SSC CHSL Tier-1 2021: Official Paper (Held On : 27 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 most appropriate ANTONYM of the given word.

Pseudo

(a) Flawed
(b) Genuine
(c) Artificial
(d) Corrupt

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

The birds flew / fastly above us / as we stood / on our terrace.

(a) on our terrace
(b) as we stood
(c) fastly above
(d) The birds flew

Q3. Select the option that expresses the given sentence in indirect speech.

She said, “I can play the guitar pretty well.”

(a) She said that she can play the guitar pretty well.
(b) She said that she would play the guitar pretty well
(c) She said that she could play the guitar pretty well.
(d) She said that she plays the guitar pretty well.

Q4. Select the most appropriate ANTONYM of the highlighted word.

The boss persists with his loyalists even now.

(a) retinues
(b) continues
(c) formulates
(d) discontinues

Q5. Select the option that can be used as a one-word substitute for the underlined group of words.

Samantha keeps herself occupied by helping other people willingly without expecting any payment for her services.

(a) Opportunist
(b) Volunteer
(c) Mercenary
(d) Iconoclast

Q6. Select the option that can be used as a one-word substitute for the given group of words.

The state of being full or complete.

(a) Plunder
(b) Plebiscite

(c) Plenitude
(d) Pliability

Q7. Select the most appropriate meaning of the given idiom.
Knock down.
(a) To re do
(b) To accept
(c) To succeed
(d) To demolish

Q8. Select the INCORRECTLY spelt word
(a) Huddle
(b) Hostil
(c) Horror
(d) Hospital

Q9. Select the option that expresses the given sentence in passive voice.
Tell her to finish the work.
(a) Let she finish the work.
(b) To finish the work be told to her.
(c) The work is to be finished by her.
(d) Let her be told to finish the work.

Q10. Select the option that expresses the given sentence in passive voice.
They will meet Freddy outside the airport.
(a) Freddy would have been met outside the airport.
(b) They would be met by Freddy outside the airport.
(c) Freddy will meet them outside the airport.
(d) Freddy will be met by them outside the airport.

Q11. Select the most appropriate meaning of the given idiom.
Eat like a horse.
(a) Eat a lot of food
(b) Eat making sound
(c) Dislike food
(d) Eat food while running

Q12. Select the option that can be used as a one-word substitute for the given group of words.
A remedy to counteract the effects of poison.
(a) Antibody
(b) Antidote
(c) Antiseptic
(d) Antibiotic

Q13. Select the INCORRECTLY spelt word.
(a) Mandatory
(b) Amnesia
(c) Corteous
(d) Frigidity

Q14. Select the most appropriate meaning of the given idiom.
Beat around the bush.
(a) To discuss minute details of something
(b) To avoid talking about what is important

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(c) To search for a lost thing in vain
(d) To hope for something that is unattainable

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

Scared

(a) Tranquil
(b) Brave
(c) Solemn
(d) Afraid

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

Assiduous

(a) Anxious
(b) Destitute
(c) Unique
(d) Idle

Q17. Select the option that will improve the underlined part of the given sentence.

Life is hard, unpredictable, but though manageable.

(a) still controllable
(b) despite practicable
(c) although bearable
(d) though achievable

Q18. 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. When the fish, at last, had been safely landed, I asked the brothers if they ate fish.

B. The condition that I put was that they had to help me land another fish for my men.

C. On receiving their eager answer that they most certainly did, I told them I would give them the fish we had just landed.

D. To this they readily agreed and the wait started again.

(a) DCBA
(b) ABCD
(c) ACBD
(d) BDCA

Q19. Select the most appropriate ANTONYM of the given word.

Ebb

(a) Ripe
(b) Moisture
(c) Flow
(d) Stiff

Q20. Select the most appropriate meaning of the underlined word in the given sentence.

Police fear that terrorists may try to assassinate the president during his appearance at the summit.

(a) Distress
(b) Murder
(c) Rebuke
(d) Deceive

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.

A question like "How big is Faerie?" does not admit (1)_____ a simple answer. Faerie, after all, is not one land, one principality

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or (2)_____ Maps of Faerie are unreliable, and may not be (3)_____ upon. Faerie is bigger than England, as it is bigger than the world. In the middle of a wood so thick it was very nearly a forest was a small hut, (4)_____ of thatch and grey clay. A yellow bird in a cage sat on its perch outside the house. It did not sing, and sat (5)_____ silent.

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

(a) about
(b) of
(c) off
(d) in accordance

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

(a) dominion
(b) organism
(c) entity
(d) unit

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

(a) depended
(b) wobbled
(c) steady
(d) stabilised

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

(a) created
(b) built
(c) build
(d) carved

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

(a) blissfully
(b) mournfully
(c) gaily
(d) chirpily

GENERAL INTELLIGENCE

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

25 * 5 * 10 * 2 * 8 * 56

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

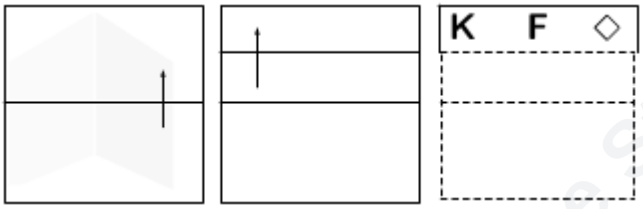
Q27. Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

FLOWERS : OLFWSRE :: HOSTILE : SOHTELI :: IMPORTS : ?

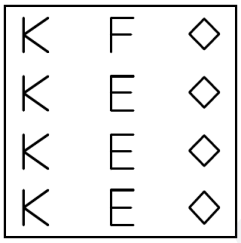
(a) RTSIMPO
(b) IMPSTRO
(c) PMIOSTR
(d) PMIORTS

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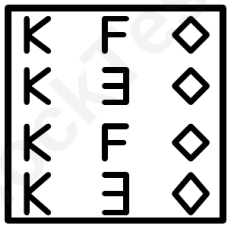
Q28. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded ?



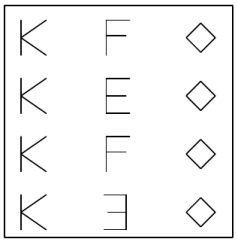
(a)



(b)



(c)



(d)



Q29. 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.

375 : 592 :: 423 : 640 :: 198 : ?

(a) 440
(b) 415
(c) 423
(d) 392

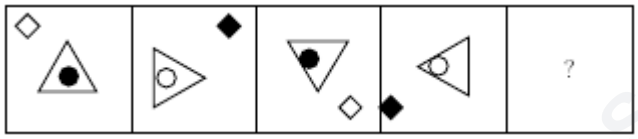
Q30. Which of the following numbers will replace the question mark (?) in the given series?

13, 78, 83, ?, 335, 670

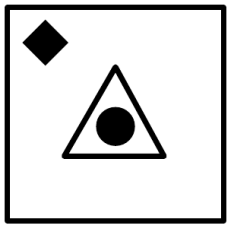
(a) 334
(b) 332
(c) 330

(d) 325

Q31. Select the figure form amomg the given option that can replace the question mark (?) in the following series.



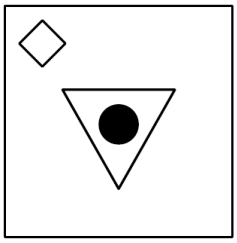
(a)



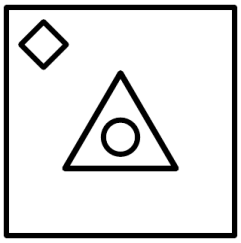
(b)



(c)



(d)



Q32. Which of the following numbers will replace the question mark (?) in the given series?

5, 8, 24, 57, 109, 184, 288, 423, ?

(a) 559
(b) 595
(c) 659
(d) 695

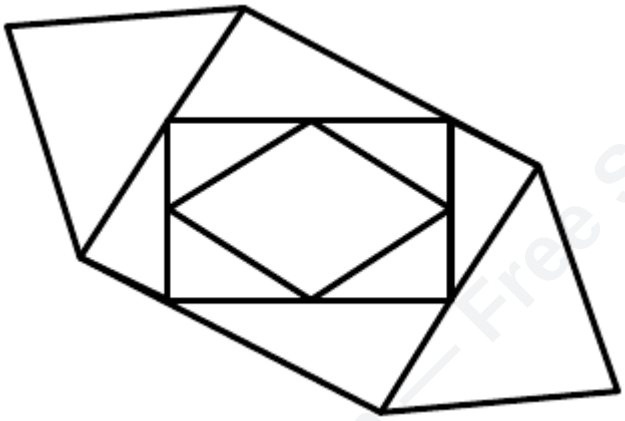
Q33. Select the option that is related to the third term in the same way as the second term is related to the first term and the sixth term is related to the fifth term.

56 : 217 :: 38 : ? :: 73 : 285

(a) 163
(b) 158
(c) 132
(d) 145

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Q34. How many triangles are there in the given figure.



(a) 12
(b) 14
(c) 8
(d) 10

Q35. Which letter cluster will replace the question mark (?) to complete the given series?

OSRE, QOXH, SKDK, ?

(a) UGJN
(b) UHJM
(c) UGJM
(d) UHJN

Q36. 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.

7 : 105 :: 9 : 153 :: 13 : ?

(a) 273
(b) 233
(c) 277
(d) 237

Q37. If 11 July 2020 was Monday, what will be 14 October 2028?

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

Q38. In a certain code language, 'PUNCH' is written as 'IDOVQ' and ‘CRACK’ is written as ‘LDBSD’. How will ‘BREAK’ be written in that language?

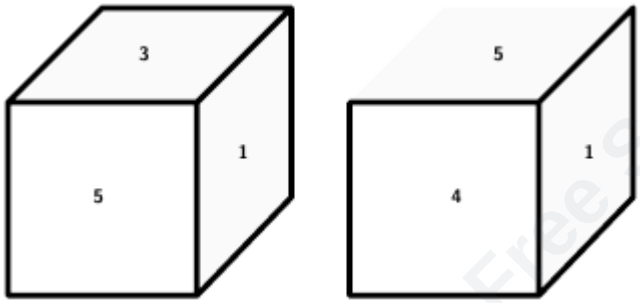
(a) LBFSC
(b) CSFBL
(c) LCDTD
(d) CTEBL

Q39. Pointing to a woman Rashmi said "My father's daughter is the sister of this lady's daughter." How is that lady related to Rashmi ?

(a) Mother
(b) Daughter
(c) Sister
(d) Mother-in-law

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Q40. Two different poritions of the same dice are shown, the six faces of which are numbered from 1 to 6. What is the sum of the numbers that are opposite '5' and '1' ?



(a) 6
(b) 8
(c) 9
(d) 7

Q41. Seven friends A,B,C,D,E,F and G, each has a different height. A is shorter than B but taller than C. B is taller than only four others. E is taller than G but shorter than C. D is taller than B but shorter than F. Who is the tallest among all?

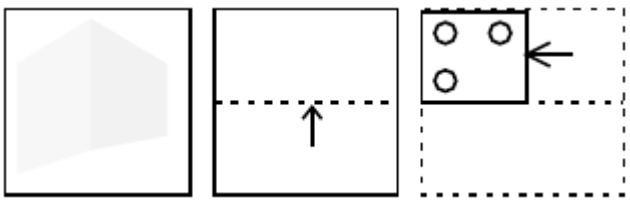
(a) B
(b) A
(c) F
(d) D

Q42. Which of the following numbers will replace the question mark (?) in the given series?

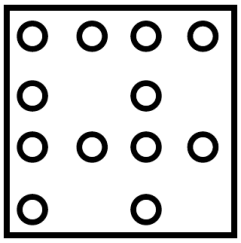
24, 48, 45, ?, 175, 1050

(a) 185
(b) 195
(c) 190
(d) 180

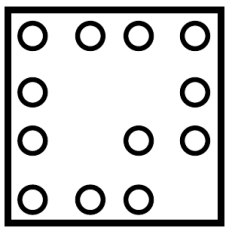
Q43. A paper is folded and cut as shown. How will it appear when unfolded ?



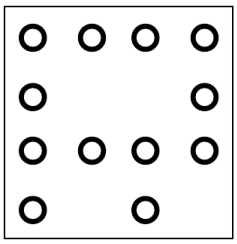
(a)



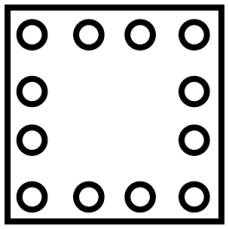
(b)



(c)



(d)



Q44. 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, decide which of the conclusions logically follow(s) from the statements.

Statements:

All pillows are beds.

No table is a bed.

Some tables are chairs.

Conclusions:

I. No pillow is a table.

II. Some chairs are pillows.

III. No bed is a chair.

(a) Only conclusion II follows.

(b) Only conclusion I follows.

(c) Both conclusions I and II follow.

(d) Both conclusions I and III follow.

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

First row- 5, 6, 19

Second row- 7, 7, 35

Third row- 8, 9, ?

(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)

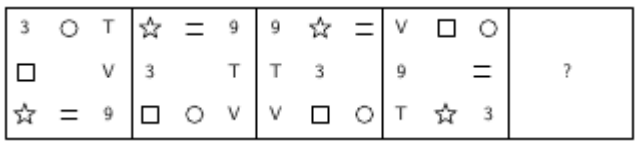
(a) 65

(b) 35

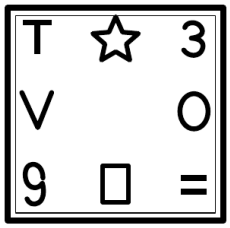
(c) 45

(d) 55

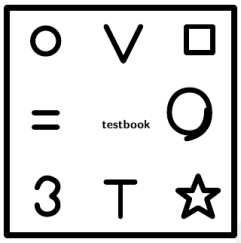
Q46. Select the figure thet will replace the question mark (?) in the following figure series.



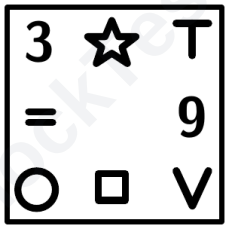
(a)



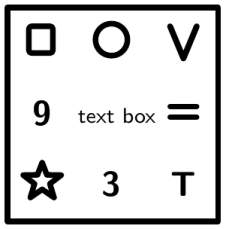
(b)



(c)



(d)



Q47. If M denotes '−', N denotes '÷', O denotes '×' and P denotes '+', then what will come in place of '?' in the following equation

(16 O 7) P 124 M 92 P (86 N 43) O 18 M 29 = ?

(a) 145
(b) 151
(c) 160
(d) 148

Q48. In a certain code language, "AN" is coded as "16", and "NO" is coded as "212". How will "US" be coded in that language?

(a) 403
(b) 397
(c) 401
(d) 399

Q49. Which of the following letter-clusters will replace the question mark (?) in the given series to make it logically complete?

YXV, TSQ, ONL, JIG, ?

(a) BED
(b) EBD
(c) EDB

(d) DBE

Q50. Which of the following numbers will replace the question mark (?) in the given series?

67, 83, 71, 91, 80, 118, ?

(a) 116
(b) 96
(c) 100
(d) 98

QUANTITATIVE APTITUDE

Q51. In an election, there were three candidates: A, B and C. 10% of the eligible voters did not vote. Out of those who voted, 45% voted for A, 35% voted for B and the remaining 20% voted for C. 30% of the votes polled for A and 20% of the votes polled for B were later deemed invalid, while all the votes polled for C were deemed valid. If A got 882 more valid votes than B did, how many valid votes did C receive?

(a) 5020
(b) 5040
(c) 5050
(d) 5060

Q52. If cos 2A = sin 75°, then the smallest positive value of A is:

(a) 15°
(b) 7.5°
(c) 30°
(d) 37.5°

Q53. The frustum of a right circular cone has the radius of the base as 5 cm, radius of the top as 3 cm, and height as 6 cm. What is its volume?

(a) 98 π cm^3
(b) 100 π cm^3
(c) 96 π cm^3
(d) 90 π cm^3

Q54. Find the total surface area of a closed hemisphere whose radius is 3.5 cm. (Use π = 22/7)

(a) 114.5 cm^2
(b) 113.5 cm^2
(c) 115.5 cm^2
(d) 112.5 cm^2

Q55. The table below gives the numbers (in thousand) of different types of geysers sold by a company in six consecutive years.

Year	Types				
A	B	C	D	E	
2007	75	122	103	98	95
2008	100	102	103	112	102
2009	105	108	112	109	108
2010	100	189	123	102	122
2011	95	123	102	124	124
2012	85	145	134	134	145

What is the difference in the number of type B geysers sold in 2010 and 2012 ?

(a) 44000

(b) 42000
(c) 41000
(d) 45000

Q56. A thief is noticed by a policeman from a distance of 650 m. The thief starts running and the policeman chases him. The thief and the policeman run at the rate of 8 km and 10.5 km per hour, respectively. The distance (in metres) between them after 12 minutes is:

(a) 150
(b) 85
(c) 125
(d) 100

Q57. The price of a cell phone is Rs. 20,000. On Sundays, the shopkeeper offers a cash discount of Rs. 1,000 on the purchase of the cell phone. Further, if someone purchases it through a credit card, he gives 5% additional discount. If someone is purchasing the cell phone on a Sunday through a credit card, then how much does he/she have to pay?

(a) Rs. 18,350
(b) Rs. 18,900
(c) Rs. 18,050
(d) Rs. 18,500

Q58. The price of a tablet is first increased by 10%, and then decreased by 2.5% due to reduction in sales. What is the net percentage change in the final price of the tablet?

(a) Decrease by 8.75%
(b) Increase by 7.25%
(c) Increase by 6.35%
(d) Decrease by 5.5%

Q59. Which of the following can be a rationalising factor of $(\sqrt{2} + \sqrt{3} + \sqrt{5})$?

(a) $(\sqrt{2} - \sqrt{3} - \sqrt{5})\sqrt{6}$
(b) $(\sqrt{2} + \sqrt{3} - \sqrt{5})\sqrt{6}$
(c) $(\sqrt{2} - \sqrt{3} + \sqrt{5})\sqrt{6}$
(d) $(\sqrt{2} + \sqrt{3} + \sqrt{5})\sqrt{6}$

Q60. What is the fourth proportional to 16, 24, 8?

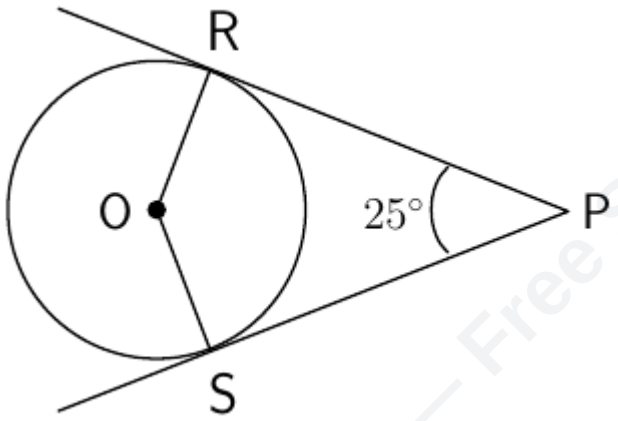
(a) 12
(b) 8
(c) 24
(d) 16

Q61. The volume of a cone of radius 13 cm is $507\ \pi\ cm^3$. Find its height.

(a) 12 cm
(b) 27 cm
(c) 18 cm
(d) 9 cm

Q62. In the given figure, If angle RPS = 25°, the value of angle ROS is_____.

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(a) 155°
(b) 145°
(c) 135°
(d) 165°

Q63. Study the given table and answer the question that follows.

The table shows quanity of various food items used by a restaurant during four months of a year (in kg).

Food Item	June	July	August	September
Rice	180	200	240	300
Wheat	420	400	380	350
Sugar	200	210	230	240
Pulses	250	310	320	280
Vegetables	300	320	390	370

The quantity of wheat used in the month of July is what percentage of the total quantity of food items used in June ?

(a) 29 16/27 %
(b) 29 17/27 %
(c) 29 18/27 %
(d) 29 15/27 %

Q64. Subir claimed to sell his items at only 5% above the cost of production, but used a weight that had 1 kg written on it, though it actually weighed 960 grams. What was the actual profit percentage earned by Subir?

(a) 9.125%
(b) 9.375%
(c) 9.25%
(d) 9.5%

Q65. When $f(x) = 15x^3 – 14x^2 – 4x + 10$ is divided by $(3x + 2)$, then the remainder is:

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

Q66. The average present age of four members of a family is 27 years and average increases by 3 years when one of their relatives joins them. The age of the relative is:

(a) 40 years
(b) 42 years
(c) 46 years
(d) 44 years

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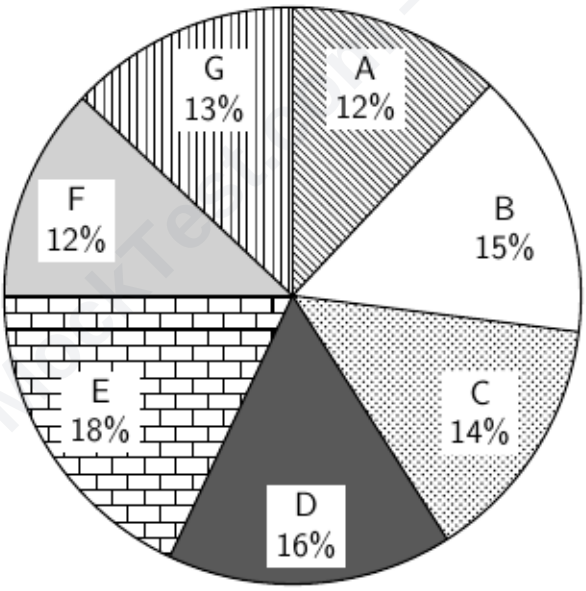
Q67. In an engineering institution, a student's grade is assessed based on Internal tests (30%), assignments (30%) and external exams (40%). If a student scored 90% in internal tests, 95% in assignments and 75% in external exams, then the overall

grade of the student is:

(a) 86.25%
(b) 85.25%
(c) 86%
(d) 85.50%

Q68. The following pie chart shows the spending of a country on tourism in various districts during a particular year. Total spending of the country Rs. 15,62,000

Study the pie chart and answer the following question.



How much less money (in Rs.) is spent on district C than on district E ?

(a) 65790
(b) 60890
(c) 66780
(d) 62480

Q69. $983^2 - 17^2 = ?$

(a) 96600
(b) 966^2
(c) 96600000
(d) 966000

Q70. 30 men can complete a piece of work in 24 days. 12 days after they started working together, 10 more men joined them. How many days will they now take to complete then remaining work?

(a) 12 days
(b) 8 days
(c) 10 days
(d) 9 days

Q71. The difference between a discount of 35% on Rs. 8,000 and two successive discounts of 20% and 15% on the same amount is:

(a) Rs. 240
(b) Rs. 320
(c) Rs. 540
(d) Rs. 800

Q72. What is the largest 6-digit number divisible by 52?

(a) 999984
(b) 999999
(c) 999960
(d) 100000

Q73. The average speed of a train running at a speed of 30 km/h during the first 100 km, at the speed of 40 km/h during the second 100 km and at the speed of 50 km/h during the last 100 km is nearly _____.

(a) 40.2 km/h
(b) 38.3 km/h
(c) 39.2 km/h
(d) 37.5 km/h

Q74. The population of a country has been growing at a rate of 4% every decade. If the projected population of the country in 2030 is given as 1,58,18,400, what was the population of the country in 2000?

(a) 1,40,62,000
(b) 1,40,65,200
(c) 1,40,56,200
(d) 1,40,62,500

Q75. What is the value of 1980 ÷ 9 + [-77 + {-1980 + (1/4 of 7920)}] ?

(a) 1980
(b) 143
(c) 164
(d) 1990

GENERAL AWARENESS

Q76. Sheikh Chinna Moula was an exponent of the _____, a musical instrument.

(a) sitar
(b) mandolin
(c) veena
(d) nadaswaram

Q77. In which year was India the host of Commonwealth Games?

(a) 2015
(b) 2010
(c) 1980
(d) 2009

Q78. Which vitamins are present in Milk?

(a) Vitamin A, C and D
(b) Vitamin C, D and E
(c) Vitamin C, K and D
(d) Vitamin A, B and D

Q79. Which ministry launched an All-India dance competition 'Vande Bharatam Nritya Utsav' as part of Azadi Ka Amrit Mahotsav?

(a) Ministry of Education
(b) Ministry of Culture
(c) Ministry of Tribal Affairs
(d) Ministry of Rural Development

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Q80. SLR is an important tool used by RBI to control money supply in the economy. The full form of SLR is_____.

(a) Statutory Liquidity Reserve
(b) Stipulated Liquidity Reserve
(c) Statutory Liquidity Ratio
(d) Stipulated Liquidity Ratio

Q81. In November 2021, under the Atma Nirbhar Bharat Abhiyan, the Central Government has approved the SPV that would privatise the electricity distribution business in which of the following Union Territories?

(a) Dadra and Nagar Haveli and Daman and Diu
(b) Chandigarh
(c) Ladakh
(d) Puducherry

Q82. As per statistics published by National Crime Records Bureau for 2020, which state registered the second highest number of crimes against women [Indian Penal Code (IPC) and Special and Local Laws (SLL)]?

(a) West Bengal
(b) Rajasthan
(c) Uttar Pradesh
(d) Bihar

Q83. 'The Man Who Made the Elephant Dance by Kurien' is the audio autobiography of_____.

(a) M Karunanidhi
(b) Dr. Verghese Kurien
(c) Temsula Ao
(d) Saurabh Duggal

Q84. Who among the following is known as a descendant of Ishwari Prasad, the first Kathak teacher ?

(a) Sambhu Maharaj
(b) Gopi Krishna
(c) Lacchu Maharaj
(d) Birju Maharaj

Q85. In which sport does the score depend on putting the ball in a hole?

(a) Hockey
(b) Baseball
(c) Squash
(d) Golf

Q86. Nirmala Mehta is an exponent of which Indian classical dance form?

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

Q87. The Himachal is a range in the Himalayas. It is also known as:

(a) Northernmost Range
(b) Inner Himalayas
(c) Lesser Himalayas
(d) Outermost Range

Q88. Javelin thrower Annu Rani, who registered a throw of 63.24 m at the Federation Cup Senior National Athletics Championships to set a new national record, represented the state of _____.

(a) Uttar Pradesh
(b) Himachal Pradesh
(c) Arunachal Pradesh

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(d) Madhya Pradesh

Q89. Among the following Indian actresses, whose autobiography is ‘Unfinished’?

(a) Waheeda Rahman
(b) Deepika Padukone
(c) Asha Parekh
(d) Priyanka Chopra

Q90. Which Part of the Indian Constitution provides for the Union Public Service Commission?

(a) Part X
(b) Part VIII
(c) Part XIV
(d) Part XVI

Q91. Which statement is NOT correct regarding the food chain?

(a) Every component of food chain forms trophic level.
(b) Inter-relation between different food chains is known as a food web.
(c) All the chains formed by nutritional relations are used to understand energy flow.
(d) In food chain, energy level increases from lower trophic level to higher trophic level.

Q92. In the electronic configuration of an atom, What does ‘n’ signify in the formula $2n^2$?

(a) The number of electrons
(b) The number of protons
(c) The number of the given shell from the nucleus
(d) The number of valence electrons present

Q93. Who among the following started the Kuchipudi Art Academy at Madras in 1963?

(a) Vedantam Satyanarayana Sarma
(b) Dr. Vempati Chinna Satyam
(c) Narasimhachari
(d) Pasumarthy Venkata Ramana

Q94. Which of the following sportspersons has written his/her autobiography ‘Ace against Odds’?

(a) Mary Kom
(b) Yuvraj Singh
(c) Sachin Tendulkar
(d) Sania Mirza

Q95. What is the starting voltage of an AA battery used for home gadgets such as remote controls, small toys, and wireless kitchen appliances?

(a) 2.0 V
(b) 1.5 V
(c) 3.0 V
(d) 2.5 V

Q96. Which day marks the founding of the World Health Organization (WHO) and aims to draw the attention to the important health issues facing the world every year?

(a) 9^(th) April
(b) 7^(th) April
(c) 1^(st) April
(d) 5^(th) April

Q97. Which is a visible sign of severe iodine deficiency?

(a) Tooth decay
(b) Swelling in the neck
(c) Loss of vision in darkness

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(d) Bleeding gums

Q98. The first recipient of the National Award for Best Music Direction was _____ who was honoured for his composition in the Tamil film Kandan Karunai.

(a) KV Mahadevan
(b) Vidyasagar
(c) Deva
(d) Karthik Raja

Q99. In which of the following years did Pandit Bhimsen Gururaj Joshi give his first ever live performance?

(a) 1937
(b) 1945
(c) 1941
(d) 1950

Q100. Padma Shri awardee Chittani Ramachandra Hegde is known for his contribution to which of the following dance forms in India?

(a) Sattriya
(b) Kuchipudi
(c) Yakshagana
(d) Kathakali

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (b) Genuine

The solution is in Hindi. Read it online.

Q2. Answer: (c) fastly above

The segment that contains a grammatical error is 'fastly above'.

Key Points

• ‘Fastly’ is not correct.

• The word ‘fast’ is used in the same form in adjectives and in adverbs.

• Generally, we add ' ly' to the adjectives to change them into adverbs.

• But there are certain words that can be used as adjectives as well as adverbs without adding 'ly'. Eg: ‘ fast, straight, enough, etc. ‘

• Examples- • He ran fast. (adverb)

•They like fast cars and expensive restaurants. (adjective)

So, the right sentence is: The birds flew fast above us as we stood on our terrace.

The correct answer is option 3.

Q3. Answer: (c) She said that she could play the guitar pretty well.

The correct answer is: She said that she could play the guitar pretty well.

Key Points

• The given sentence is in direct speech and we need to convert it to indirect speech.

• When we change a direct speech to indirect speech, we must follow these rules:

• The reporting verb 'said' remains unchanged.

• The inverted commas ("...") are replaced with the conjunction 'that' to show the indirect speech.

• A comma (,) that is added after the direct speech part, should be removed in the indirect speech.

• The modal 'can' changes to 'could'.

• 'I' changes to 'she'.

• Thus, option 3 is the correct answer.

Hence, The Indirect speech is- She said that she could play the guitar pretty well.

Q4. Answer: (d) discontinues

The solution is in Hindi. Read it online.

Q5. Answer: (b) Volunteer

The solution is in Hindi. Read it online.

Q6. Answer: (c) Plenitude

The solution is in Hindi. Read it online.

Q7. Answer: (d) To demolish

The correct answer is: To demolish.

Key Points

• 'Knock down' means to kill or injure someone with a vehicle; deliberately destroy a building or wall; reduce a price or amount.

• Example- A drunk driver knocked down and killed two girls.

• Marked option 'To demolish' means to destroy something, for example, a building.

• So it is clear that the most appropriate meaning of 'Knock down' is 'To demolish.'

Therefore, the correct answer is option 4.

Q8. Answer: (b) Hostil

The correct answer is: Hostil.

Key Points

• The correct spelling should be 'Hostile.'

• Hostile means having very strong feelings against somebody/something.

• Example- The experience has made him generally hostile towards women.

Therefore, the correct answer is option 2 which is incorrectly spelled.

Additional Information

• Huddle - to gather or crowd together in a close mass

• For e.g.- People were huddling (together) in doorways to get out of the rain

Important Points The rest of the options are correctly spelled.

Q9. Answer: (d) Let her be told to finish the work.

The correct answer is: Let her be told to finish the work.

Key Points

• The given sentence is an imperative sentence.

• The imperative sentence in the passive voice always starts with 'Let'

• An imperative sentence in the passive voice has the following form: Let + object + be + past participle.

• Example- Active: Do it at once.

Passive: Let it be done at once.

• The word 'be' is used as an auxiliary in the passive.

• We can begin the passive sentence with 'you' if we want to put emphasis on the person addressed.

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Therefore the correct answer is option 4.

Q10. Answer: (d) Freddy will be met by them outside the airport.

The correct answer is: Freddy will be met by them outside the airport.

Key Points

• The given sentence is in Future simple tense.

• The simple future tense in the passive voice has the following form: Object+ will+ be +V3+ by + subject

• Example- Active: Kriya will sew the bag.

Passive: The bag will be sewed by Kriya.

• In the passive voice of simple future tense, we use the auxiliary verb shall / will with be and the past participle of a verb. The object of the sentence becomes the subject.

• The word 'be' is used as an auxiliary in the passive.

Therefore the correct answer is option 4.

Q11. Answer: (a) Eat a lot of food

The correct answer is: Eat a lot of food.

Key Points

• 'Eat like a horse' means to eat a lot because you have a large appetite.

• Example- She's so thin, yet she eats like a horse.

• So it is clear that the most appropriate meaning of 'Eat like a horse' is 'Eat a lot of food.'

Therefore, the correct answer is option 1.

Q12. Answer: (b) Antidote

The correct answer is Antidote.

Key Points

• Antidote means a medical substance that is used to prevent a poison or a disease from having an effect.

• Example- Regular exercise is the best antidote to tiredness and depression.

• So, it is clear that the 'Antidote' can be used as a one-word substitute for 'A remedy to counteract the effects of poison.'

Additional Information

• Antibody means a substance that the body produces in the blood to fight disease.

• Antiseptic means a liquid or cream that prevents a cut, etc. from becoming infected.

• Antibiotic means a medicine which is used for destroying bacteria and curing infections.

Therefore, the correct answer is option 2.

Q13. Answer: (c) Corteous

The correct answer is: Corteous.

Key Points

• The correct spelling should be 'Courteous'.

• Courteous means polite and pleasant, showing respect for other people.

• Example- She was unfailingly courteous and helpful.

Therefore, the correct answer is option 3 which is incorrectly spelled.

Additional Information

• Amnesia- Refers to the loss of memory, including facts, information and experiences.

• For e.g.- She'd been terrified since being told she had amnesia, but she'd stayed strong

Important Points

The rest of the options are correctly spelled.

Q14. Answer: (b) To avoid talking about what is important

The correct answer is: To avoid talking about what is important.

Key Points

• 'Beat around the bush' means to avoid getting to the point of an issue.

• Example- “If you want to ask me, just ask; don't beat around the bush.”

So, it is clear that the most appropriate meaning of the given idiom 'Beat around the bush' is 'To avoid talking about what is important.'

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Hence, the correct answer is option 2.

Q15. Answer: (d) Afraid

The solution is in Hindi. Read it online.

Q16. Answer: (d) Idle

The correct answer is: Idle

Key Points

• Assiduous means working very hard and taking great care that everything is done as well as it can be.

• Example- They were assiduous in their search for all the latest facts and figures.

• Marked option Idle means not wanting to work hard; lazy.

• Example- An idle man's brain is the devil's workshop.

• It is clear that Assiduous and Idle are opposite in meaning.

Therefore the correct answer is option 4.

Additional Information

• Anxious means worried and afraid.

• Destitute means without any money, food, or a home.

• Unique means not like anything else; being the only one of its type.

Q17. Answer: (a) still controllable

The correct answer is "still controllable"

Key Points

• We use 'still' to show that something continues up to a time in the past, present, or future.

• 'Controllable' means capable of being directed or influenced.

• So, according to the meaning of the given sentence "still controllable" is the best fit.

The improved sentence is: Life is hard, unpredictable, but still controllable.

Important Points

• Although, even though, in spite of and despite are all used to link two contrasting ideas or show that one fact makes the other fact surprising.

Therefore, the correct answer is option 1.

Q18. Answer: (c) ACBD

The correct answer is "ACBD"

Key Points

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

• Statement A is the opening sentence of the passage which explains the theme of the passage what happened when the narrator landed and his worry about the fish.

• Statement C is the second sentence of the passage.

• Statement B is the third sentence of the passage which explains the deal and how they agreed to the narrator's condition.

• Statement D is the last sentence of the passage and also an extensive portion of the previous statement that the condition made by the narrator.

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

The correct passage is: A. When the fish, at last, had been safely landed, I asked the brothers if they ate fish. C. On receiving the eager answer that they most certainly did, I told them I would give them the fish we had just landed. B. The condition that I put was that they had to help me land another fish for my men. D. To this they readily agreed and the wait started again.

Q19. Answer: (c) Flow

The solution is in Hindi. Read it online.

Q20. Answer: (b) Murder

The correct answer is Murder.

Key Points

• Assassinate means to murder (a usually prominent person) by sudden or secret attack often for political reasons.

• Example- President John F. Kennedy was assassinated in 1963.

• Murder means the crime of killing a person illegally and on purpose.

• Example- He promised to avenge his father's murder.
• So, it is clear that Assassinate and Murder are similar in meaning.
Therefore, the correct answer is option 2.
Additional Information
• Distress means the state of being in great danger and needing immediate help.
• Rebuke means to speak angrily to somebody because he/she has done something wrong.
• Deceive means to try to make somebody believe something that is not true.

Q21. Answer: (b) of

The correct answer is 'of'
Key Points
• Of is a preposition that indicates relationships between other words, such as belonging, things made of other things, things that contain other things, or a point of reckoning.
• “of” is considered as a preposition because it is used to show that a person or an object belongs to, or is related to, something.
• Admit of is a phrasal verb that means to permit, allow, or suggest something.
• Example- The evidence can not admit of doubt.
• From the given meaning and example of the phrasal verb :
• The most appropriate option to fill in is 'Of'.
Therefore, the correct answer is option 2.
Additional Information
• About as a preposition indicates the subject of thought, feeling or action.
• Off is used with verbs that mean ‘remove’ or ‘separate’.
• In Accordance in a way that agrees with or follows something, such as a rule or request.

Q22. Answer: (a) dominion

The correct answer is 'dominion'.
Key Points
• Dominion means the power to rule and control.
• Example- Alexander held dominion over a vast area.
• So, it is clear that the most appropriate word is 'dominion'.
Additional Information
• Organism means a living thing, especially one that is so small that you can only see it with a special instrument.
• Entity means something that exists separately from something else and has its own identity.
• Unit means a single thing that is complete in itself, although it can be part of something larger.
Therefore, the correct answer is option 1.

Q23. Answer: (a) depended

The correct answer is depended.
Key Points
• Depended means a person who depends on or needs someone or something for aid, support, favour, etc.
• Example- The baby depended on her mother for all her care since she was too little to feed or clothe herself.
• So, it is clear that the most appropriate word is 'depended'.
Additional Information
• Wobbled means to move from side to side in a way that is not steady; to make somebody/something do this.
• Steady means staying the same; not changing and therefore safe.
• Stabilised means to maintain the stability of something.
Therefore, the correct answer is option 1.

Q24. Answer: (b) built

The correct answer is built.
Key Points
• Built is defined as something which was constructed, or is the past tense of to build.
• Example- The two houses were built after the same model.

• So, it is clear that the most appropriate word is 'built'.

Additional Information

• Created means to cause something new to happen or exist.

• Build means to make something by putting pieces, materials, etc. together.

• Carved means to cut wood or stone in order to make an object or to put a pattern or writing on it.

Therefore, the correct answer is option 2.

Q25. Answer: (b) mournfully

The correct answer is mournfully.

Key Points

• Mournfully means feeling or expressing sorrow or grief; sorrowful; sad.

• Example- The church's funeral bell tolled mournfully over the neighbourhood.

• So, it is clear that the most appropriate word is 'mournfully'.

Additional Information

• Blissfully means causing complete happiness.

• Gaily means in a lively manner; cheerfully.

• Chirpily means in a happy and energetic way.

Therefore, the correct answer is option 2.

Q26. Answer: (d) ÷, ×, –, +, =

We have to try the options on the given equation:

25 * 5 * 10 * 2 * 8 * 56

Using BODMAS rule :- Bracket of Division Multiplication Addition Subtraction.

Option 1) ÷, ×, +, –, =

25 ÷ 5 × 10 + 2 - 8 = 56

5 × 10 + 2 - 8 = 56

50 + 2 - 8 = 56

52 - 8 = 56

44 = 56 Incorrect

Option 2) –, +, ÷, ×, =

25 - 5 + 10 ÷ 2 × 8 = 56

25 - 5 + 5 × 8 = 56

25 - 5 + 40 = 56

65 - 5 = 56

60 = 56 Incorrect

Option 3) ×, ÷, –, +, =

25 × 5 ÷ 10 - 2 + 8 = 56

25 × 0.5 - 2 + 8 = 56

12.5 - 2 + 8 = 56

20.5 - 2 = 56

18.5 = 56 Incorrect

Option 4) ÷, ×, –, +, =

25 ÷ 5 × 10 - 2 + 8 = 56

5 × 10 - 2 + 8 = 56

50 - 2 + 8 = 56

58 - 2 = 56

56 = 56 Correct

Hence the correct answer is option 4.

Q27. Answer: (c) PMIOSTR

The pattern followed in the given terms are:

The first and third characters are interchanged & fifth and seventh characters are interchanged.

FLOWERS becomes OLFWSRE

HOSTILE becomes SOHTELI

IMPORTS becomes PMIOSTR

Hence, the correct answer is option 3.

Q28. Answer: (a) [figure]

The answer is option 1)

SOLUTION:

When we unfold the paper once we get the mirror image of :

The mirror image of this pattern will be:

Now to get the complete unfolded pattern, which will be the mirror image of the last pattern:

Hence the correct answer is option 1)

Q29. Answer: (b) 415

The relation between two consecutive term is :

The difference between first and the second term is 217.

Let's apply the pattern on the given series:

375 : 592

592 - 375 = 217

423 : 640

640 - 423 = 217

198 : ?

? - 198 = 217

? = 217 +198

? = 415

Hence the correct answer is 415.

Q30. Answer: (b) 332

The pattern in the given series can be determined by:

Hence the correct answer is 332.

Q31. Answer: (b) [figure]

In the given figure we can observe the pattern:

• The diamond moves in clock wise direction and turns solid after every alternate step.

• The triangle moves in clock wise direction and it is following the diamond.

• The circle inside the triangle turns solid after every alternate step.

Next step:

• As the last block shows the diamond downwards, it will appear upwards in the next step due to the clockwise motion and the triangle will not be solid because it was solid in the last step.

• The triangle will face upwards as it follows the movement of diamond.

• The circle will be solid because of it's alternate behavior.

So the pattern with the next step will be :

Hence the correct answer is option 2)

Q32. Answer: (b) 595

We take the difference between the numbers:

Note: Add prime number series 13,17, 19, 23, 29, 31 and 37.

Hence the correct answer is 595.

Q33. Answer: (d) 145

Logic: (First term × 4) - 7 = Second term

In 56 : 217

(56 × 4) - 7 = 217

(224) - 7 = 217

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217 = 217
In 73 : 285
(73 × 4) - 7 = 285
(292) - 7 = 285
285 = 285
In 38 : ?
(38 × 4) - 7 = Second term
(152) - 7 = Second term
145 = Second term
Hence, the correct answer is 145.

Q34. Answer: (d) 10

When we observe the given image we can easily locate the triangles present in it:
• 4 + 4 + 2 = 10
Hence the correct answer is 10.

Q35. Answer: (a) UGJN

Alphabetical Order with its placed value:
The pattern followed in the given series is:
On continuing the pattern we get the next cluster,
Hence, the correct answer is UGJN.

Q36. Answer: (a) 273

The pattern in the following series:
13 × 21 = 273
Hence the correct answer is 273.
Alternate Method7 x (7 + 8) = 7 x 15 = 105
9 x (9 + 8) = 9 x 17 = 153
13 x (13 + 8) = 13 x 21 = 273

Q37. Answer: (b) Monday

Given: 11 July 2020 was Monday.
Important Points
• Here, 11 July 2020 has been given as Monday - this does not match the original weekday of this date. Hence, the day on 14 October 2028 is also not similar to the original weekday.
• Therefore, 14 October 2028 will not be a Saturday if 11 July 2020 is a Monday.
So, 11 July to 14 October = 20(July) + 31(Aug) + 30(Sep) + 14(Oct)
= 95 days = 95/7 = 13 weeks and 4 odd days.
So, 14 October 2020 = Monday + 4 = Friday.
Now,
14 October 2020 to 14 October 2028 = 8 Years.

Normal Year	1 Odd day
Leap Year	2 Odd day

8 Years (6 Ordinary Year + 2 Leap Year) = 6 + 4 = 10 odd days.
10 odd days = 10/7 = 1 week 3 odd days.
So, 14 October 2028 = Friday + 3 = Monday.
Hence, the correct answer is "Monday".
Alternate Method
Year : 2028 - 2020 = 8 years + 2 leap years = 10 years, odd days = 3
Month: July-3, Aug-3, Sep-2 = 8, odd days =1 (Oct will not be counted)
Date: 22-14 = 8, odd days = 1
total odd days = 3 + 1 + 1 = 5, odd days = 0

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Therefore, Monday + 0 = Monday

Hence, the correct answer is Monday.

Q38. Answer: (a) LBFSC

Alphabetical order with its placed value:

The pattern in the given series is:

The letters are increased to 1 positional value and the code word is arranged backwards:

PUNCH becomes IDOVQ

CRACK becomes LDBSD

BREAK becomes LBFSC

Hence the correct answer is LBFSC.

Q39. Answer: (a) Mother

Family chart:

According to the statement:

She is Rashmi's mother.

Hence, 'option 1' is the correct answer.

Q40. Answer: (b) 8

In a standard dice the faces 2 and 5 are opposite & 3 and 4 are opposite & 1 and 6 are opposite to each other.

The side opposites to each other in a dice are:

The dice is turned to it's right keeping the face '1' at the same position.

We found that '3' is to the right of '5' and '4' is to the left of '5'. Thus, 3 is opposite to 4.

Therefore 5 is opposite to 2.

The only two faces left are '1' and '6'. So 1 is opposite to 6.

So the sum of side opposite to 5 and 1 is:

Side opposite to 5 + side opposite to 1 = 6 + 2 = 8

Hence the correct answer is 8.

Q41. Answer: (c) F

From the given information:

Step 1: A is shorter than B but taller than C.

=> B > A > C

Step 2: E is taller than G but shorter than C.

=> C > E > G

Step 3: D is taller than B but shorter than F.

=> F > D > B

Combining the given information:

=> F > D > B > A > C > E > G

So, F is the tallest.

Hence the correct answer is option 3)

Q42. Answer: (d) 180

The pattern applied in the given series is:

Thus you can clearly see that there are two cases alternatively followed, first a number is multiplied by two and as we further go on it, it will be multiplied by next number by keeping a common multiple of 2 and in next case subtracted by an odd number in a succeeding manner from the previous cases.

Hence the answer will be option 4)

Q43. Answer: (d) [figure]

If you see the question properly the paper has been folded symmetrically from the middle and then again through the line.

This will divide the figure into four squares and each square will contain 3 circles along the adjacent sides, when the paper will be folded the circles should overlap each other which can be only seen in Option 4 while all the other three options are asymmetrical.

Thus the correct answer is option 4)

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Q44. Answer: (b) Only conclusion I follows.

Lets see the statements;

All pillows are beds.

No table is a bed.

Some tables are chairs.

Now we consider the given conclusions:

I. No pillow is a table: From the diagram and the given statement we can say that there is no relation between pillow and table and thus we can say that no pillow is a table. So the conclusion follow.

II. Some chairs are pillows: From the diagram and the given statement we can say that there is no relation between pillow and chairs also chairs are not related to bed so there is no possibility and thus we cannot say that some chairs are pillows. So the conclusion does not follow.

III. No bed is a chair: There is no information that relates bed with chairs and we already know chairs are not related to pillows either so there is no connection that leads us to this conclusion and therefore this conclusion does not follow.

Since only conclusion I follows.

Hence the correct answer is option 2)

Q45. Answer: (d) 55

The logic is followed here:

Sum of all numbers = Multiplication of first two numbers

First row: 5,6,19

=> 5 × 6 = 5 + 6 + 19

=> 30 = 30

Second row: 7,7,35

=> 7 × 7= 7 + 7 + 35

=> 49 = 49

Third row: 8,9,?

=> 8 × 9 = 8 + 9 + ?

=> 72 = 17 + ?

=> ? = 55

Here, the correct answer is 55.

Alternate Method The applied logic is:

In a given row the first two numbers are multiplied and subtracted with the third number which will give the obtained number thus as we go on to the next row the obtained value increases by three in each case, thus following the same logic,

First row: 5,6,19

5 × 6 - 19 = 11

30 - 19 = 11

Second row:7,7,35

7 × 7 - 35 = 14

49 - 35 = 14

That is (11+3=14, FROM FIRST ROW)

Third row:8,9,?

8 × 9 - ?= (14 + 3)

72 - ? = 17

55 = Answer

Hence the correct answer is option 4)

Q46. Answer: (b) [figure]

In the given series:

The pattern changes in rows and columns alternatively.

• In rows, the top row shift to middle, middle row shifts to bottom and bottom row shifts to top.

• In columns, the right column sifts to left, left shifts to middle and middle shifts to right.

So the next step will be:

Now we consider the given options:

Option 1) The arrangement of rows are wrong.
Option 2)) The pattern matches completely.
Option 3) The arrangement of rows and columns are wrong.
Option 4) The arrangement of rows are wrong.
Hence the correct answer is option 2)

Q47. Answer: (b) 151

From the given information:
M denotes '−', N denotes '÷', O denotes '×' and P denotes '+'We substitute the values and solve the equation using BODMAS rule:
(16 O 7) P 124 M 92 P (86 N 43) O 18 M 29 = ?
(16 × 7) + 124 - 92 + (86 ÷ 43) × 18 - 29 = ?
112 + 124 - 92 + 2 × 18 - 29 = ?
112 + 124 - 92 + 36 - 29 = ?
272 - 92 - 29 = ?
151 = Answer
Hence the correct answer is option 2)

Q48. Answer: (c) 401

The pattern followed here is:
Coded word = (Positional value of 1st letter) × (Positional value of 2nd letter) + 2
• In AN → 16
• Positional value of A and N = 1 and 14
• Hence, coded word = (1 × 14) + 2 = 14 + 2 = 16
• In NO → 212
• Positional value of N and O = 14 and 15
• Hence, coded word = (14 × 15) + 2 = 210 + 2 = 212
• Similarly, US → ?
• Positional value of U and S = 21 and 19
• Hence, coded word = (21 × 19) + 2 = 399 + 2 = 401
Hence, Option 3) is the correct answer.

Q49. Answer: (c) EDB

According to the English alphabet and their positional values:
The pattern followed in the given series is:
The alphabet are decreased to 5 positional values.
Hence the correct answer is option 3)

Q50. Answer: (b) 96

The logic followed here is:
Hence, option 2) is the correct answer.

Q51. Answer: (b) 5040

Given:
45% voted for A, 35% voted for B and the remaining 20% voted for C.
30% of the votes polled for A and 20% of the votes polled for B were later deemed invalid,
A got 882 more valid votes than B
Calculations:
According to the question,
Let the total votes be 'x'
882 = (Valid votes of A) - (Valid votes of B)
=> 882 = (70% of 45% of 90% of x) - (80% of 35% of 90% of x)
=> 882 = (x × 90 × 10 × 5)/1000000 (7 × 9 - 8 × 7)
=> 882 = (4500x)/1000000 × (63 - 56)
=> 882 = (45x)/10000 × (7)

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=> x = (882 × 10000)/(7 × 45)
=> x = 14 × 2000 = 28000 votes
Now, valid votes did C recieve
Votes of C = 20% of 90% of valid votes
=> Votes of C = 20% × 90% × 28000
=> Votes of C = 0.20 × 0.90 × 28000
=> Votes of C = 0.20 × 25200 = 5040 votes
Therefore Valid votes of C is 5040.

Q52. Answer: (b) 7.5°

Given:
Cos 2A = sin 75°
Concept used:
Cos θ = Sin (90 - θ)
Calculations:
According to the question,
Cos 2A = Sin 75°
=> Sin (90°- 2A) = Sin (75°)
Removing Sin From LHS and RHS
=> 90° - 2A = 75°
=> 2A = 90° - 75°
=> 2A = 15°
=> A = 15/2 = 7.5°
Therefore The smallest positive value of A is 7.5°.

Q53. Answer: (a) 98 π cm³

Given:
Radius of the base (R) = 5 cm
Radius of the top (r) = 3 cm
Height (H) of frustum = 6 cm
Formula used:
Volume of Frustum (V) = 1/3 πH (R^2 + Rr + r^2)
Calculations:
According to the question,
Volume of Frustum = 1/3 π × 6 × [(5)2 + (5 × 3) + (3)2]
=> V = π × 2 × [25 + 15 + 9]
=> V = π × 2 × [49] = 98π cm^3
Therefore The volume of frustum is 98π cm3.

Q54. Answer: (c) 115.5 cm^2

Given:
Radius (r) of the hemisphere = 3.5 cm
Formula used:
Total surface area of a closed hemisphere = 3πr^2
Calculations:
According to the question,
TSA = 3π$(3.5)^2$
=> TSA = 3 × 22/7 × 12.25
=> TSA = 808.5/7 = 115.5 cm^2
Therefore The total surface area of a closed hemisphere is 115.5 cm2.

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Q55. Answer: (a) 44000

Given:

The table below gives the numbers (in thousand) of different types of geysers sold by a company in six consecutive years.

Year	Types				
A	B	C	D	E	
2007	75	122	103	98	95
2008	100	102	103	112	102
2009	105	108	112	109	108
2010	100	189	123	102	122
2011	95	123	102	124	124
2012	85	145	134	134	145

Calculations:

According to the question,

The number of type B geysers sold in 2010 = 189000 units

The number of type B geysers sold in 2012 = 145000 units

The difference in the number of type B geysers sold in 2010 and 2012

=> 189000 - 145000 = 44000 units

Therefore The difference in the number of type B geysers sold in 2010 and 2012 is 44000 units.

Q56. Answer: (a) 150

Shortcut Trick

Relative speed of the policeman = 10.5 − 8 = 2.5 km/h.

Distance covered in 60 min (1 hour) = 2.5 km = 2500 m.

Distance covered in 12 minutes = 2500 × (12 ÷ 60) = 500 m.

Remaining distance between them = 650 − 500 = 150 m.

Therefore The correct answer is 150 m.

Alternate Method

Given:

Initial distance = 650 m

Speed of thief (v_t) = 8 km/h

Speed of policeman (v_p) = 10.5 km/h

Time (t) = 12 minutes

Formula Used:

Relative Speed (Same direction) = v_p − v_t

Distance = Speed × Time

Calculations:

=> Relative speed = 10.5 − 8 = 2.5 km/h

=> Converting speed to m/min: 2.5 × (1000 ÷ 60) = 125/3 m/min

=> Distance reduced in 12 min = (125 ÷ 3) × 12

=> Distance reduced = 125 × 4 = 500 m

=> Distance between them after 12 minutes = Initial Distance − Distance reduced

=> Final distance = 650 − 500 = 150 m

Therefore The correct answer is 150 m.

Additional Information

Relative Speed in Same Direction

When two objects move in the same direction, the effective speed is the difference: Speed = v1 − v2.

Speed Conversion

To convert km/h to m/s, multiply by 5/18. To convert km/h to m/min, multiply by 50/3.

Time, Speed, and Distance

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Distance = Speed × Time. Always ensure all variables are in consistent units before calculation.

Q57. Answer: (c) Rs. 18,050

Given:

Actual price of phone = Rs. 20000

Sunday discount = Rs. 1000

Credit card discount = 5%

Concept used:

Percentage = Lower value/Upper value × 100

Calculations:

According to the question,

Price of Phone on sunday = Actual Price - Sunday discount = 20000 - 1000 = 19000

Price of Phone on sunday with credit card

=> Price (1 - Discount%)

=> 19000 (1 - 0.05)

=> 19000 × 0.95 = Rs. 18050

Therefore The price of phone on sunday with credit card on discount will be Rs. 18050.

Q58. Answer: (b) Increase by 7.25%

Given:

The price of a tablet is first increased by = 10%

The price of a tablet is then decreased by = 2.5%

Concept used:

Overall discount = (A + B) - (AB/100)

Calculations:

According to the question,

DIscount = (10 - 2.5) - (10 × 2.5)/100

=> D = (7.5) - (25/100)

=> D = (7.5) - (0.25) = 7.25%

Therefore The net percentage change in the final price of the tablet is increased by 7.25%.

Q59. Answer: (b) (√2 + √3 - √5) √6

Given:

(√2 + √3 + √5)

Calculations:

The expression that is multiplied with an irrational expression to obtain a rational number is called the "rationalising factor".

For rationalization, we need to multiply the given equation by the given options. If we get a real number by multiplying it then we can choose it as the correct option.

(√2 + √3 + √5)(√2 + √3 - √5) √6

=> (2 + √6 - √10 + √6 + 3 - √15 + √10 + √15 - 5)√6

=> (2√6)√6 = 12

Here, 12 is rational number

Therefore The rationalising factor of (√2 + √3 + √5) is (√2 + √3 - √5)√6.

Q60. Answer: (a) 12

Given:

16 : 24 :: 8 : ?

Calculations:

Let the fourth proportion be x

16: 24 :: 8: x

=> 16/24 = 8/x

=> x = 8 × 24/16

=> x = 24/2 = 12

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Therefore The fourth proportion is 12.

Q61. Answer: (d) 9 cm

Given:

The volume of a cone = 507 π cm3.

Radius (r) of cone = 13 cm

Formula used:

Volume of cone = 1/3 $\pi r^2 h$

Where, r = radius

h = Height

Calculations:

According to the question,

Volume of cone = 1/3 × π × $(13)^2$ × h

=> 507 π = (1/3) × π × 169 × h

=> h = (507 × 3)/169

=> h = 1521/169 = 9 cm

Therefore The height of the cone is 9 cm.

Q62. Answer: (a) 155°

Given:

angle RPS = 25°

angle S = angle R = 90° [Tangent of a circle is perpendicular to the Radius]

Concept used:

Sum of all the angles of quadrilateral = 360°

Calculations:

According to the question,

in quadrilateral OSPR,

=> angle P + angle S + angle O + angle R = 360°

=> 25° + 90° + angle O + 90° = 360°

=> angle ROS = 360° - 205° = 155°

Therefore The value of angle ROS is 155°.

Q63. Answer: (b) 29 17/27 %

Given:

The table shows quanity of various food items used by a restaurant during four months of a year (in kg).

Food Item	June	July	August	September
Rice	180	200	240	300
Wheat	420	400	380	350
Sugar	200	210	230	240
Pulses	250	310	320	280
Vegetables	300	320	390	370

Calculations:

According to the question,

The quantity of wheat used in the month of July = 400 kg

The total quantity of food items used in June = 180 + 420 + 200 + 250 + 300 = 1350 kg

Now percentage

=> (The quantity of wheat used in the month of July)/(the total quantity of food items used in June) × 100

=> (400)/(1350) × 100

=> 0.2962 × 100 = 29.62% or 29 17/27 %

Therefore The quantity of wheat used in the month of July is 29.62% or 29 17/27 % of the total quantity of food items used in June.

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Q64. Answer: (b) 9.375%

Shortcut Trick

Use the Ratio Method for multi-factor Profit and Loss problems.

Price Ratio (CP : SP) → 100 : 105 = 20 : 21

Weight Ratio (Actual : Claimed) → 960 : 1000 = 24 : 25

Final Ratio (CP : SP) = (20 × 24) : (21 × 25) = 480 : 525 = 32 : 35

Profit % = (3 ÷ 32) × 100 = 9.375%

Therefore The correct answer is 9.375%.

Alternate Method

Given:

Claimed Profit Percentage = 5%

Claimed Weight = 1000 g

Actual Weight = 960 g

Let the Cost Price (CP) of 1 g be Rs. 1.

=> CP of 1000 g = Rs. 1000

=> Claimed SP = Rs. 1000 + 5% of Rs. 1000 = Rs. 1050

=> Actual Weight sold = 960 g

=> Actual CP for Subir = Rs. 960

=> Actual Profit = SP − Actual CP = 1050 − 960 = Rs. 90

=> Actual Profit % = (Profit ÷ Actual CP) × 100

=> Actual Profit % = (90 ÷ 960) × 100

=> Actual Profit % = (3 ÷ 32) × 100 = 9.375%

Therefore The correct answer is 9.375%.

Additional Information

Dishonest Dealer Formula

Profit % = [(True Value − False Value) ÷ False Value] × 100. This is used when only weight is manipulated.

Effective Profit with Price Hike

Net Profit % = [(100 + g1) × (True Weight ÷ False Weight) − 100], where g1 is the claimed profit percentage.

Successive Percentage Application

When multiple factors like price hike and weight cheating occur, the net effect is calculated as a product of their respective multipliers.

Q65. Answer: (d) 2

Shortcut Trick

By the Remainder Theorem, if a polynomial f(x) is divided by (ax + b), the remainder is f(−b/a).

Here, dividing by (3x + 2) means we substitute x = −2/3 into f(x).

$f(-2/3) = 15(-8/27) - 14(4/9) - 4(-2/3) + 10$

$f(-2/3) = -40/9 - 56/9 + 24/9 + 90/9 = 18/9 = 2$

Therefore The correct answer is 2.

Alternate Method

Given:

Polynomial $f(x) = 15x^3 - 14x^2 - 4x + 10$

Divisor = 3x + 2

Formula Used:

Remainder Theorem: If f(x) is divided by ax + b, the remainder is f(−b/a).

Calculations:

=> Let 3x + 2 = 0

=> 3x = −2

=> x = −2/3

=> Substitute x = −2/3 in f(x) to find the remainder:

=> Remainder = $15(-2/3)^3 - 14(-2/3)^2 - 4(-2/3) + 10$

=> Remainder = $15(-8/27) - 14(4/9) + 8/3 + 10$

=> Remainder = −40/9 − 56/9 + 24/9 + 90/9
=> Remainder = (−40 − 56 + 24 + 90) / 9
=> Remainder = 18 / 9
=> Remainder = 2
Therefore The correct answer is 2.
Additional Information
Remainder Theorem
When a polynomial p(x) is divided by a linear polynomial (x − a), the remainder is equal to p(a).
Factor Theorem
A polynomial p(x) has a factor (x − a) if and only if p(a) = 0. This is a special case of the remainder theorem.
Polynomial Division
Dividend = Divisor × Quotient + Remainder, where the degree of the Remainder is strictly less than the degree of the Divisor.

Q66. Answer: (b) 42 years

Given:
The average present age of four members of a family is 27 years
Average increases by 3 years when one of their relatives joins them
Concept used:
Average value = (Sum of all the values)/Total no. values)
Calculations:
Let the age of relative be 'x'
According to the question,
Average age = [(4 × 27) + x]/5
=> 30 = (108 + x)/5
=> 108 + x = 150
=> x = 150 - 108 = 42 years
Therefore The age of the relative is 42 years.
Shortcut Trick
Average increases by 3 years when one of their relatives
joins them and common average = 27
Total member = 5
so, extra age = 5 × 3 = 15
new relative age = 27 +15 = 42

Q67. Answer: (d) 85.50%

Given:
Marks distribution = Internal tests (30%) + Assignments (30%) + External exams (40%) = 100%
Student Scored = 90% of internal test + 95% of Assignments + 75% of external exam
Concept used:
Percentage = (Given value/Total value) × 100
Calculations:
According to the question,
Total percentage (P_T) student acquired = 90% of internal test + 95% of Assignments + 75% of external exam
=> PT = 90% of 30 + 95% of 30 + 75% of 40
=> PT = 90% × 30 + 95% × 30 + 75% × 40
=> PT = 0.90 × 30 + 0.95 × 30 + 0.75 × 40
=> PT = 27% + 28.5% + 30%
=> PT = 85.50%
Therefore The overall grade of the student is 85.50%.

Q68. Answer: (d) 62480

Given:
Total spending of the country = Rs. 15,62,000

Concept used:
Percentage = (Given value/Total value) × 100
Calculations:
According to the question,
Money spent on District C = 14% of total money
=> District C = 14% of 1562000
=> District C = 14/100 × 1562000
=> District C = 14 × 15620 = Rs. 218680
Money spent on District C = 18% of total money
=> District E = 18% of 1562000
=> District E = 18/100 × 1562000
=> District E = 18 × 15620 = Rs. 281160
Now difference between money spent of district C and district E
=> (Money spent on District E) - (Money spent on District C)
=> (281160) - (218680) = Rs. 62480
Therefore Rs. 62480 is spent on District C than on District E.

Q69. Answer: (d) 966000

Given:
9832 - 172 = ?
Formula used:
$a^2 - b^2 = (a + b)(a - b)$
Calculations:
(983)2 - (17)2
=> (983 + 17)(983 - 17)
=> 1000 × 966 = 966000
Therefore 9832 - 172 is 966000.

Q70. Answer: (d) 9 days

Shortcut Trick
The remaining work can be completed by 30 men in (24 − 12) = 12 days.
After 10 more men join, total men working = 30 + 10 = 40.
Applying the M1 × D1 = M2 × D2 rule for the remaining work:
30 × 12 = 40 × D2
D2 = 360 ÷ 40 = 9 days.
Therefore The correct answer is 9 days.
Alternate Method
Given:
Initial number of men = 30
Total time to complete the work = 24 days
Number of days worked initially = 12 days
Number of new men joined = 10

Person	Days	Total Work	Efficiency
30 Men	24	720	30

Calculations:
=> Let the efficiency of 1 man be 1 unit/day.
=> Total work = 30 × 24 = 720 units.
=> Work done in 12 days by 30 men = 30 × 12 = 360 units.
=> Remaining work = 720 − 360 = 360 units.
=> Total men working after 12 days = 30 + 10 = 40 men.
=> Total efficiency of 40 men = 40 units/day.

=> Time required for remaining work = Remaining work ÷ Total efficiency

=> Time required = 360 ÷ 40 = 9 days.

Therefore The correct answer is 9 days.

Additional Information

Chain Rule (MDH Concept)

Used to relate Men (M), Days (D), Hours (H) and Work (W) across two scenarios: (M1 × D1 × H1) ÷ W1 = (M2 × D2 × H2) ÷ W2.

Efficiency Concept

Efficiency is inversely proportional to the time taken. If A is twice as efficient as B, then A takes half the time B takes to finish the same piece of work.

Work and Wages

Wages are always distributed in direct proportion to the total work done by each person, or in the ratio of their efficiencies if they work for the exact same number of days.

Q71. Answer: (a) Rs. 240

Given:

Marked Price = Rs. 8000

First Discount = 35%

Successive discounts on the bill = 20% and 15%

Formula used:

S.P = [(100- Discount%) /100] × M.P

In case of successive discounts, equivalent discount% = a + b - (ab/100)

Where, a = First discount percentage, b = Second discount percentage

Calculation:

According to the first condition,

=> S.P1 = [(100 - 35)/100] × 8000

=> S.P1 = 65/100 × 8000

=> S.P1 = 0.65 × 8000 = Rs. 5200

According to the second condition,

Equivalent discount = 20 + 15 - (20 × 15/100)

Equivalent discount = (35 - 3)%

Equivalent discount = 32%

=> S.P2 = [(100 - 32)/100] × 8000

=> S.P2 = [68/100] × 8000

=> S.P2 = 0.68 × 8000 = Rs. 5440

Now the difference between the First condition and second condition = Rs. 5440 - Rs. 5200 = Rs. 240

Therefore The difference between the First and second discounts is Rs. 240.

Shortcut Trick

Fraction method :-

Condition (1)

=> D% = 35 % =(-7)/20 (Where 20 is MRP, SP = 20 - 7=13)

=> As per the question,

=> 20(unit) = 8000, 13(unit) = 5200 ....(1)

Condition (2)

D	MP	SP
20% =(-1/5)	5	4
15% =(-3/20)	20	17

=> MRP =5 × 20 =100(unit) SP = 4 × 17 = 68(unit)

=> 100 (unit) = 8000 so 68(unit) = 5440...(2)

Difference = 5440 - 5200 = 240

Q72. Answer: (c) 999960

Calculations:

The largest 6-digit number = 999999

Dividing 999999 by 52 gives the quotient as 19230 and 39 as the remainder,

Now the largest 6-digit number divisible by 52

=> 999999 = 19230 × 52 + 39 (remainder 39)

=> 999999 - 39 = 999960

Therefore The largest 6-digit number divisible by 52 is 999960.

Q73. Answer: (b) 38.3 km/h

Shortcut Trick

For three equal distances (100 km each), the Average Speed is the harmonic mean of the speeds.

Average Speed = 3 × s1 × s2 × s3 / (s1s2 + s2s3 + s3s1)

=> Average Speed = 3 × 30 × 40 × 50 / (30 × 40 + 40 × 50 + 50 × 30)

=> Average Speed = 180000 / (1200 + 2000 + 1500) = 180000 / 4700

=> Average Speed = 1800 / 47 ≈ 38.297 km/h

Therefore The correct option is B.

Alternate Method

Given:

Distance 1 (d1) = 100 km, Speed 1 (s1) = 30 km/h

Distance 2 (d2) = 100 km, Speed 2 (s2) = 40 km/h

Distance 3 (d3) = 100 km, Speed 3 (s3) = 50 km/h

Formula Used:

Average Speed = Total Distance / Total Time

Time = Distance / Speed

100 km

30 km/h

100 km

40 km/h

100 km

50 km/h

Total Distance = 300 km

Calculations:

=> Total Distance = 100 + 100 + 100 = 300 km

=> Time for 1st part (t1) = 100 / 30 = 10/3 hours

=> Time for 2nd part (t2) = 100 / 40 = 2.5 hours

=> Time for 3rd part (t3) = 100 / 50 = 2 hours

=> Total Time = 10/3 + 2.5 + 2 = 10/3 + 4.5

=> Total Time = 10/3 + 9/2 = (20 + 27) / 6 = 47 / 6 hours

=> Average Speed = 300 / (47 / 6) = (300 × 6) / 47

=> Average Speed = 1800 / 47 ≈ 38.297 km/h

=> Average Speed ≈ 38.3 km/h

Therefore The correct option is B.

Additional Information

Average Speed for Two Equal Distances

If a journey is divided into two equal distances with speeds x and y, Average Speed = 2xy / (x + y).

Harmonic Mean Property

When distances are equal, the average speed is the harmonic mean of individual speeds; when time intervals are equal, it is the arithmetic mean.

Speed Conversion

To convert speed from km/h to m/s, multiply by 5/18. To convert m/s to km/h, multiply by 18/5.

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Q74. Answer: (d) 1,40,62,500

Confusion Point - Growth Rate = 4% per decade Not per year

Given:

Population in 2030 = 15818400

Growth Rate = 4% per decade

Concept used:

Amount (A) = Principle (1 + R%)^T

Calculations:

According to the question,

A = P(1 + 4%)3

=> 15818400 = P(1 + 0.04)3

=> $P(1.04)^3 = 15818400$

=> P = 15818400/ 1.124864

=> P = 14062500

Therefore The population of the country in 2000 was 14062500.

Q75. Answer: (b) 143

Given: The simplified value of the equation is 143.

1980 ÷ 9 + [-77 + {-1980 + (1/4 of 7920)}]

Concept used:

BODMAS rule

Calculations:

1980 ÷ 9 + [-77 + {-1980 + (1/4 × 7920)}]

=> 1980 ÷ 9 + [-77 + {-1980 + (7920/4)}]

=> 1980 ÷ 9+ [-77 + {-1980 + (1980)}]

=> 1980 ÷ 9+ [-77 + {-1980 + 1980}]

=> 1980 ÷ 9 + [-77 + {0}]

=> 220 + [-77]

=> 220 - 77 = 143

Therefore The simplified value of the equation is 143.

Q76. Answer: (d) nadaswaram

The correct answer is Nadaswaram.

Key Points

• Sheik Chinna Moulana popularly known as Sheik was a legendary nadhaswaram player in the Carnatic tradition.

• He was awarded the Madras Music Academy's Sangeetha Kalanidhi in 1998.

• He was awarded the title of "Nadhaswara Acharya" by Vassar College, New York.

• He was a Hon. Professor in the Raja's Government Music College of Thiruvaiyaru, Thanjavur District, Tamil Nadu.

Additional Information

• Sitar was invented by Amir Khusru, an artist. He is the one who popularized Hindustani Classical Sangeet and made the first attempts at modifying Veena to design the present-day Sitar.

• Uppalapu Srinivas was an Indian mandolin player in Carnatic classical music and composer.

• Pandit Gopal Krishan was an exponent of vichitra veena, an ancient Indian instrument.

Q77. Answer: (b) 2010

The correct answer is 2010.

Key Points

• The XIX Commonwealth Games (CWG-2010) were successfully hosted in Delhi from 3 to 14 October 2010.

• These Games represented the largest ever multi-sport event held in India.

• The most successful event for India in these games is shooting.

• This was the first time India has hosted the Games and only the second time the event has been held in Asia (Kuala Lumpur in 1998 was the first).

Additional Information

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• The 2015 National Games, also known as the 35th National Games of India, was a national multi-sport event held in the Indian state of Kerala.

• The members of India's field hockey team jump joy after beating the Spanish team 4-3 to win the gold medal in the Moscow Olympics on July 26, 1980.

Q78. Answer: (d) Vitamin A, B and D

The correct answer is Vitamin A, B, and D.

Key Points

• Vitamin A, B, and, D is present in the Milk.

• Cow's milk is fortified with vitamin D.

• Milk is an excellent source of calcium and other essential nutrients.

• Whole milk contains some vitamin A.

• Vitamin A is required for good vision, immune health, and normal growth and development of body tissues.

Additional Information

• Vitamin C is not present in milk. Vitamin C is present in citrus fruits, such as oranges and green vegetables.

• Vitamin K is found in the following foods: Green leafy vegetables, such as kale, spinach, turnip greens, collards, Swiss chard, mustard greens, parsley, romaine, and green leaf lettuce.

• Foods for Calcium and Vitamin D

• Spinach.

• Kale

• Okra.

• Collards.

• Soybeans.

• Vitamin E is found in the following foods: Vegetable oils (such as wheat germ, sunflower, safflower, corn, and soybean oils) Nuts.

Q79. Answer: (b) Ministry of Culture

The correct answer is the Ministry of Culture.

Key Points

• The Ministry of Defence and the Ministry of Culture had announced the launch of 'Vande Bharatam-Nritya Utsav, an All-India dance competition as part of Azadi Ka Amrit Mahotsav to commemorate 75 years of independence of India.

• The prime objective of this competition was to select the top dancing talent from across the country and provide them with the opportunity to perform during the Republic day parade 2022.

• It was the first time that dance groups performed in the Republic day parade were chosen based on all India Level competitions.

Additional Information

• Participants can perform in of the four dance categories, namely, Classical, Folk, Tribal, and Fusion/Contemporary and ultimately 480 dancers will be eventually selected as winners.

• The Vande Bharatam competition began at the district level on November 17.

• Top 480 dancers were declared winners from the Grand Finale and they will perform in the Republic Day Parade to be held at Rajpath, New Delhi.

Q80. Answer: (c) Statutory Liquidity Ratio

The correct answer is the Statutory Liquidity Ratio.

Key Points

• The SLR is fixed by the RBI. CRR (Cash Reserve Ratio) and SLR have been the traditional tools of the central bank's monetary policy to control credit growth, the flow of liquidity, and inflation in the economy.

• The SLR was prescribed by Section 24 (2A) of the Banking Regulation Act, 1949.

• During inflation, RBI raises SLR to control the bank credit.

• SLR is a monetary policy tool that the Reserve Bank of India (RBI) uses to assess the liquidity at the banks' disposal.

Additional Information

• Reserve Bank of India is the authority to control inflation through monetary policies which it does by increasing:

• Bank rates,

• Repo rates,

• Cash reserve ratio,

• Buying dollars,

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• Regulating money supply

• Availability of credit.

Q81. Answer: (a) Dadra and Nagar Haveli and Daman and Diu

The correct answer is Dadra and Nagar Haveli and Daman and Diu.

Key Points

• In November 2021, under the Atma Nirbhar Bharat Abhiyan, the Central Government approved the SPV that would privatize the electricity distribution business in Dadra and Nagar Haveli and Daman and Diu.

• The government of India had announced 'AtmaNirbhar Bharat Abhiyan', to make India self-reliant through structural reforms.

• One of the key measures planned was to reform the power distribution and retail supply in UTs through privatization of the power distribution utilities, for leveraging private sector efficiency in electricity distribution.

• The privatization process will fulfil the desired outcomes of better services to over 1.45 lakh consumers of the Union Territory operational improvements and functional efficiencies in distribution and provide a model for emulation by other utilities across the country.

Additional Information

• Atmanirbhar Bharat which translates to 'self-reliant India', is a phrase the Prime Minister of India Narendra Modi and his government used and popularised in relation to the country's economic development plans

• The aim is to make the country and its citizens independent and self-reliant in all senses. He further outlined five pillars of Aatma Nirbhar Bharat – Economy, Infrastructure, System, Vibrant Demography, and Demand.

Q82. Answer: (a) West Bengal

The correct answer is West Bengal.

Key Points

• West Bengal has registered the second highest number of crimes against (IPC and SLL).

• The latest NCRB report showed that in 2020, West Bengal recorded more than 51 violent crime incidents for every one lakh person

Additional Information

• Uttar Pradesh: The per capita crime rate of UP is 7.4.

• According to the National Crime Records Bureau, this ratio means that Uttar Pradesh has the highest number of crimes, and thus, the state is unsafe to travel alone.

• Delhi had the highest crime rate (incidence of crime per 100,000 population) among all States of India.

• The crime rate in Bihar in 2019 was recorded at 164.8 which witnessed a 5.1% decline in 2020 to 159.7.

Q83. Answer: (b) Dr. Verghese Kurien

The correct answer is Dr Verghese Kurien.

Key Points

• The Man Who Made the Elephant Dance, by Dr Verghese Kurien, is the authorized audio-autobiography of the Father of the White Revolution.

• Verghese Kurien, known as the "Father of the White Revolution" in India,

• His Nickname was Milkman of India.

• Dr. Verghese Kurien was awarded by Padma Vibhushan.

• White Revolution was one of the biggest dairy development movements in India in 1970.

Additional Information

• Once Upon a Life: Burnt Curry and Bloody Rags: a Memoir is the autobiography of Temsula Ao.

Q84. Answer: (d) Birju Maharaj

The correct answer is Birju Maharaj.

Key Points

• Pandit Birju Maharaj is the direct descendant of Ishwari Prasad, who is said to be the first known Kathak teacher.

• Considered to be a child prodigy, he was invited to teach Kathak at Sangeet Bharati in Delhi at the young age of thirteen.

• Sri Ishwari Prasadji was a Mishra Brahmin in Handia Tehsil of Allahabad. It is said that Lord Krishna appeared in his dream and asked him to re-establish Kathak Nritya (Natwari Nritya).

• Birju Maharaj is one of the most renowned Kathak gurus of India.

• Kathak, a north Indian dance form, is a mixture of dance and drama which is usually performed by both men and women.

Additional Information

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• Pandit Shambhu Maharaj was a Guru of the Lucknow Gharana (school) of the Indian classical dance form, Kathak.

• Gopi Krishna was a renowned Kathak dancer and choreographer. Gopi Krishna was an Indian dancer and actor.

• Pandit Bajinath Prasad also known as Pandit Lachhu Maharaj (1901–1978) was an Indian classical dancer and choreographer of Kathak dance.

Q85. Answer: (d) Golf

The correct answer is Golf.

Key Points

• Golf is a cross-country game in which a player strikes a small ball with various clubs from a series of starting points (teeing grounds) into a series of holes on a course.

• Different Golf Scoring Formats:

• Stroke Play: In this type of play, you are to take note of the strokes you've committed in each hole using the scorecard. At the end of the game, the player with the lowest strokes wins.

• Match Play: The difference is that a winner is defined in each hole – that is by comparing your number of strokes against your opponent's. The player with fewer strokes wins the hole. At the end of the game, the player who won most of the holes wins.

• Stableford system: In this scoring format, which was named Dr. Stableford, what is taken into account to decide a winner is how well a player plays against his own handicap. This is done by converting under, even, and over strokes into points against par adjustment based on handicap.

Additional Information

• Hockey is a term used to denote various types of both summer and winter team sports which originated on either an outdoor field, sheet of ice, or dry floor such as in a gymnasium.

• Baseball is a bat-and-ball sport played between two teams of nine players each, taking turns batting and fielding.

• The game is in play when a player on the fielding team, called the pitcher, throws a ball that a player on the batting team tries to hit with a bat.

• Squash is a racket and ball sport played by two or four players in a four-walled court with a small, hollow rubber ball.

• The players alternate in striking the ball with their rackets onto the playable surfaces of the four walls of the court.

Q86. Answer: (a) Manipuri

The correct answer is Manipuri.

Key Points

• Manipuri is one of the six major classical dances of India.

• Nirmala Mehta was the Exponent of Manipuri classical Dance form.

• This Dance is also known as Jogai.

• The different Manipuri classical dance forms are Tal Rasak, Danda Rasak, and Mandal Rasak.

• Some of the most famous performers of this dance are Guru Bipin Sinha, Nirmala Mehta, and Savita Mehta.

Additional Information

• Mayadhar Raut, is an exponent of the Indian classical dance form Odissi.

• The modern form of Sattriya is attributed to the 15th-century Sankaradeva, who systematized the dance using the ancient texts and introduced drama and expressive dancing (nritta and nritya) as a form of a community religious art for emotional devotion to Krishna.

• Pandit Birju Maharaj was an exponent of Kathak dance in India. He belonged to the Lucknow "Kalka-Bindadin" Gharana of Kathak.

Q87. Answer: (c) Lesser Himalayas

The correct answer is Lesser Himalayas.

Key Points

• The Lower Himalayan Range is also called the Lesser Himalayas or Himachal.

• The Himachal range also parallels the lower Shivalik or Churia range (Outer Himalaya) to the south.

• The Pir Panjal is the largest range of the Lesser Himalayas.

• Lesser Himalayas, also called Inner Himalayas, Lower Himalayas, or Middle Himalayas, middle section of the vast Himalayan mountain system in south-central Asia.

• Lesser Himalayas or the Lower Himalayas with a height of 12000 to 15000 feet.

• The range extends its arms from southeast Pakistan through the states of Jammu and Kashmir, Himachal Pradesh, western Uttar Pradesh, and Nepal.

Additional Information

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• The Himalayas consist of three parallel ranges, the Greater Himalayas known as the Himadri.
• the Lesser Himalayas are called the Himachal, and the Shivalik hills, which comprise the foothills.
• The Shiwalik is the southernmost range.

Q88. Answer: (a) Uttar Pradesh

The correct answer is Uttar Pradesh.

Key Points

• Annu Rani is an Indian javelin thrower from Bahadurpur, Meerut, Uttar Pradesh.
• She was the 1st Indian to reach the finals of the women's javelin throw event in the World Athletics Championships, Doha.
• Annu had qualified for the 2020 Tokyo Olympics through world rankings after missing out on the Olympic Qualification mark.

Additional Information

• Nishad Kumar of Una, Himachal Pradesh, won the silver medal for India in the high jump in the Tokyo Paralympics 2020.
• Vivek Sagar, from Madhya Pardesh who was part of the Indian squad that won the bronze medal at the Tokyo Olympics,

Q89. Answer: (d) Priyanka Chopra

The correct answer is Priyanka Chopra.

Key Points

• Unfinished is a 2021 memoir by Indian actress Priyanka Chopra.
• Described as a "collection of personal essays, stories, and observations".
• The book chronicles the main moments in Chopra's life and her twenty-year-long career, such as working as an actress-producer and UNICEF Goodwill Ambassador and her marriage to the American singer and actor Nick Jonas.
• After facing a one-month postponement, it was issued by Penguin Random House on 9 February 2021 and reached The New York Times Best Seller list in the United States and topped the Nielsen BookScan bestseller list in India.

Additional Information

• Waheeda Rehman (born 3 February 1938) is an Indian actress and dancer.
• Deepika Padukone is an Indian actress who works in Hindi films. One of the highest-paid actresses in India, her accolades include three Filmfare Awards.
• Asha Parekh (born 2 October 1942) is an Indian actress, film director, and producer who appeared in many commercially successful films throughout her career.

Q90. Answer: (c) Part XIV

The correct answer is Part XIV.

Key Points

• The provisions regarding the composition of UPSC, appointment, and moving of its limbs, and the powers and functions of UPSC are provided in Part XIV of the Indian Constitution under Article 315 to Article 323.
• Constitutional status. Articles 315 to 323 of Part XIV of the constitution, titled Services Under the Union and the States, provide for a Public Service Commission for the Union and for each state.
• Accordingly, as per Art. 315, at the Union level, Union Public Service Commission is envisaged by it.
• The Government of India Act, 1935 provided for the establishment of a Public Service Commission for each Province.

Additional Information

• Part X Formation of an autonomous State comprising certain tribal areas in Assam and creation of local Legislature or Council of Ministers or both forthwith.
• Part VIII_by law, every Union territory shall be administered by the President acting, to such extent as he thinks fit, through an administrator to be appointed by him with such appointment as he may specify.
• Part XVI_ declaring that the security of India or any part of the territory thereof is menaced by war or by external aggression or by armed rebellion may be made before the actual occurrence of war or of any such hostility or rebellion, if the President is satisfied that there is imminent danger forthwith.

Q91. Answer: (d) In food chain, energy level increases from lower trophic level to higher trophic level.

The correct answer is In the food chain, the energy level increases from a lower trophic level to a higher trophic level.

Key Points

• A food chain describes how energy and nutrients move through an ecosystem.
• At the basic level, there are plants that produce the energy, then it moves up to higher-level organisms like herbivores.
• After that when carnivores eat the herbivores, energy is transferred from one to the other.
• There are 2 types of food chains, namely the Grazing food chain and Detritus food chain.

• Food chains are important because they show the intricate relationships in ecosystems.

Additional Information

• All of the interconnected and overlapping food chains in an ecosystem make up a food web. Organisms in food chains are grouped into categories called trophic levels.

• The relationship between organisms is interlinked by a food chain. Food web: It is the link between different food chains and presents what species eat in an ecological system.

• Energy flow is the flow of energy through living things within an ecosystem.

Q92. Answer: (c) The number of the given shell from the nucleus

Correct answer is The number of the given shell from the nucleus.

Key Points

• $2n^2$ denotes the maximum number of electrons that a shell can accommodate. n refers to the principal quantum number of the shell.

• The elements have different shells in which the electrons are present and revolve around the nucleus.

• 2n square rule is used in electronic configuration. there are K,L ,M and N shells. firstly taking n=1 we get that in the K shell only two electrons can be placed.

• Taking n=2 we get that in the L shell 8 electrons can be filled and so on.

• Additional Information

• The number of electrons in a neutral atom is equal to the number of protons.

• The number of protons in an atom is called its atomic number (Z). This number is very important because it is unique for atoms of a given element.

• For neutral atoms, the number of valence electrons is equal to the atom's main group number.

• The main group number for an element can be found from its column on the periodic table. For example, carbon is in group 4 and has 4 valence electrons.

• Oxygen is in group 6 and has 6 valence electrons.

Q93. Answer: (b) Dr. Vempati Chinna Satyam

The correct answer is Dr. Vempati Chinna Satyam.

Key Points

• At the age of 18, Chinna Satyam left his village and reportedly went by foot to Madras.

• He established the Kuchipudi Art Academy in Chennai in 1963.

• At Kuchipudi Art Academy, he composed and choreographed more than 180 solo items and 15 dance dramas.

• Additional Information

• Vedantam Satyanarayana Sarma (1935–2012), popularly known as Satyam, was an Indian classical dancer and choreographer, examined by many as one of the main exponents of the classical dance form of Kuchipudi.

• Narasimhachari and Vasanthalakshmi are well-known and highly respected performers, teachers, and choreographers of the Bharathanatyam and Kuchipudi styles of Indian classical dance.

• Venkata Ramana has been teaching Kuchipudi Classical Dance for more than 18 years in ... guru Sri Pasumarthi Venu Gopala Krishna Sarma for about 5 years.

Q94. Answer: (d) Sania Mirza

The correct answer is Sania Mirza.

Key Points

• Ace Against Odds is the 2016 biography of the Indian professional tennis player Sania Mirza.

• The book is her official biography chronicling her journey to becoming one of India and the world's top female tennis players.

• Titled, 'Ace Against Odds,' the book has been penned by Mirza with her father Imran Mirza.

• The book was released at the hands of Shah Rukh Khan at a function in Hyderabad in July 2016.

Additional Information

• Unbreakable: An Autobiography is the autobiography of the unbreakable Mary Kom who never let anything come between her and her quest for winning.

• The book “The Test of My Life: From Cricket to Cancer and Back” is an autobiography of Yuvraj Singh.

• Playing It My Way is the autobiography of former Indian cricketer Sachin Tendulkar. It was launched on 5 November 2014 in Mumbai.

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Q95. Answer: (b) 1.5 V

The correct answer is 1.5 V.

Key Points

• AA batteries measure at 1.5V and work well for devices that require a somewhat high current draw but are not in constant use.

• For example, an alkaline battery, like a AA or AAA, has a nominal voltage of about 1.5V, while the voltage of a LiPo battery will normally be around 3.7V. The key word here is 'nominal', as the actual voltage of the battery will fluctuate turn on how much charge it has left.

• A classic nominal voltage, most AA, AAA, C, & D cells are 1.5 volts, and many household and handheld devices have been built to use that voltage.

• The first zinc-carbon dry cells naturally produced 1.5 volts of energy and have remained the standard ever since.

Additional Information

• An electric battery is a source of electric power consisting of one or more electrochemical cells with external connections for powering electrical devices.

• When a battery is supplying power, its positive terminal is the cathode and its negative terminal is the anode.

• The terminal marked negative is the source of electrons that will flow through an external electric circuit to the positive terminal.

Q96. Answer: (b) 7^(th) April

The correct answer is 7th April.

Key Points

• The Assembly decided to celebrate 7 April of each year, with effect from 1950, as World Health Day.

• World Health Day is held to mark WHO's founding and is seen as an opportunity by the organization to draw worldwide attention to a subject of major importance to global health each year.

• On World Health Day 2022, under the theme “Our planet, our health”.

• It is an enterprise taken by the World Health Organization (WHO) to raise awareness about the overall health and well-being of people across the world. Each year, there is a specific theme for World Health Day.

Additional Information

• World environment day is celebrated on June 5 every year and this day is commemorated to raise awareness about environmental issues, increasingly deteriorating conditions, climate change, etc.

• "Universal Social Protection to End Child Labour" The 2022 theme of the world day calls for increased investment in social protection systems and schemes to establish solid social protection floors and protect children from child labour.

Q97. Answer: (b) Swelling in the neck

The correct answer is Swelling in the neck.

Key Points

• Symptoms of iodine deficiency and related thyroid disorders can include Swelling of thyroid glands in the neck.

• A visible lump (goitre) on your neck.

• Treatment: It is usually treated by eating more foods containing iodine, using iodised salt, and taking iodine supplements.

• Precautions: You can use small amounts of iodized salt and eat packaged bread to increase the amount of iodine in your diet.

Additional Information

• Cavities, also called tooth decay or caries, are caused by a combination of factors, including bacteria in your mouth, frequent snacking, sipping sugary drinks, and not cleaning your teeth well.

• Night blindness (nyctalopia) is your inability to see well at night or in poor light such as in a restaurant or movie theatre.

• The main cause of bleeding gums is the buildup of plaque at the gum line.

Q98. Answer: (a) KV Mahadevan

The correct answer is KV Mahadevan.

Key Points

• The first recipient of the award was K. V. Mahadevan who was honoured for his composition in the Tamil film Kandan Karunai (1967).

• Krishnankoil Venkadachalam Mahadevan (14 March 1918 – 21 June 2001) was an Indian composer, singer-songwriter, music producer, and musician known for his works in Tamil cinema, Telugu cinema, Kannada cinema, and Malayalam cinema.

• His music assistant known as Puhalendi in the Telugu film industry was with him like a life partner throughout his life, though scored few films on his own.

Additional Information

• Vidyasagar (born 2 March 1963) is an Indian composer, musician, and singer who works predominantly in the Tamil, Malayalam,

and Telugu film industries.

• Devanesan Chokkalingam, also known as Deva, is a south Indian film composer and singer who predominantly works in Tamil Cinema.

Q99. Answer: (c) 1941

The correct answer is 1941.

Key Points

• Pandit Bhimsen Joshi first performed live in 1941 at the age of 19.

• His debut album, containing a few devotional songs in Marathi and Hindi, was released by HMV the next year in 1942.

• Later Joshi moved to Mumbai in 1943 and worked as a radio artist.

• His performance at a concert in 1946 to celebrate his guru Sawai Gandharva's 60th birthday won him accolades both from the audience and his guru.

Additional Information

• His first music teacher was Channappa of Kurtakoti, who had trained with the veteran singer Inayat Khan.

• Joshi heard a recording of Abdul Karim Khan's Thumri "Piya Bin Nahi Aavat Chain" in Raga Jhinjhoti when he was a child, which inspired him to become a musician.

• During this time, he also heard Pandit Sawai Gandharva at a performance in Kundgol. In 1933, the 11-year-old Joshi left Dharwad for Bijapur to find a master's and learn music.

Q100. Answer: (c) Yakshagana

The correct answer is Yakshagana.

Key Points

• Chittani Ramachandra Hegde is the first artist performing Yakshagana, to receive the prestigious Padmashri award and he dedicated the award to "Yakshagana".

• Chittani Ramachandra Hegde (1 January 1933 – 3 October 2017) was a Yakshagana artist from Honnavara, Uttara Kannada, Karnataka.

• He was the first Yakshagana artist to be awarded the Padma Shri Award by the Government of India.

Additional Information

• Sattriya or Sattriya Nritya is a major Indian Classical dance.

• Kuchipudi is indigenous to the state of Andhra Pradesh and differs from the other five classical styles by the inclusion of singing.

• Kathakali originated in the state of Kerala between the 16th and 17th centuries, around the same time as Shakespeare.

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