SSC CHSL Tier-1 2022: Official Paper (Held On: 16 March, 2023 Shift 4) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2022 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. Out of the given letter clusters, three are similar in a certain manner. However, one option is NOT like the other three. Select the option which is different from the rest.

(a) ABC
(b) JKL
(c) RTU
(d) FGH

Q2. Select the correct mirror image of the given combination when the mirror is placed at line AB as shown.



(a)



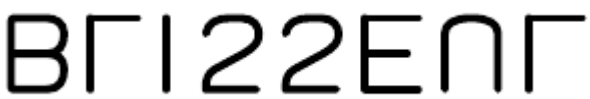
(b)



(c)



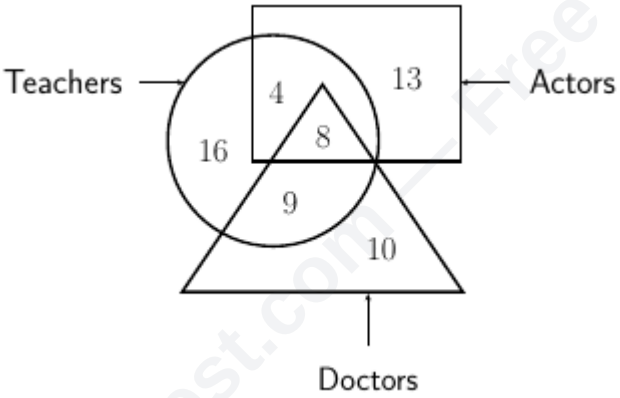
(d)



Q3. Three of the four group of words are alike in some manner. Select the oddgroup of words.

(a) (Bangkok, Dhaka, Ottawa)
(b) (Tokyo, Egypt, Oslo)
(c) (Thimphu, Jakarta, Nairobi)
(d) (Canberra, Beijing, Rome)

Q4. What is the total numbers of teachers?



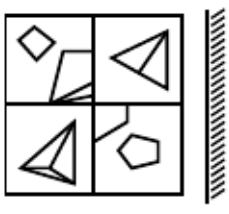
(a) 17
(b) 12
(c) 20
(d) 37

Q5. In the following question, four number pairs are given. In each pair the number on left side of (–) is related to the number of the right side of (–) with some Logic/Rule /Relation. Three pairs are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives.(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

(a) 51624 – 42615
(b) 51678 – 87615
(c) 42675 – 57624
(d) 12311 – 11231

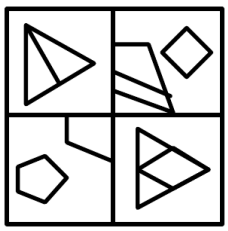
Q6. If a mirror is placed on the line AB, then out of the option figures which figure will be the right image of the question figure?

A

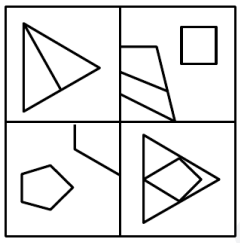


B

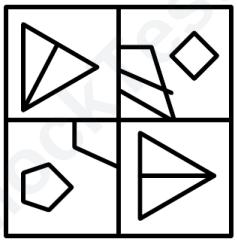
(a)



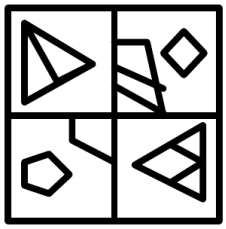
(b)



(c)



(d)



Q7. In the following question, four number pairs are given. In each pair the number on left side of (–) is related to the number of the right side of (–) with some Logic/Rule /Relation. Three pairs are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

(a) 1286 – 2578

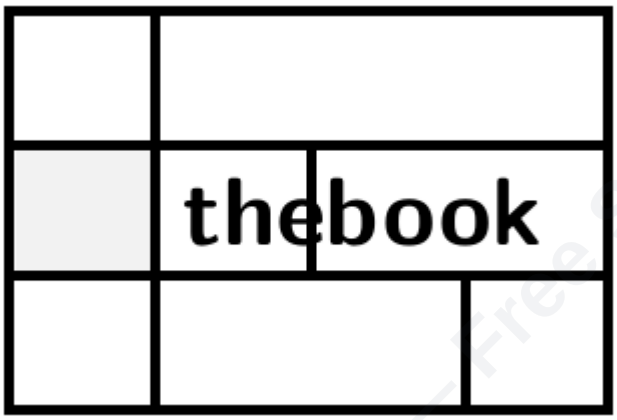
(b) 3294 – 6589

(c) 1324 – 2649

(d) 3184 – 6369

Q8. How many quadrilaterals are there in the given figure?

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(a) 21
(b) 22
(c) 24
(d) 23

Q9. By Interchanging the given two numbers (Not digits) which of the following equation will be not correct?

4 and 6

(a) 2 + 6 × 5 – 4 = 16
(b) 4 + 5 – 6 = 7
(c) 6 ÷ 2 – 4 × 5 = –28
(d) 6 × 3 – 4 ÷ 1 = 3

Q10. In a certain code language, 'LETTER' is coded as 'RETTEL' and 'SYMBOL' is coded as 'LOBMYS'. What is the code for the word 'RENAISSANCE' in that language?

(a) ECNASSIANER
(b) ENCASSIANER
(c) ECANSSIANER
(d) ECNASSAINER

Q11. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statement I: All silver are gold.

Statement II: No gold is platinum.

Conclusion I: Some gold are silver.

Conclusion II: Some silver are platinum.

(a) Neither I nor II follows
(b) Only II follows
(c) Both I and II follows
(d) Only I follows

Q12. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

ab_a_bba_ _ba

(a) abbb
(b) aaaa
(c) bbbb
(d) baab

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Q13. Manisha's sister Sakshi is the wife of Subham. Subham is the brother of Darshan. Akash, the son of Manisha, has a sister Rekha who is the daughter of Darshan. Rekha's father Darshan's mother is Saloni. How is Saloni related to Sakshi?

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

Q14. If '+' means '×', '–' means '÷', '÷' means '+' and '×' means '–', then 74 ÷ 11 – 33 + 42 × 16 = ?

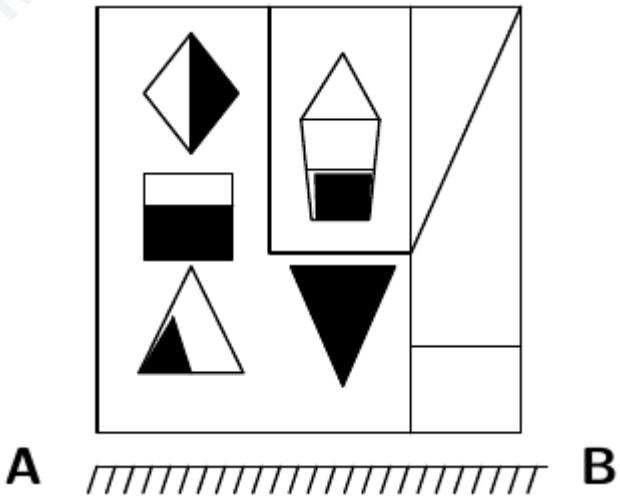
(a) 64
(b) 68
(c) 76
(d) 72

Q15. Select the option that is related to the fourth number in the same way as the first number is related to the second number and the fifth number is related to the sixth number.

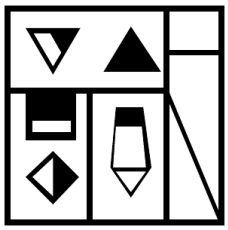
22 : 132 :: ? : 72 :: 24 : 144

(a) 12
(b) 8
(c) 18
(d) 36

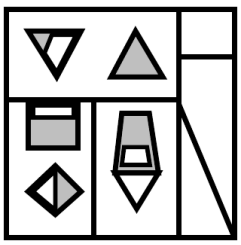
Q16. If a mirror is placed on the line AB, then out of the option figures which figure will be the right image of the question figure?



(a)

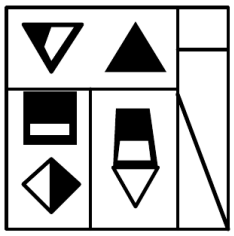


(b)

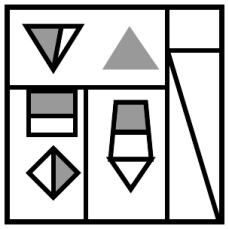


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(c)



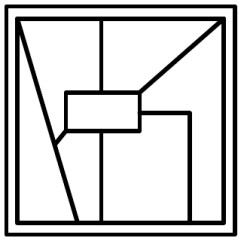
(d)



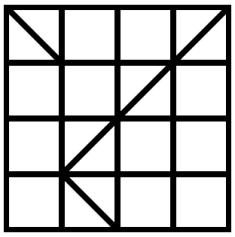
Q17. Select the option figure in which the given figure is embedded. (rotation is NOT allowed)



(a)

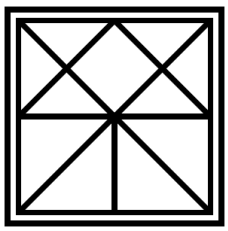


(b)

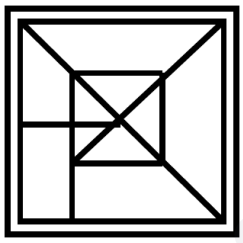


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(c)



(d)



Q18. Select the word pair in which the words are related in the same way as the words are related in the following pair:

Treatment : Hospital :: ?

(a) Cinema hall : Entertainment
(b) Temple : Prayer
(c) Education : School
(d) Garage : Repairing

Q19. In the following question, select the related letters from the given alternatives.

IMQ : KOS :: XBF : ?

(a) LOK
(b) ZFH
(c) MFH
(d) ZDH

Q20. Select the correct option that indicates the arrangement of the given words in a logical and meaningful order.

1. Sentence
2. Letter
3. Paragraph
4. Chapter
5. Book

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

Q21. In a certain code language, '629' is coded as 'namo te fek', '943' is coded as 'dump to te', and '748' is coded as 'to fir tako'. What is the code for the letter '3' in that language?

(a) dump
(b) to
(c) fir
(d) te

Q22. Select the option in which the numbers shares the same relationship in set as that shared by the numbers in the given set. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

(66, 13, 20)

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(298, 80, 69)

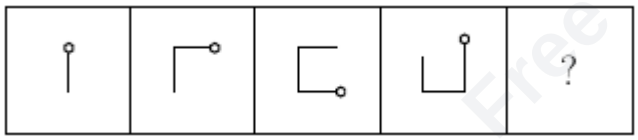
(a) (356, 111, 67)

(b) (219, 39, 180)

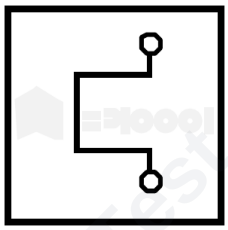
(c) (38, 12, 18)

(d) (56, 16, 42)

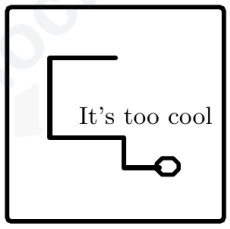
Q23. Select the figure that will come next in the following figure series.



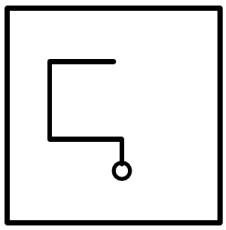
(a)



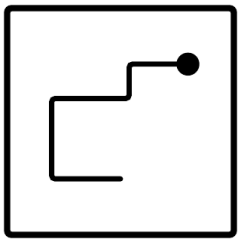
(b)



(c)



(d)



Q24. Words given on the left side of(::)are related with each other by some Logic/Rule /Relation. Select the missing word/word pair on the right side of(::)from the given alternatives based on the same Logic/Rule/Relation.

Ottawa : Canada :: ?

(a) Nairobi : Kenya

(b) Russia : Moscow

(c) Greece : Athens

(d) Spain : Madrid

Q25. In the following question, select the missing number from the given series.

623, 626, 635, 662, 743, ?

(a) 986
(b) 966
(c) 1026
(d) 1016

GENERAL INTELLIGENCE

Q26. Where does Alaknanda River join Bhagirathi River in India?

(a) Devprayag
(b) Prayagraj
(c) Champawat
(d) Dehradun

Q27. Indian Standard Time (IST) is ahead of Greenwich Mean Time (GMT) by _____.

(a) 3 hours 45 minutes
(b) 7 hours 15 minutes
(c) 2 hours
(d) 5 hours 30 minutes

Q28. Who is the author of the book 'Languages of Truth: Essays 2003-2020'?

(a) Vikram Sampath
(b) Salman Rushdie
(c) Kabir Bedi
(d) Meghan Markale

Q29. Cotton requires ____ temperature, light rainfall or irrigation, ____ frost-free days and bright sun-shine for its growth.

(a) high, 210
(b) low, 150
(c) low, 210
(d) high, 150

Q30. Muscles are of three types. Which of the following is NOT one of them?

(a) Sesamoids
(b) Smooth
(c) Cardiac
(d) Skeletal

Q31. Who among the following is famously called the Iron Lady of India?

(a) Mary Kom
(b) Deepika Padukone
(c) Lata Mangeshkar
(d) Indira Gandhi

Q32. Which of the following rivers flowed through Magadha?

(a) Ganga and Krishna
(b) Krishna and Tungabhadra
(c) Ganga and Son
(d) Narmada and Tapi

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Q33. Draft “Drug, Medical Devices and Cosmetics Bill-2022” has been released by which union ministry?

(a) Ministry of Health and Family Welfare
(b) Ministry of Chemicals and Fertilizers
(c) Ministry of Consumer Affairs, Food & Public Distribution
(d) Ministry of Agriculture and Farmer Welfare

Q34. Neel wants to use a Character Printer. Which among the following should he pick?

(a) Chain Printer
(b) Laser Printer
(c) Drum Printer
(d) Dot Matrix Printer

Q35. _____ forces water through a semipermeable membrane and removes contaminants

(a) Boiling
(b) Distillation
(c) Reverse Osmosis
(d) Filtration

Q36. _____ is a legal declaration of a person who is unable to pay off debts.

(a) Bankruptcy
(b) Credit Crunch
(c) Amortisation
(d) Bancassurance

Q37. _____ is the physical network of computers all over the world.

(a) Laptop
(b) Web browser
(c) Server
(d) Internet

Q38. Who was the first Indian woman to be appointed Chief Justice of a state High Court?

(a) Leila Seth
(b) Anna Chandy
(c) M. Fathima Beevi
(d) Kiran Mazumdar-Shaw

Q39. The most distinctive type of folk songs of Assam are _____.

(a) Qawwali songs
(b) Bihu songs
(c) Teej songs
(d) Bhuta songs

Q40. Which article of the Indian constitution specifies equality before the law?

(a) Article 19
(b) Article 23
(c) Article 14
(d) Article 36

Q41. In which year was the Special Marriage Act passed in India?

(a) 1958
(b) 1954
(c) 1962
(d) 1950

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Q42. Which of the following statements is correct regarding the government securities in the economy?

I. It is a tradeable instrument issued by the Central Government or the State Governments.

II. They are called risk-free gilt-edged instruments.

(a) Neither I nor II
(b) Only I
(c) Only II
(d) Both I and II

Q43. Which act was passed by the British Government of India to introduce provincial autonomy?

(a) Indian Council Act of 1892
(b) Government of India Act of 1935
(c) Charter Act of 1853
(d) Indian Independence Act of 1947

Q44. Which of the following pairs of "medal – player" is correct regarding performance of India in 2022 Commonwealth Games?

I. Sanket Sargar – Bronze

II. Mirabai Chanu – Gold

(a) Only II
(b) Both I and II
(c) Only I
(d) Neither I nor II

Q45. The withdrawal of the monsoon begins in _____ states of India by early September.

(a) south-eastern
(b) north-eastern
(c) south-western
(d) north-western

Q46. Who won a bronze medal in Weightlifting at the 2000 Summer Olympics in Sydney?

(a) Mirabai Chanu
(b) Neelam Setti Laxmi
(c) Karnam Malleswari
(d) Kunjarani Devi

Q47. Which among the following is the monsoon mud festival of Goa?

(a) Sarhul
(b) Karma
(c) Chikal kalo
(d) Ladainha

Q48. Which of the following pair of "term – sports" is NOT correct?

I. Penalty kick – Handball

II. Greco Roman – Boxing

(a) Neither I nor II
(b) Both I and II
(c) Only II
(d) Only I

Q49. Rahul is suffering from Beriberi. What deficiency he has?

(a) Vitamin B1
(b) Vitamin C
(c) Vitamin A
(d) Vitamin K

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Q50. In March 2022, evacuation operation to bring Indian citizens from Ukraine was called as _____.

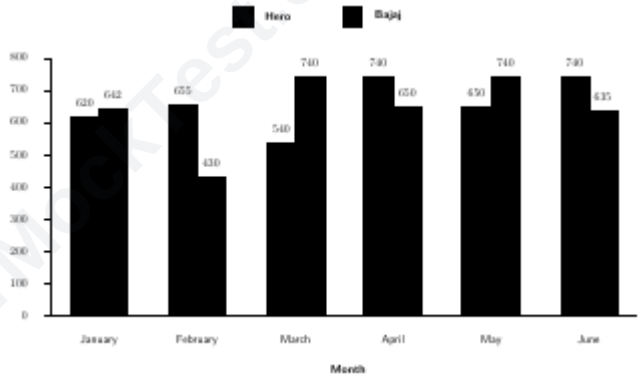
(a) Operation Devi Shakti
(b) Operation Maitr
(c) Operation Vande Bharat
(d) Operation Ganga

QUANTITATIVE APTITUDE

Q51. Kapila covers a distance of 1200 meters in 10 minutes. What is the speed of Kapila?

(a) 1.2 kmph
(b) 72 kmph
(c) 120 kmph
(d) 7.2 kmph

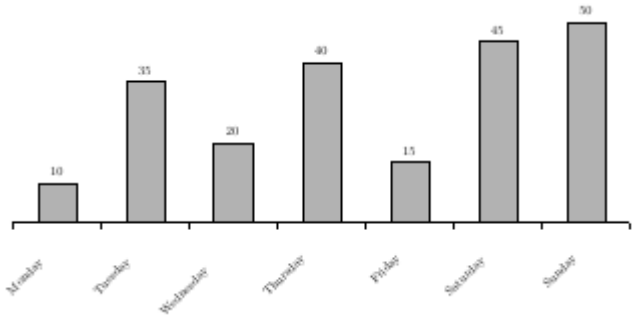
Q52. The below bar graph shows the number of bikes (in hundreds) sold by Hero and Bajaj over the first six months of 2022.



In July, the sales for the number of bikes for Hero company decreased with respect to the previous month by the same percentage as the sales of Hero company decreases in the month of March with respect to February, then find the approximate number of bikes sold by Hero in the month of July.

(a) 58240
(b) 89759
(c) 61000
(d) 90240

Q53. The bar graph given below shows the temperature recorded every day in a certain week.



What is the sum of the temperatures recorded on all the days?

(a) 240 degree
(b) 215 degree
(c) 235 degree
(d) 205 degree

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Q54. If cot 2A = tan (A - 48°), then what is the value of A?

(a) 36 degree
(b) 46 degree
(c) 42 degree
(d) 40 degree

Q55. If PQ is a tangent of a circle (touches the circle at Q) with centre O and angle POQ is 75°, then what is the value of angle OPQ?

(a) 15°
(b) 35°
(c) 30°
(d) 25°

Q56. The perimeter of two similar triangles ABC and PQR (in correspondence) are 64 cm and 56 cm respectively. If AB = 16 cm, then what is the length of PQ?

(a) 18 cm
(b) 16 cm
(c) 14 cm
(d) 8 cm

Q57. What is the circumference of a circle whose radius is 10.5 cm?

(a) 21 cm
(b) 66 cm
(c) 30 cm
(d) 110 cm

Q58. How many numbers are there between 201 and 401 which are divisible by 5 but not by 4?

(a) 30
(b) 20
(c) 40
(d) 45

Q59. If 3/2×7/3÷ 7/6+1/4=1/x. What is the value of x?

(a) 7 / 12
(b) 4 / 13
(c) 13 / 4
(d) 6 / 7

Q60. A sum becomes 1.96 times of itself in 2 years when invested at compound interest (compounding annually). What is the annual rate of interest?

(a) 20 percent
(b) 25 percent
(c) 40 percent
(d) 30 percent

Q61. The table given below shows the income and expenditure of a company in five years.

Years	Income	Expenditure
A	350	150
B	250	100
C	200	150
D	400	100
E	150	75

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Saving = Income - Expenditure

What is the average saving in all years?

(a) 245
(b) 145
(c) 175
(d) 155

Q62. Work can be completed by 8 boys in 48 days. If 2 boys leave after working for 24 days, then how many days will be needed to complete the remaining work?

(a) 20 days
(b) 24 days
(c) 32 days
(d) 30 days

Q63. In a cyclic quadrilateral MNOP, angle M is opposite to angle O, If 2angle O = 3angle M, then what is the value of angle M?

(a) 88 degree
(b) 108 degree
(c) 72 degree
(d) 96 degree

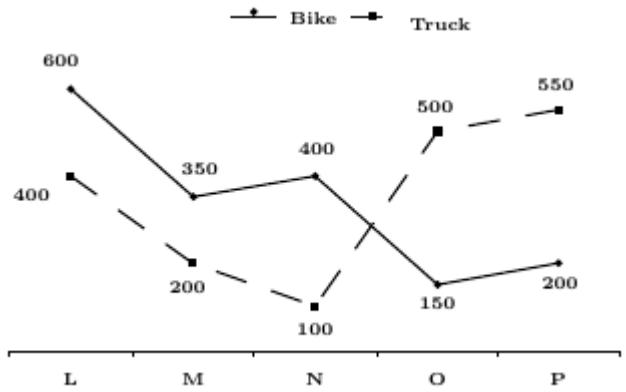
Q64. A person buys three spectacles at the rate of Rs. 4,000 per spectacles. He sells first spectacles at a profit of 30 percent, sells second spectacles at a loss of 10 percent and sells third spectacles at a loss of 10 percent. What is the total percentage of profit earned in the whole transaction?

(a) 7.14 percent
(b) 2.18 percent
(c) 3.33 percent
(d) 5.41 percent

Q65. A shopkeeper has a sale of Rs. 10,000, Rs. 7,500, Rs. 8,000 and Rs. 10,500 for 4 consecutive months. How much sale must he have in the fifth month so he gets an average sale of Rs. 9,000 in five months?

(a) Rs. 10,200
(b) Rs. 8,500
(c) Rs. 11,000
(d) Rs. 9,000

Q66. The line chart given below shows the production of bike and truck by five companies L, M, N, O and P.



Which of the following statement is correct?

I. The ratio of production of bike to the production of truck by company M are 7 : 4.

II. The difference between average of production of bike and truck by all companies is 10.

(a) Neither I nor II
(b) Only II
(c) Only I

(d) Both I and II

Q67. What is the value of cot Θ when Θ is 60°?

(a) 1/√3
(b) √3
(c) 0
(d) 1

Q68. A sum of Rs.1,248 is to be distributed among Ridhaan and Vihaan in the proportion of 2 : 3. What is the share of Vihaan?

(a) Rs. 684.20
(b) Rs. 776.40
(c) Rs. 748.80
(d) Rs. 874.50

Q69. If tan(x + y) = 1 and cos(x - y) = √3/2, then what is the value of x and y?

(a) x = 3, y = 4.5
(b) x = 37.5, y = 7.5
(c) X = 7.5, y = 37.5
(d) x = 4.5, y = 3

Q70. What is the expansion of (x + 11) (x - 11)?

(a) $x^2 + 11$
(b) $x^2 - 121$
(c) $x^2 + 121$
(d) $x^2 - 11$

Q71. AC is the diameter of the circle. B is a point on the circumference. If angle BAC is 40°, then what is angle BCA?

(a) 50°
(b) 90°
(c) 55°
(d) 40°

Q72. A fruit seller had some watermelons. He sells 45% of the watermelons and still has 495 watermelons left. How many watermelons be originally had?

(a) 900
(b) 800
(c) 400
(d) 600

Q73. The marked price of a chair is Rs. 1,650. This chair is sold at two successive discounts of 10 percent and 20 percent. What is the selling price of chair?

(a) Rs. 1,188
(b) Rs. 1,288
(c) Rs. 1,166
(d) Rs. 1,265

Q74. If x + 1/x = 2K, then what is the value of x^4+1/(x^4) ?

(a) $16K^4 - 16K^2 - 1$
(b) $8K^4 + 4K^2 - 1$
(c) $16K^4 - 16K^2 + 2$
(d) $16K^4 - 4K^2 - 1$

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Q75. What is the value of $a^2 + 4b^2 + 9c^2 - 4ab + 12bc - 6ca$?

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

GENERAL AWARENESS

Q76. Choose the word that is opposite in meaning to the given word.

Pliable

(a) Rigid
(b) Fluid
(c) Variable
(d) Ductile

Q77. Rearrange the parts of the sentence in correct order. From the

P. California to the pork hub of China,
Q. reduced food supplies and sharply increased food prices
R. grain heartland of Argentina to the tomato belt of
S. extreme weather events in 2021 have

(a) RPQS
(b) RPSQ
(c) QPRS
(d) SPQR

Q78. Select the word that is closest in meaning (SYNONYM) to the word given below.

Dreary

(a) Faith
(b) Dull
(c) Superstitious
(d) Active

Q79. Select the most appropriate option to fill in the blank.

While one cannot really say the pandemic is over yet, it is a sensible decision to now_____ to the older system.

(a) sympathise
(b) comprehend
(c) revert
(d) stick

Q80. Select the most appropriate meaning of the given idiom.

Piece of cake

(a) Extremely difficult
(b) Something which is very simple
(c) Intuition for something dangerous
(d) Invitation for birthday

Q81. Choose the word that means the same as the given word.

Ecclesial

(a) Profane
(b) Secular
(c) Profuse
(d) Churchly

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Q82. Fill in the blank with an appropriate option.

Choosing the right software for any purpose can be a/an _____ task for any business.

(a) intimating
(b) challenging
(c) flickering
(d) attributing

Q83. In the following question, out of the given four alternatives, select the alternative which best expresses the meaning of the Idiom/Phrase.

To breast the tape

(a) To shut someone's mouth
(b) To create problems
(c) To bring joy
(d) To win a race

Q84. Find the part of the given sentence that has an error in it. If there is no error, choose 'No error'.

There is evidence that much too technology can lead to a loss of child development opportunities.

(a) No error
(b) technology can lead to a
(c) loss of child development opportunities
(d) There is evidence that much too

Q85. Some parts of a few sentences have been jumbled up, and labelled A, B, C and D. Select the option that gives the correct sequence in which these parts can be rearranged to form a meaningful and grammatically correct sentence.

I knew that the remedy lay not

A. let the past go. Be at ease. Allow the future

B. Rohan had advised me over and again:

C. to arrive at its own pace

D. in finding a new flower but in what unfurling its secrets when it will.

(a) DBAC
(b) DACB
(c) CDBA
(d) ACDB

Q86. Identify the segment in the sentence which contains a grammatical error. If there is no error, then select the option "No error".

The London-based Brodsky/ Quartet, meanwhile, is one of/ the world's leading string quartet.

(a) The London-based Brodsky
(b) the world's leading string quartet.
(c) Quartet, meanwhile, is one of
(d) No error

Q87. Select the correct passive form of the given sentence.

Swallows build new nests every year.

(a) New nests were built by swallows every year
(b) New nests are built by swallows every year.
(c) New nests were being built by swallows every year.
(d) New nests is being built by swallows every year.

Q88. Select the correctly spelt word

(a) Amatuer
(b) Amatueer
(c) Amture
(d) Amateur

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Q89. Select the correctly spelt word

(a) Reprimand
(b) Repriment
(c) Reprimend
(d) Reprimant

Q90. Choose the option that is the correct direct form of the sentence.

The teacher asked me if I had seen the match.

(a) "Did you see the match?" the teacher said to me.
(b) "Did you had saw the match?" the teacher said to me.
(c) "Did you saw the match?" the teacher said to me.
(d) "Did you seen the match?" the teacher said to me.

Q91. Improve the underlined part of the sentence. Choose 'No improvement' as an answer if the sentence is grammatically correct.

I can't concentrate on my work because I am thinking off that beautiful scene.

(a) was think of
(b) am thinking about
(c) is thinking about
(d) No improvement

Q92. Select the word that is closest in meaning (SYNONYM) to the word given below.

UNBIASED

(a) UNCOMPLAINING
(b) CANDID
(c) SAPIENT
(d) HUMBLE

Q93. Given below are four jumbled sentences. Pick the option that gives their correct order.

P. Amongst all the cities of Japan, Hiroshima is the one that experiences earliest mornings.

Q. It experiences the earliest sun rise amongst all the countries.

R. According to the words of the Japanese envoy himself, that name was chosen because the country was so close to where the sun rises.

S. Japan is also known as the land of the rising sun.

(a) SRQP
(b) PSQR
(c) QPRS
(d) SQRP

Q94. Select the option that will improve the underlined part of the sentence. In case no improvement is needed, select 'No improvement'.

Neither of the two companies are winning in the price war.

(a) Neither of two company is winning
(b) Neither of the companies are winning
(c) Neither of the two companies is winning
(d) No improvement

Q95. Fill in the blank with an appropriate option.

Do you _____ your tap water before drinking?

(a) flush
(b) filter
(c) flirt
(d) flicker

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Directions

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

Generally, dolphins sleep (1) ____ only one brain hemisphere in slow-wave sleep at a time, thus (2) __ enough consciousness to breathe and to watch for possible (3) __ and other threats. Early (4) __ stages can occur simultaneously in both hemispheres. In captivity, dolphins seemingly enter a fully asleep state where both eyes are closed and there is no response to mild external (5) ____.

Q96. Select the most appropriate option to fill in the blank No.1.

(a) on
(b) with
(c) over
(d) through

Q97. Select the most appropriate option to fill in the blank No.2.

(a) maintaining
(b) facilitating
(c) generating
(d) tormenting

Q98. Select the most appropriate option to fill in the blank No.3.

(a) predators
(b) preys
(c) carnivorous
(d) orators

Q99. Select the most appropriate option to fill in the blank No.4.

(a) sleep
(b) brain
(c) woke
(d) conscious

Q100. Select the most appropriate option to fill in the blank No.5.

(a) stimuli
(b) moduli
(c) spur
(d) deterrent

ANSWER KEY

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

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SOLUTIONS

Q1. Answer: (c) RTU

The logic followed here is:

1. ABC → A + 1 = B; B + 1 = C
2. JKL → J + 1 = K; K + 1 = L
3. RTU → R + 2 = T; T + 1 = U
4. FGH → F + 1 = G; G + 1 = H

Hence, 'RTU' is the correct answer.

Q2. Answer: (b) [figure]

The mirror image of the given figure is shown below:

Hence, the correct answer is "Option 2".

Q3. Answer: (b) (Tokyo, Egypt, Oslo)

The logic followed here is:

Logic: All three are the capital cities of any country.

=> In Options (1, 3, 4), all three items are capital cities of countries. In Option 2, Tokyo and Oslo are capital cities (of Japan and Norway, respectively), but Egypt is a country, not a city. The capital of Egypt is Cairo.

Here, we can see that Option 2 doesn't follow the logic.

Hence, the correct answer is "(Tokyo, Egypt, Oslo)".

Q4. Answer: (d) 37

The total number of teachers are:

= (16 + 4 + 8 + 9) = 37

Hence, the correct answer is "37".

Q5. Answer: (d) 12311 – 11231

The logic followed here is:

Logic: First number written from right to left gives the second number.

1. 51624 – 42615 → 51624 written from right to left is 42615.
2. 51678 – 87615 → 51678 written from right to left is 87615.
3. 42675 – 57624 → 42675 written from right to left is 57624.
4. 12311 – 11231 → 12311 written from right to left is 11321.

Hence, '12311 – 11231' is the correct answer.

Q6. Answer: (a) [figure]

The mirror image of the given figure is shown below:

Hence, the correct answer is "Option 1".

Q7. Answer: (a) 1286 – 2578

The logic followed here is:

1. 1286 – 2578 → (1286 × 2) + 1 = 2572 + 1 = 2573 ≠ 2578
2. 3294 – 6589 → (3294 × 2) + 1 = 6588 + 1 = 6589
3. 1324 – 2649 → (1324 × 2) + 1 = 2648 + 1 = 2649
4. 3184 – 6369 → (3184 × 2) + 1 = 6368 + 1 = 6369

Hence, '1286 – 2578' is the correct answer.

Q8. Answer: (c) 24

The number of quadrilaterals in the figure is shown below:

Hence, '24' is the correct answer.

Q9. Answer: (d) 6 × 3 – 4 ÷ 1 = 3

Let's check each option by interchanging 4 and 6,

1) 2 + 6 × 5 – 4 = 16

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→ 2 + 4 × 5 – 6 = 16
→ 2 + 20 – 6 = 16
→ 22 – 6 = 16
→ LHS = RHS.
2) 4 + 5 – 6 = 7
→ 6 + 5 – 4 = 7
→ 11 – 4 = 7
→ LHS = RHS.
3) 6 ÷ 2 – 4 × 5 = –28
→ 4 ÷ 2 – 6 × 5 = –28
→ 2 – 6 × 5 = –28
→ 2 – 30 = –28
→ –28 = –28
→ LHS = RHS.
4) 6 × 3 – 4 ÷ 1 = 3
→ 4 × 3 – 6 ÷ 1 = 3
→ 4 × 3 – 6 = 3
→ 12 – 6 = 3
→ 6 ≠ 3
→ LHS ≠ RHS.
=> Here, we can see that only Option 4 is not correct.
=> Hence, the correct answer is "Option 4".

Q10. Answer: (a) ECNASSIANER

The logic followed here is:
• 'LETTER' is coded as 'RETTEL'
'LETTER' when written from right to left, we get 'RETTEL'.
• 'SYMBOL' is coded as 'LOBMYS'
'SYMBOL' when written from right to left, we get 'LOBMYS'.
Similarly,
• 'RENAISSANCE'
'RENAISSANCE' when written from right to left, we get 'ECNASSIANER'.
Hence, 'ECNASSIANER' is the correct answer.

Q11. Answer: (d) Only I follows

The least possible Venn diagram is shown below:
Conclusion I: Some gold are silver. → Follows (As, All silver are gold)
Conclusion II: Some silver are platinum. → Does not follow (As, All silver are gold and No gold is platinum → No Silver is platinum)
Hence, 'Only I follows' is the correct answer.

Q12. Answer: (d) baab

Given sequence: ab_a_bba_ _ba
1. abbb → abaa / bbba / bbba
2. aaaa → abaa / abba / aaba
3. bbbb → abba / bbba / bbba
4. baab → abba / abba / abba
• In option 4, 'abba' is repeated.
Hence, 'baab' is the correct answer.

Q13. Answer: (c) Mother-in-law

By using the symbols in the table given below, we can draw the following family tree:
Clearly, Saloni is mother-in-law of Sakshi.

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Hence, 'Mother-in-law' is the correct answer.

Q14. Answer: (d) 72

Sign	•	•	÷	×
Means	×	÷	•	•

Given equation: 74 ÷ 11 – 33 + 42 × 16 =?

After changing the signs: 74 + 11 ÷ 33 × 42 - 16 =?

→ 74 + 11 ÷ 33 × 42 - 16 =?

→ 74 + 1/3 × 42 - 16 =?

→ 74 + 14 - 16 =?

→ 88 - 16 =?

→ 72 =?

=> Hence, the correct answer is "72".

Q15. Answer: (a) 12

The logic followed here is:

=> Logic: Second Number = (First Number × 6)

Let's check using the logic,

22 : 132

→ 132 = (22 × 6)

→ 132 = 132

24 : 144

→ 144 = (24 × 6)

→ 144 = 144

? : 72

→ 72 = (? × 6)

→ 72 ÷ 6 =?

→ 12 =?

Hence, the correct answer is "12".

Q16. Answer: (c) [figure]

The mirror image of the given figure is shown below:

Hence, the correct answer is "Option 3".

Q17. Answer: (b) [figure]

The option figure in which the given figure is embedded is shown below:

Hence, 'option 2' is the correct answer.

Q18. Answer: (c) Education : School

The logic followed here is:

Logic: The second word is a place where the actions denoted by the first word is carried out.

Treatment: Hospital

→ Treatment is done in the hospital.

Let's check each option using the logic,

1)	Cinema Hall	Entertainment
2)	Temple	Prayer
3)	Education	School
4)	Garage	Repairing

→ Here, we can see that Option 3 follows the logic i.e., Education is done in the school.

Hence, the correct answer is "Education: School".

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Q19. Answer: (d) ZDH

The logic followed here is:

• Similarly,

• Hence, 'ZDH' is the correct answer.

Q20. Answer: (b) 5, 4, 3, 1, 2

The logic followed here is:

Logic: This sequence represents the progression from the largest unit to the smallest unit. Chapters combine to make up a book, Multiple paragraphs form a chapter, Sentences are grouped to form paragraphs and Individual letters are used to form sentences.

The correct logical order is as follows:

5) Book

4) Chapter

3) Paragraph

1) Sentence

2) Letter

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

Q21. Answer: (a) dump

The code for each number is shown below:

Clearly, the code for '3' is 'dump'.

Hence, ‘dump’ is the correct answer.

Q22. Answer: (a) (356, 111, 67)

The logic followed here is:

Logic: (2nd number + 3rd number) × 2 = first number

• (66, 13, 20) → (13 + 20) × 2 = 33 × 2 = 66

• (298, 80, 69) → (80 + 69) × 2 = 149 × 2 = 298

Similarly,

• (356, 111, 67) → (111 + 67) × 2 = 178 × 2 = 356

Hence, '(356, 111, 67)' is the correct answer.

Q23. Answer: (b) [figure]

The logic followed here is:

Logic: The number of lines are increasing by 1 in the subsequent image of the series. There is only one circle in each image which is hollow in nature.

Hence, the correct answer is "Option 2".

Q24. Answer: (a) Nairobi : Kenya

The logic followed here is:

Logic: The word on the left is the capital city of the country on the right side.

Ottawa: Canada

→ Ottawa is the capital city of Canada.

Let's check each option as per the logic,

1)	**Nairobi**	**Kenya**
2)	Russia	Moscow
3)	Greece	Athens
4)	Spain	Madrid

=> Here, we can see that only Option 1 follows the order and logic i.e., Nairobi is the capital city of Kenya.

Hence, the correct answer is "Nairobi: Kenya".

Q25. Answer: (a) 986

The logic followed here is:

$623 + 3^1 = 623 + 3 = 626$

626 + 32 = 626 + 9 = 635

635 + 33 = 635 + 27 = 662

662 + 34 = 662 + 81 = 743

743 + 35 = 743 + 243 = 986

Hence, '986' is the correct answer.

Q26. Answer: (a) Devprayag

The correct answer is Devprayag.

Key Points

• The Alaknanda River joins the Bhagirathi River at Devprayag in the Indian state of Uttarakhand.

• Devprayag is located in the Tehri Garhwal district of Uttarakhand, India.

• This confluence marks the beginning of the holy river Ganga, which flows downstream through the plains of India.

• Devprayag is considered one of the Panch Prayag (five confluences) in Uttarakhand, which holds immense religious significance for Hindus.

Additional Information

• Prayagraj

• It is formerly known as Allahabad, is a city located in the northern state of Uttar Pradesh, India.

• It is situated at the confluence of three sacred rivers (Triveni Sangam), the Ganges, the Yamuna, and the mythical Saraswati.

• Prayagraj is famous for hosting the Kumbh Mela, the largest religious gathering in the world.

• Champawat

• It is a district of the northern Indian state of Uttarakhand.

• It was once the capital of the Kumaon Kingdom.

• The Baleshwar Temple, dedicated to Lord Shiva, is a prominent attraction and other notable temples of Champawat include the Kranteshwar Mahadev Temple and the Nagnath Temple.

• This district also has Champawat Wildlife Sanctuary and the Nanda Devi National Park.

• Dehradun

• It serves as the capital city of the Indian state of Uttarakhand.

• Dehradun acts as a gateway to popular hill stations like Mussoorie and Dhanaulti, offering breathtaking views and a pleasant climate.

• Dehradun houses institutions such as the Indian Military Academy (IMA) and various government offices, contributing to its importance in defence and administration.

• The city is renowned for its prestigious educational institutions, including top boarding schools and the Forest Research Institute.

Q27. Answer: (d) 5 hours 30 minutes

The correct answer is 5 hours 30 minutes.

Key Points

• Indian Standard Time (IST) is ahead of Greenwich Mean Time (GMT) by 5 hours 30 minutes.

• IST is calculated based on the 82.5°E longitude, which passes through Mirzapur, near Allahabad in Uttar Pradesh.

• The city of Mirzapur, Uttar Pradesh, is situated on the longitude reference line of 82.5°E, making it the reference point for calculating Indian Standard Time.

• The CSIR-National Physical Laboratory (NPL) in New Delhi is responsible for maintaining and recording time in India. It utilizes five caesium atomic clocks for accurate timekeeping.

Additional Information

• Greenwich Mean Time (GMT)

• It is a time standard based on the location of the prime meridian at the Royal Observatory in Greenwich, London, England.

• GMT serves as the basis for the division of the world into different time zones. It is used as a reference point to determine the time offset in relation to the prime meridian.

• GMT is often used interchangeably with Coordinated Universal Time (UTC). UTC is a more precise and scientifically accurate time standard that incorporates leap seconds to account for Earth's irregular rotation.

• GMT was historically used as the international civil time standard, particularly during the era of maritime navigation. It allowed for uniformity in timekeeping across different regions of the world.

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Q28. Answer: (b) Salman Rushdie

The correct answer is Salman Rushdie.

Key Points

• The book ‘Languages of Truth: Essays 2003-2020’ is written by Salman Rushdie.

• He is a renowned British-Indian author known for "Midnight's Children" and the controversial novel "The Satanic Verses."

• Languages of Truth: Essays 2003-2020 is a collection of essays written by Rushdie over seventeen years, exploring literature, politics, culture, and personal experiences.

• He has also won the Booker Prize for "Midnight's Children".

Additional Information

• Vikram Sampath

• He is an Indian author, historian, and musician known for his contributions in the field of literature and historical research.

• He is also the author of acclaimed books such as "Splendours of Royal Mysore: The Untold Story of the Wodeyars" and "My Name is Gauhar Jaan! The Life and Times of a Musician."

• He accomplished classical musician specializing in Indian classical vocals, particularly in the Kirana gharana tradition.

• Founded the Archive of Indian Music, a non-profit organization dedicated to preserving and promoting India's rich musical heritage.

Q29. Answer: (a) high, 210

The correct answer is high, 210.

Key Points

• Cotton thrives in high temperatures, which promotes optimal growth and development.

• It requires light rainfall or proper irrigation to provide the necessary moisture for its growth.

• Cotton cultivation requires a significant number of frost-free days, typically around 210, to ensure the plant's survival and uninterrupted growth.

• Bright sunshine is crucial for cotton plants as they require ample sunlight for photosynthesis, which is essential for their growth and the production of cotton fibres.

Additional Information

• Kharif crops

• Kharif Crops are planted at the onset of the South-West monsoon, primarily in India, Pakistan, and Bangladesh, during the rainy season.

• The sowing of these crops takes place between the months of June and July.

• Upon reaching maturity, typically in October, these crops are harvested in the Autumn season.

• Examples of Kharif crops include rice, cotton, corn, sugarcane, turmeric, pigeon pea, and more.

• Rabi crops

• Rabi Crops are cultivated during the winter season in regions with a subtropical climate.

• They include important crops like wheat, barley, oats, chickpeas, and peas.

• The Sowing of Rabi crops takes place between October and December.

• These crops require cooler temperatures and lesser rainfall compared to Kharif crops.

• Rabi crops play a crucial role in ensuring food security and contribute significantly to the agricultural economy.

• Zaid crops

• Zaid Crops are grown during the summer season in regions with a tropical climate.

• These crops are typically cultivated between the months of March and June.

• Zaid crops are known for their quick growth and shorter duration compared to Kharif and Rabi crops.

• Examples of Zaid crops include cucumber, watermelon, bitter gourd, and cowpea.

• These crops are often irrigated using modern techniques and are harvested before the onset of the monsoon season.

Q30. Answer: (a) Sesamoids

The correct answer is Sesamoids.

Key Points

• Sesamoids are small, round bones embedded within certain tendons, primarily found in the hands, feet, and knee joints.

• They provide mechanical support, improve joint stability, and assist in transmitting forces in the body.

• Prominent sesamoid bones include the patella (kneecap), two sesamoids located under the big toe (tibial and fibular sesamoids), and sesamoids in the hand's flexor tendons.

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• Sesamoids act as protective cushions, reducing friction and stress on the tendons they are associated with.

Additional Information

• Cardiac Muscles

• These are specialized muscle tissue found only in the heart, responsible for pumping blood throughout the body.

• Cardiac muscles are involuntarily controlled by the autonomic nervous system, ensuring continuous and rhythmic contractions.

• Its cells have a striated or striped appearance due to the arrangement of contractile proteins.

• The unique features of cardiac muscle, intercalated discs, allow cells to communicate and synchronize contractions for efficient pumping action.

• Cardiac muscle exhibits exceptional endurance and fatigue resistance, enabling the heart to continuously perform its pumping function.

• Skeletal Muscles

• These muscles attached to the skeleton enable body movements and provide structural support.

• Skeletal muscles are under conscious control, allowing individuals to initiate and control their movements.

• They not only enable movement but also help maintain posture, stabilize joints, and generate body heat.

• Skeletal muscles are connected to bones through tough, fibrous connective tissues called tendons.

• Smooth Muscles

• These are involuntary muscles found in the walls of organs, blood vessels, and other structures throughout the body.

• Smooth muscles are not under conscious control and are regulated by the autonomic nervous system.

• Smooth muscle cells lack the striped appearance of striated muscles, as they do not have organized sarcomeres.

• They contract and relax slowly, providing sustained contractions for processes like digestion and blood vessel constriction.

• These muscles are often arranged in layers, allowing for coordinated contractions that help propel substances through organs and regulate blood flow.

Q31. Answer: (d) Indira Gandhi

The correct answer is Indira Gandhi.

Key Points

• Indira Gandhi is known as the "Iron Lady of India" and she was the first women Prime Minister of India.

• First Rajya Sabha member to become the PM.

• Indira Gandhi born was on 19th November 1917 in Allahabad in Uttar Pradesh and her birthday is celebrated as 'National Integration Day.

• The first woman got Bharat Ratna in 1971.

• Longest Serving Chairperson ;of Planning Commission.

• She raised the slogan 'Garibi Hatao' (Remove Poverty).

• She was the PM who Nationalised 14 banks in 1969 and 6 banks in 1980.

• India's 'Iron Lady' Indira Gandhi was assassinated on the morning of 31 October 1984.

• The murder was carried out by his 'Sikh bodyguards' Satwant Singh and Beant Singh.

• This assassination took place after 'Operation Blue Star' carried out by the Indian Army at the behest of Prime Minister Indira Gandhi.

• Resting place - Shaktisthal

Additional Information

• Mary Kom-

• Mary Kom is an Indian Olympic boxer.

• Mary Kom was born in Kangathei village, Moirang Lamkhai in the Churachandpur district of rural Manipur in India.

• She was awarded the Padma Vibhushan, India's second-highest civilian award, in 2020.

• She became the first Indian female boxer to win a gold medal in the Asian Games in 2014 at Incheon, South Korea, and is the first Indian female boxer to win gold at the 2018 Commonwealth Games.

• Deepika Padukone-

• Deepika Padukone is an Indian film actress.

• She is the founder of the "Live Love Laugh Foundation", which creates awareness of mental health in India.

• First Bollywood movie of Deepika Padukone is "Om shanti om".

• Lata Mangeshkar-

• She was an Indian playback singer and music director.

• She was honored with The Dadasaheb Phalke Award in 1989.

• She was awarded the Bharat Ratna, (2001) India's highest civilian honor.
• Mangeshkar was born in Indore on 28 September 1929.
• She breathed her last at Breach Candy Hospital, Mumbai on 6 February 2022 (Sunday), at the age of 92.

Q32. Answer: (c) Ganga and Son

The correct answer is Ganga and Son.

Key Points

• Magadha became the most important Mahajana Pada in about two hundred years.
• The Ganga and Son Rivers flowed through Magadha.
• Magadha empire was established on the bank of the river Ganges and was bounded by the river Son on the west.
• Magadha was an ancient Indian kingdom in Bihar.
• The First capital of Magadha was Rajagriha.
• The first ruling dynasty of Magadha was the Haryak dynasty.
• Bimbasar ruled Magadha Empire for almost 52 years.
• Magadha finds mention in the Atharva Veda which conveys that Magadha was semi-Brahmanical habitation.
• Later, Magadha became a center of Jainism and the first Buddhist Council was held in Rajagriha.

Additional Information

• Narmada and Tapi-
• It originates from Satpura ranges in Madhya Pradesh.
• Both flow in the east-to-west direction.
• Tapi is known as twin or handmade of the Narmada river.
• The total length of Narmada is 1312 km and the Tapi river is 724 km.
• Krishna and Tungabhadra-
• Krishna River originates in the Western Ghats near Mahabaleshwar.
• The Krishna River extends over the states of Andhra Pradesh, Maharashtra, and Karnataka and finally empties into the Bay of Bengal.
• Ghatprabha, Malprabha, Tungabhadra, Bhima, and Musi are a few important tributaries.
• The Tungabhadra River is formed by the confluence of the Tunga River and the Bhadra River at Koodli, Karnataka.
• The Tungabhadra finally joins the Krishna River near Sangameswaram village in the Kurnool district of Andhra Pradesh.

Q33. Answer: (a) Ministry of Health and Family Welfare

The correct answer is Ministry of Health and Family Welfare.

Key Points

• The Union Health Ministry has released the new draft ‘Drug, Medical Devices, and Cosmetics Bill-2022’.
• The Bill seeks to replace the Drugs and Cosmetics Act of 1940 with an updated law laying down strict regulatory guidelines to keep pace with changing needs and technology.
• Salient Feature of the bill:-
• A new definition of Medical devices and setting up of the regulatory body.
• Broaden the regulation on the Import of medical devices.
• Regulation Of AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy) products.
• Clinical trial
• Online pharmacy
• Offence and penalties

Additional Information

Ministry	Current Minister (April 2023)
Ministry of Health and Family Welfare	Mansukh Mandaviya
Ministry of Chemicals and Fertilizers	Mansukh Mandaviya
Ministry of Consumer Affairs, Food & Public Distribution	Piyush Goyal
Ministry of Agriculture and Farmer Welfare	Narendra Singh Tomar

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Q34. Answer: (d) Dot Matrix Printer

The correct answer is Dot Matrix Printer.

Key Points

• Printer is an output device.

• Dot matrix printers, also known as pin printers, are the most popular type of impact printer.

• These printers have a matrix of pins on their print heads to create characters or graphics.

• Dot-matrix printers usually have 9 to 24 pins in the print head.

• Dot-matrix printers are cheap and usually print 100–600 characters per second.

Additional Information

• Drum Printer-

• Drum printer is a type of impact printer.

• The drum printer consists of a rotating cylindrical drum with a circular band of characters on its surface.

• In particular, the surface is divided into tracks equal to the size of the supported printing paper.

• Drum Printer printing speed is quite fast (300 - 2,000 lines per minute), they make a lot of noise.

• Laser Printer-

• Laser printers are non-impact printers, typically using laser or non-impact photocopier technology to produce the dots needed to print text or images on paper.

• Laser printers can produce extremely high-resolution prints.

• This can vary from 300 dpi (Dots Per Inch) to 1200 dpi depending on system capacity and memory availability.

• Chain Printer-

• Chain printer is a type of impact printer.

• The chain printer consists of a revolving chain with characters set on its surface. These printers typically have a character set of 48, 64, or 96 characters.

• Chain printer can print 300 - 500 lines of characters per minute.

Q35. Answer: (c) Reverse Osmosis

The correct answer is Reverse Osmosis.

Key Points

• Reverse Osmosis is a technology that is used to remove a large majority of contaminants from water by pushing the water under pressure through a semi-permeable membrane.

• Reverse Osmosis, commonly referred to as RO.

• Osmosis is a process where a weaker saline solution will tend to migrate to a strong saline solution

• Examples of osmosis are when plant roots absorb water from the soil and our kidneys absorb water from our blood.

• Reverse Osmosis is the process of Osmosis in reverse.

• Whereas Osmosis occurs naturally without energy required, to reverse the process of osmosis you need to apply energy to the more saline solution.

Additional Information

• Boiling-

• Boiling is the process by which a liquid turns into a vapour when it is heated to its boiling point.

• The boiling point of a substance is the temperature at which the vapour pressure of the liquid equals the atmospheric pressure.

• The boiling point of water is 373 K (or 100 ° C).

• Distillation-

• Distillation refers to the selective boiling and subsequent condensation of a component in a liquid mixture.

• It is a separation technique that can be used to either increase the concentration of a particular component in the mixture.

• Filtration-

• Filtration is technically defined as the process of separating suspended solid matter from a liquid.

• By causing the latter to pass through the pores of a membrane, called a filter.

Q36. Answer: (a) Bankruptcy

The correct answer is Bankruptcy.

Key Points

• The legal status of an entity or a person where the debt owed to the creditors cannot be repaid is known as Bankruptcy.

• It is important to note that bankruptcy is not synonymous with insolvency.

• Insolvency is a state of financial distress in which a business or person is unable to pay its bills or debts.

• The Insolvency and Bankruptcy Code, 2016 (IBC) is the bankruptcy law of India which seeks to consolidate the existing framework by creating a single law for insolvency and bankruptcy.

Additional Information

Term	Meaning
Credit Crunch	A credit crunch refers to a decline in lending activity by financial institutions brought on by a sudden shortage of funds.
Amortization	Amortization is a practice that helps spread the cost of an intangible asset over a specific period, which is usually the course of its useful life.
Bancassurance	the concept of selling the products that insurance companies offer through the bank

Q37. Answer: (d) Internet

The correct answer is the Internet.

Key Points

• The full name of the Internet is International Network.

• The Internet is a globally connected network system that is used to exchange information from one computer to another through using the TCP/IP (Transmission Control Protocol/ Internet Protocol).

• Due to the utility of the internet, this era is called the era of communication revolution.

• America's Vint Gray Cerf is called the father of the Internet.

Additional Information

• Web Browser-

• A web browser is a software application for accessing information on the WWW (World Wide Web).

• he commonly used web browsers including Google Chrome, Edge, Mozilla Firefox, etc.

• Laptop-

• Laptop computers, also known as notebooks, are portable computers that you can take with you and use in different environments.

• Osborne 1, the first commercially successful portable computer (Laptop).

• Laptop is invented by Adam Osborne.

• Server-

• A server is a computer, equipped with specific programs and /or hardware, to enable it to offer services to other computers (clients) on its network (connected to it).

• There are different types of servers: web servers, file servers, application servers, print servers, etc.

Q38. Answer: (a) Leila Seth

The correct answer is Leila Seth.

Key Points

• Leila Seth was an Indian judge who served as the first woman judge on the Delhi High Court and became the first woman to become Chief Justice of a state High Court, Himachal Pradesh High Court, on 5 August 1991.

• She was also the first woman to be designated senior counsel by the Supreme Court of India.

• Justice Fathima M. Beevi was the first woman judge of the Supreme Court of India.

Additional Information

Name	Famous for
Anna Chandy	Justice Anna Chandy was India's first female judge and the first woman in the country to become a High Court judge.
M. Fathima Beevi	Justice Fathima M. Beevi was the first woman judge of the Supreme Court of India.
Kiran Mazumdar-Shaw	Kiran Mazumdar-Shaw is a first-generation entrepreneur and global business leader with over 4 decades of experience in biotechnology. She is the Chairperson and Managing Director of Biocon.

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Q39. Answer: (b) Bihu songs

The correct answer is Bihu Songs.

Key Points

• Bihu songs are the most famous among music lovers in Assam and are based on themes like Assamese new year, farmers' daily life, love, and more.

• Bihu music is played with instruments like dhol, mohor singor Pepe, cymbal, a bamboo instrument called gogona and a clapper made from bamboo known as toka.

• Bihu music is reflective of the Oriental influence on Assam's folk music.

• It is an absolute delight to sit and listen to heart-touching Bihu songs during the Bihu festival when the entire state is in a celebratory mood.

• The talented musicians of the state have been following this traditional form of music for generations and listening to them sing in joy is an unmatched experience for every tourist

Important Points

• Bihu is one of the major festivals of Assam.

• There are three forms of Bihu.

• Bohag Bihu or Rangoli Bihu in April.

• Magh or Bhogali Bihu in January.

• Kati or Kongali Bihu in October/November.

Additional Information

Folk Songs	Important Point
Teej songs	• Teej is celebrated with great involvement by women of Rajasthan. This is a festival celebrated on the third day after the new moon or Amavasya of Shraavana month. - The theme of the songs sung during this festival revolves around the union of Shiva and Parvati, the magic of monsoon, greenery, peacock dance, etc.
Bhuta songs	• The basis of the Bhuta song is rooted in superstitions. Some communities of Kerala do Bhuta rituals to send away evil ghosts and spirits. - This ritual is accompanied by vigorous dancing and the music has a piercing and eerie character.
Qawwali songs	• Originally, Qawwalis were sung in praise of God. - In India Qawwali was brought from Persia around the thirteenth century and Sufis enlisted its services to spread their message. - Amir Khusro (1254-1325) a Sufi and an innovator contributed to the evolution of Qawwali.

Q40. Answer: (c) Article 14

The correct answer is Article 14.

Key Points

• In Part III of the Constitution, between Articles 12 to 35, the six fundamental rights have been given to the citizens.

• Article 14 - It provides the right to equality before the law.

• This right of equality applies to all foreigners and Indians.

Important PointsFundamental rights and its article-

• Right to Equality (Article 14 - 18)

• Right to Freedom (Article 19 - 22)

• Right against Exploitation (Article 23 - 24)

• Right to Freedom of Religion (Article 25 - 28)

• Cultural and Educational Rights (Article 29 - 30)

• Right to constitutional remedies (Article 32)

Additional Information

Article	Provision

Article -19	• Article 19 Comes under the Right to Freedom. - It is an Article on which the Press of India works. - Article 19 is the protection of six rights regarding freedom: - Speech and expression - Assembly - Association - Movement - Residence - Profession
Article 23	• prohibits traffic in human beings and forced labour.
Article 36	• articles 36-51 under Part IV of the Indian Constitution deal with Directive Principles of State Policy (DPSP).

Q41. Answer: (b) 1954

The correct answer is 1954.

Key Points

• The Special Marriage Act, 1954 is an Act of the Parliament of India with provision for civil marriage (registered marriage) for people of India and all Indian nationals in foreign countries, irrespective of the religion or faith followed by either party.

• The Special Marriage Act, 1954 replaced the old Act III, 1872. The new enactment had three major objectives:

1. To provide a special form of marriage in certain cases,

2. To provide for the registration of certain marriages and,

3. To provide for divorce

Additional Information

• The Hindu Marriage Act is an Act of the Parliament of India enacted in 1955.

• Three other important acts were also enacted as part of the Hindu Code Bills during this time: the Hindu Succession Act (1956), the Hindu Minority and Guardianship Act (1956), and the Hindu Adoptions and Maintenance Act (1956).

• The main purpose of the act was to amend and codify the law relating to marriage among Hindus and others.

• The act applies to Hindus by religion in any of its forms and Hindus within the extended meaning i.e. Buddhist, Jains, or Sikh, and, in fact, applies to all such persons domiciled in the country who are not Muslims, Christians, Parsi, or Jew, unless it is proved that such persons are not governed by the Act under any custom or usage.

• The Government of India brought the Prohibition of Child Marriage Act (PCMA) in 2006, and it came into effect on 1 November 2007.

• The object of the Prohibition of Child Marriage Act is to prohibit the solemnization of child marriage and connected and incidental matters. To ensure that child marriage is eradicated from within society, the Government of India enacted the Prevention of Child Marriage Act 2006 by replacing the earlier legislation of Child Marriage Restraint Act 1929.

• The Child Marriage Restraint Act, 1929, passed on 28 September 1929, in the Imperial Legislative Council of India, fixed the age of marriage for girls at 14 years and boys at 18 years. In 1949, after India's independence, it was amended to 15 for girls, and in 1978 to 18 for girls and 21 for boys. It is popularly known as the Sarda Act

Q42. Answer: (d) Both I and II

The correct answer is Both I and II.

Key Points

• Government Securities-

• A Government Security (G-Sec) is a tradable instrument issued by the federal or state governments. (Hence, statement I is correct)

• Government Securities are of two types-

• Short term: With original maturities of less than one year. They are currently issued in three tenures: 91 days, 182 days, and 364 days. Example- Treasury Bills.

• Long-term: With original maturity of one year or more. Example- Government bonds (dated securities).

• Treasury bills and bonds, also known as dated securities, are both issued by the central government.

• State governments issue only bonds or dated securities, which are known as State development loans.

• They are known as Risk-free gilt-edged instruments because they are issued by the government and hence there is no danger of default. (Hence, statement II is correct)

• FPIs (Foreign Portfolio Investment) are authorized to trade in G-Secs as long as they stay within the quantitative limits that are set from time to time.

• The Reserve Bank of India has allowed retail investors to invest in G-Secs from November 2021.

Important Points

• RBI-

• RBI was established in India on 1st April, in Kolkata in 1935 under the Reserve Bank Of India Act, 1934.

• It was set up on the recommendation of the Hilton Young Commission.
• RBI is the central bank of India and is responsible for the issue and supply of Indian currency.

Q43. Answer: (b) Government of India Act of 1935

The correct answer is the Government of India Act of 1935.

Key PointsGovernment of India Act of 1935-

• It provided for a new system of government for the provinces on the basis of provincial autonomy.
• Abolished Dyarchy in the provinces and introduced provincial autonomy.
• It provided for the adoption of Dyarchy at the center in which the federal subjects were divided into reserved and transferred subjects.
• It provided for the establishment of an all-India Federation
• They divided the powers between the center and states based on three lists- Federal list, provincial list, and concurrent list.
• Residuary powers were given to the viceroy.

Additional Information

• Government of India Act, 1892
• The Indian Council Act of 1892 was an Act of the Parliament of the United Kingdom that empowered legislative councils in British India by increasing their size which laid the foundation of the Parliamentary system in India.
• The Act received royal assent on 20th June 1892.
• Charter Act of 1853-
• Charter Act of 1853 was the last Charter Act passed for the East India Company.
• The Charter Act of 1853 provided for the appointment of a new Governor, distinct from the Governor-General, for the Presidency of Bengal.
• The Charter Act; of 1853 provided for the creation of the Governor General's Council for legislative purposes.
• Indian Independence Act of 1947
• In 1947, the Indian Independence Act was passed. India and Pakistan became separate nations as a result of the act.
• The Act abolished the usage of the title "Emperor of India" for the British Crown, as well as any previous treaties with princely nations.
• Lord Mountbatten remained Governor-General, and Jawaharlal Nehru was named India's first Prime Minister.
• Muhammad Ali Jinnah was named Governor-General of Pakistan, and Liaquat Ali Khan was named Prime Minister.

Q44. Answer: (a) Only II

The correct answer is Only II.

Key Points

• Mirabai Chanu and Sanket Sargar both are related to the weightlifting sport.
• In Commonwealth Games 2022 Mirabai Chanu wins India’s first gold medal in weightlifting.
• Mirabai Chanu won gold in the women’s 49- kilogram event.
• Sanket Sargar has clinched a silver medal in the men’s 55 kg category.

Important Points

• Birmingham City has been chosen to host the 2022 Commonwealth Games.
• The 2022 Commonwealth Games, officially known as the XXII Commonwealth Games and commonly known as Birmingham 2022.
• It is an; international multi-sport event for members of the Commonwealth that is scheduled to be held in Birmingham, England.
• This is to be the third time England has hosted the Games after London in 1934 and Manchester in 2002.
• The 2022 Commonwealth Games were held in Birmingham, England from 28 July to 8 August 2022.
• India finished fourth in the medals tally with 61 medals comprising 22 gold, 16 silver and 23 bronze in the event.
• India bagged a total of 12 medals in wrestling, the most in any sport in the 2022 Games.
• Australia won the most medals 178 with 67 gold medals
• 2026 Commonwealth Games will be held in Victoria, Australia.

Q45. Answer: (d) north-western

The correct answer is north-western.

Key PointsWithdrawal of monsoon

• The withdrawal of the monsoon begins in the north-western states of India by early September.
• By mid-October, it withdraws completely from the northern half of the peninsula.

• By early December, the monsoon has withdrawn from the rest of the country.
• The withdrawal, takes place progressively from north to south from the first week of December to the first week of January.
• By this time the rest of the country is already under the influence of the winter monsoon.
• The months of October and November are known for retreating monsoons.
• By the end of September, the southwest monsoon becomes weak as the low-pressure trough of the Ganga plain starts moving southward in response to the southward march of the sun.

Important Points

• Indian Monsoon-
• The word ‘ monsoon’ is believed to have originated from the Arabic word for season.
• India receives the bulk of its rainfall during the Southwest Monsoon season.
• During the southwest monsoon period, the moisture Laden winds blow from sea to land.
• Intense low-pressure formation over the Tibetan Plateau because of intense heating during the summer season; permanent high-pressure cell in the South of the Indian Ocean (East to Northeast of Madagascar in summer) is the main reason for Southwest Monsoon.
• Southwest monsoon winds bring heavy rainfall to most parts of the country.
• Factors influencing the onset of; monsoons
• Intense low-pressure formation over the Tibetan Plateau
• The permanent high-pressure cell in the South of the Indian Ocean
• Subtropical jet stream
• African Easterly jet (Tropical easterly jet)
• Inter-Tropical Convergence Zone (ITCZ)

Q46. Answer: (c) Karnam Malleswari

The correct answer is Karnam Malleswari

Key Points

• Karnam Malleswari:-
• She is an Indian weightlifter and is now retired.
• She won silver in World Championship, Istanbul in 1994 and Asian Weightlifting Championship, Korea in 1995.
• She was the two-time weightlifting champion with 11 Gold medals out of 29 international medals before the Olympics.
• In the 2000, Sydney Olympics she won a Bronze medal and become first and only Indian women weightlifter to win Olympics.
• She also awarded Rajiv Gandhi Khel Ratna Award in 1995, Arjuna Award in 1994 and Padma Shri in 1999.
• 2000 Summer Olympics:-
• The 2000 Summer Olympics was an international multi-sport event held from 15 September to 1 October 2000 in Sydney, New South Wales, Australia.
• It was the second time the Summer Olympics were held in Australia, and in the Southern Hemisphere.
• The United States topped the medal table, followed by Russia and China.

Additional Information

• Mirabai Chanu:-
• Saikhom Mirabai Chanu is a weightlifter who hails from Manipur, India.
• She competed in the women’s 49-kilogram division at the Olympic Games in Tokyo in 2020 and earned the silver medal.
• Because of her hard work and dedication to the sport, the government of India honoured her with the Padma Shri award in 2018.
• In 2018, the Government of India honoured her with Major Dhyan Chand Khel Ratna for her achievements in the athletic world.
• Neelam Setti Laxmi:-
• She is s an Indian female weightlifter, competing in the 69 kg category and representing India at international competitions.
• She competed at world championships, most recently at the 1999 World Weightlifting Championships.
• She also won two silver medals at the 2002 Commonwealth Games.
• Nameirakpam Kunjarani Devi:-
• She is the most decorated Indian Sportswoman in Weightlifting, in the category of 48kg.
• She holds the rank of Commandant in the CRPF and also worked as nodal officer for the sports team in CRPF.
• She was also awarded Rajiv Gandhi Khel Ratna and Arjuna award for the year 2014.
• She was also the coach of the Indian Weightlifting in Common Wealth Games 2014 in Glasgow.

Q47. Answer: (c) Chikal kalo

The correct answer is Chikal Kalo.

Key Points

• Chikal Kalo:-

• It is celebrated on the 12th day of the month of Ashadh that roughly falls in the 2nd or 3rd week of July.

• The festival celebrates the naughty nature of Bal Krishna or the Baby Krishna.

• On this day, every male – from a toddler to a senior citizen becomes a little Krishna.

Additional Information

• Sarhul:-

• The people of Uraon tribes celebrate the festival of Sarhul.

• Sarhul literally related to the Sal tree.

• When the Sal tree gets a new flower in the spring season, Sarhul is celebrated.

• It is a worship of the local village deity.

• More than 30 tribes of India celebrate the Sarhul festival.

• Karma:-

• Karma festival is a harvest festival.

• Karma festival is held on the 11th day of a full moon (Purnima) of the Hindu month of Bhadrab.

• Ladainha:-

• Ladainha or Ladin is a thanksgiving ritual among the Christians of Goa.

• The Ladin which literally means a litany to the Virgin Mary, is a religious function of thanksgiving to god for material and spiritual benefits that have accrued or are sought for, by the persons sponsoring the Ladin.

Q48. Answer: (b) Both I and II

The correct answer is Both I and II.

Key Points

• Penalty kick:-

• The penalty as a format of punishment for an infringement of the rules of the game was introduced for the first time in 1891.

• Players other than the goalkeeper that handled the ball within twelve yards of the goal line, or who committed foul play at the same distance, would have a penalty kick given against them.

• A penalty kick in football:

• The penalty-kick shootout to decide a match consists of a minimum of 5 penalty kicks.

• It is to be taken by each of the two teams from the penalty spot (8 yards from the goal line in the case of half-pitch play, 10 yards in the case of a full-pitch play).

• The referee decides by the flip of a coin which team begins. (Hence pair I is incorrect)

• Handball:-

• Fieldball or handball is, a game played between two teams.

• The game has 7 or 11 players who try to throw or hit an inflated ball into a goal at either end of a rectangular playing area while preventing their opponents from doing so.

• Boxing:-

• Boxing is a combat sport in which two people wearing protective gloves and other protective equipment such as hand wraps and mouthguards, throw punches at each other for a predetermined amount of time in a boxing ring.

• Depiction of boxing comes from a Sumerian relief in Iraq from the 3rd millennium BC.

• Boxers are prohibited from hitting below the belt, holding, tripping, pushing, biting, or spitting.

• Greco-Roman Wrestling

• Greco-Roman wrestling is an older style of wrestling that prohibits the use of the legs in offense and defense.

• Greco-Roman wrestling has been an Olympic sport since 1896. (Hence pair II is incorrect)

Additional Information

• Terms related to boxing:-

Terminology	Meaning
Uppercut	upward punch aimed at the stomach or the jaw.
Punch	strike with a clenched fist

Knockout	boxer is hit hard and he loses his consciousness

Q49. Answer: (a) Vitamin B1

The correct answer is Vitamin B1.

Key Points

• Beriberi:-

• It is a nutritional disorder caused by a deficiency of Thiamine (vitamin B1).

• It is an acute, progressive neuropathy with impairment of both superficial and deep sensation and motor weakness.

• It is characterized by impairment of the nerves and heart.

• The term beriberi is derived from the Sinhalese word meaning “extreme weakness.”

• General symptoms include loss of appetite and overall lassitude, digestive irregularities, and a feeling of numbness and weakness in the limbs and extremities.

• It targets and destroys heart muscles, nerve fibers, and the brain.

• Vitamin B1:-

• Sources include:- Seafood, milk, meat, peas, cereals, green vegetables

• It is useful in Growth and development, releasing energy from carbohydrates

Additional Information

Name of Vitamin	Sources	Need	Deficiency Diseases
Vitamin A	Milk, butter, egg, carrots, cod liver oil, tomatoes, pumpkin, green leafy vegetables	Normal growth and keeping eyes and skin healthy	Night blindness, Irregular growth of teeth
Vitamin K	Cabbage, cauliflower, spinach, and other green leafy vegetables, cereals, soybeans	Clotting of blood	Excessive bleeding from wounds
Vitamin C	Indian gooseberry (amla), lemons, lime, pineapple, oranges, watermelon, green peppers, tomatoes, cabbage, turnip, carrots, green mint, guava	Maintenance of ligaments, tendons, other supportive tissues, and blood vessels	Scurvy (gums swell and bleed)

Q50. Answer: (d) Operation Ganga

The correct answer is Operation Ganga.

Key Points

• Operation Ganga:-

• It is the initiative launched by the government of India to bring back Indians stranded in Ukraine.

• It has also set up 24×7 control centers to assist in the evacuation of Indians through the border crossing points with Hungary, Poland, Romania and Slovak Republic.

• A Twitter handle, ‘OpGanga Helpline’, has also been dedicated to the mission, where all information regarding evacuation process and advisories of embassies are shared to keep everyone up-to-date.

• Many students who reached Ukraine’s borders with Poland and Romania have not been allowed to enter those nations.

• The government had identified an alternate train route to help evacuate the students, from Uzhhorod in western Ukraine to Budapest, Hungary’s capital city.

• Under this operation, India has decided to send four Union Ministers to Poland and Romania to oversee the evacuation.

Additional Information

• Operation Devi Shakti:-

• Under "Operation Devi Shakti”, a total of 669 people have now been evacuated from Afghanistan.

• This comprises 448 Indians and 206 Afghans, which includes members of the Afghan Hindu/Sikh minority community.

• In view of the challenging humanitarian situation in Afghanistan, the Government of India has dispatched humanitarian assistance consisting of medical supplies on the return flight.

• Operation Maitri:

• It is the rescue and relief operation in Nepal by the Government of India and Indian Armed Forces in the aftershock of the 2015 Nepal earthquake.

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• The operation was named Operation Maitri by Indian Army.
• Vande Bharat Mission:-
• It started with the operation of 64 flights from May 7 to May 13 to bring back around 15,000 Indian nationals stranded abroad.
• It turns out to be the largest evacuation operation ever since the 1990 airlift of 1.7 lakh people from Kuwait.

Q51. Answer: (d) 7.2 kmph

Given:
Distance covered by Kapila = 1200 meters
Time taken = 10 minutes
Formula used:
Speed = Distance/Time
Solution:
The speed of Kapila is 1200 meters/10 minutes = 120 meters/minute.
Converting 120 meters/minute to km/hr, we get 120 x (1/60) x (18/5) = 7.2 km/hr.
Therefore, the speed of Kapila is 7.2 km/hr.

Q52. Answer: (c) 61000

Calculation:
The sales for the number of bikes for Hero company in Feburary = 655
The sales for the number of bikes for Hero company in March = 540
Percentage decrease = (655 - 540)/655 × 100 = 17.55
The sales for the number of bikes for Hero company in June = 740
The sales for the number of bikes for Hero company in July = (100 - 17.55)/100 × 740 = 610
The sales for the number of bikes for Hero company in July 61000.
Therefore Option 3 is the correct answer.

Q53. Answer: (b) 215 degree

Calculation:
The sum of the temperatures recorded on all the days
10 + 35 + 20 + 40 + 15 + 45 + 50
215
Therefore Option 2 is the correct answer.

Q54. Answer: (b) 46 degree

Given:
cot 2A = tan (A - 48°),
Formula Used:
If tanA = tanB then A = B
If cot A = cot B then A = B
Calculation:
We have cos 2A = tan (A – 48°)
=> tan (90° - 2A) = tan (A – 48°),
=> (90° - 2A) = (A – 48°),
=> A = 46°
Therefore The measurement of angle A is 46°.

Q55. Answer: (a) 15°

Given:
PQ is a tangent to the circle, touching it at point Q.
O is the centre of the circle.
angle POQ = 75°
Concept Used:
The tangent at any point makes an angle of 90° with the radius drawn to the point of tangency.
The sum of the angles in a triangle equals 180°.

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Calculation:

The tangent at any point makes an angle of 90° with the radius.

Therefore, angle OQP = 90° (since OQ is the radius and PQ is the tangent at Q).

We need to find the value of angle OPQ.

However, we know that the sum of the angles in a triangle equals 180°.

So, we have angle OPQ + angle OQP + angle POQ = 180°.

Substituting the given values into the equation, we get:

angle OPQ + 90° + 75° = 180°

angle OPQ = 180° - 90° - 75°

angle OPQ = 15°

So, the value of angle OPQ is 15°.

Q56. Answer: (c) 14 cm

Given:

ΔABC ~ ΔPQR

The perimeter ΔABC = 64 cm

The perimeter ΔPQR = 56 cm

AB = 16 cm

Concept :

The ratio of the perimeter of 2 similar triangles is equal to the ratio of the corresponding sides.

Perimeter of ΔABC/Perimeter of ΔPQR = (AB/PQ) = (BC/QR) = (AC/PR)

Calculation:

ΔABC and ΔPQR are similar so

AB/PQ = (Perimeter of Δ ABC)/(Perimeter of Δ PQR)

16/PQ = 64/56

PQ = 14 cm

Therefore Option 3 is the correct answer.

Q57. Answer: (b) 66 cm

Given:

The radius of a circle is 10.5 cm

Concept used:

Circumference of circle = 2πr, where r = radius

Calculation:

Circumference = 2 × (22/7) × 10.5 = 66 cm

Therefore Circumference (in cm) of a circle is 66 cm.

Q58. Answer: (a) 30

Given:

We need to find the count of numbers between 201 and 401 that are divisible by 5 but not by 4.

Calculation:

First, we will find the numbers divisible by 5 between 201 and 401.

The smallest number greater than 201 which is divisible by 5 is 205, and the largest number less than 401 which is divisible by 5 is 400.

The formula to find the count of numbers divisible by 'n' between 'a' and 'b' is given by:

((b - a)/n) + 1, provided both 'a' and 'b' are divisible by 'n'.

Therefore, the total numbers divisible by 5 between 205 and 400, both inclusive, are ((400 - 205)/5) + 1 = 40.

The smallest number greater than 205 divisible by 20 (since 20 is the least common multiple of 5 and 4) is 220, and the largest number less than 401 which is divisible by 20 is 400.

Applying the above formula, the total numbers divisible by 20 between 220 and 400, both inclusive, are ((400 - 220)/20) + 1 = 10.

Finally, subtracting the count of numbers divisible by 4 from the total count of numbers divisible by 5, we get the count of numbers divisible by 5 but not by 4.

This is 40 - 10 = 30.

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So, there are 30 numbers between 201 and 401 that are divisible by 5 but not by 4.

Q59. Answer: (b) 4 / 13

Given:

3/2×7/3÷ 7/6+1/4=1/x

Calculation:

3/2×7/3÷ 7/6+1/4=1/x

3/2×7/3× 6/7+1/4=1/x

3/2× 2+1/4=1/x

3+1/4=1/x

13/4 = 1/x

x = 4/13

Therefore Option 2 is the correct answer.

Q60. Answer: (c) 40 percent

Shortcut Trick

For compound interest over 2 years, the multiplier is the square of the 1-year growth factor.

1-year growth factor = √1.96 = 1.4

Rate of interest = (Growth factor − 1) × 100

Rate = (1.4 − 1) × 100 = 40%

Therefore The correct answer is 40%.

Alternate Method

Given:

Let the Principal be P.

Amount (A) after 2 years = 1.96P

Time (t) = 2 years

Formula Used:

A = P(1 + r/100)^t

Calculations:

=> 1.96P = P(1 + r/100)²

=> 1.96 = (1 + r/100)²

=> √1.96 = 1 + r/100

=> 1.4 = 1 + r/100

=> r/100 = 1.4 − 1

=> r/100 = 0.4

=> r = 0.4 × 100

=> r = 40%

Therefore The correct answer is 40%.

Additional Information

Compound Interest Multiplier

The ratio of Amount to Principal for n years is $(1 + r/100)^n$. To find the 1-year factor, take the n-th root of the total multiplier.

Effective Rate for 2 Years

If the annual rate is r%, the effective interest rate for 2 years compounded annually is given by $2r + r^2/100$.

Successive Percentage Change

Compound interest follows the concept of successive percentage increase, where the interest for each year is added back to the principal for the next year's calculation.

Q61. Answer: (d) 155

Calculation:

The savings for each year, which is Income - Expenditure:

Year A: 350 - 150 = 200

Year B: 250 - 100 = 150

Year C: 200 - 150 = 50

Year D: 400 - 100 = 300
Year E: 150 - 75 = 75
Now, add up all the savings:
200 + 150 + 50 + 300 + 75 = 775
There are 5 years, so to find the average savings, divide the total savings by the number of years:
775/5 = 155
So, the average savings in all years is 155.

Q62. Answer: (c) 32 days

Given:
8 boys can complete the work in 48 days.
Formula:
m1d1 = m2d2
Solution:
(8 × 48) = (8 × 24) + 6d
192 = 6 × d
d = 192/6
Time is taken to complete remaining work = 32 days
Therefore, it will take 32 days to complete the remaining work after the 2 boys leave.

Q63. Answer: (c) 72 degree

Given:
A cyclic quadrilateral MNOP, where angle M is opposite to angle O.
2angle O = 3angle M
Concept Used:
In a cyclic quadrilateral, the sum of a pair of opposite angles is 180 degrees.
Calculation:
In a cyclic quadrilateral, the sum of a pair of opposite angles is 180 degrees.
Therefore, angle M + angle O = 180 degrees.
Since we know that 2angle O = 3angle M, we can express angle O in terms of angle M. Dividing the equation by 2, we get:
angle O = 1.5angle M
Substituting this into the formula angle M + angle O = 180 degrees, we get:
angle M + 1.5angle M = 180
2.5angle M = 180
angle M = 180/2.5
angle M = 72 degrees
So, the measure of angle M is 72 degrees.

Q64. Answer: (c) 3.33 percent

Given:
Cost price of each spectacle = Rs. 4,000
Profit on first spectacle = 30%
Loss on second spectacle = 10%
Loss on third spectacle = 10%
Formula used:
Profit = Selling price - Cost price
Loss = Cost price - Selling price
Profit percentage = Profit/Cost price x 100
Loss percentage = Loss/Cost price x 100
Solution:
The profit on the first spectacle is Rs. 4,000 x 30/100 = Rs. 1,200.
The Selling price of the first spectacle is Rs. 4,000 + Rs. 1,200 = Rs. 5200.
The loss on the second spectacle is Rs. 4,000 x 10/100 = Rs. 400.

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The Selling price of the second spectacle is Rs. 4,000 - Rs. 400 = Rs. 3,600.
The loss on the third spectacle is Rs. 4,000 x 10/100 = Rs. 400.
The Selling price of the third spectacle is Rs. 4,000 - Rs. 400 = Rs. 3,600.
The total cost of the three spectacles is Rs. 4000 + Rs. 4000 + Rs. 4000 = Rs. 12,000.
The total selling price of the three spectacles is Rs.5200 + Rs. 3,600 + Rs. 3,600 = Rs. 12,400.
The total profit earned in the whole transaction is Rs. 12,400 - Rs. 12,000 = Rs. 400.
The total profit percentage is Rs. 400 /12000 × 100 = 3.33%
Therefore, the total percentage of profit earned in the whole transaction is 3.33%.

Q65. Answer: (d) Rs. 9,000

Given:
Sale in first month = Rs. 10,000
Sale in second month = Rs. 7,500
Sale in third month = Rs. 8,000
Sale in fourth month = Rs. 10,500
Average sale in five months = Rs. 9,000
Formula used:
Average = Total/Number of items
Solution:
The total sale in four months is Rs. 10,000 + Rs. 7,500 + Rs. 8,000 + Rs. 10,500 = Rs. 36,000.
The required sale in the fifth month is Rs. 9,000 x 5 - Rs. 36,000 = Rs. 9,000.
Therefore, the shopkeeper must have a sale of Rs. 9,000 in the fifth month so he gets an average sale of Rs. 9,000 in five months.

Q66. Answer: (d) Both I and II

Calculation:
Production of bike by company M = 350
Production of truck by company M = 200
I. The ratio of production of bike to the production of truck by company M are 7 : 4.
Statement I is correct.
Average production of bike by all companies = (600 + 350 + 400 + 150 + 200)/5 = 1700/5 = 340
Average production of truck by all companies = (400 + 200 + 100 + 500 + 550)/5 = 1750/5 = 350
Difference = 350 - 340 = 10
Statement II is correct.
Therefore Option 4 is the correct answer.

Q67. Answer: (a) 1/√3

Calculation:
cot Θ
Substitute Θ = 60° into the expression:
cot 60° = 1/√3
Therefore Option 1 is the correct answer.

Q68. Answer: (c) Rs. 748.80

Given:
Total amount = Rs.1,248
Ratio of Ridhaan and Vihaan = 2 : 3
Solution:
Find the total parts of the ratio: 2 + 3 = 5
Multiply the total amount by the share of Vihaan's part of the ratio: 1,248 × (3/5) = Rs.748.80
Therefore, the share of Vihaan is Rs.748.80

Q69. Answer: (b) x = 37.5, y = 7.5

Given:
tan (x + y) = 1 and cos(x - y) = √3/2

Calculation:

tan (x + y) = 1

=> (x + y) = 45° …. (i)

cos(x - y) = √3/2

=> (x - y) = 30° …. (ii)

Add both equations –

2x = 75°

=> x = 37.5°

2y =15

y = 7.5°

Therefore Option 2 is the correct answer.

Q70. Answer: (b) x^2- 121

Given:

(x + 11) (x - 11)

Formula used:

(x + y) (x - y) = x2 - y^2

Calculation:

(x + 11) (x - 11)

Using the formula

(x + 11) (x - 11) = x2 - 121

Therefore Option 2 is the correct answer.

Q71. Answer: (a) 50°

Given:

AC is the diameter of the circle.

angle BAC = 40°

Concept used:

By the properties of a circle, an angle subtended by a diameter at the circumference is a right angle. Therefore, angle ABC = 90°.

Calculation:

In triangle ABC, the sum of angles in a triangle is 180°. We can use this property to find angle ABC.

So, angle BCA = 180° - angle BAC - angle ABC

angle BCA = 180° - 40° - 90°

angle BCA = 50°

Therefore, angle BCA = 50°.

Q72. Answer: (a) 900

Given:

The fruit seller sells 45% of the watermelons.

After selling, the seller has 495 watermelons left.

Calculation:

Let's assume the original number of watermelons the seller had is "x".

The number of watermelons sold is 45% of x, which can be represented as 0.45x.

The remaining number of watermelons can be calculated by subtracting the number of watermelons sold from the original number of watermelons:

x - 0.45x = 0.55x.

To solve for x, we can set up the equation:

0.55x = 495

x = 900

Therefore Option 1 is the correct answer.

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Q73. Answer: (a) Rs. 1,188

Given:

The marked price of a chair is Rs. 1,650.

The chair is sold at two successive discounts of 10 percent and 20 percent.

Concept Used:

If there are two discounts of a% and b% given successively, then the total discount is given by a + b - ab/100.

Calculation:

a + b - ab/100

10 + 20 - (10 × 20)/100

30 - 2

=> 28%

=> 1,650 × (100 - 28)%

=> 1650 × 72%

=> 1188

Therefore, the selling price of the chair after two successive discounts of 10 percent and 20 percent is Rs. 1,188.

Q74. Answer: (c) 16K^4- 16K²+ 2

Given,

x + 1/x = 2k

Formula:

(x + 1/x)2 = x2 + 1/x2 + 2

Calculation:

x + 1/x = 2k

Square both sides:

x2 + 1/x2 + 2 = 4k²

x2 + 1/x2 = 4k² - 2

Squaring both side:

=> (x2 + 1/x2)2 = x4 + 1/x4 + 2 = (4k2 - 2)²

=> x4 + 1/x4 + 2 = (16k^4 + 4 - 16k²)

=> x4 + 1/x4 = (16k4 + 2 - 16k2)

Therefore Option 3 is the correct answer.

Q75. Answer: (d) (a - 2b - 3c)²

Shortcut Trick

Identify the squares: a², 4b² = (2b)², and 9c² = (3c)².

Check signs of cross-products: −4ab and −6ca are negative, while 12bc is positive.

Since 12bc is positive, b and c must have the same sign (both − or both +).

Since −4ab and −6ca are negative, a must have the opposite sign of b and c.

Testing signs: (a − 2b − 3c)² gives −4ab, +12bc, and −6ca.

Therefore The correct answer is (a − 2b − 3c)².

Alternate Method

Given: The expression is a² + 4b² + 9c² − 4ab + 12bc − 6ca.

Formula Used: The standard Trinomial Square Identity: (x + y + z)² = x² + y² + z² + 2xy + 2yz + 2zx.

Comparing the given expression with the identity:

=> x² = a² → x = a

=> y² = 4b² → y = ±2b

=> z² = 9c² → z = ±3c

=> 2xy = −4ab => 2(a)(y) = −4ab => y = −2b

=> 2zx = −6ca => 2(z)(a) = −6ca => z = −3c

=> 2yz = 2(−2b)(−3c) = 12bc (Matches the given term)

=> Therefore, the factorized form is (x + y + z)² = (a − 2b − 3c)².

Therefore The correct answer is (a − 2b − 3c)².

Additional Information

Trinomial Expansion Rule

The expansion of $(a + b + c)^2$ always results in 3 squared terms (always positive) and 3 cross-products. The signs of the cross-products depend entirely on the relative signs of a, b, and c.

Perfect Square Recognition

If an algebraic expression has the form $x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$, it is a perfect square of the trinomial $(x + y + z)$.

Sign Analysis

In $(a - b - c)^2$, only the terms involving 'a' multiplied by others (ab and ac) will be negative, while the product of two negatives (bc) becomes positive.

Q76. Answer: (a) Rigid

The solution is in Hindi. Read it online.

Q77. Answer: (b) RPSQ

The correct answer is 'Option 2'.

Key Points

• The sentence opens with a geographical reference starting with "From the..." and lists three regions.

• These are Argentina's grain heartland (R), California's tomato belt (P), and China's pork hub (S).

• They are connected by "to the" indicating a sequence. This completes the locations mentioned in the sentence.

• After we've set up these locations, we then talk about what happened in them, which is "extreme weather events in 2021 have reduced food supplies and sharply increased food prices." (Q).

• It logically follows the description of the regions because it's providing information about the impact of these weather events on these areas.

Therefore, the correct answer is: 'RPSQ' i..e. "From the grain heartland of Argentina to the tomato belt of California to the pork hub of China, extreme weather events in 2021 have reduced food supplies and sharply increased food prices."

Q78. Answer: (b) Dull

The solution is in Hindi. Read it online.

Q79. Answer: (c) revert

The correct answer is 'Option 3' i.e. 'Revert'.

Key Points

• The most appropriate word to fill in the blank is "revert".

• "Revert" means to return to (a previous state, condition, practice, etc.).

• It fits best in the context of the sentence, which implies a return to a previous system or way of doing things.

Therefore, the correct sentence is: While one cannot really say the pandemic is over yet, it is a sensible decision to now revert to the older system.

Additional Information

• Now, explaining the other options:

• Sympathise - This means to have feelings of pity and sorrow for someone else's misfortune. It doesn't fit in the context of this sentence because it doesn't make sense to "sympathise to the older system".

• Comprehend - This means to grasp mentally; understand. Again, this does not fit in the context of the sentence as you can't "comprehend to the older system".

• Stick - This can mean to adhere or remain attached, as to an idea, hope, memory, etc. However, in this context, "stick to the older system" would imply that they have been using the older system all along, which is not what the sentence is saying.

Q80. Answer: (b) Something which is very simple

The solution is in Hindi. Read it online.

Q81. Answer: (d) Churchly

The solution is in Hindi. Read it online.

Q82. Answer: (b) challenging

The correct answer is 'Option 2' i.e. 'Challenging'.

Key Points

• The most appropriate word to fill in the blank is "challenging".

• "Challenging" means demanding or testing the abilities of (someone or something).

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• In this context, choosing the right software indeed could be a complex and demanding task.

Therefore, the correct sentence is: Choosing the right software for any purpose can be a challenging task for any business.

Additional Information

• Now, explaining the other options:

• Intimating- This means to imply or make known indirectly. It does not fit in this context. You wouldn't describe a task as "intimating."

• Flickering - This means to shine with a light that is not steady; twinkle. Typically used to describe light, it does not make sense to describe a task as "flickering."

• Attributing - This means to regard something as being caused by or belonging to. In this context, the word "attributing" does not make sense, because it does not correctly describe a characteristic of a task.

Q83. Answer: (d) To win a race

The solution is in Hindi. Read it online.

Q84. Answer: (d) There is evidence that much too

The correct answer is 'Option 4'.

Key Points

• The error in the sentence is in part 4) "There is evidence that much too".

• The phrase "much too" is incorrectly used in this context.

• The correct phrase should be "too much".

• "Much too" is usually used before an adjective to emphasize it, such as "much too difficult".

• But in this case, we're discussing an excessive amount of something (technology), so the correct term is "too much".

Therefore, the correct sentence is: "There is evidence that too much technology can lead to a loss of child development opportunities."

Q85. Answer: (a) DBAC

The correct answer is 'Option 1' i.e. 'DBAC'.

Key Points

• The correct sequence is indeed: DBAC

• Rearranging the sentence parts according to this sequence gives us a meaningful and grammatically correct sentence:

• "I knew that the remedy lay not in finding a new flower but in what unfurling its secrets when it will (D) Rohan had advised me over and again (B): let the past go. Be at ease. Allow the future (A) to arrive at its own pace (C)."

• So, the correct sequence is DBAC, creating a coherent narrative where the speaker reflects on Rohan's advice as the remedy they were looking for.

Therefore, the correct answer is: 'DBAC'.

Q86. Answer: (b) the world's leading string quartet.

The correct answer is 'Option 2'.

Key Points

• The segment of the sentence that contains the grammatical error is 2) "the world's leading string quartet."

• The problem lies in the phrase "one of the world's leading string quartet."

• When using the phrase "one of," it should be followed by a plural noun because you're choosing one item from a set.

• The correct phrase should be "one of the world's leading string quartets."

Therefore, the correct sentence is: "The London-based Brodsky Quartet, meanwhile, is one of the world's leading string quartets."

Q87. Answer: (b) New nests are built by swallows every year.

The correct answer is 'Option 2'.

Key Points

• In English, passive sentences are formed by rearranging the subject, the verb, and the object of the sentence.

• The object of the active sentence becomes the subject of the passive sentence.

• The verb in the passive sentence is formed by using the appropriate form of "to be" plus the past participle of the main verb.

• In this case, "build" is the main verb, and its past participle is "built."

• In the sentence "Swallows build new nests every year", the present simple tense is used, which suggests a repeated or regular action.

• When converted into the passive voice, the same tense (present simple) should be maintained.

• Therefore, the appropriate form of "to be" is "are".

Therefore, the correct sentence is: 'New nests are built by swallows every year'.

Additional Information

• Let's look at the other options:

• New nests were built by swallows every year - This uses the past simple tense ("were built"), so it is not the correct conversion from the original sentence, which is in the present simple tense.

• New nests were being built by swallows every year - This uses the past continuous tense ("were being built"), so it is not the correct conversion from the original sentence, which is in the present simple tense.

• New nests is being built by swallows every year - This is incorrect grammatically. "Is being built" is present continuous tense and used for ongoing actions, and the subject "new nests" is plural, which should take "are" instead of "is".

Q88. Answer: (d) Amateur

The correct answer is 'Option 4' i.e. 'Amateur'.

Key Points

• The correctly spelled word is "Amateur".

• "Amateur" refers to someone who engages in a pursuit, especially a sport, on an unpaid basis or someone who is incompetent or inept at a particular activity.

Therefore, the correct spelling is: "Amateur".

Q89. Answer: (a) Reprimand

The correct answer is 'Option 1' i.e. 'Reprimand'.

Key Points

• The correctly spelled word is "Reprimand".

• "Reprimand" is a verb that means to express to someone sharp disapproval or criticism because of their behavior or actions.

Therefore, the correct spelling is: "Reprimand".

Q90. Answer: (a) "Did you see the match?" the teacher said to me.

The correct answer is 'Option 1'.

Key Points

• In reported or indirect speech, the present simple tense in direct speech changes to the past simple.

• Similarly, the past simple tense in direct speech changes to the past perfect.

• Therefore, when we convert the indirect speech back to direct, we revert this change.

• In the sentence "The teacher asked me if I had seen the match", the phrase "had seen" is in the past perfect tense.

• In direct speech, this would have been in the past simple tense, which is "did see" or more commonly expressed as "did you see".

Therefore, the correct direct form of the sentence: "The teacher asked me if I had seen the match" is "Did you see the match?" the teacher said to me.

Additional Information

• Now, let's analyze the incorrect options:

• "Did you had saw the match?" the teacher said to me.- This sentence is grammatically incorrect. We don't use "did" with "had" or the past participle "saw".

• "Did you saw the match?" the teacher said to me. - This sentence is also grammatically incorrect. After "did", we use the base form of the verb, which is "see", not the past form "saw".

• "Did you seen the match?" the teacher said to me. - This sentence is grammatically incorrect. After "did", we use the base form of the verb, which is "see", not the past participle "seen".

Q91. Answer: (b) am thinking about

The correct answer is 'Option 2' i.e. "am thinking about".

Key Points

• In the sentence "I can't concentrate on my work because I am thinking off that beautiful scene", the phrase "thinking off" is incorrect.

• The correct preposition to use with "thinking" in this context is "about".

• When we think about something, we consider it, it occupies our mind.

Therefore, the correct sentence is: "I can't concentrate on my work because I am thinking about that beautiful scene."

Additional Information

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• Let's analyze the incorrect options:

• "was think of" - This option is grammatically incorrect. The correct form should be "was thinking of", but the sentence requires present tense, not past tense, so "am thinking about" is correct.

• "is thinking about" - This option is incorrect because the subject of the sentence is "I", and with "I", the correct form of the verb "to be" is "am", not "is".

Q92. Answer: (b) CANDID

The solution is in Hindi. Read it online.

Q93. Answer: (d) SQRP

The correct answer is 'Option 4'.

Key Points

• Here's how the sentences logically connect:

• S. Japan is also known as the land of the rising sun. - This sentence introduces the topic, Japan being known as the land of the rising sun.

• Q. It experiences the earliest sunrise amongst all the countries. - This sentence elaborates on why Japan is known as the land of the rising sun, i.e., it experiences the earliest sunrise amongst all the countries.

• R. According to the words of the Japanese envoy himself, that name was chosen because the country was so close to where the sun rises. - This sentence further supports and explains the reason behind the name given in Sentence S, adding more detail to Sentence Q's explanation.

• P. Amongst all the cities of Japan, Hiroshima is the one that experiences earliest mornings. - This sentence narrows the scope to the city level, providing a specific example within Japan.

Therefore, the correct sequence is: 'SQRP'.

Q94. Answer: (c) Neither of the two companies is winning

The correct answer is 'Option 3'.

Key Points

• In the sentence, the subject is "Neither of the two companies".

• The word "neither" is used to mean "not one and not the other of two", so it's singular.

• Therefore, the verb should also be in the singular form to agree with the subject.

• Thus, "is winning" is the correct verb form to use, not "are winning".

Therefore, the correct sentence is: Neither of the two companies is winning in the price war.

Q95. Answer: (b) filter

The correct answer is 'Option 2' i.e. 'Filter'.

Key Points

• The sentence is "Do you _____ your tap water before drinking?" Here, the verb needs to describe an action that you could reasonably do to tap water before drinking it.

• The most logical and common action is to "filter" the tap water, which means to pass it through a device that removes impurities.

Therefore, the correct sentence is: Do you filter your tap water before drinking?

Additional Information

• Now, let's explain why the other options are incorrect:

• "Flush" - This term is usually used to describe the action of cleaning out a system, such as pipes or a toilet, by causing a large amount of water to flow through it. It's not typically used in the context of preparing water for drinking.

• "Flirt" - This is a social and sometimes romantic behavior that involves speaking and behaving in a way that suggests a playful attraction to someone, typically not involving serious intentions. It's not related to the context of drinking water.

• "Flicker" - This term usually refers to a light or a flame that shines or burns in an unsteady, changeable way. It's not relevant to the action of preparing water for drinking.

Q96. Answer: (b) with

The correct answer is 'Option 2' i.e. 'With'.

Key Points

• The most appropriate option to fill in blank No.1 is 2) "with".

• In the given context, the preposition "with" is the correct choice because it shows that the dolphins are using one of their brain hemispheres to sleep.

• "With" in this context signifies possession or means.

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• The dolphins possess two brain hemispheres and they use one to sleep. So, "with" fits perfectly in the sentence.

Therefore, the correct sentence is: Generally, dolphins sleep with only one brain hemisphere in slow-wave sleep at a time, thus (2) ____ enough consciousness to breathe and to watch for possible (3) __ and other threats. Early (4) __ stages can occur simultaneously in both hemispheres. In captivity, dolphins seemingly enter a fully asleep state where both eyes are closed and there is no response to mild external (5) ____.

Additional Information

• Let's explain why the other options are incorrect:

• "On" - This preposition is used to express a state of being in contact with or supported by something. It doesn't fit in this context.

• "Over" - This preposition typically indicates movement from one place to another, above the place mentioned, or covering a particular area. It doesn't fit in this context.

• "Through" - This preposition generally signifies movement from one end or side to another. It doesn't fit in this context.

Q97. Answer: (a) maintaining

The correct answer is 'Option 1' i.e. 'Maintaining'.

Key Points

• The most appropriate option to fill in blank No.2 is 1) "maintaining".

• In the context of the sentence, the verb that fits best is "maintaining".

• Dolphins sleep with only one brain hemisphere at a time, thus "maintaining" enough consciousness to breathe and to watch for possible threats.

• The word "maintaining" here means that they are keeping or preserving their consciousness even while sleeping, which is necessary for their survival.

Therefore, the correct sentence is: Generally, dolphins sleep with only one brain hemisphere in slow-wave sleep at a time, thus maintaining enough consciousness to breathe and to watch for possible (3) ____ and other threats. Early (4) __ stages can occur simultaneously in both hemispheres. In captivity, dolphins seemingly enter a fully asleep state where both eyes are closed and there is no response to mild external (5) ____.

Additional Information

• Now, let's explain why the other options are incorrect:

• "Facilitating" - This term generally means making something easier or less difficult. While it can be said that sleeping with one hemisphere might facilitate consciousness, it doesn't fit as well as "maintaining" in this context, because it's about preserving consciousness rather than making it easier.

• "Generating" - This term refers to producing or creating something. In this context, dolphins aren't producing consciousness, they are preserving it, making "maintaining" a better fit.

• "Tormenting" - This term means causing severe physical or mental suffering. It doesn't make sense in this context, as the dolphins are not causing suffering to their consciousness.

Q98. Answer: (a) predators

The correct answer is 'Option 1' i.e. 'Predators'.

Key Points

• The most appropriate option to fill in blank No.3 is 1) "predators".

• In the context of the sentence, dolphins are maintaining consciousness to watch for possible threats.

• The term "predators" is the most logical word to use here as it refers to animals that prey on others, and would be a potential threat to dolphins.

Therefore, the correct sentence is: Generally, dolphins sleep with only one brain hemisphere in slow-wave sleep at a time, thus maintaining enough consciousness to breathe and to watch for possible predators and other threats. Early (4) ____ stages can occur simultaneously in both hemispheres. In captivity, dolphins seemingly enter a fully asleep state where both eyes are closed and there is no response to mild external (5) ____.

Additional Information

• Now, let's explain why the other options are incorrect:

• "Preys" - The term "prey" is used to describe animals that are hunted and killed by other animals for food. It wouldn't make sense for dolphins to maintain consciousness to watch for "preys" as "preys" wouldn't pose a threat to them.

• "Carnivorous" - This is an adjective that describes animals that feed on other animals. It's not the correct term here because we're talking about specific threats to the dolphins, not a dietary classification.

• "Orators" - This term refers to public speakers, especially ones who are skilled. This term doesn't fit into this context at all, as it has no connection to potential threats to dolphins.

Q99. Answer: (a) sleep

The correct answer is 'Option 1' i.e. 'Sleep'.

Key Points

• The most appropriate option to fill in blank No.4 is 1) "sleep".

• In the context of the sentence, the term that fits best is "sleep".

• The sentence is talking about the sleeping patterns of dolphins, specifically the different stages of sleep.

• The sentence says "Early ____ stages can occur simultaneously in both hemispheres."

• The blank refers to what kind of stages, and since the context is about sleep, the word "sleep" fits best.

Therefore, the correct sentence is: Generally, dolphins sleep with only one brain hemisphere in slow-wave sleep at a time, thus maintaining enough consciousness to breathe and to watch for possible predators and other threats. Early sleep stages can occur simultaneously in both hemispheres. In captivity, dolphins seemingly enter a fully asleep state where both eyes are closed and there is no response to mild external (5) _____.

Additional Information

• Now, let's explain why the other options are incorrect:

• "Brain" - This term does not fit because "brain stages" is not a concept that makes sense in this context. While the brain does go through different stages during processes like development or healing, it doesn't fit in this sentence, which is specifically about sleep.

• "Woke" - This term refers to the state of being awake. It doesn't fit in this context because the sentence is about sleeping, not waking.

• "Conscious" - While consciousness is mentioned in the sentence, the term "conscious stages" is not a common or clear concept. The word "sleep" is more specific and directly related to the topic.

Q100. Answer: (a) stimuli

The solution is in Hindi. Read it online.

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