SSC CHSL Tier-1 2021: Official Paper (Held On : 26 May 2022 Shift 2) (Previous Year Paper)

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

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ENGLISH LANGUAGE

Q1. Select the most appropriate ANTONYM of the given word.

Variance

(a) Convention
(b) Equal
(c) Harmony
(d) Intellectual

Q2. Select the most appropriate synonym of the highlighted word

He is inclined to stay with the present organisation.

(a) struggled
(b) mystified
(c) motivated
(d) declined

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

One should work hard than others to succeed.

(a) harder than
(b) hardest that
(c) harder to
(d) hard to

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

Pygmalion was written by GB Shaw.

(a) GB Shaw was writing Pygmalion.
(b) GB Shaw was written by Pygmalion.
(c) Pygmalion wrote GB Shaw.
(d) GB Shaw wrote Pygmalion.

Q5. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

There is many ways / to make / a stranger feel / welcome in the community.

(a) welcome in the community
(b) There is many ways
(c) a stranger feel
(d) to make

Q6. Select the INCORRECTLY spelt word.

(a) Acquaint
(b) Mamorial
(c) Guarantee

(d) Monotonous

Q7. Select the option that will improve the underlined part of the given sentence.

Robin has less marbles than George.

(a) enough marbles
(b) lower marbles
(c) few marbles
(d) fewer marbles

Q8. In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

The minute you start _____ and tolerating _____, it becomes the new norm and the slide begins and therefore, we must constantly _____ to give our best and be recognised, not simply aim to do just enough to _____ that we don't get found out.

(a) compelling, excellence, strike, encourage
(b) compromising, mediocrity, strive, ensure
(c) conjecturing, transcendence, strum, envision
(d) contradicting, distinction, stink, endeavour

Q9. Select the correct homonym from the given options to fill in the blank.

Which_____does the minister take to reach the Assembly?

(a) riot
(b) rot
(c) root
(d) route

Q10. Select the sentence which has no spelling error.

(a) Gupta empire posed a competetoin to the invaders in ancient India.
(b) Neeta represented Global School in the state level debate competition.
(c) There is a high market compettion due to the advent of online shopping.
(d) The cooking compitition was judged by the head chef of Garland Hotels.

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

One who is well-versed in the knowledge of plants.

(a) Florist
(b) Gardener
(c) Vegetarian
(d) Botanist

Q12. Select the INCORRECTLY spelt word.

(a) Opportunity
(b) Warrant
(c) Conversation
(d) Collaegue

Q13. Select the most appropriate meaning of the given idiom.

Win laurels

(a) To gain honour
(b) To be decisive
(c) To change
(d) To punish

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Q14. Directions: Each of the following questions has underlined idioms/phrases. Each sentence is followed by four options. Choose the option that best describes the meaning of the underlined idiom/phrase.

The youth involved in the accident escaped by the skin of his teeth.

(a) Barely managed to escape
(b) Very arrogant
(c) Always taking calculated decisions
(d) Deficiency of funds

Q15. 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'.

The teacher said, "the sun raises in the east every day".

(a) the sun will rise in the east
(b) the sun rises in the east
(c) the sun rises at the east
(d) No substitution required

Q16. Select the INCORRECTLY spelt word.

(a) Equine
(b) Equilateral
(c) Equillibrium
(d) Equanimity

Q17. Select the INCORRECTLY spelt word.

(a) Encouregement
(b) Achievement
(c) Advertisement
(d) Environment

Q18. Select the most appropriate option to fill in the blank.

Ramu went with his friends on a trip to _____ new paths.

(a) determine
(b) deploy
(c) invent
(d) explore

Q19. Select the most appropriate option to substitute the underline segment in the given sentence.

I was carried by her rapturous song.

(a) carried off
(b) carried away
(c) carried of
(d) carried to

Q20. Identify the option that arranges the given parts in the correct order to form a meaningful and coherent passage.

a) Non-verbal communication is a means
b) This is possible by using visual clues
c) By which you are able to communicate without speaking
d) Such as facial expressions, eye-contact, postures, gestures etc.

(a) a, c, b, d
(b) b, d, c, a
(c) d, c, a, b
(d) a, b, c, d

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Directions

In the following passage, some words have been deleted. Fill in the blanks with the help of the options given. Select the most appropriate option for each blank.

Tree plantation is the (1)____ of transplanting saplings or seeds to maximise the amount of greenery and focus on promoting (2)__. Planting trees can be a very rewarding and fruitful (3)__! Not only is it (4)__ beneficial for this planet, but it also contributes to helping create an environmentally friendly place to live, as trees help reduce pollutant (5)____.

Q21. Select the most appropriate option to fill in blank No.1.

(a) Aspect
(b) Process
(c) Tool
(d) Mechanism

Q22. Select the most appropriate option to fill in blank No.2.

(a) vegetation
(b) afforestation
(c) land reservation
(d) deforestation

Q23. Select the most appropriate option to fill in blank No.3.

(a) plan
(b) Labour
(c) Order
(d) Endeavour

Q24. Select the most appropriate option to fill in blank No.4.

(a) ecologically
(b) physically
(c) Socially
(d) economically

Q25. Select the most appropriate option to fill in blank No.5.

(a) problem
(b) concentration
(c) method
(d) calculation

GENERAL INTELLIGENCE

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

17, 20, 60, 64, 256, 261, 1305, ?

(a) 1346
(b) 1361
(c) 1284
(d) 1311

Q27. Select the option that represents the correct order of the given words as they would appear in an English dictionary.

1. Beginner
2. Beheld
3. Beggar
4. Belief
5. Behind

(a) 1, 3, 2, 5, 4

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

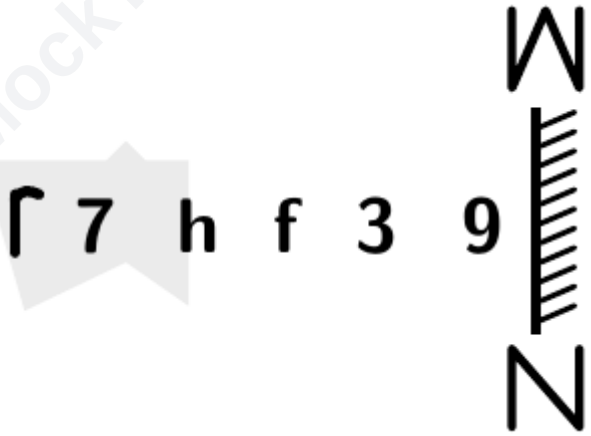
Q28. Seven friends P, Q, R, S, T, U and V, each has a different age. P is older than only U and R. R is older than U. Q is older than S but younger than T. T is not the oldest among all. The age of how many persons is between the ages of Q and R?

(a) 0
(b) 2
(c) 3
(d) 1

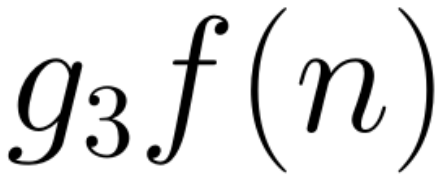
Q29. In a certain code language, 'Read the code' is coded as '18 20 3', 'Decode the code' is coded as '4 20 3' and 'code is easy' is coded as '3 9 5'. How will 'make one code' be coded in that language?

(a) 19 18 5
(b) 12 13 15
(c) 13 15 3
(d) 1 2 5

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



(a)



(b)



(c)



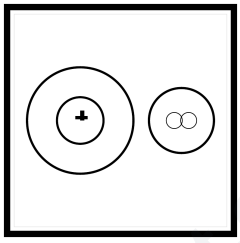
(d)

$\rho\ \varepsilon\ t\mu\ \lambda\ t$

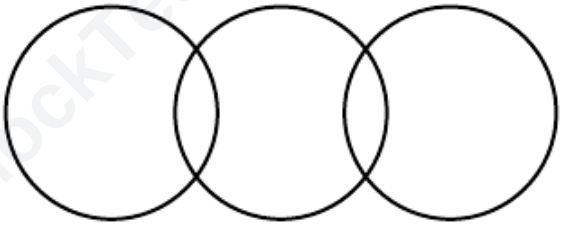
Q31. Select the Venn diagram that best represents the relationship between the following classes.

Doctors, Fathers, Mothers

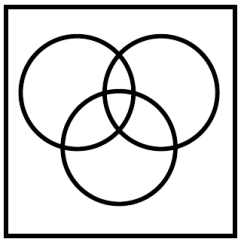
(a)



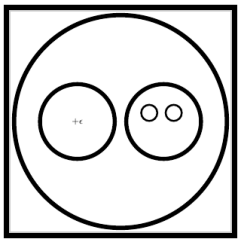
(b)



(c)



(d)



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

78 * 43 * 2 * 56 * 27 * 4

(a) +, =, +, ×, −

(b) −, ÷, =, +, ×

(c) −, ×, =, +, ×

(d) +, ×, −, =, ×

Q33. Select the correct combination of mathematical signs to replace the * signs and to balance the given equation.

230 * 1 * 5 * 16 * 41 * 21

(a) ×, ÷, +, –, =

(b) +, ÷, ×, –, =

(c) –, +, ÷, ×, =

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(d) ÷, +, –, ×, =

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



(a)



(b)



(c)



(d)



Q35. Select the correct combination of mathematical signs to replace the * signs and to balance the given equation.

41 * 4 * 39 * 73 * 25 * 4 * 30

(a) –, ×, +, =, ÷, +

(b) ×, +, –, =, ×, +

(c) ÷, +, =, ×, –, +

(d) –, =, +, ×, –, ×

Q36. 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) 4 : 48
(b) 6 : 180
(c) 8 : 448
(d) 9 : 639

Q37. Select the option that represents the letters that, when placed from left to right in the blanks, will complete the letter series.

_ P N I E X _ N I E Y P N _ E Z P _ I _

(a) I E W P N
(b) N I E W P
(c) W P I N E
(d) E W P N I

Q38. Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

BROWSER : SERWBRO :: CAPTURE : URETCAP :: DESKTOP : ?

(a) SEDKTOP
(b) TOPKDES
(c) TPOKEDS
(d) TOPKSED

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

93 * 65 * 3 * 56 * 14 * 40

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

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) are followed in all the number pairs, except one. Find that odd number pair.

(a) 6 : 36
(b) 2 : 15
(c) 3 : 20
(d) 5 : 30

Q41. If I denotes '÷', J denotes '×', K denotes '−' and L denotes '+', then what will come in place of '?' in the following equation?

42 L 18 K (7 J 4) L (21 I 3) J 9 L 22 = ?

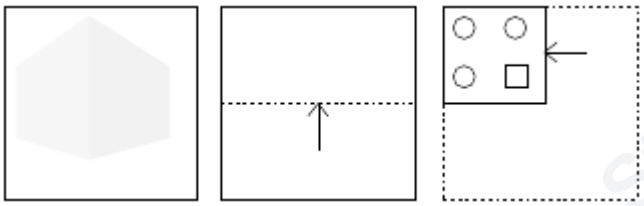
(a) 117
(b) 120
(c) 114
(d) 127

Q42. Select the option that represents the letters that, when sequentially placed from left to right in the blanks below, will complete the letter series.

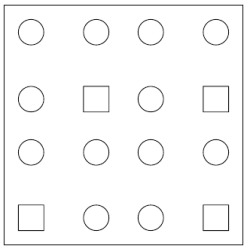
_ a _ _ W a L W _ L _ W a L _ a _ a W _ L

(a) W L a a L W L a
(b) W L a a a W L a
(c) W L a a a W L W
(d) L L a a a W L a

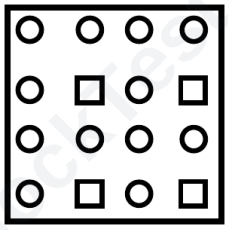
Q43. A paper is folded and cut as shown. How will it appear when unfolded?



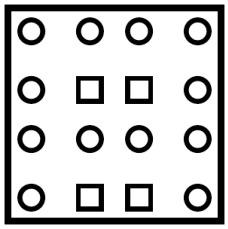
(a)



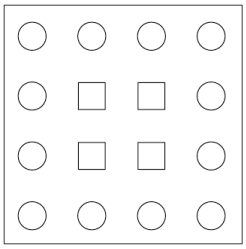
(b)



(c)



(d)



Q44. Select the correct mirror image of the given combination when the mirror is placed at XY as shown.



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(a)



(b)



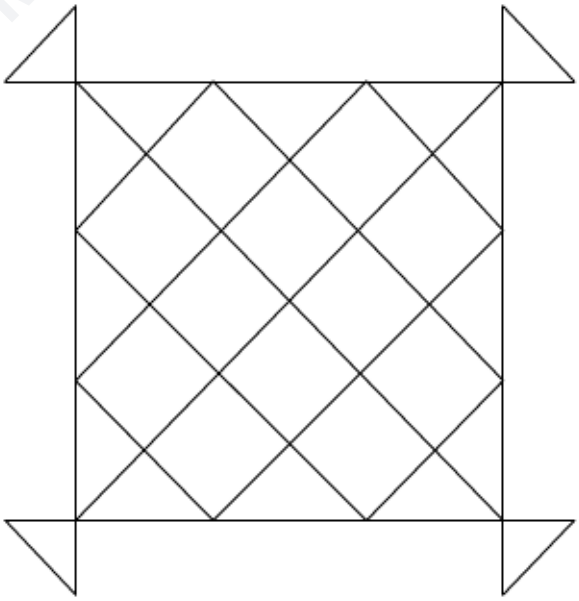
(c)



(d)

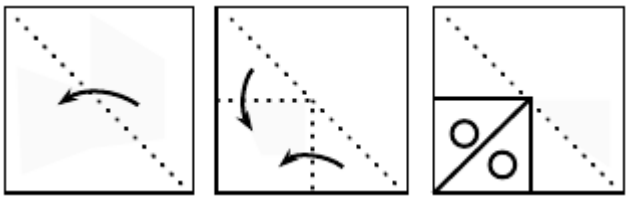


Q45. How many squares are there in the given figure?

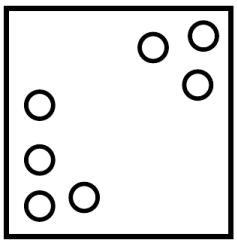


(a) 20
(b) 18
(c) 12
(d) 24

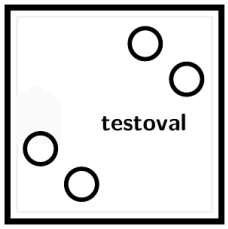
Q46. A paper is folded and cut as shown below. How will it appear when unfolded?



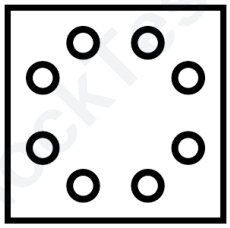
(a)



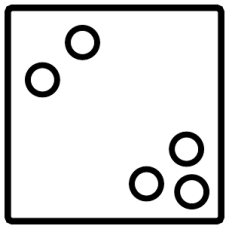
(b)



(c)



(d)



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

14 : 21 :: 6 : 9 :: 12 : ?

(a) 24
(b) 35
(c) 18
(d) 20

Q48. If 20 July 2021 was Tuesday, then what was the day of the week on 28 November 2021?

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

Q49. In a certain code language, ‘RACE’ is written as ‘AREC’, and ‘PEAK’ is written as ‘EPKA’. How will ‘CORE’ be written in that language?

(a) OERC
(b) ECRE
(c) EORC
(d) OCER

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Q50. If 'A' denotes '+', 'B' denotes '×', 'C' denotes '–' and 'D' denotes '÷', then what will come in place of '?' in the following equation?

71 A 3 B 2 C 6 B (65 D 13) C 7 B 4 = ?

(a) 18
(b) 19
(c) 44
(d) 14

QUANTITATIVE APTITUDE

Q51. The difference between a number and the square root of the number is 2. The number is:

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

Q52. If $a^2 - 4a + 1 = 0$, then the value of $a^2 + a + 1/a + 1/(a^2)$ is:

(a) 10
(b) 1
(c) 18
(d) 16

Q53. If $(x - 1/x) = 7/3$, what is the value of $(x^3 - 1/(x^3))$?

(a) 1920/27
(b) 1919/27
(c) 197/9
(d) 192/3

Q54. If the average marks of three batches of 30, 50 and 70 students is 55, 70 and 70 respectively, then the average marks of all the students is:

(a) 67
(b) 66.50
(c) 69
(d) 68.75

Q55. Which of the following options is divisible by 11?

(a) 28171
(b) 27667
(c) 29817
(d) 28196

Q56. Compute the compound interest on Rs. 8,400 for one and half years at 12% rate of interest per annum, compounded half yearly.

(a) Rs. 3,276.40
(b) Rs. 2,948.60
(c) Rs. 3,401.30
(d) Rs. 1,604.50

Q57. Triangles ABC and PQR are similar to each other. If m(BC) = 5 cm, m(QR) = 12.5 cm, and m(PQ) = 6.25 cm, find m(AB).

(a) 6 cm
(b) 2.5 cm
(c) 6.25 cm
(d) 10 cm

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Q58. If x : y = 1 : 2, find the value of (2x + 4y) : (x + 4y).

(a) 10 : 9
(b) 8 : 7
(c) 5 : 4
(d) 9 : 8

Q59. The speed of a train is 108 km/h. The distance covered by the train in 11 seconds will be:

(a) 620 m
(b) 540 m
(c) 440 m
(d) 330 m

Q60. The base of a 12 cm-high wooden solid cone has a circumference of 44 cm. Find its volume.
(use π 22/7)

(a) 616 cm^3
(b) 535 cm^3
(c) 702 cm^3
(d) 456 cm^3

Q61. A man takes 16 days to complete a project. A woman does the same work in 12 days. They started the work together on alternate days and the man worked on the first day. How much time will they take to complete the work?

(a) 58/4 days
(b) 55/4 days
(c) 33/4 days
(d) 61/4 days

Q62. Find the area of the triangle whose sides are 5 cm, 12 cm and 13 cm.

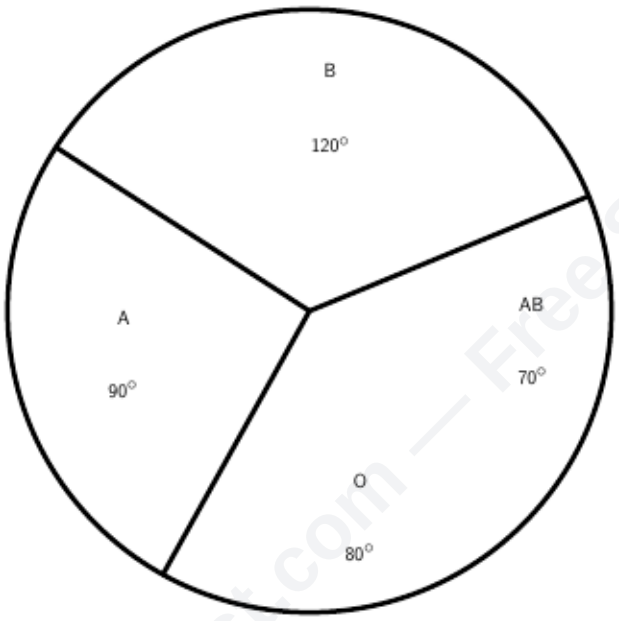
(a) 30 cm^2
(b) 33 cm^2
(c) 15 cm^2
(d) 25 cm^2

Q63. The value of tan 48°. tan 23°. tan 42°. tan 67° is

(a) 0°
(b) 1
(c) 1/2
(d) √3

Q64. Study the given pie-chart and answer the question that follows.
The pie-chart shows the data for A, B, O, AB blood groups of 240 donors.

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The ratio of the donors of blood group ‘O’ to the average of the donors of groups ‘A’ and ‘AB’ is:

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

Q65. The table below provides information about the distribution of students from three different schools who are enrolled with three different coaching centres in a town.

Coaching Centre	Total no. of students who have enrolled in the coaching centre	Percentage of students who have enrolled in the given coaching centre from different schools		
L	M	N		
P	70	30	22	15
Q	50	32	24	29
R	300	25	34	18

35% of the students in Coaching centre R are female. 20% of the female students enrolled with centre R are from school M. What is the number of male students from school M who have enrolled with Coaching centre R?

(a) 78
(b) 90
(c) 80
(d) 81

Q66. Rohan scored 70 and 75 marks in the first two tests. How many marks should he score in the third test to get an average of 70 marks?

(a) 68
(b) 70
(c) 72.5
(d) 65

Q67. Harsh purchased a scooter for Rs. 48,000. He sold it at a loss of 15%. With that money he purchased another scooter and sold it at a profit of 22.5%. What is his overall loss/profit percentage?

(a) Profit 4.125%
(b) Profit 2.25%

(c) Loss 4.125%
(d) Loss 2.25%

Q68. The marked price of a toy was Rs. 4,875. Successive discounts of 28% and 30% were offered on it during a clearance sale. What was the selling price of the toy?
(a) Rs. 2,457
(b) Rs. 2,047.50
(c) Rs. 2,057.50
(d) Rs. 2,467

Q69. Find the sum of money which when increased by 15% becomes Rs. 19,320.
(a) Rs. 16,800
(b) Rs. 16,000
(c) Rs. 17,000
(d) Rs. 17,800

Q70. After successive discounts of 25% and 10% a shirt was sold for Rs. 480. What was the original price of the shirt (Nearest to a Rs.)?
(a) Rs. 723
(b) Rs. 720
(c) Rs. 711
(d) Rs. 708

Q71. The mean of three numbers a/3, b and c is the same as the mean of the numbers b/3, c/3 and x. The value of 3x is (where a, b, c are positive numbers):
(a) b + c
(b) a + 2b + 2c
(c) a
(d) a + 3b + 3c

Q72. In a class, the ratio of the number of boys to that of the girls is 11 : 9. 30% of the boys and 20% of the girls passed an exam. Find the percentage of students who passed the exam.
(a) 3.92%
(b) 20%
(c) 24.5%
(d) 25.5%

Q73. If the ratio of the volumes of two cones is 11 : 16 and the ratio of the radii of their bases is 3 : 4, then the ratio of their heights will be:
(a) 11 : 9
(b) 4 : 11
(c) 3 : 16
(d) 9 : 11

Q74. The number 2143251 is divisible by:
(a) 13
(b) 17
(c) 3
(d) 7

Q75. In a school, a survey is taken on sports loving children as given in the following table. Any student who loves one sport is understood to dislike the other sport.

What is the difference between the number of boys and the number of girls in the school?

	Cricket	Soccer
Boys	542	438

Girls	358	372

(a) 66
(b) 250
(c) 125
(d) 84

GENERAL AWARENESS

Q76. Gaddam Padmaja Reddy was awarded the Padma Shri in 2022 for her contributions to which of the following dance forms?
(a) Odissi
(b) Kathak
(c) Bharatanatyam
(d) Kuchipudi

Q77. _____'s 'The Year of the Runaways' follows the lives of three migrant workers who flee India to look for work in England.
(a) Neel Mukherjee
(b) Sunjeev Sahota
(c) Shashi Tharoor
(d) Khushwant Singh

Q78. Who among the following was popularly known as 'Gurudev' for his expertise in binding together elements of Indian classical music and folk pieces to suit the western tunes entailed with precision along with his expertise in other art domains?
(a) Rabindranath Tagore
(b) Abanindranath Tagore
(c) Hemanta Mukherjee
(d) Bankim Chandra Chattopadhyay

Q79. As of December 2021, how many sports infrastructure projects of various categories have been sanctioned in the North Eastern Region under the 'Khelo India' scheme?
(a) 45
(b) 57
(c) 62
(d) 69

Q80. Which state has the highest length (in km) of national highways as per the data of 2017?
(a) Uttar Pradesh
(b) Madhya Pradesh
(c) Karnataka
(d) Maharashtra

Q81. Identify the INCORRECT pair with respect to the substances and their specific heat capacity (J kg^(-1)K^(-1)) at room temperature and atmospheric pressure.
(a) Aluminium – 900.0
(b) Water – 1200
(c) Carbon – 506.5
(d) Tungsten – 134.4

Q82. _____ demand for money arises mainly due to the uncertainty of future receipts and expenses.
(a) Transactions
(b) Generic
(c) Speculative

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(d) Precautionary

Q83. 'In The Afternoon of Time: An Autobiography' was written by which of the following Indian poets of the 20^(th) century?

(a) Harivansh Rai Bachchan
(b) Kuvempu
(c) Rahat Indori
(d) Sahir Ludhiyanvi

Q84. The Asian Games 2022 will be organised in which of the following countries?

(a) Qatar
(b) China
(c) Japan
(d) South Korea

Q85. What was the theme for the International Day for Older persons 2021?

(a) Senior Citizens in Virtual Reality
(b) Intergenerational Learning
(c) Closing the Generation Gap, Virtually
(d) Digital Equity for all Ages

Q86. The Eld's deer subspecies, which is classified as endangered in the IUCN Red List, is found only in the:

(a) Hemis National Park in Ladakh
(b) Ranthambore National Park in Rajasthan
(c) Keibul Lamjao National Park in Manipur
(d) Pench National Park in Madhya Pradesh

Q87. Which of the following is a group of primitive vertebrates having a large jawless sucking mouth, no limbs or paired fins and a completely cartilaginous skeleton with a persistent notochord?

(a) Cyclostomata
(b) Aschelminthes
(c) Hemichordata
(d) Arthropoda

Q88. The South Indian film dance choreographer, K Shivashankar, won which of the following prestigious awards in 2010 for the best choreography in the Telugu film Magadheera?

(a) National Film Award
(b) Filmfare Award
(c) International Film Academy Award
(d) Guild Award

Q89. Mohanan Chandrasekaran, an awardee of Madras Music Academy's Sangeetha Kalanidhi, is a _____ player of Carnatic classical music.

(a) Flute
(b) Violin
(c) Mridangam
(d) ghatam

Q90. Who among the following dancers is the first transwoman to receive a Padma Shri Award for her contribution to Indian Classical dance?

(a) Narthaki Nataraj
(b) Yamini Natrajan
(c) Savitri Devi
(d) Padma Valli

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Q91. How many members of the Legislative Council are there in the state of Karnataka?

(a) 68
(b) 78
(c) 75
(d) 100

Q92. The particles of which metal on heating to the boiling point of 357°C go from liquid state to gas state?

(a) Mercury
(b) Copper
(c) Bronze
(d) Gallium

Q93. Sonal Mansingh is a prominent Indian classical dancer who specialises in _____.

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

Q94. Who is the author of the famous Marathi novel ‘Mrityunjay’?

(a) Bhalchandra Nemade
(b) Shivaji Sawant
(c) Ranjit Desai
(d) Vishnu Khandekar

Q95. Ustad Zakir Hussain, Ustad Allah Rakha, Ustad Sabir Khan, Pt. Kishan Maharaj are known for which of the following instruments?

(a) Mandolin
(b) Surbahar
(c) Mohan Veena
(d) Tabla

Q96. Who is NOT an awardee of the Major Dhyan Chand Khel Ratna Award 2021?

(a) Manpreet Singh
(b) Sumit Antil
(c) Krishna Nagar
(d) Mandeep Singh

Q97. Ustad Amir Khan belonged to which of the following Gharanas?

(a) Gwalior
(b) Indore
(c) Maihar
(d) Bhopal

Q98. Lake Baikal, the world's largest freshwater lake (by volume) and the world's deepest lake with a depth of 1620 m (5315 ft), is located in which country?

(a) Russia
(b) Tanzania
(c) Canada
(d) Uganda

Q99. What do you call the water holding compounds produced in large quantities by marine brown and red algae?

(a) Lipids
(b) Carbohydrates
(c) Hydrocolloids
(d) Gelatin

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Q100. Which of the following countries will host the FIFA World Cup in 2026?

(a) India and Sri Lanka
(b) The USA, Canada, and Mexico
(c) South Africa
(d) Brazil

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) Harmony

The solution is in Hindi. Read it online.

Q2. Answer: (c) motivated

The solution is in Hindi. Read it online.

Q3. Answer: (a) harder than

The correct answer is 'harder than'.

Key Points

• There is an error in the adjective usage in the underlined part of the given sentence.
• There is a comparison happening in the sentence between the work done by an individual and the work done by others.
• To make it correct we need to substitute it with the correct comparative adjective form of hard.
• Adjectives with two syllables can form the comparative either by adding -er or by preceding the adjective with more.
• So, harder is the correct comparative degree of the adjective for the given sentence.
• So, either option 1 or option 3 is the correct substitute.
• But the given sentence has two clauses - The independent clause 'One should work hard' and the dependent clause 'other to succeed'.
• We need to join the two parts with a conjunction.
• Than is a conjunction while to is a preposition.
• Hence, option 1 or harder than is the most appropriate option that can substitute the underlined segment in the given sentence.

Correct sentence - One should work harder than others to succeed.

Q4. Answer: (d) GB Shaw wrote Pygmalion.

The correct answer is 'GB Shaw wrote Pygmalion.'

Key Points

• The given sentence is in passive voice. As per the question we have to change it into active voice.
• The structure of the given sentence is as follows:
• Subject (objective case) + was + past participle + by Object (subjective case) (Passive voice)
• Subject + past participle + Object (Active voice)
• Example:

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• A large house was built by her.(Passive voice)
• She built a large house. (Active voice)
• The subject of the given sentence is ‘Pygmalion’.
• The object of the given subject is ‘GB Shaw’.
• The subject will be put in place of the object and the object will be put in place of the subject.
• was written will be changed to wrote.
Correct sentence - GB Shaw wrote Pygmalion.

Q5. Answer: (b) There is many ways

The erroneous part is 'There is many ways'.
Key Points
• There is an error in the use of the linking verb in the segment 'There is many ways'.
• many ways is a plural phrase and using the singular linking verb violates the subject-verb agreement.
• Thus, option 2 is the correct answer.
• We can correct the erroneous part by using the plural linking verb are.
Correct sentence - There are many ways / to make / a stranger feel / welcome in the community.

Q6. Answer: (b) Mamorial

The incorrectly spelled word is 'Mamorial'.
Key Points
• The correct spelling for the word is memorial which means a statue or structure established to remind people of a person or event.
• The meanings of the other options are as follows -
• Acquaint - make someone aware of or familiar with.
• Guarantee - a formal assurance (typically in writing) that certain conditions will be fulfilled, especially that a product will be repaired or replaced if not of a specified quality.
• Monotonous - dull, tedious, and repetitious; lacking in variety and interest.
• Hence, option 2 is the correct answer.

Q7. Answer: (d) fewer marbles

The correct answer is 'fewer marbles'.
Key Points
• There is an error in adjective usage in the underlined part of the given sentence.
• Less is an adjective of quantity used with uncountable nouns. - less sugar, less time, etc.
• But, marbles is a countable noun.
• Marbles means small balls of coloured glass or similar material used as a toy.
• In such a case we need to use the adjective few which is used with nouns for countable objects and concepts.
• Since a comparison between two entities is happening (the number of marbles Robin has versus the number George has) we need to use the comparative degree of few which is fewer.
• Hence, option 4 or fewer marbles is the option that will improve the underlined part of the given sentence.
Correct sentence - Robin has fewer marbles than George.

Q8. Answer: (b) compromising, mediocrity, strive, ensure

The correct answer is 'compromising, mediocrity, strive, ensure'.
Key Points
• From the given incomplete passage, we can infer from the beginning part that it is talking about how if we start tolerating something negative it becomes the new norm.
• Thus, the second blank will have a word that implies a negative trait.
• From the given options let us look into the meanings of each second word -
• | Option | Second Word | Meaning |

1	**excellence**	**the quality of being outstanding or extremely good.**
2	mediocrity	the quality or state of being mediocre.

3	transcendence	existence or experience beyond the normal or physical level.
4	distinction	a difference or a contrast between similar things or people.

• From the above table it is clear that only mediocrity is a word that implies a negative trait and it falls under option 2.

• Let us look into the meaning of the other words under option 2 -

• compromising - expediently accept standards that are lower than is desirable.

• strive - make great efforts to achieve or obtain something.

• ensure - make certain that (something) will occur or be the case.

• From the above meanings it is clear that each word of option 2 fits the corresponding blanks correctly.

• Hence option 2 is the correct answer.

Correct passage - The minute you start compromising and tolerating mediocrity, it becomes the new norm and the slide begins therefore, we must constantly strive to give our best and be recognized, not simply aim to do just enough to ensure that we don't get found out.

Q9. Answer: (d) route

The solution is in Hindi. Read it online.

Q10. Answer: (b) Neeta represented Global School in the state level debate competition.

The sentence with no spelling error is 'Neeta represented Global School in the state level debate competition.'

Key Points

• The word competition which means the activity or condition of striving to gain or win something by defeating or establishing superiority over others has been incorrectly spelled in options 1, 3 and 4.

• Option 1 - competetoin

• Option 3 - compettion

• Option 4 - compitition

• Only option 2 has the correct spelling for the word, making it the correct answer.

Q11. Answer: (d) Botanist

The correct answer is 'Botanist'.

Key Points

• Let us look into the meaning of the words in the options -

• Florist - a person who sells and arranges cut flowers.

• Gardener - a person who tends and cultivates a garden as a pastime or for a living.

• Vegetarian - a person who does not eat meat or fish, and sometimes other animal products, especially for moral, religious, or health reasons.

• Botanist - an expert in or student of the scientific study of plants.

• From the above meanings it is clear that botanist is the best word to substitute for the given group of words.

• Hence, option 4 is the correct answer.

Q12. Answer: (d) Collaegue

The incorrectly spelt word is 'Collaegue'.

Key Points

• The correct spelling for the word is colleague which means a person with whom one works in a profession or business.

• The meanings of the other options are as follows -

• Opportunity - a time or set of circumstances that makes it possible to do something.

• Warrant - a document issued by a legal or government official authorizing the police or another body to make an arrest, search premises, or carry out some other action relating to the administration of justice.

• Conversation - a talk, especially an informal one, between two or more people, in which news and ideas are exchanged.

• Hence, option 4 is the correct answer.

Q13. Answer: (a) To gain honour

The correct answer is 'To gain honour'.

Key Points

• Win laurels is an idiom that means to obtain achievements or honors.
• Example - Anand is a very hard-working boy, he is sure to win laurels in life.
• So, to gain honour is the most appropriate meaning of the given idiom.
• Hence, option 1 is the correct answer.

Q14. Answer: (a) Barely managed to escape

The solution is in Hindi. Read it online.

Q15. Answer: (b) the sun rises in the east

The correct answer is 'the sun rises in the east'.

Key Points

• There is an error in the verb usage in the underlined segment of the given sentence.
• The segment incorrectly uses the verb raise.
• Raise is a transitive verb that is it must have a direct object.
• If you raise something, it means that you elevate it - you move it up or lift it to a higher level. - If you have a question, please raise your hand.
• But in the given segment raise does not have a direct object.
• The correct verb, in this case, is the intransitive verb rises. If something rises, it means that it elevates itself - it goes up itself. No external force is needed to lift it.
• Hence, option 2, or the sun rises in the east is the most appropriate option that can substitute the underlined segment in the given sentence.

Correct sentence - The teacher said, “the sun rises in the east every day”.

Q16. Answer: (c) Equillibrium

The incorrectly spelt word is 'Equillibrium'.

Key Points

• The correct spelling for the word is equilibrium which means a state in which opposing forces or influences are balanced.
• The meanings of the other options are as follows -
• Equine - relating to or affecting horses or other members of the horse family.
• Equilateral - having all its sides of the same length.
• Equanimity - calmness, and composure, especially in a difficult situation.
• Hence, option 3 is the correct answer.

Q17. Answer: (a) Encouregement

The incorrectly spelt word is 'Encouregement'.

Key Points

• The correct spelling for the word is encouragement which means the action of giving someone support, confidence, or hope.
• The meanings of the other options are as follows -
• Achievement - a thing is done successfully with effort, skill, or courage.
• Advertisement - a notice or announcement in a public medium promoting a product, service, or event or publicizing a job vacancy.
• Environment - the surroundings or conditions in which a person, animal, or plant lives or operates.
• Hence, option 1 is the correct answer.

Q18. Answer: (d) explore

The correct answer is 'explore'.

Key Points

• Let us look into the meanings of the given options -
• determine - cause (something) to occur in a particular way or to have a particular nature.
• deploy - move (troops or equipment) into position for military action.
• invent - create or design (something that has not existed before); be the originator of.
• explore - travel through (an unfamiliar area) in order to learn about it.
• The given sentence implies that the subject (Ramu) was traveling with his friends to find and tour new paths.
• From the above meanings it is clear that explore is the most appropriate option to fill in the blank.

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• Hence, option 4 is the correct answer.

Correct sentence - Ramu went with his friends on a trip to explore new paths.

Q19. Answer: (b) carried away

The correct answer is 'carried away'.

Key Points

• There is an error in the verb usage in the given sentence.

• Based on the given options, we need to replace the verb carried with the appropriate phrasal verb.

• Let us look into the meanings of the given options -

• carried off - to succeed in doing or achieving something difficult

• carried away - to arouse to a high and often excessive degree of emotion or enthusiasm.

• carried of - to take or bear (something) from one place to another. (Note - this is not a phrasal verb)

• carried to - support and move (someone or something) from one place to another. (Note - this is not a phrasal verb)

• From the above meanings it is clear that carried away is the most appropriate option to substitute the underline segment in the given sentence.

• Hence, option 2 is the correct answer.

Correct sentence - I was carried away by her rapturous song.

Q20. Answer: (a) a, c, b, d

The correct answer is 'a, c, b, d'.

Key Points

• From the given jumbled parts, we can make out that the sentence is related to non-verbal communication.

• The sentence should start with part a which introduces the topic.

• It should be followed by part c which mentions what this form of communication means.

• Part b which points out how to communicate without speaking through visual clues should come after part c.

• Part d becomes the concluding part of the passage.

• So, we get the sequence a, c, b, d, making option 1 the correct answer.

So, the correct paragraph is: a) Non-verbal communication is a means c) By which you are able to communicate without speaking b) This is possible by using visual clues d) Such as facial expressions, eye contact, postures, gestures, etc.

Q21. Answer: (b) Process

The correct answer is 'process'.

Key Points

• Let us look into the meaning of the given options -

• aspect - a particular part or feature of something.

• process - a series of actions or steps taken in order to achieve a particular end.

• tool - a device or implement, especially one held in the hand, used to carry out a particular function.

• mechanism - a system of parts working together in a machine; a piece of machinery.

• From the line with the blank, we can infer that the blank 1 needs a word that would describe the procedure of tree plantation.

• Hence, process is the most appropriate option for blank 1.

• So, option 2 is the correct answer.

Correct paragraph - Tree plantation is the (1)process of transplanting saplings or seeds to maximise the amount of greenery and focus on promoting (2)afforestation. Planting trees can be a very rewarding and fruitful (3)endeavour! Not only is it (4)ecologically beneficial for this planet, but it also contributes to helping create an environmentally friendly place to live, as trees help reduce pollutant (5)concentration.

Q22. Answer: (b) afforestation

The correct answer is 'afforestation'.

Key Points

• Let us look into the meaning of the given options -

• vegetation - plants considered collectively, especially those found in a particular area or habitat.

• afforestation - a process where new forests are planted across land without trees.

• land reservation - tract of land set aside by a government for the use of one or more aboriginal peoples.

• deforestation - the action of clearing a wide area of trees.

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• From the line with the blank, we can infer that the blank 2 needs a word that would describe the process of creating new forests.

• Hence, afforestation is the most appropriate option for blank 2.

• So, option 2 is the correct answer.

Correct paragraph - Tree plantation is the (1)process of transplanting saplings or seeds to maximise the amount of greenery and focus on promoting (2)afforestation. Planting trees can be a very rewarding and fruitful (3)endeavour! Not only is it (4)ecologically beneficial for this planet, but it also contributes to helping create an environmentally friendly place to live, as trees help reduce pollutant (5)concentration.

Q23. Answer: (d) Endeavour

The correct answer is 'endeavour'.

Key Points

• Let us look into the meaning of the given options -

• plan - a detailed proposal for doing or achieving something.

• labour - work, especially physical work.

• order - the arrangement or disposition of people or things in relation to each other according to a particular sequence, pattern, or method.

• endeavour - earnest, prolonged, and industrious effort.

• From the line with the blank, we can infer that the blank 3 needs a word that would describe the effort of planting trees which is rewarding.

• Hence, endeavour is the most appropriate option for blank 3.

• So, option 4 is the correct answer.

Correct paragraph - Tree plantation is the (1)process of transplanting saplings or seeds to maximise the amount of greenery and focus on promoting (2)afforestation. Planting trees can be a very rewarding and fruitful (3)endeavour! Not only is it (4)ecologically beneficial for this planet, but it also contributes to helping create an environmentally friendly place to live, as trees help reduce pollutant (5)concentration.

Q24. Answer: (a) ecologically

The correct answer is 'ecologically'.

Key Points

• Let us look into the meaning of the given options -

• ecologically - in a way that concerns the relation of living organisms to one another and to their physical surroundings.

• physically - in a manner relating to the body as opposed to the mind.

• socially - in a way that relates to society or its organization.

• economically - in a way that relates to economics or finance.

• From the line with the blank, we can infer that blank 4 needs a word that would refer to the natural benefit of tree plantation.

• Hence, ecologically is the most appropriate option for blank 4.

• So, option 1 is the correct answer.

Correct paragraph - Tree plantation is the (1)process of transplanting saplings or seeds to maximise the amount of greenery and focus on promoting (2)afforestation. Planting trees can be a very rewarding and fruitful (3)endeavour! Not only is it (4)ecologically beneficial for this planet, but it also contributes to helping create an environmentally friendly place to live, as trees help reduce pollutant (5)concentration.

Q25. Answer: (b) concentration

The correct answer is 'concentration'.

Key Points

• Let us look into the meaning of the given options -

• problem - a matter or situation regarded as unwelcome or harmful and needing to be dealt with and overcome.

• concentration - the relative amount of a particular substance contained within a solution or mixture or in a particular volume of space.

• method - a particular procedure for accomplishing or approaching something, especially a systematic or established one.

• calculation - a mathematical determination of the amount or number of something.

• From the line with the blank, we can infer that blank 5 needs a word that would describe the presence of pollutants in the environment.

• Hence, concentration is the most appropriate option for blank 5.

• So, option 2 is the correct answer.

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Correct paragraph - Tree plantation is the (1)process of transplanting saplings or seeds to maximise the amount of greenery and focus on promoting (2)afforestation. Planting trees can be a very rewarding and fruitful (3)endeavour! Not only is it (4)ecologically beneficial for this planet, but it also contributes to helping create an environmentally friendly place to live, as trees help reduce pollutant (5)concentration.

Q26. Answer: (d) 1311

The pattern followed in the given series is :

According to the pattern the next term in the series will be,

Hence the correct answer is 1311.

Q27. Answer: (c) 3, 1, 2, 5, 4

According to the sequence in the dictionary.

The correct order of the given words is:

3. Beggar

1. Beginner

2. Beheld

5. Behind

4. Belief

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

Q28. Answer: (b) 2

The logic followed here is:

Step 1: P is older than only U and R.

Step 2: R is older than U.

P > R > U

Step 3:Q is older than S but younger than T.

T > Q > S

Now on combining all the above steps we get:

T > Q > S > P > R > U

Step 4: T is not the oldest among all.

V > T > Q > S > P > R > U

Here when we observe that there are 2 person between R and Q.

Hence the correct answer is 2.

Q29. Answer: (c) 13 15 3

When we compare the codes we get :

Here we can see the word "code" is coded as "3".

And in the options, we can see only one option that consist of code "3"

Hence the answer for "make one code" is "13 15 3".

Q30. Answer: (c) [figure]

The mirror image of the given combination is :

We can clearly see the the mirror image of the given combination matches with option 3).

Hence the answer is option 3).

Q31. Answer: (b) [figure]

The logic followed here is:

Fathers and mothers both can be doctors, so both mother and father can have a common factor, thus, the Venn diagram representing the relation are as follows:

Hence, the above Venn diagram that is represented in option 2 is the correct answer.

Q32. Answer: (d) +, ×, −, =, ×

The logic followed here is:

Replacing the given equation with the given signs,

and by using BODMAS RULE,

option 1)
78 * 43 * 2 * 56 * 27 * 4
78 + 43 = 2 + 56 × 27 - 4
78 + 43 = 2 + 1512 - 4
121 = 1514 - 4
121 is not equal to 1510.
Thus, LHS is not equal to RHS.
option 2)
78 * 43 * 2 * 56 * 27 * 4
78 - 43 ÷ 2 = 56 + 27 × 4
78 - 21.5 = 56 + 27 × 4
78 - 21.5 = 56 + 108
78 - 21.5 = 164
56.5 is not equal to 164.
Thus, LHS not equal to RHS.
option 3)
78* 43 * 2 * 56 * 27 * 4
78 - 43 × 2 = 56 + 27 × 4
78 - 86 = 56 + 108
78 - 86 = 164
-8 is not equal to 164.
Thus, LHS is not equal to RHS
option 4)
78 * 43 * 2 * 56 * 27 * 4
78 + 43 × 2 - 56 = 27 × 4
78 + 86 - 56 = 108
164 - 56 = 108
108 =108
Thus, LHS is equal to RHS.
Hence, "+, ×, −, =, ×" is the correct answer.

Q33. Answer: (a) ×, ÷, +, –, =

The logic followed here is:
By using BODMAS rule,
OPTION 1)
230 × 1 ÷ 5 + 16 - 41 = 21
230 × 0.2 + 16 - 41= 21
46 + 16 - 41 = 21
62 - 41 = 21
21 = 21
Therefore, LHS is equal to RHS
OPTION 2)
230 + 1 ÷ 5 × 16 - 41 = 21
SOLVING LHS:
230 + 0.2 ×16 - 41
230 + 3.2 - 41
233.2 - 42
192.2
Thus, LHS is not equal to RHS.
OPTION3)
230 – 1 + 5 ÷ 16 × 41 = 21
SOLVING LHS,

230 - 1 + 0.3125 × 41

230 - 1 + 12.8

230 - 13.8

216.2

Thus, LHS is not equal to RHS.

OPTION4)

230 ÷ 1 + 5 – 16 × 41 = 21

Solving LHS

230 + 5 - 16 × 41

230 + 5 - 656

235 - 656

• 421

Thus, LHS is not equal to RHS"

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

Q34. Answer: (c) [figure]

The logic followed here is:

In a mirror image LEFT changes to right and the RIGHT changes to left.

When placement of mirror not given, by default we will assume it in VERTICAL DIRECTION.

The letter adjacent to the right side of mirror, will be adjacent to it on the left side but direction will be changed as left changes to the right and the right changes to the left.

Hence,

will be the correct answer

Q35. Answer: (b) ×, +, −, =, ×, +

The logic followed here is:

By using BODMAS RULE,

OPTION 1) −, ×, +, =, ÷, +

41 - 4 × 39 + 73 = 25 ÷ 4 + 30

41 - 4 × 39 + 73 = 6.25 + 30

41 - 156 + 73 = 6.25 + 30

41 - 229 = 36.25

-188 is not equal to 36.25

OPTION 2) ×, +, −, =, ×, +

41 × 4 + 39 - 73 = 25 × 4 + 30

164 + 39 - 73 = 100 + 30

203 - 73 = 130

130 = 130

Thus, LHS is equal to RHS

OPTION 3) ÷, +, =, ×, −, +

41 ÷ 4 + 39 = 73 × 25 - 4 + 30

10.25 + 39 = 1825 - 4 + 30

40.25 = 1825 - 34

40.25 is not equal to 1791

OPTION 4) −, =, +, ×, −, ×

41 - 4 = 39 + 73 × 25 - 4 × 30

37 = 39 + 1825 - 120

37 = 1864 - 120

Thus, LHS is not equal to RHS

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

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Q36. Answer: (d) 9 : 639

The logic followed here is:

OPTION 1) 4 : 48

$4^3 - 4^2 = 48$

64 - 16 = 48

OPTION 2) 6 : 180

$6^3 - 6^2 = 180$

216 - 36 = 180

OPTION 3) 8 : 448

$8^3 - 8^2 = 448$

512 - 64 = 448

OPTION4) 9 : 639

$9^3 - 9^2 = 648$

729 - 81 = 648

639 is not equal to 648.

As it should be 648 and not 639, it will be the odd number - pair.

Hence, the correct answer is 9 : 639.

Q37. Answer: (c) W P I N E

The logic followed here is:

A particular pattern is observed after every five letters and after every fourth letter the sixth letter is the succeeding letter of the first one.

Option 1) I E W P N

I P N I E / X E N I E / Y P N W E / Z P P I N

No pattern is seen here.

Option 2) N I E W P

N P N I E / X I N I E / Y P N E E / Z P W I P

No pattern is seen here.

Option 3) W P I N E

W P N I E / X P N I E / Y P N I E/ Z P N I E

Thus, this option is correct.

Option 4) E W P N I

E P N I E / X W N E / Y P N P E / Z P N I I

No pattern is seen here

Hence, W P I N E is the correct answer.

Q38. Answer: (b) TOPKDES

The logic followed here is:

BROWSER : SERWBRO :: CAPTURE : URETCAP :: DESKTOP : ?

If you see the pattern carefully the middle letter remains at the same position and the three letters on the left side shift to the right side and vice versa.

BROWSER : SERWBRO

CAPTURE : URETCAP

Similarly,

DESKTOP : TOPKDES

Hence, the correct answer TOPKDES

Q39. Answer: (a) –, +, ×, ÷, =

Let's take each pair individually to obtain the identical operation:

Pair 1- 8 : 64

Operation- (First number × First number) = Second number

8 × 8 = 64

Pair 2- 8 : 512

Operation- (First number × First number × First number) = Second number
8 × 8 × 8 = 512
Pair 3- 6 : 216
Operation- (First number × First number × First number) = Second number
6 × 6 × 6 = 216
Pair 4- 4 : 64
Operation- (First number × First number × First number) = Second number
4 × 4 × 4 = 64
The pattern is common in pair 2, 3 and 4.
Therefore the odd pair is 8 : 64.
Hence, the correct answer is 8:64.

Q40. Answer: (a) 6 : 36

The logic followed here is:
(First term + 1) × 5 = Second term
Option 1) 6 : 36
(6 + 1) × 5 = 36
7 × 5 = 36
35 ≠ 36
Thus, the logic does not apply to this pair.
Option 2) 2:15
(2 + 1) × 5 = 15
3 × 5 = 15
15 = 15
Option 3) 3:20
(3 + 1) × 5 = 20
4 × 5 = 20
20 = 20
Option 4) 5 : 30
(5 + 1) × 5 = 30
6 × 5 = 30
30 = 30
Hence the correct answer is option 1)

Q41. Answer: (a) 117

From the given information:
I denotes ÷
J denotes ×
K denotes '–'
L denotes '+'
Now we solve the equation using BODMAS rule:
Now we substitute the values,
42 + 18 - (7 × 4) + (21 ÷ 3) × 9 + 22 = ?
42 + 18 - 28 + 7 × 9 + 22 = ?
42 + 18 - 28 + 63 + 22 = ?
145 - 28 = ?
117 = Answer
Hence the correct answer is option 1)

Q42. Answer: (b) W L a a a W L a

Given: _ a _ _ W a L W _ L _ W a L _ a _ a W _ L
Let's check each option:
1) W L a a L W L a → W a L a W a L W a L L W a L W a L a W a L

2) W L a a a W L a → W a L a W a L W a L a W a L W a L a W a L

3) W L a a a W L W → W a L a W a L W a L a W a L W a L a W W L

4) L L a a a W L a → L a L a W a L W a L a W a L W a L a W a L

So, In option 2 "W a L a W a L" is repeating itself.

Hence, ‘W L a a a W L a’ is the correct answer.

Q43. Answer: (d) [figure]

We unfold the paper step by step:

Now we consider the given options:

Option 1) The pattern in the option is not symmetrical.

Option 2) The pattern is incorrect.

Option 3) The positioning of the shapes is wrong.

Option 4) The pattern matches completely.

Hence the correct answer is option 4)

Q44. Answer: (c) [figure]

In a mirror image LEFT CHANGES TO RIGHT AND THE RIGHT CHANGES TO LEFT and vice-versa.

From the given options,

Option 1) The pattern is inverted and it does not match.

Option 2) The pattern is inverted and it is reversed so it does not match.

Option 3) The pattern matches completely.

Option 4) The pattern is mirrored but in the wrong order.

Hence the correct answer is option 3)

Q45. Answer: (b) 18

Lets count the number of squares step by step:

Hence, the correct answer is "18".

Q46. Answer: (c) [figure]

We unfold the paper step by step:

Now we consider the given options:

Option 1) There is no symmetry.

Option 2) There is no symmetry.

Option 3) The pattern matches completely.

Option 4) There is no symmetry.

Hence the correct answer is option 3)

Q47. Answer: (c) 18

The pattern used in the given series is:

First term + (first term ÷ 2) = Second term

Let's apply the pattern n the series:

14 : 21 :: 6 : 9 :: 12 : ?

14 + (14 ÷ 2) = 21

14 + 7 = 21

21 = 21

14 : 21 :: 6 : 9 :: 12 : ?

6 + (6 ÷ 2) = 9

6 + 3 = 9

9 = 9

14 : 21 :: 6 : 9 :: 12 : ?

12 + (12 ÷ 2) = ?

12+ 6 = ?

18 = Answer

Hence the correct answer is option 3).

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Q48. Answer: (a) Sunday

For the year 2021:
Total number of odd days from 20 July to 28 November:
July=11; odd days = 4
August = 31; odd days = 3
September=30; odd days = 2
October=31; odd days = 3
November=28; odd days = 0
Total number of odd days = 4 + 3 + 2 + 3 + 0 = 12 i.e. 5
So, Tuesday + 5 = Sunday.
Hence the correct answer is option 1)

Q49. Answer: (d) OCER

The pattern used in the given codes is:
First and second alphabets are interchanged.
Third and fourth alphabets are interchanged.
Similarly,
Hence the correct answer is option 4)

Q50. Answer: (b) 19

From the given information:
A denotes '+'
'B' denotes '×'
'C' denotes '–'
'D' denotes '÷'
Now we substitute the values and solve the equation using BODMAS rule:
71 A 3 B 2 C 6 B (65 D 13) C 7 B 4 = ?
71 + 3 × 2 - 6 × (65 ÷ 13) - 7 × 4 = ?
71 + 3 × 2 - 6 × 5 - 7 × 4 =?
71 + 6 - 30 - 28 =?
77 - 30 - 28 = ?
19 = Answer
Hence the correct answer is option 2)

Q51. Answer: (d) 4

GIVEN:
Difference between number and square root of the number = 2.
CALCULATION :
Let the number be x
then, According to the question
=> x - √x = 2 ----------(1)
On rearranging the equation we get
=> (x - 2) = √x
on squaring we get
=> $(x - 2)^2 = (\sqrt{x})^2$
On apply the formula $(a - b)^2 = a^2 + b^2 - 2ab$, we get
=> $x^2 + 4 - 2x (-2) = x$
=> x2 - 5x + 4 = 0
=> x(x - 4) - (x - 4) = 0
=> (x - 1)(x - 4) = 0
=> x = 1 or x = 4
Now on putting the value of x in equation 1, we get
For x = 1,

=> x - √x = 2
=> 1 - √1 = 2
=> 1 - 1 = 2
=> 0 ≠ 2
For x = 4,
=> x - √x = 2
=> 4 - √4 = 2
=> 4 - 2 = 2
=> 2 = 2
So the required number is 4.
Hence the correct answer is option 4)

Q52. Answer: (c) 18

GIVEN:
$a^2 - 4a + 1 = 0$
FORMULA USED:
$(a + b)^2 = a^2 + b^2 + 2ab$
Where a and b are 1st and 2nd term respective
CALCULATION:
$a^2 - 4a + 1 = 0$
=> on taking a common we get,
=> $a (a -4 +1/a) = 0$
=> $a - 4 + 1/a = 0$
=> $a + 1/a = 4$ .....(1)
Now, on squaring both the sides we get,
$(a + 1/a)^2 = a^2 + 1/a^2 + 2 \times a \times 1/a$
=> $16 = a^2 + 1/a^2 + 2$
$a^2 + 1/a^2 = 14$ .....(2)
Now, on adding the equations (1) and (2) the value of $a + 1/a + a^2 + 1/a^2 = (4 + 14) = 18$.
Hence, the value is 18.

Q53. Answer: (b) 1919/27

Given:
$(x - 1/x) = 7/3$
Formula used:
$(a - b)^3 = a^3 - b^3 - 3ab(a -b)$ where a and b are 1st and 2nd term respectively.
Calculation:
$(x-1/x)^3 = x^3 -1/(x^3) - 3x1/x(x- 1/x)$
=> $(7/3)^3 = (x^3 - 1/(x^3)) - 3 \times 7/3$
=> $x^3 - 1/x^3 = 532/27 = 19\ 19/27$.
=> Hence, the value is 1919/27.

Q54. Answer: (a) 67

Shortcut Trick
Ratio of students in the three batches = 30 : 50 : 70 => 3 : 5 : 7
Combine the batches with the same average marks (70): 5 + 7 = 12 units.
New simplified ratio of students = 3 : 12 => 1 : 4
Using Deviation Method (Base = 55): Net Deviation = 4 × (70 − 55) = 60
Average increase = 60 ÷ (1 + 4) = 12 marks
Total Average = 55 + 12 = 67
Therefore The correct answer is 67.
Alternate Method
Given:

Number of students (n1, n2, n3) = 30, 50, 70

Average marks (A1, A2, A3) = 55, 70, 70

Formula Used:

Combined Average = (n1A1 + n2A2 + n3A3) ÷ (n1 + n2 + n3)

Calculations:

=> Total marks of all students = (30 × 55) + (50 × 70) + (70 × 70)

=> Total marks = 1650 + 3500 + 4900

=> Total marks = 10050

=> Total number of students = 30 + 50 + 70 = 150

=> Combined Average = 10050 ÷ 150

=> Combined Average = 67

Therefore The correct answer is 67.

Additional Information

Weighted Average Principle

When multiple groups are combined, the overall average is the sum of products of values and their respective weights, divided by the total weight: $A_w = \Sigma n_i a_i \div \Sigma n_i$.

Deviation Method for Averages

Pick an assumed average (A). The true average = A + (Σdeviations ÷ total count). This simplifies calculations with large numbers.

Combined Average with Same Mean

If two or more groups have the exact same average, their combined average will always be that same value, regardless of the number of students in each group.

Q55. Answer: (a) 28171

GIVEN:

numbers divisible by 11

CONCEPT USED :

Divisibility of 11: Difference between the sums of the alternate digits of the given number is either 0 or divisible by 11.

CALCULATION :

Considering option (1), we have

=> 28171 = (2 + 1 + 1) - (8 + 7) = (4 - 15) = -11, which is divisible by 11

=> Hence, 28171 is divisible by 11.

Considering option (2), we have

=> 27667 = (2 + 6 + 7) - (7 + 6) = (15 - 13) = 2, which is not divisible by 11

=> Hence, 27667 is not divisible by 11

Considering option (3), we have

=> 29817 = (2 + 8 + 7) - (9 + 1) = (17 - 10) = 7, which is not divisible by 11

Considering option (4), we have

=> 28196 = (2 +1 + 6) - (8 + 9) = (9 - 17) = -8, which is also not divisible by 11

Hence, 28171 is divisible by 11.

Q56. Answer: (d) Rs. 1,604.50

GIVEN:

Sum = Rs 8400 $(1 +6/100)^3$

Time = One and a half years

Rate = 12% per annum compounded half early

FORMULA USED:

Compound Interest = $P (1 + r/100)^n - P$ where n = time and P = principal or sum

When it is compounded half-yearly, then time becomes double i.e. = 3 years in this case

and the rate becomes half i.e. 6% in this case.

CALCULATION:

Principal = 8400

C.I. = $8400 (1+ 6/100)^3 - 8400$

=> (8400 × 106/100 × 106/100 × 106/100) - 8400 = 1604.5

Hence, compound interest is Rs1604.5
Shortcut Trick=> Principle → Amount
=> 50 → 53
=> 50 → 53
=> 50 → 53
=> Total → 125000 → 148877
Now,
If, Principle = 125000x, then Amount = 148877x
Therefore Compound Interest = 148877x - 125000x =23877x
=> 125000x = 8400
=> x = 8400/125000
Therefore Compound Interest = 23877x = 23877 × (84/1250) = 1604.5

Q57. Answer: (b) 2.5 cm

GIVEN:
Two Δ ABC and Δ PQR are similar to each other.
Side BC = 5 cm, Side QR = 12.5 cm, Side PQ = 6.25 cm
CONCEPT USED:
When two triangles are similar, their corresponding sides are in the same ratio.
CALCULATION :
Since Δ ABC is similar to Δ PQR
Hence, their corresponding sides are in the same ratio such as,
AB/PQ = BC/QR =AC/PR
=> Now, AB/PQ = BC/QR
=> AB/6.25 = 5/12.5
=> AB = 2.5 cm
Hence, the value of side AB is 2.5 cm.

Q58. Answer: (a) 10 : 9

GIVEN:
x : y = 1 : 2
CALCULATION :
x/y = 1/2
Hence, on putting the value of x and y, we get
=> (2x + 4y) : (x + 4y) = (2 × 1 + 4 × 2) : (1 + 4 × 2)
=> (2x + 4 y) = 10 : 9.
Hence, the value is (2x + 4y) = 10 : 9.

Q59. Answer: (d) 330 m

GIVEN :
Speed = 108 km/h
Time = 11 seconds
FORMULA USED:
Distance = Speed × Time
CALCULATION :
Speed = 108 km/h
To convert km/h into m/s multiply the number by 5/18.
speed = 108 × 5/18 m/s = 30 m/s.
Distance = Speed × Time = 30 × 11 = 330 m
Hence, the distance covered by the train is 330m.

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Q60. Answer: (a) 616 cm³

GIVEN:
Height of wooden solid cone = 12cm
Circumference = 44cm
FORMULA USED:
Volume = 1/3π r²h, where r is radius and h is height respectively
Circumference = 2π r
CALCULATION :
Circumference = 2πr = 44
=> 2 × 22/7 × r = 44
=> r = 7 cm
The volume of the cone = 1/3π r²h
=> 1/3 × 22/7 × 7 × 7 × 12
=> 616 cm³
Hence, the volume is 616 cm³

Q61. Answer: (b) 55/4 days

GIVEN :
Man completes the project in 16 days
Women complete the same work in 12 days
they worked on alternate days.
CALCULATION :
Man's 1-day work = 1/16 days
Woman's 1-day work = 1/12 days
(man + woman)'s work in 2 days = (1/16 + 1/12) = (4 + 3)/48 = 7/48
=> In 6 pairs of 2 days they will complete = 7/48 × 6 = 7/8 i.e. after 6 × 2 = 12 days
Remaining work
(1 - 7/8) = 1/8 work is left.
On the 13th day, A will do the work,
=> 1/16 work done by A in 1 day
Then, remaining work = (1/8) - (1/16) = 1/16
On the 14th day, it is B's turn,
=> 1/12 work done by B in 1 day
Hence, 1/16 work will be done in (12 × 1/16) = 3/4 day
=> Total days = (12 + 1 + 3/4) = 13 3/4 days or 55/4 days.
Hence, they will take 55/4 days to complete the work.

Q62. Answer: (a) 30 cm²

GIVEN :
The sides of a triangle are 5 cm,12 cm and 13 cm
FORMULA USED:
Area of the triangle = √(s (s-a)(s-b) (s-c)) where a, b and c are the sides of the triangle respectively
and s is the semi- perimeter and s = (a + b + c) /2.
CALCULATION:
S = (5 + 12 + 13) /2 = 15 cm
Area of the triangle = √(15 (15 -5)(15-12)(15 -13)) = √(15 (10)(3)(2)) = √900 = 30 cm².
Hence, the area of the triangle is 30 cm².
Alternate Method
13² = 169 and (5² + 12²) = 169.
Hence, as both are equal and the square of the bigger side is equal to the sum of the square of the smaller sides
13² = 5² + 12² it is a right-angled triangle and hence, as in this h² = p² + b² where h = hypotenuse, b= base and p= perpendicular.
=> here, h = 13, b = 12 and p = 5

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=> Hence, Area of the triangle = 1/2 × b × h = 1/2 × 12 × 5 = 30 cm².
Hence, the area of the triangle is 30 cm²

Q63. Answer: (b) 1

Given:
tan48° tan23° tan42° tan67°
Formula used:
tanθ × cotθ = 1
tan(90 - θ) = cotθ
Calculation:
=> The value can be rewritten as
tan48 tan42 tan23 tan67
=> tan48 tan(90 - 48) tan23 tan(90 - 23)
=> tan48 cot48 tan23 cot23
=> 1
Hence, the value is 1

Q64. Answer: (b) 1 : 1

Given:
240 donors of blood group A, B, O and AB
Formula used:
360 degrees = Total donors
Calculation:
As, 360 degree represents 240 donors
Hence, blood group O has 80 degree
Blood group O has = 240/360 × 80 donors = 160/3
Now, blood group A represents 90 degree
Blood group A has = 240/360 × 90 = 60
Now, blood group AB represents 70 degrees
Blood group AB has = 240/360 × 70 = 140/3
Now, average of A and AB = Sum of values/Total number of values = (60 + 140/3) ÷ 2 = 160/3.
Hence, the ratio between O and the average of A and AB = 160/3 : 160/3 = 1:1.
Hence, the ratio is 1:1.

Q65. Answer: (d) 81

GIVEN:
The total number of students in coaching R = 300.
Percentage of students of school M enrolled in coaching R = 34
CALCULATION:
35% of the students in coaching R are female = 35% × 300 = 105.
20% of the female enrolled with Coaching R belongs to the school
20% of 105 = 21
Total students are in the school M = 34% of 300 = 102.
Hence, female in school M = 21
No. of male students of school M who have enrolled with coaching R = (102 - 21) = 81.
Hence, the number of male students of school M who enrolled with coaching R = 81.

Q66. Answer: (d) 65

Given:
Rohan scored 70 and 75 in two exam.
Average given = 70
Concept used:
Average = Sum of all the terms/Total number of terms

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Calculations:
Let the marks obtained in the third test be x.
According to the question,
(70+75+x)/3=70
=> 145 + x = 210
=> x = 65
Therefore Marks obtained in the third test are 65 marks.

Q67. Answer: (a) Profit 4.125%

Given:
C.P = Rs. 48,000
Loss% on first S.P = 15 %
Profit on second S.P = 22.5 %
Concept used:
S.P = (100-loss)/100× C.P
S.P = (100+profit)/100× C.P
Calculations:
First S.P = (100-15)/100×48,000
=> Rs. 40,800
Hence, First S.P = Second C.P = Rs. 40,800
Now, Second S.P = (100+22.5)/100×40,800
=> Second S.P = Rs. 49,980
Now, Total profit = Second S.P - C.P = 49,980 - 48,000 = 1,980
Hence, total profit = Rs. 1, 980
Now, Profit % = (1,980)/(48,000)×100
=> Profit % = 0.04125 × 100 = 4.125 %
Therefore Overall Profit % is 4.125%.

Q68. Answer: (a) Rs. 2,457

Shortcut Trick
Successive discounts of 28% and 30% give a combined multiplier.
SP Multiplier = (100 − 28)% × (100 − 30)% = 0.72 × 0.70
SP Multiplier = 0.504
SP = 4875 × 0.504 = 2457
Therefore The correct answer is Rs. 2,457.
Alternate Method
Given: Marked Price (MP) = Rs. 4,875, First Discount (d1) = 28%, Second Discount (d2) = 30%
Formula Used: SP = MP × (100 − d1)/100 × (100 − d2)/100
MP: Rs. 4875
−28%
Rs. 3510
−30%
SP: Rs. 2457
=> Price after 1^(st) discount = 4875 × (100 − 28) ÷ 100
=> Price after 1^(st) discount = 4875 × 0.72 = Rs. 3,510
=> Selling Price (SP) = 3510 × (100 − 30) ÷ 100
=> SP = 3510 × 0.70
=> SP = Rs. 2,457
Therefore The correct answer is Rs. 2,457.
Additional Information
Successive Discount Formula
The single equivalent discount for two successive discounts a% and b% is given by (a + b − (a × b) ÷ 100)%.

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Selling Price and Marked Price Relationship

SP = MP × (1 − Discount/100). For multiple discounts, multiply each factor: SP = MP × (1 − d1/100) × (1 − d2/100)...

Discount Amount

Total Discount = Marked Price − Selling Price. It is always calculated on the Marked Price unless otherwise specified.

Q69. Answer: (a) Rs. 16,800

Given:

Final amount = Rs. 19,320

Gain% = 15 %

Calculations:

Let the amount be x.

Then, according to the question,

x + 15% of x = 19,320

=> x + 15x/100=19,320

=> 115x/100=19,320

=> x =(19,320×100)/115

=> x = 16,800

Therefore The initial sum of money is Rs. 16,800.

Q70. Answer: (c) Rs. 711

Given:

Selling Price (M.P) = Rs. 480

Two successive Discount = 25% and 10%

Formula used:

Net Discount = (-X-Y+XY/100)

S.P = M.P × (100-D%)/100

Calculations:

Net Discount = (-X-Y+XY/100)

=> - 25 - 10 + 25 × 10/100

=> - 35 + 2.5

=> - 32.5

Net discount% = 32.5 %

Selling Price(S.P) = Marked Price(M.P) × (100-D%)/100

=> 480 = Marked Price × (100-32.5)/100

=> 480 = Marked Price × 67.5/100

=> 480 = Marked Price × 0.675

=> Marked Price = 480/0.675 = 711.11 ≈ 711

Therefore The original Price of the Shirt is Rs. 711.

Shortcut TrickLet the original price be Rs. 'x'

=> x × 75% × 90% = 480

=> (3x/4) × (9/10) = 480

Therefore x = (480 × 10 × 4)/ (9 × 3) = 711.11 ≈ 711.

Q71. Answer: (b) a + 2b + 2c

Given:

The mean of three numbers a/3, b and c is the same as the mean of the numbers b/3, c/3 and x.

Concept used:

Mean = (Sum of observations)/(No. of observation)

Calculations:

According to the question,

(a/3+b+c)/3=(b/3+c/3+x)/3

=> a/3+b-b/3+c-c/3=x

=> (a+2b+2c)/3=x

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=> 3x = a+2b+2c

Therefore The value of 3x = a + 2b + 2c.

Q72. Answer: (d) 25.5%

Given:

The ratio of number of boys and girls = 11 : 9

30% of boys and 20% of girls passed the examination

Calculation:

Let the ratio of boys and girls be 11x and 9x.

Total number of students = 20x

According to the question,

Number of passed students = 11x × 30% + 9x × 20%

=> 33x/10+18x/10

=> 51x/10

Number of passed students = 51x/10

Now, the percentage of passed students = (51x/10)/20x×100

=> 25.5 %

Therefore The percentage of the passed student is 25.5 %.

Q73. Answer: (a) 11 : 9

Given:

The ratio between their radii of the bases = 3 : 4

The ratio between their volume = 11 : 16

Formula used:

The volume of the cone = 1/3 πr2h, where r is the radius of the base and h is the height of the cone.

Calculation:

Let V1 and V2 are the volumes of two cones

and H1 and H2 are their height.

V1 = 1/3 × π × (R1)2 × H1

V2 = 1/3 × π × (R2)2 × H2

According to the question,

V1 : V2 = 11 : 16

=> [1/3 × π × (R1)2 × H1] : [1/3 × π × (R2)2 × H2] = 11/16

=> $(3^2)/(4^2)$ × (H1: H2)= 11/16

=> 9/16 × (H1 : H2)= 11/16

=> (H1 : H2) = 11 : 9

Therefore The ratio between their heights is 11 : 9.

Q74. Answer: (c) 3

Given:

The number is 2143251

Concept used:

Divisibility law of 3 => A number is divisible by 3 if the sum of its digit is divisible by 3.

Divisibility law of 7 => A number is divisible by 7 if the difference between twice the unit digit of the given number and the remaining part of the given number should be a multiple of 7 or it should be equal to 0

Calculations:

Sum of digits of 2143251 = 2 + 1 + 4 + 3 + 2 + 5 + 1 = 18

Now, 18 is divisible by 3 therefore, the Number 2143251 is divisible by 3.

Here in the options, two numbers are not available so we don't need to check divisibility from other numbers.

Therefore The number 2143251 is divisible by 3.

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Q75. Answer: (b) 250

Given:

Table showing the survey on students loving sports.

	Cricket	Soccer
Boys	542	438
Girls	358	372

Calculations:

Total number of boys = 542 + 438 = 980

Total number of girls = 358 + 372 = 730

Now, the difference between the number of boys and girls in the school = 980 - 730 = 250

Therefore The difference between no. of boys and girls in the school is 250.

Q76. Answer: (d) Kuchipudi

The correct answer is Kuchipudi.

Key Points

• Gaddam Padmaja Reddy

• Gaddam Padmaja Reddy, a well-known Kuchipudi dancer, received the Padma Shri award in 2022 for her tireless efforts to advance the dance style.

• Former President Ram Nath Kovind presented the Padma Shri to Padmaja Reddy.

• She is from Pamarru, a village located about 15 kilometres away from Kuchipudi.

• For nearly 50 years, she has been performing Kuchipudi.

• She is renowned for bringing to life on stage the illustrious past and beauty of the Kakatiya empire.

• The 51-year-old Hyderabadi dancer has performed in more than 3000 concerts across 100 nations.

• She was also influenced by the book Nritta Ratnavali, which describes classical and traditional dance.

• At the age of five, she started dancing.

Additional Information

• She performed and directed part 1 of Kakatiyam in 2017. The second part of it was conducted in 2021.

• Together with approximately 100 other dancers, she gave a stunning Kuchipudi performance that earned her a lot of praise and admiration.

• Over the course of her 40-year dance career, she has won numerous honours and rewards.

• The Sangeeta Nataka Akademi Award, the highest honour awarded by the Indian government to working artists, was one of her largest honours.

• She was the first person from Telangana to ever get this honour, which was given to her by former President Pranab Mukherjee in 2016.

Q77. Answer: (b) Sunjeev Sahota

The correct answer is Sunjeev Sahota.

Key Points

• The Year of the Runaways

• 'The Year of the Runaways is Sunjeev Sahota's second book, and he is a British novelist.

• After being released in June 2015, it was shortlisted for the 2015 Man Booker Prize and received the 2017 European Union Prize for Literature (for the UK).

• The book follows the lives of three migrant workers who flee India to look for work in England.

• The plot of the book centres on the interactions between three young men and one woman over the period of four seasons, during which their aspirations, physical capabilities, and religious beliefs are tested.

• The Year of the Runaways was ranked among the top 12 Indian novels by Emma Lee-Potter of The Independent in 2020.

Additional Information

• 'Ours are the Streets' is Sahota's first book which was released by Picador in January 2011.

• A British Pakistani youngster who becomes a suicide bomber is the subject of the book.

Name of the book	Author	Year
The State of Freedom The Lives of Others	Neel Mukherjee	2017 2014

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The Paradoxical Prime Minister Inglorious Empire	Shashi Tharoor	2018 2017
Train to Pakistan Delhi: A Novel	Khushwant Singh	1956 1990

Q78. Answer: (a) Rabindranath Tagore

The correct answer is Rabindranath Tagore.

Key PointsRabindranath Tagore

• Rabindranath Tagore was a mystic, artist and Bengali polymath (great poet, philosopher, music composer and a leader of Brahma Samaj).

• He took Indian culture and tradition to the whole world and became a voice of Indian heritage.

• He was the first Non-European to be awarded the Nobel Prize in literature in 1913 with his book Gitanjali: Song Offerings.

• Gitanjali (Song Offerings), Gora (Fair-Faced) and Ghare-Baire (The Home and the World) are his best-known works.

Additional Information Abanindranath Tagore

• The principal artist and creator of the Indian Society of Oriental Art.

• The first major exponent of Swadeshi values in Indian art.

• He founded the influential Bengal school of art, which led to the development of modern Indian painting.

Hemanta Mukherjee

• Indian music director and playback singer who primarily sang in Bengali and Hindi.

• Also sang in Indian languages like Marathi, Gujarati, Odia, Assamese, Tamil, Punjabi, Bhojpuri, Konkani, Sanskrit and Urdu.

• Recipient of two National Awards for Best Male Playback Singer and was popularly known as the "voice Of God".

Bankim Chandra Chattopadhyay

• Indian novelist, poet and journalist.

• He was the author of the 1882 Bengali language novel Anandamath(one of the landmarks of modern Bengali and Indian literature).

• His famous novels were: Kapalkundala (1866), Mrinalini (1869), Vishbriksha (1873), Chandrasekhar (1877), Rajani (1877), Rajsimha (1881), and Devi Chaudhurani (1884).

Q79. Answer: (c) 62

The correct answer is 62.

Key PointsKhelo India Scheme

• Flagship Central Sector Scheme of the Ministry of Youth Affairs & Sports.

• Proposed by the government of India in 2017.

• More than Rs.2400 Crore allocated under Khelo India Scheme since its inception.

• 453 Khelo India Centres have been notified in 359 districts of 28 States/UTs as of date.

• 62 sports infrastructure projects of various categories have been sanctioned in the North Eastern Region amounting to 423.01 crores.

• The inaugural event was held at JNL Indoor Stadium.

Additional Information

• Khelo India program has been divided into 12 verticals

Q80. Answer: (d) Maharashtra

The correct answer is Maharashtra.

Key Points

• Maharashtra leads states in terms of the construction of national highways.

• In 2017-18, it built 1,345 km, followed by Rajasthan and Karnataka.

• The state also holds the distinction of having the highest NH network, spanning 17,749 km and racing ahead of Uttar Pradesh with 11,476 km in the network.

Additional Information

• National Highways are classified into three categories based on the type of Lane i.e. Less than Two Lane, Two Lane and Four-Lane & above.

• The longest National Highway is NH44, which runs between Srinagar in Jammu and Kashmir and Kanyakumari in Tamil Nadu, covering a distance of 3,806 km.

• "Bharatmala" Pariyojana is an umbrella programme for the highway sector that focuses on optimising the efficiency of freight and

passenger movements across the country.

• The Ministry of Road Transport and Highways (MoRTH) is mandated with the construction, development and maintenance of the National Highways (NH) in the country.

Q81. Answer: (b) Water – 1200

The correct answer is Water-1200.

Key PointsSpecific Heat Capacity

• The quantity of heat (J) absorbed per unit mass (kg) of the material or substance when its temperature increases 1 K (or 1 °C).

• Its units are J/(kg K) or J/(kg °C).

Atmospheric Pressure

• The average air pressure at sea level at a temperature of 15 degrees Celsius.

• An atmosphere (atm) is a unit.

• 1atm = 1,013 millibars or 760 millimeters of mercury.

• Atmospheric pressure drops as altitude increases.

Additional InformationList of some substances and Specific Heat Capacity:

Q82. Answer: (d) Precautionary

The correct answer is Precautionary.

Key Points

• People hold money in cash for three motives: (i) Transactions motive, (ii) Precautionary motive, and (iii) Speculative motive.

• Precautionary Motive:

• People often demand money as a precaution against an uncertain future.

• Unexpected expenses, such as medical or car repair bills, often require immediate payment.

Additional InformationTransactions Motive

• Demanding money arises from the fact that most transactions involve an exchange of money.

• The total number of transactions made in an economy tends to increase over time as income rises.

• As income or GDP rises, the transaction demand for money also rises.

Speculative Motive

• Demanding money arises in situations where holding money is perceived to be less risky than the alternative of lending the money or investing it in some other asset.

• The demand for an asset depends on both its rate of return and its opportunity cost.

• Money holdings provide no rate of return and often depreciate in value due to inflation.

• The opportunity cost of holding money is the interest rate that can be earned by lending or investing one's money holdings.

Q83. Answer: (a) Harivansh Rai Bachchan

The correct answer is Harivansh Rai Bachchan.

Key PointsHarivansh Rai Bachchan

• Indian poet and writer of the Nayi Kavita literary movement of early 20th century Hindi literature.

• He was also a poet of the Hindi Kavi Sammelan.

• He is best known for his early work Madhushala.

• In 1976, he received the Padma Bhushan for his service to Hindi literature.

Additional InformationKuvempu

• Kuppali Venkatappa Puttappa was an Indian poet, playwright, novelist and critic.

• He is widely regarded as the greatest Kannada poet of the 20th century.

• He was the first Kannada writer to receive the Jnanpith Award.

Rahat Indori

• Indian Bollywood lyricist and Urdu poet.

• He was also a former professor of Urdu language and a painter.

• He was a pedagogist of Urdu literature at DAVV.

Sahir Ludhiyanvi

• Indian poet and film song lyricist who wrote primarily in Urdu in addition to Hindi.

• His work influenced Indian cinema, in particular Bollywood films.

• He won a Filmfare Award for Best Lyricist for Taj Mahal.

Q84. Answer: (b) China

The correct answer is China.

Key PointsAsian Games

• Also known as Asiad, is a continental multi-sport event held every four years among athletes from all over Asia.

• The Games were regulated by the Asian Games Federation from the first Games in New Delhi, India, in 1951.

• The 2022 Asian Games, officially known as the 19th Asian Games, also known as Hangzhou 2022, were held in Hangzhou, China.

Additional Information

• The Games are recognized by the International Olympic Committee (IOC).

• They are described as the second largest multi-sport event after the Olympic Games.

• The most recent games was held in Jakarta and Palembang, Indonesia from 18 August to 2 September 2018.

Q85. Answer: (d) Digital Equity for all Ages

The correct answer is Digital Equity for all Ages.

Key PointsInternational Day for Older persons

• Observed on October 1 every year to raise awareness about issues affecting the elderly, such as senescence and elder abuse.

• On December 14, 1990, the United Nations General Assembly voted to establish this day.

• The holiday was observed for the first time on October 1, 1991.

• The 2021 theme Digital Equity for All Ages affirms the need for access and meaningful participation in the digital world by older persons.

Additional Information

• The theme of 2022: The Resilience and Contributions of Older Women.

• This theme will serve as a hallmark and reminder of the significant role older women play in traversing global challenges and contributing to their solutions with resilience and fortitude.

Q86. Answer: (c) Keibul Lamjao National Park in Manipur

The correct answer is Keibul Lamjao National Park in Manipur.

Key PointsKeibul Lamjao National Park in Manipur

• The only floating National Park in the world.

• Located on Loktak Lake is the last natural habitat of the 'Sangai' (Eld's deer), the dancing deer of Manipur.

• A glimpse of the deer in this unique wetland ecosystem is a must for any wildlife enthusiast.

IUCN Red List

• The International Union for Conservation of Nature Red List of Threatened Species.

• Also known as the Red Data Book, founded in 1964.

• It is the world's most comprehensive inventory of the global conservation status of biological species.

• Animals, plant and fungi species, subspecies, varieties and subpopulations can be assessed on the Red List.

Additional InformationHemis National Park in Ladakh

• Globally famous for its snow leopards (believed to have the highest density of them in any protected area in the world).

• The Tibetan wolf, the Eurasian brown bear (endangered in India), and the red fox are also present in Hemis.

Ranthambore National Park in Rajasthan

• Known for its large tiger population.

• There has been a decline in the tiger population in Ranthambhore due to poaching and other reasons.

Pench National Park in Madhya Pradesh

• This park is home to a number of endangered species.

• There are 25 tigers, 3 species of amphibians, 39 species of mammals, 13 species of reptiles and 285 species of birds.

• Indian leopard, sloth bear, Indian wolf, wild dog, porcupine, monkeys, jungle cat, fox, striped hyena, gaur, four-horned antelope and barking deer are protected.

Q87. Answer: (a) Cyclostomata

The correct answer is Cyclostomata.

Key PointsCyclostomata

• a group of vertebrates that comprises the living jawless fishes: the lampreys and hagfishes.

• They are modified and degenerate offshoots of the primitive vertebrate stalk.

• Because of their round mouths, they are named Cyclostomata.
• Notochord persists throughout life.
• The median fin is supported by cartilaginous fin-rays.

Additional Information Aschelminthes

• Closely associated with the Platyhelminthes, are an obsolete phylum of pseudocoelomate
• Commonly called roundworms, the body appears circular in the transverse cross-section.
• They are free-living or parasites.
• They are found in soil, freshwater, or as a parasite on plants, animals, and even humans.
• The body is bilaterally symmetrical and triploblastic.

Hemichordata

• Consist of three classes: Enteropneusta, Pterobranchia, and Planctosphaeroidea.
• Enteropneusts or acorn worms are solitary, wormlike, bilaterally symmetrical animals, often brilliantly coloured.
• They are known as acorn worms because of the appearance of the proboscis and collar.

Arthropoda

• Invertebrate animals have an exoskeleton, a segmented body, and paired jointed appendages.
• They form the phylum Arthropoda.
• They are distinguished by their jointed limbs and cuticle made of chitin, often mineralised with calcium carbonate.

Q88. Answer: (a) National Film Award

The correct answer is National Film Award.

Key PointsNational Film Award

• The most prominent film award ceremony in India.
• Established in 1954.
• It has been administered by the Indian government's Directorate of Film Festivals since 1973.
• Soorarai Pottru won the 2020 National Film Award.

K Shivashankar

• Indian dance choreographers worked in more than 10 languages (majorly with South Indian films, including Tamil films & Telugu films).
• He won National Film Award for Dheera Dheera Dheera in Magadheera.

Additional Information Filmfare Award

• They are annual awards that honour artistic and technical excellence in the Hindi-language film industry of India.
• The Filmfare ceremony is one of the most famous film events in India.
• Sidharth Malhotra's Shershaah dominated the awards this year.

International Film Academy Award

• It is one of the Academy Awards handed out annually by the U.S.-based Academy of Motion Picture Arts and Sciences (AMPAS).
• It is given to a feature-length motion picture produced outside the United States with a predominantly non-English dialogue track.
• Drive My Car won the 2021 award.

Guild Award

• They are accolades given by the Screen Actors Guild-American Federation of Television and Radio Artists.
• The award was founded in 1952 to recognize outstanding performances in movies and prime-time television.
• It presents thirteen awards.
• Gosford Park has the largest winning cast.

Q89. Answer: (b) Violin

The correct answer is Violin.

Key PointsMohanan Chandrasekaran

• Carnatic classical violinist from Chennai, Tamil Nadu, India.
• He was awarded the Madras Music Academy's Sangeetha Kalanidhi in 2005.
• Considered as an expert in the laya aspects, recognizing and adapting to intricate rhythmic patterns.
• He often performs violin duet concerts with his daughter Smt. G. Bharathi.

Additional Information Madras Music Academy's Sangeetha Kalanidhi

• The title is awarded yearly to a Carnatic musician by the Madras Music Academy.

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• The highest accolade in the field of Carnatic music, it came into existence in 1942.
• In 2022, Violinists: Lalgudi GJR Krishnan and Lalgudi Vijayalakshmi.
• From 1929 to 1941, the award did not exist.

Q90. Answer: (a) Narthaki Nataraj

The correct answer is Narthaki Nataraj.

Key PointsNarthaki Nataraj

• Bharatanatyam dancer.
• In 2019, awarded Padma Shri, making her the first transgender woman to be awarded India's fourth-highest civilian award.
• She specialises in the Tanjore-based Nayaki Bhava tradition.

Additional Information

• Transgender folk dancer Manjamma Jogati received a Padma Shri honour for her contribution to the arts.
• President Ram Nath Kovind handed over the award at the 2021 Padma awards ceremony at Rashtrapati Bhavan.
• Jogati, is also the first transwoman President of Karnataka Janapada Academy.

Q91. Answer: (c) 75

The correct answer is 75.

Key PointsKarnataka Legislative Council

• Karnataka is one of the six states in India, where the state legislature is bicameral
• Bicameral comprises two houses: the Legislative Assembly, the Legislative Council, and the Governor.
• The Karnataka Legislative Council is a permanent body comprising 75 members(64 Elected and 11 Nominated).

Additional Information

• The size of the State Legislative Council cannot be more than one-third of the membership of the State Legislative Assembly.
• Its size cannot be less than 40 members.
• These members elect the Chairman and Deputy Chairman of the State Legislative Council.
• 28 states and 3 union territories are with a unicameral state legislature.
• 6 states, the lower house of their bicameral state legislatures with the upper house being the State Legislative Council.

Q92. Answer: (a) Mercury

The correct answer is Mercury.

Key PointsMercury

• It has relatively high surface tension, which makes it very unique.
• By heating liquid mercury to its boiling point of 357°C, and under the right pressure conditions, its all particles in the liquid state go into the gas state.
• The melting point of -38.9 Degree Celcius.
• The boiling point of 356.7 Degree Celcius.
• The only metal to remain in liquid form at room temperature.

Additional Information Properties:

• Copper
• soft, malleable, and ductile metal with very high thermal and electrical conductivity.
• A freshly exposed surface of pure copper has a pinkish-orange colour.
• Bronze
• It is made up of copper and tin, with tin accounting for roughly 12% of the alloy.
• It produces a lower amount of friction when it comes into contact with other types of metal.
• Gallium
• soft, silvery metal used primarily in electronic circuits, semiconductors and light-emitting diodes (LEDs).
• It readily alloys with most metals.

Q93. Answer: (b) Bharatanatyam and Odissi

The correct answer is Bharatanatyam and Odissi.

Key PointsSonal Mansingh

• Indian classical dancer and Guru Bharatanatyam and Odissi dancing style.
• She is a teacher, researcher, choreographer, and social activist.

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• Also Nominated by the President of India to become a Member of Parliament, Rajya Sabha.
• She is the youngest recipient of Padma Bhushan in 1992 and Padma Vibhushan in 2003.

Additional Information

• Bala Saraswati is the queen of Bharatnatyam.
• Kelucharan Mohapatra was a legendary Indian classical dancer, guru, and exponent of Odissi dance
• She is credited with the revival and popularizing of this classical dance form in the 20th century.
• Guru Pankaj Charan Das was an Indian classical dancer, choreographer and the Adi Guru of Odissi dance.
• He is known as the Father of Odissi dance.

Q95. Answer: (d) Tabla

The correct answer is Tabla.

Key PointsUstad Zakir Hussain

• Indian tabla player, composer, percussionist, music producer and film actor.
• He was awarded the Padma Shri in 1988, and the Padma Bhushan in 2002, by the Government of India presented by President Abdul Kalam.

Ustad Allah Rakha

• Indian tabla player who specialized in Hindustani classical music.
• He was a frequent accompanist of sitar player Pandit Ravi Shankar
• He was largely responsible for introducing Tabla to the western audience.

Ustad Sabir Khan

• youngest amongst the renowned tabla players of our country.
• He is the only living heir and sole representative of Farrukhabad Gharana.

Additional Information

• Percussion Instruments: Tabla, Mridangam, Drum, Dholak, Cymbal, Xylophone, Ghatam, Pakhawaj, Bells
• String Instruments: Guitar, Violon, Sitar, Banjo, Sarod, Saarangi, Veena, Surbahaar, Mandolin.
• Wind Instruments: Flute, Clarinet, Shehnai, Saxophone Bagpipe, Harmonica, Trumpet, Piano, Harp.

Q96. Answer: (d) Mandeep Singh

The correct answer is Mandeep Singh.

Key PointsMajor Dhyan Chand Khel Ratna Award

• Formerly known as the Rajiv Gandhi Khel Ratna Award in Sports and Games.
• The highest sporting honour of India.
• It is awarded annually by the Ministry of Youth Affairs and Sports.
• The award comprises a medallion, a certificate, and a cash prize of Rs. 25 lakh (as of 2020).
• Established in 1992.

Mandeep Singh

• Indian professional field hockey player.
• Plays as a forward for Delhi Waveriders in the Hockey India League and the India men's national field hockey team.

Additional Information Manpreet Singh

• Indian field hockey player and the captain of India men's national field hockey team since May 2017.
• He led the Indian field hockey team to the bronze medal at the Tokyo 2020 Olympics.
• He plays as a halfback.
• In 2021, he was awarded by Khel Ratna Award.

Sumit Antil

• Indian Paralympian and javelin thrower.
• Gold medalist in the 2020 Summer Paralympics.
• He holds the current world record, having thrown 68.55 metres in the Paralympic final.
• In 2021, he was awarded by Khel Ratna Award.

Krishna Nagar

• Indian para-badminton player.
• Ranked as world number 2 in para-badminton men's Singles SH6.
• He has won a gold medal at 2020 Summer Paralympics.

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• In 2021, he was awarded by Khel Ratna Award.

Q97. Answer: (b) Indore

The correct answer is Indore.

Key PointsUstad Amir Khan

• Also known as Sur Rang.

• one of the greatest and most influential Indian vocalists in the Hindustani classical tradition.

• Founder of the Indore Gharana.

• His singing style: The amalgamation of Kirana and Bhendibazaar Gharanas.

Additional Information Gharanas

• A community of performers who share a distinctive musical style that traces to a particular instructor or region.

List of some Musical styles and Gharanas

Musical Style	Gharanas
Khyal	Dilli(Delhi), Agra, Gwalior, Indore, Atrauli-Jaipur, Kirana, and Patiala
Thumri	Benaras, Lucknow, and Patiala.
Kathak	Lucknow, Atrauli-Jaipur, Benares, and Raigarh.

Q98. Answer: (a) Russia

The correct answer is Russia.

Key Points Lake Baikal

• ancient, massive lake in the mountainous Russian region of Siberia, north of the Mongolian border.

• Volume: 23,620 km^3

• holds about 20% of the world's fresh surface water.

• one of the most biodiverse lakes on earth.

• 1340 species of animals (including 745 species of endemic animals), 570 species of plants (including 150 endemics).

Additional Information

• Freshwater lakes hold the majority of the world’s drinkable water.

• Some other largest freshwater lakes are:

• The Caspian Sea in Azerbaijan, Iran, Kazakhstan, Russia, and Turkmenistan and Depth: 3,360 ft.

• Lake Superior in Canada and United States and Depth:1,333 ft.

• Lake Victoria in Tanzania, Uganda, Kenya, Burundi, Rwanda and Depth:266 ft.

Q99. Answer: (c) Hydrocolloids

The correct answer is Hydrocolloids.

• Certain marine brown and red algae produce large amounts of hydrocolloids (water holding substances), e.g., algin (brown algae), and carrageenin (red algae) are used commercially.

Key Points

• Hydrocolloids are a class of food additives with broad applications in the food industry to develop structure in food ingredients.

• Hydrocolloids can be synthetic, plant-based, or animal-based.

• Increasing consumer awareness has led to the use of natural food ingredients derived from natural sources, making algae-derived hydrocolloids more appealing nowadays.

• Algae-derived hydrocolloids such as carrageenan, agar, and alginate are widely used in the food industry as a thickening, gelling, and emulsifying agents.

• Algae are the most abundant primary producers, and algae-derived hydrocolloids are high-value thickening, gelling, and emulsifying agents, which have reached 100,000 tons of annual global production and exceeded US$ 1.1 billion of gross market value.

Additional Information

• A lipid is any of various organic compounds that are insoluble in water. They include fats, waxes, oils, hormones, and certain components of membranes and function as energy-storage molecules and chemical messengers.

• Carbohydrates, or carbs, are sugar molecules. Along with proteins and fats, carbohydrates are one of three main nutrients found in foods and drinks. Your body breaks down carbohydrates into glucose.

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• Gelatin is a protein made from animal collagen, usually from cows and pigs. It's commonly used to make capsules, cosmetics, ointments, and foods.

Q100. Answer: (b) The USA, Canada, and Mexico

The correct answer is The USA, Canada, and Mexico.

• The FIFA World Cup 2026 will be hosted by The USA, Canada, and Mexico.

Key Points

• The biggest World Cup in history will be played in North America in 2026.

• Three host nations, a record number of venues, and 48 teams are the most any World Cup has ever seen and the USA, Canada, and Mexico will bring it all to life.

• FIFA confirmed back in 2018 that the 2026 World Cup would be played across North America, with 80 matches spread across the continent's three largest nations.

• Of the 80 games to be contested in the tournament, 60 will be played in the USA, with 10 in Canada and 10 in Mexico.

Additional Information

• Founded in 1904 to provide unity among national soccer associations, the Federation Internationale de Football Association (FIFA) boasts 209 members, rivalling that of the United Nations, and is arguably the most prestigious sports organization in the world.

• Current FIFA President is Gianni Infantino.

• Zurich is the headquarter of FIFA.

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