SSC CHSL Tier-1 2021: Official Paper (Held On : 3 June 2022 Shift 1) (Previous Year Paper)

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

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ENGLISH LANGUAGE

Q1. Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.

In 1920s, new technology has allowed filmmakers to attach to each film a soundtrack of speech.

(a) allowed
(b) have allowed
(c) was allowed
(d) No substitution required

Q2. Select the INCORRECTLY spelt word

(a) Spacios
(b) Lyre
(c) Irrespective
(d) Soluble

Q3. Select the most appropriate meaning of the given idiom.

Get away

(a) To equalise
(b) To fall off
(c) To visit
(d) To leave

Q4. Select the option that expresses the given sentence in active voice.

The disabled should not be oppressed.

(a) Let not the disabled be oppressed.
(b) The disabled have not been oppressed
(c) We should not be oppressing the disabled
(d) Do not oppress the disabled

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

Attract

(a) Flex
(b) Repel
(c) Rash
(d) Destroy

Q6. Select the most appropriate meaning of the given idiom.

Between Scylla and Charybdis

(a) Between two favours
(b) Between two charms

(c) Between two possibilities
(d) Between two dangers

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

We love to swing from the branches _____ the pond.

(a) over
(b) on
(c) in
(d) under

Q8. Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.

Is he remembering our help?

(a) No substitution required
(b) Has he remember
(c) Does he remember
(d) Did he remembered

Q9. Select the INCORRECTLY spelt word.

(a) Audasious
(b) Incredible
(c) Baffling
(d) Prevalent

Q10. Select the INCORRECTLY spelt word.

(a) Retrospect
(b) Guarmet
(c) Magnanimous
(d) Clandestine

Q11. Select the most appropriate meaning of the given idiom.

Be at a loose end

(a) To have nothing to do
(b) On a turning point
(c) Defining moment
(d) In much trouble

Q12. Select the option that can be used as a one-word substitute for the given group of words.

Lasting for a very short period of time

(a) Permanent
(b) Ceaseless
(c) Pungent
(d) Ephemeral

Q13. Select the sentence which has no spelling error.

(a) He incorporates daily vocablary in his gestures.
(b) Reading stories developed her vocabluary.
(c) She has her own vockbulary words from English and Hindi.
(d) Vocabulary raises the standard of the English language.

Q14. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

After he had / ate that lobster,/ he began to / feel sick

(a) he began to
(b) ate that lobster
(c) After he had

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(d) feel sick

Q15. Select the most appropriate synonym of the word given in the brackets to fill in the blank.

It will be _____ (illogical) to accept the demands of the protesters this time

(a) unfavourable
(b) absurd
(c) biased
(d) factual

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

I was not hired by her.

(a) She was not hired
(b) She did not hire me.
(c) She was not been hired me.
(d) She was not hiring me.

Q17. Select the most appropriate meaning of the underlined word in the given sentence. His strategy is to protract negotiations until the enemy are exhausted while assembling the forces necessary to crush them

(a) Control
(b) Prolong
(c) Accept
(d) Cease

Q18. Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.

She shall complete her graduation by 2023.

(a) will be completed
(b) No substitution required
(c) shall have completed
(d) would complete

Q19. Select the INCORRECTLY spelt word

(a) Commisarate
(b) Decennial
(c) Nausea
(d) Curriculum

Q20. 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. It provides a high-quality learning opportunity, improves student outcomes and skills, and expands educational choice options

B. Therefore, location, time, and quality are no longer considered factors in seeking degree courses or higher education because of online education.

C. Online education is an amenable instructional delivery process that includes any learning that takes place via the internet.

D. Its potential advantages involve increased educational access.

(a) ABCD
(b) CBDA
(c) DCAB
(d) CDAB

Directions

Direction: In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank. Readers have been (1) _____ conditioned that they feel embarrassed to admit that they find it hard (2) _____ stomach the work of a literary giant for fear it would betray their plebian taste. The (3) _____ is that a few read, and

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fewer enjoy, the novels of those who sit on the literary pedestal. We have (4) _____ ourselves to be persuaded that a book with a story can't be quite in the same class as a book that leaves us to (5) _____ what is unsaid.

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

(a) well
(b) deeply
(c) rightly
(d) so

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

(a) in
(b) at
(c) to
(d) on

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

(a) story
(b) term
(c) myth
(d) fact

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

(a) cared
(b) thrown
(c) transited
(d) allowed

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

(a) deny
(b) accept
(c) malign
(d) interpret

GENERAL INTELLIGENCE

Q26. 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.

27 : 75 :: 45 : ? :: 39 : 111

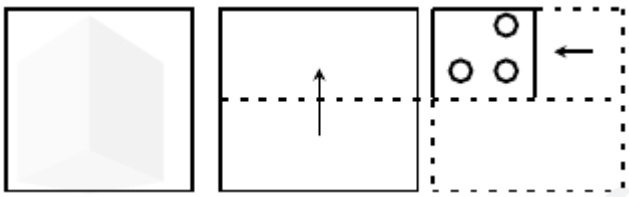
(a) 129
(b) 136
(c) 118
(d) 139

Q27. In a certain code language, 'ELBOW' is written as 'DLYOV' and ‘ANKLE' is written as 'VOPMZ'. How will 'WRIST' be written in that language?

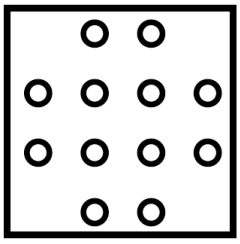
(a) GHRID
(b) IRWST
(c) TSEIW
(d) GHRJC

Q28. A paper is folded and cut as shown. How will it appear when unfolded?

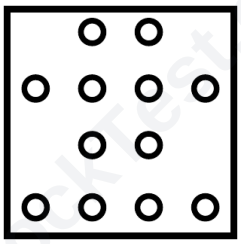
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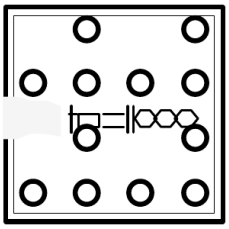
(a)



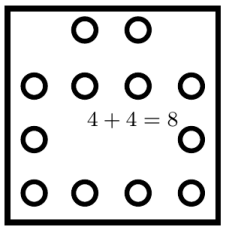
(b)



(c)



(d)

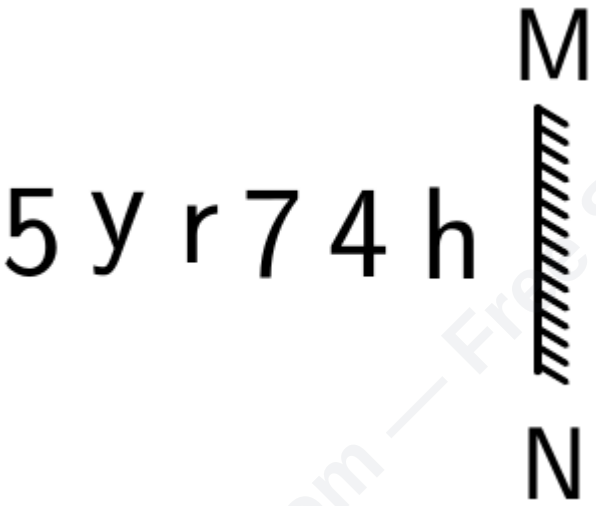


Q29. If 15 July 2002 is a Monday, then what will be the day of the week on 16 October 2005?

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

Q30. Select the correct mirror image of the given combination when the major is placed at MN as shown below.

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(a)



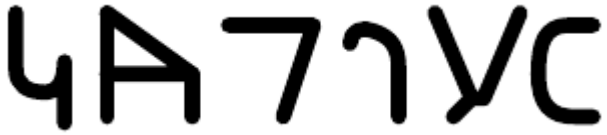
(b)



(c)



(d)



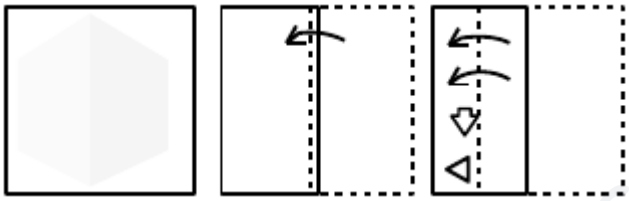
Q31. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

B E _ K P C _ H K P _ E H K P_ E H K P

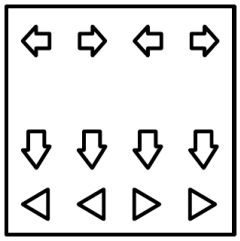
(a) F E Q H
(b) F D Q H
(c) H D Q E
(d) H E D E

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

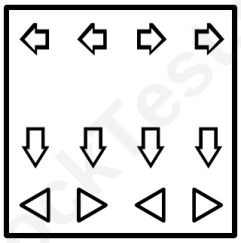
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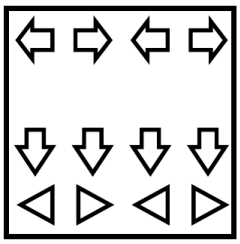
(a)



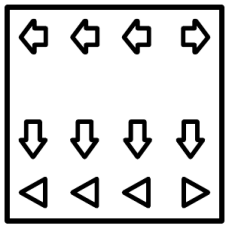
(b)



(c)



(d)



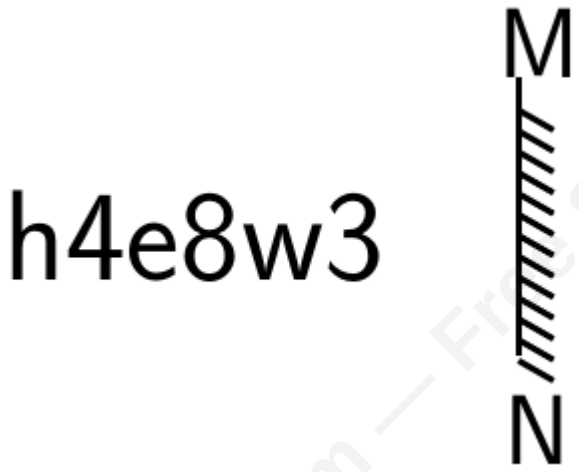
Q33. Select the option that is related to the fifth number in the same way as the second number is related to the first number and the fourth number is related to the third number.

64 : 18 :: 196 : 24 :: 529 : ?

(a) 30
(b) 35
(c) 39
(d) 33

Q34. Select the mirror image of the given combination when the mirror is placed at MN as shown in the figure.

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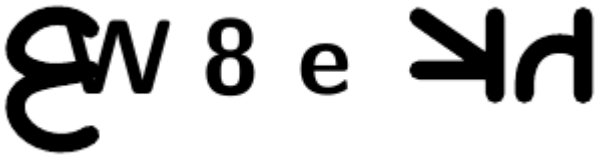
(a)



(b)



(c)



(d)



Q35. 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.

UNCLEAR : CNULRAE :: PRIVACY : IRPVYCA :: NUCLEAR : ?

(a) CUNLREA
(b) CUNLRAE
(c) UNCLRAE
(d) NLCURAE

Q36. A is the brother of C. B is the only sister of D who is the maternal uncle of C. If E is the father of C, then how is A related to B?

(a) Nephew
(b) Uncle
(c) Cousin
(d) Son

Q37. 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 cakes are sweets.

No sweet is a biscuit.

Some chocolates are biscuits.

Conclusions:

I. Some biscuits are cakes.

II. Some chocolates are sweets.

III. No cake is a chocolate.

(a) Only conclusion II follows.
(b) None of the conclusions follow.
(c) Both conclusions I and III follow
(d) Both conclusions I and II follow

Q38. Select the set in which the numbers are related in the same way as are the numbers of the following set.

(45, 9, 12)

(21, 3, 14)

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

(a) (55, 5, 11)
(b) (66, 6, 17)
(c) (80, 10, 15)
(d) (70, 5, 13)

Q39. In a certain code language, 'RESET' is written as '36538540' and 'START' is written as '384013640'. How will 'STOP' be written in that language?

(a) 38401532
(b) 38401516
(c) 38401632
(d) 38403032

Q40. 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) 3 : 16
(b) 6 : 49
(c) 12 : 169
(d) 9 : 64

Q41. If ‘A’ denotes ‘+’, ‘B’ denotes ‘×’, ‘C’ denotes ‘–’ and ‘D’ denotes ‘÷’, then what will come in place of ‘?’ in the following equation?

(84 D 14) A 17 C 13 B (75 D 15) A 9 B 7 = ?

(a) 23
(b) 17
(c) 13
(d) 21

Q42. In a certain code language, “IS” is coded as “169”, and “AM” is coded as “11”. How will “IN” be coded in that language?

(a) 23
(b) 124
(c) 128

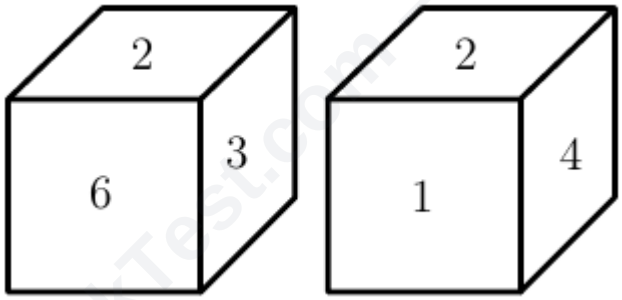
(d) 126

Q43. Select the option that is related to the fourth term in the same way as the first term is related to the second term and the fifth term is related to the sixth term

8 : 508 :: ? : 2193 :: 2 : 4

(a) 17
(b) 13
(c) 19
(d) 15

Q44. Two different positions of the same dice are shown, the six faces of which are numbered from 1 to 6. Select the number that will be on the face opposite to the one showing '2'.

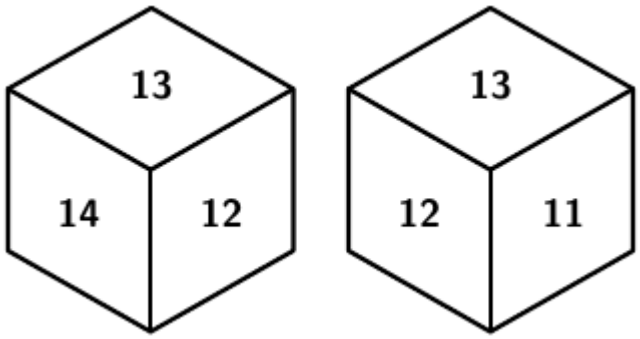


(a) 5
(b) 3
(c) 1
(d) 6

Q45. The second number in the given number pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs, except one. Find that odd number pair

(a) 25 : 5
(b) 80 : 4
(c) 36 : 3
(d) 12 : 2

Q46. 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 '14'.



(a) 11
(b) 12
(c) 16
(d) 15

Q47. Which of the following numbers will replace the question mark (?) in the given series?

10, 21, 35, 56, 90, 145, 231, 360, ?

(a) 436
(b) 546
(c) 463

(d) 564

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

16 : 576 :: 8:80 :: 22 : ?

(a) 1455
(b) 1452
(c) 1458
(d) 1456

Q49. Which letter-cluster will replace the question mark (?) to complete the given series?

SYGZ, NIRT, ?, DCNH, YMYB

(a) ITXN
(b) ISCN
(c) JTZN
(d) JSVN

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

762, 755, 741, 720, 692, ?

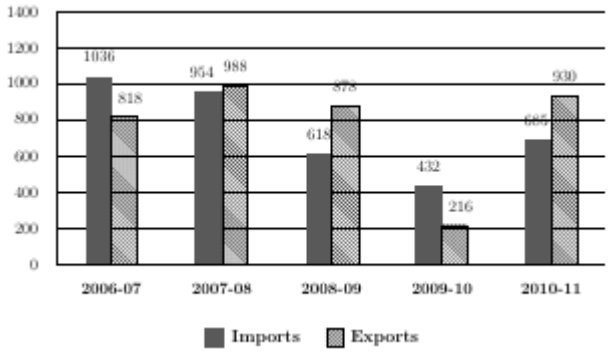
(a) 657
(b) 655
(c) 664
(d) 641

QUANTITATIVE APTITUDE

Q51. If the 9-digit number 5p42978n6 is divisible by 72, what is the value of (2p – 1), where n is the second largest of all the possible values of n? Given that p and n are natural numbers.

(a) 17
(b) 21
(c) 15
(d) 11

Q52. Study the following graph which shows imports and exports (in Rs. crores) of a company during 2006-07 to 2010-11 and answer the question.



In which of the following years, the sum of Imports & Exports is minimum?

(a) 2010-11
(b) 2009-10
(c) 2008-09
(d) 2006-07

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Q53. If the length of the diagonal of a cube is 6 √3 cm, length of the edge of the cube is:

(a) 6 cm
(b) 4 cm
(c) 2 cm
(d) 3 cm

Q54. The height of a right circular cone is 6 cm and its base diameter is 16 cm. Find the volume of this cone.

(a) 384 π cm^3
(b) 786 π cm^3
(c) 128 π cm^3
(d) 512 π cm^3

Q55. Champa buys type 1 sugar at Rs. 45 per kg. He mixes it with type 2 sugar having a price of Rs. 48 per kg. The final mixture becomes worth Rs. 46 per kg. What is the ratio of the quantities of type 1 sugar to type 2 sugar in the final mixture?

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

Q56. If cosec θ + cot θ = 5, then cosec θ is equal to _____.

(a) (5 + 1/5)
(b) 1/2 (3+ 1/3)
(c) 1/2 (5 + 1/5)
(d) (3 + 1/3)

Q57. A retailer offers the following discount schemes for an article to his customers.

A. Two equal successive discounts of 15%.

B. Two successive discounts of 12% and 18%.

C. Buy 7 articles and get 3 free.

Which scheme is favorable to a customer? (assuming buys articles in a multiple of 10)

(a) Only A
(b) Only C
(c) Both A and C are the same
(d) Only B

Q58. The average of 16 numbers is 23. The average of the first 7 numbers is 21 and that of the last 8 numbers is 24. Find the 8^(th) number.

(a) 28
(b) 27
(c) 29
(d) 26

Q59. If a solid piece of iron in the form of a cuboid, of dimensions 49 cm × 33 cm × 24 cm, is moulded to form a solid sphere, then the radius of the sphere is _____. [Use π = 22/7]

(a) 16 cm
(b) 10 cm
(c) 18 cm
(d) 21 cm

Q60. The ratio of the distances Ravina and Suhel had to travel from their respective houses to their workplaces was 4 : 7. If Suhel had to travel 63 km, how much did Ravina have to travel?

(a) 40 km
(b) 32 km
(c) 39 km

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(d) 36 km

Q61. 64% of the students of a class are girls and 81.25% of the girls have chosen soccer as their favourite sport. If 143 girls have chosen soccer as their favourite sport, what is the total number of students in the class?

(a) 270
(b) 280
(c) 300
(d) 275

Q62. The table below gives the profit/loss of a company during each of five consecutive years. Study the table and answer the question that follows. [Note: A negative value will denote a loss.]

Year	2016	2017	2018	2019	2020
Profit/Loss (in Rs. lakh)	20	30	-10	-5	35

What was the total profit or loss of the company during the last three years given in the table, taken together?

(a) Profit of Rs.25 lakhs
(b) Loss of Rs.20 lakhs
(c) Profit of Rs.40 lakhs
(d) Profit of Rs.20 lakhs

Q63. Simplify : 450 + 752 - 125 x 3/100 of 1000 - {650 ÷ (16 - 3)}

(a) 3200
(b) 2598
(c) -3750
(d) -2598

Q64. A woman sold her earphone for Rs. 2,000 and got a percentage profit equal to the numerical value of cost price. The cost price of the earphone is:

(a) Rs. 500
(b) Rs. 200
(c) Rs. 600
(d) Rs. 400

Q65. A sum of money amounts to Rs. 4,624 in 2 years and to Rs. 4,913 in 3 years at a certain rate of interest, when interest is compounded per annum. The sum is _____.

(a) Rs. 4,412
(b) Rs. 4,335
(c) Rs. 4,260
(d) Rs. 4,096

Q66. if $x + 1/x = 10$, then find the value of $7x/(x^2 + 1 - 8x)$.

(a) 3.5
(b) 4.5
(c) 2.5
(d) 5.5

Q67. The marked price of a laptop is Rs. 50,000.A shopkeeper gives the following four schemes of discount to his customers. Which one is more beneficial to the customers?

i) Discount of Rs. 10,000
ii) Discount of flat 25%
iii) Discount of 10% of 10%
iv) Discount of 15% of 10%

(a) i
(b) iv

(c) ii
(d) iii

Q68. Four runners started running simultaneously from a point on a circular track. They took 400 seconds, 600 seconds, 720 seconds and 900 seconds to complete one round. After how much time did they meet at the starting point for the first time since the race started?

(a) 4200 sec
(b) 2400 sec
(c) 3600 sec
(d) 1800 sec

Q69. In an election between two candidates, 15% of the voters did not cast their votes and 10% of the votes polled were found invalid. The successful candidate got 55% of the valid votes and won by a majority of 6120 votes. The number of voters enrolled on the voters list was:

(a) 70000
(b) 80000
(c) 72000
(d) 75000

Q70. If $x - 2y = 3$ and $2xy = 5$, then find the value of $(x + 2y)^2$

(a) 29
(b) 27
(c) 30
(d) 28

Q71. if $a^2 + b^2 + 1/(a^2) + 1/(b^2) = 4$, $a \neq 0$, $b \neq 0$, then the value of a^4 + b^4 is:

(a) 32
(b) 256
(c) 64
(d) 2

Q72. A die is thrown 1,000 times with the frequencies for the outcomes 1, 2, 3, 4, 5 and 6 as given in the following table. How many times is the number appearing on the die greater than or equal to 5?

Outcome	1	2	3	4	5	6
Frequency	179	150	157	149	175	190

(a) 365
(b) 535
(c) 190
(d) 356

Q73. A group of 36 students has an average present age of 14 years. When the age of the teacher is included, the average age rises by one. Calculate the teacher's age (in years).

(a) 53
(b) 54
(c) 52
(d) 51

Q74. If ABC is a triangle in which DE || BC and AD : DB = 9 : 8, then DE : BC is _____.

(a) 9 : 17
(b) 9 : 15
(c) 8 : 17
(d) 9 : 13

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Q75. Manoj and his wife Swathi fill a tank with water fetched from a well. Manoj fetches 5 litres of water in 4 minutes whereas Swathi fetches 4 litres of water in 5 minutes. Find the time taken by them together to fetch 205 litres of water.

(a) 2 hours
(b) 80 minutes
(c) 100 minutes
(d) 1 hour 30 minutes

GENERAL AWARENESS

Q76. Who among the following has been conferred the prestigious title of 'Maestro' by London's Royal Philharmonic Orchestra, with whom he had been the only Asian to have composed a full symphony as on 6th March 2022?

(a) Ilaiyaraaja
(b) AR Rahman
(c) Devi Sri Prasad
(d) Gopi Sundar

Q77. In India, CRR is fixed by _____.

(a) Ministry of Finance
(b) Ministry of External Affairs
(c) Reserve Bank of India
(d) Life Insurance Corporation of India

Q78. Which of the following is the first city in history to host the Paralympic Games for a second time?

(a) Tokyo
(b) Sydney
(c) Brisbane
(d) Beijing

Q79. Which Indian cartoonist's autobiography is titled 'The Tunnel of Time'?

(a) Ajit Ninan
(b) RK Laxman
(c) OV Vijayan
(d) Mario Miranda

Q80. In January 2022, in which city an initiative - Deaddiction, Reformation and Entrepreneurial Assistance for Making a Safe Society (Dreams) was launched to rehabilitate drug addicts?

(a) Amritsar
(b) Kolkata
(c) Bhubaneswar
(d) New Delhi

Q81. Name the only Indian athlete who received the Padma Bhushan Award for the year 2022

(a) Vandana Katariya
(b) Faisal Ali Dar
(c) Sankaranarayana Menon Chundayil
(d) Devendra Jhajharia

Q82. Who among the following was the author of the famous work "Sangita Ratnakara"?

(a) Sharngadeva
(b) Lochan Kavi
(c) Jaidev
(d) Ramamatya

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Q83. Padma Bhushan, Kanak Rele was conferred with the award for her significant contribution to which of the following dance forms?

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

Q84. Which disease refers to the inflammation of the liver caused by a variety of infectious viruses and non-infectious agents leading to a variety of health problems?

(a) Tuberculosis
(b) Pneumonia
(c) Hepatitis
(d) Diabetes

Q85. Out of the given four alternatives, select the one that is NOT a constitutional body.

(a) Finance Commission
(b) Election Commission
(c) National Human Rights Commission
(d) Union Public Service Commission

Q86. Kelucharan Mohapatra, awarded with Padma Vibhushan in 2000, was a dancer of which of the following dances?

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

Q87. Who was recognised as ‘Asthana Nartaki’ (resident dancer) of the Tirumala Tirupati Devasthanam?

(a) Yamini Krishnamurthy
(b) Chinta Ravi Bala Krishna
(c) Sunder Prasad
(d) Mohanrao Kallianpurkar

Q88. Among the following, whose autobiography is ‘Daughter of Destiny: An Autobiography’?

(a) Kamala Das
(b) Urvashi Butalia
(c) Malala Yousafzai
(d) Benazir Bhutto

Q89. Which music director duo of India made their debut in the ‘Forbes India Celebrity 100 List 2015’?

(a) Shiv-Hari
(b) Ajay-Atul
(c) Anand-Milind
(d) Vishal-Shekhar

Q90. Which kind of sport is bungee jumping?

(a) Adventure sport
(b) Recreational sport
(c) Para sport
(d) Special sport

Q91. Which of the following characters are correct about Phylum Echinodermata?

(a) Roundworms, pseudocoelomate
(b) Coelom present, bilateral symmetry
(c) Gastrovascular cavity, flatworms, acoelomate
(d) Gastrovascular cavity, coelom present

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Q92. What components are often called the building blocks of the body that play a vital role in helping to repair and strengthen muscle tissues after exercise?

(a) Carbohydrates
(b) Micronutrients
(c) Fats
(d) Proteins

Q93. The given equation describes the _____ relation.

$s = u\,t + 1/2\,a\,t^2$

(a) position-time
(b) distance-time
(c) position-velocity
(d) velocity-time

Q94. Which crop grows best in areas with hot, humid climate and requires temperature between 21°C to 37°C with well distributed rainfall or irrigation facilities of about 100 cm?

(a) Rice
(b) Bajra
(c) Pulses
(d) Oilseeds

Q95. How do humans acclimatise at high altitudes where atmospheric pressure is low for normal breathing?

(a) By decreasing red blood cell production, decreasing the binding affinity of haemoglobin and by increasing breathing rate
(b) By increasing red blood cell production, decreasing the binding affinity of haemoglobin and by increasing breathing rate
(c) By hibernating
(d) By increasing white blood cell production, decreasing the binding affinity of haemoglobin and by increasing breathing rate

Q96. Who among the following won the National Film Award for Best Choreography at the 67^(th) National Film Awards?

(a) Remo Dsouza
(b) Farah Khan
(c) Prabhu Deva
(d) Raju Sundaram

Q97. In which region of India are Kotli Dun and Patli Dun located?

(a) Between greater Himalayas and the Shiwaliks
(b) Between lesser Himalayas and Trans Himalayas
(c) Between eastern Himalayas and the Shiwaliks
(d) Between lesser Himalayas and the Shiwaliks

Q98. Who is the author of ‘The Interpreter of Maladies’?

(a) Alberto Vourvoulias
(b) Anita Desai
(c) Jhumpa Lahiri
(d) Amitav Ghosh

Q99. In which month of 2021 was the Gram Ujala Yojana, aimed at providing high-quality electricity at an affordable cost to villages across the country, launched in Varanasi, Uttar Pradesh?

(a) August
(b) March
(c) September
(d) April

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Q100. Padma Bhushan awardee Ustad Sabri Khan was a _____ player.

(a) sarangi
(b) Flute
(c) santoor
(d) Sarod

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (a) allowed

The correct answer is: allowed

Key Points

• Allow (verb) means to give permission for somebody/something to do something or for something to happen.

• We use "have/has + v3" in the present perfect tense when an action that started in the past and is directly related to the present, such as actions that are still continuing or that indicate a change over time.

• The given sentence talks about the period of 1920.

• So, the sentence must be written in the simple past tense, when the action started and finished in the past.

• The structure should be Subject + V2+ object.

Therefore, option 1 is the correct answer that can substitute the underlined segment in the given sentence.

Corrected sentence: In the 1920s, new technology allowed filmmakers to attach to each film a soundtrack of speech.

Q2. Answer: (a) Spacios

The solution is in Hindi. Read it online.

Q3. Answer: (d) To leave

The solution is in Hindi. Read it online.

Q4. Answer: (d) Do not oppress the disabled

The correct answer is Do not oppress the disabled.

Key Points

• Given sentence "The disabled should not be oppressed" is in Simple Present Tense and in Passive voice.

• The rule for changing a simple Present Indefinite tense form into an Active voice is as follows:

• Interchange the subject with the object and vice-versa.

• While converting the negative sentences with should into an active voice, the subject starts with Do not.

• Convert the verb "Disable" into a past participle or 3rd form of the verb.

• "Should not" will change into "Do not."

• Structure: Subject + first form of verb + Object.

• Example: The car should not be moved. (Active Voice)

Do not move the car. (Passive Voice)

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Additional Information

• The Active voice is used when the subject of the sentence does the action.

• The Passive voice is used when we focus on the object of the sentence.

Q5. Answer: (b) Repel

The correct answer is Repel.

Key Points

• Attract refers to drawing something or someone toward them by virtue of their traits, particularly positive ones.

• Example: Flowers attract butterflies.

• Repel refers to making something or someone stops approaching you or attacking you.

• Example: The smell of the place repelled tourists.

• Attract and Repel have different meanings.

Therefore, the correct option is Repel.

Additional Information

• Flex refers to expressing extreme joy or pride about an accomplishment or possession, typically in a way that irritates others.

• Rash refers to numerous little red dots on the skin.

• Destroy refers to seriously harming something such that it cannot be utilised.

Q6. Answer: (d) Between two dangers

The correct answer is Between two dangers.

Key Points

• The most appropriate meaning of the given idiom "Between Scylla and Charybdis" is "Between two dangers."

• Between Scylla and Charybdis refers to being forced to choose between two unappealing options.

• Example: Mike does not see that his actions will bring him between Scylla and Charybdis.

• Therefore, as per the points mentioned above, we find that the correct answer is Between two dangers.

Additional Information

• Meaning and examples of some idioms of the play "Between."

Idioms	Meaning	Example
Between a rock and a hard place	Being forced to decide between two terrible options.	He is between a rock and a hard place.
Between the devil and the deep blue sea.	You have to decide between two unpleasant options when you are in a challenging circumstance.	When I was a student, I was always caught between the devil and the deep blue sea having to choose whether to buy food or stop eating junk food.

Q7. Answer: (a) over

The correct answer is Over.

Key Points

• In the given options the correct option to be filled in the blank is Over.

• The word "over" is used to describe a movement or position that is superior to another.

• It can also be used while referring to movement across a surface.

• Example: A bird flew over my home.

• Thus, the correct option is Over.

The correct sentence is: We love to swing from the branches over the pond.

Additional Information

• We use the word "on" when referring to a place on a surface.

• We use the preposition "in" when describing a location in relation to a bigger area.

• We use the word "under" when referring to something that is beneath or beneath another.

Q8. Answer: (c) Does he remember

The correct answer is Does he remember.

Key Points

• "Is he remembering" is grammatically incorrect in this sentence.

• The correct usage is "Does he remember" instead of "Is he remembering."
• The tense used in this sentence is Interrogative Simple Present Tense.
• Structure of Interrogative Simple Present Tense: “Do or Does” + Subject + first form of a verb + Object.
• Example: Does she read the novels she bought?
The correct sentence is: Does he remember our help?

Q9. Answer: (a) Audasious

The incorrectly spelt word is "Audasious."
Key Points
• In the given options "Audasious" is incorrectly spelt. Its correct spelling is "Audacious."
• Let's look at its meaning.
• Audacious: Demonstrating a readiness to take chances or offend people.
• Example: He described the speech as audacious.
• **Therefore, as per the points mentioned above, we find that the correct answer is Audacious.
Additional Information Let's look at the meaning of other options also:

Word	Meaning
Incredible	Extremely tough to believe, impossible and extremely good
Baffling	Difficult for anyone to comprehend or express
Prevalent	Existing frequently or occurring frequently

Q10. Answer: (b) Guarmet

The incorrectly spelt word is "Guarmet."
Key Points
• In the given options "Guarmet" is incorrectly spelt. Its correct spelling is "Gourmet."
• Let's look at its meaning.
• Gourmet: A person with a passion for and extensive knowledge of food.
• Example: She is a chef and a gourmet.
• **Therefore, as per the points mentioned above, we find that the correct answer is "Gourmet."
Additional Information
Let's look at the meaning of other options also:

Word	Meaning
Retrospect	Considering something from the past right now
Magnanimous	Kind and courteous to an enemy or a foe you have defeated
Clandestine	Prepared or completed covertly, especially when referring to something that is not permitted by law

Q11. Answer: (a) To have nothing to do

The correct answer is To have nothing to do.
Key Points
• The most appropriate meaning of the given idiom "Be at a loose end " is "To have nothing to do."
• Be at a loose end refers to a state of being idle.
• Example: If you find yourself at a loose end, you could always read the novel.
• Therefore, as per the points mentioned above, we find that the correct answer is To have nothing to do.
Additional Information
• Let's look at the meaning and examples of some idioms of the play "Loose."

Idioms	Meaning	Example
Loose as a goose	Very comfortable and calm.	She is under a lot of pressure, but she still looks as loose as a goose.

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Cut one loose	To abruptly end a connection, whether it be personal or professional.	She cut me loose with no explanation.

Q12. Answer: (d) Ephemeral

The correct answer is "Ephemeral."

Key Points

• The appropriate answer is "Ephemeral" which means "Lasting for a very short period of time."

• Ephemeral: Lasting merely a short period of time.

• Example: Fame in the industry is Ephemeral.

• **Therefore, the correct option is Ephemeral.

Additional Information

• Permanent refers to something that lasts forever.

• Ceaseless refers to something having no end or appearing to have no end.

• Pungent refers to strong and harsh flavours or aromas.

Q13. Answer: (d) Vocabulary raises the standard of the English language.

The correct answer is "Vocabulary raises the standard of the English language."

Key Points

• In "He incorporates daily vocablary in his gestures" the incorrect spelling is vocablary.

• In "Reading stories developed her vocabluary" the incorrect spelling is vocabluary.

• In "She has her own vockbulary words from English and Hindi" the incorrect spelling is vockbulary.

• The correct spelling is Vocabulary.

• Vocabulary: All the words that a specific person is familiar with and uses.

• Example: Reading increases your vocabulary.

Q14. Answer: (b) ate that lobster

The correct answer is Ate that lobster.

Key Points

• "Ate that lobster" is grammatically incorrect in this sentence.

• The correct usage is "Eaten that lobster" instead of "Ate that lobster."

• The tense used in this sentence is Past Perfect tense.

• Structure of Past Perfect tense: Subject + had +V3 form + Object.

• Example: She had already left the party when I reached there.

The correct sentence is: After he had eaten that lobster, he began to feel sick.

Q15. Answer: (b) absurd

The correct answer is Absurd.

Key Points

• Illogical means not prudent, smart, or rational, typically because they are motivated by their emotions rather than critical consideration.

• Example: Her statements are totally illogical.

• Absurd refers to things which are either foolish and unreasonable or amusingly silly.

• Example: The answers that she gave in the test were totally absurd.

• "Illogical" and "Absurd" are similar in meaning.

Therefore, the correct option is Absurd.

Additional Information

• Unfavourable refers to not offering you a competitive edge or a high likelihood of success.

• Biased refers to showing an excessive affinity for or aversion to a person depending on one's own preferences.

• Factual refers to utilising or containing facts.

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Q16. Answer: (b) She did not hire me.

The correct answer is 'She did not hire me'.

Key Points

• The given sentence is in Simple Past Tense and in Passive voice.

• Rules to change a Passive voice to an Active voice :

• The subject and object are interchanged i.e. the subject become the object and the object becomes the subject.

• Passive pronouns (her) change to active pronouns (she).

• Active pronouns (I) change to passive pronouns (me).

• 'By' is removed.

• The structure :

• Object + was/were+ not +V3+ by Subject (Passive voice)

• Subject +did+ not+v1+ object (Active voice)

• Example- She was not taken by him. (Passive voice)

• He did not take her. (Active voice)

Additional Information

• In passive voice, a sentence emphasizes the object performing an action.

• In active voice, a sentence emphasizes the subject performing an action.

Q17. Answer: (b) Prolong

The correct answer is 'prolong'.

Key Points

• To Protract means to make something last for a long time or last longer than necessary.

• Example- He has certainly taken his time, even protracting the process.

• To Prolong means to extend the duration of something to make it longer.

• Example- An idea that prolonged the life of the engine by years.

• It is clear that 'Prolong' is the most appropriate meaning for the underlined word 'protract'.

Additional Information

• Control means the power to influence something.

• Example- The whole project is under the control of the project manager.

• Accept means consent to receive or undertake something.

• Example- He accepted the position as the new CEO of the company.

• Cease means to come or bring to an end.

• Example- The hostilities ceased and normal life was resumed.

Q18. Answer: (c) shall have completed

The correct answer is 'shall have completed'.

Key Points

• The sentence is in Future perfect tense.

• The structure for future perfect tense : Subject + (auxiliary verb + have) + V3

• So the right sentence would be:

• She shall have completed her graduation by 2023.

Additional Information

• The future perfect tense refers to a completed action in the future.

• When we use this tense, we project ourselves forward into the future and look back at an action that will be completed sometime later than now.

• It is often used with a time expression.

• Example- Won't they have arrived by 5 pm?

Q19. Answer: (a) Commisarate

The correct answer is 'commisarate'.

Key Points

• In the given options, 'commisarate' is an incorrectly spelt word.

• The right spelling would be 'commiserate'.

• Commiserate means to express or feel sympathy or pity.
• Example-She went over to commiserate with Rose on her unfortunate circumstances.

Additional Information

• Decennial means recurring every 10 years.
• Example- It is time for the decennial census.
• Nausea means a feeling of sickness with an inclination to vomit.
• Example- A wave of nausea engulfed him as soon as he saw the rotting dead body.
• Curriculum means the subjects comprising a course of study in a school or college.
• Example- I was in charge of developing the curriculum and its course components for this academic year.

Q20. Answer: (d) CDAB

The correct answer is 'CDAB'.

Key Points

• Sentence C comes first as it gives an introduction and definition regarding the subject matter i.e online education.
• Sentence D comes second as it carries the definition to the advantages point.
• Sentence A comes next as it continues the advantages part.
• Sentence B comes last as it concludes the whole discussion about online education.
• Hence, the right order is CDAB.

Q21. Answer: (d) so

The correct answer is 'so'.

Key Points

• Here 'so' has a similar meaning to that of 'very'.
• In sentences like this, 'so' is used to add emphasis and to make the meaning stronger.
• Example- He is so proud of his son.
• Hence it is the most appropriate option to fill in the blank.

Q22. Answer: (c) to

The correct answer is 'to'.

Key Points

• Here the word 'stomach' is used as a verb.
• Stomach as a verb means to bear without overt reaction or resentment.
• Example- She couldn't stomach the ongoing office politics.
• There is already a verb present in the same sentence (find), so there is a need for a to-infinitive to include the other verb in the sentence.
• Among the given options, 'to' is the most appropriate one because it makes the verb a to-infinitive form.

Q23. Answer: (d) fact

The correct answer is 'fact'.

Key Points

• Fact means a thing that is known or proven to be true.
• Example- He blatantly ignored some historical facts while writing that book.
• Since the point being tried to be made is a statement that is supposedly true, 'fact' is the most appropriate option to fill in the blank.

Additional Information

• A Story means an account of real or imaginary people told for entertainment.
• Example- Jumanji is a story of adventure and thrill.
• The term means a word or phrase used to describe a thing or to express a concept, especially in a particular branch or field of study.
• Example- The scientific term for human beings is Homosapiens.
• Myth means a traditional story concerning the early history of people or explaining a natural phenomenon involving supernatural beings or events.
• Example- He found the ancient Celtic myths too fascinating.

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Q24. Answer: (d) allowed

The solution is in Hindi. Read it online.

Q25. Answer: (d) interpret

The correct answer is Interpret.

Key Points

• The verb is a term that serves as the major component of the predicate of a sentence and is used to describe an action, state, or event, such as hear, become, or happen.

• The word Interpret is a verb which means to give a definition of (information or actions).

• Example: I am sorry, I interpret something wrong.

Additional Information

• The word deny means a state that one refuses to admit the truth or existence of.

• Example: You can't deny that you don't like Jim.

• The word accept means agreement to receive or perform (something offered).

• Example: I accept I broke the vase.

• The word malign means wicked in character or outcome.

• Example: She had a strong and malign influence.

Q26. Answer: (a) 129

Logic : (First number - 2) × 3 = Second number

1) 27 : 75

=> (27 - 2) × 3

=> 25 × 3 => 75

2) 39 : 111

=> (39 - 2) × 3

=> 37 × 3 => 111

Similarly,

3) 45 : ?

=> (45 - 2) × 3

=> 43 × 3 => 129

Hence, '129' is the correct answer.

Q27. Answer: (a) GHRID

The positional values of English alphabet is as follows:

The pattern followed here is: Opposite letters

'ELBOW' is written as 'DLYOV'

‘ANKLE' is written as 'VOPMZ'

Similarly,

'WRIST' will be written as:

Hence, "GHRID" is the correct answer.

Q28. Answer: (a) [figure]

The paper when unfolded will appear as shown below:

Hence, ‘option 1' is the correct answer.

Q29. Answer: (a) Sunday

Given : 15 July 2002 is a Monday

• Total number of days in a normal year = 365

• Number of odd days in a normal year = 365 ÷ 7 = 1

• Total number of days in a leap year = 366

• Number of odd days in a leap year = 366 ÷ 7 = 2

• 15 July 2002 (Monday) + 1 odd day (2003) + 2 odd days (2004) + 1 odd day (2005) = 15 July 2005 (Friday)

• Total number of days from 15 July 2005 to 16 October 2005 = 16 (July) + 31 (August) + 30 (September) + 16 (October) = 93

• Total number of odd days from 15 July 2005 to 16 October 2005 = 93 ÷ 7 = 2

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• Now starting from 15 July 2005, every 7^(th)day will be a Friday.
• Therefore, Friday + 2 = 16 October 2005 i.e., Sunday
Hence, 'option 1' is the correct answer.

Q30. Answer: (c) [figure]

The correct mirror image of the given figure when the mirror is placed at MN:
Hence, "Option 3" is the correct answer.

Q31. Answer: (d) H E D E

Given : B E _ K P C _ H K P _ E H K P_ E H K P
Lets check each option:
1) F, E, Q, H => B,E,F,K,P - C,E,H,K,P - Q,E,H,K,P - H,E,H,K,P
No pattern is followed.
2) F,D,Q,H => B,E,F,K,P - C,D,H,K,P - Q,E,H,K,P - H,E,H,K,P
No pattern is followed.
3) H,D,Q,E => B,E,H,K,P - C,D,H,K,P - Q,E,H,K,P - E,E,H,K,P
No pattern is followed.
4) H,E,D,E => B,E,H,K,P - C,E,H,K,P - D,E,H,K,P - E,E,H,K,P
In this series, pattern is followed.
Hence, 'option 4' is the correct answer.

Q32. Answer: (c) [figure]

The paper when unfolded will be as shown below:
Hence, 'option 3' is the correct answer.

Q33. Answer: (d) 33

Logic : Square root of first number + 10 = second number
1) 64 : 18
=> √64 + 10
=> 8 + 10 = 18
And,
2) 196 : 24
=> √196 + 10
=> 14 + 10 = 24
Similarly,
3) 529 : ?
=> √529 + 10
=> 23 + 10 = 33
Hence, the correct answer is "33".

Q34. Answer: (c) [figure]

The correct mirror image of the given figure when the mirror is placed at MN.
Hence, "Option 3" is the correct answer.

Q35. Answer: (b) CUNLRAE

The positional values of English alphabet is as follows:
The pattern followed here is:
UNCLEAR is written as CNULRAE
And,
PRIVACY is written as IRPVYCA
Similarly,
NUCLEAR is written as:
Hence, 'CUNLRAE' is the correct answer.

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Q36. Answer: (d) Son

Family Chart:

Given :

• A is the brother of C

• B is the only sister of D who is the maternal uncle of C.

• E is the father of C.

Hence, the correct answer is "Son".

Q37. Answer: (b) None of the conclusions follow.

The least possible Venn diagram:

Conclusions:

I. Some biscuits are cakes → False (As no sweet is a biscuit and all cakes are sweets. So some biscuits are cakes is not true)

II. Some chocolates are sweets → False (As no sweet is a biscuit and some chocolates are biscuits. So some chocolates sweets is not true)

III. No cake is a chocolate → False (There is no direct relation between cake and chocolate. So, it may or may not be true. Hence, this is considered false).

Hence, the correct answer is "None of the conclusions follow".

Q38. Answer: (c) (80, 10, 15)

Logic : (First number ÷ Second number) + 7 = Third number

1) (45, 9, 12)

=> (45 ÷ 9) + 7

=> 5 + 7 = 12

And,

2) (21, 3, 14)

=> (21 ÷ 3) + 7

=> 7 + 7 = 14

Lets check each option:

1) (55, 5, 11)

=> (55 ÷ 5) + 7

=> 11 + 7 = 18 ≠ 11

2) (66, 6, 17)

=> (66 ÷ 6) + 7

=> 11 + 7 = 18 ≠ 17

3) (80, 10, 15)

=> (80 ÷ 10) + 7

=> 8 + 7 = 15

4) (70, 5, 13)

=> (70 ÷ 5) + 7

=> 14 + 7 = 21 ≠ 13

Hence, 'option 3' is the correct answer.

Q39. Answer: (a) 38401532

The positional values of English alphabet is as follows:

The pattern followed here is:

Twice the value of consonant whereas vowel is written as it is.

'RESET' is written as '36538540'

And

'START' is written as '384013640'

Similarly,

'STOP' will be written as:

Hence, '38401532' is the correct answer.

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Q40. Answer: (d) 9 : 64

Logic : (First number + 1)²= Second number

Lets check each option:

1) 3 : 16

=> (3 + 1)² => (4)²=> 16

2) 6 : 49

=> (6 + 1)²=> (7)² => 49

3) 12 : 169

=> (12 + 1)²=> (13)² => 169

4) 9 : 64

=> (9 + 1)² => (10)² => 100 ≠ 64

So, 9 : 64 is the odd one out.

Hence, 'option 4' is the correct answer.

Q41. Answer: (d) 21

BODMAS Rule:

Explanation :

Letter	Symbol
A	•
B	×
C	•
D	÷

If we apply BODMAS rule on the given equation

=> (84 D 14) A 17 C 13 B (75 D 15) A 9 B 7

=> (84 ÷ 14) + 17 - 13 ×(75 ÷ 15) + 9 × 7

=> 6 + 17 - 13 × 5 + 9 × 7

=> 6 + 17 - 65 + 63

=> 86 - 65

=> 21

Hence, 21 is the correct answer.

Q42. Answer: (b) 124

Table of English alphabet positional value

According to given coding language

IS

9 × 19 = 171 - 2 = 169

AM

1 × 13 = 13 - 2 = 11

Similarly,

IN

9 × 14 = 126 - 2 = 124

Hence, 124 is the correct answer.

Q43. Answer: (b) 13

The logic followed here is:

Logic: (First number)³ - 4 = Second number

Hence, the correct answer is "13"

Q44. Answer: (a) 5

Given :

Explanation :

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The two dices with one face common in the figures

Then write it in a clockwise order starting from the common face then the positional value become the opposite face.

Here 2 is the common face in both the dices. The opposite faces are

6 → 1

3 → 4

2 → 5

Hence, 5 is the correct answer.

Q45. Answer: (a) 25 : 5

Explanation : The pattern followed here is :

Logic: First number = (second no)²×(second no. +1)

Option 1 : 25: 5

=> $25 \neq 5^2 \times 6$

Option 2 : 80 : 4

=> $80 = 4^2 \times 5$

Option 3 : 36 : 3

=> $36 = 3^2 \times 4$

Option 4 : 2 : 12

=> $12 = 2^2 \times 3$

Hence, 25 : 5 is the correct answer.

Q46. Answer: (a) 11

Explanation :

Let's take common number in both the dices

12 and 13 both are common in both the dices. Now move clockwise direction in both dice.

13-12-14 first dice

13-11-12 second dice

13 is opposite to 12 and 12 is opposite to 13

so, 14 is opposite to 11 as shown below

Hence, 11 is the correct answer.

Q47. Answer: (b) 546

The pattern followed here is:

Hence, the correct answer is "546".

Q48. Answer: (b) 1452

Explanation :

Logic: Second number completely divide by.

1) 576 is divisible by 16

And

2) 80 is also divisible by 8.

Among the options(we have to select the option that will be divisible by 22)

3) 1452 is divisible by 22.

Hence, 1452 is the correct answer.

Q49. Answer: (b) ISCN

The table of English alphabet positional value

According to positional value

Note: G(7) = 7 + 26 = 33, 33 - 15 = 18(R) As alphabet series end with 26, We take 26 as 0 or starting point.

C(3) = 26 + 3 = 29, 29 - 15 = 14(N),As alphabet series end with 26, We take 26 as 0 or starting point.

Hence, "ISCN" is the correct answer.

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Q50. Answer: (a) 657

The pattern followed here is:

Hence, "657" is the correct answer.

Q51. Answer: (c) 15

Given:

The 9 - digit number 5p42978n6 is divisible by 72.

Calculations:

Number should be divisible by 72. then, number should be divisible by 8 and 9 both.

Largest possible value of n to be divisible by 8 is = 9

And second largest possible value of n to be divisible by 8 = 5

=> 856/8 = 107

For n = 5, then

Number should be divisible by 9 -

= (5 + p + 4 + 2 + 9 + 7 + 8 + 5 + 6)

= 46 + p

Therefore, (46 + p) should be divisible by 9 then for p = 8 this condition will satisfy.

So, possible value of p = 8

Then, 2p - 1

= 2(8) - 1

= 16 - 1

= 15

Therefore The value of (2p - 1) is 15.

Q52. Answer: (b) 2009-10

Calculations:

The sum of imports-exports in year 2006-07 = 1036 + 818 = 1854

The sum of imports-exports in year 2007-08 = 954 + 988 = 1942

The sum of imports-exports in year 2008-09 = 618 + 878 = 1496

The sum of imports-exports in year 2009-10 = 432 + 216 = 648

The sum of imports-exports in year 2010-11 = 685 + 930 = 1615

Here, 648 < 1496 < 1615 < 1854 < 1942

Therefore The imports-exports is minimum in year 2009-10.

Q53. Answer: (a) 6 cm

Given:

Length of diagonal of Cube = 6√3 cm

Concept used:

Diagonal of a cube of side a = a√3

Calculations:

Let the side of the cube be "a".

According to question,

Diagonal = 6√3

=> a√3 = 6√3

=> a = 6 cm

Hence, The side is 6 cm

Therefore Length of side of the cube is 6 cm.

Q54. Answer: (c) 128 π cm^3

Given:

The diameter of base of a right circular cone = 16 cm.

The height of the right circular cone = 6 cm.

Formula used:

The volume of a cone = (1/3)πr2h
(l)2 = (r)2 + (h)2
where, r = Base radius of a cone, h = Height of a cone and l = Slant height of a cone
Calculation:
The diameter of the base = 16 cm,
Radius = 16/2 = 8 cm
The volume of the cone = (1/3)πr2h
=> (1/3) × π × 82 × 6
=> 128π cm3
Therefore The volume of the cone is 128π cm3.

Q55. Answer: (d) 2 : 1

Given:
Cost of first variety = Rs. 45/kg
Cost of second variety = Rs. 48/kg
Selling price of mixture = Rs. 46/kg
Formula used:
Rule of alligation:
(Quantity of cheaper/Quantity of dearer) = [(Cost price of dearer) – (Mean price)]/[(Mean price) – (Cost price of cheaper)]
Calculations:
According to question, the mean price of the mixture is Rs. 46/kg.
Let the ratio of the two varieties be R.
Using the rule of alligation,
=> R = (48 - 46)/(46 – 45)
=> R = 2/1
=> R = 2 : 1
Therefore The ratio in which the two varieties must be mixed to sell the mixture for Rs. 46/kg is 2 : 1.

Q56. Answer: (c) 1/2 (5 + 1/5)

cosec θ + cot θ = 5
Formula used:
1+cosθ=2cos² (θ/2)
sinθ=2sin (θ/2)cos (θ/2)
sinθ = p/h and cosθ = b/h
where p → perpendicularh → hypotenuse
b → base
Calculation:
=> 1/sinθ+cosθ/sinθ=(1+cosθ)/sinθ=5
=> (2cos² (θ/2))/(2sin (θ/2)cos (θ/2))=5
=> (cos (θ/2))/(sin (θ/2))=cot(θ/2)=5
Now,
sin (θ/2)=1/√26 and cos (θ/2)=5/√26
cosecθ=1/(sin θ)=1/(2 sin (θ/2) cos (θ/2))
substituting, we get
cosecθ=1/(2× 1/√26× 5/√26) =26/10=1/2(5+1/5)
Alternate MethodAs we know that,
cosec²θ - cot²θ = 1
=> (cosecθ + cotθ)(cosecθ - cotθ) = 1
=> 5 × (cosecθ - cotθ) = 1
=> cosecθ - cotθ = 1/5 ----(1)
and cosec θ + cot θ = 5 ----(2)
Adding equation(1) and equation(2)

=> 2cosecθ = 5 + 1/5

=> cosecθ = 1/2(5 + 1/5)

Q57. Answer: (b) Only C

Formula used

Two successive discounts x and y

The total discount = -x-y+(x× y)/100

Calculation:

Case 1: two successive discounts of 15%

Total discount = 27.75%

Case 2: two successive discounts of 12% and 18%

Total discount=27.84%

Case 3: buying 7 articles and get 3 free

let cost price of an article = Rs 1

He got 10 articles with price of seven

Discount= (10-7)/10× 100= 30% %

so the most discount is offered in case 3

Q58. Answer: (c) 29

Given

average of 16 numbers=23

average of 7 numbers=21

average of 8numbers=24

Calculation

sum of 16 numbers = average × number

=> 23 × 16 = 368

sum of the first 7 numbers = 21 × 7 =147

sum of the last 8 numbers = 24 × 8=192

sum of 16 numbers

=> sum of first 7 numbers + 8^(th)number+sum of last 8 numbers

=> 368 = 147 + 8thnumber + 192

=> 8thnumber = 29

The 8thnumber is 29

Q59. Answer: (d) 21 cm

Given:

solid cuboid dimension = 49 cm × 33 cm × 24 cm

Formula used:

The volume of a cuboid = a × b × c, where a,b, c are dimensions

The volume of a sphere = 4/3~ × π × r^3, where r is the radius

Calculation:

For remolding volume of sphere is equal to volume of cuboid

=> 4/3~ × π × r^3 = 49 × 33 × 24

=> r^3 = 9261

=> r = $\sqrt[3]{9261}$ = 21

solving this we get r=21cm

Therefore The radius of the sphere is 21 cm.

Q60. Answer: (d) 36 km

The ratio of distance 4:7

If Ravina traveled 4 km then Suhel travels 7 km

So if Suhel travel 63 km that is 9 × 7

So Ravina travelled 9 × 4 = 36 km

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Ravina travels 36km

Q61. Answer: (d) 275

Given

percentage of girls 64%

girls chosen soccer 81.25%

number of girls chosen soccer is 143

Calculation

Total percentage of the class=100%

let total number of students in class is T

girls chosen soccer is 81.25% of the 64% of T

So 64/100× 81.25/100 × T=143

=> T = 275

The total number of students in the class is 275

Q62. Answer: (d) Profit of Rs.20 lakhs

Given

Taking last three years

in year 2018 = 10 lakh loss

in year 2019 = 5 lakh loss

Combining those two, total 15 lakh loss

Then in the year 2020 = 35 lakh profit

So, 35 - 15 = 20 lakh profit

So for last three years there is a profit of 20 lakhs

Q63. Answer: (d) -2598

450 + 752 - 125 x 3/100 of 1000 - {650 ÷ (16 - 3)}

applying BODMAS rule

=> 450 + 752 - 125 x 3/100 of 1000 - {650 ÷ (13)}

=> 450 + 752 - 125 x 3/100 of 1000 - 50

=> 450 + 752 - 125 x 30- 50

=> 450 + 752 - 3750 - 50

=> 1202 - 3750 - 50 = - 2598

Q64. Answer: (d) Rs. 400

Given

selling price of earphone= 2000Rs

profit percentage = numerical value of cost price

Formula used

profit percentage= (Sp-Cp)/Cp× 100

Sp = selling price= 2000Rs

Cp = cost price

Calculation

from the question,

= Profit percentage,= (Sp-Cp)/Cp× 100

=> CP = (2000 - CP)/(CP) × 100

Let CP be x,

=> x = (2000 - x)/x × 100

=> x^2 = (2000 - x) × 100

=> x^2 + 100x - 2,00,00

=> x^2 + 500x - 400x - 2,00,000 = 0

=> x(x + 500) - 400(x + 500)

=> (x - 400) (x + 500) = 0

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=> x = 400 as CP can not be negative

The cost price of the earphone is Rs. 400

Q65. Answer: (d) Rs. 4,096

Shortcut Trick

Growth factor for 1 year = Amount3 ÷ Amount2 = 4913 ÷ 4624 = 17/16.

Since the time gap from 0 to 2 years is two 1-year intervals:

Principal (P) = Amount2 ÷ (Growth factor)²

P = 4624 ÷ (17/16)² = 4624 × (256 ÷ 289)

P = 16 × 256 = 4096.

Therefore The correct answer is Rs. 4,096.

Alternate Method

Given:

Amount after 2 years (A2) = Rs. 4,624

Amount after 3 years (A3) = Rs. 4,913

Formula Used:

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

Calculations:

=> (1 + r/100) = A3 ÷ A2

=> (1 + r/100) = 4913 ÷ 4624

=> Dividing by 289: (1 + r/100) = 17/16

=> $P(1 + r/100)^2 = 4624$

=> $P \times (17/16)^2 = 4624$

=> $P \times (289/256) = 4624$

=> P = (4624 × 256) ÷ 289

=> P = 16 × 256

=> P = 4096

Therefore The correct answer is Rs. 4,096.

Additional Information

Compound Interest Concept

In Compound Interest, the interest earned in each period is added to the principal to calculate the interest for the next period. The amounts in successive years form a Geometric Progression (GP).

Rate of Interest Shortcut

If amounts for two consecutive years are given, Rate (r) = [(A_(n+1) − A_n) ÷ A_n] × 100.

SI vs CI for 2 Years

The difference between Compound Interest and Simple Interest for 2 years is given by the formula: Difference = $P(r/100)^2$.

Q66. Answer: (a) 3.5

GIVEN:

x +1/x = 10

CALCULATION:

As, we have x +1/x = 10

=> $x^2 + 1 = 10x$

=> $x^2 = 10x - 1$

Now, on putting the value of x^2 in the equation 7xover x^2 +1 -8x we get,

=> 7xover (10x -1) +1 -8x = 7xover2x = 7/2 or 3.5

Hence, the value is 3.5.

Q67. Answer: (c) ii

GIVEN:

Marked price = Rs50,000

FORMULA USED:

Discount = Marked price × Discount Rate

Selling price = (1-d1/100) × (1-d2/100) × M.P. Where M.P. → Marked price,
d1 and d2 → Successive discount rates respectively.
Selling price = Marked price - Discount
CALCULATION:
On considering 1st condition we have,
Discount = Rs10,000 and M.P. = Rs50,000
=> Selling price = (M.P.- Discount)
=> 50,000 - 10,000
=> Rs40,000
On considering 2nd condition we have,
Discount Rate = 25%, M.P. = Rs50,000,
=> Discount = M.P. × Discount Rate
=> 50,000 × 25/100 = Rs12,500
Hence,
=> Selling price = (M.P.- Discount)
=> 50,000 - 12,500 = Rs37,500
On considering 3rd condition we have,
d1 = 10% d2 = 10%, M.P. = Rs50,000
Selling price = (1-d1/100) × (1-d2/100) × M.P.
=> (1 - 10/100) × (1 - 10/100) × 50,000
=> 9/10× 9/10 × 50,000 = Rs40,500
On considering 4th condition we have,
d1 = 15%, d2 = 10 %, M.P. = Rs50,000
=> Selling price = (1-15/100) × (1-10/100) × 50,000
=> 17/20 × 9/10 × 50,000 = Rs38,250
Since, on condition 2nd i.e. on discount of flat 25% we have lowest selling price. Hence, it is more beneficial to the customers.
Hence, condition 2nd i.e.(ii), is in option no.3 .So, it is the required answer.

Q68. Answer: (c) 3600 sec

Given:
four runners to complete 1 round takes 400 sec, 600 sec, 720 sec, and 900 sec respectively
Concept used:
Lowest Common Multiple (L.C.M)
Calculation:
When the four runners will meet at the starting point, they would have completed different numbers of rounds
Hence, the time at which they will meet will be the L.C.M of the individual time taken by them
=> L.C.M. of 400, 600, 720, and 900 = 3600 sec.
Hence, they will meet after 3600 seconds.

Q69. Answer: (b) 80000

GIVEN:
Votes by which the successful candidate won the election = 6120
CALCULATION:
Let the initial votes be x
15% of the voters did not cast their votes and 10% of the votes were declared invalid
Hence, Total valid votes = x × (85/100) × (90/100)
Successful candidate received 55% of valid votes
=> non -successful candidate received 45% of valid votes
=> Difference = (55 -45) = 10%
Votes by which successful candidate won the election = 6120
=> x × (85/100) × (90/100) × (10/100) = 6120
=> x = 80,000.

Hence, the number of voters enrolled on the voter list were 80,000.

Q70. Answer: (a) 29

GIVEN:

x-2y = 3

2xy = 5

FORMULA USED:

$(a + b)^2 = a^2 + b^2 + 2ab$

(a - b)2 = a2 + b2 - 2ab

CALCULATION:

Now, (x - 2y) = 3,

on squaring both sides we get,

$\Rightarrow (x - 2y)^2 = 3^2$

$\Rightarrow x^2 + 4y^2 - 2 \times x \times 2y = 9$

$\Rightarrow x^2 + 4y^2 = 9 + 4xy$ ----(1)

Also, it is given 2xy = 5

$\Rightarrow xy = 5/2$ ----(2)

Now, $(x + 2y)^2 = x^2 + 4y^2 + 4xy$

put the value of $x^2 + 4y^2$ from equation (1) and the value of xy from equation (2),

$\Rightarrow (x + 2y)2 = (9 + 4xy) + 4\times 5/2$

$\Rightarrow (9+ 4 \times 5/2) + 10$

$\Rightarrow (19 +10) = 29.$

Hence, the value is 29.

Q71. Answer: (d) 2

GIVEN:

$a^2 + b^2 + 1/(a^2) + 1/(b^2) = 4$

FORMULA USED:

$(a - b)^2 = a^2 + b^2 - 2ab$

where a = 1st term, b = 2nd term

CALCULATION:

The given equation is $a^2 + b^2 + 1/(a^2) + 1/(b^2) = 4$

the equation can be rearranged as,

$\Rightarrow (a^2 + 1/(a^2) -2)+(b^2 + 1/(b^2) -2) = 0.$

$\Rightarrow (a^2 + 1/(a^2) - 2.a^2.1/(a^2)) + (b^2 +1/(b^2) -2.b^2.1/(b^2)) = 0.$ Now, this is in the form of $a^2 - b^2 -2.a.b.$

$\Rightarrow (a- 1/a)^2 + (b -1/b)^2 = 0.$

Hence, $(a - 1/a)^2 = 0.$ and $(b -1/b)^2 = 0.$

(as they are in the square form, hence, both individuals have to be zero, to satisfy the equation).

Now, $(a - 1/a)^2 = 0.$

$\Rightarrow a = 1/a$

$\Rightarrow a^2 = 1$ so, a^4 = 1

$(b -1/b)^2 = 0.$

$\Rightarrow b^2 =1$ so, b^4 = 1

Now, (a^4 + b^4) = (1+ 1) = 2.

Hence, the value is 2.

Q72. Answer: (a) 365

GIVEN:

die is thrown = 1000 times

CONCEPT USED:

Frequency = no. of times a particular outcome appears

CALCULATION:

Number appearing on the dice greater than or equal to five i.e. N(5 and 6)

=> (frequency of outcome 5 + frequency of outcome 6)

=> (175 +190) = 365.

Hence, 365 times the number which is equal to 5 or greater than 5 appears.

Q73. Answer: (d) 51

GIVEN:

Average of age of 36 students = 14 years

Average of teacher and students = 15 years

FORMULA USED:

Average = sum of values/ number of values

CALCULATION:

=> Sum of students / 36 = 14

=> sum of age of students = (36 × 14) = 504.

=> (sum of students + teacher) /37 = 15

=> sum of age of students and teacher = (37× 15) = 555

=> Age of teacher = (sum of age of students and teacher) - sum of age of student = (555- 504) = 51 years.

Hence, the teacher is 51 year old.

Q74. Answer: (a) 9 : 17

GIVEN:

In triangle ABC, DE// BC

AD/.DB = 9/8

CONCEPT USED:

Basic Proportionality Theorem (BPT) = If line DE is parallel to side BC of triangle ABC that intersects the other sides into two points, line DE divides AB and AC in proportion.

AD/AB = AE/AC = DE/BC

CALCULATION:

In triangle ABC, AD/DB = 9/8

=> AD/AB = DE/BC

=> 9/(9+8) = DE/BC

=> 9/17 = DE/BC

Hence, DE :BC = 9:17.

Q75. Answer: (c) 100 minutes

GIVEN:

Manoj fetches 5 litres of water in = 4 minutes

Swathi fetches 4 litres of water in = 5 minutes

FORMULA USED:

Efficiency = Total work / Time taken to do work

CALCULATION:

Efficiency of Manoj = Total unit / time taken = 5/4 litres/min

Efficiency of Swathi = Total unit/ time taken = 4/5 = litres/min

=> Efficiency of Manoj and Swathi together

=> (5/4 +4/5) litres/min

=> 41/20 litres/min

Total unit = 205 litres

=> Time taken = Total unit/Total efficiency

=> = 205÷(41/20)

=> 205 × 20over 41 = 100 minutes.

Hence, time taken together is 100 minutes.

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Q76. Answer: (a) Ilaiyaraaja

The correct answer is Ilaiyaraaja.

Key Points

• R. Gnanathesikan, known as Ilaiyaraaja, has been conferred the prestigious title of 'Maestro' by London's Royal Philharmonic Orchestra, with whom he had been the only Asian to have composed a full symphony as on 6th March 2022.

• He is an Indian film composer, conductor-arranger, singer, and lyricist who works in the Indian film industry, predominantly in Tamil cinema in addition to Telugu cinema.

• He is a nominated Member of Parliament in the Rajya Sabha since July 2022.

• Music legend Ilaiyaraaja stands out with his phenomenal achievements bringing in structural changes within the Tamil film world.

Additional Information

• Allah Rakha Rahman is an Indian film composer, record producer, singer, and songwriter who works predominantly in Indian cinema and occasionally international cinema. In 2010, the Indian government awarded him the Padma Bhushan, the nation's third-highest civilian award.

• Devi Sri Prasad is an Indian film composer, lyricist, singer-songwriter, and performer. Popularly known by his initials DSP, he is best known for his work in Telugu films. He also worked in a few Tamil films.

• Gopi Sundar C. S. is an Indian music director, programmer, playback singer, songwriter, actor, and performer who works prominently in Malayalam, Telugu, and Tamil film industries.

Q77. Answer: (c) Reserve Bank of India

The correct answer is Reserve Bank of India.

Key Points

• Cash Reserve Ratio (CRR) is the share of a bank's total deposit that is mandated by the Reserve Bank of India (RBI) to be maintained with the latter as reserves in the form of liquid cash.

• The current cash reserve ratio is at 4%, this will be changed to 4.5% from May 21st.

• Objectives of Cash Reserve Ratio:

• Cash Reserve Ratio ensures that a part of the bank's deposit is with the Central Bank and is hence, secure.

• Another objective of CRR is to keep inflation under control. During high inflation in the economy, RBI raises the CRR to reduce the amount of money left with banks to sanction loans. It squeezes the money flow in the economy, reducing investments and bringing down inflation.

Additional Information

• The statutory Liquidity Ratio (SLR) is the proportion of liquid assets to time and demand liabilities.

• The rate of SLR is 18.00%.

Q78. Answer: (a) Tokyo

The correct answer is Tokyo.

Key Points

• The Paralympic Games or Paralympics, also known as the Games of the Paralympiad, is a periodic series of international multi-sport events involving athletes with a range of physical disabilities, including impaired muscle power, impaired passive range of movement, limb deficiency, leg length difference, short stature, hypertonia, ataxia, athetosis, vision impairment and intellectual impairment.

• There are Winter and Summer Paralympic Games, which since the 1988 Summer Olympics in Seoul, South Korea, are held almost immediately following the respective Olympic Games.

• The Paralympics has grown from a small gathering of British World War II veterans in 1948 to become one of the largest international sporting events by the early 21st century.

• The Paralympics has grown from 400 athletes with a disability from 23 countries in Rome in 1960, where they were proposed by doctor Antonio Maglio, to 4520 athletes from 163 National Paralympic Committees at the 2020 Summer Paralympics.

Additional Information

• International Paralympic Committee (including Paralympic athletics, Paralympic swimming, Paralympic shooting, Paralympic powerlifting, Para-alpine skiing, Paralympic biathlon, Paralympic cross-country skiing, Para ice hockey, Para snowboarding).

Q79. Answer: (b) RK Laxman

The correct answer is RK Laxman.

Key Points

• Rasipuram Krishnaswami Laxman was an Indian cartoonist, illustrator, and humorist.

• He is best known for his creation "The Common Man" and for his daily cartoon strip, You Said It in The Times of India, which started in 1951. R. K.

• He was born on 24 October 1921, in Mysuru.

• He died on 26 January 2015, at Deenanath Mangeshkar Hospital and Research Center, Pune.

• He wrote You Said it, Maalgudi Ki Kahaniyan, The best of Laxman, and more books.

Additional Information

• Ajit Ninan is an Indian political cartoonist, best known for drawing the Centrestage series of cartoons in India, Today magazine and Ninan's World in the Times of India. Ninan lives in New Delhi, where he works for the Times of India.

• Ottupulackal Velukkuty Vijayan, commonly known as O. V. Vijayan, was an Indian author and cartoonist, who was an important figure in modern Malayalam language literature.

• Mario Miranda popularly known as Mario de Miranda was an Indian cartoonist and painter based in Loutolim in the Indian state of Goa.

Q80. Answer: (c) Bhubaneswar

The correct answer is Bhubaneswar.

Key Points

• In January 2022, in Bhubaneswar an initiative - Deaddiction, Reformation and Entrepreneurial Assistance for Making a Safe Society (Dreams) was launched to rehabilitate drug addicts.

• Drug addicts, who were involved in snatching, theft, or other property-related offence in the city, may soon get a fresh lease of life.

• The commission police have decided to facilitate their treatment in deaddiction centres, bring them to the mainstream and provide them livelihood support.

• They will initially help 50 drug addicts under their new incentives.

• Police will launch awareness campaigns in slums and educational institutes to make them free from drugs.

Additional Information

• It is to be noted here that the city police launched the DREAMS project in February this year with an aim to help the drug addicts, who were involved in snatching, theft, or other property-related offences in the city, to return to normal life.

• They were engaged in different activities like yoga, dance, and playing chess. Proper food and other facilities were provided at the deaddiction centers which helped the drug addicts to return to normalcy now.

Q81. Answer: (d) Devendra Jhajharia

The correct answer is Devendra Jhajharia.

Key Points

• Devendra Jhajharia is an Indian Paralympic javelin thrower competing in F46 events.

• He is the first Indian Paralympics player to win two gold medals at the Paralympics.

• He was born on 10 June 1981 (age 41 years) in Churu.

• He was awarded Padma Bhushan, Major Dhyan Chand Khel Ratna Award for Para-Athletics, Padma Shri, Arjuna Award for Athletics.

Additional Information

• Vandana Katariya is an Indian field hockey player. She plays as a forward in the Indian national team. Vandana rose to prominence in 2013, being India's top goal-scorer in the 2013 Women's Hockey Junior World Cup, where India won a bronze medal; she scored five goals in the tournament, the third by any player.

• Faisal Ali Dar is an Indian sports enthusiast, and the first person to receive the Padma Shri Award in sports from Jammu and Kashmir.

• Sankara Narayana Menon Chundayil popularly known as Unni Gurukkal is a Kalaripayattu gurukkal or teacher from Chavakkad. For his contributions in the field of Kalaripayattu, he has won several noted awards including Kerala Folklore Academy Award and India's forth highest civilian honor Padma Shri.

Q82. Answer: (a) Sharngadeva

The correct answer is Sharngadeva.

Key Points

• The Sangita-Ratnakara literally "Ocean of Music and Dance", is one of the most important musicological texts from India.

• Composed by Sharngadeva in Sanskrit during the 13th century, both Hindustani music and Carnatic music traditions of Indian classical music regard it as a definitive text.

• It is also called 'Saptadhyayi' as it consists of seven chapters.

• Sharngadeva or Sarnga Deva was the 13th-century Indian musicologist who authored Sangita Ratnakara – the classical Sanskrit text on music and drama. It is considered to be the authoritative treatise in Indian classical music by both Hindustani music and Carnatic music.

Additional Information

• Lochan kavi belonged to the Mithila region, Bihar, and was also called Lochan Pandit.

• Jaidev was a music composer in Hindi films, most known for his work in films: Hum Dono, Reshma Aur Shera, Prem Parbat, Gharaonda and Gaman. He won the National Film Award for Best Music Direction, three times for Reshma Aur Shera, Gaman and Ankahee.

• Ramamatya was the grandson of the illustrious Kallinatha. He was also the royal composer and architect at the court of king Ramaraja.

Q83. Answer: (a) Mohiniyattam

The correct answer is Mohiniyattam.

Key Points

• Mohiniyattam is an Indian classical dance form that developed and remained popular in the state of Kerala. Kathakali is another classical dance form in Kerala.

• The dance is performed by women in honour of the Hindu god Vishnu in his incarnation as the enchantress Mohini.

• Kanak Rele is an Indian dancer, choreographer, and academic best known as an exponent of Mohiniyattom.

• She is the founder-director of the Nalanda Dance Research Centre and the founder-principal of the Nalanda Nritya Kala Mahavidyalaya in Mumbai.

• She was born on 11 June 1937 (age 85 years) in Gujarat.

Additional Information

• Kuchipudi is one of the eight major Indian classical dances. It originates from a village named Kuchipudi in the Indian state of Andhra Pradesh. Kuchipudi is a dance-drama performance, with its roots in the ancient Hindu Sanskrit text of Natya Shastra.

• 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 travelling bards in of ancient northern India known as Kathakars or storytellers.

• Bharatanatyam is a major form of Indian classical dance that originated in Tamil Nadu. The dance form is also briefly mentioned in the Kannada text Manasollasa written by Someshwara III. It has flourished in the temples and courts of southern India since ancient times.

Q84. Answer: (c) Hepatitis

The correct answer is Hepatitis.

Key Points

• Non-infectious diseases are caused by factors such as genetics, malnutrition, environment, and lifestyle. Examples of non-infectious diseases include cancer, Alzheimer's disease, and epilepsy.

• Infectious diseases are disorders caused by organisms — such as bacteria, viruses, fungi, or parasites. Many organisms live in and on our bodies. They're normally harmless or even helpful. But under certain conditions, some organisms may cause disease. Some infectious diseases can be passed from person to person.

• Hepatitis means inflammation of the liver. The liver is a vital organ that processes nutrients, filters the blood, and fights infections. When the liver is inflamed or damaged, its function can be affected.

• Heavy alcohol use, toxins, some medications, and certain medical conditions can cause hepatitis.

Additional Information

• Tuberculosis (TB) is caused by a bacterium called Mycobacterium tuberculosis. The bacteria usually attack the lungs, but TB bacteria can attack any part of the body such as the kidney, spine, and brain. Not everyone infected with TB bacteria becomes sick.

• In pneumonia, the air sacs may fill with fluid or pus. The infection can be life-threatening to anyone, but particularly to infants, children, and people over 65. Symptoms include a cough with phlegm or pus, fever, chills, and difficulty breathing.

• Diabetes is a chronic (long-lasting) health condition that affects how your body turns food into energy. Your body breaks down most of the food you eat into sugar (glucose) and releases it into your bloodstream. When your blood sugar goes up, it signals your pancreas to release insulin.

Q85. Answer: (c) National Human Rights Commission

The correct answer is National Human Rights Commission.

Key Points

• In India, a Constitutional body is a body or institute established by the Constitution of India. They can only be created or changed by passing a constitutional amendment bill, rather than an Act of Parliament.

• The National Human Rights Commission of India is a statutory public body constituted on 12 October 1993 under the Protection of Human Rights Ordinance of 28 September 1993.

• It was given a statutory basis by the Protection of Human Rights Act, 1993.

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• Arun Kumar Mishra, a former Judge of the Supreme Court is the current chairperson of the commission (11th chairperson of NHRC).

Additional Information

• The Finance Commissions are commissions periodically constituted by the President of India under Article 280 of the Indian Constitution to define the financial relations between the central government of India and the individual state governments.

• The Election Commission of India is a constitutional body. It was established by the Constitution of India to conduct and regulate elections in the country.

• The Union Public Service Commission, commonly abbreviated as UPSC, is India's premier central recruitment agency for recruitment of all the Group 'A' officers under the Government of India.

Q86. Answer: (d) Odissi

The correct answer is Odissi.

Key Points

• Kelucharan Mohapatra was a legendary Indian classical dancer, guru, and exponent of Odissi dance, who is credited with the revival and popularizing of this classical dance form in the 20th century.

• He is the first person to receive the Padma Vibhushan from Odisha.

• He was born on 8 January 1926 and died on 7 April 2004, in Bhubaneswar.

• Odissi is traditionally a dance-drama genre of performance art, where the artist and musicians play out a story, a spiritual message or devotional poem from the Hindu texts, using symbolic costumes, body movement, abhinaya (expressions), and mudras (gestures and sign language) set out in ancient Sanskrit literature.

Additional Information

• Mohiniyattam is an Indian classical dance form that developed and remained popular in the state of Kerala. Mohiniyattam dance gets its name from the word Mohini – a historical enchantress avatar of the Hindu God Vishnu, who helps the good prevail over evil by developing her feminine powers.

• 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 travelling bards in ancient northern India known as Kathakars or storytellers.

• The Manipuri Dance, also referred to as the Manipuri Raas Leela is one of the eight major Indian classical dance forms, originating from the state of Manipur. The dance form is imbued with the devotional themes of Madhura Raas of Radha-Krishna and is characterized by gentle eyes and soft peaceful body movements.

Q87. Answer: (a) Yamini Krishnamurthy

The correct answer is Yamini Krishnamurthy.

Key Points

• Mungara Yamini Krishnamurthy is an Indian dancer of Bharatanatyam and Kuchipudi styles of dancing.

• She was born on 20 December 1940, Madanapalle.

• She was awarded Padma Vibhushan, Padma Bhushan, and Sangeet Natak Akademi Award for Dance - Bharatanatyam.

• She has the honour of being Asthana Nartaki (resident dancer) of the Tirumala Tirupati Devasthanam.

Additional Information

• Chinta Ravi Bala Krishna is a winner of the Sangeet Natak Akademi’s Ustad Bismillah Khan Yuva Puraskar for 2009, a recipient of the singular honor of Yuva Sutradhari at the Siddhendra Yogi Nrityotsav in 2007, a Gold Medallist M.A Kuchipudi, as well as being a winner of a host of other awards.

• Pandit Sunder Prasad was a guru of - Jaipur Gharana of the Indian classical dance form, Kathak. He received his training from his father Pandit Chunnilal of Jaipur Gharana.

• Mohanrao Shankarrao Kallianpurkar was a Kathak dancer and teacher from Karnataka, considered to be one of the greatest scholars and teachers of the Kathak dance form. He belongs to the Jaipur school of Kathak.

Q88. Answer: (d) Benazir Bhutto

The correct answer is Benazir Bhutto.

Key Points

• Daughter of Destiny: An Autobiography is a 1988 memoir by Benazir Bhutto, the 11th Prime Minister of Pakistan.

• The book was also released as Daughter of the East: An Autobiography from Hamish Hamilton in 1988.

• The author of this book is Benazir Bhutto.

• Benazir Bhutto 21 June 1953 – 27 December 2007 was a Pakistani politician who served as the 11th and 13th prime ministers of Pakistan from 1988 to 1990 and from 1993 to 1996. She was the first woman to head a democratic government in a Muslim majority country.

Additional Information

• Kamala Surayya, popularly known by her one-time pen name Madhavikutty and married name Kamala Das, was an Indian poet in English as well as an author in Malayalam from Kerala, India.

• Urvashi Butalia is an Indian feminist writer, publisher, and activist. She is known for her work in the women's movement of India, as well as for authoring books such as The Other Side of Silence: Voices from and the Partition of India and Speaking Peace: Women's Voices from Kashmir.

• Malala Yousafzai is a Pakistani activist for female education and the 2014 Nobel Peace Prize laureate. Awarded when she was 17, she is the world's youngest Nobel Prize laureate, and the second Pakistani and the first Pashtun to ever receive a Nobel Prize.

Q89. Answer: (b) Ajay-Atul

The correct answer is Ajay-Atul.

Key Points

• Ajay–Atul is an Indian music composer duo comprising brothers Ajay Gogavale and Atul Gogavale.

• They won the Best Music Direction award at the 56th National Film Awards from the Government of India for contributing music to the Marathi film Jogwa in 2008.

• They born in 21 August 1976 (age 45) (Ajay); 11 September 1974 (age 47) (Atul); in Pune, Maharashtra, India.

• Music-director-and-composer brothers Ajay and Atul Gogavale are making their debut on the 2015 Forbes India Celebrity 100 List.

Additional Information

• Shiv-Hari refers to the Indian music director duo of Shivkumar Sharma, a Santoor player, and Hariprasad Chaurasia, a flutist. The duo has worked on Indian classical music pieces as well as Indian movie scores.

• Anand and Milind Shrivastav are a duo of Indian film music composers. Born to composer Chitragupt, they have composed music for over 200 Bollywood films. The brothers debuted in 1984 with Ab Ayega Mazaa and had their major breakthrough with Qayamat se Qayamat Tak in 1988.

• Vishal–Shekhar is an Indian music composer, production, singing and songwriting duo consisting of Vishal Dadlani and Shekhar Ravjiani from Mumbai.

Q90. Answer: (a) Adventure sport

The correct answer is Adventure sport.

Key Points

• Bungee jumping is an exciting sport, it's also dangerous.

• Free fallers can suffer serious injuries, such as a herniated disc or compression fracture.

• The cord can also rupture or tear and cause spaces between vertebrae.

• Bungee jumping in Rishikesh is the safest Bungy platform in India.

• Nobody has to ever hesitate before doing it as it is operated by experts and well-trained staff from New Zealand.

Additional Information

• Recreational sports are competitive physical games such as basketball or baseball that are played for fun as opposed to professionally.

• Fighting for a common goal with a group of players and coaches teaches you how to build teamwork and effectively communicate to solve problems

• Parasports are sports played by people with a disability, including physical and intellectual disabilities.

Q91. Answer: (b) Coelom present, bilateral symmetry

The correct answer is Coelom present, bilateral symmetry.

Key Points

• Echinodermata

• Members of the phylum Echinodermata are commonly known as Echinoderms.

• Echinoderms are marine organisms that live in both the intertidal zone and the ocean's depths.

• Characteristics of Echinodermata

• They are round or elongated and have a star-like appearance.

• They are exclusively marine organisms.

• The organisms have spiky skin.

• Organ system level organisation can be seen in them. Most members have a digestive system in addition to a circulatory system.

• They have a coelomic cavity and are triploblastic.

• The body of an adult echinoderm has radial symmetry.

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• Larvae of echinoderms show bilateral symmetry.

Additional Information

Characteristics	Phylum
Roundworms, pseudocoelomate	Aschelminthes
Gastrovascular cavity, flatworms, acoelomate	Platyhelminthes
Gastrovascular cavity, coelom present	No phylum

Q92. Answer: (d) Proteins

The correct answer is Proteins.

Key Points

• Proteins

• Of all macromolecules, proteins have the widest diversity of functions and are one of the most abundant organic molecules in biological systems.

• Because there are 20 different chemically unique amino acids that combine to produce lengthy chains of proteins, the functions of proteins are extremely diverse.

• Protein is essential to our diet because it helps our bodies create and repair new cells.

• For children, teenagers, and pregnant women, protein is also crucial for growth and development.

• Consumed protein is converted to amino acids by the body and then absorbed.

• It is utilised in the development of muscles and organs, production of hormones and antibodies, storage of fat, and production of energy.

• Proteins are commonly called as the building blocks of the body because they play a vital role in helping to repair and strengthen muscle tissues after exercise.

Additional Information

• Animal products such as meats, milk, fish, and eggs are rich sources of protein, they can also be found in plant-based foods like some grains, beans, soy, legumes, nut kinds of butter, and legumes.

• Carbohydrates

• Carbohydrates also called carbs are one of the three primary nutrients included in foods and beverages, along with proteins and fats.

• The body converts carbohydrates to glucose. The primary fuel for your body's cells, tissues, and organs is glucose, also known as blood sugar.

• Grains, such as bread, cereals, and rice, are typical sources of carbs.

• Providing energy to all of the body's cells is the main function of carbs

• Micronutrients

• Vitamins and minerals that our body needs in very small amounts are known as micronutrients.

• However, they have a crucial impact on a body's health, and a lack of any one of them can result in serious, even life-threatening illnesses.

• Fats

• Fat is the primary energy storage type in the body and is used as a fuel source by the body.

• A moderate amount of fat is required in the diet for optimal health since it performs numerous other vital activities in the body.

• Food contains a variety of fats, such as monounsaturated, polyunsaturated, and saturated fats.

• Butter, oil, nuts, meat, fish, and various dairy products are a few examples of foods that include fats.

Q93. Answer: (a) position-time

The correct answer is position-time.

Key Points

• Second Equation of Motion

• The second equation of motion is

s = u t + 1/2 a t2

• The given equation describes the position-time relation.

• With the knowledge of the numbers for the time, acceleration, and beginning velocity, we can use this formula to calculate the displacement.

• In the equation s = u t + 1/2 a t2

• S denotes the body's displacement and is expressed in metres (m),
• u denotes the body's initial velocity and is expressed in metres per second (m/s),
• t denotes the time required for the body to move and is expressed in seconds (s),
• and a denotes the body's acceleration and is expressed in metres per second square (m/s^(-2)).

Additional Information

Relation	Equation
distance-time	s= d/t where, s denotes the speed of the object, d denotes the distance of the object, and t denotes the time required for the body to move
position-velocity	$2as = v^2 - u^2$ where, S denotes the body's displacement, u denotes the body's initial velocity, v denotes the body's final velocity, and a denotes the body's acceleration
velocity-time	v = u + at where, u denotes the body's initial velocity, v denotes the body's final velocity, a denotes the body's acceleration, and t denotes time required for the body to move

Q94. Answer: (a) Rice

The correct answer is Rice.

Key Points

• Rice
• Most people in India eat rice as their main crop of sustenance.
• After China, our nation is the second-largest rice producer in the world.
• It is a Kharif crop that needs high temperatures (over 25°C), high levels of humidity, and an average annual rainfall of at least 100 cm.
• It flourishes with the aid of irrigation in locations with lower rainfall.
• In Southern and Eastern India, it is a favourite staple cuisine.
• Rice is quickly establishing itself in the North-Western Plain.
• Mixed farming (Crops + Livestock) is ideally suited to rice-growing regions.
• Unpolished rice is very nutrient-dense. It contains plenty of calcium, vitamin B, and A.
• These vitamins are absent from polished rice.

Additional Information

• Bajra
• Bajra is a rainfed Kharif crop of dry and warm climate.
• It is grown in areas of 40-50 cm of annual rainfall. The upper limit is 100 cm.
• Bajra can be grown on poor light sandy soils, black and red soils.
• It is sown either as a pure or mixed crop with cotton, jowar and ragi.
• Pulses
• The edible seeds of plants in the legume family are known as pulses.
• India is the world's largest producer of pulses (25 per cent of total output), consumer of pulses (27 per cent of total consumption), and importer of pulses (14 per cent).
• It can be cultivated in a variety of climates, although it favours a mild, cool, and rather a dry climate with temperatures between 20 and 25 degrees Celsius and rainfall between 40 and 50 centimetres.
• Oilseeds
• The world's top producer of oilseeds is India.
• About 12% of the country's total cultivated area is dedicated to the cultivation of various oil seeds.
• It prefers a tropical climate with temperatures between 20° and 30°C and rainfall between 50 and 75 cm.
• The maximum isohyet for groundnut cultivation is 100 cm.

Q95. Answer: (b) By increasing red blood cell production, decreasing the binding affinity of haemoglobin and by increasing b...

The correct answer is By increasing red blood cell production, decreasing the binding affinity of haemoglobin and by increasing breathing rate.

Key Points

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• Acclimatisation

• Acclimatisation is the long-term adaptation to high altitude, which is primarily carried on by an increase in red blood cell production and capillary tissue perfusion.

• At high altitudes, acclimatisation typically takes 1-3 days.

• The body undergoes a number of adaptations that enable it to function with less oxygen at high altitudes, such as:

• the depth of breathing increases or by increasing breathing rate.

• Increased pulmonary arterial pressure "forces" blood into areas of the lung that are typically not used when breathing at sea level.

• The body creates more red blood cells to transport oxygen, as well as more of an enzyme.

• By decreasing the binding affinity of haemoglobin.

• In order to reduce the effects of altitude sickness and to balance out increased urination, it's critical to stay hydrated during acclimatisation.

• Despite acclimation, the heart rate and ventilation rate both rise when at rest, whereas the heart rate falls when at its highest degree of activity due to the release of oxygen from haemoglobin to the body's tissues.

Additional Information

• Altitude Sickness

• At sea level, there are around 21% more oxygen molecules than usual.

• While the concentration does not change with the increase in altitude but the amount of oxygen molecules per breath and the atmospheric pressure decreases.

• At 12,000 feet (3,658 metres), there are around 40% less oxygen molecules in each breath.

• Even while at rest, your breathing rate needs to increase for the body to receive enough oxygen.

• Continued exposure to higher altitudes without enough acclimatisation might result in very serious, even fatal illnesses.

Q96. Answer: (d) Raju Sundaram

The correct answer is Raju Sundaram.

Key Points

• Raju Sundaram won the National Film Award for Best Choreography at the 67th National Film Awards.

• Indian dancer, actor, and director Basava Raju Sundaram predominantly produces dance choreography for Tamil, Kannada, and Telugu films.

• He acted in movies including Jeans (1998), 123 (2002), I Love You Da (2002), and Quick Gun Murugun (2009).

• He also directed one movie, Aegan (2008).

• He is the elder brother of choreographers Prabhu Deva and Nagendra Prasad and the son of dancer Mugur Sundar.

• At the 67th National Film Awards, he received the National Film Award for Best Choreography for a song from "Maharshi" (2019).

• The song was performed by Vedala Hemachandra and Vishnupriya Ravi and was titled "Everest anchuna."

• Sri Mani wrote the song's lyrics, and Devi Sri Prasad composed the melody.

• Other Telugu movies choreographed by Raju Sundaram include "Republic," "Krack," "Saaho," "Bharat Ane Nenu," and "Gudumba Shankar."

Additional Information

• 67th National Film Awards

• The 67th National Film Awards were presented on March 22, 2021, at a press conference to recognise the top Indian films certified in India between January 1, 2019, and December 31, 2019.

• The awards event, where the Directorate of Film Festivals honours the best in Indian cinema with its yearly National Film Awards, was initially scheduled for 3 May 2020 but was postponed because of the COVID-19 pandemic.

• Later, on October 25, 2021, it was delivered.

• At Vigyan Bhawan in New Delhi, the 67th National Awards are being distributed.

Q97. Answer: (d) Between lesser Himalayas and the Shiwaliks

The correct answer is Between the lesser Himalayas and the Shiwaliks.

Key Points

• Duns

• Between the Shiwaliks and the Lesser Himalayas, there are longitudinal valleys called "Duns."

• The word "dun" is used locally to refer to a valley, especially an open valley in the Sivalik Mountains or between the Sivalik Mountains and higher Himalayan foothills.

• In Himachal, these valleys are known by the names Patli Dun, Kotli Dun, and Pinjore Dun.

• Between the lesser Himalayas and Shivalik, there are longitudinal valleys that are referred to as "duns" in the west and "duars" in the east.

• Unlike normal river valleys, duns are formed structurally and are covered in rocks and gravel that were eroded from the Shiwalik uplands and the Himalayas.

Additional Information

• Longitudinal Valley

• An elongated valley known as a longitudinal valley is one that is situated between two nearly parallel mountain ranges in geologically young fold mountains like the Alps, Carpathians, Andes, or the highlands of Central Asia.

• They are frequently used by and shaped by a later stream.

• When the Indian plate and the Eurasian plate interacted as a result of folding, longitudinal valleys known as dunes were formed.

• They are formed between Shivalik and the lesser Himalayas.

• The Himalayan rivers that flow down into the valleys deposit coarse alluvium there.

Q98. Answer: (c) Jhumpa Lahiri

The correct answer is Jhumpa Lahiri.

Key Points

• The Interpreter of Maladies

• Jhumpa Lahiri, an American author of Indian descent, published a book collection of nine short stories in 1999 called Interpreter of Maladies.

• In 2000, it was awarded the Hemingway Foundation/PEN Award and the Pulitzer Prize for Fiction.

• Since then it has sold over 15 million copies worldwide.

• It is also one of Oprah Winfrey's top ten books and was named The New Yorker's Best Debut of the Year.

• Indians and Indian Americans who are caught between their traditions and the "New World" are the subjects of the stories.

• Jhumpa Lahiri

• Jhumpa Lahiri, an American writer who was born on July 11, 1967, is well-known for her English-language short stories, novels, and essays as well as her more recent works in Italian.

• Lahiri received the National Humanities Medal in 2014.

• She joined Barnard College of Columbia University in 2022 where she served as the Millicent C. McIntosh Professor of English and Director of Creative Writing.

Additional Information

Author	Books
Alberto Vourvoulias	The City and the World: New York's Global Future (1997)
Anita Desai	Cry, the Peacock (1963) Fire on the Mountain (1977)
Amitav Ghosh	The Circle of Reason (1986) River of Smoke (2011)

Q99. Answer: (b) March

The correct answer is March.

Key Points

• Gram Ujala Yojana

• On March 24, 2021, the Gram Ujala scheme was introduced in Varanasi in the Lok Sabha constituency of Prime Minister Modi by Union Power and Renewable Energy Minister R.K. Singh.

• The government provides the lowest-priced LED lights in the globe in rural areas as part of the programme for Rs 10.

• In a news statement, the Power Ministry stated that the high-quality LED bulbs will be provided to rural Varanasi residents for Rs.10 each as part of the Gram Ujala programme by Convergence Energy Services Limited, an entirely owned subsidiary of EESL- Energy Efficiency Services Limited.

• The main aim of this scheme is to provide high-quality electricity at an affordable cost to villages across the country.

• According to the official press release, phase 1 of the programme will distribute 1.5 crores LED bulbs, which will significantly impact the nation's efforts to combat climate change by enabling energy savings of 2025 million kWh/year.

• It will also show CO2 reductions of 1.65 million T CO2/year.

Additional Information

• The programme will only be put into effect in the 2,579 villages of the five districts of Bihar, Uttar Pradesh, Telangana, Andhra Pradesh, and Karnataka.

• The recipient would be permitted to exchange a maximum of five LED lights under the programme.

• Carbon credits have been used exclusively to fund the plan.

• The new programme will replace the incandescent and CFL (compact fluorescent lamp) bulbs now being used by rural consumers with new LED bulbs.

• Within just two days of its launch, the government programme in Arrah, Bihar, had distributed 6,150 items.

• Once rural households submit their incandescent lights under the Gram Ujala Scheme, 12-watt and 7-watt bulbs with a 3-year warranty will be provided.

Q100. Answer: (a) sarangi

The correct answer is sarangi.

Key Points

• Ustad Sabri khan

• Indian sarangi player Ustad Sabri Khan was born on May 21, 1927.

• He was a member of the Sainia Gharana.

• The famous vocalist Mian Tansen, who performed in the court of the Mughal Emperor Akbar, is the root of this Gharana's musical heritage.

• His father, Ustad Chajju Khan, continued his training after being introduced to the sarangi by his grandfather, Ustad Haji Mohammed Khan.

• On All India Radio, Sabri Khan worked as a staff artist and performed sarangi with a wide variety of vocalist artists.

• Ustad Sabri Khan received numerous honours and awards in recognition of his contribution to Indian classical music, including:

• Sahitya Kala Parishad Award

• Uttar Pradesh Sangeet Natak Academy Award (1990)

• National Sangeet Natak Academy Award (1986),

• Padma Shree(1992)

• Padma Bhushan(2006)

Additional Information

• Sarangi

• A bowed stringed instrument with a resonator covered in skin is called a sarangi.

• Typically, a single block of wood is used to handcraft a sarangi.

• The seventeen sympathetic strings on this instrument are constructed of steel, while the four playing strings are made of goat gut.

• The sarangi is a common instrument in India with numerous regional variations, but it plays a significant role in the Hindustani music of North India.

• The sarangi is the only musical instrument that can accurately produce all of the nuances of vocal music, including khayal, dhrupad, khayal, thumri, tappa, ghazal, and even bhajan, with embellishments and intonations.

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