SSC CHSL Tier-1 2021: Official Paper (Held On : 6 June 2022 Shift 1) (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 most appropriate option to substitute the underlined segment in the given sentence.

His disease is no doubt very serious but he will pull over.

(a) pull through
(b) pull for
(c) pull against
(d) pull at

Q2. From among the words given in bold, select the INCORRECTLY spelt word in the following sentence.

Kathmandu is vivid, mercenery, religious with small shrines to flower-adomed deities along the narrowest and busiest streets.

(a) shrines
(b) deities
(c) mercenery
(d) narrowest

Q3. Select the denotation of the highlighted word.

The black marketers are hoarding large quantities of groceries.

(a) Doling Out
(b) Designing
(c) Training Up
(d) Piling Up

Q4. Select the most appropriate synonym of the word given in the brackets to fill in the blank.

Collection of money through illegal means without any hard work increased the _____(greed) of the corrupt officials.

(a) cupidity
(b) stability
(c) curiosity
(d) reliability

Q5. Select the INCORRECTLY spelt word.

(a) Instanteneous
(b) Presumptuous
(c) Illegitimate
(d) Lascivious

Q6. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

The mother loving looked / at her baby / as the nurse / brought her in.

(a) The mother loving looked
(b) brought her in
(c) at her baby
(d) as the nurse

Q7. In the following passage, a word has been deleted. Read the passage carefully and select the most appropriate option to fill in the blanks.

Growing up in Bengaluru, I have watched the city grow and _____ at its seams, welcoming, as its own, all the ____ population in search of jobs and pleasant _____.

(a) retreat, native, food
(b) flex, migrant, weather
(c) curtail, local, destination
(d) demolish, foreign, tourism

Q8. Select the most appropriate synonym of the given word.

Laconic

(a) Exaggerated
(b) Lengthy
(c) Talkative
(d) Concise

Q9. Select the option that can be used as a one-word substitute for the underlined group of words.

In this situation of no organization and control due to the lack of an effective government, the rate of crime has increased exponentially.

(a) Autocracy
(b) Autonomy
(c) Anarchy
(d) Aristocracy

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

Annoy

(a) Comfort
(b) Miff
(c) Get
(d) Ruffle

Q11. Select the most appropriate meaning of the idiom given in bold in the following sentence.

The memory of all that blood was enough to make my flesh crawl.

(a) frightened me
(b) worried me
(c) drew my attention
(d) confused me

Q12. Select the most appropriate option that can substitute the underlined segment in the given sentence.

When we reached the hill station, it was raining the heaviest.

(a) heavily
(b) more heavy
(c) heavy
(d) most heavily

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Q13. Select the option that can be used as a one-word substitute for the given group of words.

Strong taste or liking for something

(a) Insolvent
(b) Parole
(c) Ebullient
(d) Penchant

Q14. Select the most appropriate meaning of the given idiom.

Start from scratch

(a) Start it from the previous situation
(b) Start from the given line
(c) Start something fast to finish it before a particular time
(d) Start entirely from the beginning

Q15. Select the most appropriate ANTONYM of the given word.

Vain

(a) Loyal
(b) Modest
(c) Unfair
(d) Energetic

Q16. Select the option that expresses the given sentence in passive voice.

Where can I find the way to the library?

(a) Where can they be found in the library?
(b) They cannot be found in the way to library?
(c) Where can the way to the library be found?
(d) Who can found with the way to library?

Q17. 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'.

They didn't ate anything yesterday.

(a) No substitution required
(b) doesn't eat
(c) didn't eat
(d) hadn't ate

Q18. Select the option that expresses the given sentence in passive voice.

Premchand wrote this novel.

(a) This novel written by Premchand.
(b) That novel is by Premchand.
(c) This novel was written by Premchand.
(d) Premchand novel has been written by him.

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. Holi is the festival of colours which is celebrated not only in India but all cross the world.

B. Then on the next day, people of all ages gather together to play with colours called 'gulal' and coloured water called 'Dulahandi'.

C. People celebrate 'Holika Dahan' on the first day by gathering around and burning piles of wood and cow dung and singing bhajans related to Holi.

D. It is also a festival of unity as it brings people together to celebrate a festivals regardless of caste, ethnicity, or religion.

(a) ADCB
(b) ABCD

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(c) DCBA
(d) ADBC

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

Resplendent

(a) Magnificent
(b) Astonished
(c) Enthusiastic
(d) Exuberant

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.

Our host started to read and the (1)_____ stopped. There was a sweet (2)___ as each person read, not one that felt forced or imposed in any way. People did not seem to (3)___ or cough, but perhaps that is just now I remember it now, I know I was increasingly self-conscious as the readings came closer to me and that when it was my turn I think I (4)____ through most of it, probably without making any sense of the (5)_____.

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

(a) chatter
(b) fritter
(c) rattle
(d) patter

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

(a) chaos
(b) silence
(c) din
(d) noise

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

(a) sleep
(b) sing
(c) fidget
(d) distract

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

(a) played
(b) mumbled
(c) grumbled
(d) dozed

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

(a) poetry
(b) music
(c) dance
(d) pottery

GENERAL INTELLIGENCE

Q26. Select the correct mirror image of the given combination when the mirror is placed at MN as shown.

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(a)



(b)



(c)



(d)



Q27. Select the correct mirror image of the given combination when he mirror is placed at XY as shown.

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(a)



(b)



(c)



(d)



Q28. Which of the following numbers will replace the question mark (?) In the given series?

27, 31, 42, 72, 139, ?

(a) 267
(b) 264
(c) 271
(d) 355

Q29. Three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decided which of the conclusions logically follow(s) from the statements.

Statements:

Some hexagons are rectangles.

Some rectangles are decagons.

All decagons are rhombuses.

Conclusions:

I. Some rhombuses are rectangles.

II. Some rhombuses are hexagons.

III. Some decagons are hexagons.

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

Q30. Pointing to a lady in a photograph, Harsh said, "My wife's son is the father of her mother's daughter". How is the lady related to Harsh?

(a) Mother
(b) Son's daughter
(c) Daughter
(d) Sister

Q31. Which letter-cluster will replace the question mark(?) to complete the given series?

GJWC, JPFO, ?, PBXM, SHGY

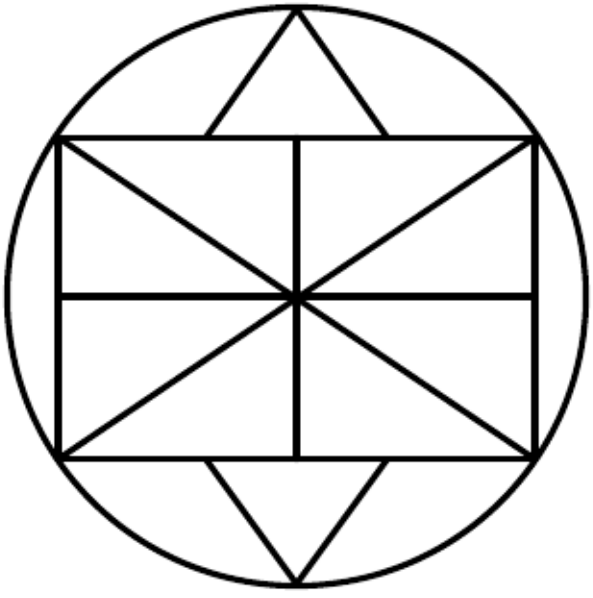
(a) FAJR
(b) UVNS
(c) MVOA
(d) POSE

Q32. In a certain code language, 'RATE' is written as 'UDWH' and 'RICH' is written as 'ULFK'.

How will 'SAVE' be written in that language?

(a) VDYH
(b) VDWH
(c) VDVH
(d) VDUH

Q33. Find how many triangles are there in the given figures.



(a) 16
(b) 20
(c) 14
(d) 18

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Q34. Select the correct option that indicates the arrangements of the following words in a logical and meaningful order.

1- Eat

2- Fruit

3- Seed

4- Pluck

5- Plant

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

Q35. Select the option that is related to the third word in the same way as the second word is related to the first word. (The words must be considered as meaningful English words and must NOT be related to each other based on the number of letters/number of consonants/vowels in the word)

Goldsmith : Jewellery :: Cobbler : ?

(a) Plastic
(b) Shoes
(c) Rubber
(d) Leather

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

71 * 56 * 14 * 15 * 5

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

Q37. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

First row - 19, 81, 30

Second row - 42, 57, 107

Third row - 23, 45, ?

(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) 75
(b) 82
(c) 54
(d) 66

Q38. 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.

LEAN : NEAL :: MEAN : NEAM :: HEAR : ?

(a) HREA
(b) RHEA
(c) REAH
(d) RAEH

Q39. Select the correct combination of mathematical signs to sequentially replace the * signs and to balance the given equation.

15 * 2 * 18 * 6 * 3 * 30

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

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(d) ÷, -, ×, +, =

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



(a)



(b)



(c)



(d)



Q41. If M denotes '-', N denotes '÷', O denotes '×' and P denotes '+', then what will come in place of '?' in he following equation?

(81 N 27) O 4 M 21 P 72 P 3 M 3 O 9 = ?

(a) 35
(b) 29
(c) 42
(d) 39

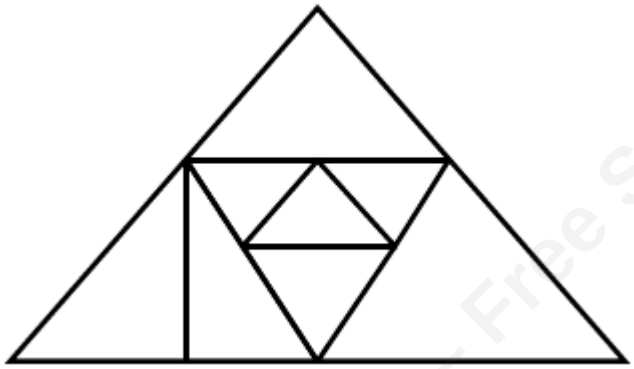
Q42. Select the correct combination of mathematical signs to replace the * signs and to balance the given equation.

19 * 4 * 44 * 59 * 61

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

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



(a) 8
(b) 11
(c) 12
(d) 10

Q44. Select the option that represents the letters that, when placed from left to right in the given blanks, will complete the letter series.

_ T Z S S T _ Y S S T T _ S S_T W _ S

(a) T X T T S
(b) X T X T T
(c) T T X T S
(d) T S X T S

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

5 : 33 :: 11 : 141 :: 7 : ?

(a) 58
(b) 50
(c) 61
(d) 56

Q46. Select the set in which the numbers are related in the same way as are the numbers of the following set.

(17,13,68)

(55, 46, 495)

(NOTE : Operation 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) (75, 69, 470)
(b) (45, 39, 270)
(c) (65, 59, 360)
(d) (55, 49, 310)

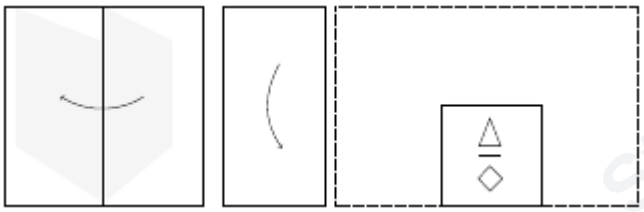
Q47. Select the option that is related to the fifth number in same way as the second number is related to the first number and the fourth number is related to the third number.

6 : 218 :: 3 : 56 :: 5 : ?

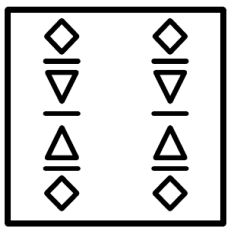
(a) 156
(b) 152
(c) 168
(d) 160

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Q48. A paper is folded and cut as shown below. How will it appear when unfolded?



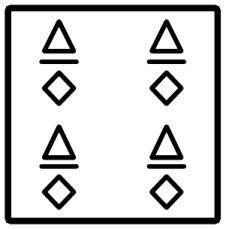
(a)



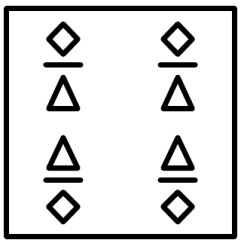
(b)



(c)



(d)



Q49. Select the option that is related to the fourth term in the same way as the first term is related to the second term and the fifth term is related to the sixth term

7 : 512 :: ? : 2744 :: 15 : 4096

(a) 21
(b) 8
(c) 17
(d) 13

Q50. In a certain code language, 'FATHER' is written as 'REHTAF', and 'COUPLE' is written as 'ELPUOC'. How will 'REMAIN' be written in that language?

(a) NIAEMR
(b) NIAMER
(c) NAIEMR
(d) INAMER

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QUANTITATIVE APTITUDE

Q51. In an election that was contested by 2 candidates, one candidate got 20% of the total votes and yet lost by 600 votes. What is the total number of votes cast in the election assuming all votes are valid?

(a) 900
(b) 700
(c) 800
(d) 1000

Q52. the average of the numbers 61, 51, 41, 31, 21 and 11.

(a) 36
(b) 42
(c) 32
(d) 22

Q53. 20 workers can paint 24 walls in 36 days. In how many days can 30 workers paint 20 walls?

(a) 20
(b) 30
(c) 24
(d) 15

Q54. Simplify: (27/14 ÷ 24/7of63/28 - 9/4)/(35/8 ÷ 15/4of7/48 + 5/16) ÷ 196/95

(a) -40/357
(b) 40/343
(c) -40/343
(d) -40/243

Q55. If $\tan\theta + 1/(\tan\theta) = 2$, then the value of $\tan^2\theta + 1/(\tan^2\theta)$ is _____.

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

Q56. The year wise production of a company (in tonnes) is given in the following table.

Year	Production (in tonnes)
2001-02	790
2002-03	810
2003-04	815
2004-05	890
2005-06	516
2006-07	902
2007-08	912
2008-09	922

From 2001 - 02 to 2008 - 09 generally the production was increased, with the exception of one year. The year was:

(a) 2005-06
(b) 2004-05
(c) 2002-03
(d) 2006-07

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Q57. If $(a - 1)^2 + (b + 2)^2 + (c - 1)^2 = 0$, the the value of $a^2 + b^2 + c^2$is:

(a) 6
(b) 0
(c) 2
(d) 1

Q58. Based on the data given in the following table, find the arithmetic mean of the number of major meals that included a potato-based dish, which the 39 students surveyed, had eaten in a week.

Number of major meals 39 students had eaten in a week with a potato-based dish included	Frequency
1	3
2	2
3	2
4	5
5	5
6	4
7	6
8	3
9	5
10	3
11	1
Total Frequency	39

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

Q59. Simplify the following expression.

(2.19)2 + 2(2.19)(3.81) + (3.81)2

(a) 216
(b) 12
(c) 36
(d) 6

Q60. An article is sold for Rs. 840 after two successive discounts of 20% and 30% on its marked price. What is the discount (in Rs.)?

(a) 660
(b) 460
(c) 560
(d) 760

Q61. The marked price of a mobile phone is 12% more than its cost price. If a discount of 8% is given on the marked price, then the gain per cent is:

(a) 2.92%
(b) 2.12%
(c) 3.04%
(d) 4.03%

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Q62. The diameter of the base and the slant height of a right circular cone are 10 cm and 16 cm, respectively. Find its total surface area. [Use π = 22/7]

(a) 5720/7 cm²
(b) 720/7 cm²
(c) 330 cm²
(d) 1760/7 cm²

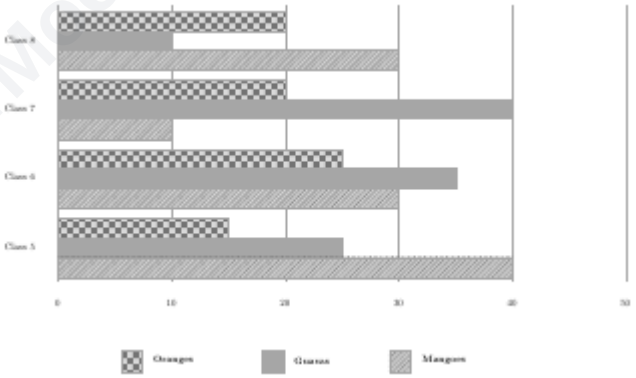
Q63. On a certain sum, the difference between the compound interest, compounded annually, and the simple interest at 10% per annum for 3 years is Rs. 93. The sum is:

(a) Rs. 3,500
(b) Rs. 3,000
(c) Rs. 4,000
(d) Rs. 2,500

Q64. If the tax on a commodity is diminished by 20%and its consumption increased by 15%, the revenue decreases by:

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

Q65. The following bar graph shows the data of the number of students of different classes who like to eat different types of fruits.



Find the ratio of the number of students from class 7 who like guavas to the number of students from Class 5 who like mangoes.

(a) 5 : 7
(b) 1 : 1
(c) 2 : 1
(d) 1 : 2

Q66. A train running at the speed of 63km/h crosses a pole in 24 seconds. What is the length of the train?

(a) 360 m
(b) 320 m
(c) 280 m
(d) 420 m

Q67. The maximum number of 4 m × 50 cm × 20 cm slabs that may be stored in a 16 m long, 12 m wide, and 4 m deep trench is:

(a) 1910
(b) 1890
(c) 1960
(d) 1920

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Q68. The height and slant height of a conical vessel are 12 cm and 13 cm, respectively. The capacity of the vessel is:(Use π = 3.14)

(a) 0.314 litres
(b) 0.424 litres
(c) 0.5 litres
(d) 0.298 litres

Q69. If Δ ABC ~ Δ QRP,(ar(Δ ABC))/(ar(Δ QRP)) = 9/4, AB = 18 cm, BC = 15 cm, then the length of PR is _____.

(a) 10 cm
(b) 12 cm
(c) 16 cm
(d) 14 cm

Q70. A girl travels 30 km at a speed of 15 km/h. She travels another 20 km at a speed of 10 km/h. What is her average speed for the entire journey?

(a) 15 km/h
(b) 12.5 km/h
(c) 13 km/h
(d) 11.5 km/h

Q71. Find the 3^(rd) proportional to 9 and 21.

(a) 49
(b) 12
(c) 30
(d) 81

Q72. How many positive two-digit numbers can be divided by 6?

(a) 12
(b) 15
(c) 14
(d) 13

Q73. The average score of a cricket team (of ten players and one captain) is 32. The scores of ten players are : 22, 11, 5, 34, 21, 32, 0, 28, 9 and 53. What is the score of the captain?

(a) 129
(b) 137
(c) 115
(d) 121

Q74. value of $((a - b)^3 + (b - c)^3 + (c - a)^3)/((a^2 - b^2)^3 + (b^2 - c^2)^3 + (c^2 - a^2)^3)$ Is equal to :

(a) ab + bc + ca
(b) 0
(c) 1
(d) 1/(a + b)(b + c)(c + a)

Q75. Vishnu sold two items X and Y for Rs. 600 each, thereby gaining 20% on item X and losing 20% on item Y. Find his overall loss or gain percentage.

(a) Loss of 4%
(b) Gain of 4%
(c) Loss of 41.6%
(d) Loss or gain of 0%

GENERAL AWARENESS

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Q76. Which of the following novels is written by Anita Desai?

(a) Clear Light of Day
(b) Jaya
(c) The White Tiger
(d) The Blue Umbrella

Q77. Identify the correct formula to find the potential difference between two points.

(a) Q = 1/W
(b) W = Q/V
(c) V = Q/W
(d) V = W/Q

Q78. A mentorship programme to train young authors named 'Young, Upcoming and Versatile Authors' (YUVA) scheme was launched in June 2021. Under the mentorship scheme, a consolidated scholarship of _____ per month was proposed to be paid for a period of six months per author.

(a) Rs. 45,000
(b) Rs. 30,000
(c) Rs. 25,000
(d) Rs. 50,000

Q79. What type of climate do the two island regions of India, Lakshadweep and Andaman and Nicobar Islands experience?

(a) Humid subtropical climate
(b) Hot semi-arid climate
(c) Tropical warm climate
(d) Subtropical highland climate

Q80. Who is the author of the historical book 'Delhi: A Noval'?

(a) Nayantara Sehgal
(b) Khushwant Singh
(c) Anita Desai
(d) Ahmed Ali

Q81. Who among the following is India’s only publicly well-known woman Shehnai player?

(a) Gauhar Jaan
(b) Binodini Dasi
(c) Bageshwari Qamar
(d) Rasoolan Bai

Q82. Manish Narwal is related to which of the following sports?

(a) Wrestling
(b) Badminton
(c) Cycling
(d) Shooting

Q83. What type of farming is Kumari which is practiced in Western Ghats?

(a) Plantation farming
(b) Horticulture farming
(c) Intensive farming
(d) Primitive Subsistence farming

Q84. Which of the following books was awarded the Booker Prize in 2021?

(a) The Promise
(b) No One Is Talking About This
(c) The Fortune Men

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(d) A Passage North

Q85. Who among the following won the US Open 2021 men's tennis singles final?

(a) Novak Djokovic
(b) Daniil Medvedev
(c) Lew Hoad
(d) Jack Crawford

Q86. Which Emmy Award-nominated Indian choreographer has won the 10th Annual 'World Choreography Award 2020'?

(a) Suresh Mukund
(b) Shiamak Davar
(c) Prabhu Deva
(d) Ganesh Achary

Q87. When the commodity value of money is less than the monetary value of money, it is called _____.

(a) fiat money
(b) fiduciary money
(c) credit money
(d) full bodied money

Q88. In February 2022, the Sports Authority of India (SAI) established a para centre under its National Centre of Excellence Scheme at which of the following SAI regional centres?

(a) Gandhinagar
(b) Lucknow
(c) Sonipat
(d) Kolkata

Q89. The book 'Man Kautuhal' was compiled by which of the following kings of Medieval India?

(a) Raja Mansingh Tomar
(b) Krishna II
(c) Parantaka Viranarayan
(d) Rajashekhara Varman

Q90. Why are species of moss used as fuel?

(a) Provide bituminous for energy
(b) Provide peat that have long been used as fuel
(c) Make a version of coal
(d) Help in geothermal energy

Q91. Which of the following microscopic cells are of an amoeboid shape with a distinctive central membrane?

(a) Nerve cells
(b) White blood cells
(c) Guard cells
(d) Red blood cells

Q92. Oleo gum resin (Asafoetida) can be obtained from:

(a) dried latex from the stem of ferula
(b) dried latex from the roots of mango tree
(c) dried latex from the banana leaves
(d) dried latex from the tap root of ferula

Q93. Pandit Shivkumar Sharma was a classical _____ player.

(a) tabla
(b) santoor
(c) shehnai

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(d) flute

Q94. Who has the right to appoint an inter-state council to promote centre-state and inter-state cooperation?

(a) The President of India
(b) Both the President and Governor together
(c) Both the Prime Minister and Chief Minister together
(d) The Prime Minister of India

Q95. Which algae produces agar?

(a) Gracilaria
(b) Chlorella
(c) Sargassum
(d) Algin

Q96. Which of the following dance types belong to the northern India?

(a) Kuchipudi
(b) Odissi
(c) Mohiniyattam
(d) Kathak

Q97. Which is the modified form of the game Volleyball?

(a) Turf Volleyball
(b) Soft Volleyball
(c) Beach Volleyball
(d) Road Volleyball

Q98. Who was the first musician to be awarded the prestigious Bharat Ratna, India's highest civilian honour?

(a) Pt Hari Prasad Chaurasia
(b) M S Subbulakshmi
(c) Pt Ravi Shankar
(d) Begum Akhtar

Q99. It is Elephanta Festival' of _____ named after the Elephanta Caves.

(a) Kerala
(b) Madhya Pradesh
(c) Gujarat
(d) Maharashtra

Q100. Shovana Narayan, a Padma Shri awardee, is a dancer of which of the following classical dance forms of India?

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

ANSWER KEY

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

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

SOLUTIONS

Q1. Answer: (a) pull through

The solution is in Hindi. Read it online.

Q2. Answer: (c) mercenery

The solution is in Hindi. Read it online.

Q3. Answer: (d) Piling Up

The solution is in Hindi. Read it online.

Q4. Answer: (a) cupidity

The solution is in Hindi. Read it online.

Q5. Answer: (a) Instanteneous

The solution is in Hindi. Read it online.

Q6. Answer: (a) The mother loving looked

The erroneous part of the sentence is: The mother loving looked

Key Points

• Replace "loving" with "lovingly" to correct the sentence.

• Adding -ly to the verb makes it an adverb.

• An adverb is a word or phrase that modifies or qualifies an adjective, verb, or other adverb or a word group, expressing a relation of place, time, circumstance, manner, cause, degree, etc.

• Lovingly means with love or great care.

• Example - They smile lovingly at each other.

• Love is a noun, which means an intense feeling of deep affection.

• Loving is an adjective that means feeling or showing love or great care. It is used in continuous tenses.

• Adjectives describe or modify nouns and limit or restrict the meaning of nouns and pronouns.

• The implied meaning of the sentence is: As the nurse brought the infant in, the mother gave her a kind gaze.

• So, an adverb should be used here.

Therefore, the correct answer is option 1.

Corrected sentence: The mother lovingly looked at her baby as the nurse brought her in.

Q7. Answer: (b) flex, migrant, weather

The solution is in Hindi. Read it online.

Q8. Answer: (d) Concise

The solution is in Hindi. Read it online.

Q9. Answer: (c) Anarchy

The solution is in Hindi. Read it online.

Q10. Answer: (a) Comfort

The solution is in Hindi. Read it online.

Q11. Answer: (a) frightened me

The solution is in Hindi. Read it online.

Q12. Answer: (a) heavily

The correct answer is: heavily

Key Points

• Replace "the heaviest" with "heavily" to correct the sentence.

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• "heaviest" is the superlative degree of "heavy"
• Heaviest means of great weight; difficult to lift or move.
• Heavily(adverb) means to a great degree; in large amounts.
• An adverb is a word that describes or modifies verbs, adjectives, clauses, and other adverbs.
• Here, the verb "raining" is already mentioned.
• So, in the given sentence "heavily" should be used because it is defining the condition of rain.
Therefore, the correct answer is option 1, that can substitute the underlined segment in the given sentence.
Corrected sentence: When we reached the hill station, it was raining heavily.

Q13. Answer: (d) Penchant

The solution is in Hindi. Read it online.

Q14. Answer: (d) Start entirely from the beginning

The solution is in Hindi. Read it online.

Q15. Answer: (b) Modest

The solution is in Hindi. Read it online.

Q16. Answer: (c) Where can the way to the library be found?

The correct answer is: Where can the way to the library be found?
Key Points
• The given sentence is in the active form and in the interrogative sentence and we need to change it into the passive form.
• The Interrogative sentence in the active voice has the following form: Wh word+ modal verb + doer + main verb + object +?
• The Interrogative sentence in the passive voice has the following form: Wh word + modal verb+ object + be verb + V3 + by + doer +?
• Example -
• Active voice - What kind of change would you suggest?
• Passive voice - What kind of change would be suggested by you?
• Rules of Conversion from Passive to Active Voice:
• Identify the subject, the verb, and the object.
• Change the object into the subject.
• Change the verb into the past participle form of the verb.
• Change the subject into an object.
Therefore, the correct answer is option 3.
Correct Passive Voice: Where can the way to the library be found?

Q17. Answer: (c) didn't eat

The correct answer is: didn't eat
Key Points
• Replace "ate" with "eat" to correct the sentence.
• Ate is the second form of the verb "eat"
• "Didn't" is used with 1st person, 2nd person and 3rd person plural subjects. (I/You/They)
• "Doesn't" is used with 3rd person singular subjects. (He/She/It)
• "Hadn't" is used in the past perfect tense to show the order of two past events.
• The given sentence is written in simple past tense and in negative form.
• The structure should be: Subject + didnot+ v1+ object
• So, the first form of the verb "eat" should be used here.
Therefore, the correct answer is option 3.
Corrected sentence: They didn't eat anything yesterday.

Q18. Answer: (c) This novel was written by Premchand.

The correct answer is: This novel was written by Premchand.
Key Points
• The given sentence is in the active form and in the simple past tense and we need to change it to the passive form.
• The simple past tense in the active voice has the following form: Subject + V2 + object

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• The simple past tense in the passive voice has the following form: Object+ was/were + V3+ by + subject

• Active: Rohit called his friends.

• Passive: His friends were called by Rohit.

• Rules of Conversion from Active to Passive Voice:

• Identify the subject, the verb, and the object.

• Change the object into the subject.

• Change the verb into the past participle form of the verb.

• Change the subject into an object.

Therefore, the correct answer is option 3.

Correct passive Voice: This novel was written by Premchand.

Q19. Answer: (a) ADCB

The correct answer is "ADCB"

Key Points

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

• Statement A is the opening sentence of the passage which explains that the celebration of colours known as Holi is observed worldwide, not just in India.

• Statement D is the second sentence of the passage which explains that as it brings people together to enjoy a celebration regardless of caste, nationality, or religion, it is also a festival of togetherness.

• Statement C is the third sentence of the passage which explains on the first day, people assemble to celebrate "Holika Dahan," in which they chant bhajans about Holi while burning stacks of cow dung and wood.

• Statement B is the last sentence of the passage which shows that then, on the following day, people of all ages congregate to play with "gulal," or coloured paint, and "Dulahandi," or coloured water.

Hence, the correct sequence is A, D, C, B

The correct answer is option 1.

The correct passage is: A. Holi is the festival of colours which is celebrated not only in India but all cross the world. D. It is also a festival of unity as it brings people together to celebrate a festivals regardless of caste, ethnicity, or religion. C. People celebrate 'Holika Dahan' on the first day by gathering around and burning piles of wood and cow dung and singing bhajans related to Holi. B. Then on the next day, people of all ages gather together to play with colours called 'gulal' and coloured water called 'Dulahandi'.

Q20. Answer: (a) Magnificent

The solution is in Hindi. Read it online.

Q21. Answer: (a) chatter

The solution is in Hindi. Read it online.

Q22. Answer: (b) silence

The solution is in Hindi. Read it online.

Q23. Answer: (c) fidget

The solution is in Hindi. Read it online.

Q24. Answer: (b) mumbled

The solution is in Hindi. Read it online.

Q25. Answer: (a) poetry

The solution is in Hindi. Read it online.

Q26. Answer: (c) [figure]

The mirror image of given combination is:

On comparing each option with the mirror combination we get:

Option 1)

This option is the inverted image. Therefore it is wrong

Option 2)

Here both the 'y' are not in mirror image. Therefore it is wrong

Option 3)

This option matches with the mirror combination.

Option 4)

In this option the 'y' are rotated upside down. Thus this option is wrong.

Hence the correct answer is option 3)

Q27. Answer: (d) [figure]

The answer is option 4)

SOLUTION:

The mirror image of the given combination is:

On comparing the mirror combination with the given options, we get:

Option 1)

In the option the characters are misplaced. So the option is wrong

Option 2)

Here the combination is upside down and not mirrored. Also, the characters are misplaced Therefore it is wrong

Option 3)

In this option the combination is mirrored but also turned upside down. So it is wrong

Option 4)

This option is same as the mirror combination.

Hence the correct answer is option 4)

Q28. Answer: (a) 267

The pattern in the given series is:

Hence the correct answer is 267.

Alternate Method

Hence the correct answer is 267.

Q29. Answer: (b) Only conclusion I follow

Least possible Venn diagram from the given statements can be drawn as:

I. Some rhombuses are rectangles → True (As all decagons are rhombuses and some rectangles are decagon. Therefore some rectangles are rhombuses, which can be stated as some rhombuses are rectangles. So, the conclusion follow.)

II. Some rhombuses are hexagons → False (As it is possible but not definite. Therefore the conclusion does not follow.)

III. Some decagons are hexagons → False (As it is possible but not definite. Thus the conclusion does not follow.)

Hence the correct answer is only conclusion I follow.

Q30. Answer: (b) Son's daughter

From the given information we have:

Step 1: My wife's son

Son of Harsh's wife is son of Harsh.

Step 2: Father of her mother's daughter.

Father of her mother's daughter = His own daughter.

So the final diagram is:

The lady is Harsh's granddaughter i.e. Son's daughter.

Hence the correct answer is option 2).

Q31. Answer: (c) MVOA

The pattern followed in the given series is:

Hence the correct answer is MVOA.

Q32. Answer: (a) VDYH

The pattern followed in the given series is:

RATE becomes UDWH

RICH becomes ULFK

Similarly,

SAVE becomes VDYH

Hence the correct answer is VDYH.

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Q33. Answer: (d) 18

We have:

10 triangles which are numbered.

So now,

Total triangles = 10 + 8 = 18

Hence the correct answer is 18.

Q34. Answer: (a) 3, 5, 2, 4, 1

The logical and meaningful order of the given words is:

3- Seed : We sow a seed.

4- Plant : Seed becomes a plant.

2- Fruit : Fruit grows on a plant.

4- Pluck : We pluck the grown plant.

1- Eat : we eat the plucked plant.

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

Q35. Answer: (b) Shoes

Given:

Goldsmith : Jewellery :: Cobbler : ?

Here, Goldsmith is the one who works with Jewellery.

Similarly, Cobbler is the one who works with shoes.

Hence the correct answer is shoes.

Q36. Answer: (a) +, ÷, =, ×

Let's apply each option into the given equation:

71 * 56 * 14 * 15 * 5

Option 1) +, ÷, =, ×

71 + 56 ÷ 14 = 15 × 5

71 + 4 = 15 × 5

71 + 4 = 75

75 = 75

LHS = RHS

Option 2) ×, =, -, +

71 × 56 = 14 - 15 + 5

3976 = 14 - 15 + 5

3976 = 19 - 15

3976 ≠ 4

LHS ≠ RHS

Option 3)+, -, =, ×

71 + 56 - 14 = 15 × 5

71 + 56 - 14 = 75

127 - 14 = 75

113 ≠ 75

LHS ≠ RHS

Option 4) =, -, ÷, ×

71 = 56 - 14 ÷ 15 × 5

71 = 56 - 0.93 × 5

71 = 56 - 4.6

71 ≠ 51.4

LHS ≠ RHS

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

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Q37. Answer: (c) 54

The pattern in the given series is:

So the multiples of 3 in the second term for each row are:

First row : 81 = 3 × 27

Second row : 57 = 3 × 19

Third row : 45 = 3 × 15

Now on applying the pattern on each row, we get:

First row - 19, 81, 30

(19 × 3) - 27 = 30

57 - 27 = 30

30 = 30

LHS = RHS

Second row - 42, 57, 107

(42 × 3) - 19 = 107

126 - 19 = 107

107 = 107

LHS = RHS

Third row - 23, 45, ?

(23 × 3) - 15 = Third term

69 - 15 = Third term

54 = Third term

Hence the correct answer is 54.

Q38. Answer: (c) REAH

The pattern followed in the given series is:

• First and fourth letters are interchanged

LEAN becomes NEAL

MEAN becomes NEAM

HEAR becomes REAH

Hence the correct answer is REAH.

Q39. Answer: (a) ×, +, ÷, -, =

Let's apply each option on the given equation:

15 * 2 * 18 * 6 * 3 * 30

Option 1) ×, +, ÷, -, =

15 × 2 + 18 ÷ 6 - 3 = 30

15 × 2 + 3 - 3 = 30

30 + 3 - 3 = 30

33 - 3 = 30

30 = 30

LHS = RHS

Option 2) ×, +, -, ÷, =

15 × 2 + 18 - 6 ÷ 3 = 30

15 × 2 + 18 - 2 = 30

30 + 18 - 2 = 30

48 - 2 = 30

46 ≠ 30

LHS ≠ RHS

Option 2) +, ÷, -, ×, =

15 + 2 ÷ 18 - 6 × 3 = 30

15 + 0.1 - 6 × 3 = 30

15 + 0.1 - 18 = 30

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15.1 - 18 = 30
-2.9 ≠ 30
LHS ≠ RHS
Option 4)÷, -, ×, +, =
15 ÷ 2 - 18 × 6 + 3 = 30
7.5 - 18 × 6 + 3 = 30
7.5 - 108 + 3 = 30
10.5 - 108 = 30
-97.5 ≠ 30
LHS ≠ RHS
Hence the correct answer is "×, +, ÷, -, =".

Q40. Answer: (d) [figure]

The mirror image of the given combination is:
On comparing the mirror combination with the given options, we get:
Option 1)
In the option the characters 'm' and 'N' are inverted and not mirrored. So the option is wrong.
Option 2)
Here the combination is upside down and inverted but not mirrored. Therefore it is wrong.
Option 3)
In this option the combination is also turned upside down. So it is wrong
Option 4)
This option is same as the mirror combination.
Hence the correct answer is option 4)

Q41. Answer: (d) 39

The given equation is:
(81 N 27) O 4 M 21 P 72 P 3 M 3 O 9 = ?
We have:

Alphabet	Denotation
M	•
N	÷
O	×
P	•

Now the equation becomes:
(81 ÷ 27) × 4 - 21 + 72 + 3 - 3 × 9 = ?
3 × 4 - 21 + 72 + 3 - 3 × 9 = ?
12 - 21 + 72 + 3 - 27 = ?
87 - 21 - 27 = ?
87 - 48 = ?
39 = Answer
Hence, the correct answer is 39.

Q42. Answer: (b) ×, +, -, =

Let's apply each option into the given equation:
19 * 4 * 44 * 59 * 61
Option 1) +, -, =, ×
19 + 4 - 44 = 59 × 61
19 + 4 - 44 = 3599
23 - 44 = 3599
-21 ≠ 3599

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LHS ≠ RHS
Option 2) ×, +, -, =
19 × 4 + 44 - 59 = 61
76 + 44 - 59 = 61
120 - 59 = 61
61 = 61
LHS = RHS
Option 3)+, ×, -, =
19 + 4 × 44 - 59 = 61
19 + 176 - 59 = 61
195 - 59 = 61
136 ≠ 61
LHS ≠ RHS
Option 4) -, =, ×, +
19 - 4 = 44 × 59 + 61
19 - 4 = 2596 + 61
19 - 4 = 2657
15 ≠ 2657
LHS ≠ RHS
Hence the correct answer is option 2)

Q43. Answer: (b) 11

The logic followed here is:
Hence the correct answer is 11.

Q44. Answer: (c) T T X T S

Given: _T Z S S T _ Y S S T T _S S _ T W _ S
We consider each option:
1) T X T T S - T T Z S S - T X Y S S - T T T S S - T T W S S
2) X T X T T - X T Z S S - T T Y S S - T T X S S - T T W T S
3) T T X T S - T T Z S S - T T Y S S - T T X S S - T T W S S
• Z is shifting one preceding letter.
4) T S X T S - T T Z S S - T S Y S S - T T X S S - T T W S S
The pattern 'T T _ S S' is followed in option 3)
Hence the correct answer 'T T X T S'.

Q45. Answer: (c) 61

Lets see the series in the given question series,
5 : 33 :: 11 : 141 :: 7 : ?
Lets see the applied logic in each pair,
first number in a given pair is multiplied by the next odd number of series and then subtracted by 2.
lets see the pairs and apply the same logic,
i) 5 : 33
5 × 7 = 35
35 - 2 = 33
ii) 11 : 141
11 × 13 = 143
143 - 2 = 141
iii) 7 : ?
7 × 9 = 63
63 - 2 = 61
Thus, 61 is the correct answer of the given series.

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Q46. Answer: (b) (45, 39, 270)

Lets see the number of sets given:

(17,13,68)

now considering the first number given in the pair as the reference to other numbers,

17 - 13 = 4

17 × 4 = 68

thus first you have to subtract the number with the middle number and multiply the obtained number with the first number which will result into the third number of the given pair

Now, lets apply the same logic for the next pair,

(55, 46, 495)

55 - 46 = 9

55 × 9 = 495

Thus, lets apply the same for the given options,

Option1): (75,69,470)

75 - 69 = 6

75 × 6 = 450

This does not follow the logic.

Option 2) (45,39,270)

45 - 39 = 6

45 × 6 = 270

Thus this FOLLOWS the same logic.

Option 3)(65,59,360)

65-59=6

65×6=390

This does not follow the logic.

Option 4)(55,49,310)

55 - 49 = 6

55 × 6 = 330

This does not follow the logic.

Hence, the correct answer is (45,39,270)

Q47. Answer: (b) 152

The logic followed here is:

Second number = (First number)^2 × 6 + 2

6 : 218 → (6^2 × 6) + 2 = 216 + 2 = 218

3 : 56 → (3^2 × 6) + 2 = 54 + 2 = 56

Similarly,

5 : ? → (5^2 × 6) + 2 = 150 + 2 = 152

Hence, 152 is the correct answer.

Alternate Method (1st number + 1)^3 - (1st number - 1)3

for, 6 : 218

(6 + 1)3 - (6 - 1)3

=> 7^3 - 5^3

=> 343 - 125 = 218.

for, 3 : 56

(3 + 1)3 - (3 - 1)3

=> 43 - 23

=> 64 - 8 = 56.

Similarly, for 5 : ?

(5 + 1)3 - (5 - 1)3

=> 63 - 43

=> 216 - 64 = 152.

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Hence, 152 is the correct answer.

Q48. Answer: (b) [figure]

We unfold the paper step by step:

Now we consider the given options:

Option 1) There are 2 extra lines used in the figure so it is incorrect.

Option 2) The pattern matches completely.

Option 3) The pattern is partially correct, lower half is wrong.

Option 4) The pattern is partially correct, upper half is wrong.

Hence the correct answer is option 2)

Q49. Answer: (d) 13

The logic followed here is:

First number = (Second number)^(1/3) - 1

7 : 512 → (512)^(1/3) - 1 = 8 - 1 = 7

15 : 4096 → (4096)1/3 - 1 = 16 - 1 = 15

Similarly,

? : 2744 → (2744)1/3 - 1 = 14 - 1 = 13

Hence, option 4) is the correct answer.

Q50. Answer: (b) NIAMER

The pattern followed in the given codes is:

All the letter are arranged in backwards order such that,

• First letter is placed at 6th

• Second letter is placed at 5th

• Third letter is placed at 4th

• Fourth letter is placed at 3rd

• Fifth letter is placed at 2nd

• Sixth letter is placed at 1st

Similarly,

Hence the correct answer is option 2)

Q51. Answer: (d) 1000

Given:

Percentage of votes got by losing candidates = 20%

Number of votes by which losing candidate lost = 600 votes

Concept used:

Total number of votes = Number of votes secured by A + Number of votes secured by B

Calculation:

Let the total number of votes be x.

Number of votes losing candidate got = x × (20/100)

=> 0.20x

Number of votes winning candidate got = 0.20x + 600

Then, Total number of votes = 0.20x + 0.20x + 600 = x

=> 0.40x + 600 = x

=> x – 0.40x = 600

=> 0.60x = 600

=> x = 1000

Therefore The total number of votes is 1000.

Alternate Method

Let the total vote be 100%.

The winner received 80% of the total votes.

The Loser received 20% of the total votes.

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Difference = 80% - 20% = 60%
Value of 60% ≡ 600
=> 100% ≡ 1000
Therefore The total number of votes is 1000.

Q52. Answer: (a) 36

Given
61, 51, 41, 31, 21 and 11
Formula used
Average = Sum of observations/Number of observations
Calculation
Average
= Sum of observations/Number of observations
= (61 + 51 + 41 + 31 + 21 + 11)/6
= 216/6
= 36
Therefore The required average is 36.

Q53. Answer: (a) 20

Given:
Number of days taken by 20 workers to paint 24 walls = 36 days
Concept used:
If someone completes work in X days
Therefore Work done in 1 day = (1/X) part of work
Calculations:
If 20 workers paints 24 walls in 36 days
Then, 1 worker can paint 24 walls in
= 36 × 20 days
And, 1 worker can paint 1 wall in
= (36 × 20)/24
= 720/24
= 30 days
Therefore, 30 workers can paint 1 wall in
= 30/30 days
= 1 day
Hence, 30 workers can paint 20 walls in
= 1 × 20 days
= 20 days
Therefore Time taken to paint 20 walls by 30 workers is 20 days.

Q54. Answer: (c) -40/343

Given:
(27/14 ÷ 24/7of63/28 - 9/4)/(35/8 ÷ 15/4of7/48 + 5/16) ÷ 196/95
Concept used:
BODMAS
Calculations:
(27/14 ÷ 24/7of63/28 - 9/4)/(35/8 ÷ 15/4of7/48 + 5/16) ÷ 196/95
= (27/14 ÷ (24/7×63/28) - 9/4)/(35/8 ÷ (15/4×7/48) + 5/16) ÷ 196/95
= (27/14 ÷ 54/7 - 9/4)/(35/8 ÷ 35/64 + 5/16) ×95/196
= (27/14 ×7/54 - 9/4)/(35/8 × 64/35 + 5/16) ×95/196
= (1/4-9/4)/(8+5/16)×95/196
= (-2)/(133/16)×95/196
= (-40)/343

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Therefore The simplified value is (-40)/343.

Q55. Answer: (b) 2

Given:

tanθ + 1/tanθ = 2

Formula used:

x + 1/(x²) = (x + 1/x)² - 2

Calculations:

tan2 θ + 1/(tan²θ)

= (tan θ + 1/(tan θ))² - 2

= 2² - 2

= 4 - 2

= 2

Therefore tan2 θ + 1/(tan²θ) = 2

Alternate MethodCalculation:

=> tan θ + 1/(tan θ) = 2

So, θ = 45°

Now, putting θ = 45°

tan2 θ + 1/(tan²θ)

=> tan 45° + 1/(tan² 45°)

=> 1 + 1 = 2

Therefore The correct answer is 2.

Q56. Answer: (a) 2005-06

Given:

Year	Production(in tonnes)
2001-02	790
2002-03	810
2003-04	815
2004-05	890
2005-06	516
2006-07	902
2007-08	912
2008-09	922

Calculations:

According to the question,

From year 2001-05 and 2006-09 there is a increase in production.

But, in year 2005-06 there is a decrease.

Hence, the year in which Production was exceptionally decreased is 2005-06.

Q57. Answer: (a) 6

Shortcut Trick

If the sum of squares is exactly zero, each base term must equal zero.

a − 1 = 0 => a = 1

b + 2 = 0 => b = −2

c − 1 = 0 => c = 1

a² + b² + c² = 1² + (−2)² + 1² = 1 + 4 + 1 = 6

Therefore The correct answer is 6.

Alternate Method

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Given:

$(a - 1)^2 + (b + 2)^2 + (c - 1)^2 = 0$

Concept Used:

For any real numbers x, y, and z, if $x^2 + y^2 + z^2 = 0$, then each individual number must be zero because the square of a real number cannot be negative.

$x = 0, y = 0, z = 0$

Calculation:

$\Rightarrow (a - 1)^2 = 0 \Rightarrow a - 1 = 0 \Rightarrow a = 1$

$\Rightarrow (b + 2)^2 = 0 \Rightarrow b + 2 = 0 \Rightarrow b = -2$

$\Rightarrow (c - 1)^2 = 0 \Rightarrow c - 1 = 0 \Rightarrow c = 1$

Now, substitute the values of a, b, and c into the required expression:

$\Rightarrow a^2 + b^2 + c^2$

$\Rightarrow (1)^2 + (-2)^2 + (1)^2$

$\Rightarrow 1 + 4 + 1$

$\Rightarrow 6$

Therefore The correct answer is 6.

Additional Information

Sum of Squares Property

Since the square of any real number is always non-negative, the sum of multiple squared terms can only result in zero if every individual term is exactly zero.

Important Algebraic Identity

$(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$. This formula frequently connects the sum of squares with the sum of terms and their cross-products.

Quadratic Minimum

A perfect square expression like $(x - k)^2$ achieves its lowest possible real minimum value of 0 exactly when $x = k$.

Q58. Answer: (c) 6

Given:

Number of major meals 39 students had eaten in a week with a potato-based dish included Frequency	**Frequency**
1	3
2	2
3	2
4	5
5	5
6	4
7	6
8	3
9	5
10	3
11	1
Total frequency	39

Calculations:

Mean average = (∑ observation × frequency)/(total frequency)

$= (1\times3+2\times2+3\times2+4\times5+5\times5+6\times4+7\times6+8\times3+9\times5+10\times3+11\times1)/39$

$= (3+4+6+20+25+24+42+24+45+30+11)/39$

$= 234/39 = 6$

Therefore The Required mean average is 6.

Q59. Answer: (c) 36

Given:

$(2.19)^2 + 2(2.19)(3.81) + (3.81)^2$

Formula used:

$(A + B)^2 = A^2 + 2AB + B2$

Calculations:

According to question, we have:

$\Rightarrow (2.19)^2 + 2(2.19)(3.81) + (3.81)^2$

$\Rightarrow (2.19 + 3.81)^2$

$\Rightarrow (6)^2$

$\Rightarrow 36$

Therefore The Required simplified value is 36.

Q60. Answer: (a) 660

Given:

The successive discount are 20% and 30%.

Selling price= Rs. 840

Formula used:

Successive discount = X + Y - (XY)/100

Where,

X = First discount

Y = Second discount

Calculation:

Successive discount = X + Y - (XY)/100

X = 20%, Y = 30%

Now,Final discount

= 20 + 30 - 600/100

= 44%

Hence, the final discount = 44%

Now, according to question,

Selling price = (100 - 44)/100 × Marked price

$\Rightarrow$ 840 = (56/100) × Marked Price

$\Rightarrow$ Marked price = 840/0.56 = 1500

Hence, Discount = 1500 - 840 = Rs. 660

Therefore The discount is Rs. 660.

Q61. Answer: (c) 3.04%

Given:

Marked price of a mobile phone = 12% of C.P + C.P = (1.12)C.P

Formula used:

Discount = M.P – S.P

Where, M.P = Marked price, S.P = Selling price

Discount % = (Discount/M.P) × 100

Gain% = {(S.P - C.P)/C.P} × 100

Calculation:

According to question,

M.P. = 1.12 C.P.

By using the formula,

Discount = M.P. – S.P.

$\Rightarrow$S.P = M.P - Discount

$\Rightarrow$S.P = M.P - (0.08)M.P = (0.92)M.P = (0.92)(1.12)C.P = (1.0304)C.P

Gain% = {(S.P - C.P)/C.P} × 100

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=> ((1.0304)C.P-C.P)/C.P × 100
=> 0.0304 × 100
=> 3.04%
Therefore The Gain percent is 3.04%
Shortcut TrickCalculation:

CP : MP	100	112
MP : SP	100	92
CP : SP	10000	10304

Now,
Profit % = (304/10000) × 100 = 3.04 %
Therefore The correct answer is 3.04 %.

Q62. Answer: (c) 330 cm²

Given:
Radius of the cone = diameter/2 = 10/2 = 5 cm
Formula used:
Formula of Total surface area of a cone = πrl + πr²
where r is the radius and l is the slant height of cone.
Calculations:
Total surface area of cone = πr(l + r)
=> 5π(16 + 5)
=> 105π
=> 330 cm²
Therefore Total surface area of the cone = 330 cm2

Q63. Answer: (b) Rs. 3,000

Given:
Time = 3 years
Difference between S.I and C.I = Rs. 93
Rate for both C.I and S.I = 10%
Calculations:
Let the sum be P.
According to question, C.I - S.I = 93
=> P{ (1+R/100) ^T- 1} - (P×R×T)/100 = 93
=> P{ (1+10/100) 3 - 1} - (P×10×3)/100 = 93
=> P{(1.1)³ - 1} - 0.3P = 93
=> P{ 1.331 - 1 } - 0.3P = 93
=> 0.331 P - 0.3 P = 93
=> 0.031P = 93
=> P = 93/0.031 = 3000
Hence, Amount of sum is Rs.3000.
Therefore The Sum is Rs.3000.
Shortcut TrickCalculation:
(CI - SI) for 3 yrs = 3 × P × (R/100)² + P × (R/100)³
=> 3 × P × (10/100)² + P × (10/100)³ = 93
=> P × [3 × (1/10)2 + (1/10)3] = 93
=> P × [3 × (1/100) + (1/1000)] = 93
=> P × [(30 + 1)/1000] = 93
=> P = Rs. 3000
Therefore The correct answer is Rs. 3000.

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Q64. Answer: (a) 8%

Given:

Decrease in tax = 20%

Increase in consumption = 15%

Formula used:

Increase/decrease % in revenue = X + Y + (XY/100)

Calculations:

Increase/decrease% in revenue = - 20 + 15 - (300/100)

=> - 5 - 3 = - 8%

Here, - 8 % represents the decrease of 8%

Therefore The Revenue is decreased by 8%.

Q65. Answer: (b) 1 : 1

Given:

Bar graph shows the data of the number of students of different classes who like to eat different types of fruits.

Calculations:

According to question, the number of students from class 7 who likes guavas = 40

And the number of students from class 5 who likes Mangoes = 40

Hence, the ration of the number of students from class 7 who like guavas to the number of students from Class 5 who like mangoes = 40 : 40 = 1 : 1

Therefore The required ratio is 1 : 1

Q66. Answer: (d) 420 m

Given

Speed of train = 63km/h

Time taken to cross the pole = 24s

Calculation

Speed should be converted from km/h to m/s

so 63 km/h = 17.5m/s

Distance travelled =length of the train

Distance = speed × time = 17.5 × 24 = 420 m

Therefore Length of the train is 420 m

Q67. Answer: (d) 1920

Given:

Dimensions of a slab = 4 m × 50 cm × 20 cm

Bigger Slab Dimensions = 16 m × 12 m × 4 m

Concept Used:

Area of cuboid = The volume of Slab = Product of Sides

Calculation:

The volume of a Bigger slab = n × volume of a slab

Where n is the maximum number of slabs,

=> n = Volume of a Bigger slab/volume of a slab

=> n = 16 m × 12 m × 4 m over 4 m × 50 cm × 20 cm

=> n = 16 m × 12 m × 4 m × 100 × 100 over 4 m × 50 m × 20 m, we know that 1 m = 100 cm

=> n = 1920

Therefore The maximum number of sides is 1920.

Q68. Answer: (a) 0.314 litres

Given

height=12cm

slant height =13cm

Formula used

slant height = √(radius²+height²)
volume = 1/3π r²h
Calculation
slant height =13= √(radius²+12²)
radius =5cm
Volume of cone = 1/3× 3.14× 5²× 12=314cm³ =0.314litres
The volume of cone is 0.314litres

Q69. Answer: (a) 10 cm

Given
Δ ABC ~ Δ QRP,(ar(Δ ABC))/(ar(Δ QRP)) = 9/4
AB=18cm
BC=15cm
Calculation
using similarity of triangles
(ar(Δ ABC))/(ar(Δ QRP)) = 9/4=(AB/QR)²
AB/QR=3/2
. AB/QR=BC/RP=AC/QP
3/2=15/RP so RP=10cm
The length of RP is 10cm

Q70. Answer: (b) 12.5 km/h

Given
speed of first part =15km/h
distance of first part=30km
speed of second part =10km/h
distance of second part=20km
Formula used
average speed= (D1+D2)/(D1/S1+D2/S2)
calculation
average speed= (30+20)/(30/15+20/10) =12.5km/h
The average speed is 12.5km/h

Q71. Answer: (a) 49

Third proportional means,
if a, b, c are three numbers as a:b::b:c then c is third proportional to a and b
Calculation
a/b=b/c
c=b²/a=21²/9=49
The third proportional to given numbers is 49

Q72. Answer: (b) 15

Calculation
two digit numbers which can be divisible by 6 are 12,18,24.....,90,96
thus it is an Arithmetic progression
An=a+(n-1)d
An is n^(th)number
a first term
d=common difference
so 96=12+(n-1)6
n=15
15 two digit numbers are divisible by 6

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Q73. Answer: (b) 137

Given

average score of cricket team=32

number of players=11

scores=22, 11, 5, 34, 21, 32, 0, 28, 9 and 53

Calculation

total score=32 × 11=352

sum of scores of 10 players=22+11+ 5+ 34+21+ 32+ 0+ 28+ 9 + 53=215

score of captain=total score-score of 10 members=352-215=137

Therefore Score of captain is 137.

Q74. Answer: (d) 1/(a + b)(b + c)(c + a)

Concept used:

If $x + y + z = 0$, then, $x^3 + y^3 + z^3 = 3xyz$

Calculations:

$((a - b)^3 + (b - c)^3 + (c - a)^3)/((a^2 - b^2)^3 + (b^2 - c^2)^3 + (c^2 - a^2)^3)$

$x = (a - b)$

$y = (b - c)$

$z = (c - a)$

$x + y + z = a - b + b - c + c - a = (a + b + c) - (a + b + c) = 0$

So, x3 + y3 + z3 = 3xyz = 3(a - b)(b - c)(c - a)

Similarly,

$m = (a^2 - b^2)$

$n = (b^2 - c^2)$

$o = (c^2 - a^2)$

$m + n + o = (a^2 - b^2) + (b^2 - c^2) + (c^2 - a^2) = 0$

So, $m^3 + n^3 + o^3 = 3mno = 3(a^2-b^2)(b^2-c^2)(c^2-a^2)$

Thus, we have :

$(3(a-b)(b-c)(c-a))/(3(a^2-b^2)(b^2-c^2)(c^2-a^2))$

$= (3(a-b)(b-c)(c-a))/(3(a-b)(a+b)(b-c)(b+c)(c-a)(c+a))$

$= 1/(a+b)(b+c)(c+a)$

Therefore The correct answer is option (4).

Q75. Answer: (a) Loss of 4%

Given

Selling price = 600Rs

Formula used

Successive profit or loss=x+ y+(x y/100)

Calculation

=> x =+ 20 % (+ for profit)

=> y = - 20 % (- for loss)

total profit or loss= x+y+xy/100

=> 20-20+(20× -20)/100=-4 %

Therefore There is a total loss of 4 %

Q76. Answer: (a) Clear Light of Day

The correct answer is Clear Light Of Day

Key Points

• Clear Light Of Day is written by Anita Desai.

• It is the primary theme is the importance of family, other predominant themes include the importance of forgiveness, the power of childhood, and the status of women, particularly their role as mothers and caretakers, in modern-day India

Additional Information

• The White Tiger is a novel by Indian author Aravind Adiga. It was published in 2008 and won the 40th Man Booker Prize the

same year. The novel provides a darkly humorous perspective of India's class struggle in a globalized world as told through a retrospective narration from Balram Halwai, a village

• Blue Umbrella, is crucial to demonstrate the importance of kindness in everyday life. By reading The Blue Umbrella, students can see how selfishness and materialism are harmful to society while showing the benefits of friendship and generosity through Binya and Ram Bharosa.

• Jaya is a novel of great importance this book has an ending that has never ever been told in any retelling of the Mahabharata. This ending is the reason the book was originally called Jaya

Q77. Answer: (d) V = W/Q

The correct answer is V=W/Q

Key Points

• The electric potential difference is the difference in electric potential (V) between the final and the initial location when work is done upon a charge to change its potential energy.

• The potential difference between two points is equal to the work done in moving a unit of positive charge from one point to the other.

• V = W/Q (V = potential difference, W = work done, Q = charge)

Additional Information

• The electric potential difference between two points in an electric circuit carrying some current is the work done to move a unit charge from one point to another.

• Thus, a potential difference is the work done per unit charge and is given as V =W/Q.

Q78. Answer: (d) Rs. 50,000

The correct answer is 50,000

Key Points

• A mentorship programme to train young authors named the 'Young, Upcoming and Versatile Authors' (YUVA) scheme was launched in June 2021.

• Under the mentorship scheme, a consolidated scholarship of Rs. 50,000 per month was proposed to be paid for a period of six months per author.

• The central government has launched the scheme in honour of the country's 75 years of Independence.

• Thereby, creating future leaders of tomorrow.

• The scheme for Young Upcoming Versatile Authors abbreviates into YUVA.

• It is a PM Scheme for Mentoring Young Authors in the country.

Additional Information

• To help youngster achieve their business dreams, The Union Ministry of Skill Development and Entrepreneurship under the leadership of Prime Minister Narendra Modi launched Pradhan Mantri Yuva Yojana (PMYY).

• The aim of the scheme is to provide training to 75 aspiring writers below 30 years.

• These authors should be ready to express themselves and project India along with its culture and literature globally.

Q79. Answer: (c) Tropical warm climate

The correct answer is Tropical warm climate.

Key Points

• Tropical warm type of climate does the two island regions of India, Lakshadweep and Andaman and Nicobar Islands experience.

• The tropics are warm all year, averaging 25 to 28 degrees Celsius (77 to 82 degrees Fahrenheit).

• This is because the tropics get more exposure to the sun.

• Because of all that sun, the tropics don't experience the kind of seasons the rest of the Earth does.

Additional Information

• A humid subtropical climate is a zone of climate characterized by hot and humid summers, and cool to mild winters.

• These climates normally lie on the southeast side of all continents, generally between latitudes 25° and 40°, and are located poleward from adjacent tropical climates.

• Hot semi-arid climates are most commonly found around the fringes of subtropical deserts.

• Hot semi-arid climates are most commonly found in Africa, Australia, and South Asia.

• In Australia, a large portion of the Outback surrounding the central desert regions lies within the hot semi-arid climate region.

• The subtropical highland variety of the oceanic climate exists in elevated portions of the world that are within either the tropics or subtropics.

• The subtropical highland climates tend to be essentially identical to an oceanic climate, with mild summers and noticeably cooler

winters.

Q80. Answer: (b) Khushwant Singh

The correct answer is Khushwant Singh.

Key Points

• Khushwant Singh is the author of the historical book 'Delhi: A Noval'.

• He was an Indian author, lawyer, diplomat, journalist, and politician.

• His experience in the 1947 Partition of India inspired him to write Train to Pakistan in 1956, which became his most well-known novel.

Additional Information

• One of the first Indian writers in English to make a mark on an international readership, she won the Commonwealth Writers Prize (Eurasia) in 1986 for Plans for Departure, while Rich Like Us won the Sinclair Fiction Prize in 1985 and the Sahitya Akademi Award in 1986.

• Anita Desai, original name Anita Mazumdar, (born June 24, 1937, Mussoorie, India), English-language Indian novelist and author of children's books who excelled in evoking character and mood through visual images ranging from the meteorologic to the botanical.

• Ahmed Ali, is a Pakistani author whose novels and short stories examine Islamic culture and tradition in Hindu-dominated India. Proficient in both English and Urdu, he was also an accomplished translator and literary critic.

Q81. Answer: (c) Bageshwari Qamar

The correct answer is Bageshwari Qamar.

Key Points

• A third-generation artist, Delhi's Bageshwari Qamar stormed the male bastion of shehnai playing at a young age.

• At six, Bageshwari Qamar couldn't have been much taller than the shehnai she held in her hand when she walked up to her father with a nervous plea.

• The first woman shehnai wadak of India is Bageshwari Qamar.

• Renowned Guru Ustad Bismillah khan taught her.

• She made her debut in the year 1983 and was crowned as “Shehnai Queen” at Chandigarh.

Additional Information

• Gauhar Jaan was an Indian singer and dancer from Kolkata.

• Gauhar Jaan is known as "the Gramophone girl" and "the first recording superstar of India".

• Binodini Dasi, also known as Notee Binodini, was an Indian Bengali actress and thespian.

• Rasoolan Bai was a leading Indian Hindustani classical music vocal musician. Belonging to the Benaras gharana.

Q82. Answer: (d) Shooting

The correct answer is Shooting.

Key Points

• Manish Narwal (born 17 October 2001) is an Indian Para Pistol Shooter.

• He ranks fourth in the world in Men's 10m Air Pistol SH1 according to the World Shooting Para Sports Rankings.

• Manish is also supported by GoSports Foundation through the Para Champions Programme.

• Shooting has inspired competition, and in several countries, rifle clubs started to form in the 19th century.

Additional Information

• Wrestling is a hand-to-hand combat system and a set of combat sports involving grappling-type techniques.

• Badminton is a racquet sport played using racquets to hit a shuttlecock across a net.

• Cycling, also called bicycling or biking, is the use of bicycles for transport, recreation, exercise or sport.

Q83. Answer: (d) Primitive Subsistence farming

The correct answer is Primitive Subsistence farming.

Key Points

• Primitive subsistence agriculture is practiced on small patches of land with the help of primitive tools like hoe, dao, digging sticks, and family/ community labor.

• This type of farming depends upon monsoon, natural fertility of the soil, and suitability of other environmental conditions to the crops grown.

• Primitive subsistence farming makes use of primitive tools like digging sticks, dao, and hoe.

• The main crops are starchy foods such as tapioca, cassava or cassava, yams, corn or maize, millet, mountain rice, beans, and

bananas.

Additional Information

• Plantations are a type of commercial farming where a single crop of tea, coffee, sugarcane, cashew, rubber, banana, or cotton is grown.

• Horticulture is the art of cultivating plants in gardens to produce food and medicinal ingredients, or for comfort and ornamental purposes.

• Horticulturists are agriculturists who grow flowers, fruits, and nuts, vegetables and herbs, as well as ornamental trees and lawns.

• Intensive farming focuses on investing a lot of resources and labor into small tracts of land in order to increase yield.

Q84. Answer: (a) The Promise

The correct answer is The Promise.

Key Points

• Damon Galgut has won the Booker Prize 2021 with The Promise, on his third time being shortlisted for the award.

• Galgut is the third writer from South Africa to win the Booker, following Nadine Gordimer and J. M. Coetzee, who has won twice.

• Galgut was previously shortlisted twice for the Prize: first in 2003 for The Good Doctor and again in 2010 for In a Strange Room.

• The Promise is a family saga spanning four decades, each of which features a death in the family.

Additional Information

• No One Is Talking About This is the debut novel by American poet Patricia Lockwood, published in 2021.

• The Fortune Men is a 2021 novel by the Somali-British author Nadifa Mohamed, published on 27 May 2021, by the Viking Books imprint of Penguin General.

• A Passage North is a 2021 novel written by Anuk Arudpragasam. The novel is set in Sri Lanka following the end of the Civil War.

Q85. Answer: (b) Daniil Medvedev

The correct answer is Daniil Medvedev.

Key Points

• Daniil Medvedev defeated Novak Djokovic in the final, 6–4, 6–4, 6–4 to win the men's singles tennis title at the 2021 US Open.

• It was his first major title and he only lost one set en route (against Botic van de Zandschulp in the quarterfinals).

• Daniil Sergeyevich Medvedev is a Russian professional tennis player.

• He is currently ranked world No. 1 by the Association of Tennis Professionals.

Additional Information

• Novak Djokovic is a Serbian professional tennis player.

• Novak Djokovic is currently ranked world No. 6 in singles by the Association of Tennis Professionals.

• Lewis Alan Hoad was an Australian tennis player whose career ran from 1950 to 1973.

• John Herbert Crawford, OBE was an Australian tennis player during the 1930s.

• John Herbert Crawford was the World No. 1 amateur for 1933, during which year he won the Australian Open, the French Open, and Wimbledon, and was runner-up at the U.S.

Q86. Answer: (a) Suresh Mukund

The correct answer is Suresh Mukund.

Key Points

• The Emmy Award-nominated Indian choreographer Suresh Mukund, has won the 10th Annual ‘World Choreography Award 2020’, (also known as Choreo Awards), becoming the first Indian to win the prestigious honour.

• He won the award in the ‘TV REALITY SHOW/COMPETITION’ category, for his work on the hit American TV reality show ‘World of Dance.

• Mukund is the director and choreographer of the Indian dance crew ‘The Kings’, which won the 2019 season of World of Dance.

• The World Choreography Awards, famously known as the “Oscars of Dance”, takes place every year, in Los Angeles, to showcase the most innovative and original works by the world’s best choreographers featured in television, film, commercials, digital content, and music videos.

Additional Information

• Emmy Awards, or Emmys, are an extensive range of awards for artistic and technical merit in United States television.

• An Emmy is considered one of the four major American awards for performing arts and entertainment – the others being the Grammy (for music), the Oscar (Academy Award, for film), and the Tony for (stage) theatre.

• The Emmy statuette, depicting a winged woman holding an atom, is named after "immy", an informal term for the image orthicon tube that was common in early television cameras.

• The awards are presented by three related, but separate, organizations: the Academy of Television Arts & Sciences (ATAS), the National Academy of Television Arts & Sciences (NATAS), and the International Academy of Television Arts and Sciences (IATAS).

Q87. Answer: (c) credit money

The correct answer is Credit money.

Key Points

• The commodity value of money is less than the monetary value of money, it is called Credit money.

• Credit money is monetary value created as the result of some future obligation or claim.

• As such, credit money emerges from the extension of credit or issuance of debt. In the modern fractional reserve banking system, commercial banks are able to create credit money by issuing loans in greater amounts than the reserves they hold in their vaults.

• There are many forms of credit money, such as IOUs, bonds and money markets.

• Virtually any form of financial instrument that cannot or is not meant to be repaid immediately can be construed as a form of credit money.

• Credit money is the creation of monetary value through the establishment of future claims, obligations, or debts.

• These claims or debts can be transferred to other parties in exchange for the value embodied in these claims.

• Fractional reserve banking is a common way that credit money is introduced in modern economies.

Additional Information

• Fiat money is a government-issued currency that is not backed by a physical commodity, such as gold or silver, but rather by the government that issued it.

• Any money whose face value (exchange value) is equal to its intrinsic value (the worth of the metallic content of money) is called full-bodied money

• Fiduciary money is money that is accepted as a medium of exchange due to the trust that exists between the payer and the payee.

Q88. Answer: (a) Gandhinagar

The correct answer is Gandhinagar.

Key Points

• The Sports Authority of India has established a para centre under its National Centre of Excellence Scheme at SAI regional centre in Gandhinagar.

• Under the 'promotion of sports among persons with disabilities vertical of the Khelo India scheme, financial assistance is provided to support district and state-level games to the concerned national sports federations, namely, Special Olympic Bharat, All India Sports Council of Deaf and Paralympics Committee of India.

• In addition, the nodal body has also established a para centre at SAI's regional centre in Gandhinagar.

• The centre is operational in the disciplines of athletics, swimming, powerlifting and table tennis.

• The selected athletes are provided support in the form of expert coaches, sports equipment, boarding and lodging, sports kit, competition exposure, educational expenses, medical/insurance and stipend as per the approved scheme norms.

• Most of the other centres of SAI have also been made disabled-friendly.

• This ministry implements the Khelo India Scheme with the twin objectives of mass participation and promotion of excellence in sports under which various programmes have been launched under the different Khelo India verticals to realise the objective of broad-basing and promoting the culture of sports.

• These initiatives are undertaken in both rural and urban areas across the country.

Additional Information

• Anurag Thakur is the current Minister of Youth Affairs and Sports.

• The National Sports Day in India is celebrated on August 29, the birth anniversary of hockey legend Major Dhyan Chand.

• The Sports Authority of India is the apex national sports body of India, established in 1982 by the Ministry of Youth Affairs and Sports of Government of India for the development of sports in India

Q89. Answer: (a) Raja Mansingh Tomar

The correct answer is Raja Mansingh Tomar.

Key Points

• Man kutuhal was the name of a treatise created under the patronage of Raja Man Singh Tomar.

• Raja Mansingh Tomar of Gwalior (1486-1516 AD) was the driving force behind introducing and consolidating Dhrupad.

• He is also known to have related Indian music to the common and laymen by replacing many of the traditional Sanskrit songs with Hindi songs.

• Man Singh Tomar is credited with composing three volumes of songs Vishnupadas (songs in praise of lord Vishnu), Dhrupads, and Hori and Dhamar songs associated with Holi.

• Mansingh's support gave pride of place to both the Hindu and Muslim musicians.

• Man kutuhal was the name of a treatise created under the patronage of Raja Man Singh Tomar.

Additional Information

• Krishna II (reigned 878–914 CE) succeeded his famous father, Amoghavarsha I Nrupatunga, to the Rashtrakuta throne. Kannara was his Kannada name.

• Parantaka Viranarayana was the second son of Srimara Srivallabha. He reigned from AD 880 to 900. It was in his reign period that the Dalavaipuram plates were issued.

• Rajashekhara Varman was the second ruler of the Kulasekhara dynasty (later Chera Dynasty) who worshipped lord Shiva and became a Shaivite unlike his father Kulasekhara Alwar who was a Vaishnavite. He probably ruled from 820-844 A.D.

Q90. Answer: (b) Provide peat that have long been used as fuel

The correct answer is Provide peat that has long been used as fuel.

Key Points

• Species of moss are used as fuel to provide peat that has long been used as fuel.

• Mosses are nonvascular plants also known as Bryophytes.

• Sphagnum is commonly known as peat moss.

• Peat has multiple uses as it provides nutrients to them and also it is used to derive energy which could be used in vehicles.

• Peat is used for domestic heating purposes as an alternative to firewood and forms a fuel suitable for boiler firing in either briquetted or pulverized form.

• Peat is also used for household cooking in some places and has been used to produce small amounts of electricity.

• Some organizations classify peat as fossil fuel and not as a renewable fuel.

• The development of peat is favoured by warm moist climatic conditions; however, peat can develop even in cold regions such as Siberia, Canada, and Scandinavia.

Additional Information

• Mosses are small, non-vascular flowerless plants in the taxonomic division Bryophyta.

• Bryophyta may also refer to the parent group of bryophytes, which comprise liverworts, mosses, and hornworts.

• Mosses typically form dense green clumps or mats, often in damp or shady locations.

• The individual plants are usually composed of simple leaves that are generally only one cell thick, attached to a stem that may be branched or unbranched and has only a limited role in conducting water and nutrients.

• Although some species have conducting tissues, these are generally poorly developed and structurally different from similar tissue found in vascular plants.

• Mosses do not have seeds and after fertilisation develop sporophytes with unbranched stalks topped with single capsules containing spores.

• They are typically 0.2–10 cm (0.1–3.9 in) tall, though some species are much larger.

• Dawsonia, the tallest moss in the world, can grow to 50 cm (20 in) in height. There are approximately 12,000 species.

Q91. Answer: (b) White blood cells

The correct answer is White blood cells.

Key Points

• White blood cells are of an amoeboid shape with a distinctive central membrane.

• The amoeboid shape of WBCs helps them to squeeze out through the capillary wall.

• White blood cells help in defence mechanisms for our body.

• They play a major role in putting away foreign particles.

• At the site of infection, white blood cells accumulate to destroy pathogens.

• Their amoeboid shape assists them to squeeze through blood capillaries and at the same time their pseudopodia help to kill pathogens by the process of phagocytosis.

• They change their shape in order to sink bacteria and separate invaders in the body in order to protect the body against diseases and infections.

Additional Information

• Nerve cells (neurones) are 'excitable' cells which can transduce a variety of stimuli into electrical signals, continuously sending information about the external and internal environment (in the form of sequences of action potentials) to the central nervous system (CNS).

• Guard cells are pairs of epidermal cells that control gas diffusion by regulating the opening and closure of stomatal pores. Guard

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cells, like other types of plant cells, are surrounded by a three-dimensional, extracellular network of polysaccharide-based wall polymers.

• Red blood cells contain a protein called haemoglobin, which carries oxygen from the lungs to all parts of the body. Checking the number of red blood cells in the blood is usually part of a complete blood cell (CBC) test. A type of blood cell that is made in the bone marrow and found in the blood.

Q92. Answer: (d) dried latex from the tap root of ferula

The correct answer is dried latex from the tap root of ferula.

Key Points

• The spice asafoetida is the dried latex (gum oleoresin) exuded from the living underground rhizome or tap root of several species of Ferula which is a perennial herb (1 to 1.5 m high).

• It is greyish-white when fresh, darkening with age to yellow, red and eventually brown.

• It is sold in blocks or pieces as gum and more frequently as a fine yellow powder, sometimes crystalline or granulated.

• The major constituents of asafoetida are resin (40–64%), gum (25%) and essential oil (10–17%).

• The aroma of asafoetida is attributed mainly to secondary butyl propenyl disulphide.

Additional Information

• Ferula is a genus of about 220 species of flowering plants in the family Apiaceae, native to the Mediterranean region east to central Asia, mostly growing in arid climates.

• They are herbaceous perennial plants growing to 1–4 m tall, with stout, hollow, somewhat succulent stems.

• It is used in modern herbalism in the treatment of hysteria, some nervous conditions, bronchitis, asthma and whooping cough.

• It was at one time employed in the treatment of infantile pneumonia and flatulent colic.

• The gum resin is antispasmodic, carminative, expectorant, laxative, and sedative.

Q93. Answer: (b) santoor

The correct answer is Santoor.

Key Points

• Pandit Shivkumar Sharma (13 January 1938 – 10 May 2022) was an Indian classical musician and santoor player who is credited with adapting the santoor for Indian classical music.

• As a music composer, he collaborated with Indian flautist Hariprasad Chaurasia under the collaborative name Shiv–Hari and composed music for many Indian films.

• He was awarded the Sangeet Natak Akademi Award in 1986, the Padma Shri, India's fourth highest civilian award in 1991, and the Padma Bhushan, India's third highest civilian award in 2001.

• He is credited with introducing the santoor as a popular Indian classical music instrument.

Additional Information

• The tabla is the most commonly played drum set in North Indian music. It is the instrument most frequently used to accompany vocal and instrumental music, and dance; whereas its primary function is to maintain the metric cycle in which the compositions are set.

• The Indian santoor instrument is a trapezoid-shaped hammered dulcimer and a variation of the Iranian Santur. The instrument is generally made of walnut and has 25 bridges. Each bridge has 4 strings, making for a total of 100 strings. It is a traditional instrument in Jammu and Kashmir and dates back to ancient times.

• Shehnai, double-reed conical oboe of North India. The shehnai is made of wood, except for a flaring metal bell attached to the bottom of the instrument, and measures about 12–20 inches (30–50 cm) in length, with six to eight keyless finger holes along its body.

• The flute is a family of classical music instruments in the woodwind group. Like all woodwinds, flutes are aerophones, i.e. they make sound by vibrating a column of air.

Q94. Answer: (a) The President of India

The correct answer is the President of India.

Key Points

• The President of India has the right to appoint an inter-state council to promote centre-state and inter-state cooperation.

• The nation can progress only if the Union and State Governments work hand in hand.

• Inter-State Council is not a permanent constitutional body, which can be created at any time if it seems to the President that the public interest would be served by the establishment of such a council.

• It was set up in 1990 through a presidential ordinance for the first time as per the recommendations of the Sarkaria Commission under the Ministry of Home affairs.

• The secretarial functions of the Zonal Councils have been reassigned to the Inter-State Council Secretariat from 1st April 2011.

• Inter-State Council works as an instrument for cooperation, coordination and the evolution of common policies.

• The interstate council is proposed to meet thrice a year. But in 26 years, it has met only 11 times. The latest meeting was held after a gap of 10 years in Delhi in July 2016.

Additional Information

• Droupadi Murmu is an Indian politician who is the 15th and current President of India since 25 July 2022.

• She is a member of the Bharatiya Janata Party.

• She is the first person belonging to the tribal community and also the second woman after Pratibha Patil to hold the President's office.

Q95. Answer: (a) Gracilaria

The correct answer is Gracilaria.

Key Points

• Agar polymers synthesized by species of the genus Gracilaria constitute a complex mixture of molecules, containing several extremes in structure.

• Sulphate Hemi-esters, methyl ethers, and pyruvic ketals can alter in several ways the structural regularity of agar based on strictly 3-O-linked β-L-galactopyranose and 4-O-linked α-L-galactopyranose residues.

• In comparison with agars from Gelidium and Pterocladia, agars from Gracilaria can have higher degrees of sulphation, methoxylation, and prenylation.

• The gelling ability of agars from most Gracilaria species is considerably improved by adopting, before extraction, an alkali pretreatment that converts α-L-galactose 6 sulphate into 3,6-anhydro-α-L-galactose.

• Native agars obtained from Gracilaria cannot be classified, with few exceptions, as bacteriological grade agar as they have a high content of methoxyl and consequently high gelling temperatures.

• On the contrary, the genus Gracilaria is considered the most important source of food and sugar-reactive grade agars.

Additional Information

• Chlorella is a genus of about thirteen species of single-celled green algae belonging to the division Chlorophyta. The cells are spherical in shape, about 2 to 10 μm in diameter, and are without flagella. Their chloroplasts contain the green photosynthetic pigments chlorophyll-a and -b.

• Sargassum is a genus of brown macroalgae in the order Fucales. Numerous species are distributed throughout the temperate and tropical oceans of the world, where they generally inhabit shallow water and coral reefs, and the genus is widely known for its planktonic species.

• Alginic acid, also called algin, is a naturally occurring, edible polysaccharide found in brown algae. It is hydrophilic and forms a viscous gum when hydrated. With metals such as sodium and calcium, its salts are known as alginates. Its colour ranges from white to yellowish-brown

Q96. Answer: (d) Kathak

The correct answer is Kathak.

Key Points

• A dance of northern India, Kathak is often a dance of love.

• It is performed by both men and women.

• The movements include intricate footwork accented by bells worn around the ankles and stylized gestures adapted from normal body language.

• Nati is classified into seven different dance forms. Some of the most famous ones are – Kinnauri Nati, Kullu Nati, and Shiv Badar Nati.

• While Kinnauri Nati is performed to welcome the New Year, Kullu Nati is performed during Dusshera.

Additional Information

• Some Other Popular Dance forms in Northern India:

• Dumhal – Jammu, and Kashmir.

• Nati – Himachal Pradesh.

• Mayur Nritya and Rasleela – Uttar Pradesh and Uttarakhand.

• Dhamyal – Haryana.

• Bhangra – Punjab.

• Gambhira – West Bengal.

• Bideshiya – Bihar/Chhattisgarh.

• Chhau dance – Odisha/Jharkhand.

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Q97. Answer: (c) Beach Volleyball

The correct answer is Beach Volleyball.

Key Points

• Beach volleyball is a best-of-three set contest, unlike indoor volleyball where matches can go on till five sets.

• The first two sets are played until one team reaches 21 points - as opposed to 25 in the indoor version for its first four sets - and the third and final deciding set, if required, is played to 15 points.

• Beach volleyball has similar rules for hitting as international volleyball.

• The beach game was developed organically on the beach and one of the things that commonly happens is it's difficult to get enough players to play a game of traditional 6-on-6 in a beach setting.

Additional Information

• Other Beach Games:

• Tug of War

• Hunnyball

• Tidalball

• Gritz

• Quaddleball

• Spikeball

Q98. Answer: (b) M S Subbulakshmi

The correct answer is MS Subbulakshmi.

Key Points

• MS Subbulakshmi was the first musician to be awarded the prestigious Bharat Ratna, India's highest civilian honour.

• Madurai Shanmukhavadivu Subbulakshmi (16 September 1916 – 11 December 2004) was an Indian Carnatic singer from Madurai, Tamil Nadu.

• She was also awarded with the Ramon Magsaysay award, Asia's highest civilian award in 1974.

Additional Information

• Bharat Ratna is the highest civilian award in India.

• The Bharat Ratna award is presented by the president of India.

• The first Bharat Ratna award was awarded to politician C. Rajagopalachari, philosopher Sarvepalli Radhakrishnan, and scientist CV Raman in the year 1954.

• Indira Gandhi was the first female Prime Minister of India and was conferred with the Bharat Ratna in 1971. She was elected as the president of the Congress party in 1959.

Q99. Answer: (d) Maharashtra

The correct answer is Maharashtra.

Key Points

• Elephanta Festival is celebrated in February every year on Elephanta islands in Mumbai, Maharashtra.

• The caves, as well as the island, were given the name Elephanta by Portuguese invaders after they took control of the place in 1534.

• It was the discovery of a gigantic rock-cut sculpture of an elephant on the island that prompted them to name the place so.

• The 'City of Caves', on an island in the Sea of Oman close to Bombay, contains a collection of rock art linked to the cult of Shiva.

Additional Information

• Edakkal Caves Located at about 1200 ft above sea level, the Edakkal Caves are among the oldest human settlements ever discovered.

• Junagadh Caves are located in Gujrat.

• Caves Located in Madhya Pradesh:

• Bhimbetka Caves, Raisen.

• Adamgarh Caves, Hoshangabad.

• Saru Maru Caves, Sehore.

• Pandav Caves, Pachmarhi.

Q100. Answer: (a) Kathak

The correct answer is Kathak.

Key Points

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• Shovana Narayan is a recognised Indian Kathak dancer and a career officer with the Indian Audit and Accounts Service.
• She performs in India and internationally, and has been awarded the Padma Shri.
• She trained under Birju Maharaj.
• She has been awarded the Padma Shri and Sangeet Natak Akademi Award for Dance.
• The world-famous Kathak dancer, Pandit Birju Maharaj is the face of the Kalka-Bindadin Gharana of Lucknow.

Additional Information

• The number of classical dances ranges from eight to more, depending on the source and scholar.
• The Sangeet Natak Academy recognizes eight –
• Bharatanatyam.
• Kathak.
• Kuchipudi.
• Odissi.
• Kathakali.
• Sattriya.
• Manipuri.
• Mohiniyattam.

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