest in scheme 1 (r1) = 5% per annum

Rate of interest in scheme 2 (r2) = 4% per annum

Formula used:

Simple Interest (SI) = (P × r × t)/100

Calculation:

Let the amount invested in scheme 1 be Rs. x.

Then, the amount invested in scheme 2 = Rs. (8,000 - x).

Interest from scheme 1 = (x × 5 × 2)/100

Interest from scheme 2 = ((8,000 - x) × 4 × 2)/100

Total interest = Rs. 720

=> (x × 5 × 2)/100 + ((8,000 - x) × 4 × 2)/100 = 720

=> 10x/100 + (64,000 - 8x)/100 = 720

=> (10x + 64,000 - 8x)/100 = 720

=> (2x + 64,000)/100 = 720

=> 2x + 64,000 = 72,000

=> 2x = 72,000 - 64,000

=> 2x = 8,000

=> x = 4,000

Therefore The amount of money invested in scheme 1 is Rs. 4,000, which is option (4).

Q60. Answer: (a) 284/7 %

Shortcut Trick

To keep Expenditure constant when Price increases by r%:

Percentage Reduction in Consumption = [r ÷ (100 + r)] × 100

Given r = 40%: Reduction = [40 ÷ (100 + 40)] × 100 = (40 ÷ 140) × 100

=> (2 ÷ 7) × 100 = 200 ÷ 7 = 28 4/7 %

Therefore The correct answer is 28 4/7 %.

Alternate Method

Given:

=> Increase in Price = 40%

=> Total Expenditure = Constant

Formula Used:

=> Expenditure = Price × Consumption

=> If Expenditure is constant, Price is inversely proportional to Consumption.

Calculations:

=> Let the initial Price = 100 units and initial Consumption = 100 units.

=> Initial Expenditure = 100 × 100 = 10000 units.

=> New Price = 100 + 40% of 100 = 140 units.

=> To keep Expenditure same, New Consumption = Total Expenditure ÷ New Price

=> New Consumption = 10000 ÷ 140 = 500 ÷ 7 units.

=> Decrease in Consumption = 100 − (500 ÷ 7) = (700 − 500) ÷ 7 = 200 ÷ 7 units.

=> Percentage Decrease = (Decrease ÷ Initial Consumption) × 100

=> Percentage Decrease = (200 ÷ 7 ÷ 100) × 100 = 200 ÷ 7 % = 28 4/7 %.

Therefore The correct answer is 28 4/7 %.

Additional Information

Constant Product Rule

When the product of two variables is constant (P × C = E), an increase in one by x/y requires a decrease in the other by x/(x+y).

Price Decrease Scenario

If the price decreases by r%, the consumption must increase by [r ÷ (100 − r)] × 100% to maintain the same expenditure.

Fraction to Percentage Conversion

Common fractions for quick calculation: 1/7 ≈ 14.28% | 2/7 ≈ 28.57% (which is 28 4/7 %).

Q61. Answer: (d) 10

Given:

What is the smallest number that must be added to 19487161 so that it is divisible by 11?

Formula used:

Divisibility Rule of 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 either 0 or a multiple of 11.

Calculation:

Number: 19487161

Sum of digits in odd positions: 1 + 4 + 7 + 6 = 18

Sum of digits in even positions: 9 + 8 + 1 + 1 = 19

Difference: 19 - 18 = 1

To make the number divisible by 11, we need to make the difference 0 or a multiple of 11.

=> The smallest number = 11 - 1 = 10

Hence, Smallest number is 10.

Therefore The correct answer is option 4.

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Q62. Answer: (a) 12.28 units

Given:

Two parallel chords of length 5 units and 8 units are on opposite sides of the center of a circle of radius 7 units.

We need to find the distance between the chords.

Formula used:

In a right triangle:

OM = √(r² - AM²), where OM is the perpendicular distance from the center to the chord.

Calculation:

For the chord of length 5 units:

=> AM = 1/2 × 5 = 2.5 units

=> $OM^2 = r^2 - AM^2$

=> $OM = \sqrt{(7^2 - 2.5^2)}$

=> $OM = \sqrt{(49 - 6.25)}$

=> $OM = \sqrt{42.75} = 6.54$ units

For the chord of length 8 units:

=> CN = 1/2 × 8 = 4 units

=> $ON^2 = r^2 - CN^2$

=> $ON = \sqrt{(7^2 - 4^2)}$

=> $ON = \sqrt{(49 - 16)}$

=> $ON = \sqrt{33} = 5.74$ units

Therefore, the distance between the chords:

=> Distance = OM + ON

=> Distance = 6.54 + 5.74 = 12.28 units

Therefore The distance between the chords is 12.28 units.

Q63. Answer: (a) 1/15

Given:

If cot θ = 3/4, θ is an acute angle

Formula used:

cot θ = adjacent/opposite

$\sin^2\theta + \cos^2\theta = 1$

tan θ = opposite/adjacent

Calculation:

Given: cot θ = 3/4

=> Opposite side = 4, Adjacent side = 3

=> Hypotenuse = $\sqrt{(3^2 + 4^2)} = \sqrt{(9 + 16)} = \sqrt{25} = 5$

=> sin θ = 4/5, cos θ = 3/5

=> tan θ = 4/3

sin θ + cos θ - tan θ = 4/5 + 3/5 - 4/3

=> (4 + 3)/5 - 4/3

=> 7/5 - 4/3

=> (21 - 20)/15

=> 1/15

Therefore The correct answer is option (1).

Q64. Answer: (b) 42 L

Given:

A mixture contains alcohol and water in the ratio of 12 : 5. On adding 14 liters of water, the ratio of alcohol to water becomes 4 : 3. The quantity of alcohol in the mixture is:

Formula used:

Let the quantity of alcohol be 12x liters and the quantity of water be 5x liters.

After adding 14 liters of water, the new quantity of water = 5x + 14 liters.

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The ratio of alcohol to water becomes 4 : 3.
Thus, 12x/(5x + 14) = 4/3
Calculation:
12x/(5x + 14) = 4/3
=> 12x × 3 = 4 × (5x + 14)
=> 36x = 20x + 56
=> 36x - 20x = 56
=> 16x = 56
=> x = 56/16
=> x = 3.5
Quantity of alcohol = 12x = 12 × 3.5 = 42 liters
Therefore The correct answer is option 2.

Q65. Answer: (d) 1 : 4

Given:
Base diameter of cylinder (d) = 60 cm
Height of cylinder (h) = 10 cm
Formula used:
Lateral Surface Area (LSA) = $2\pi rh$
Total Surface Area (TSA) = $2\pi rh + 2\pi r^2$
Calculation:
Radius (r) = d/2 = 60/2 = 30 cm
LSA = $2\pi rh = 2\times\pi\times30\times10 = 600\pi$ cm²
TSA = $2\pi rh + 2\pi r^2 = 2\times\pi\times30\times10 + 2\times\pi\times30^2 = 600\pi + 1800\pi = 2400\pi$ cm²
Ratio (LSA : TSA) = $600\pi : 2400\pi$
=> 1 : 4
Therefore The correct answer is option (4).

Q66. Answer: (d) 30%

Given:
Initial expenditure percentage = 72%
Income increase percentage = 12%
Expenditure increase percentage = 5%
Formula used:
New Income = Initial Income × (1 + Income increase percentage/100)
New Expenditure = Initial Expenditure × (1 + Expenditure increase percentage/100)
Savings = Income - Expenditure
Percentage change in savings = ((New Savings - Initial Savings) / Initial Savings) × 100
Calculation:
Let initial income be 100
Initial expenditure = 72% of 100 = 72
Initial savings (y) = 100 - 72 = 28
New income = 100 × (1 + 12/100)
=> New income = 100 × 1.12 = 112
New expenditure = 72 × (1 + 5/100)
=> New expenditure = 72 × 1.05 = 75.6
New savings (x) = 112 - 75.6 = 36.4
Percentage change in savings = ((36.4 - 28) / 28) × 100
=> Percentage change in savings = (8.4 / 28) × 100
=> Percentage change in savings = 0.3 × 100 = 30%
Therefore The correct answer is option (4).
Shortcut Trick

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Q67. Answer: (b) 6

Shortcut Trick

For infinitely many solutions, the ratios of the coefficients of x, y, and the constant terms must be equal: a1/a2 = b1/b2 = c1/c2.

Substitute values: k/12 = 3/k = −(k − 3)/−k.

Equating the first two ratios: k/12 = 3/k => $k^2 = 36$ => k = 6 (since k must be positive).

Verifying with the second and third ratios: 3/6 = (6 − 3)/6 => 1/2 = 3/6 (True).

Therefore The correct answer is 6.

Alternate Method

Given Equations:

Equation 1: kx + 3y − (k − 3) = 0

Equation 2: 12x + ky − k = 0

Comparing with standard form a1x + b1y + c1 = 0 and a2x + b2y + c2 = 0:

a1 = k, b1 = 3, c1 = −(k − 3)

a2 = 12, b2 = k, c2 = −k

Formula Used:

For coincident lines (infinitely many solutions): a1/a2 = b1/b2 = c1/c2

Calculations:

=> From the first two ratios: k/12 = 3/k

=> k × k = 12 × 3

=> $k^2 = 36$

=> k = √36 => k = 6 or k = −6

=> Now, check with the second and third ratios: 3/k = (k − 3)/k

=> 3k = k(k − 3)

=> $3k = k^2 - 3k$

=> $k^2 - 6k = 0$

=> k(k − 6) = 0

=> k = 0 or k = 6

=> The common positive value for both conditions is k = 6.

Therefore The correct answer is 6.

Additional Information

Consistent and Inconsistent Systems

A system of equations is consistent if it has at least one solution (unique or infinite) and inconsistent if it has no solution.

Unique Solution (Intersecting Lines)

Condition: a1/a2 ≠ b1/b2. The lines cross at exactly one point (x, y).

No Solution (Parallel Lines)

Condition: a1/a2 = b1/b2 ≠ c1/c2. The lines are parallel and never meet.

Infinite Solutions (Coincident Lines)

Condition: a1/a2 = b1/b2 = c1/c2. Both equations represent the same line.

Q68. Answer: (c) 24 m

Shortcut Trick

Ratio of distances covered in the same time:

A : B = 100 : 80 = 5 : 4

B : C = 100 : 95 = 20 : 19

A : B : C = (5 × 5) : (4 × 5) : (19 × 1) → No, equate B: A : B : C = 25 : 20 : 19

When A = 100 (i.e., 25 × 4), C = 19 × 4 = 76

Distance A beats C = 100 − 76 = 24 m

Therefore The correct answer is 24 m.

Alternate Method

Given:

Total distance of the race = 100 m

When A covers 100 m, B covers (100 − 20) = 80 m.

When B covers 100 m, C covers (100 − 5) = 95 m.
Calculations:
=> Ratio of speeds (or distances in same time) A/B = 100/80
=> Ratio of speeds (or distances in same time) B/C = 100/95
=> To find A/C, multiply the ratios: (A/B) × (B/C) = (100/80) × (100/95)
=> A/C = (5/4) × (20/19)
=> A/C = 100/76
=> This means when A covers 100 m, C covers 76 m.
=> Distance by which A beats C = 100 − 76 = 24 m.
Therefore The correct answer is 24 m.
Additional Information
Relative Speed in Races
In a race of length L, if A beats B by distance d, the ratio of their speeds is V_A/V_B = L/(L − d).
Successive Beats Rule
If A beats B by x meters and B beats C by y meters in a race of L meters, A beats C by (x + y − xy/L) meters.
Time Headstart
If A gives B a start of t seconds, it means B starts t seconds before A or A finishes t seconds before B for the same distance.

Q69. Answer: (a) 6 cm

Shortcut Trick
For melting n spheres into one, the large radius R follows: $R^3 = r1^3 + r2^3 + ... + r_n^3$.
Given diameters are 6, 8, 10 cm, so radii are 3, 4, 5 cm.
$R^3 = 3^3 + 4^3 + 5^3 = 27 + 64 + 125 = 216$
$R = \sqrt[3]{216} = 6$ cm.
Therefore The correct answer is 6 cm.
Alternate Method
Given:
Diameters of three spheres: D1 = 6 cm, D2 = 8 cm, D3 = 10 cm
Formula Used:
Volume of a solid sphere = (4/3) × π × r^3
Calculations:
=> Radius of 1^(st) sphere (r1) = 6 ÷ 2 = 3 cm
=> Radius of 2^(nd) sphere (r2) = 8 ÷ 2 = 4 cm
=> Radius of 3^(rd) sphere (r3) = 10 ÷ 2 = 5 cm
=> Total volume of new sphere = Volume1 + Volume2 + Volume3
=> (4/3) × π × R^3 = (4/3) × π × ($r1^3 + r2^3 + r3^3$)
=> $R^3 = 3^3 + 4^3 + 5^3$
=> $R^3 = 27 + 64 + 125 = 216$
=> $R = \sqrt[3]{216} = 6$ cm
Therefore The correct answer is 6 cm.
Additional Information
Total Surface Area of Sphere
The total surface area of a sphere is given by 4 × π × r^2.
Volume of Hemisphere
A hemisphere is half a sphere, so its volume is (2/3) × π × r^3.
Recasting Principle
Whenever a solid object is melted and recast into another shape, the total volume remains constant, provided there is no wastage.
Curved Surface Area of Hemisphere
The CSA of a hemisphere is 2 × π × r^2 and the Total Surface Area (TSA) is 3 × π × r^2.

Q70. Answer: (d) 60°, 60°, 60°

Given:

In triangle ABC, AB = AC.

BC is extended to D such that CD = AB and angle ADC = 30°.

Formula used:

In an isosceles triangle, the base angles are equal.

The sum of angles in any triangle = 180°.

Calculation:

Since AB = AC and CD = AB

So, AB = AC = CD

In Δ ACD,

AC = CD

So, angle ADC = angle DAC = 30°

And, angle ACD = 180 - (angle ADC + angle DAC)

=> angle ACD = 180 - (30 + 30) = 180 - 60 = 120°

Now,

angle ACB = 180 - angle ACD = 180 - 120 = 60°

Since AB = BC,

angle ABC = angle ACB = 60°

Since two angles of a triangle are 60°, so third angle also will be 60° (as sum of angles of a triangle is 180°)

Hence, the angles of triangle ABC are 60°, 60°, and 60°.

Q71. Answer: (d) Rs. 61.33

Shortcut Trick

Directly calculate the Weighted Average of the books.

Total items = 4 + 5 + 6 = 15 books.

Weighted Sum = (4 × 50) + (5 × 60) + (6 × 70) = 200 + 300 + 420 = Rs. 920.

Average Cost = 920 ÷ 15 = Rs. 61.333...

Therefore The correct answer is Rs. 61.33.

Alternate Method

Given:

Number of books (n1) = 4, Price (p1) = Rs. 50

Number of books (n2) = 5, Price (p2) = Rs. 60

Number of books (n3) = 6, Price (p3) = Rs. 70

Formula Used:

Average = (Total Value) ÷ (Total Number of Units)

=> Total Cost = (4 × 50) + (5 × 60) + (6 × 70)

=> Total Cost = 200 + 300 + 420 = Rs. 920

=> Total Books = 4 + 5 + 6 = 15

=> Average Cost = 920 ÷ 15

=> Average Cost = 61.3333...

Therefore The correct answer is Rs. 61.33.

Additional Information

Weighted Average Formula

It is calculated as Σ(ni × xi) ÷ Σni, where n is the frequency and x is the value.

Rounding Decimals

When rounding to two decimal places, check the third decimal; if it is 5 or more, round up the second digit.

Properties of Average

The average always lies between the minimum and maximum values of the data set (50 < 61.33 < 70).

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Q72. Answer: (c) 27

Given:

A shopkeeper buys 1800 kg wheat for Rs. 32,400. If 20% of this wheat is spoiled due to rain, at what rate (Rs. /kg) should he sell the rest to earn 20%?

Formula used:

Selling Price (SP) = Cost Price (CP) × (1 + Profit Percentage)

Calculation:

Total wheat = 1800 kg

Cost Price (CP) = Rs. 32,400

Wheat spoiled = 20% of 1800 kg

=> Wheat spoiled = 0.20 × 1800 = 360 kg

Remaining wheat = 1800 - 360 = 1440 kg

Desired Profit = 20%

Selling Price (SP) = CP × (1 + 0.20)

=> SP = Rs. 32,400 × 1.20

=> SP = Rs. 38,880

Rate per kg = SP / Remaining wheat

=> Rate per kg = Rs. 38,880 / 1440 kg

=> Rate per kg = Rs. 27

Therefore The correct answer is option (3).

Q73. Answer: (c) 143/13 %

Given:

A 35% profit is made when a discount of 35% is given on the marked price of an item.

Formula used:

MP/CP = (100 + profit%) / (100 - discount%)

Profit% = [(SP - CP) / CP] × 100

Calculations:

MP/CP = (100 + 35) / (100 - 35) = 135 / 65

=> MP/CP = 27/13

MP = 27, CP = 13

If discount is 45%, then

SP = 27 - 27 × 45/100 = 27(1 - 45/100) = 27 × 55/100 = 297/20 = 14.85

So, profit = SP - CP = 14.85 - 13 = 1.85

Thus, Profit% = 1.85/13 × 100 = 185/13 = 14 3/13 %

Therefore The correct answer is option (3).

Q74. Answer: (d) 416/21 %

Given:

If the income of Neha is 5% more than that of Monica, then the income of Monica is what percentage less than that of Neha?

Formula used:

Let Monica's income be M.

Neha's income = M + 5/100 × M

Neha's income = 1.05M

Calculation:

Let Neha's income be N.

N = 1.05M

Monica's income = M

Percentage by which Monica's income is less than Neha's income:

=> (N - M)/N × 100

=> (1.05M - M)/1.05M × 100

=> 0.05M/1.05M × 100

=> 0.05/1.05 × 100

=> 5/105 × 100

=> 100/21

=> 416/21 %

Therefore The correct answer is option (4).

Q75. Answer: (a) 450

Given:

The production data for wheat and maize over five years is given:

Years: 2016-17 to 2020-21

Wheat production (in lakh tonnes): 650, 800, 680, 700, 640

Maize production (in lakh tonnes): 200, 240, 220, 260, 300

Formula used:

Average production = (Sum of production over years)/(Number of years)

Calculation:

For wheat:

=> Sum of production = 650 + 800 + 680 + 700 + 640 = 3470 lakh tonnes

=> Average wheat production = 3470/5 = 694 lakh tonnes

For maize:

=> Sum of production = 200 + 240 + 220 + 260 + 300 = 1220 lakh tonnes

=> Average maize production = 1220/5 = 244 lakh tonnes

=> Difference in average production = 694 - 244 = 450 lakh tonnes

Therefore The correct answer is option (1) 450.

Q76. Answer: (d) C, B, A

The correct answer is C, B, A

Key Points

• Option 4 is the correct answer which arranges the states in descending order of their population growth rate according to Census 2011.

• The states in descending order of population growth rate are: Meghalaya, Arunachal Pradesh, Bihar.

• Meghalaya had the highest population growth rate among the three states listed.

• Arunachal Pradesh followed Meghalaya in terms of population growth rate.

• Bihar had the lowest population growth rate among the three states listed.

Additional Information

• The Census of India, 2011, is the 15th National Census survey conducted by the Census Organization of India.

• Population growth rate is a crucial metric that indicates the rate at which the number of individuals in a population increases in a given time period.

• The growth rate of population in a region is influenced by factors such as birth rate, death rate, and migration rate.

• Understanding population growth rates helps in planning and resource allocation for the development and welfare of the population.

Q77. Answer: (b) Maasai

The correct answer is Maasai

Key Points

• Maasai is a tribe that predominantly lives in Kenya and Tanzania.

• They are known for their distinct culture, customs, and dress.

• Unlike the other tribes listed in the question (Gond, Santhal, Tharu), the Maasai do not have a presence in India.

• The Maasai people are semi-nomadic and are known for their traditional lifestyle and resistance to modern cultural influences.

Additional Information

• Gond is one of the largest tribal groups in India, found mainly in Madhya Pradesh, Chhattisgarh, Maharashtra, Odisha, and Andhra Pradesh.

• Santhal is a prominent tribe in India, primarily residing in Jharkhand, West Bengal, Bihar, and Odisha.

• Tharu is a tribal community living in the Terai region of Uttarakhand, Uttar Pradesh, and Bihar in India.

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• These tribes (Gond, Santhal, Tharu) contribute to India's rich cultural and ethnic diversity.

Q78. Answer: (c) James Watt

The correct answer is James Watt

Key Points

• James Watt was the first to use the term 'horsepower' to quantify the power produced by an engine.

• He coined the term in the late 18th century as a way to help market his improved steam engine.

• Watt's definition of horsepower was based on the amount of work a horse could do over a certain period.

• This unit of measurement became widely adopted and is still used today to describe the power output of engines.

Additional Information

• James Watt was a Scottish inventor, mechanical engineer, and chemist who made significant improvements to the Newcomen steam engine.

• His enhancements to the steam engine played a key role in the Industrial Revolution by making it more efficient and powerful.

• The watt, a unit of power in the International System of Units, is named in his honor.

• Watt's contributions to engineering and energy measurement have had a lasting impact on technology and industry.

Q79. Answer: (a) Justified

The correct answer is Justified

Key Points

• Justified is not an alignment option for text in a cell in most spreadsheet applications.

• Common text alignment options in spreadsheet applications include Left, Center, and Right alignments.

• Text alignment determines how the text is positioned within the cell.

• Proper text alignment enhances the readability and organization of data in a spreadsheet.

Additional Information

• Left alignment aligns the text to the left side of the cell.

• Center alignment centers the text horizontally within the cell.

• Right alignment aligns the text to the right side of the cell.

• Some spreadsheet applications may offer additional alignment options, such as Top, Middle, and Bottom vertical alignments.

Q80. Answer: (c) Punjab – Bhangra dance

The correct answer is Punjab – Bhangra dance

Key Points

• Bhangra is a lively folk dance originating from the state of Punjab in India.

• It is traditionally performed during the harvest festival of Baisakhi and other celebrations.

• Bhangra involves energetic movements and is usually performed to the beat of the dhol, a traditional drum.

• It has gained popularity worldwide and is often performed at cultural events and competitions.

Additional Information

• Gujarat is known for its Garba and Dandiya Raas dances.

• Haryana is known for its Saang and Phag dances.

• Kerala is famous for its Kathakali and Mohiniyattam dances.

• Bihu dance is associated with the state of Assam.

• Ghoomar dance is associated with the state of Rajasthan.

Q81. Answer: (d) Ujwal DISCOM Assurance Yojana

The correct answer is Ujwal DISCOM Assurance Yojana

Key Points

• Ujwal DISCOM Assurance Yojana (UDAY) is one of the well-known schemes sponsored by the Union Government of India.

• It was launched in November 2015 with the aim of rescuing the country's ailing electricity distribution companies.

• The scheme focuses on improving the operational and financial efficiency of DISCOMs (Distribution Companies).

• Under UDAY, states take over 75% of the DISCOM debt, thereby reducing the interest burden and improving financial stability.

• The scheme also emphasizes on reducing AT&C (Aggregate Technical and Commercial) losses, improving billing and collection efficiency, and promoting energy efficiency measures.

Additional Information

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• The other options listed in the question pertain to various other initiatives and schemes related to the power sector in India.

• One Nation, One Grid aims at providing a single grid for electricity transmission across the country.

• Integrated Power Development Scheme (IPDS) focuses on strengthening sub-transmission and distribution networks in urban areas.

• Deendayal Upadhyaya Gram Jyoti Yojana aims at rural electrification and feeder separation to improve the supply of electricity in rural areas.

Q82. Answer: (b) both molecules cross the membrane in the same direction

The correct answer is both molecules cross the membrane in the same direction

Key Points

• In a symport, both molecules cross the membrane in the same direction.

• Symport is a type of cotransport mechanism where two molecules or ions are transported across a biological membrane simultaneously.

• It is an essential process in various biological functions, including nutrient absorption and ion balance in cells.

• For example, the Na+/glucose symporter in the intestinal cells allows the absorption of glucose alongside sodium ions.

Additional Information

• Symport is one of the two main types of cotransport, the other being antiport, where two molecules move in opposite directions.

• The energy for symport can be derived from various sources, including ATP hydrolysis or the electrochemical gradient of another ion.

• Symporters are integral membrane proteins and play a crucial role in maintaining cellular homeostasis.

• Disruptions in symport mechanisms can lead to various diseases and metabolic disorders.

Q83. Answer: (c) Swaran Singh Committee (1976)

The correct answer is Swaran Singh Committee (1976)

Key Points

• The Swaran Singh Committee was appointed by the government in 1976 to make recommendations on the Constitution, which included the incorporation of Fundamental Duties.

• Following the recommendations of the Swaran Singh Committee, the 42nd Amendment Act of 1976 added a new chapter, Part IVA, to the Constitution, which enumerates the Fundamental Duties of citizens.

• The idea behind the inclusion of Fundamental Duties was to remind citizens that they have certain responsibilities towards the nation, in addition to enjoying their rights.

• There are currently 11 Fundamental Duties listed in Article 51A of the Constitution of India.

Additional Information

• The 42nd Amendment Act is also known as the "Mini-Constitution" due to the extensive changes it made to the Constitution.

• The concept of Fundamental Duties was borrowed from the Constitution of the former Soviet Union.

• Fundamental Duties are non-justiciable, meaning they are not enforceable by the courts for their violation.

• The inclusion of Fundamental Duties aims to promote a sense of discipline and commitment among citizens towards the nation.

• Some of the duties include respecting the national symbols, cherishing the heritage of the country, and protecting the environment.

Q84. Answer: (d) Heeralal Samariya

The correct answer is Heeralal Samariya

Key Points

• Heeralal Samariya was sworn in as the chief of the Central Information Commission of India in November 2023.

• The Central Information Commission is an important body set up under the Right to Information Act (RTI) to act upon complaints from those who have been unable to submit their requests for information to a Central Public Information Officer or State Public Information Officer.

• The commission plays a crucial role in ensuring transparency and accountability in the functioning of public authorities.

• Heeralal Samariya has previously held various significant positions in the government, contributing to his extensive experience in administration.

Additional Information

• The Central Information Commission was constituted with effect from 12th October 2005 under the RTI Act, 2005.

• The Chief Information Commissioner and Information Commissioners are appointed by the President of India on the recommendation of a committee consisting of the Prime Minister, the Leader of Opposition in the Lok Sabha, and a Union Cabinet Minister nominated by the Prime Minister.

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• The tenure of the Chief Information Commissioner is typically up to 5 years or until they attain the age of 65 years, whichever is earlier.

• The commission has been instrumental in promoting transparency and accountability in the working of the public authorities and has handled numerous significant cases regarding the right to information.

Q85. Answer: (b) Triton

The correct answer is Triton

Key Points

• Triton is not a moon of Jupiter.

• Callisto, Ganymede, and Europa are all moons of Jupiter.

• Triton is actually the largest moon of Neptune.

• Jupiter has numerous moons, with the four largest being the Galilean moons: Io, Europa, Ganymede, and Callisto.

• These moons were first observed by Galileo Galilei in 1610 and are some of the largest objects in our Solar System outside the Sun and the eight planets.

Additional Information

• Jupiter is the largest planet in our Solar System and has a very strong magnetic field.

• Jupiter's atmosphere is primarily composed of hydrogen and helium, with traces of other gases.

• Jupiter's Great Red Spot is a giant storm that has been raging for hundreds of years.

• Jupiter's moons are of great interest to scientists because some of them, like Europa, may have subsurface oceans that could potentially harbor life.

• Neptune's moon Triton is unique because it has a retrograde orbit, meaning it orbits in the opposite direction to Neptune's rotation.

Q86. Answer: (a) income estimated at base year prices

The correct answer is income estimated at base year prices

Key Points

• Income estimated at base year prices refers to national income calculated using the prices of a specific base year, which helps in eliminating the effects of inflation and provides a more accurate measure of real income over different periods.

• This method allows for a consistent comparison of economic performance over time by adjusting for changes in price levels.

• It is also known as national income at constant prices or real national income.

• Using base year prices helps in understanding the actual growth of the economy without the distortion caused by fluctuating prices.

Additional Information

• The concept of national income at constant prices is crucial for economic analysis and policy-making.

• It helps in understanding the real growth of different sectors of the economy.

• The base year is periodically updated to reflect more recent economic conditions and to provide a more accurate measure of real economic performance.

• National income is a vital indicator of the economic health of a country and is used for planning and development purposes.

• Organizations like the Central Statistical Office (CSO) in India are responsible for calculating and publishing national income data.

Q87. Answer: (c) Teak

The correct answer is Teak

Key Points

• Teak is the most dominant species of the Tropical Deciduous Forests.

• Tropical Deciduous Forests, also known as Monsoon Forests, are characterized by trees that shed their leaves annually during the dry season.

• These forests are found in areas with a distinct dry and wet season, primarily in parts of India, Southeast Asia, and Central and South America.

• Teak trees are valued for their high-quality wood, which is durable, water-resistant, and used extensively in furniture making, shipbuilding, and other applications.

• The presence of teak in these forests contributes significantly to the local economy and biodiversity.

Additional Information

• Tropical Deciduous Forests are divided into two types: Moist Deciduous and Dry Deciduous.

• Moist Deciduous Forests are found in regions with moderate rainfall and include species like teak, sal, and shisham.

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• Dry Deciduous Forests occur in areas with lower rainfall and include species like acacia, thorn, and euphorbia.
• These forests play a crucial role in maintaining ecological balance, supporting wildlife, and providing resources for human use.
• Conservation efforts are essential to protect these forests from deforestation and degradation.

Q88. Answer: (d) Rashtrakuta

The correct answer is Rashtrakuta Dynasty

Key Points

• The Kailasha temple at Ellora near Aurangabad in Maharashtra was built by a king from the Rashtrakuta Dynasty.
• The temple is one of the largest rock-cut Hindu temples and is considered one of the most remarkable cave temples in India.
• It was commissioned by King Krishna I in the 8th century CE.
• The temple is dedicated to Lord Shiva and is known for its architectural grandeur and intricate carvings.
• The construction of the Kailasha temple involved the excavation of a single, massive rock, making it an extraordinary feat of engineering and artistry.

Additional Information

• The Ellora Caves, where the Kailasha temple is located, are a UNESCO World Heritage Site.
• The caves represent a unique artistic creation and are a testimony to the rich cultural heritage of ancient India.
• Ellora is not only known for its Hindu temples but also for its Buddhist and Jain monuments, showcasing the religious harmony prevalent during that period.
• The Rashtrakuta Dynasty ruled large parts of the Indian subcontinent between the 6th and 10th centuries CE, with their capital at Manyakheta (modern-day Malkhed, Karnataka).

Q89. Answer: (b) AR Rahman

The correct answer is AR Rahman

Key Points

• AR Rahman is the composer of the iconic patriotic song 'Maa Tujhe Salaam'.
• The song is part of the album Vande Mataram, which was released in 1997.
• AR Rahman is a renowned Indian music composer, singer, and music producer, known for his contributions to Indian cinema and music.
• 'Maa Tujhe Salaam' is celebrated for its powerful lyrics and melody, making it a favorite among patriotic songs in India.

Additional Information

• AR Rahman has received numerous awards, including two Academy Awards, two Grammy Awards, a BAFTA Award, a Golden Globe Award, and several other accolades for his contributions to music.
• His work spans across various genres and languages, making him a global music icon.
• The album Vande Mataram was released to commemorate the 50th anniversary of India's independence.
• AR Rahman is often referred to as the "Mozart of Madras" for his exceptional talent and impact on the music industry.

Q90. Answer: (c) Mahatma Gandhi

The correct answer is Mahatma Gandhi

Key Points

• The birthday of Mahatma Gandhi is celebrated as the International Day of Non-Violence.
• This day is observed on 2nd October each year, commemorating Gandhi's birth anniversary.
• Mahatma Gandhi is renowned globally for his philosophy of non-violence (Ahimsa) and his role in leading India to independence through peaceful means.
• The United Nations General Assembly established this day in 2007 to disseminate the message of non-violence through education and public awareness.

Additional Information

• Mahatma Gandhi, also known as the Father of the Nation in India, was born on 2nd October 1869 in Porbandar, Gujarat.
• His full name was Mohandas Karamchand Gandhi.
• He led various significant movements such as the Non-Cooperation Movement, the Civil Disobedience Movement, and the Quit India Movement against British rule in India.
• Gandhi's principles of non-violence and civil disobedience have inspired many global leaders and movements for civil rights and freedom across the world.
• 2nd October is also celebrated as Gandhi Jayanti in India, a national holiday in his honor.

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Q91. Answer: (a) Rajasthan

The correct answer is Rajasthan

Key Points

• The Braj festival is celebrated in Rajasthan every year.

• It is held for two days in the Shukla Paksha of the Phalgun month, which is a few days before Holi.

• This festival is known for its vibrant colors, traditional music, and dance, reflecting the rich cultural heritage of Rajasthan.

• Devotees and tourists from various parts of India and the world come to participate in this festival.

Additional Information

• The Braj festival is associated with the legends of Radha and Krishna, and many events during the festival depict their divine love.

• It is celebrated with great enthusiasm in the towns of Bharatpur, Deeg, and Kaman in Rajasthan.

• During the festival, people engage in activities like Raslila dance and singing traditional songs, which are integral parts of the celebrations.

• The festival also features processions, folk performances, and various cultural programs that highlight the traditions of Braj Bhoomi.

Q92. Answer: (c) Delhi, 1973

The correct answer is Delhi, 1973

Key Points

• India's first Senior National Archery Championship was held in Delhi in the year 1973.

• This event marked the beginning of organized archery competitions at a national level in India.

• The championship has since become an annual event, attracting top archers from across the country.

• Archery in India has a rich history, and the establishment of the Senior National Archery Championship has contributed significantly to the sport's development.

Additional Information

• Archery is an ancient sport in India, with references dating back to the Vedic period.

• The Archery Association of India (AAI) was established in 1973 to promote and regulate the sport in the country.

• India has produced several internationally acclaimed archers who have represented the country in various global competitions, including the Olympics.

• The AAI conducts various national and international events to nurture and identify talent at the grassroots level.

Q93. Answer: (a) Only ii

The correct answer is Only ii

Key Points

• The Special Economic Zones (SEZs) Policy in India was announced by the Government of India in the year 2000, not 2011.

• The main objectives of the SEZs Act include the promotion of exports of goods and services, investment from domestic and foreign sources, and the creation of employment opportunities.

• The SEZ Rules do indeed provide for different minimum land requirements for different classes of SEZs.

Additional Information

• Special Economic Zones (SEZs) are specially delineated duty-free enclaves treated as foreign territories for the purpose of trade operations, duties, and tariffs.

• The SEZ Act, 2005, along with the SEZ Rules, came into effect on 10th February 2006, providing for the establishment, development, and management of SEZs for the promotion of exports.

• SEZs are intended to promote rapid economic growth by using tax and business incentives to attract foreign investment and technology.

• They are also designed to provide high-quality infrastructure facilities and support services, besides allowing for the duty-free import/domestic procurement of goods for the development, operation, and maintenance of SEZ units.

Q94. Answer: (b) Thounaojam Chaoba

The correct answer is Thounaojam Chaoba

Key Points

• Thounaojam Chaoba from Manipur was awarded Padma Shri in 2023 by the Union government.

• He was recognized for his significant contributions in public affairs over the last four decades.

• Thounaojam Chaoba has served as a former Union Minister, highlighting his extensive experience and dedication to public service.

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• The Padma Shri is one of the highest civilian awards in India, acknowledging exceptional service in various fields.

Additional Information

• The Padma Awards are announced annually on the eve of Republic Day.

• They are categorized into three levels: Padma Vibhushan, Padma Bhushan, and Padma Shri, in descending order of precedence.

• The awards recognize achievements in all fields of activities or disciplines where an element of public service is involved.

• The selection process involves recommendations from the general public, which are then reviewed by a committee before final approval by the President of India.

Q95. Answer: (c) Badminton male

The correct answer is Badminton male

Key Points

• The Thomas Cup is an international badminton competition among teams representing member nations of the Badminton World Federation (BWF).

• It is often referred to as the World Men's Team Championships.

• The tournament has been held every two years since 1982, previously being held every three years since its inception in 1948-49.

• The Thomas Cup is named after Sir George Thomas, a British badminton player and administrator who proposed the idea of the competition.

• The competition has seen dominance by countries like Indonesia, China, and Malaysia over the years.

Additional Information

• The Thomas Cup is one of the most prestigious tournaments in the sport of badminton, alongside the Uber Cup (the women's team championship).

• Indonesia has been the most successful team in the history of the Thomas Cup, winning the title multiple times.

• The format of the tournament includes group stages followed by knockout rounds, culminating in the final to determine the champion.

• Thomas Cup matches consist of five rubbers: three singles and two doubles matches.

Q96. Answer: (a) Article 142

The correct answer is Article 142

Key Points

• Article 142 of the Indian Constitution grants discretionary power to the Supreme Court of India.

• This article allows the Supreme Court to pass any decree or make any order necessary for doing complete justice in any cause or matter pending before it.

• It was under this discretionary power that the Supreme Court of India recognized sex work as a profession.

• The recognition aims to protect the rights and dignity of sex workers and to ensure their safety and well-being.

Additional Information

• Article 142 has been used in various landmark judgments to provide comprehensive justice when existing laws are inadequate.

• The article empowers the Supreme Court to ensure that its orders are implemented and justice is achieved, even if it means going beyond the existing legal framework.

• This provision underscores the role of the judiciary in upholding the principles of justice and the rule of law in India.

Q97. Answer: (b) Punjab

The correct answer is Punjab

Key Points

• Gatka is a traditional martial art form that originated from Punjab.

• It is associated with the Sikh community and has historical significance dating back to the times of the Sikh Gurus.

• The martial art involves the use of various weapons like swords, sticks, and shields, and is performed both as a sport and as a form of self-defense.

• Gatka is known for its graceful movements, agility, and quick reflexes, making it a unique and visually appealing martial art.

• It is practiced and demonstrated during Sikh festivals and ceremonies, such as Hola Mohalla and Gurpurabs.

Additional Information

• Gatka is not just a martial art but also a form of spiritual and mental discipline.

• It is believed that practicing Gatka helps in developing focus, concentration, and a sense of inner peace.

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• The techniques and skills of Gatka are passed down through generations, preserving the cultural heritage of Punjab.
• Today, Gatka is gaining international recognition and is being practiced by enthusiasts around the world.
• Efforts are being made to promote Gatka as a sport and include it in various national and international sporting events.

Q98. Answer: (c) Ekam Satyam

The correct answer is Ekam Satyam

Key Points

• Ekam Satyam is a song recorded by AR Rahman with Michael Jackson.
• This collaboration was a significant event in the music industry, showcasing the fusion of different musical styles and cultural backgrounds.
• The song emphasizes unity and peace, aligning with the themes often explored by both artists in their respective works.
• AR Rahman is a renowned Indian composer, while Michael Jackson was a globally celebrated pop icon.

Additional Information

• AR Rahman is known for his extensive work in Indian cinema and has won numerous awards including Oscars and Grammys.
• Michael Jackson is often referred to as the "King of Pop" and has left an indelible mark on the global music scene with his groundbreaking albums and performances.
• The collaboration between these two artists was seen as a bridge between Eastern and Western music traditions.
• The song Ekam Satyam was performed at the United Nations in 1999, promoting the message of global unity and harmony.

Q99. Answer: (b) Textbox

The correct answer is Textbox

Key Points

• Textbox is used to add text to a slide in MS-PowerPoint.
• To insert a textbox, go to the Insert tab on the Ribbon and click on the Textbox button.
• Click and drag on the slide to draw the textbox where you want to add the text.
• Once the textbox is created, you can type your desired text into it.
• You can also format the text using various formatting options available in the Home tab.

Additional Information

• Textboxes can be resized by clicking and dragging the handles on the edges of the textbox.
• You can move the textbox to a different location on the slide by clicking and dragging it.
• Textboxes can also be used to add titles, subtitles, or any other text-based information to your slides.
• In addition to textboxes, you can also add other elements like shapes, images, and charts to enhance your presentation.
• MS-PowerPoint offers various design and animation options to make your text and other elements more visually appealing.

Q100. Answer: (d) Part II

The correct answer is Part II

Key Points

• Part II of the Constitution of India deals with the provisions related to Citizenship.
• This part includes Articles 5 to 11, which lay down the laws concerning who may be regarded as a citizen of India.
• It covers various aspects such as citizenship at the commencement of the Constitution, rights of citizenship of certain persons who have migrated from Pakistan, and other provisions related to the acquisition and termination of citizenship.
• Citizenship is a crucial aspect as it determines the rights and duties of individuals within the Indian state.

Additional Information

• The Constitution of India was adopted by the Constituent Assembly on 26th November 1949 and came into effect on 26th January 1950.
• It lays down the framework defining fundamental political principles, establishes the structure, procedures, powers, and duties of government institutions, and sets out fundamental rights, directive principles, and the duties of citizens.
• The Constitution of India is the longest written constitution of any country in the world.
• It declares India a sovereign, socialist, secular, and democratic republic, assuring its citizens justice, equality, and liberty, and endeavors to promote fraternity.
• The Seventh Schedule of the Constitution contains three lists which delineate the subjects under the Union, State, and Concurrent lists.
• Amendments to the Constitution can be made through a process outlined in Article 368.
• The Union List has been amended several times to meet the evolving needs of the nation.

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