SSC CHSL Tier-1 2021: Official Paper (Held On : 25 May 2022 Shift 2) (Previous Year Paper)

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

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ENGLISH LANGUAGE

Q1. Select the INCORRECTLY spelt word.

(a) Informassional
(b) Personnel
(c) Informal
(d) Personal

Q2. Select the most appropriate option to substitute the underline segment in the given sentence.

My sincerity and patience drove me through all odds and problems of life.

(a) carried me
(b) flew me
(c) ran me
(d) lifted me

Q3. Directions: Each of the following questions has underlined idioms/phrases. Each sentence is followed by four options. Choose the option that best describes the meaning of the underlined idiom/phrase.

She was within a hair's breadth of winning.

(a) certain
(b) desirous
(c) narrow margin
(d) accomplished

Q4. Select the most appropriate option that can substitute the underlined words in the given sentence*.*

He is an excessively enthusiastic and strict follower of Judaism.

(a) a janissary
(b) a Zionist
(c) a zealot
(d) a healer

Q5. Select the INCORRECTLY spelt word.

(a) Enthusiasm
(b) Acomplishment
(c) Convenience
(d) Auxiliary

Q6. Select the most appropriate option that can substitute the underlined part in the given sentence.

Her writing is very ilegible and so she loses marks in her exam.

(a) illeggible
(b) illegibel
(c) illegible

(d) illegal

Q7. 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'.

My uncle is doing business in Hyderabad for the last 10 years.

(a) has been doing
(b) No substitution required
(c) did
(d) doing

Q8. Complete the sentence with an appropriate synonym of the word mentioned in the bracket.

The party was so amazing that everyone _____ (hated) leaving it.

(a) loathed
(b) enhanced
(c) revered
(d) embraced

Q9. Select the most appropriate synonym of the word given in the brackets to fill in the blank.

Doing adventure sports is banned for athletes as it can be _____ (perilous).

(a) reliable
(b) worthless
(c) adventurous
(d) treacherous

Q10. Select the option that expresses the given sentence in active voice.

The library building was renovated in 2020.

(a) They were renovating the building in 2020.
(b) They had renovated the library building in 2020.
(c) They renovated the library building in 2020.
(d) They did renovating the building in 2020.

Q11. Select the option that expresses the given sentence in active voice.

Has the assignment been uploaded by you?

(a) Have you been uploaded the assignment?
(b) Have you uploaded the assignment?
(c) Did you upload the assignment?
(d) Were you uploading the assignment?

Q12. Select the option that expresses the given sentence in active voice.

Coffee is sipped by me.

(a) I have sipped coffee.
(b) I sip coffee.
(c) I have had sipped coffee.
(d) I am sipping coffee.

Q13. Select the INCORRECTLY spelt word.

(a) Occurrence
(b) Accommodation
(c) Priviledge
(d) Erroneous

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Q14. Select the most appropriate ANTONYM of the highlighted word.

His liberal policies were responsible for progress in the community.

(a) ineffectual
(b) conservative
(c) central
(d) hysterical

Q15. In the following passage, a word has been deleted. Read the passage carefully and select the most appropriate option to fill in the blank.

Manpower exporters and overseas recruiters commonly _____ in illegal business practices for short-term _____ gain.

(a) honoured, professional
(b) indulged, monetary
(c) regulated, personal
(d) thrived, devotional

Q16. Select the most appropriate meaning of the given idiom.

Grease someone's palm

(a) Go to battle
(b) Put in hard work
(c) Bribe someone
(d) Be jealous of someone

Q17. Select the INCORRECTLY spelt word.

(a) Consciousness
(b) Encyclopedia
(c) Euphemism
(d) Embberassment

Q18. Select the option that will improve the underlined part of the given sentence.

She is educated than her sister.

(a) far educated
(b) more educated
(c) best educated
(d) good educated

Q19. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

A. I went to college from the eleventh grade and never went to the twelfth grade, and skipped another grade earlier, so I was a pretty young fellow at Morehouse.

B. At the age of fifteen, I entered Morehouse College and my father and my maternal grandfather had also attended, so Morehouse has had three generations of Kings.

C. The professors were not caught up in the clutches of state funds and could teach what they wanted with academic freedom and encouraged us in a positive quest for a solution to racial ills.

D. I shall never forget the hardships that I had upon entering college, for though I had been one of the top students in high school, I was still reading at only an eighth-grade level.

(a) BDAC
(b) ABDC
(c) ADBC
(d) BADC

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Q20. Select the option that will improve the underlined part of the given sentence.

I keep telling myself how I am lucky to have such wonderful sisters.

(a) how lucky I am to have
(b) how lucky I am to having
(c) how I am lucky for
(d) how I am lucky for having

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.

Yoga is a personal journey for everyone as now most people are turning to it, not for fitness (1) _____, but for the union of both, body and soul. Yoga is an ancient practice that (2) _____ in India. It involves movement, meditation and breathing (3) _____ to promote mental and physical well-being. There are many styles of yoga. A person should (4) _____ a style based on their goals and fitness level. If yoga and pranayam are complemented with other forms of spiritual practice to purify the mental body and other bodies, then a person can achieve rapid spiritual progress in his lifetime. Thus a person can make progress to achieve the purpose of life which is to (5) _____ with God.

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

(a) rather
(b) change
(c) apart
(d) alone

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

(a) settled
(b) came
(c) originated
(d) involved

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

(a) senses
(b) techniques
(c) phases
(d) pursuit

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

(a) choose
(b) familiarise
(c) make
(d) strike

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

(a) compete
(b) progress
(c) merge
(d) mark

GENERAL INTELLIGENCE

Q26. Select the correct combination of mathematical signs to replace the * signs and to balance the given equation.

41 * 2 * 36 * 6 * 57 * 7 * 4 * 3

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

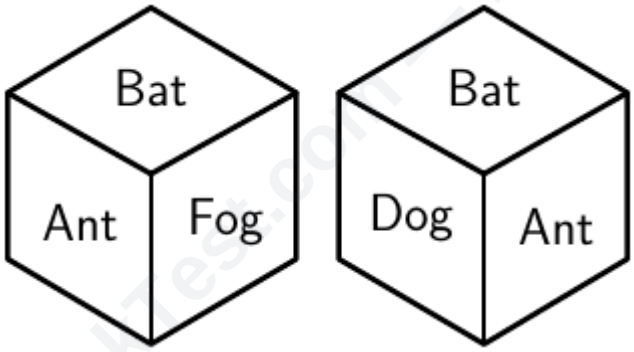
(d) −, +, ×, −, =, +, ×

Q27. Select the correct combination of mathematical signs to replace the * signs and to balance the given equation.

78 * 3 * 14 * 80 * 2

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

Q28. Two different position of the same dice are shown, the six faces of which are marked as Ant, Bat, Cat, Dog, Egg, Fog. Select the word that will be on the face opposite to the one showing 'Dog'.



(a) Fog
(b) Cat
(c) Bat
(d) Egg

Q29. Pointing to a lady in a photograph, Vijay said, “Her sister’s mother is the sister of my father’s daughter.” How is the lady related to Vijay?

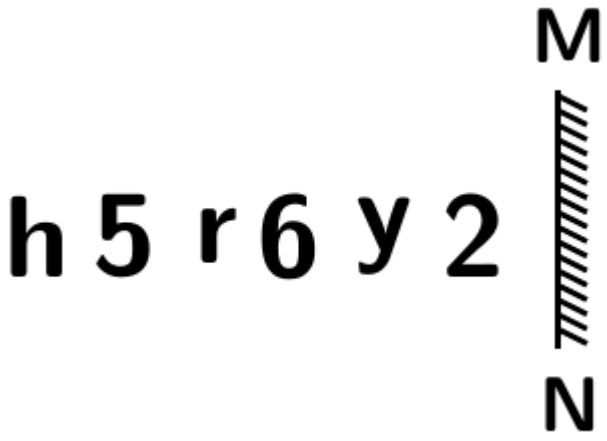
(a) Mother
(b) Sister’s daughter
(c) Daughter
(d) Sister

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

28, 40, 25, ?, 22, 46

(a) 41
(b) 43
(c) 44
(d) 42

Q31. Select the mirror image of the given combination when the mirror is placed at MN as shown in the figure.



(a)



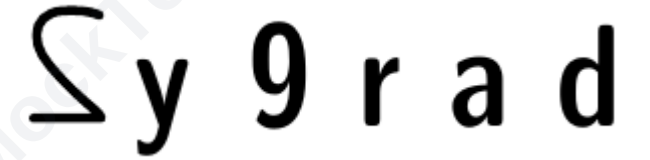
(b)



(c)



(d)



Q32. Select the correct combination of mathematical signs to sequentially replace the * signs and to balance the given equation.

25 * 5 * 10 * 2 * 8 * 11

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

Q33. If 3 March 2020 was Tuesday, then what was the day of the week on 3 February 2019?

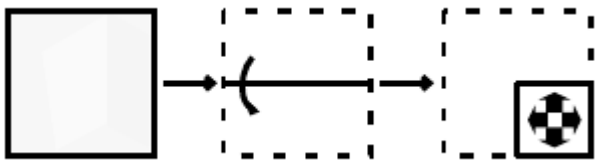
(a) Wednesday
(b) Friday
(c) Sunday
(d) Monday

Q34. Which letter cluster will replace the question mark (?) to complete the given series?

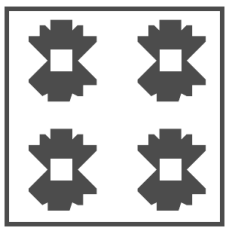
ETRE, AZJG, WFBI, SLTK, ?

(a) OPLM
(b) ORLM
(c) ORMM
(d) OPMM

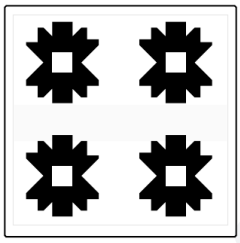
Q35. A paper is folded and cut as shown below. How will it appear when unfolded?



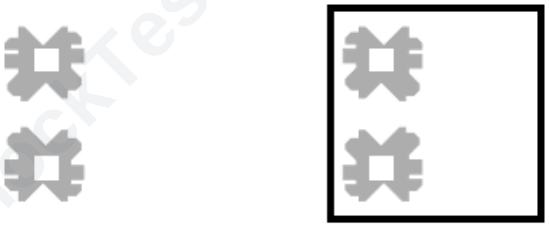
(a)



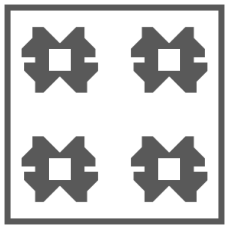
(b)



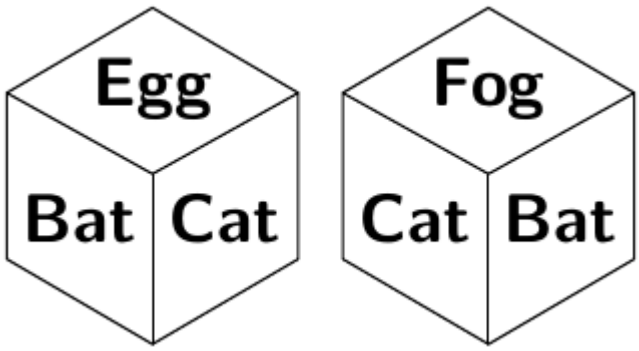
(c)



(d)



Q36. Two different positions of the same dice are shown, the six faces of which are marked as Ant, Bat, Cat, Dog, Egg, Fog. Select the word that will be on the face opposite to the one showing 'Fog'



(a) Ant
(b) Dog
(c) Bat
(d) Egg

Q37. In a certain code language, 'HISTORY' is written as ‘SRHGLIB’ and ‘RECORD’ is written as ’IVXLIW’.How will 'ARCHIVE' be written in that language?

(a) ZIXSGEV
(b) ZIXTREV

(c) ZIXSREV
(d) AIXSREV

Q38. Which of the following letter-clusters will replace the question mark (?) in the given series to make it logically complete?

WUT, RPO, MKJ, HFE, ?

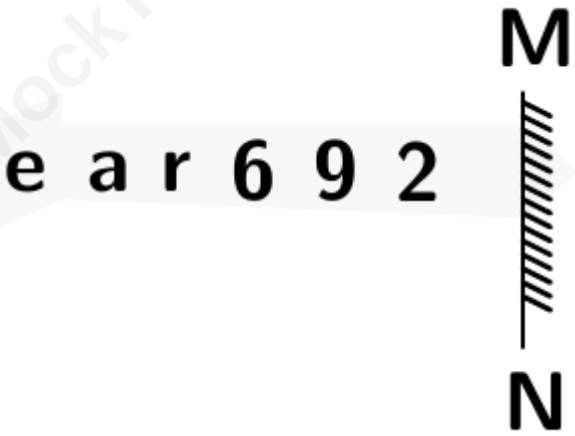
(a) CAZ
(b) ACZ
(c) CZA
(d) AZC

Q39. Which of the following numbers will replace the question mark (?) in the given number series?

56, 68, ?, 128, 176, 236

(a) 80
(b) 116
(c) 74
(d) 92

Q40. Select the correct mirror image of the given combination when the mirror is placed at MN as shown.



(a)



(b)



(c)



(d)

Section

Q41. Select the set in which the numbers are related in the same way as are the numbers of the following set.

(75, 25, 28)

(136, 34, 38)

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

(a) (27, 9, 15)
(b) (45, 9, 12)
(c) (55, 5, 11)
(d) (105, 35, 38)

Q42. In a certain code language, ‘CAPON’ is written as ‘EYRMP’ and ‘DECOY’ is written as ‘FCEMA’. How will ‘POWER’ be written in that language?

(a) RQGDT
(b) RMYCT
(c) RMWDT
(d) RNVDV

Q43. Select the correct combination of mathematical signs to replace the * signs and to balance the given equation.

96 * 6 * 24 * 49 * 25

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

Q44. Select the correct combination of mathematical signs to sequentially replace the * signs and to balance the given equation.

57 * 35 * 7 * 14 * 2 * 34

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

Q45. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

First row- 6,39, 124

Second row- 8, 53, ?

Third row- 11, 74, 229

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as

adding /deleting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is NOT allowed).

(a) 111
(b) 161
(c) 116
(d) 166

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Q46. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

First row: 3, 2, 30

Second row: 7, 5, 175

Third row: 4, 6, ?

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

(a) 125
(b) 110
(c) 120
(d) 140

Q47. Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

DENIAL : IANDEL :: OBJECT : ECJOBT :: FLAVOR : ?

(a) VOAFLR
(b) OVAFRL
(c) VOAFRL
(d) OVFARL

Q48. Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

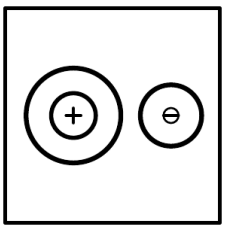
YAR : RAY :: TCA : ACT :: TAB : ?

(a) TBA
(b) ABT
(c) ATB
(d) BAT

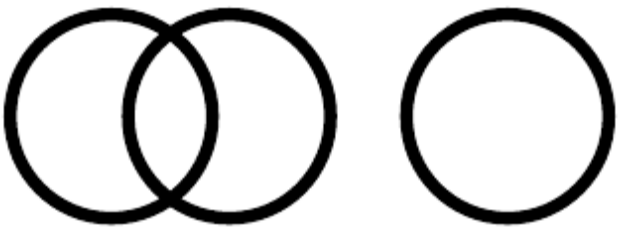
Q49. Select the Venn diagram that best illustrates the relationship between the following classes.

King, Father, Queen

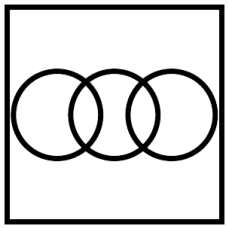
(a)



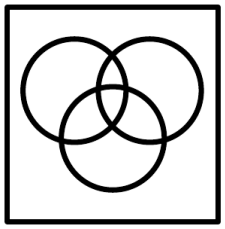
(b)



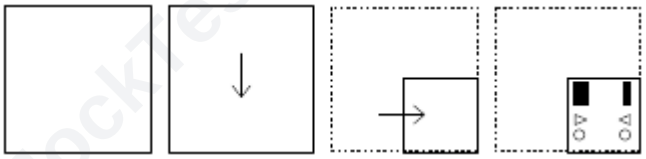
(c)



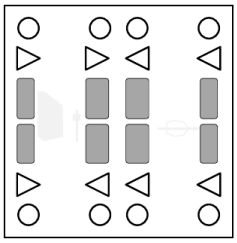
(d)



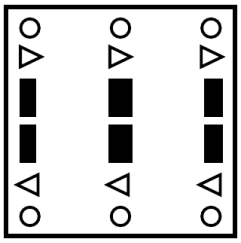
Q50. A paper is folded and cut as shown. How will it appear when unfolded?



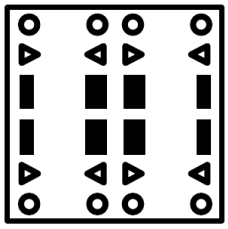
(a)



(b)

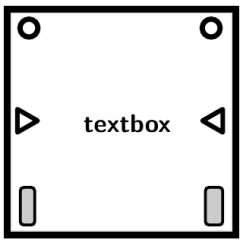


(c)



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(d)



QUANTITATIVE APTITUDE

Q51. In Class 8 of a school, the ratio of students playing cricket to those playing football is 27 : 13, while the ratio of those playing football to those playing hockey is 26 : 14. If the total number of students in Class 8 is 470, and each student plays exactly one game, find the percentage of students of the class playing cricket. [Give your answer correct to two decimal places.]

(a) 55.47%
(b) 54.75%
(c) 57.45%
(d) 56.35%

Q52. The table below provides information about the marks obtained by a group of students in a test.

Marks	No. of Students
Less than 10	2
Less than 20	5
Less than 30	6
Less than 40	8
Less than 50	10

How many students scored at least 30 marks but less than 40 marks in the test?

(a) 8
(b) 3
(c) 1
(d) 2

Q53. If sec θ - cos θ = 14 and 14 sec θ = x, then the value of x is _____.

(a) $\tan^2 \theta$
(b) $\sec^2 \theta$
(c) 2sec θ
(d) 2tan θ

Q54. If x + 1/X = - 13, what is the value of x^4+ 1/(X^4) ?

(a) 27887
(b) 27891
(c) 29243
(d) 28561

Q55. If (x+1/x) = 7.5, what is the value of (x^3+1/(x^3))?

(a) 399.37
(b) 52.25
(c) 56.25
(d) 58.25

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Q56. The population of a city increases at the rate of 10% per annum. If the population of the city was 2 crore in 2018, then the population of the city in the year 2021 was:

(a) 2.3 crore
(b) 2.6 crore
(c) 2.662 crore
(d) 2.42 crore

Q57. What will be a single equivalent discount for successive discounts of 20%, 40% and 75% on the marked price of an item?

(a) 65%
(b) 78%
(c) 88%
(d) 45%

Q58. Study the given graph carefully and answer the question that follows.



In which of the following years was the sales of company 1 exactly half of the total sales of companies 2 and 3 together in that year?

(a) 2019
(b) 2021
(c) 2016
(d) 2020

Q59. In a company, there are only two types of employees, workers, and officers. 35% of the employees are officers and the average monthly salary of an officer is Rs. 39,000 more than the combined average monthly salary of all employees. What is the difference between the average monthly salaries of an officer and a worker?

(a) Rs. 52,650
(b) Rs. 50,700
(c) Rs. 64,350
(d) Rs. 60,000

Q60. Simplify [7 1/2 ÷ {1 1/4 - 1/2 (2 1/2 - 1/4 - 1/6)}] ÷ (1/2 of 8 1/3).

(a) 26
(b) 36
(c) 43.2
(d) 23.6

Q61. If, in a family, consumption of sugar is 6 kg for 24 days, then what is the consumption of sugar for 18 days?

(a) 3.75 kg
(b) 4 kg
(c) 3.6 kg
(d) 4.5 kg

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Q62. A pond is 50 m long, 35 m wide and 2.5 m deep. Find the capacity of the pond.

(a) 4165 m^3
(b) 4375 m^3
(c) 4185 m^3
(d) 3850 m^3

Q63. 16 men can paint 15 walls in 45 days. In how many days can 20 men paint 20 walls?

(a) 40
(b) 60
(c) 48
(d) 45

Q64. The cost price of an article is Rs.6,450. If it sold at a profit 16%, how much would be its selling price?

(a) Rs.7,482
(b) Rs.7,428
(c) Rs.7,842
(d) Rs.7,282

Q65. In a Panchayat election, three candidates were there in the fray. The losing candidates got an equal number of votes and the winning candidate got as many votes as the rest of the two got collectively. If the total votes polled were 1500, find the number of votes that the winning candidate got, assume all votes polled were valid.

(a) 750
(b) 625
(c) 575
(d) 800

Q66. A shopkeeper wanted to sell Rs. 2,700 worth of products. But he had two options — giving two successive discounts of 10% and 15%, respectively, or giving a single discount of 25%. What was the difference between the two options?

(a) Rs. 40.50
(b) Rs. 42.75
(c) Rs. 44.00
(d) Rs. 47.50

Q67. On dividing 8675123 by a certain number, the quotient is 33611 and the remainder is 3485. The divisor is _____.

(a) 538
(b) 258
(c) 248
(d) 356

Q68. RA and RB are two tangents from a common point ‘R’ outside the circle with centre ‘O’, having a radius of 6 cm. If angle ARB = 70°, find the measure of the angle AOB.

(a) 130°
(b) 110°
(c) 120°
(d) 80°

Q69. The given table shows the consumption of grains (in kilograms) by a village per day over the given set of years. Study the table and answer the following question.

For which set of years (in options) is the combined consumption per day equal to that for the other set of years?

Year	Rice	Wheat	Maize	Barley
1998-2000	181	50	35	26
2003-2005	167	44	39	17
2008-2010	169	38	49	25

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2013-2015	150	45	51	21
2018-2020	147	54	63	24

(a) 1998–2000 and 2008–2010
(b) 2008–2010 and 2013–2015
(c) 2003–2005 and 2013–2015
(d) 1998–2000 and 2003–2005

Q70. If the total surface area of a cube is 96 cm^2, then find the volume of the cube.
(a) 64 cm^3
(b) 82 cm^3
(c) 27 cm^3
(d) 74 cm^3

Q71. Find the total surface area of a cuboid 17 m long, 8 m broad and 3 m high.
(a) 420 m^2
(b) 417 m^2
(c) 402 m^2
(d) 422 m^2

Q72. A worker's average income for a week is Rs. 180. He earned Rs. 115, Rs. 212, Rs. 170, Rs. 165, Rs. 185, and Rs. 225 from Monday to Saturday. Find his Sunday's income.
(a) Rs. 191
(b) Rs. 188
(c) Rs. 195
(d) Rs. 178

Q73. The time taken by a 180 m long train running at a speed of 54 km/h to cross a man standing on the platform is:
(a) 10 seconds
(b) 12 seconds
(c) 11 seconds
(d) 9 seconds

Q74. If 49 litres of a milk solution has 63% milk in it, then how much milk should be added to make the concentration of milk 70% in the solution?
(a) 1113/30 litres
(b) 147/30 litres
(c) 1211/30 litres
(d) 131/30 litres

Q75. If $x + y + z = 0$, then find the value of $x^3 + y^3 + z^3 - 3xyz$.
(a) 1
(b) $x^3 + y^3 + z^3$
(c) 3xyz
(d) 0

GENERAL AWARENESS

Q76. Who among the following personalities has written the National Song 'Vande Mataram'?
(a) Sarojini Naidu
(b) Bankimchandra Chatterjee
(c) Rabindra Nath Tagore
(d) Sri Aurobindo

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Q77. Identify the element that helps to trap light energy that is essential for photosynthesis.

(a) Cristae
(b) Amyloplasts
(c) Carotenoid
(d) Vacuoles

Q78. Which of the following novels is NOT written by Amitav Ghosh?

(a) The Circle of Reason
(b) A Suitable Boy
(c) Sea of Poppies
(d) The Shadow Lines

Q79. The foreign exchange reserves in India crossed the landmark of _____ in June 2021.

(a) US$ 900 trillion
(b) US$ 600 trillion
(c) US$ 600 billion
(d) US$ 900 billion

Q80. Reni Village in Garhwal was known for what environmental movement in 1970?

(a) Save Silent Valley Movement
(b) Chipko Movement
(c) Jungle Bachao Andolan
(d) Appiko Movement

Q81. Who is the recipient of 2021 Abhinandan Saroja National Award?

(a) Sujata Mohapatra
(b) Gopika Varma
(c) N Amusana Devi
(d) Aparna Satheesan

Q82. Under the electron microscope, which cell organelle is visible as either clusters or single, small dots that float freely in the cytoplasm?

(a) Golgi apparatus
(b) Ribosomes
(c) Vesicle
(d) Peroxisomes

Q83. The equipment bolt is used in which sport?

(a) Swimming
(b) Mountaineering
(c) Cycling
(d) Motor sports

Q84. Who among the following is the first ever Grammy award winner from India?

(a) Pt Hari Prasad Chaurasia
(b) Pt Ravi Shankar
(c) Ustad Zakir Husain
(d) Pt Shiv Prakash Sharma

Q85. Among the following freedom fighters of India, whose autobiography is ‘Why am I an Atheist’?

(a) Ras Behari Bose
(b) Bhagat Singh
(c) Ram Prasad Bismil
(d) Aurobindo Ghosh

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Q86. Padma Shri awardee Guru Amubi Singh has conferred the award for his significant contributions in which of the following dance forms?

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

Q87. _____ was first trained in classical music under her father Ustad ‘Baba’ Allauddin Khan, and established the Maihar-Senia gharana with his help.

(a) Anupama Bhagwat
(b) Annapurna Devi
(c) Roopa Panesar
(d) Sahana Banerjee

Q88. The Guinness world record for the highest number of songs recorded in a day is held by an Indian Playback Singer. How many songs in a day were recorded?

(a) 34
(b) 26
(c) 30
(d) 28

Q89. Who among the following is NOT a part of the Union Executive?

(a) The Prime Minister of India
(b) The President of India
(c) The Supreme Court of India
(d) The council of ministers

Q90. Who among the following personalities received the Prestigious National Nritya Shiromani Award 2022?

(a) Vedantam Ramalinga Sastry
(b) Deepa Sashindran
(c) KV Satyanarayana
(d) Aparna Satheesan

Q91. Which group is on the second column from the right in the periodic table and contains fluorine (F), chlorine (Cl), bromine (Br), iodine (I), astatine (At) and tennessine (Ts)?

(a) Group 16
(b) Group 15
(c) Group 13
(d) Group 17

Q92. In the case of Mohammad Salimullah vs _____, the Supreme Court observed in 2021 that the 'Right not to be deported' is concomitant to Article 19 and available only to Indian citizens.

(a) State of Maharashtra
(b) Union of India
(c) State of Tripura
(d) Union Territory of Lakshadweep

Q93. The 13^(th) ICC ODI Cricket World Cup will be organised by _____.

(a) England
(b) South Africa
(c) West Indies
(d) India

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Q94. In July 2021, in which state/Union Territory did the Ministry of Social Justice and Empowerment of the Government of India launch the 'Samajik Adhikarita Shivir' for the distribution of assistive devices and aids to 'Divyangjan'?

(a) Chhattisgarh
(b) Delhi
(c) Madhya Pradesh
(d) Punjab

Q95. What type of forests are found north and south of the equator between 40° and 60° where rainfall is high, between 500-1500 mm in a year?

(a) Taiga forests
(b) Coniferous forests
(c) Mediterranean forests
(d) Temperate deciduous forests

Q96. What type of rocks was once igneous or sedimentary, but have metamorphosed as a result of intense heat and/or pressure within the Earth's crust?

(a) Granite
(b) Quartzite
(c) Sandstone
(d) Basalt

Q97. Who among the following is the author of 'Set the Boy Free'?

(a) David Niven
(b) Johnny Marr
(c) Paul Kalanithi
(d) Bill Browder

Q98. Which of the following artificial colouring agents is used in dietary supplements, sauces, soups and broths, bakery, dairy fats and oils, seafood, condiments, breath fresheners, desserts, convenience foods and beverages?

(a) Acid fuchsin
(b) Orange G
(c) Oil red O
(d) Quinoline yellow

Q99. Launched in April 2021, the PM Umeed Scheme aims to provide skills training to around three lakh youths to become entrepreneurs. The tenure of this scheme is upto _____.

(a) 2027-28
(b) 2023-24
(c) 2025-26
(d) 2029-30

Q100. Aparna Satheesan, a US-based exponent of Bharatanatyam/Kuchipudi, won the prestigious Abhinandan Saroja National Award by the National Institute of Indian Classical Dance in which of the following years?

(a) 2021
(b) 2011
(c) 2017
(d) 2005

ANSWER KEY

1	a	2	a	3	c	4	c	5	b	6	c	7	a	8	a	9	d	10	c
11	b	12	b	13	c	14	b	15	b	16	c	17	d	18	b	19	a	20	a
21	d	22	c	23	b	24	a	25	c	26	c	27	c	28	a	29	b	30	b
31	c	32	d	33	c	34	b	35	b	36	d	37	c	38	a	39	d	40	d

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41	d	42	b	43	d	44	a	45	d	46	c	47	a	48	d	49	b	50	c
51	c	52	d	53	a	54	a	55	a	56	c	57	c	58	c	59	d	60	c
61	d	62	b	63	c	64	a	65	a	66	a	67	b	68	b	69	c	70	a
71	d	72	b	73	b	74	a	75	d	76	b	77	c	78	b	79	c	80	b
81	d	82	b	83	b	84	b	85	b	86	b	87	b	88	d	89	c	90	d
91	d	92	b	93	d	94	c	95	d	96	b	97	b	98	d	99	c	100	a

SOLUTIONS

Q1. Answer: (a) Informassional

The erroneous spelling is "Informassional"

Key Points

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

• Informational:

relating to or characterized by facts about something; providing information.

• Example: I found the seminar on mental health and wellness by the clinical psychologist to be very informational.

Hence, the correct answer is option 1.

Additional Information

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

• Personnel:

people employed in an organization or engaged in an organized undertaking such as military service.

• Informal:

having a relaxed, friendly, or unofficial style, manner, or nature.

• Personal:

belonging to or affecting a particular person rather than anyone else.

Q2. Answer: (a) carried me

The correct answer is "carried me"

Key Points

• Let's look at the meaning of given phrasal verbs.

• carried me: to sustain or aid someone, especially during a challenging time.

• flew me: to soar or glide over someone or something

• ran me: To proceed through something very quickly or summarily.

• lift me: To pick or raise someone or something up (from some lower place or position)

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

• The implied meaning of the given sentence is that both the qualities of the speaker such as sincerity and patience sustained them through a challenging time.

The correct sentence is: My sincerity and patience carried me through all odds and problems of life.

Hence, the correct answer is option 1.

Q3. Answer: (c) narrow margin

The solution is in Hindi. Read it online.

Q4. Answer: (c) a zealot

The solution is in Hindi. Read it online.

Q5. Answer: (b) Acomplishment

The erroneous spelling is "Acomplishment"

Key Points

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

• Accomplishment:

the successful achievement of a task.

• Example: The biggest accomplishment of my career as a teacher is that I was able to make a difference in the life of so many students.

Hence, the correct answer is option 2.

Additional Information

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

• Enthusiasm:

intense and eager enjoyment, interest, or approval.

• Convenience:

the state of being able to proceed with something without difficulty.

• Auxiliary:

providing supplementary or additional help and support.

• All the other words are spelled correctly.

Q6. Answer: (c) illegible

The correct answer is "illegible".

Key Points

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

• Illegible:

not clear enough to be read.

• Example: His signature was illegible so the bank refused to encash the cheque.

• Hence, the correct answer is option 3.

The correct sentence is: Her writing is very illegible and so she loses marks in her exam.

Q7. Answer: (a) has been doing

The correct answer is "has been doing"

Key Points

• The given sentence should be in the present perfect Continuous tense.

• We need to use "has been" in the given sentence to make it the present perfect continuous tense.

• "Has" is an auxiliary verb used with the third person present tense and "been" is the past participle of "be".

• We use "has been" to describe actions that started in the past but continue to the present time.

The correct sentence is: My uncle has been doing business in Hyderabad for the last 10 years.

Hence, the correct answer is option 1.

Q8. Answer: (a) loathed

The solution is in Hindi. Read it online.

Q9. Answer: (d) treacherous

The correct answer is "treacherous"

Key Points

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

• Perilous:

exposed to imminent risk of disaster or ruin.

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

• reliable:

consistently good in quality or performance; able to be trusted.

• worthless:

(of a person) having no good qualities; deserving contempt.

• adventurous:

willing to take risks or to try out new methods, ideas, or experiences.

• treacherous:

(of ground, water, conditions, etc.) presenting hidden or unpredictable dangers.

• As per the meaning of the given words, "treacherous" appropriate synonym of the word given in the brackets to fill in the blank.

• Example: Rajat warned the tourists, "The path ahead is treacherous, we must tread carefully".

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The correct sentence is: Doing adventure sports is banned for athletes as it can be treacherous.

Hence, the correct answer is option 4.

Q10. Answer: (c) They renovated the library building in 2020.

The correct answer is "They renovated the library building in 2020."

Key Points

• There are a few things to keep in mind when changing a sentence from passive to active voice.

• In active voice, the subject or doer of the action is highlighted.

• In the given sentence, we will begin the sentence with the subject pronoun "they".

• The subject in passive voice becomes the object in active voice.

• In the given sentence, the "library building" becomes the object in the active voice.

• The given sentence is in the simple past tense. So we see that the past tense of "to be" which is "was" is used in the passive voice.

• We can avoid the usage of "to be" construction in the form of "was" for the active voice.

• The tense of the given sentence will still be in the simple past tense in active voice.

Hence, the correct answer is option 3.

Q11. Answer: (b) Have you uploaded the assignment?

The correct answer is "Have you uploaded the assignment?"

Key Points

• There are a few things to keep in mind when changing a sentence from passive to active voice:

• The subject is highlighted in the active voice and it comes at the beginning of the sentence.

• In the given sentence, the subject pronoun "you" will come to the beginning of the sentence.

• We usually use the helping verb "have" with the subject pronoun "you" in a sentence.

• We omit the use of "to be" constructions such as "been" which is the past participle of 'be' in active voice sentences.

Hence, the correct answer is option 2.

Q12. Answer: (b) I sip coffee.

The correct answer is "I sip coffee."

Key Points

• There are a few things to keep in mind when changing a sentence from passive to active voice:

• Active voice highlights the subject of the sentence. The object in the passive voice becomes the subject of the active voice.

• The subject pronoun "me" at the end of the passive voice will change to "I" at the beginning of the active voice sentence.

• The subject in passive voice becomes the object in active voice.

• In the given sentence, "Coffee" is the object of the sentence in active voice.

• The past participle form of the verb "sipped"(V3) in the passive voice will change to the base form of the verb "sip"(V1).

• We don't need to use the preposition "by" in the active voice. It is used to denote the agent in the passive voice sentence.

• We also don't need the helping verb "is" in the given sentence when changing to active voice.

• The tense of the given sentence is in the simple past tense.

Hence, the correct answer is option 2.

Q13. Answer: (c) Priviledge

The erroneous spelling is "Priviledge"

Key Points

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

• Privilege:

a special right, advantage, or immunity granted or available only to a particular person or group.

• Example: There are certain privileges that public servants enjoy but it also comes with a set of responsibilities.

Hence, the correct answer is option 3.

Additional Information

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

• Occurrence:

an incident or event.

• Accommodation:
a convenient arrangement; a settlement or compromise.
• Erroneous:
wrong; incorrect.
• All the other words are spelled correctly.

Q14. Answer: (b) conservative

The correct answer is "conservative".
Key Points
• Let's look at the meaning of the given word:
• Liberal: respecting and allowing many different types of beliefs or behaviour.
• For example: Her parents were far more liberal than mine.
• Conservative:
averse to change or innovation and holding traditional values.
• For example: Old people are usually more conservative than young people.
• As per the meaning of the given words, "conservative" is the antonym of the highlighted word
Hence, the correct answer is "Option 2".
Additional Information
• - Central:
at the point or in the area that is in the middle of something.
• Hysterical: affected by or deriving from wildly uncontrolled emotion.
• Ineffectual:
not producing any significant or desired effect.

Q15. Answer: (b) indulged, monetary

The correct answer is "indulged, monetary"
Key Points
• Let's look at the meaning of the given words:
• honoured:
regarded with great respect.
• professional:
engaged in a specified activity as one's main paid occupation rather than as a pastime.
• Indulged:
become involved in (an activity, typically one that is undesirable or disapproved of).
• monetary:
relating to money or currency.
• regulated:
control (something, especially a business activity) by means of rules and regulations.
• personal:
belonging to or affecting a particular person rather than anyone else.
• thrived:
prosper; flourish.
• devotional:
used in religious worship.
• As per the meaning of the given words, "indulged" and "monetary" is the appropriate word choice for the respective blanks.
• The meaning of the given sentence is that manpower exporters and overseas recruiters engaged in illegal business for financial gains.
Hence, the correct answer is option 2.

Q16. Answer: (c) Bribe someone

The solution is in Hindi. Read it online.

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Q17. Answer: (d) Embberassment

The erroneous spelling is "Embberassment"

Key Points

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

• Embarrassment: a feeling of self-consciousness, shame, or awkwardness.

• Example: Her daughter's tantrums at the party caused her a lot of embarrassment in front of the guests.

Hence, the correct answer is option 4.

Additional Information

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

• Consciousness:

the state of being aware of and responsive to one's surroundings.

• E.g.- The medication caused her to enter an altered state of consciousness.

• Encyclopedia:

a book or set of books giving information on many subjects or on many aspects of one subject, and typically arranged alphabetically.

• E.g.- Meg liked his quiet manners and considered him a walking encyclopedia of useful knowledge.

• Euphemism:

a mild or indirect word or expression substituted for one considered to be too harsh or blunt when referring to something unpleasant or embarrassing.

• E.g. The term 'early retirement' is nearly always a euphemism for redundancy nowadays.

• All the other words are spelled correctly.

Q18. Answer: (b) more educated

The correct answer is "more educated".

Key Points

• In the given sentence we need to use the "more" in the comparative form to make the sentence grammatically correct.

• We need to use the comparative form as we are comparing the subject's education to her sister and saying that subject is more educated.

• We use the comparative form "more" with an adjective.

• In the given sentence, we use the comparative form more with the adjective "educated" in the given sentence.

The correct sentence is: She is more educated than her sister.

Hence, the correct answer is option 2.

Q19. Answer: (a) BDAC

The correct answer is "BDAC"

Key Points

• Let's look at the correct sequence of the given passage:

• Statement B is the opening sentence of the given passage as it begins by recalling an event from the author's past. The author mentions that he was fifteen at the time when he entered Morehouse College. He also mentions his ancestors studied in the same college. So Morehouse has had three generations of Kings.

• Statement D is the second sentence of the passage, as the author begins by describing his experience when he entered college. He states though he had been one of the top students in high school, he was still reading at only an eighth-grade level.

• Statement A is the third sentence of the passage as the author continues the story and adds more details from that time. He mentions that he was a young fellow at Morehouse.

• Statement C is the last sentence of the passage as he talks about the professors at the college. He states that the professors were not caught up in the clutches of state funds and could teach what they wanted with academic freedom and encouraged us in a positive quest for a solution to racial ills.

Hence, the correct sequence is BDAC.

Q20. Answer: (a) how lucky I am to have

The correct sentence is "how lucky I am to have".

Key Points

• In the given sentence, the position of the adjective "lucky" in the given sentence is incorrect.

• In order to make a coherent meaning, we need to use the adjective "lucky" before "I am" in the given sentence.

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• The adjective "lucky" is modifying the meaning of the sentence.

• The implied meaning of the sentence is that the speaker is expressing his/her luck in having such wonderful sisters.

Hence, the correct answer is option 1.

Q21. Answer: (d) alone

The correct answer is "alone".

Key Points

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

• rather: used as an adverb to indicate that something is true to a fairly great extent.

• change:

make (someone or something) different; alter or modify.

• apart: (of two or more people or things) separated by a specified distance in time or space.

• alone: can be used as both adjective or adverb. It is used after a noun or pronoun to show that the person or thing mentioned is the only one.

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

• The implied meaning of the given sentence is that people do yoga not just for fitness reasons but for union soul and body as well.

Hence, the correct answer is option 1.

The complete passage is: Yoga is a personal journey for everyone as now most people are turning to it, not for fitness (1) alone, but for the union of both, body and soul. Yoga is an ancient practice that (2) originated in India. It involves movement, meditation and breathing (3) techniques to promote mental and physical well-being. There are many styles of yoga. A person should (4) choose a style based on their goals and fitness level. If yoga and pranayam are complemented with other forms of spiritual practice to purify the mental body and other bodies, then a person can achieve rapid spiritual progress in his lifetime. Thus a person can make progress to achieve the purpose of life which is to (5) merge with God.

Q22. Answer: (c) originated

The correct answer is "originated"

Key Points

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

• settled:

resolve or reach an agreement about (an argument or problem).

• came:

arrive at a specified place. Past tense of come.

• originated:

have a specified beginning.

• involved:

be or become occupied or engrossed in something.

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

• The implied meaning of the given sentence is that the ancient practice of yoga started in India.

Hence, the correct answer is option 3.

The complete passage is: Yoga is a personal journey for everyone as now most people are turning to it, not for fitness (1) alone, but for the union of both, body and soul. Yoga is an ancient practice that (2) originated in India. It involves movement, meditation and breathing (3) techniques to promote mental and physical well-being. There are many styles of yoga. A person should (4) choose a style based on their goals and fitness level. If yoga and pranayam are complemented with other forms of spiritual practice to purify the mental body and other bodies, then a person can achieve rapid spiritual progress in his lifetime. Thus a person can make progress to achieve the purpose of life which is to (5) merge with God.

Q23. Answer: (b) techniques

The correct answer is "techniques".

Key Points

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

• senses:

a faculty by which the body perceives an external stimulus; one of the faculties of sight, smell, hearing, taste, and touch.

• techniques:

a skillful or efficient way of doing or achieving something.

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• phases:

a distinct period or stage in a series of events or a process of change or development.

• pursuit:

the action of pursuing someone or something.

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

• The implied meaning of the given sentence is that yoga involves skillful way of movement, meditation, and breathing to promote mental and physical well-being.

Hence, the correct answer is option 2.

The complete passage is: Yoga is a personal journey for everyone as now most people are turning to it, not for fitness (1) alone, but for the union of both, body and soul. Yoga is an ancient practice that (2) originated in India. It involves movement, meditation and breathing (3) techniques to promote mental and physical well-being. There are many styles of yoga. A person should (4) choose a style based on their goals and fitness level. If yoga and pranayam are complemented with other forms of spiritual practice to purify the mental body and other bodies, then a person can achieve rapid spiritual progress in his lifetime. Thus a person can make progress to achieve the purpose of life which is to (5) merge with God.

Q24. Answer: (a) choose

The correct answer is "choose".

Key Points

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

• choose:

pick out (someone or something) as the best or most appropriate of two or more alternatives.

• familiarise:

give (someone) knowledge or understanding of something.

• make:

form (something) by putting parts together or combining substances; create.

• strike:

hit forcibly and deliberately with one's hand or a weapon or other implement.

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

• The implied meaning is that people should take up yoga based on their goals and fitness levels.

Hence, the correct answer is option 1.

The complete passage is: Yoga is a personal journey for everyone as now most people are turning to it, not for fitness (1) alone, but for the union of both, body and soul. Yoga is an ancient practice that (2) originated in India. It involves movement, meditation and breathing (3) techniques to promote mental and physical well-being. There are many styles of yoga. A person should (4) choose a style based on their goals and fitness level. If yoga and pranayam are complemented with other forms of spiritual practice to purify the mental body and other bodies, then a person can achieve rapid spiritual progress in his lifetime. Thus a person can make progress to achieve the purpose of life which is to (5) merge with God.

Q25. Answer: (c) merge

The correct answer is "merge".

Key Points

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

• Compete:

strive to gain or win something by defeating or establishing superiority over others.

• Progress:

forward or onward movement towards a destination.

• Merge:

combine or cause to combine to form a single entity.

• Mark: a

line, figure, or symbol made as an indication or record of something.

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

• The implied meaning of the given sentence is that when yoga and pranayam are complemented with other forms of spiritual practice to purify the mental body and other bodies. Thus, this will enable them to fulfill the purpose of life which is to be one with god.

Hence, the correct answer is option 3.

The complete passage is: Yoga is a personal journey for everyone as now most people are turning to it, not for fitness (1) alone,

but for the union of both, body and soul. Yoga is an ancient practice that (2) originated in India. It involves movement, meditation and breathing (3) techniques to promote mental and physical well-being. There are many styles of yoga. A person should (4) choose a style based on their goals and fitness level. If yoga and pranayam are complemented with other forms of spiritual practice to purify the mental body and other bodies, then a person can achieve rapid spiritual progress in his lifetime. Thus a person can make progress to achieve the purpose of life which is to (5) merge with God.

Q26. Answer: (c) ×, +, ÷, −, =, ×, +

The logic followed here is:

According to BODMAS Rule

B	Brackets in order
O	Of
D	Division
M	Multiplication
A	Addition
S	Subtraction

Given equation: 41 * 2 * 36 * 6 * 57 * 7 * 4 * 3

Option 1 : Using the combination +, −, =, ×, −, ÷, −

By BODMAS rule

41 + 2 - 36 = 6 × 57 - 7 ÷ 4 - 3

41 + 2 - 36 = 6 × 57 - 1.75 - 3

41 + 2 - 36 = 342 - 1.75 - 3

43 - 36 = 342 - 1.75 - 3

7 ≠ 337.2 (LHS ≠ RHS)

Option 2 : Using the combination −, =, +, ×, −, +, ×

41 - 2 = 36 + 6 × 57 - 7 + 4 × 3

41 - 2= 36 + 342 - 7 + 12

41 - 2 = 390 - 7

39 ≠ 383 (LHS ≠ RHS)

Option 3: Using the combination ×, +, ÷, −, =, ×, +

41 × 2 + 36 ÷ 6 - 57 = 7 × 4 + 3

41 × 2 + 6 - 57 = 7 × 4 + 3

82 + 6 - 57 = 28 + 3

88 - 57 = 31

31 = 31 (LHS = RHS)

Option 4: Using the combination −, +, ×, −, =, +, ×

41 - 2 + 36 × 6 - 57 = 7 + 4 × 3

41 - 2 + 216 - 57 = 7 + 12

257 - 2 - 57 = 19

257 - 59 = 19

198 ≠ 19 (LHS ≠ RHS)

Hence, ×, +, ÷, −, =, ×, + is the correct answer.

Q27. Answer: (c) ÷, +, =, ÷

The logic followed here is-

According to BODMAS rule:

B	Brackets in order
O	Of
D	Division
M	Multiplication

A	Addition
S	Subtraction

Given equation 78 * 3 * 14 * 80 * 2
Option 1: Using combination by BODMAS rule +, ÷, =, ×
78 + 3 ÷ 14 = 80 × 2
78 + 0.2 = 80 × 2
78 + 0.2 = 160
78.2 ≠ 160 (LHS ≠ RHS)
Option 2 : Using combination by BODMAS rule +, ×, =, ÷
78 + 3 × 14 = 80 ÷ 2
78 + 3 × 14 = 40
78 + 42 = 40
120 ≠ 40 (LHS ≠ RHS)
Option 3 : Using combination by BODMAS rule ÷, +, =, ÷
78 ÷ 3 + 14 = 80 ÷ 2
26 + 14 = 40
40 = 40 (LHS = RHS)
Option 4 : Using combination by BODMAS rule −, =, +, ×
78 - 3 = 14 + 80 × 2
78 - 3 = 14 + 160
78 - 3 = 174
75 ≠ 174 (LHS ≠ RHS)
Hence, ÷, +, =, ÷ is the correct answer.

Q28. Answer: (a) Fog

Given :
Bat and Ant are common in both dices. So, remaining two will be opposite face.
From the both dices :

Dice 1	**Ant**	**Bat**	**Dog**
Dice 2	Bat	Ant	Fog

Thus, Dog opposite to Fog
Hence, Fog is the correct answer.

Q29. Answer: (b) Sister’s daughter

Explanation:
The family tree diagram is shown below :
According to question
The blood relation diagram as follows
It is clear from above that lady is the Sister’s daughter of Vijay.
Hence, Sister’s daughter is the correct answer.

Q30. Answer: (b) 43

The logic followed here is:
Hence, 43 is the correct answer.

Q31. Answer: (c) [figure]

The logic followed here is:
In a mirror image left changes to right and the right changes to left vice-versa
The correct mirror image of the given figure when the mirror is placed at MN
Hence,
is the correct answer.

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Q32. Answer: (d) ÷, –, +, ×, =

The logic followed here is:

According to BODMAS rule

B	Brackets in order
O	Of
D	Division
M	Multiplication
A	Addition
S	Subtraction

Given equation: 25 * 5 * 10 * 2 * 8 * 11

Option 1: ÷, ×, +, –, =

Using the combination by BODMAS rule

25 ÷ 5 × 10 + 2 - 8 = 11

5 × 10 + 2 - 8 = 11

50 + 2 - 8 = 11

52 - 8 = 11

44 ≠ 11 (LHS ≠ RHS)

Option 2: ×, ÷, –, +, =

using the combination by BODMAS rule

25 × 5 ÷ 10 - 2 + 8 = 11

25 × 0.5 - 2 + 8 = 11

12.5 - 2 + 8 = 11

20.5 - 2 =11

18.5 ≠ 11 (LHS ≠ RHS)

Option 3 : –, +, ÷, ×, =

Using the combination by BODMAS rule

25 - 5 + 10 ÷ 2 × 8 = 11

25 - 5 + 5 × 8 = 11

25 - 5 + 40 = 11

65 - 5 = 11

60 ≠ 11 (LHS ≠ RHS)

Option 4 : ÷, –, +, ×, =

using the combination by BODMAS rule

25 ÷ 5 - 10 + 2 × 8 = 11

5 - 10 + 2 × 8 = 11

5 - 10 + 16 = 11

21 - 10 = 11

11 = 11 (LHS = RHS)

Hence, ÷, –, +, ×, = is the correct answer.

Q33. Answer: (c) Sunday

The logic followed here is:

3 march 2020 was Tuesday

First of all we will check is 2020 is a leap year 2020/4

so, 2020 is a leap year therefore February has 29 days.

Now, we will check days between 4 Feb 2020 - 3 march 2020

i.e. 26 + 3 odd days

= 29/7(because week has 7 days)

remainder is 1 by dividing it

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so we will -1 in Tuesday i.e. Monday

therefore 3 Feb 2020 is Monday

but, we have to find 3 Feb 2019

then we will do -1 in Monday

so, on 3 February 2019 is Sunday

Hence, Sunday is the correct answer.

Q34. Answer: (b) ORLM

The logic followed here is

The pattern followed is

Hence, ORLM is the correct answer.

Q35. Answer: (b) [figure]

The paper when unfolded will be shown as below:

Hence,

'option 2' is the correct answer.

Q36. Answer: (d) Egg

Given:

Explanation: If two dice have the same face value in the given image then their clockwise or anti-clockwise numbers are known as opposite numbers in dice.

In first and second dice Bat and Cat are common in both dices.

*Thus, Egg is the opposite of Fog

Hence, Egg is the correct answer.

Q37. Answer: (c) ZIXSREV

The logic followed here is:

The positional value table is as follows:

'HISTORY' is written as ‘SRHGLIB’

'RECORD’ is written as ’IVXLIW’

ARCHIEVE is written as ZIXSREV

Hence, ZIXSREV is the correct answer.

Q38. Answer: (a) CAZ

The correct answer is option 1) CAZ.

SOLUTION:

The pattern followed here is :

Hence the answer is CAZ.

Q39. Answer: (d) 92

The logic followed here is:

The difference between the numbers is the multiple of 12 such that the difference between first two digit is 12 and the difference between last two digits is 48.

Therefore the difference between 2^(nd)and 3^(rd)digit should be 24 and the 3^(rd)and 4^(th)should be 36.

Which makes the missing number 92.

Hence the correct answer is 92.

Q40. Answer: (d) [figure]

The logic followed here is;

Here MN is the mirror.

The image on the right is the mirror image.

Now comparing the image with the options we get, option 4.

Hence option 4) in correct.

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Q41. Answer: (d) (105, 35, 38)

The pattern in the given set is :
Quotient of (First term/second term) + second term = Third term
Quotient of (75/25) + 25 = 28
3 + 25 = 28
Quotient of (136/34) + 34 = 38
4 + 34 = 38
Similarly,
Let's apply and check in option 1 (27, 9, 15) ;
Quotient of (27/9) + 9 = 15
3 + 9 = 15
12 = 15 -- Incorrect
Let's apply and check in option 2 (45, 9, 12) ;
Quotient of (45/9) + 9 = 12
5 + 9 = 12
14 = 12 -- Incorrect
Let's apply and check in option 3 (55, 5, 11) ;
Quotient of (55/5) + 5 = 11
11 + 5 = 11
16 = 11 -- Incorrect
Let's apply and check in option 4 (105, 35, 38) ;
Quotient of (105/35) + 35 = 38
3 + 35 = 38
38 = 38 -- Correct
Hence the correct answer is (105, 35, 38).

Q42. Answer: (b) RMYCT

The positional value table is as follows:
The pattern followed here is:
AND
Now the given word can be coded as,
Hence the answer is RMYCT.

Q43. Answer: (d) ×, ÷, =, −

The logic followed here is:
Let's try each option and solve the equations we get,
Option 1) +, ×, =, ÷
96 + 6 - 24 = 49 ÷ 25
96 + 6 - 24 = 1.96
102 - 24 = 1.96
78 ≠ 1.96
78 not equals to 1.96 therefore this option is incorrect.
Option 2) ÷, −, =, +
96 ÷ 6 - 24 = 49 + 25
16 - 24 = 49 + 25
16 - 24 = 74
-8 ≠ 74
-8 not equals to 74 therefore this option is incorrect.
Option 3) −, +, ×, =
96 - 6 + 24 × 49 = 25
96 - 6 + 1176 = 25
96 - 1182 = 25

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-1086 ≠ 25

-1086 not equals to 25 therefore this option is incorrect.

Option 4) ×, ÷, =, −

96 × 6 ÷ 24 = 49 - 25

96 × 0.25 = 49 - 25

24 = 49 - 25

24 = 24

24 is equal to 24 therefore this option is correct.

Hence the correct is ×, ÷, =, −

Q44. Answer: (a) +, ÷,–,×, =

The logic followed here is:

Let's try each option and solve the equations we get,

Option 1) +, ÷,–,×, =

57 + 35 ÷ 7 - 14 × 2 = 34

57 + 5 - 14 × 2 = 34

57 + 5 - 28 = 34

62 - 28 = 34

34 = 34

34 is equal to 34 therefore this option is correct.

Option 2) ×, +, ÷,–, =

57 × 35 + 7 ÷ 14 - 2 = 34

57 × 35 + 0.5 - 2 = 34

1995 + 0.5 - 2 = 34

1995.5 - 2 = 34

1993.5 ≠ 34

1993.5 not equals to 34 therefore this option is incorrect.

Option 3) –,÷,+,×, =

57 - 35 ÷ 7 + 14 × 2 = 34

57 - 5 + 14 × 2 = 34

57 - 5 + 28 = 34

85 - 5 = 34

80 ≠ 34

80 not equals to 34 therefore this option is incorrect.

Option 4) +,–, ×,÷, =

57 + 35 - 7 × 14 ÷ 2 = 34

57 + 35 - 7 × 7 = 34

57 + 35 - 49 = 34

92 - 49 = 34

43 ≠ 34

43 is not equal to 34 therefore this option is incorrect.

Hence the correct is option 1) +, ÷,–,×, =

Q45. Answer: (d) 166

The pattern in the given set is :

(First term × 7) - 3 = Second term

(Second term × 3) + 7 = Third term

Let's apply and check in the given sets ;

First row- 6,39, 124

(First term × 7) - 3 = Second term (Second term × 3) + 7 = Third term

(6 × 7) – 3 = 39 (39 × 3) + 7 = 124

(42) – 3 = 39 117 + 7 = 124

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39 = 39 124 = 124
Third row- 11, 74, 229
(First term × 7) - 3 = Second term (Second term × 3) + 7 = Third term
(11 × 7) – 3 = 74 (74 × 3) + 7 = 229
(77) – 3 = 74 222 + 7 = 229
74 = 74 229 = 229
Now applying the pattern in second row- 8, 53, ?
(First term × 7) - 3 = Second term (Second term × 3) + 7 = Third term
(8 × 7) – 3 = 53 (53 × 3) + 7 = Third term
(56) – 3 = 53 159 + 7 = Third term
53 = 53 166 = Third term
Hence the correct answer is 166.

Q46. Answer: (c) 120

The pattern is :
(first digit × second digit × 5) = Third digit
Let's apply and check in the first row,
3 × 2 × 5 = 30
6 × 5 = 30
30 = 30
Let's apply and check in the second row,
7 × 5 × 5 = 175
35 × 5 = 175
175 = 175
Let's apply and check in the first row,
4 × 6 × 5 = Third digit
24 × 5 = Third digit
120 = Third digit
Hence the correct answer is 120.

Q47. Answer: (a) VOAFLR

The pattern in the code is :
First term and second term,
Third term and fourth term,
Fifth term and sixth term,
Hence the correct answer is VOAFLR.

Q48. Answer: (d) BAT

The logic followed here is:
The relation between 1^(st)and 2^(nd)term is that its first and last characters are interchanged,
The relation between 3^(rd) and 4^(th) term is that its first and last characters are interchanged,
Therefore the relation between 3rd and 4th term is that its first and last characters are interchanged, and we get
Hence the correct answer is BAT.

Q49. Answer: (b) [figure]

Let's understand the relationship between the classes;
King, father, queen
• Some kings can be fathers.
• A queen is a female.
Combining both the facts we get,
This diagram is same as the option 2).
Hence the correct answer is option 2).

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Q50. Answer: (c) [figure]

In order to get the complete unfolded pattern we have to unfold the paper one by one in the order it was folded,

Here we get the completely unfolded paper and the pattern on it and the pattern matches with option 3.

Hence the correct answer is option 3).

Q51. Answer: (c) 57.45%

Given:

Ratio of students playing cricket to those playing football is 27 : 13 and

Ratio of students playing football to those playing hockey is 26 : 14.

Total no. of students is 470

Calculations:

Ratio of students playing cricket, football and hockey respectively is 27 × 26 : 26 × 13 : 13 × 14

=> 702 : 338: 182

=> 351: 169 : 91

=> 27 : 13 : 7

Now, according to the question,

(27 + 13 + 7)k = 470

=> 47 × k = 470

=> k = 10

Now, no. of students playing cricket = 27k = 27 × 10 = 270

Percentage required = 270/470 × 100 = 57.45%

Therefore The percentage reduired = 57.45%

Q52. Answer: (d) 2

Given:

Marks	No. of students
Less than 10	2
Less than 20	5
Less than 30	6
Less than 40	8
Less than 50	10

Calculations:

Students scored at least 30 marks but less than 40 marks on the test

=> Students scored less than 40 - Students scored less than 30

=> 8 - 6 = 2

Therefore Students scored at least 30 marks, but less than 40 marks on the test is 2.

Q53. Answer: (a) $\tan^2 \theta$

Shortcut Trick

Given: $14 = \sec \theta - \cos \theta$

Substitute 14 in the second equation: $x = (\sec \theta - \cos \theta) \times \sec \theta$

=> $x = \sec^2 \theta - (\cos \theta \times \sec \theta)$

=> $x = \sec^2 \theta - 1 = \tan^2 \theta$

Therefore The correct answer is $\tan^2 \theta$.

Alternate Method

Given: $\sec \theta - \cos \theta = 14$ and $14 \sec \theta = x$

Formula Used: $\sec \theta \times \cos \theta = 1$; $\sec^2 \theta - 1 = \tan^2 \theta$

=> From the first equation, we have $14 = \sec \theta - \cos \theta$

=> Substitute the value of 14 in the second equation: $x = (\sec \theta - \cos \theta) \times \sec \theta$

=> $x = \sec^2 \theta - (\cos \theta \times \sec \theta)$

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=> Since cos θ × sec θ = 1, we get x = sec² θ − 1

=> Using identity sec² θ − tan² θ = 1, x = tan² θ

Therefore The correct answer is tan² θ.

Additional Information

Trigonometric Identities

Fundamental square relations: sin²θ + cos²θ = 1, 1 + tan²θ = sec²θ, and 1 + cot²θ = cosec²θ.

Reciprocal Relations

The product of a trigonometric ratio and its reciprocal is always 1: sinθ × cosecθ = 1, cosθ × secθ = 1, and tanθ × cotθ = 1.

Q54. Answer: (a) 27887

Given:

x + 1/x = - 13

Formula used:

a² + b² = (a + b)² - 2ab

Calculation:

x² + 1/(x²) = (x + 1/x)² - 2 × x × 1/x

=> x² + 1/(x²) = 13² - 2

=> x2 + 1/(x²) = 167

Now,

x^4 + 1/(x^4) = (x2 + 1/(x²))² - 2

=> (167)²-2

=> 27889 - 2 = 27887

=> x^4 + 1/(x^4) = 27887

Therefore The value of x4 + 1/(x^4) = 27887.

Shortcut TrickIf x + 1/x = p,

then x2 + 1/(x²) = p² - 2

=> x + 1/x = - 13

=> x2 + 1/(x²) = (-13)2 - 2 = 167 = k(Let)

If x2 + 1/(x²) = k,

then x^4 + 1/(x^4) = k² - 2

=> x2 + 1/(x²) = 167

=> x4 + 1/(x^4) = (167)2 - 2

=> 27887

Q55. Answer: (a) 399.37

Given:

x+1/x=7.5

Formula used:

a³ + b³ = (a + b)³ - 3ab(a + b)

Calculation:

x³+1/(x³) =(x+1/x)³-3×x×1/x(x+1/x)

=> x³+1/(x³) = (7.5)³-3×(7.5)

=> x³+1/(x³) =421.875 -22.5 =399.37

=> x³+1/(x³) =399.37

Therefore option (()1) is correct.

Q56. Answer: (c) 2.662 crore

Given:

Previous Population(P) = 2 crores

Rate = 10%

Time = 2021 - 2018 = 3 years

Formula used:

New Population = P(1+R/100) ^T

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Calculation:
New Population = P(1+R/100) T
=> 20,000,000(1+10/100)³
=> 20,000,000(11/10)³
=> 20,000,000×1331/1000
=> New Population = 26,620,000
Therefore The population in 2021 is 2.662 crores.

Q57. Answer: (c) 88%

Given:
The successive discount are 20%, 40% and 75%.
Formula:
Successive discount = X + Y -XY/100
Where,
X = First discount
Y = Second discount
Calculation:
Successive discount = X+Y-XY/100
20+40-(20×40)/100 = 52%
Now, again
Successive discount = X+Y-XY/100
=> X = 52%, Y = 75%
=> 52+75-(52×75)/100
=> 127-39
=> 88
Therefore The single equivalent discount is 88%.

Q58. Answer: (c) 2016

Given:
Graph representing sales of three companies in each year.
Calculations:
According to question,
Half of the sum of sales of companies 2 and 3 together = sales of company 1
Now, in year 2015, we have
=> (50+40)/2 = 45
Which is not equal to 30 i.e., sales of company 1 in that year.
Similarly, In the year 2016, we have
=> (60+40)/2 = 50
Which is exactly equal to 50 i.e., sales of company 1 in that particular year.
Therefore The year in which half of the sales of 2nd and 3rd company is equal to sales of first company is 2016.

Q59. Answer: (d) Rs. 60,000

Shortcut Trick
Ratio of Officers : Workers = 35% : 65% = 7 : 13.
Deviation of Officer's salary from the combined average = +Rs. 39,000.
Applying the net deviation rule: Sum of deviations = 0.
7 × (+39,000) + 13 × (Worker's deviation) = 0.
Worker's deviation = −(7 × 39,000) ÷ 13 = −Rs. 21,000.
Total difference = Officer's surplus + Worker's deficit = 39,000 + 21,000 = Rs. 60,000.
Therefore The correct answer is Rs. 60,000.
Alternate Method
Given:
Percentage of Officers = 35%

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Percentage of Workers = 100% − 35% = 65%

Avg_(Officer) − Avg_(Total) = Rs. 39,000

Formula Used:

Weighted Average: n1(A1 − A_(avg)) = n2(A_(avg) − A2)

Calculations:

=> Ratio of Officers (n_O) to Workers (n_W) = 35 : 65 = 7 : 13

=> Let Avg_(Total) be A, then Avg_(Officer) = A + 39,000

=> Let Avg_(Worker) be A_W

=> 7 × (Avg_(Officer) − A) = 13 × (A − Avg_(Worker))

=> 7 × (39,000) = 13 × (A − Avg_(Worker))

=> A − Avg_(Worker) = (7 × 39,000) ÷ 13

=> A − Avg_(Worker) = 7 × 3,000 = 21,000

=> Difference = Avg_(Officer) − Avg_(Worker)

=> Difference = (Avg_(Officer) − A) + (A − Avg_(Worker))

=> Difference = 39,000 + 21,000 = 60,000

Therefore The correct answer is Rs. 60,000.

Additional Information

Alligation Rule for Averages

The ratio of the quantities of two groups is the inverse ratio of the differences of their individual averages from the combined average: n1/n2 = (A2 − A_(avg)) / (A_(avg) − A1).

Net Deviation Method

In any distribution, the sum of the products of the frequency and the deviation of each value from the mean is always zero: ∑ f_i(x_i − x) = 0.

Weighted Average Formula

The combined average of two groups is given by A_(avg) = (n1A1 + n2A2) / (n1 + n2), where n represents the number of items and A represents the average.

Q60. Answer: (c) 43.2

Given:

[7 1/2 ÷ {1 1/4 - 1/2 (2 1/2 - 1/4 - 1/6)}] ÷ (1/2 of 8 1/3)

Concept used:

VBODMAS

Calculations:

[7 1/2 ÷ {1 1/4 - 1/2 (2 1/2 - 1/4 - 1/6)}] ÷ (1/2 of 8 1/3)

=> [71/2÷[11/4-1/2(21/2-1/12)]÷(1/2of81/3)

=> [15/2÷[5/4-1/2(5/2-1/12)]]÷(1/2×25/3)

=> [15/2÷[5/4-1/2(29/12)]]÷(1/2×25/3)

=> [15/2÷[5/4-29/24)]]÷(25/6)

=> [15/2÷[1/24]]÷(25/6)

=> [15/2×[24/1]]÷(25/6)

=> [15×[12/1]]÷(25/6)

=> 180÷(25/6)

=> 180×6/25 = 43.2

Therefore The value required is 43.2.

Q61. Answer: (d) 4.5 kg

Shortcut Trick

Apply the Unitary Method logic: Consumption is directly proportional to Days.

Ratio of days = 18 ÷ 24 = 3/4

Consumption for 18 days = 6 kg × (3/4)

=> 18 ÷ 4 = 4.5 kg

Therefore The correct answer is 4.5 kg.

Alternate Method

Given:
Sugar consumption for 24 days = 6 kg
Formula Used:
Consumption per day = Total Consumption ÷ Total Days
Calculations:
=> Consumption for 1 day = 6 ÷ 24 kg
=> Consumption for 1 day = 0.25 kg
=> Consumption for 18 days = 18 × 0.25 kg
=> Consumption for 18 days = 4.5 kg
Therefore The correct answer is 4.5 kg.
Additional Information
Direct Proportion
When one quantity increases, the other also increases at a constant rate. Formula: x1/y1 = x2/y2.
Inverse Proportion
When one quantity increases, the other decreases. Formula: x1 × y1 = x2 × y2 (e.g., Men and Days in Time & Work).

Q62. Answer: (b) 4375 m^3

Given:
Length = 50 m
Breadth = 35 m
Width = 2.5 m
Concept:
Volume of cuboid = length × breadth × height
Calculations:
Volume of pond = 50×35×2.5
=> Volume= 4375 m^3
Therefore Capacity of the Pond is 4375 m^3.

Q63. Answer: (c) 48

Given:
16 men can paint 15 walls in 45 days.
Calculations:
To paint 15 walls, 16 men take = 45 days
To paint 1 wall, 16 men will take = 45/15 = 3 days
To paint 1 wall, 1 man will take = 16×3 = 48 days
To paint 1 wall, 20 men will take = 1/20×48 = 12/5 days
To paint 20 walls, 20 men will take = 20×12/5 = 48 days
Therefore 20 men will take 48 days to paint 20 walls.
Shortcut Trick
M1 = 16, D1 = 45, W1 = 15, M2 = 20, W2 = 20
(M1 × D1)/W1 = (M2 × D2)/W2
=> (16 × 45)/15 = (20 × D2)/20 => 48 = D2

Q64. Answer: (a) Rs.7,482

Given:
Cost price = Rs.6, 450
Profit = 16%
Concept:
Selling price = (100+profit)/100×Cost price
Calculation:
Selling price = (100+16)/100×6, 450
=> (116/100) × 6450
=> 58 ×129

Therefore The Selling price is Rs. 7482.

Q65. Answer: (a) 750

Given:
Winner got the votes equal to the sum of rest two candidates
Rest candidates got equal amount of votes.
Calculations:
Let the loosing candidates got x votes each
Then, winner got 2x votes.
Now, according to question,
2x + x + x = 1500
=> x = 375
=> Winner got 2x = 2 × 375
Therefore Winner got 2x = 750 votes.

Q66. Answer: (a) Rs. 40.50

Given:
Product Price = Rs 2,700
Successive Discounts = 10% and 15%
Single Discount = 25%
Concept Used:
Discount = % of Discount × Product Price
Price After Discount = Product Price – Discount
Calculations:
For first successive discount of 10%,
=> Product Price =2,700-10% ×2,700
=> Product Price =2,700-10/100×2,700
=> Product Price =2700-270
=> Product Price = Rs 2,430
For second successive discount of 15%,
=> Product Price =2430-15%×2430
=> Product Price =2430-15/100×2430
=> Product Price =2430-364.50
=> Product Price = Rs 2065.50
Price after single discount of 25%,
=> Product Price =2700-25%× 2700
=> Product Price =2700-25/100×2700
=> Product Price =2700-675
=> Product Price = Rs 2025.00
Difference between prices after the discounts = Rs 2065.50 – Rs 2025.00
Difference between prices after the discounts = Rs 40.50
Therefore The required difference between the two options is Rs 40.50

Q67. Answer: (b) 258

Shortcut Trick
Apply the Division Algorithm: Dividend − Remainder = Divisor × Quotient.
Subtract 3485 from 8675123 to get 8671638.
Divide 8671638 by 33611 to find the Divisor.
By unit digit check: 1 × 8 = 8, so the last digit of the divisor must be 8.
Therefore The correct answer is 258.
Alternate Method
Given:
Dividend = 8675123

Quotient = 33611

Remainder = 3485

Formula Used:

Dividend = (Divisor × Quotient) + Remainder

Calculations:

=> 8675123 = (Divisor × 33611) + 3485

=> 8675123 − 3485 = Divisor × 33611

=> 8671638 = Divisor × 33611

=> Divisor = 8671638 ÷ 33611

=> Divisor = 258

Therefore The correct answer is 258.

Additional Information

Division Algorithm

It states that for any two integers a and b, there exist unique integers q and r such that a = bq + r, where 0 ≤ r < |b|.

Remainder Theorem

The Remainder is always less than the Divisor. If the remainder is 0, then the dividend is exactly divisible by the divisor.

Unit Digit Verification

In large divisions, check if (Last digit of Divisor × Last digit of Quotient) + Last digit of Remainder matches the last digit of the Dividend.

Q68. Answer: (b) 110°

Given:

Radius = 6 cm

angle ARB = 70°

Concept Used:

Sum of the angles of a quadrilateral is 360°

The angle between the radius and the tangent of a circle is 90°

Calculation:

=> The 4 points A, B, R and O make a quadrilateral

=> angle RAO = angle RBO = 90°

=> angle RAO + angle AOB + angle RBO + angle ARB = 360°

=> 90° + angle AOB + 90° + 70° = 360°

=> angle AOB = 360° – 250° = 110°

Therefore The value of angle AOB is 110°.

Q69. Answer: (c) 2003–2005 and 2013–2015

Given:

Year	Rice	Wheat	Maize	Barley
1998-2000	181	50	35	26
2003-2005	167	44	39	17
2008-2010	169	38	49	25
2013-2015	150	45	51	21
2018-2020	147	54	63	24

Concept Used:

Total consumption per day = Sum of all the weights of each item in kilograms

Calculation:

=> Total consumption per day in year 1998-2000 = 181 + 50 + 35 + 26 = 292 kg

=> Total consumption per day in year 2003-2005 = 167 + 44 + 39 + 17 = 267 kg

=> Total consumption per day in year 2008-2010 = 169 + 38 + 49 + 25 = 281 kg

=> Total consumption per day in year 2013-2015 = 150 + 45 + 51 + 21 = 267 kg

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=> Total consumption per day in year 2018-2020 = 147 + 54 + 63 + 24 = 288 kg

Therefore The combined consumption per day is equal for the years 2003-2005 and 2013-2015.

Q70. Answer: (a) 64 cm³

Given:

Surface area of cube = 96 cm²

Concept Used:

Surface area of cube = $6a^2$

Volume of cube = a^3

Calculation:

Surface area of cube = $6a^2$

=> Putting the given value of surface area, we get

=> $6a^2 = 96$

=> $a^2 = 96/6 = 16$

=> $a = \sqrt{16} = 4$ cm

Side of cube, a = 4 cm

Volume of cube = a^3

=> $a^3 = 4^3$

=> 64 cm^3

Therefore The volume of the cube is $64cm^3$.

Q71. Answer: (d) 422 m²

Given:

Length = 17m

Breadth = 8m

Height = 3m

Concept Used:

Total Surface area of cuboid = 2(lb + bh + hl)

Calculation:

Surface area of cuboid = 2(lb + bh + hl)

=> Putting the values in the formula, we get

=> 2(17 × 8 + 8 × 3 + 3 × 17)

=> 2(136 + 24 + 51)

=> 2 × 211 = 422 m^2.

Therefore The value of total surface area of cuboid is 422 m^2.

Q72. Answer: (b) Rs. 188

Shortcut Trick

Net deviation from the average (180) must be zero.

Monday to Saturday deviations: (−65) + (+32) + (−10) + (−15) + (+5) + (+45) = −8

To balance this −8 deviation, Sunday's income must be 8 more than the average.

Sunday's income = 180 + 8 = Rs. 188.

Therefore The correct answer is Rs. 188.

Alternate Method

Given: Average income for 7 days = Rs. 180; Incomes of 6 days = Rs. 115, Rs. 212, Rs. 170, Rs. 165, Rs. 185, Rs. 225.

Formula Used: Total Sum = Average × Number of terms; Missing Value = Total Sum − Sum of given values.

=> Total income for the week = 180 × 7 = Rs. 1260

=> Sum of income (Mon to Sat) = 115 + 212 + 170 + 165 + 185 + 225

=> Sum (Mon to Sat) = Rs. 1072

=> Sunday's income = Total week income − Sum (Mon to Sat)

=> Sunday's income = 1260 − 1072 = Rs. 188

Therefore The correct answer is Rs. 188.

Additional Information

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Arithmetic Mean Property

The sum of the deviations of a set of values from their arithmetic mean is always zero. ∑(x_i − x) = 0.

Weighted Average

When two groups with averages A1 and A2 and sizes n1 and n2 are combined, the new average is (n1A1 + n2A2) ÷ (n1 + n2).

Inclusion/Exclusion Rule

If one value is added to a group, New Value = New Average + (Change in Average × Old Number of items).

Q73. Answer: (b) 12 seconds

Given:

Length of train = 180 m

Speed of train = 54 km/h

Concept Used:

Speed = Distance/Time

Calculation:

Firstly, we will change the value of speed from km/h to m/s.

=> 54 km/h = 54× 5/18

=> 54 km/h = 15 m/s

Putting the value in the speed formula, we get

=> 15 m/s = 180/Time

=> Time = 180/15

=> Time = 12 seconds

Therefore The time taken by the train to cross a man standing on the platform is 12 seconds.

Q74. Answer: (a) 1113/30 litres

Shortcut Trick

Equating the constant quantity of water before and after adding milk:

Initial Water % × Initial Volume = Final Water % × Final Volume

=> 37% × 49 = 30% × Final Volume

=> Final Volume = (37 × 49) ÷ 30 = 1813 ÷ 30 L

=> Added Milk = Final Volume − Initial Volume = (1813 ÷ 30) − 49 = 343 ÷ 30 = 11 $^{13}/_{30}$ litres

Therefore The correct answer is 11 $^{13}/_{30}$ litres.

Alternate Method

Given:

Total volume of initial mixture = 49 litres

Milk concentration in initial mixture = 63%

Desired milk concentration in final mixture = 70%

Concentration of pure milk added = 100%

Calculations:

Using the rule of alligation, the ratio in which the initial mixture and pure milk must be mixed is:

=> Ratio = (100 − 70) : (70 − 63)

=> Ratio = 30 : 7

We are given that 30 units of the initial mixture corresponds to 49 litres.

=> 30 units = 49 L

=> 1 unit = 49 ÷ 30 L

=> Pure milk to be added (7 units) = 7 × (49 ÷ 30) = 343 ÷ 30 L

=> Quantity of milk added = 11 $^{13}/_{30}$ litres

Therefore The correct answer is 11 $^{13}/_{30}$ litres.

Additional Information

Rule of Alligation

It is a visual mathematical method used to find the ratio in which two ingredients at their respective concentrations must be mixed to produce a mixture of a desired average concentration. The ratio is determined by cross-subtracting the target value from the components.

Constant Quantity Method

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When only one component (e.g., milk) is added or removed from a mixture, the absolute quantity of the other component (e.g., water) remains strictly unchanged. Equating the initial and final volumes of this unchanged part yields the new total volume directly.

Replacement Formula

When a specific volume of a mixture is repeatedly replaced by one of its pure components, the remaining amount of the original un-added component is calculated as: Final Amount = Initial Amount × (1 − Replaced Volume ÷ Total Volume)^n.

Q75. Answer: (d) 0

Given:

$x + y + z = 0$

Concept Used:

$x^3 + y^3 + z^3 = \{(x + y + z) \times (x^2 + y^2 + z^2 – xy – yz – zx)\} + 3xyz$

Calculation:

=> x3 + y3 + z3 = {(x + y + z) × (x2 + y2 + z2 – xy – yz – zx)} + 3xyz

By putting the value of (x + y + z = 0),

=> x3 + y3 + z3 = {(0) × (x2 + y2 + z2 – xy – yz – zx)} + 3xyz

=> x3 + y3 + z3 = 0 + 3xyz

=> x3 + y3 + z3 – 3xyz = 0

Therefore The value of x3 + y3 + z3 – 3xyz is 0.

Q76. Answer: (b) Bankimchandra Chatterjee

The correct answer is Bankim Chandra Chattopadhyay.

Key Points

• On 24 January 1950, the Constituent Assembly of India adopted "Vande Mataram" as a national song.

• It played a vital role in the Indian independence movement, first sung in a political context by Rabindranath Tagore at the 1896 session of the Indian national congress.

• It became a popular marching song for political activism and the Indian freedom movement in 1905.

• Bankim Chandra Chatterjee (also Chattopadhayay) (26 or 27 June 1838 – 8 April 1894) was an Indian novelist, poet, and journalist.

• He was the author of the 1882 Bengali language novel Anandamath, which is one of the landmarks of modern Bengali and Indian literature.

• Bankim Chandra was a member of an orthodox Brahman family.

• Bankim is widely regarded as the “father of modern novel in India".

• Additional Information

• Sarojini Naidu's work as a poet earned her the sobriquet the Nightingale of India or Bharat.

• Rabindranath Tagore (1861 – 1941) is best known as a poet, and in 1913 was the first non-European writer to be awarded the Nobel Prize for Literature.

• Sri Aurobindo was an Indian nationalist but is best known for his philosophy on human evolution and Integral Yoga.

Q77. Answer: (c) Carotenoid

The correct answer is Carotenoid.

Key Points

• Carotenoids are a class of more than 750 naturally occurring pigments synthesized by plants, algae, and photosynthetic bacteria.

• These richly coloured molecules are the sources of the yellow, orange, and red colours of many plants.

• Fruit and vegetables provide most of the 40 to 50 carotenoids found in the human diet.

• Carotenoids are beneficial antioxidants that can protect you from disease and enhance your immune system.

• Provitamin A carotenoids can be converted into vitamin A, which is essential for growth, immune system function, and eye health.

Additional Information

• The folds in the inner membrane of a mitochondrion are called cristae.

• An amyloplast is an organelle found in plant cells. Amyloplasts are plastids that produce and store starch within internal membrane compartments.

• Vacuoles are membrane-bound organelles that can be appearing in both animals and plants. In a way, they're specialized lysosomes. That is to say that their function is really to handle waste products, and by the handle, they mean take in waste

products and also get rid of waste products.

Q78. Answer: (b) A Suitable Boy

The correct answer is A Suitable Boy.

Key Points

• A Suitable Boy is a novel by Vikram Seth, published in 1993. With 1,349 pages (1,488 pages in paperback), the English–language book is one of the longest novels published in a single volume.

• The average reader will spend 24 hours and 48 minutes reading this book at 250 WPM (words per minute).

• A Suitable Boy is set against India's newfound independence, and although the plot, including Lata and the other three families, is not based on one true story, the historical backdrop is accurate.

• 'A Suitable Boy' remains a must-read. Despite it being published almost three decades ago, 'A Suitable Boy' still never fails to impress its modern readers.

• Moreover, it was recently adapted into a BBC miniseries that garnered worldwide attention and admiration.

Additional Information

• The Circle of Reason is the first novel by Indian writer Amitav Ghosh. It was published in 1986.

• Sea of Poppies (2008) is a novel by Indian novelist Amitav Ghosh which was shortlisted for the Man Booker Prize in 2008.

• The Shadow Lines (1988) is a Sahitya Akademi Award-winning novel by Indian writer Amitav Ghosh.

Q79. Answer: (c) US$ 600 billion

Correct answer is US$ 600 billion.

Key Points

• In June 2021, India crossed the 600 Billion USD mark for the first time.

• India has large foreign-exchange reserves; holdings of cash, bank deposits, bonds, and other financial assets denominated in currencies other than India's national currency, the Indian rupee.

• The reserves are managed by the Reserve Bank of India for the Indian government and the main component is foreign currency assets.

• Foreign-exchange reserves act as the first line of defence for India in case of economic slowdown, but the acquisition of reserves has its own costs.

Additional Information

• Foreign exchange reserves facilitate external trade and payment and promote orderly development and maintenance of the foreign exchange market in India.

• India's total foreign exchange (Forex) reserves stand at around US$580.252 Billion on 08 July 2022.

• India's foreign exchange reserves are mainly composed of US dollar in the forms of US government bonds and Institutional bounds.

• Reserve Bank of India Act and the Foreign Exchange Management Act, 1999 set the legal provisions for governing the foreign exchange reserves.

Q80. Answer: (b) Chipko Movement

The correct answer is Chipko Movement.

Key Points

• The Chipko development began in the mid-1970 in the Garhwal Himalayas of Uttarakhand (the then U.P). The milestone occasion occurred on 26 March 1974.

• When a gathering of labourer ladies of Reni town in Chamoli locale of Uttarakhand acted to forestall the cutting of trees and recover their customary timberland freedoms.

• Gaura Devi drove 27 of the town ladies to the site and faced the lumberjacks.

• The Chipko development started from an episode in a far-off town called Reni in Garhwal, high-up in the Himalayas during the mid-1970s.

• Sunderlal Bahuguna a preservationist was the main impetus behind the unbelievable Chipko development.

Additional Information

• Save Silent Valley was a social development focused on the security of Silent valley, an evergreen tropical backwoods in the Palakkad region of Kerala, India.

• Wilderness Bachao Andolan was begun in 1982 in the Singbhum locale of Jharkhand(then Bihar).

• The Appiko Movement was privately known as "Appiko Chaluvali".

• Local people embraced the trees which were to be cut by project workers of the woodland division.

• The Appiko development utilized different procedures to bring issues to light, for example, foot walks in the inside woodland,

slide shows, society moves, road plays and so on.

• 'Appiko' signifies 'embrace'. To develop and safeguard trees and to forestall their obliteration, this development was begun in Karnataka.02-Sept-2020.

Q81. Answer: (d) Aparna Satheesan

The correct answer is Aparna Satheesan.

Key Points

• Aparna Satheesan, renowned Kuchipudi/Bharatanatyam dancer, choreographer and teacher.

• She is well known globally for her ability to use creativity in presenting innovative ideas through multiple classical dance forms of India.

• She was awarded the Abhinandan Saroja award for her contribution to classical dance in November 2021.

Additional Information

• Abhinandan Saroja Award

• Aparna Satheesan Recipient of 2021 Abhinandan Saroja National Award By National Institute of Indian Classical Dance.

• This award was started on the birthday of Saroja Vaidyanathan.

• Amala Akkineni is an actor and animal rights activist.

• Swati Daithanka

• She has been associated with Bharatanatyam for two decades.

Q82. Answer: (b) Ribosomes

The correct answer is Ribosomes.

Key Points

• Ribosomes are the cellular structures responsible for protein synthesis.

• Polyribosomes are clusters of ribosomes may sit on an mRNA and make proteins, each making a strand of polypeptides.

• These clusters are called polyribosomes. When they are free in the cytoplasm, they are called free polyribosomes (linked by the mRNA).

• Ribosomes are the protein factories of the cell.

• Ribosomes link amino acids together to form polypeptide chains, which are further modified before becoming functional proteins.

Additional Information

• The Golgi apparatus is responsible for transporting, modifying, and packaging proteins and lipids into vesicles for delivery to targeted destinations.

• Vesicle is an important term used to describe the appearance of many rashes that typically consist of or begin with tiny-to-small fluid-filled blisters.

• Pemphigus is classified as one of the blistering diseases.

• Vesicles are small structures within a cell, consisting of fluid enclosed by a lipid bilayer involved in transport, buoyancy control, and enzyme storage.

• Peroxisomes are organelles that sequester diverse oxidative reactions and play important roles in metabolism, reactive oxygen species detoxification, and signalling.

• Oxidative pathways housed in peroxisomes include fatty acid β-oxidation, which contributes to embryogenesis, seedling growth, and stomatal opening.

Q83. Answer: (b) Mountaineering

The correct answer is Mountaineering.

Key Points

• Bolts are used in sports climbing as a backup to catch a fall.

• Mountaineering gear: Items such as mountaineering boots, crampons, a climbing helmet and an ice axe are standard items for almost every mountaineering climb.

• Equipment:- Helmet rubber climbing shoes climbing ropes/ high strength cord anchors harness or a set of ropes for fastening carabineers or hooks with safety locks belay devices rappel devices belay gloves ascenders slings nuts pitons and camming devices daisy chains.

• In rock climbing, an anchor can be any device or method for attaching a climber, a rope, or a load above or onto a climbing surface—typically rock, ice, steep dirt, or a building—either permanently or temporarily.

Additional Information

• Swimmers use all kinds of swimming pools for their pool training sessions including snorkels, pull buoys, rubber bands, hand paddles, kickboards and fins.

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• A kickboard can be used to isolate and learn the leg movements, especially the flutter kick and the breaststroke kick.

• Swedish goggles, or Swedes, are among the most popular swimming goggles for competitive swimmers, and for good reason.

• This sport is held on a racing bicycle or also known as a bike so the most important of all is the bicycle and the bike gears.

• Cycling improves strength, balance and coordination. It may also help to prevent falls and fractures.

• Riding a bike is an ideal form of exercise if you have osteoarthritis because it is a low-impact exercise that places little stress on joints.

Q84. Answer: (b) Pt Ravi Shankar

The correct answer is Pt Ravi Shankar.

Key Points

• Ravi Shankar was the very first Indian to win the Grammy Award in 1968. He won for the album named “West Meets East” in the category of “Best Chamber Music Performance”.

• The legendary artist won the first Grammy for his album West Meets East in the 'Best Chamber Music Performance category in 1968.

• He performed with Anoushka for the BBC in 1997 at the Symphony Hall in Birmingham, England.

• “As one of the world's most renowned sitar players, three-time Grammy winner Ravi Shankar is a true ambassador for international music,” said a statement issued by the Recording Academy.

Additional Information

• Hariprasad Chaurasia is an Indian music director and classical flautist, who plays the flute, in the Hindustani classical tradition.

• Pandit Hariprasad Chaurasia is regarded as the best flute player of Eastern Classical music.

• Zakir Hussain has carried on that tradition — not only as one of the world's foremost Indian percussionists but also as one of the architects of modern world music.

• Pandit Shivkumar Sharma is an Indian music composer and santoor player from the state of Jammu and Kashmir.

Q85. Answer: (b) Bhagat Singh

The correct answer is Bhagat Singh.

Key Points

• Why I Am an Atheist is an essay written by Indian revolutionary Bhagat Singh in 1930 in Lahore Central Jail.

• Singh mentioned in his essay that some of his friends said that the Delhi Bombing and the Lahore Conspiracy had shot him to fame, and it was fame inhibiting his belief in God.

• Singh was born in a Sikh family, which also had ties with the Arya Samaj.

• Bhagat Singh was an Indian revolutionary freedom fighter who was hanged to death by British colonisers at the age of 23 years.

• Fondly known as 'Shaheed (martyr) Bhagat Singh', he is considered a national hero of India's freedom struggle against colonial rule.

Additional Information

• The Indian National Army(INA) was formed in 1942 under Rash Behari Bose which he later handed over as the Indian National Army to Subhas Chandra Bose.

• In 1912, Rash Behari made an attempt to assassinate Lord Hardinge, the then British Viceroy and Governor-General of India.

• Bismil was a freedom fighter who played an active role in India's freedom struggle.

• On 19th December 1927, Ram Prasad Bismil, freedom fighter, was hanged at Gorakhpur Jail, for his role in the Kakori conspiracy.

Q86. Answer: (b) Manipuri

The correct answer is Manipuri*.*

Key Points

• Guru Amubi Singh, who was credited with pioneering solo dance in Manipuri, was the first winner of the Sangeet Natak Akademi award from the state of Manipur which he won in 1956.

• Manipuri dance is well known and very famous throughout the country and abroad.

• Guru Amubi was appointed as the surpervisor of the Academy.

• Guru Amubi was a man of personality and principles, who could speak Hindi and Bengali fluently.

• He was awarded with 'Nritya Guru' Award in 1954 by the Manipuri Sahitya Parishas, Bharat Rastrapati Award in 1956 and Padmashree Awarded in 1970.

Additional Information

• Shovana Narayan is a recognised Indian Kathak dancer and a career officer with Indian Audit and Accounts Service.

• He was a descendant of the Maharaj family of Kathak dancers, which includes his two uncles, Shambhu Maharaj and Lachhu

Maharaj, and his father and guru, Acchan Maharaj.

• Saroja Vaidyanathan was conferred the Padma Shri in 2002 and the Padma Bhushan in 2013 by the Government of India.

• Savitha Sastry is an Indian dancer and choreographer best known as an exponent of Bharatanatyam.

• Sonal Mansingh,dancer of odissi, a classical Indian dance form that originated in Orissa, and other Indian classical forms.

Q87. Answer: (b) Annapurna Devi

The correct answer is Annapurna Devi.

Key Points

• Annapurna Devi is the musician of the Maihar Gharana has been the guru of sitarist Nikhil Banerji, and of bansuri players Hari Prasad chaurasia and Nityanand Haldipur.

• Sitar maestros Ravi Shankar and Nikhil Banerjee; sarod wizard Ali Akbar Khan; Bahadur Khan and Sharan Rani, surbahar virtuoso Annapurna Devi; flautist Pannalal Ghosh and violinist V G Jog, to name just a few.

• Annapurna Devi was hailed in the 1940s and 1950s as a virtuoso, in possession of a nearly singular musical sensitivity.

Additional Information

• Bhagwat was introduced to playing the sitar at age 9 by Shri. R. N. Verma. At 13, she started training under Bimalendu Mukherjee, doyen of the Imdadkhani Gharana.

• Born in Leicester, she is considered one of the finest sitar players to emerge on the Indian classical music scene from the UK.

• Roopa Panesar's new album of morning ragas, SUBHA is being released internationally through the Asian Arts Agency with distribution through Cadiz Music on 12 August 2022.

• Sahana Banerjee is an esteemed sitarist. Her mother Chhabi Banerjee, a famous singer, and her father Pandit Santosh Banerjee, a sitar.

Q88. Answer: (d) 28

The correct answer is 28.

Key Points

• Kumar Sanu is the world record holder for recording 28 songs in a single day.

• Kumar Sanu made this record in 1993 when he recorded 28 songs in a single day.

• Kumar Sanu is the stage name of Kedarnath Bhattacharya who came to fame for his big break in Aashiqui, in 1990.

• Famous singer Kumar Sanu is known for his evergreen songs.

• There is also a record in the name of this legendary singer who has given many memorable songs of Bollywood.

Additional Information

• The longest singing marathon by an individual lasted 105 hours and was achieved by Sunil Waghmare (India) in Nagpur, India, from 3 to 7 March 2012.

• Asha Bhosale. Legendary Bollywood playback singer Asha Bhosle has entered the Guinness World Records for the most number of single studio recordings.

• She is best known for her playback singing in Hindi cinema. Asha has recorded up to 11,000 solo, duets and chorus-backed songs.

• Balasubrahmanyam won the Guinness World Record for recording the highest number of songs by a singer: they Sang over 40,000 songs in 16 languages.

Q89. Answer: (c) The Supreme Court of India

The correct answer is The Supreme Court of India.

Key Points

• The Union executive of the government of India consists of the President, the Vice- President, the Prime Minister, the council of ministers and the attorney general of India.

• Chief Justice of India does not form a part of the Union executive.

• The Union executive consists of the President, the Vice-President, and the Council of Ministers with the Prime Minister as the head to aid and advise the President.

• The Chief Justice of India is the Head and Chief Judge of the Supreme Court, which consists of a maximum of 34 judges.

• The Constitution requires the president to submit nominations to the Senate for its advice and consent.

Additional Information

• The president of India is the head of state and the commander-in-chief of the Indian Armed Forces whilst the elected prime minister acts as the head of the executive and is responsible for running the Union government.

• Today, the prime minister is often, but not always, a member of the legislature or its lower house.

• According to Article 52, there shall be a President of India. Article 53 says, that the President shall be the head of the Union

Executive.

• According to this system, there is a President who is the formal Head of the State and the Prime Minister and the Council of Ministers, which run the government at the National level.

Q90. Answer: (d) Aparna Satheesan

The correct answer is Aparna Satheesan.

Key Points

• The National Nritya Shiromani award is given to outstanding dance performers and musicians of India and abroad for promoting and preserving the traditional classical art forms of India.

• Aparna was selected for her exceptional talent in the field of classical dance and for promoting the Kuchipudi dance across the globe.

• Celebrated dancer Aparna Satheesan, an exponent in Bharatanatyam and Kuchipudi.

• Aparna's performances are popular all over India and many other countries.

• Aparna Satheesan is a senior disciple of Guru Smt. Vyjayanthi Kashi has contributed tremendously to Bharatanatyam as well as Kuchipudi.

Additional Information

• Karothi Venkata Satyanarayana, better known as K. V. Satyanarayana is a Kuchipudi dancer, choreographer, dance director and composer in India.

• He was born to Venkata Ramanamma and Guruvulu as Karothi Venkata Satyanarayana at Eluru.

• Sashindran is a versatile artist of the Kuchipudi dance style who has practised the art-form for close to four decades.

• Vedantam Ramalinga Sastry is an Indian classical dancer in Kuchipudi.

• He won the Sangeet Natak Akademi Award in 2012 for his research on Kuchipudi dance form.

Q91. Answer: (d) Group 17

The correct answer is Group 17.

Key Points

• The group 17 elements include fluorine(F), chlorine(Cl), bromine(Br), iodine(I) and astatine(At) from the top to the bottom.

• They are called "halogens" because they give salts when they react with metals.

• The elements in this group are all non-metals.

• The term 'halogen' is a Greek word which means 'salt former' because they react with metals to form compounds called salts. For example, fluorine reacts explosively with sodium to form sodium fluoride. Hence group 17 are called halogens.

• Group 17 elements are called halogens. The name halogens are from Greek halo (sea salt) and gens (producing formation) and thus means 'sea salt former'.

Additional Information

• A boron group element, any of the six chemical elements constituting Group 13 (IIIa) of the periodic table.

• Groups 13–16 of the periodic table contain one or more metalloids, in addition to metals, nonmetals, or both.

• Group 13 is called the boron group, and boron is the only metalloid in this group. The other group 13 elements are metals.

• Group 15 elements are also called the Nitrogen family. It includes nitrogen, phosphorus, arsenic, antimony and bismuth elements.

• The p-block elements are also known as the Representative Elements which are placed on the right side of the main periodic table.

• The oxygen family, also called the chalcogens, consists of the elements found in Group 16 of the periodic table and is considered among the main group elements

Q92. Answer: (b) Union of India

The correct answer is Union of India.

Key Points

• The court stated that, "the right not to be deported is ancillary or concomitant to the right to reside or settle in any part of the territory of India guaranteed under Article 19(1)(e)."

• In March 2021, several newspaper reports indicated that about 150--170 Rohingya refugees detained in a sub-jail in Jammu were facing deportation back to Myanmar.

• The petitioners argued that despite India not being a signatory to the 1951 Refugee Convention, the principle of nonrefoulement is part of the right guaranteed under Article 21 of the Constitution.

• The court locates the right to not be deported within Article 19(1)(e), a misinterpretation of the petitioners' arguments.

Additional Information

• Maharashtra is divided into 6 revenue divisions, which are further divided into 36 districts.

• These 36 districts are further divided into 109 sub-divisions of the districts and 357 talukas

• Tripura is a state in North-East India. It shares borders with Bangladesh, Mizoram and Assam. Tripura is surrounded by Bangladesh on its north, south and west.

• In 1905, Tripura became part of the new province of Eastern Bengal and Assam and was designated as 'Hill Tippera'.

• The Kavaratti is the capital of the Union Territory Lakshadweep in India

• Lakshadweep, formerly (1956–73) Laccadive, Minicoy, and Amindivi Islands, union territory of India.

Q93. Answer: (d) India

The correct answer is India.

Key Points

• The 2023 ICC Men's Cricket World Cup will be the 13th edition of the men's Cricket World Cup, scheduled to be hosted by India in October and November 2023.

• India will host the 2025 Women's World Cup, the International Cricket Council said on Tuesday.

• This will be the first time in over a decade that India will be hosting the tournament and their fourth time hosting a women's 50-over World Cup.

• UAE has been a favoured backup country for hosting major tournaments, with India hosting the 2021 T20 World Cup in the country.

• India will stage the next 50-over women's World Cup in September-October 2025, while in mid-2026 England will host the women's T20 World Cup.

Additional Information

• The first competition hosted outside England was the 1987 Cricket World Cup, which was jointly held in India and Pakistan.

• The ICC Women's T20 World Cup 2024 will be hosted by Bangladesh for the second time, with the 2026 edition going to England for the first time since 2009.

• West Indies won the first Cricket World Cup by defeating Australia by 17 runs in the final. The next two World Cups held in 1979 and 1983 were again hosted by England.

• The 1979 Cricket World Cup saw the introduction of the ICC Trophy, a competition used to select non-Test playing teams for the World Cup.

Q94. Answer: (c) Madhya Pradesh

The correct answer is Madhya Pradesh.

Key Points

• Under the ADIP Scheme of the Ministry of Social Justice and Empowerment (Government of India), a "Samajik Adhikarita Shivr" is to be organised at FDDI, Imlikheda Chhindwara, Madhya Pradesh on July 31, 2021.

• Chief Guest of the function Union Social Justice and Empowerment Minister Dr Virendra Kumar inaugurated the camp in which a total of 737 aids and assistive devices of different categories of disabilities worth Rs. 45 lakh were distributed free of cost to 409 pre-identified Divyang beneficiaries of the Niwari District in Madhya Pradesh under the central government ADIP Scheme.

• Union Minister informed that adhering the vision of Atamanirbhar Bharat, ALIMCO a CPSU under his ministry has indigenously developed a modern cane ‘Sugamya Cane’ for visually impaired persons, the cane was launched on 14th Feb 2022 by the minister.

• Different type of assistive devices which are to be distributed among identified Divyangjan registered during assessment camps at Block Level includes 183 Tricycle, 60 Wheelchairs, 202 Crutches, 78 Walking Sticks, 02 Rollator, 09 Smart Phone, 26 Sugamya Cane, 08 C. P Chair, 06 MSIED Kit, 30 Hearing Aid,133 Artificial Limbs and Callipers etc.

Additional Information

• A ‘Samajik Adhikarita Shivir’ for distribution of aids and assistive devices to Divyangjan and Senior citizens under the ADIP and Rashtriya Vayoshri Yojana scheme respectively of the Ministry of Social Justice and Empowerment.

• Government of India will be organized by the Department of Empowerment of Persons with Disabilities (DEPwD) in association with ALIMCO and District Administration Kannauj on 12 July 2022 at 11:00 AM at PSM Degree Collage, Kannauj District in Uttar Pradesh.

• A total of 7319 Aids and Assistive devices of different categories with value worth Rs. 446.40 Lakhs will be distributed free of cost among 1973 pre-identified Divyangjan and Senior Citizens beneficiaries who were assessed during assessment camps organized by ALIMCO at the various locations of Kannauj District.

• Sushri Pratima Bhoumik, Union Minister of State for Social Justice and Empowerment will be the Chief Guest of the function and will inaugurate the camp virtually through video conference.

• It is a camp organized for the distribution of aids and assistive devices to ‘Divyangjan’ under the Assistance to Disabled Persons (ADIP) Scheme and to Senior Citizens under the Rashtriya Vayoshri Yojana.

Q95. Answer: (d) Temperate deciduous forests

The correct answer is Temperate deciduous forests.

Key PointsTemperate deciduous forests

• Temperate deciduous forests are found between 40° and 60° north and south of the equator.
• The rainfall is high, between 500-1,500 mm a year.
• The temperatures remain on average above 0°C even in the winter.
• The summer temperatures average between 25-20°C.
• The winter is cooler, encouraging the trees to shed their leaves.

Additional InformationTaiga forests

• Taiga is generally referred to in North America as a boreal forest or snow forest.
• Taiga is the terrestrial biome with the lowest annual average temperatures.
• The total yearly precipitation in the taiga biome is 10 - 30 inches (25 - 75 cm).
• Snow may remain on the ground for as long as nine months in the northernmost extensions of the taiga biome.

Coniferous forests

• Coniferous forests consist mostly of conifers.
• The average temperature in winter ranges from -40°C (-40°F) to 20°C (68°F).
• The average summer temperatures are usually around 10°C (50°F).
• Precipitation in coniferous forests varies from 300 to 900 mm annually.

Mediterranean forests

• Mediterranean forests, woodlands, and scrub is a biome defined by the World Wide Fund for Nature.
• Precipitation totals ranging from 35 to 90 cm.
• Mediterranean climate experiences 22.0 °C during summer and 18 and −3 °C during winter.

Q96. Answer: (b) Quartzite

The correct answer is Quartzite.

Key PointsQuartzite

• Quartzite is a non-foliated metamorphic rock.
• It is composed almost entirely of quartz.
• It forms when a quartz-rich sandstone is altered by the heat, pressure, and chemical activity of metamorphism.
• They were once igneous or sedimentary.
• They have metamorphosed as a result of intense heat and/or pressure within the Earth's crust.
• The quartz content of quartzite gives it a hardness of about seven on the Mohs Hardness Scale.
• Most quartzite forms during mountain-building events at convergent plate boundaries.

Additional InformationGranite

• Granite is an example of igneous rock.
• Due to the large presence of silica in its composition, granite is highly resistant to decay.
• Granite is an easily quarried stone.
• This is due to the presence of a mural joint.

Sandstone

• Sandstone is a sedimentary rock.
• It is composed of sand-size grains rock fragments, minerals, and organic material.
• Sand-size particles range in size from 1/16 millimetres to 2 millimetres in diameter.

Basalt

• Basalt is the most common rock on Earth’s surface.
• Specimens are black in colour and weather to dark green or brown.
• Basalt is rich in iron and magnesium.
• It is composed of olivine, pyroxene, and plagioclase.
• Most specimens are compact, fine-grained, and glassy.

Q97. Answer: (b) Johnny Marr

The correct answer is Johnny Marr.

Key PointsJohnny Marr

• The author of Set the Boy Free is Johnny Marr.
• Johnny Marr is a musician and songwriter.
• Between 1982 and 1987 he was the co-founder of and guitarist for The Smiths.
• He is now an established solo artist who has released two albums, The Messenger and Playland, to date.
• He currently lives in Manchester, England.
• The books written by Johnny Marr are Total Chaos: The Story of the Stooges, Punk Fiction: An Anthology of Short Stories Inspired by Punk, Instrument, Strangeways - Here We Come, Lowdown: The Story of Wire, The Smiths.

Additional InformationDavid Niven

• David Niven, PhD, is a social scientist and author of the 100 Simple Secrets series.
• His books have sold more than 1 million copies in the U.S. and have been translated into 30 languages.
• His new book is It's Not About the Shark: How to Solve Unsolvable Problems.

Paul Kalanithi

• Paul Sudhir Arul Kalanithi was an American neurosurgeon and writer.
• When Breath Becomes Air is a non-fiction autobiographical book written by American neurosurgeon Paul Kalanithi.
• It is a memoir about his life and illness, battling stage IV metastatic lung cancer.
• It was posthumously
• on January 12, 2016.

Bill Browder

• William Felix Browder is an American-born British financier and political activist.
• He is the CEO and co-founder of Hermitage Capital Management, the investment advisor to the Hermitage Fund, which at one time was the largest foreign portfolio investor in Russia.
• Books written by him are A True Story of Money Laundering, Murder, and Surviving Vladimir Putin's Wrath.

Q98. Answer: (d) Quinoline yellow

The correct answer is Quinoline yellow.

Key PointsQuinoline Yellow

• Quinoline yellow can be used to colour cosmetics, drugs, and food, including dietary supplements, sauces, soups and broths, bakery, dairy fats and oil, seafood, seasonings, breath fresheners, desserts, and convenient foods, and beverages.
• It occurs as a yellow powder or granules.
• It is manufactured by sulfonating 2-(2-quinolyl)-1,3-indandione.
• It is added to foods and beverages at concentrations up to a maximum permitted level (MPL).
• There are currently 8 food categories for which MPLs for quinoline yellow have been adopted in the General Standard of Food Additives.

Additional Information

Acid Fuchsin

• Acid Fuchsin has been used in tissue sections for Masson's trichrome staining.
• It has been used as a marker to trace ingestion of solutions by green peach aphids.
• It also works as a pH indicator.

Orange G

• Orange G is used in the Papanicolaou stain to stain keratin.
• It is also a major component of the Alexander test for pollen staining.
• It is often combined with other yellow dyes.
• It is used to stain erythrocytes in trichrome methods.

Oil Red O

• Oil Red O is a type of Sudan lysochromes that stain lipid and triglyceride contents in frozen liver tissue sections.
• This dye is used for the staining of neutral lipids.
• It is used to detect latent fingerprints on dry and wet porous items like paper and cardboard.

Q99. Answer: (c) 2025-26

The correct answer is 2025-26.

Key PointsPM Umeed Scheme

• The Union govt launched PM Udyam Mitra Excellence in Entrepreneurship Development (PMUmeed) Scheme.
• Umeed stands for Udyam Mitra Excellence in Entrepreneurship Development.

• In this scheme, the Union govt. will create entrepreneurs and handhold young enterprises that are struggling.
• They plan to provide training to more than 3 lakh youth to become entrepreneurs over the next 5 years.
• This scheme would facilitate loans to youths and connect them to appropriate markets.
• These entrepreneurs could also become job providers.
• The tenure of this scheme is up to 2025-26.

Additional InformationPM Mentoring Yuva Scheme

• The scheme for Young Upcoming Versatile Authors abbreviates into YUVA.
• It is a PM Scheme for Mentoring Young Authors in the country.
• It is a great platform for young writers to be International leaders of tomorrow.
• All these youth will be provided with an international platform to represent India and express themselves.
• The writers under the scheme will be provided with a mentorship program in writing.
• These candidates will be offered a scholarship throughout the mentoring program.
• The selected winners will be provided with scholarship money of Rs. 50,000/- every month for six months.

Q100. Answer: (a) 2021

The correct answer is 2021.

Key Points

• Aparna Satheesan is a US-based exponent of Bharatanatyam/Kuchipudi.
• She is an established Bharatanatyam and Kuchipudi dancer.
• She won the prestigious Abhinandan Saroja National Award from the National Institute of Indian Classical Dance on November 15th 2021.
• She was nominated for her excellence in performance, choreographic skills and charity work in the field of dance.
• She is also a recipient of the prestigious Natya Shiromani National Award.

Additional InformationAbhinandan Saroja National Award

• The Abhinandan Saroja National Award was started on the birthday of the legendary Guru Smt. Padma Bhushan Saroja Vaidyanathan.
• The award started for honoring the legacy in the field of Indian Classical Dance.
• It is a national award given to eminent dancers for their notable excellence in choreography, performance and contribution to promoting and preserving the traditional classical dance forms of India.
• The award will be given by the legendary Bharatanatyam exponent Padma Bhushan Guru Saroja Vaidyanathan.

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