SSC CHSL Tier-1 2021: Official Paper (Held On : 31 May 2022 Shift 1) (Previous Year Paper)

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

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ENGLISH LANGUAGE

Q1. Parts of the given sentence have been given as options. One of them contains a grammatical error. Select the option that has the error.

He continued staring at the elephant, as if he had not see one before.

(a) as if he had not see
(b) staring at the elephant
(c) one before
(d) He continued

Q2. Select the most appropriate option that can substitute the underlined segment in the given sentence.

A visit _____ Ladhak is a must these days.

(a) from
(b) to
(c) for
(d) at

Q3. Select the most appropriate option that can substitute the underlined segment in the given sentence.

The NCERT was set up ahead by the government to assist and advise the Central and State Governments on policies and programmes for qualitative improvement in school education.

(a) was set off
(b) was set forward
(c) was set over
(d) was set up

Q4. Select the most appropriate option fill in the blank.

I have been studying this course _____ two years now.

(a) through
(b) since
(c) for
(d) almost

Q5. Select the most appropriate synonym of the given word.

Incite

(a) Pacify
(b) Tighten
(c) Inflame
(d) Quote

Q6. Select the option that expresses the given sentence in active voice

This match is being watched today by more than thirty-three million people worldwide.

(a) This match is watching more than thirty-three million people worldwide today.
(b) More than thirty-three million people worldwide have been watching this match today.
(c) More than thirty-three million people worldwide are watching this match today.
(d) Today more than thirty-three million people worldwide have watched this match.

Q7. Select the most appropriate meaning of the given idiom.

Sum and substance

(a) Essence
(b) Difficulty
(c) Deliberation
(d) Assessment

Q8. 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. The current concern is that it is rising day by day due to various resources of pollutants.

B. It has been there in different forms since a long time, even before human evolution, such as volcanic eruptions, wildfire which led to various photochemical reactions in the atmosphere.

C. Pollution has become a very common yet serious issue in today's world.

D. And, one of the main pollutants are humans and man-made machines.

(a) CBAD
(b) ABCD
(c) CDBA
(d) CADB

Q9. Select the most appropriate meaning of the given idiom.

Under duress

(a) Under pressure
(b) Under shelter
(c) Under confusions
(d) Under support

Q10. Select the most appropriate meaning of the given idiom.

Apple of one's eye

(a) Very dear
(b) Very harmful
(c) Very useful
(d) Very far

Q11. Select the option that can be used as a one-word substitute for the given group of words.

Direct and outspoken

(a) Forthright
(b) Fortitude
(c) Formica
(d) Fortify

Q12. From among the words given in bold, select the INCORRECTLY spelt word in the following sentence.

Now I will not shoot a sloth bear wantanly but unfortunately for the poor beast.

(a) unfortunately
(b) sloth
(c) beast
(d) wantanly

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

Pretence

(a) Reality
(b) Impotence
(c) Arrogance
(d) Intolerance

Q14. Select the INCORRECTLY spelt word.

(a) Repitetion
(b) Portray
(c) Procedure
(d) Separate

Q15. Spot the error in the given sentence and select the correct sentence from the options given.

Is Savita is joining us for lunch today?

(a) Is Savita joining us for lunch today?
(b) Savita is joined us for lunch today?
(c) Savita joining us for lunch today?
(d) Are Savita joining us for lunch today?

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

Precocious

(a) Liberal
(b) Gentle
(c) Backward
(d) Lenient

Q17. Complete the collocation.

I met my professor yesterday and we _____ a long conversation about books and work.

(a) did
(b) spoke
(c) had
(d) talked

Q18. Select the most appropriate synonym of the given word.

Fleck

(a) Spot
(b) Neglect
(c) View
(d) Fault

Q19. Select the option that expresses the given sentence in passive voice.

The finance minister will announce the budget.

(a) The budget will have announced by the finance minister.
(b) The budget were announced by the finance minister.
(c) The budget are announced by the finance minister.
(d) The budget will be announced by the finance minister.

Q20. Select the option that can be used as a one-word substitute for the given group of words.

Allowing or assisting to discover

(a) Conceptual
(b) Ineducative
(c) Unempirical
(d) Heuristic

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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.

The most urgent areas of attention and immediate action are nutrition, health and education of children, whose well-being (1)_____ the health of the society and caring outlook of the polity. Since the causes of malnutrition of children are many, like exploding population, (2)____ against the female child, weak and suffering mothers, the remedy calls for 'care of the mother and care by mother', (3)____, an effective control over population explosion. Ignorance on what food should be taken is another (4)____ factor that results in malnutrition among women and children. The implementation of various schemes to fight the (5)_____ of malnutrition and undernourishment of children requires planning, co-ordination and monitoring by high-powered bodies right down to the village level.

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

(a) reflects
(b) thinks
(c) groups
(d) efforts

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

(a) bias
(b) advanced
(c) neutral
(d) law

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

(a) Regardless
(b) Against
(c) Instead
(d) Besides

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

(a) advisory
(b) explanatory
(c) contradictory
(d) contributory

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

(a) menace
(b) solace
(c) balance
(d) embrace

GENERAL INTELLIGENCE

Q26. Which of the following numbers will replace the question mark (?) in the given series?

176, 218, 228, 291, 280, 364, 332, ?

(a) 435
(b) 416
(c) 437
(d) 384

Q27. The second number in the given number-pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) is/are followed in all the number-pairs, except one. Find that odd number-pair.

(a) 48 : 7
(b) 25 : 8
(c) 15 : 4

(d) 8 : 3

Q28. Which letter cluster will replace the question mark(?) to complete the given series?

EMXB, ?, YGRV, VDOS, SALP

(a) BYJU
(b) JBUY
(c) YUBJ
(d) BJUY

Q29. Select the correct combination of mathematical signs to replace the * signs and to balance the given equation.

24 * 6 * 51 * 31 * 3

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

Q30. Pointing to a woman, Rohan said- "Her daughter's son is the brother of my wife's daughter." How is that lady related to Rohan?

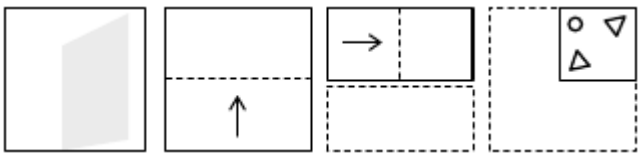
(a) Sister
(b) Mother in law
(c) Mother
(d) Daughter

Q31. 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.

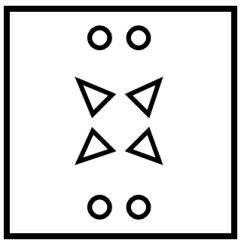
5 : 35 : : 9 : ? : : 14 : 224

(a) 99
(b) 113
(c) 107
(d) 87

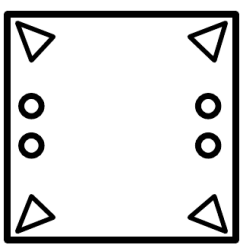
Q32. A paper is folded and cut as shown below. How will it appear when unfolded?



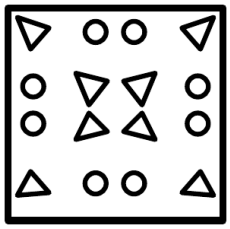
(a)



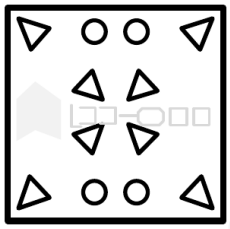
(b)



(c)



(d)



Q33. Select the option that represents the correct order of the given words as they would appear in an English dictionary.

1. Knight
2. Kitchen
3. Kinship
4. Kinetic
5. Kind

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

Q34. 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 : 71 : :13 : 209 : : 16 : ?

(a) 291
(b) 317
(c) 305
(d) 309

Q35. In a certain code language, “NOPE” is coded as “100”, and “EGG” is coded as “38”. How will “LAP” be coded in that language?

(a) 27
(b) 31
(c) 29
(d) 58

Q36. In a certain code language, 'STATE' is written as '38401405' and 'EXILE' is written as 5489245'. How will ‘ARENA’ be written in that language?

(a) 21810142
(b) 1365281
(c) 21181014
(d) 1365141

Q37. 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.

BIRTHDAY : HDAYBIRT : : CHILDREN : DRENCHIL : : PROGRESS : ?

(a) SSERGORP

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(b) RPOGERSS
(c) GRESSPRO
(d) RESSPROG

Q38. 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 huts are houses.

No villa is a house.

Some buildings are villas.

Conclusions:

I. Some buildings are huts.

II. Some houses are buildings.

III. No hut is a villa.

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

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

5, 16, 28, 36, 71, 90, 234, 342, ?

(a) 739
(b) 793
(c) 893
(d) 839

Q40. Select the correct combination of mathematical signs to sequentially replace the * signs and to balance the given equation.

16 * 2 * 4 * 8 * 10 * 34

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

Q41. Select the correct mirror image of the given combination when the mirror is placed at XY as shown.



(a)



(b)



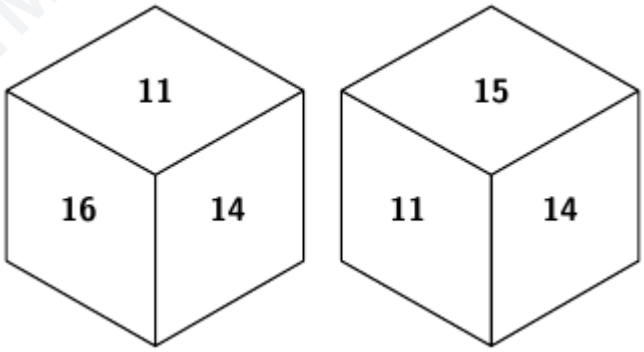
(c)



(d)



Q42. Two different positions of the same dice are shown, the six faces of which are numbered from 11 to 16. Select the number that will be on the face opposite to the one showing '15'.



(a) 13
(b) 12
(c) 14
(d) 16

Q43. Select the option that represents the letters that, when sequentially placed from left to right in the blanks below, will complete the letter series.

t u _ _ x _ _ _ u u_ _ x y _ _ _ v x x _

(a) u v x y u v x t u u y
(b) u v x x t v x t u u y
(c) u v x y t v x t u u y
(d) u v x y t v x t u u u

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

104 * 26 * 13 * 7 * 18 * 77

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

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Q45. In a certain code language, ‘THREE’ is written as ‘UISFF’, and ‘SEVEN’ is written as ‘TFWFO’. How will ‘EIGHT’ be written in that language?

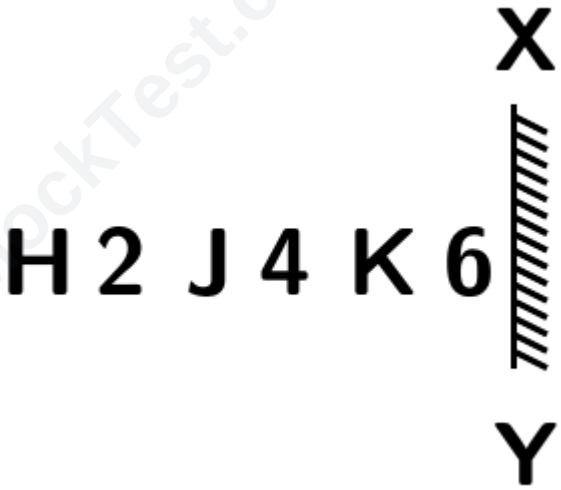
(a) JFHIU
(b) FJHIU
(c) FJHUI
(d) JFIHU

Q46. Which of the following numbers will replace the question mark (?) in the given series?

58, 117, 237, 479, 965, ?

(a) 1939
(b) 1930
(c) 1929
(d) 1940

Q47. Select the correct mirror image of the given combination when the mirror is placed at XY as shown.



(a)



(b)



(c)

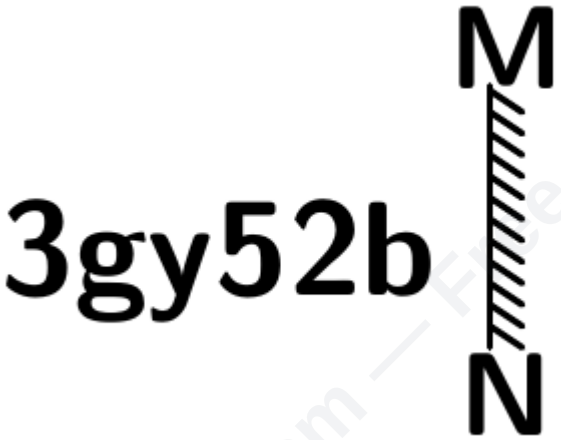


(d)



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Q48. Select the correct mirror image of the given combination when the mirror is placed at MN as shown below.



(a)



(b)



(c)

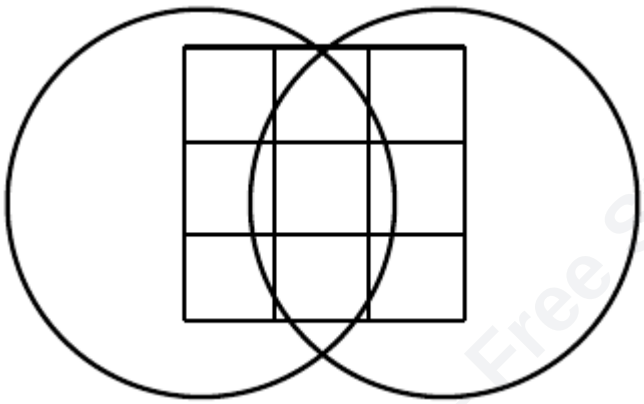


(d)



Q49. How many squares are there in the given figure?

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

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

12, 32, 123, 609, ?

(a) 3654
(b) 3054
(c) 3045
(d) 3647

QUANTITATIVE APTITUDE

Q51. A train crosses a 400 m-long platform in 50 seconds. It crosses another 600 m-long platform in 60 seconds. What are the length and the speed of the train?

(a) 600 m; 72 km/h
(b) 550 m; 75 km/h
(c) 500 m; 70 km/h
(d) 650 m; 74 km/h

Q52. If $a/b + b/a = -1$, $a \neq 0$, $b \neq 0$, then the value of $6(a^3 - b^3)$ is:

(a) 6
(b) 3
(c) 0
(d) 1

Q53. The curved surface area of a hemisphere is 1232 cm2. Its radius will be: (Take $\pi = 22/7$)

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

Q54. The population of a city increases 5% annually in compounded manner (yearly compounding). The present population of this city is 93051. The population of this city 2 years ago was:

(a) 84400
(b) 84000
(c) 88000
(d) 88400

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Q55. Asha and Bhuvan can do a piece of work in 6 days and 9 days, respectively. They work on alternate days, starting with Asha on the first day. In how many days will the work be completed?

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

Q56. The ratio of measures of the angles of a triangle is given as 3 : 4 : 8. What is the measure of the smallest of the three angles?

(a) 33°
(b) 39°
(c) 30°
(d) 36°

Q57. The score in Maths of 50 students of a class is given in the following table. Calculate the mean score.

Interval	Frequencies
0-10	2
10-20	11
20-30	28
30-40	6
40-50	3

(a) 28.8
(b) 22.2
(c) 24.4
(d) 26.6

Q58. If sin x - 3cos x = √3 cos x, then the value of cot x is _____.

(a) 3 - √3
(b) 3 + √3
(c) √3
(d) (3 - √3)/6

Q59. The marked price of a refrigerator is Rs. 60,000. A shopkeeper offers a flat discount of Rs. 12,000 on full cash payment. Further he offers an extra discount of 5% on the marked price to his regular customers. How much does a regular customer have to pay on full cash for the refrigerator?

(a) Rs. 45,000
(b) Rs. 48,000
(c) Rs. 44,000
(d) Rs. 47,000

Q60. Soham's initial expenditure and savings were in the ratio 5 : 1. His income increases by 25%, while his savings increase by 20%. If Soham's current expenditure is Rs. 4,347, what was his initial income?

(a) Rs. 4,130
(b) Rs. 4,140
(c) Rs. 4,150
(d) Rs. 4,160

Q61. A 25% profit is made when a discount of 25% is given on the marked price of an item. When the discount is 35%, what will be the profit? (Give your answer correct to the nearest whole number.)

(a) 13%
(b) 8%
(c) 9%

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(d) 11%

Q62. What is the remainder when 8127 is divided by 8?

(a) 7
(b) 5
(c) 4
(d) 6

Q63. What is the curved surface area of a cylinder with a base radius of 2 cm and a height of 6 cm? (Use π = 3.14)

(a) 73 cm^2
(b) 88.24 cm2
(c) 81 cm2
(d) 75.36 cm2

Q64. The table below provides information about the number of registered voters and the percentage of registered voters who voted in a particular election in three different centers, P, Q, and R.

Centre	Total No. of registered voters	Percentage of people who voted (out of the total no. of registered voters)
P	3200	90
Q	1850	80
R	2500	66

What percentage of the total number of voters registered at center Q cast invalid votes, if the number of invalid votes casted at centre Q was 25% of all votes cast at the centre?

(a) 25%
(b) 40%
(c) 20%
(d) 75%

Q65. If p^4 = 4354 - 1/(p^4) then the value of $p^3 – 1/(p^3)$ can be:

(a) 536
(b) 436
(c) 416
(d) 516

Q66. Sunila drove her car at an average speed of 45 km/h for the first 75 km of a trip, and then at an average speed of 70 km/h for the remaining 45 km of the trip. If she made no stops during the trip, what was Sunila's average speed (in km/h) for the entire trip?

(a) 52
(b) 51 3/7
(c) 51
(d) 51 93/97

Q67. 8 + [16 – {7 + 4 – (9 of 3 + 6 – 4 × 7)}] =?

(a) 21
(b) 16
(c) 18
(d) 23

Q68. If a : b = 2 : 3 and b : c = 6 : 8, then find a : b : c.

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

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Q69. In what ratio must a grocer mix two varieties of pulses costing Rs. 15 and Rs. 20 per kg, respectively, so as to get a mixture worth Rs. 18 per kg?

(a) 3 : 2
(b) 3 : 4
(c) 2 : 3
(d) 2 : 5

Q70. The average of the first 43 natural numbers is:

(a) 33
(b) 44
(c) 43
(d) 22

Q71. If $x + y = 14$, then the value of $x^3 + y^3 + 42xy$ is:

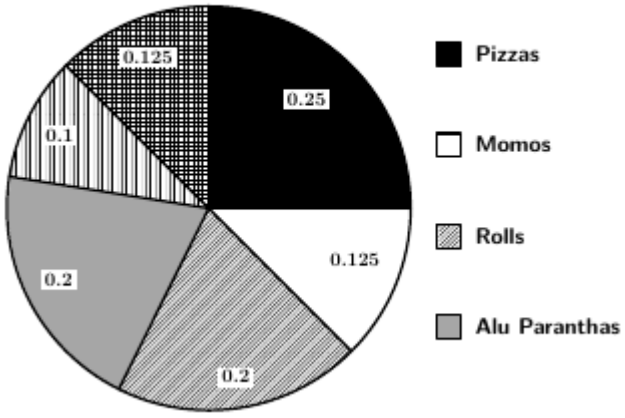
(a) 2744
(b) 2644
(c) 2742
(d) 2714

Q72. If the length and the breadth of a rectangle are increased by 15% and 20%, respectively, then by how much percent the area of the rectangle will increase?

(a) 32%
(b) 38%
(c) 36%
(d) 48%

Q73. If it is known that 35 students mentioned momos as their preferred food, on the basis of the information provided in the following pie chart, calculate the number of students who mentioned both rolls and Alu Parathas as their preferred food.

Pie chart giving fraction of students preferring different types of food



(a) 116
(b) 108
(c) 112
(d) 120

Q74. The sum of the length, breadth, and depth of a cuboid is 23 cm, and its diagonal is $5\sqrt{7}$ cm. Its surface area is:

(a) 288 cm^2
(b) 354 cm2
(c) 372 cm2
(d) 222 cm2

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Q75. A pen was sold for Rs. 28.75 at a profit of 15%. If it was sold for Rs. 25.75, then what would have been the percentage of profit?

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

GENERAL AWARENESS

Q76. In animal cells, which membrane-bound cell organelles are generally smaller and help to separate waste products?

(a) Plastids
(b) Cytosols
(c) Golgi apparatus
(d) Vacuoles

Q77. The Men's Hockey World Cup 2023 will be organised by which of the following states?

(a) Uttar Pradesh
(b) Odisha
(c) Punjab
(d) Maharashtra

Q78. Agumbe, a biodiversity-rich region that receives 7640 mm of average annual rainfall in South India, is located in which state?

(a) Andhra Pradesh
(b) Karnataka
(c) Tamil Nadu
(d) Kerala

Q79. What resource is found in sedimentary rocks on the western and eastern flanks of the peninsula in Gujarat?

(a) Gold
(b) Bauxite
(c) Manganese
(d) Petroleum

Q80. ‘Sense and Sensibility’, ‘Mansfield Park’ and ‘Emma’ are written by whom among the following authors?

(a) Jane Austen
(b) Thomas Hardy
(c) George Eliot
(d) D H Lawrence

Q81. The 8^(th) T20 Women’s Cricket World Cup will be organised by _____.

(a) India
(b) England
(c) South Africa
(d) Australia

Q82. Famous musician Shakoor Khan was associated with which of the following musical instruments?

(a) Sitar
(b) Sarod
(c) Sarangi
(d) Santoor

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Q83. A candidate seeking election as Vice-President is required to make a security deposit of _____.

(a) Rs. 25,000
(b) Rs. 20,000
(c) Rs. 30,000
(d) Rs. 15,000

Q84. Which ecologist's research provided revolutionary new insights into how energy and nutrients move through the ecosystems?

(a) Arthur Tansley
(b) Ernst Haeckel
(c) Charles Elton
(d) Raymond L Lindeman

Q85. Metabolic reactions in our body are carried out by:

(a) proteins
(b) carbohydrates
(c) lipids
(d) salts

Q86. Famous classical dancer Vidyagauri Adkar is recognised with _____ Gharana of Indian classical dance form.

(a) Alwar
(b) Gwalior
(c) Banaras
(d) Jaipur

Q87. Identify the component that is unique only to prokaryotes.

(a) Nucleus
(b) Chromosomes
(c) Mesosome
(d) Nuclear membrane

Q88. Tansen, one of the well-known musicians of medieval India, was in the court of which of the following Mughal emperors?

(a) Akbar
(b) Aurangzeb
(c) Babur
(d) Humayun

Q89. Which journalist's autobiography is titled the 'Devil's Advocate: The untold story'?

(a) Vir Sanghvi
(b) Pranoy Roy
(c) Vinod Dua
(d) Karan Thapar

Q90. In January 2022, which Indian state received a loan of Rs. 1,000 crores for the protection of social services from the World Bank?

(a) Maharashtra
(b) Odisha
(c) West Bengal
(d) Assam

Q91. Ustad Alla Rakha is famous for his contribution to playing which of the following instruments in Indian Music?

(a) Veena
(b) Ghatam
(c) Tabla

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(d) Santoor

Q92. Guru Shyama Charan Pati, was conferred the Padma Shri for his contributions to mainly which of the following dance forms?

(a) Kathi nacha
(b) Santali dance
(c) Chhau nritya
(d) Jhumair

Q93. The famous novel 'Pinjar' based on riots during the Indian independence, was written by _____.

(a) Divya Prakash Dubey
(b) Mohan Rakesh
(c) Amrita Pritam
(d) Manav Kaul

Q94. Identify the plant that shows adaptation through leaves that are reduced to spines.

(a) Mimosa
(b) Rose
(c) Opuntia
(d) Hibiscus

Q95. Which of the following Hindustani musical Gharanas is the oldest among all the Khayal Gayaki styles?

(a) Agra Gharana
(b) Kirana Gharana
(c) Atrauli Gharana
(d) Gwalior Gharana

Q96. Which of the following organisations won the Etienne Glichitch Award in May 2021?

(a) Board of Control for Cricket in India
(b) All India Football Federation
(c) Badminton Association of India
(d) Hockey India

Q97. The title of Asthana Narthaki ('Resident Dancer') was bestowed upon by the Tirumala Tirupathi Devasthanam temple to whom among the following prominent dancer?

(a) Maya Rao
(b) Yamini Krishnamurthy
(c) Sitara Devi
(d) Uma Sharma

Q98. Banks issue KCC to support credit in agriculture. KCC stands for _____.

(a) Kisan Credit Certificate
(b) Krishi Credit Card
(c) Krishi Credit Certificate
(d) Kisan Credit Card

Q99. Who among the following Indian Cricketers (Female) won Major Dhyan Chand Khel Ratna Award 2021?

(a) Deepti Sharma
(b) Shafali Verma
(c) Poonam Yadav
(d) Mithali Raj

Q100. Who among the following is the recipient of Sangeet Natak Akademi for Bharatanatyam?

(a) Vijay Shankar
(b) Anita Ratnam
(c) Geeta Chandran

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(d) AB Bala Kondala Rao

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (a) as if he had not see

The erroneous part is 'as if he had not see'.

Key Points

• The given sentence is grammatically incorrect.

• Here, 'as if he had not seen' should be used instead of 'as if he had not see'.

• In the given sentence the second clause is in the past perfect tense. As we know that after 'had' third form of the verb is used. So, the verb 'see', the first form should be changed into the third form, ' seen'.

• Example: I had finished the work.

• Thus, the correct answer is Option 1.

Correct Sentence: He continued staring at the elephant, as if he had not seen one before.

Q2. Answer: (b) to

The solution is in Hindi. Read it online.

Q3. Answer: (d) was set up

The solution is in Hindi. Read it online.

Q4. Answer: (c) for

The correct answer is 'for'.

Key Points

• The most appropriate preposition for the given blank is 'for'.

• The word 'for' is used to show a period of time, in the past, present, or future.

• The given sentence is in the present perfect continuous tense.

• Example: I have been reading War and Peace for a month now.

The word 'since' is used to refer to a time (an action that began in the past and is still continuing). It is used as a preposition.

• So, 'for' should be used here.

• Thus, the correct answer is Option 3.

Correct Sentence: I have been studying this course for two years now.

Additional Information

• Through - Incorrect here because "through" indicates movement within a time period, e.g., "through the night," but not for indicating a duration of time.

• Since - Incorrect because "since" specifies the starting point of an action or event, e.g., "since 2022," not a duration.

• Almost - Incorrect because "almost" implies an approximation but does not specify the exact time frame, e.g., "almost two years."

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Q5. Answer: (c) Inflame

The solution is in Hindi. Read it online.

Q6. Answer: (c) More than thirty-three million people worldwide are watching this match today.

The correct answer is 'More than thirty-three million people worldwide are watching this match today.'

Key Points

• The given sentence is in the Passive Voice. As per the given question, we have to change the sentence into Active Form.

• The given sentence is an example of 'present continuous'.

• The structure of these kinds of sentences is:

• Subject(Objective Case)+ is/am/are + being + V3+ by + Object (subjective case). (Passive Voice)

• Subject + is/am/are + V1+ing + Object. (Active Voice)

• Example:

• He is riding a bike.

• A bike is being ridden by him.

• Here, in the given question 'are being watched' will be changed into 'are watching'.

• 'By' will be removed.

• Therefore, as per the above-mentioned points, we find that the correct answer is Option 3.

Correct Sentence: More than thirty-three million people worldwide are watching this match today.

Q7. Answer: (a) Essence

The solution is in Hindi. Read it online.

Q8. Answer: (a) CBAD

The correct answer is 'CBAD'.

Key Points

• The given question is an example of a Para Jumble.

• We know that the first statement of a para jumbled question is usually an independent general statement, a noun, a universal fact, starting off a story, starting of an incident or an event, or it starts with 'most' or 'once'.

• Sentence C will be the first statement because it is a general independent statement and it is talking about the common problem of pollution.

• Sentence B will be the next sentence as it further tells us about the time this problem is prevalent.

• Sentence A will be the next sentence because it is telling us about the current situation of pollution.

• Lastly, Sentence D will be used.

• Thus, the sequence becomes:

• C: Pollution has become a very common yet serious issue in today’s world.

• B: It has been there in different forms since a long time, even before human evolution, such as volcanic eruptions, wildfire which led to various photochemical reactions in the atmosphere.

• A: The current concern is that it is rising day by day due to various resources of pollutants.

• D: And, one of the main pollutants are humans and man-made machines.

• Therefore, as per the above-mentioned points, we find that the correct answer is Option 1.

Correct Sequence: Pollution has become a very common yet serious issue in today’s world. It has been there in different forms since a long time, even before human evolution, such as volcanic eruptions, wildfire which led to various photochemical reactions in the atmosphere. The current concern is that it is rising day by day due to various resources of pollutants. And, one of the main pollutants are humans and man-made machines.

Q9. Answer: (a) Under pressure

The solution is in Hindi. Read it online.

Q10. Answer: (a) Very dear

The solution is in Hindi. Read it online.

Q11. Answer: (a) Forthright

The solution is in Hindi. Read it online.

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Q12. Answer: (d) wantanly

The solution is in Hindi. Read it online.

Q13. Answer: (a) Reality

The solution is in Hindi. Read it online.

Q14. Answer: (a) Repitetion

The solution is in Hindi. Read it online.

Q15. Answer: (a) Is Savita joining us for lunch today?

The correct answer is 'Is Savita joining us for lunch today?'.

Key Points

• Among the given sentence the correctly structured sentence is 'Is Savita joining us for lunch today?'.

• This sentence is an example of present continuous tense which starts with a helping verb.

• The structure of these kinds of sentences is: Is/Am/Are + Subject + V1 + ing + Object?

• Example: Are we going to the picnic this evening?

• Thus, the correct answer is Option 1.

Correct Sentence: Is Savita joining us for lunch today?

Q16. Answer: (c) Backward

The solution is in Hindi. Read it online.

Q17. Answer: (c) had

The correct answer is 'had'.

Key Points

• The most appropriate word for the given blank is 'had'.

• The given sentence is in the past tense. Thus, in the underlined part a past helping verb will be used.

• We know that 'had' is the past participle of 'have'.

• Example: No more food please - I've had enough.

• We never say 'spoke a long conversation or talked a long conversation' it will make a wrong collocation. Neither do we use 'did' in an assertive sentence.

• Thus, the correct answer is Option 3.

Correct Sentence: I met my professor yesterday and we had a long conversation about books and work.

Q18. Answer: (a) Spot

The solution is in Hindi. Read it online.

Q19. Answer: (d) The budget will be announced by the finance minister.

The correct answer is 'The budget will be announced by the finance minister'.

Key Points

• The given sentence is an example of Active Voice. As per the given question, we have to change it to Passive Voice.

• The process of transformation is as follows:

• The subject of the given sentence is 'The finance minister'.

• The object of the given sentence is 'the budget'.

• Since a modal verb has been used in the active voice, therefore, the passive voice will follow the given structure:-

• Active Voice - Subject + modal verb*(will)* + V1 + Object.

• Passive Voice - Object(Subjective form) modal verb*(will)* + be + V3 Subject (Objective form).

• Here, 'will announce' is changed into 'will be annunced' because in the 'active to passive' transformation third form of the verb is used.

• Therefore, as per the above-mentioned points, we find that the correct answer is Option 4.

Correct Sentence: The budget will be announced by the finance minister.

Q20. Answer: (d) Heuristic

The solution is in Hindi. Read it online.

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Q21. Answer: (a) reflects

The solution is in Hindi. Read it online.

Q22. Answer: (a) bias

The solution is in Hindi. Read it online.

Q23. Answer: (d) Besides

The solution is in Hindi. Read it online.

Q24. Answer: (d) contributory

The solution is in Hindi. Read it online.

Q25. Answer: (a) menace

The solution is in Hindi. Read it online.

Q26. Answer: (c) 437

The pattern followed in the given series is:

Difference between two consecutive terms is an increasing multiple of 21.

Hence the correct answer is option 3)

Q27. Answer: (b) 25 : 8

The pattern followed in the given options is:

√(First term + 1) = Second term

Let's apply the pattern on the options:

Option 1) 48 : 7

√(48 + 1) = 7

√49 = 7

7 = 7

Option 2) 25 : 8

√(25 + 1) = 8

√26 = 8

5.09 ≠ 8

Option 3) 15 : 4

√(15 + 1) = 4

√16 = 4

4 = 4

Option 4) 8 : 3

√(8 + 1) = 3

√9 = 3

3 = 3

So, 25:8 is the odd one.

Hence the correct answer is option 2)

Q28. Answer: (d) BJUY

According to the English alphabets and their positional values:

The pattern followed in the given series is:

All the alphabets are decreased to 3 positional values.

Hence the correct answer is option 4)

Q29. Answer: (b) ×, −, =, ×

The given equation is :

24 * 6 * 51 * 31 * 3

We consider each option and solve the equation by using BODMAS rule:

Option 1) =, −, ×, +

24 = 6 - 51 × 31 + 3

24 = 6 - 1581 + 3
24 = 9 - 1581
24 ≠ 1572
Option 2) ×, −, =, ×
24 × 6 - 51 = 31 × 3
144 - 51 = 93
93 = 93
Option 3) −, ÷, =, +
24 - 6 ÷ 51 = 31 + 3
24 - 0.117 = 31 + 3
24 - 0.117 = 34
23.83 ≠ 34
Option 4) +, −, =, ×
24 + 6 - 51 = 31 × 3
24 + 6 - 51 = 93
30 - 51 = 91
21 ≠ 91
Hence the correct answer is option 2)

Q30. Answer: (b) Mother in law

We draw a diagram according to the table, to get the answer:
Step 1: Her daughter's son,
Step 2: brother of my wife's daughter,
Her wife's daughter is her daughter. And brother of his wife's daughter is his son.
We can see that, the woman is Rohan's mother-in-law.
Hence the correct answer is option 2)

Q31. Answer: (a) 99

The pattern followed in the given series is:
(First term + 1)²- 1 = Second term
Now we apply the pattern on the given series:
5 : 35 : : 9 : ? : : 14 : 224
(First term + 1)2 - 1 = Second term
(5 + 1)²- 1 = 35
6²- 1 = 35
36 - 1 = 35
35 = 35
5 : 35 : : 9 : ? : : 14 : 224
(First term + 1)2 - 1 = Second term
(14 + 1)2 - 1 = 224
15²- 1 = 224
225 - 1 = 224
224 = 224
5 : 35 : : 9 : ? : : 14 : 224
(First term + 1)2 - 1 = Second term
(9 + 1)2 - 1 = Answer
102 - 1 = Answer
100 - 1 = Answer
99 = Answer
Hence the correct answer is option 1)

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Q32. Answer: (d) [figure]

We unfold the paper step by step:

Now we compare the pattern with given options:

Option 1)

The pattern does not match. This option is incorrect.

Option 2)

The pattern does not match. This option is incorrect.

Option 3)

The pattern does not match. This option is incorrect.

Option 4)

The pattern matches completely.

Hence the correct answer is option 4)

Q33. Answer: (a) 5, 4, 3, 2, 1

The correct order of words according to English dictionary is:

5. Kind

4. Kinetic

3. Kinship

2. Kitchen

1. Knight

So the correct order is 5, 4, 3, 2, 1.

Hence the correct answer is option 1)

Q34. Answer: (c) 305

The pattern followed in the given series is:

First number × (First number + 3) + 1 = Second number

Let's apply the pattern on the given series:

7 : 71 : :13 : 209 : : 16 : ?

First number × (First number + 3) + 1 = Second number

7 × (7 + 3) + 1 = 71

7 × 10 + 1 = 71

70 + 1 = 71

71 = 71

7 : 71 : :13 : 209 : : 16 : ?

First number × (First number + 3) + 1 = Second number

13 × (13 + 3) + 1 = 209

13 × 16 + 1 = 209

208 + 1 = 209

209 = 209

7 : 71 : :13 : 209 : : 16 : ?

First number × (First number + 3) + 1 = Second number

16 × (16 + 3) + 1 = Answer

16 × 19 + 1 = Answer

304 + 1 = Answer

305 = Answer

Hence the correct answer is option 3)

Q35. Answer: (d) 58

According to the English alphabets and their positional values:

The pattern followed by the given codes is:

Sum of positional values of the alphabets × 2 = Code

50 × 2 = 100

19 × 2 = 38

Similarly,

29 × 2 = 58

Hence the correct answer is option 4)

Q36. Answer: (b) 1365281

Here, the alphabets and their positions are shown as below:

The logic here is: The consonants letters position number are multiplied by 2 and vowels letters position number are written as it is.

'STATE' is written as '38401405'

And,

'EXILE' is written as 5489245'

Similarly,

'ARENA' be written as '?'

Hence, the correct answer is "1365281".

Q37. Answer: (d) RESSPROG

The logic here is:

BIRTHDAY : HDAYBIRT

And,

CHILDREN : DRENCHIL

Similarly,

PROGRESS : ?

Hence, the correct answer is "RESSPROG".

Q38. Answer: (a) Only conclusion III follow.

The least possible Venn diagram is given below according to information.

I. Some buildings are huts → Does not follow→ (As, all huts are houses, some buildings are villas and no villa is house. So some buildings are huts is not definite true)

II. Some houses are buildings → Does not follow → (As there is no villa is a house and some buildings are villas. As all huts are houses and so some houses are huts. So, some houses are buildings is not definite true)

III. No hut is a villa → Follow → (As, no villa is a house and all huts are houses. So no hut is a villa is definite true)

Hence, the correct answer is "Only conclusion III follow".

Q39. Answer: (b) 793

The pattern used in the given series is:

Difference of the difference is a multiple, twice a even places and thrice at odd places.

Hence the correct answer is option 2)

Q40. Answer: (c) ÷, ×, –, +, =

BODMAS Rule:

Given: 16 * 2 * 4 * 8 * 10 * 34

First we will check options one by one as below:

1) –, +, ×, ÷, =

=> 16 - 2 + 4 × 8 ÷ 10 = 34

=> 16 - 2 + 4 × 0.8 = 34

=> 16 - 2 + 3.2 = 34

=> 19.2 - 2 = 17.2

=> 17.2 ≠ 34, this is not possible

2) ÷, ×, +, –, =

=> 16 ÷ 2 × 4 + 8 - 10 = 34

=> 8 × 4 + 8 - 10 = 34

=> 32 + 8 - 10 = 34

=> 40 - 10 = 34

=> 30 ≠ 34, this is not possible

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3) ÷, ×, –, +, =

=> 16 ÷ 2 × 4 - 8 + 10 = 34

=> 8 × 4 - 8 + 10 = 34

=> 32 - 8 + 10 = 34

=> 42 - 8 = 34

=> 34 = 34, this is possible

4) ×, ÷, –, +, =

=> 16 × 2 ÷ 4 - 8 + 10 = 34

=> 16 × 0.5 - 8 + 10 = 34

=> 8 - 8 + 10 = 34

=> 18 - 8 = 34

=> 10 ≠ 34, this is not possible

Hence, the correct answer is "Option 3".

Q41. Answer: (d) [figure]

Here, we are given the word and we need to find the mirror image of it.

First keep in mind that, in a mirror image, the first letter will be the last letter of the given word. Also, the size of the letters will not change i.e. capital letters will appear capital only.

The correct mirror image of the given combination when the mirror is placed at XY is as shown below:-

Detailed Explanation :-

• The line XY is the mirror.

• The word "

" ends with "

". So, the mirror image will start with "

" → Options 1 and 2 are eliminated.

• The letter "

" is used. So, the mirror image will be "

"→ Option 3 is eliminated.

Hence, 'Option 4' is the correct answer.

Additional Information

• In a mirror image, Left changes to rightand theright changes to leftwheretop and bottom remains the same.

• When placement of the mirror is not given, by default we will assume it is in the vertical direction.

• The starting letter word will be at last after the mirror image drawn with left changes to right and right changes to left.

Q42. Answer: (d) 16

The pattern followed here is:

We have been given two dices having common number on two faces i.e. 11 and 14.

We can see that, number 15 is opposite to number 16.

Hence, the correct answer is "16".

Q43. Answer: (c) u v x y t v x t u u y

Given: t u _ _ x _ _ _ u u_ _ x y _ _ _ v x x _

The logic here is: The repeated letters used are 'tuuvxxy'. A group of 7 letters is made.

First we will check all the options:

1) u v x y u v x t u u y → t u u v x x y - u u u v x x y - t u u v x x y

2) u v x x t v x t u u y → t u u v x x x - t u u v x x y - t u u v x x y

3) u v x y t v x t u u y → t u u v x x y - t u u v x x y - t u u v x x y

4) u v x y t v x t u u u → t u u v x x y - t u u v x x y - t u u v x x u

So, in option 3 'u v x y t v x t u u y' is repeating itself.

Hence, the missing blanks are 'u v x y t v x t u u y'.

Q44. Answer: (b) ÷, +, ×, –, =

BODMAS Rule:

Given: 104 * 26 * 13 * 7 * 18 * 77

First we will check options one by one as below:

1) ×, +, ÷, –, =

=> 104 × 26 + 13 ÷ 7 - 18 = 77

Applying BODMAS rule, we will get,

=> 104 × 26 + 1.85 - 18 = 77

=> 2704 + 1.85 - 18 = 77

=> 2687.85 ≠ 77, this is not possible

2) ÷, +, ×, –, =

=> 104 ÷ 26 + 13 × 7 - 18 = 77

Applying BODMAS rule, we will get,

=> 4 + 13 × 7 - 18 = 77

=> 4 + 91 - 18 = 77

=> 77 = 77, this is possible

3) ÷, –, ×, +, =

=> 104 ÷ 26 - 13 × 7 + 18 = 77

Applying BODMAS rule, we will get,

=> 4 - 13 × 7 + 18 = 77

=> 4 - 91 + 18 = 77

=> -69 ≠ 77, this is not possible

4) ×, +, –, ÷, =

=> 104 × 26 + 13 - 7 ÷ 18 = 77

Applying BODMAS rule, we will get,

=> 104 × 26 + 13 - 0.388 = 77

=> 2704 + 13 - 0.388 = 77

=> 2716.612 ≠ 77, this is not possible

Hence, the correct answer is "Option 2".

Q45. Answer: (b) FJHIU

Here, the alphabets and their positions are shown as below:

The logic here is:

‘THREE’ is written as ‘UISFF’

And,

‘SEVEN’ is written as ‘TFWFO’

Similarly,

‘EIGHT’ be written as '?'

Hence, the correct answer is "FJHIU".

Q46. Answer: (a) 1939

The logic here is:

Hence, the correct answer is "1939".

Q47. Answer: (d) [figure]

Here, we are given the word and we need to find the mirror image of it.

First keep in mind that, in mirror image the first letter will be the last letter of the given word. Also, the size of the letters will not change i.e. capital letters will appear capital only.

The correct mirror image of the given combination when the mirror is placed at XY is as shown below :-

Detailed Explanation :-

• The line XY is the mirror.

• The word "

" ends with "

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". So, the mirror image will start with "

" → Options 1, 2 and 3 are eliminated.

Hence, 'Option 4' is the correct answer.

Additional Information

• In a mirror image Left changes to rightand theright changes to leftwheretop and bottom remains the same.

• When placement of mirror not given, by default we will assume it in vertical direction.

• The starting letter word will be at last after the mirror image drawn with left changes to right and right changes to left.

Q48. Answer: (b) [figure]

Here, we are given the word and we need to find the mirror image of it.

First keep in mind that, in mirror image the first letter will be the last letter of the given word. Also, the size of the letters will not change i.e. capital letters will appear capital only.

The correct mirror image of the given combination when the mirror is placed at XY is as shown below :-

Detailed Explanation :-

• The line XY is the mirror.

• The word "

" ends with "

". So, the mirror image will start with "

" → Options 1, 3 and 4 are eliminated.

Hence, 'Option 2' is the correct answer.

Additional Information

• In a mirror image Left changes to rightand theright changes to leftwheretop and bottom remains the same.

• When placement of mirror not given, by default we will assume it in vertical direction.

• The starting letter word will be at last after the mirror image drawn with left changes to right and right changes to left.

Q49. Answer: (d) 14

The pattern followed here is:

First we will count all the small squares as: We get total = 9 squares

Then, we get one biggest square: Total = 1 square.

Again, we get more big squares as: Total = 4 squares

Thus, a total of 9 + 1 + 4 = 14 squares.

Hence, the correct answer is "14".

Q50. Answer: (d) 3647

The logic here is:

Hence, the correct answer is "3647".

Q51. Answer: (a) 600 m; 72 km/h

Given:

Time taken to cross 400 m long platform = 50 seconds

Time taken to cross another 600 m long platform = 60 seconds

Concept used:

Time = Distance/Speed

Calculation:

=> Let the length of a train be x m

=> Putting the values in the formula,

=> 400 +x over 50 = 600 +xover 60

=> 60(400 + x) = 50(600 + x)

=> 24000 + 60x = 30000 + 50x

=> 10x = 6000

=> x = 600 metres

=> Speed = 400 + 600 over 50 = 20m/sec

=> For converting m / sec into km / h, multiply the value with 18/5

=> So, 20 m / sec = 20× 18/5 = 72 km/h

Hence, The length and speed of the train are 600 meters and 72 km/h respectively.

Q52. Answer: (c) 0

Given:

a/b + b/a = -1, a ≠ 0, b ≠ 0

Concept Used:

$a^3 – b^3 = (a – b)(a^2 + b^2 + ab)$

Calculation:

=> a/b+b/a=-1

=> Taking LCM of the denominator,

=> $(a^2+b^2)/ab=-1$

=> $a^2+b^2=-ab$

=> $a^2+b^2+ab=0$

=> $6(a^3-b^3)=6(a-b)(a^2+b^2+ab)$

=> Putting the values in the formula,

=> $6(a^3-b^3)=6(a-b)\times 0=0$

Hence, the value of $6(a^3 – b^3)$ is 0

Q53. Answer: (b) 14 cm

Given:

Curved surface area of hemisphere = 1232 cm2

Concept Used:

)Curved surface area of hemisphere = $(2 \pi r^2$

Calculation:

=> Let the radius of hemisphere be r cm

=> Putting the values in the formula,

=> $2\pi r^2 = 1232$

=> $2 \times 22/7\ r^2 = 1232$

=> $r^2 = 1232 \times 7$over 44 = 196

=> $r = \sqrt{196} = 14$ cm

Hence, the radius of the hemisphere will be 14 cm.

Q54. Answer: (a) 84400

Shortcut Trick

Multiplying factor for a 5% increase = 100% + 5% = 105% = 21/20.

For 2 years, the population becomes $(21/20)^2$ of the original.

Population 2 years ago = Present Population × $(20/21)^2$

=> Population 2 years ago = 93051 × (400/441)

=> Population = 211 × 400 = 84400

Therefore The correct answer is 84400.

Alternate Method

Given:

Present population of the city (A) = 93051

Annual increase rate (R) = 5%

Time period (n) = 2 years

Formula Used:

$A = P(1 + R/100)^n$

Where A is the final population and P is the initial population.

P = ?2 Years Ago+5%Intermediate1 Year Ago+5%93051Present× $(21/20)^2$

Calculations:

=> $93051 = P(1 + 5/100)^2$

=> $93051 = P(1 + 1/20)^2$

=> 93051 = P(21/20)²

=> 93051 = P(441/400)

=> P = (93051 × 400) ÷ 441

=> P = 211 × 400 = 84400

Therefore The correct answer is 84400.

Additional Information

Depreciation or Decrease in Population

If the population decreases by R% annually instead of increasing, the formula becomes $A = P(1 - R/100)^n$.

Different Rates of Growth

If the population changes by R1% in the 1st year and R2% in the 2nd year, the final population is calculated as A = P(1 ± R1/100)(1 ± R2/100).

Effective Percentage Change

For successive increments of a% and b%, the effective percentage change formula is [a + b + (a × b)/100]%. For a 5% increase over 2 years, it results in an effective 10.25% net growth.

Q55. Answer: (b) 7 days

Given:

Days taken by Asha to complete the work = 6 days

Days taken by Bhuvan to complete the work = 9 days

Concept Used:

Assuming the work as LCM of 6 & 9

Calculation:

=> Let the work be 18 units.

=> Work done by Asha in one day = 18 ÷ 6 = 3 units / day

=> Work done by Bhuvan in one day = 18 ÷ 9 = 2 units / day

=> When they work together alternatively,

=> Work done in 2 days = 2 + 3 = 5 units

=> Work done in another 2 days = 5 units

=> Work done in another 2 days = 5 units

=> In this way they will complete 15 units in 6 days.

=> Then, Asha's turn will come and she will do remaining 3 units on 7^(th) day

Hence, the work will be completed in 7 days.

Shortcut Trick

	Time	Efficiency	Total work
Asha	6	3	18
Bhuvan	9	2	

Work done in 2 days = 2 + 3 = 5 units

=> 6 days. =15 unit

Then, Asha's turn will come and she will do the remaining 3 units on 7th day

Q56. Answer: (d) 36°

Given:

Ratio of the angles of a triangle = 3 : 4 : 8

Concept Used:

The sum of the angles of a triangle is 180°

Calculation:

=> Let the angles be 3x, 4x and 8x

=> According to the formula,

=> 3x + 4x + 8x = 180°

=> 15x = 180°

=> x = 12°

=> 3x is the smallest angle of three

=> 3x = 3 × 12° = 36°

Hence, measure of the smallest angle is 36°.

Q57. Answer: (c) 24.4

Given:

Total number of students = 50

Interval	Frequencies
0-10	2
10-20	11
20-30	28
30-40	6
40-50	3

Concept Used:

Mean = Total Sum of f(x) ÷ Total Sum of f

Calculation:

=> Firstly for each interval, we will find the midpoint of it.

=> For interval 0-10, Midpoint = (0+10)/2 = 5

=> For interval 10-20, Midpoint = (10+20)/2 = 15

Interval	Frequencies (f)	Midpoint (x)
0-10	2	5
10-20	11	15
20-30	28	25
30-40	6	35
40-50	3	45
Total	50	125

=> Now, to calculate the values of f(x), multiply each midpoint with their respective frequencies.

Interval	Frequencies (f)	Midpoint (x)	f(x)
0-10	2	5	10
10-20	11	15	165
20-30	28	25	700
30-40	6	35	210
40-50	3	45	135
Total	50	125	1220

=> So, Mean = (∑ f(x))/(∑ f)

=> Mean = 1220/50 =24.4

Hence, the mean score of the students is 24.4.

Q58. Answer: (d) (3 - √3)/6

Given:

sin x – 3cos x = √3 cosx

Concept Used:

)cot x = (1over tan x

Calculation:

=> sin x – 3cos x =√3 cosx

=> On dividing both sides of the equation by cos x, we get
=> tan x – 3 = √3
=> tan x = 3 + √3
=> cot x = 1 over 3+√3
=> On rationalizing the numerator, we get
=> cot x = 1 over 3+√3 × 3 - √3 over 3-√3
=> cot x = 3- √3over 3²-3 = (3-√3)/6
Hence, the value of cot x is 3- √3over 6.

Q59. Answer: (a) Rs. 45,000

Given:
Marked price = Rs. 60,000
Flat discount = Rs. 12,000
Extra discount for regular customers = 5 % on the marked price
Calculation:
=> Amount payable after flat discount = Rs. 60,000 – Rs. 12,000 = Rs. 48000
=> Discount on Marked price for regular customer = 5 % of 60,000
=> Discount on MP for regular customers = 5/100× 60000=3000 Rs
=> Amount payable by a regular customer for the refrigerator = 48000 – 3000 = Rs 45,000
Hence, the price that regular customer have to pay for the refrigerator is Rs 45,000.

Q60. Answer: (b) Rs. 4,140

Given:
Ratio of initial expenditure and savings = 5 : 1
Concept Used:
Percentage
Calculation:
=> Let the Salary of Soham be Rs. 100
=> The ratio of expenditure and saving is 5 : 1, so
=> The expenditure = 5/6 × 100 = Rs. 500/6
=> The savings = 1/6 × 100 = Rs. 100/6
=> After increase of 25 %, his new salary = Rs. 125
=> New Savings = 100/6 + 20 % of 100/6
=> New Savings = Rs. 120/6
=> So, the new expenditure = 125 – 120/6 = 750 - 120 over 6 = Rs. 630 over 6 = Rs. 105
=> For the new expenditure of Rs. 105, his initial salary is Rs.100
=> So, for the expenditure of Rs. 4347,
=> Initial Salary = 100/105 × 4347 = Rs. 4140
Hence, Soham's Initial Income was Rs. 4140.

Q61. Answer: (b) 8%

Given:
Profit = 25 %
Discount = 25 %
Concept Used:
S.P = C.P + Profit
S.P = M.P – Discount
Calculation:
=> Let the cost price be Rs. 100
=> There is a profit of 25 % on the item
=> So, Selling price = 100 + 25% of 100
=> Selling Price = 100+ 25/100 × 100 = 125 Rs.
=> Also, S.P = M. P – Discount

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=> Discount = 25 % of M.P

=> S.P = M.P – 25 % of M.P

=> 125 = M.P – 25/100 × M.P

=> 125 = 3/4 M.P

=> M.P = 4 × 125 over 3

=> M.P = Rs. 500/3

=> Now, there is a discount of 35 % on M.P

=> New S.P = M.P – 35 % of M.P

=> New S.P = 500/3 - 35/100 × 500/3=500/3-175/3

=> New S.P = Rs. 325/3

=> Hence Profit = 325/3-100=(325-300)/3=25/3

=> Profit % = 8 1/3 ≈ 8 %

Hence we can say that profit percent is equivalent to 8 %

Q62. Answer: (a) 7

Given:

8127 ÷ 8

Concept Used:

Divisibility Rule of 8

The divisibility rule of 8 for a 4 digit number says that if the last 3 digits of the given number are zeros or last 3 digits is divisible by 8 then the whole number is divisible by 8.

Calculation:

=> In the case of 8127,

=> The number formed by last 3 digits is 127 and it is not divisible by 8

=> The lesser as well as nearest number to 127 which is divisible by 8 is 120

=> 8120 is divisible by 8

=> Thus, 8127 when divisible by 8 gives 7 as the remainder

Hence, the remainder is 7.

Q63. Answer: (d) 75.36 cm2

Given:

Radius = 2 cm

Height = 6 cm

Concept Used:

Curved Surface Area of Cylinder = 2π × r × h

Calculation:

=> Curved Surface Area = 2π × r × h

=> Curved Surface Area = (2 × 3.14 × 2 × 6)

=> Curved Surface Area = 75.36 cm²

Hence, the curved surface area of a cylinder is 75.36 cm²

Q64. Answer: (c) 20%

Given:

Table showing the votes information of an election at 3 centers P, Q, and R

Center	Total No. of registered voters	Percentage of people who voted (out of the total no. of registered voters)
P	3200	90
Q	1850	80
R	2500	66

Calculations:

According to the question,

Total votes casted at center Q = 1850 × 80/100 = 1480
Number of invalid votes at center Q = 1480 × 25/100 = 370
Percentage of invalid votes = (370 × 100)/1850 = 20
Hence, The Required value of invalid votes is 20%.

Q65. Answer: (a) 536

Given:
p^4 = 4354 – 1/(p^4)
Concept Used:
$(a + b)^2 = a^2 + b^2 + 2ab$
$(a – b)^2 = a^2 + b^2 – 2ab$
Calculation:
=> p^4 = 4354 – 1/(p^4)
=> p^4 + 1/(p^4) = 4354
=> Adding 2 both sides to make it a perfect square,
=> p^4 + 1/(p^4) + 2 = 4354 + 2 = 4356
=> $(p^2 + 1/(p^2))^2 = (66)^2$
=> $p^2 + 1/(p^2) = 66$
=> $p^2 + 1/(p^2) – 2 = 64$
=> $(p - 1/p)^2 = 64 = (8)^2$
=> p - 1/p = 8
=> $p^3 - 1/(p^3) - 3p/p (p - 1/p) = 512$
=> $p^3 - 1/(p^3) - 3 × 8 = 512$
=> $p^3 - 1/(p^3) = 512 + 24 = 536$
Hence the value of $p^3 - 1/(p^3)$ is 536

Q66. Answer: (d) 51 93/97

Given:
Speed of car for first 75 km = 45 km/h
Speed of car for remaining 45 km = 70 km/h
Concept Used:
Time = Distance ÷ Speed
Calculation:
=> Time taken for first 75 km = 75/45=130/45 hours
=> Time taken for the remaining 45 km = 45/70 hours
=> Average speed for the entire trip = Total Distance ÷ Total time taken
=> Average Speed = (75+45)/(75/45+45/70)
=> Average Speed = 120/((75× 70 + 45× 45)/3150)=120/((5250+2025)/3150)=120/(7275/3150)
=> Average Speed = (120× 3150)/7275=5193/97 km/h
Hence, the average speed for the entire journey is 5193/97km/h.

Q67. Answer: (c) 18

Given:
8 + [16 – {7 + 4 – (9 of 3 + 6 – 4 × 7)}]
Concept Used:
BODMAS = Bracket, Of, Division, Multiplication, Addition, Subtraction
Calculation:
=> 8 + [16 – {7 + 4 – (9 of 3 + 6 – 4 × 7)}]
=> 8 + [16 – {7 + 4 – (27 + 6 – 4 × 7)}]
=> 8 + [16 – {7 + 4 – (27 + 6 – 28)}]
=> 8 + [16 – {7 + 4 – 5}]
=> 8 + [16 – 6] = 8 + 10 = 18
Hence, the simplified value of the expression is 18

Q68. Answer: (b) 2 : 3 : 4

Given:

a : b = 2 : 3

b : c = 6 : 8

Calculation:

=> a : b : c = (a × b) : (b × b) : (b × c)

=> a : b : c = (2 × 6) : (3 × 6) : (3 × 8)

=> a : b : c = 12 : 18 : 24 = 2 : 3 : 4

Hence, the ratio of a : b : c is 2 : 3 : 4

Q69. Answer: (c) 2 : 3

Given:

Price of pulse of first variety = Rs 15

Price of pulse of second variety = Rs 20

Calculation:

=> Let the grocer mix x kg of pulse costing Rs 15 and y kg of pulse costing Rs 20 per kg.

=> Total weight of the mixture = x + y

=> Total cost of the mixture = 15x + 20y

=> According to the question, the cost of the mixture is Rs 18 per kg.

=> 18(x + y) = 15x + 20y

=> 18x + 18y = 15x + 20y

=> 18x – 15x = 20y – 18y

=> 3x = 2y

=> x/y=2/3

=> 2 : 3

Hence, the ratio of the mixture in which two varieties of pulses should be mixed is 2 : 3

Shortcut Trick

Hence, the ratio of the mixture in which two varieties of pulses should be mixed is 2 : 3

Q70. Answer: (d) 22

Given:

First 43 natural numbers

Concept Used:

Average of n natural numbers = (n+1)/2

Calculation:

=> Average of first 43 natural numbers = (43+1)/2=44/2

=> Average = 22

Hence, the average of first 43 natural numbers is 22

Q71. Answer: (a) 2744

Given:

x + y =14

Concept Used:

$(a + b)^3 = a^3 + b^3 + 3ab(a + b)$

Calculation:

=> x + y = 14

=> Cubing both sides, we get

=> $(x + y)^3 = 14^3$

=> $x^3 + y^3 + 3xy(x + y) = 2744$

=> $x^3 + y^3 + 3xy \times 14 = 2744$

=> $x^3 + y^3 + 42xy = 2744$

Hence, the required value of the expression is 2744

Q72. Answer: (b) 38%

Given:

Increase in length of rectangle = 15%

Increase in breadth of rectangle = 20%

Concept Used:

Area of Rectangle = Length × Breadth

Calculation:

=> Let the length of the rectangle be x and breadth be y.

=> Area of Rectangle = xy

=> Length after increase of 15% = x + 15% of x

=> New length = x+15/100× x = x+3x/20=23x/20

=> Breadth after increase of 20% = y + 20% of y

=> New breadth = y+20/100× y = y+y/5=6y/5

=> New area of rectangle = 23x/20× 6y/5=69xy/50

=> Increase in area = 69xy/50-xy=(69xy-50xy)/50=19xy/50

=> Percentage increase in area of rectangle = (19xy/50)/xy× 100=19/50× 100=38%

Hence, the percentage increase in the area of rectangle is 38%

Shortcut Trick

	fraction	before	after
length 15%	(+3/20)	20	23
breadth 20%	(+1/5)	5	6

=> Area : Increase area = 20 × 5 : 23 × 6 = 100 :138

=>difference = 138 -100 =38

=>Percentage increase in the area of the rectangle = (38/100) × 100 = 38

Q73. Answer: (c) 112

Given:

Number of students mentioned momos as their preferred food = 35

Concept Used:

Share of different items = Share of one part × Share of the given item

Calculation:

=> Fraction share for momos = 0.125

=> Number of students for the momos = 35

=> Students in the fraction share of momos for 0.1 part = 35/0.125× 0.1 =28

=> Fraction share for Rolls = 0.2

=> Fraction share for Alu Paranthas = 0.2

=> Total fraction part = 0.2 + 0.2 = 0.4

=> Students in the total fraction part of rolls and alu paranthas = 28/0.1× 0.4 = 112

Hence, the total number of students who mentioned either rolls or alu paranthas as their preferred food is 112

Q74. Answer: (b) 354 cm2

Given:

Length + Breadth + Height = 23 cm

Diagonal of cuboid = 5√7 cm

Concept Used:

Diagonal of Cuboid = $\sqrt{Length^2+Breadth^2+Height^2}$

Total Surface Area of cuboid = 2(l.b + b.h + h.l)

$(a + b + c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ca$

Calculation:

=> Diagonal of Cuboid = $\sqrt{l^2+b^2+h^2} = 5\sqrt{7}$

=> $l^2+b^2+h^2=(5\sqrt{7})^2 = 175$

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=> l + b + h = 23

=> Squaring both sides, we get

=> $l^2+b^2+h^2+2(lb+bh+hl) = 23^2$

Putting the values,

=> 175 + 2(lb + bh + hl) = 529

=> 2(lb + bh + hl) = 529 – 175 = 354

Hence, the surface area of the cuboid is 354 cm^2

Q75. Answer: (b) 3%

Given:

Selling price of pen = Rs 28.75

Profit Percentage = 15%

Concept Used:

Cost Price = 100/(100+Profit %)× SP

Profit % = Profit/CP× 100

Calculation:

=> Cost Price of pen = 100/(100+15)× 28.75

=> Cost Price of pen = 100/115 × 28.75 = 25 Rs

When the pen is sold at Rs 25.75,

=> Profit = Selling Price – Cost Price

=> Profit = 25.75 – 25 = Rs 0.75

=> So, Profit % = 0.75/25× 100=3%

Hence, the percentage of profit for selling a pen at Rs 25.75 is 3%

Q76. Answer: (d) Vacuoles

The correct answer is Vacuoles.

Key Points

• A vacuole is a membrane-bound cell organelle.

• In animal cells, vacuoles are generally small and help sequester waste products.

• In plant cells, vacuoles help maintain water balance.

• Sometimes a single vacuole can take up most of the interior space of the plant cell.

Additional Information

• Plastids

• Plastids are double-membrane organelles that are found in the cells of plants and algae.

• Plastids are responsible for manufacturing and storing food.

• Cytosols

• The cytosol is the liquid medium contained within a cell.

• The cytosol is a component of the cytoplasm.

• Golgi apparatus

• The Golgi apparatus, also known as the Golgi complex, Golgi body, or simply the Golgi, is an organelle found in most eukaryotic cells.

Q77. Answer: (b) Odisha

The correct answer is Odisha.

Key Points

• The 2023 Men's FIH Hockey World Cup will be the 15th edition of the Men's FIH Hockey World Cup.

• The quadrennial world championship for men's national field hockey teams was organized by the International Hockey Federation.

• It will be held at the Kalinga Stadium in Bhubaneswar and at the under-construction 20,000-seat Birsa Munda International Hockey Stadium in Rourkela, India from 13 to 29 January 2023.

• Just as in 2018, 16 teams will compete in the tournament. Alongside the hosts, India, the five continental champions will receive an automatic berth. After the postponement of the 2020 Summer Olympics, the quota of places available through continental championships including the World Cup hosts was increased from six to sixteen.

Additional Information

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• The Hockey World Cup was first conceived by Pakistan's Air Marshal Nur Khan.

• The FIH decided that the inaugural World Cup would be held in October 1971, in Pakistan.

• The Hockey World Cup trophy was designed by the Bashir Moojid and created by the Pakistani Army, On 27 March 1971, in Brussels.

Q78. Answer: (b) Karnataka

The correct answer is Karnataka.

Key Points

• Situated in the Shimoga district of Karnataka, Agumbe gets its sobriquet because it receives 7,640 mm of mean annual rainfall, the second highest annual rainfall in India.

• Flora: Agumbe is surrounded by rich biodiversity and the hill station borders one of the last surviving lowland rain forests.

• The warm moist winds of the northward-moving air from the Bay of Bengal during the monsoon, cover an extensive area but are forced to converge into the narrower zone over the Khasi Hills, thus concentrating their moisture. That is the reason for heavy rainfall.

Additional Information

• The average rainfall received in Andhra Pradesh from 01.06. 2020 to 09.03. 2021 is recorded as 1095.7mm.

• Tamil Nadu received 701.88 mm of rainfall during the NEM season (October-December) against the normal rainfall of 447.1 mm.

• Kerala is among India's high rainfall receiving states and records an annual rainfall of 2855 mm.

Q79. Answer: (d) Petroleum

The correct answer is Petroleum.

Key Points

• Sedimentary rocks on the western and eastern flanks of the peninsula, in Gujarat and Assam, have most of the petroleum deposits.

• Petroleum, also called crude oil, is a fossil fuel.

• Like coal and natural gas, petroleum was formed from the remains of ancient marine organisms, such as plants, algae, and bacteria.

Additional Information

• Broadly speaking, peninsular rocks contain most of the reserves of coal, metallic minerals, mica, and many other non-metallic minerals

• Sedimentary rocks on the western and eastern flanks of the peninsula, in Gujarat and Assam, have most of the petroleum deposits.

• Rajasthan with the rock systems of the peninsula has reserves of many non-ferrous minerals.

• The vast alluvial plains of north India are almost devoid of economic minerals.

• These variations exist largely because of the differences in the geological structure, processes, and time involved in the formation of minerals.

Q80. Answer: (a) Jane Austen

The correct answer is Jane Austen.

Key Points

• Jane Austen was an English novelist known primarily for her six major novels, which interpret, critiqued, and commented upon the British landed gentry at the end of the 18th century.

• Austen's plots often explore the dependence of women on marriage in the pursuit of favorable social standing and economic security.

• She was born on 16 December 1775, in Steventon, United Kingdom.

• She died on 18 July 1817, in Winchester, United Kingdom.

• With the publication of Sense and Sensibility (1811), Pride and Prejudice (1813), Mansfield Park (1814), and Emma (1816), she achieved modest success.

Additional Information

• Thomas Hardy OM (2 June 1840 – 11 January 1928) was an English novelist and poet.

• A Victorian realist in the tradition of George Eliot. He was influenced both in his novels and in his poetry by Romanticism, including the poetry of William Wordsworth.

• Mary Ann Evans known by her pen name George Eliot, was an English novelist, poet, journalist, translator and one of the leading writers of the Victorian era. She wrote seven novels: Adam Bede, The Mill on the Floss, Silas Marner, Romola, Felix Holt, the Radical, Middlemarch, and Daniel Deronda.

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• David Herbert Lawrence (11 September 1885 – 2 March 1930) was an English writer, novelist, poet, and essayist. His works reflect on modernity, industrialization, sexuality, emotional health, vitality, spontaneity, and instinct.

Q81. Answer: (c) South Africa

The correct answer is South Africa.

Key Points

• The ICC Women's T20 World Cup (known as the ICC Women's World Twenty20 until 2019) is the biennial international championship for women's Twenty20 International cricket. The event is organized by the sport's governing body, the International Cricket Council (ICC).

• The first edition having been held in England in 2009.

• For the first three tournaments, there were eight participants, but this number has been raised to ten from the 2014 edition onwards.

• In July 2022, the ICC announced that Bangladesh would host the 2024 tournament and that England would host the 2026 tournament.

• The number of teams in the 2026 tournament is also set to increase to twelve.

Additional Information

• Teams are sorted by their best performance, then winning percentage, then (if equal) by alphabetical order.

• The ICC has announced that four women's tournaments will take place in four years, starting with the ICC Women's T20 World Cup 2024, which will take place in Bangladesh.

Q82. Answer: (c) Sarangi

The correct answer is Sarangi.

Key Points

• Ustad Shakoor Khan (1905-1975) was one of the outstanding sarangi players of the twentieth century.

• He was firmly identified with the Kirana Gharana, being the nephew and student of Ustad Abdul Waheed Khan.

• He was the first sarangiya to receive the Government of India's Padmashri award.

• His two sons Mashkoor Ali and Mubarak Ali are well-known vocalists.

Additional Information

• Sitar is a stringed instrument of the lute family that is popular in northern India, Pakistan, and Bangladesh.

• The sarod is a stringed instrument, used mainly in Hindustani music on the Indian subcontinent along with the sitar.

• The Indian santoor instrument is a trapezoid-shaped hammered dulcimer and a variation of the Iranian Santur. The instrument is generally made of walnut and has 25 bridges.

Q83. Answer: (d) Rs. 15,000

The correct answer is Rs. 15,000.

Key Points

• A candidate who contests an election for the posts of President and Vice President of India has to tender a security deposit amount is Rs 15,000 each.

• Droupadi Murmu is our current president and Jagdeep Dhankhar is the vice president of India.

• Every candidate has to make a security deposit of Rs 15,000 in the Reserve Bank of India.

• The security deposit is liable to be forfeited in case the candidate fails to secure one-sixth of the votes polled.

• Before 1997, the number of proposers and seconders was ten each and the amount of the security deposit was Rs 2,500.

• In 1997, they were increased to discourage non-serious candidates.

Additional Information

Electoral College of Vice President:

• As per Article 66 of the Constitution of India, The Vice President shall be elected by the members of an electoral college consisting of the members of both Houses of Parliament.

The Electoral College of Vice President consists of:

• Elected and Nominated members of Rajya Sabha.

• Elected members of Lok Sabha.

Q84. Answer: (d) Raymond L Lindeman

The correct answer is Raymond L Lindeman.

Key Points

• Raymond Laurel Lindeman (1915 – June 29, 1942) was an ecologist whose graduate research is credited with being a seminal

study in the field of ecosystem ecology, specifically on the topic of trophic dynamics.

• Lindeman completed his Ph.D. at the University of Minnesota with his thesis work being concerned with the history and ecological dynamics of Cedar Bog Lake.

• Some insights of his research:

• Energy is passed from one trophic level to the next trophic level.

• Hence, energy flows in one direction through successive trophic levels in a food chain.

• Nutrients are produced from the matter. The matter may be organic or inorganic.

• The organic and inorganic matter is produced, exchanged, and moved within the ecosystem and this is called cycling.

Additional Information

• Sir Arthur George Tansley FLS, FRS (15 August 1871 – 25 November 1955) was an English botanist and a pioneer in the science of ecology.

• Ernst Heinrich Philipp August Haeckel was a German zoologist, naturalist, eugenicist, philosopher, physician, professor, marine biologist, and artist.

• Charles Sutherland Elton FRS (29 March 1900 – 1 May 1991) was an English zoologist and animal ecologist.

Q85. Answer: (a) proteins

The correct answer is proteins.

Key Points

• Metabolism is the chemical reactions in the body's cells that change food into energy.

• Two types of metabolic reactions take place in the cell: 'building up' (anabolism) and 'breaking down'(catabolism).

• Specific proteins in the body control the chemical reactions of metabolism.

• Proteins are made up of hundreds or thousands of smaller units called amino acids, which are attached to one another in long chains.

Additional Information

• Carbohydrates, or carbs, are sugar molecules. Along with proteins and fats, carbohydrates are one of the three main nutrients found in foods and drinks.

• Your body breaks down carbohydrates into glucose.

• Glucose, or blood sugar, is the main source of energy for your body's cells, tissues, and organs.

• A lipid is any of various organic compounds that are insoluble in water.

• They include fats, waxes, oils, hormones, and certain components of membranes and function as energy-storage molecules and chemical messengers.

• A salt consists of the positive ion (cation) of a base and the negative ion (anion) of an acid.

• The reaction between an acid and a base is called a neutralization reaction.

• The term salt is also used to refer specifically to common table salt, or sodium chloride.

Q86. Answer: (d) Jaipur

The correct answer is Jaipur.

Key Points

• Vidyagauri Adkar is a Kathak dance exponent from Mumbai. She specializes and performs in Jaipur Gharana of Kathak.

• She has performed in many elite cultural events and music & dance festivals across India. Chilanka Dance Festival in Thiruvananthapuram, Festival of Dance and Music Delhi, Khajuraho Festival of Dances, Kathak Prabha – Festival of India in South Africa, Kathak Mahotsava 2012, Delhi, "Anvarat" Kathak performance, etc.

• She is associated with live performances for the past 10 years and is one of the promising young Kathak dancers of to

Additional Information

• Kathak is one of the eight major forms of Indian classical dance. It is the classical dance form of Uttar Pradesh.

• The origin of Kathak is traditionally attributed to the traveling bards in of ancient northern India known as Kathakars or storytellers.

• The Lucknow Gharana of Kathak was founded by Ishwari Prasad, a devotee of the Bhakti movement.

Q87. Answer: (c) Mesosome

The correct answer is Mesosome.

Key Points

• Prokaryotes are organisms whose cells lack a nucleus and other organelles.

• Prokaryotes are divided into two distinct groups: bacteria and archaea, which scientists believe have unique evolutionary lineages.

• Most prokaryotes are small, single-celled organisms that have a relatively simple structure.

• Mesosome is an organelle of bacteria that appears as an invagination of the plasma membrane and functions either in DNA replication and cell division or excretion of exoenzymes.

Additional Information

• A nucleus, as related to genomics, is the membrane-enclosed organelle within a cell that contains the chromosomes.

• In the nucleus of each cell, the DNA molecule is packaged into thread-like structures called chromosomes.

• The nuclear membrane is a double layer that encloses the cell's nucleus, where the chromosomes reside. The nuclear membrane serves to separate the chromosomes from the cell's cytoplasm and other contents.

Q88. Answer: (a) Akbar

The correct answer is Akbar.

Key Points

• Tansen was a prominent figure in Hindustani classical music.

• Born in a Hindu brahmin family, he learned and perfected his art in the northwest region of modern Madhya Pradesh.

• Tansen joined the musicians at the Mughal court of Akbar.

• Abu'l-Fath Jalal-ud-din Muhammad Akbar, popularly known as Akbar the Great, and also as Akbar.

• He was the third Mughal emperor, who reigned from 1556 to 1605.

Additional Information

• Aurangzeb

• Aurangzeb was the sixth emperor of the Mughal Empire, ruling from July 1658 until his death in 1707.

• Under his emperorship, the Mughals reached their greatest extent with their territory spanning nearly the entirety of South Asia.

• Babur

• Babur was the founder of the Mughal Empire in the Indian subcontinent.

• He was a descendant of Timur and Genghis Khan through his father and mother respectively.

• Humayun

• Humayun was the second emperor of the Mughal Empire, who ruled over territory in what is now Eastern Afghanistan, Pakistan, Northern India, and Bangladesh from 1530 to 1540 and again from 1555 to 1556.

Q89. Answer: (d) Karan Thapar

The correct answer is Karan Thapar.

Key Points

• Karan Thapar is an Indian journalist, news presenter, and interviewer working with The Wire.

• Thapar was associated with CNN-IBN and hosted The Devil's Advocate and The Last Word.

• He was born on 5 November 1955 in Srinagar.

• He has written many books: Devil's Advocate, India Tonight, The Last Word, Face to Face (BBC); Hardtalk India (BBC), To The Point (India Today).

• In Devil's Advocate, Karan dives deep into his life to come up with many such moments.

• Included here are stories of warm and lasting friendships.

Additional Information

• Vir Sanghvi

• Vir Sanghvi is an Indian print and television journalist, author, columnist, and talk show host.

• He has been a member of many professional, academic, and government bodies including the National Integration Council.

• Prannoy Lal Roy

• Prannoy Lal Roy is an Indian economist, chartered accountant, psephologist, journalist, and author.

• He is the executive co-chairperson of NDTV.

• Vinod Dua

• Vinod Dua was an Indian journalist who worked in Doordarshan and NDTV India.

• He became the first electronic media journalist to be bestowed with the Ramnath Goenka Excellence in Journalism Award.

• He was awarded the Padma Shri for Journalism in 2008 by the Government of India.

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Q90. Answer: (c) West Bengal

The correct answer is West Bengal.

Key Points

• The World Bank has approved a loan of around Rs. 1,000 crores to the West Bengal government primarily to support its effort to help the poor and vulnerable groups access its social protection services.

• The loan will help the administration improve services such as medical help through telemedicine, support for the elderly and differently-abled, financial inclusion of citizens.

• Also digital payments and disbursement of benefits for public schemes.

Additional Information

• The World Bank on January 19 sanctioned a $125 million (about Rs. 1,000 crores) loan to the government of West Bengal to support the state's effort to help the poor and vulnerable groups access social protection services," the statement read.

• The loan under the 'West Bengal Building State Capability for Inclusive Social Protection' operation will strengthen the capability of this state to expand coverage and access to social assistance and targeted services for poor and vulnerable groups.

Q91. Answer: (c) Tabla

The correct answer is Tabla.

Key Points

• Ustad Alla Rakha

• Indian tabla player Ustad Alla Rakha Qureshi (29 April 1919), often known as Alla Rakha, was an expert in Hindustani classical music.

• He frequently followed the sitarist Pandit Ravi Shankar, and he played a significant role in introducing the tabla to western audiences.

• Alla Rakha received the Sangeet Natak Akademi Award in 1982 and the Padma Shri in 1977.

• On April 29, 2014, the day of his 95th birthday, he was also featured in a Google doodle.

• Under the guidance of Ashiq Ali Khan of the Patiala Gharana, he studied voice and raga vidya.

• Ustad Allah Rakha's oldest child is Zakir Hussain.

Additional Information

Instrument	Renowned Musicians
Veena	Asad Ali Khan, Veena Gayathri, Gopal Shankar Misra, Emani Sankara Sastry, Veena Sheshanna
Ghatam	Thetakudi Harihara Vinayakram,Ghatam Giridhar Udupa, Umayalpuram K. Narayanaswamy
Tabla	Alla Rakha, Zakir Hussain, Anindo Chatterjee, Kishan Maharaj, Shankar Ghosh, Bikram Ghosh
Santoor	Pandit Shivkumar Sharma, Tarun Bhattacharya, Abhay Sopori, Satish Vyas

Q92. Answer: (c) Chhau nritya

The correct answer is Chhau nritya.

Key Points

• Guru Shyama Charan Pati

• Indian dancer Guru Shyama Charan Pati was renowned as one of the foremost exponents of the Seraikala lineage of Chhau, an Indian martial dance style.

• He who was born in 1940 and belongs to a low-income Brahmin family in the Icha village.

• Under the guidance of Guru Ban Bihari Acharya, he received training in the dance forms of Katthak and Bharatnatyam in Jamshedpur.

• Later, he studied the numerous Shaili forms with the foremost practitioners of the era, Panchanan Singhdev and Tarini Prasad Singhdev.

• In 2006, the Guru received the Padma Shri, the fourth-highest honour bestowed by the country, in recognition of his unique contribution to Indian dance.

• He played a significant role in introducing women to the Chhau dancing style or Chhau nritya.

• A well-known Chhau dancer, Sushmita Pati, is his daughter.

Additional Information

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• Chhau Nritya

• A semi-classical Indian dance incorporating martial and folk traditions is called chhau nritya, which is also spelled as chhou dance.

• There are three distinct varieties of it:

• the Purulia Chhau from West Bengal,

• the Seraikella Chhau from Jharkhand, and

• the Mayurbhanj Chhau from Odisha.

• The dance includes both structured dances with religious themes found in Shaivism, Shaktism, and Vaishnavism as well as celebratory dances that showcase martial arts, acrobatics, and athletic performances in festive themes.

• Purulia and Serakeilla use masks to distinguish the character while wearing various outfits that vary according to the styles.

• The Puranas, the Hindu epics Ramayana, the Mahabharata, and other works of Indian literature are among the stories that Chhau dancers portray by their dance.

Q93. Answer: (c) Amrita Pritam

The correct answer is Amrita Pritam.

Key Points

• Pinjar

• Amrita Pritam, a renowned poet and novelist, wrote 'Pinjar' in Punjabi a famous novel based on riots during the Indian independence in 1950.

• The novel 'Pinjar', which is set around the time of India's Partition, is widely regarded as one of the best pieces of Indian fiction ever written.

• The story is based on a Hindu girl, Puro, who is kidnapped by Rashid, a Muslim guy, and when Puro escapes from Rashid's house, her parents refuse to accept the defiled daughter.

• The 2003 Hindi film Pinjar, with Urmila Matondkar, Manoj Bajpai, and Sanjay Suri in the lead roles, was an adaptation of the book.

• The movie won the National Film Award for Best Feature Film on National Integration after receiving critical acclaim.

• On January 25, 2018, TVOne Pakistan premiered a Pakistani television series titled as Ghughi, based on the book.

• Amrita Pritam

• Amrita Pritam was an Indian novelist, poet, and essayist who wrote in Punjabi and Hindi.

• She was born on August 31, 1919.

• She is a well-known author in Punjabi literature and the 1956 Sahitya Akademi Award winner.

• Her body of work included more than 100 books that were all translated into numerous Indian and international languages.

• These books included poetry, fiction, biographies, essays, a collection of Punjabi folk melodies, and an autobiography.

Additional Information

Artist	Famous Novel
Divya Prakash Dubey	Musafir Cafe
Mohan Rakesh	Ashadh Ka Ek Din
Manav Kaul	Theek Tumhare Peechhe

Q94. Answer: (c) Opuntia

The correct answer is Opuntia.

Key Points

• Adaptation of Opuntia

• Opuntia, sometimes known as the prickly pear cactus, is a xerophytic plant that grows in dry habitats and has adapted to withstand extreme conditions.

• A plant species known as a xerophyte has evolved to live in environments with little liquid water, such as desert or an area covered in ice or snow in the Alps or the Arctic.

• Some of the adaptations include:

• To reduce transpiration the leaves are modified into spines.

• Plants release excess water in the form of vapour through a process known as transpiration from their aerial regions.

• By preventing the hot, dry wind from directly hitting the stomata, this adaptation helps cactus to store water and reduce water loss.

• For photosynthesis, the stem has been transformed into a flattened green structure.

Additional Information

Plant	Adaptation
Mimosa	Sharp thorns on this plant can cause terrible wounds. Its roots have nodules. This adaption enables it to coexist in symbiosis with bacteria that can fix nitrogen. The leaves of the delicate Mimosa plant can modify their response to mechanical and electrical stimulation so that they reopen in response to repeated stimulation.
Rose	The most noticeable characteristic of a rose that evolved as a result of environmental adaptation is its thorns. The thorns, that emerges from the stem, are modified leaves.
Hibiscus	One of the key adaptations of the Hibiscus is that its cellulose-based cell wall prevents it from moving at all. Hummingbirds with their long, slender beak use the bulls-eye-shaped arrangement of hibiscus petals and centre stamens to enter the flower.

Q95. Answer: (d) Gwalior Gharana

The correct answer is Gwalior Gharana.

Key Points

• Gwalior Gharana

• One of the oldest Khyal Gharanas of the Hindustani musical Gharanas is the Gwalior Gharana.

• The great Mughal emperor Akbar's rule marked the beginning of the rise of Gwalior Gharana's.

• The favorite vocalists of patrons of the arts, including Miyan Tansen, who ranked first among the court's vocalists, were from the town of Gwalior.

• Naththan Khan, Naththan Pir Bakhsh, and his grandsons Haddu, Hassu, and Natthu Khan were some of the earliest masters (ustad) of this gharana.

• Bade Mohammad Khan, known for his taan bazi style, was the chief musician in the royal court.

• The simplicity of the gharana is one of its defining characteristics, and one way to do this is through the use of well-known ragas, which save the listener from the trouble of trying to figure out the raga.

Additional Information

• Agra Gharana

• The Nauhar Bani is the ancestor of the Agra gharana, a tradition of Hindustani classical vocal music.

• Khayal gayaki and Dhrupad-Dhamar are combined to create the gayaki of the Agra Gharana.

• Both the khayal and dhrupad components are taught together in training rather than separately. T

• The Agra Gharana of music was founded by Haji Sujan Singh.

• Kirana Gharana

• The Kirana gharana laid more focus on melody than rhythm.

• It was founded by pioneer Abdul Karim Khan.

• According to the way that Bhimshen Joshi blends virtuosity and melody, he has grown to be the most well-known musician in this gharana.

• Atrauli Gharana

• Ustad Alladiya Khan founded the Jaipur-Atrauli Gharana in the late 19th century.

• This gharana, which emerged from the dhrupad lineage but is noted for khayal, produced renowned artists like Kesarbai Kerkar, Laxmibai Jadhav, Mogubai Kurdikar, Mallikarjun Mansur, Shruti Sadolikar, and Dhondutai Kulkarni.

• This gharana gained a reputation for its distinctive vocal aesthetics, raga repertory, and technical skill.

Q96. Answer: (d) Hockey India

The correct answer is Hockey India.

Key Points

• Etienne Glichitch Award, 2021

• The International Hockey Federation (FIH) presented Hockey India with the Etienne Glichitch Award on May 2021, during the virtual conference held as part of the 47th FIH Congress.

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• The FIH Honorary Awards were given to honour a variety of people, groups, and organisations for their extraordinary achievements towards the sport of hockey.

• Hockey India was one of three National Associations that received recognition for their exceptional efforts with a variety of prizes.

• It was recognised for their great commitment to the expansion and development of hockey through creative concepts.

• Gyanendro Ningombam, the president of Hockey India, thanked FIH for recognising the effort of Hockey India to develop the sport in India.

• The honour is named after Etienne Glichitch, who served as the Hon. Secretary of the FIH from 1966 to 1984, when he became the President, a post which he held until 1996.

Additional Information

• Hockey India

• All of India's hockey-related events for both men and women are organised, managed, and carried out by Hockey India.

• The Ministry of Youth Affairs & Sports, Government of India has acknowledged it as the only organisation in charge of developing hockey in India.

• Hockey India, with its headquarter in New Delhi, was founded on May 20, 2009, and is a member of the International Hockey Federation (FIH), the Indian Olympic Association (IOA), and the Asian Hockey Federation (AHF).

• Players at the sub-junior, junior, and senior levels are trained by Hockey India with assistance from the Sports Authority of India and the Department of Sports, Government of India.

• It was established after the IOA disbanded the Indian Hockey Federation in 2008.

Q97. Answer: (b) Yamini Krishnamurthy

The correct answer is Yamini Krishnamurthy.

Key Points

• Yamini Krishnamurthy

• On December 20, 1940, Yamini Krishnamurthy was born in Madanapalle, Andhra Pradesh.

• She is an outstanding Kuchipudi and Bharatnatyam dancer from India.

• In Madras, Yamini Krishnamurthy made his debut in 1957.

• She holds the title of Asthana Narthaki (‘Resident Dancer’) was bestowed upon by the Tirumala Tirupathi Devasthanam temple.

• She received numerous honours for her dancing career, including the Padma Shree (1968) and the Padma Bhushan (2001), two of the highest civilian honours given by the Indian Republic.

• In 1995, she published an autobiography 'A Passion for Dance' with Renuka Khandekar.

Additional Information

• She studied at Rukmini Devi Arundale's Kalakshetra, a renowned institution for the dance style, where she acquired the fundamental techniques and worked with renowned dancers Kanchipuram Ellapa Pillai and Thanjavur Kittappa Pillai.

• Additionally, Pankaj Charan Das and Kelucharan Mohapatra taught her Kuchipudi and Odissi.

• She received training in vocal music from Karnataka and also learned to play the instrument vina.

• In Delhi, she founded the Yamini School of Dance in 1990.

• On March 8, 2014, on the ocassion of Women's Day, the Shambhavi School of Dance presented her with the "Natya Shastra" award at "Nayika-Excellence Personified."

Q98. Answer: (d) Kisan Credit Card

The correct answer is Kisan Credit Card.

Key Points

• Kisan Credit Card

• The Kisan Credit Card (KCC) programme was launched in August 1998 by Indian public sector banks to provide kisan credit cards to the country's farmers.

• On the advice of the R. V. Gupta Committee, the National Bank for Agriculture and Rural Development (NABARD) created this model programme to give advances for agricultural requirements.

• Its goal was to provide financial assistance to farmers in order to meet the extensive credit requirements of the agricultural sector by 2019 as well as those for fisheries and animal husbandry.

• All commercial banks, regional rural banks, and state cooperative banks are included in the list of participants.

• The interest rate for KCC loans starts as low as 2% and averages at 4%, thus farmers who use it are also exempt from the high interest rates associated with the regular loans provided by banks.

Additional Information

• The Pradhan Mantri Kisan Samman Nidhi Yojana and the PM Kisan Credit Cards are now connected. Farmers may apply for up to Rs. 3 lakh in 4% interest-bearing loans from KCC.

• Characteristics and Benefits of Kisan Credit Card

• Farmers are credited for meeting their financial obligations for farming, other related activities, and post-harvest costs.

• Investment financing for agricultural necessities like dairy cows, pump sets, etc.

• Farmers are eligible for loans up to Rs. 3 lakh as well as loans for produce marketing.

• Holders of KCC schemes are covered by insurance up to Rs. 50,000 in the event of death or permanent incapacity.

• In the event of other hazards, a cover of Rs. 25,000 is provided.

• In addition to the Kisan Credit Card, qualified farmers will also receive a savings account with a competitive interest rate, a smart card, and a debit card.

Q99. Answer: (d) Mithali Raj

The correct answer is Mithali Raj.

Key Points

• Mithali Raj

• Right-handed batter Mithali Dorai Raj is an Indian cricket player who was born on 3 December 1982.

• Between 1999 and 2022, she was a member of the Indian team and served as captain between 2004 and 2022.

• She is also known as the GOAT of women's cricket and is regarded as one of the finest female cricketers of all time.

• In her career, which started in 1999, Mithali Raj has amassed 7391 ODI runs, 2364 T20I runs, and 699 Test runs, making her the top run-scorer in women's cricket.

• Ram Nath Kovind, the President of India, presented Mithali Raj with the prestigious Major Dhyan Chand Khel Ratna Award 2021 during a ceremony, November 13, 2021 at the Rashtrapati Bhavan, New Delhi.

• Mithali has won numerous national and international honours, including the Padma Shri in 2015, Arjuna Award in 2003, and the Wisden Leading Woman Cricketer in the World in 2017.

Additional Information

• Major Dhyan Chand Khel Ratna Award

• The Major Dhyan Chand Khel Ratna Award, also referred to as Khel Ratna Award and formerly known as the Rajiv Gandhi Khel Ratna Award in Sports and Games, is India's highest sporting honour.

• The Ministry of Youth Affairs and Sports bestows it annually.

• The honoree(s) is/are recognised for their "spectacular and most exceptional performance in the sphere of sports over a period of four years" at an international level by a committee appointed by the Ministry.

• As of 2020, the prize consists of a medallion, a certificate, and 25 lakh ($31,000) in cash.

• Chess Grandmaster Viswanathan Anand was the first recipient of the honour, recognised for his efforts in 1991–1992.

Q100. Answer: (c) Geeta Chandran

The correct answer is Geeta Chandran.

Key Points

• Geeta Chandran

• Indian singer and dancer Geeta Chandran specialises in Bharatanatyam.

• She had her training in Carnatic music and is a pioneering and well-known Bharatanatyam artist in India.

• She has also worked in theatre, dance, education, videography, and films. Geeta Chandran has worked with dancers, musicians, authors, writers, poets, painters, theatre figures, academicians, philosophers, linguists, costume and fashion designers, and others to further her skills in the classical arts.

• Her training in Bharatanatyam Abhinaya began at the foot of her first Guru, Abhinaya Saraswathy.

• She was then assisted in improving her abilities by Gurus Jamuna Krishnan and Smt. Kalanidhi Narayanan.

• The Sangeet Natak Akademi Puruskar for Bharatanatyam for the year 2016 has been awarded to Geeta Chandran.

• Chandran received the Padma Shri, India's fourth-highest civilian award, in 2007 for her contributions to the arts.

Additional Information

• Sangeet Natak Akademi Puruskar

• The Sangeet Natak Akademi, India's National Academy of Music, Dance, and Drama, bestows the Sangeet Natak Akademi Puraskar.

• It is the highest honour bestowed to practicing artists in India.

• Prior to 2003, the prize came with a citation, a tamrapatra, an angavastram (a shawl), and Rs. 50,000.

• Since 2009, the cash prize has been increased to Rs. 1,00,000.

• The awards are presented in the performing arts categories of music, dance, theatre, other traditional arts, puppetry, and contribution/scholarship.

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