SSC CHSL Tier-1 2021: Official Paper (Held On : 31 May 2022 Shift 2) (Previous Year Paper)

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

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ENGLISH LANGUAGE

Q1. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

She will be / write her / examination by this / time tomorrow.

(a) examination by this
(b) time tomorrow
(c) She will be
(d) write her

Q2. Select the option that can be used as a one-word substitute for the given group of words.

Something that pertaining to the controversy

(a) Poignancy
(b) Laudatory
(c) Putative
(d) Polemical

Q3. Select the most appropriate option to fill in the blank.

The children sat _____ the tables instead of the chairs.

(a) above
(b) near
(c) on
(d) in

Q4. Select the option that can be used as a one-word substitute for the given group of words.

A person as a source of intellectual light or moral inspiration

(a) Lurch
(b) Luminary
(c) Luminaire
(d) Lunette

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

Impudent

(a) Insolent
(b) Confident
(c) Triumphant
(d) Polite

Q6. Complete the sentence with an appropriate synonym of the word mentioned in the bracket.

Watching the setting sun and the _____ (tranquil) surface of the water relaxes my mind.

(a) calm
(b) unsettled

(c) moving
(d) roaring

Q7. Select the INCORRECTLY spelt word
(a) Wit
(b) Witch
(c) Wish
(d) Whipe

Q8. Select the INCORRECTLY spelt word.
(a) Wisedom
(b) Freedom
(c) Boredom
(d) Kingdom

Q9. Select the most appropriate option to fill in the blank.
We love to go to the _____.
(a) sea
(b) she
(c) saw
(d) see

Q10. Select the most appropriate meaning of the give idiom.
To pay lip service
(a) To express loyalty, respect, or support for something insincerely
(b) To face a risk
(c) To pretend to be very old
(d) To ignore what someone is saying

Q11. Select the option that will improve the underlined part of the given sentence.
Rhea and Heena are both great dancers, but Rhea is the best.
(a) but Rhea is one of the best
(b) but Rhea is better
(c) and yet both of are equally good at it
(d) but Rhea is good

Q12. Select the option that expresses the given sentence in passive voice.
In the theatre, the audience threw flowers on the screen.
(a) In the theatre, flowers were thrown by the audience.
(b) In the theatre, flowers had been thrown by the audience.
(c) In the theatre, flowers was thrown by the audience.
(d) In the theatre, flowers are thrown by the audience.

Q13. Choose the correct spelling of the underlined word. If the given spelling is correct, choose 'No correction'.
This rule is necesary to maintain discipline.
(a) nacessary
(b) necessery
(c) necessary
(d) No correction

Q14. Select the INCORRECTLY spelt word.
(a) Trustworthy
(b) Bonafide
(c) Solusion
(d) Cultural

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Q15. Select the option that can be used as a one-word substitute for the underlined group of words.

William Shakespeare and Christopher Marlowe, the two great playwrights of the Elizabethan era, were living in the same time period.

(a) Chauvinists
(b) Cosmopolitans
(c) Contemporaries
(d) Cynics

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

Judicious

(a) Modest
(b) Reserved
(c) Foolish
(d) Authoritative

Q17. Select the most appropriate meaning of the given idiom.

Every dog has his day

(a) Every dog is treated well
(b) Celebration of dogs as man's best friend
(c) Everyone has good luck or success at a point of time
(d) Dogs are faithful animals

Q18. In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

Very carefully I _____ the tree I have referred to, and avoiding contact with the creepers, the upper _____ and leaves of which might have been visible from where the tiger was lying, I climbed to the fork, where I had a comfortable seat and perfect _____.

(a) stalled, roots, visibility
(b) starved, stem, disclosure
(c) stormed, fruits, revelation
(d) stalked, tendrils, concealment

Q19. Select the most appropriate meaning of the given idiom.

Come about

(a) To happen
(b) To explode
(c) To support
(d) To deduce

Q20. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

A. The Taj Mahal's history is also one of the world's greatest love stories known to everyone.

B. She was the neice of Meherunissa who was married to Prince Salim (later the Empress Nur Jahan.)

C. It all started in 1607, when Mughal Prince Khurram, first laid eyes on the lovely Arjumand Banu Begum.

D. Khurram, the son of Emperor Jahangir, Voiced his wish to marry Arjumand, and their marriage was celebrated with great pomp.

(a) ACBD
(b) ACDB
(c) BACD
(d) ABCD

Directions

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

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The (1) _____ that comes out of the story The Grasshopper and the Ant has to be subtly put to the children in such a way (2) _____ they realise the worth of hard work, the pleasures of hard work and the comfort it offers. Laziness, which is a (3) _____ trait here, should be discouraged, (4) _____ emphasizing on the (5) _____ note which is hard work.

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

(a) value
(b) enjoyment
(c) morals
(d) ending

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

(a) that
(b) who
(c) whom
(d) which

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

(a) pleasant
(b) positive
(c) horrible
(d) negative

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

(a) yet
(b) thus
(c) but
(d) while

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

(a) positive
(b) important
(c) essential
(d) critical

GENERAL INTELLIGENCE

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

25 * 5 * 10 * 2 * 4 * 3

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

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

(a) 7 : 392
(b) 9 : 810
(c) 15 : 3150
(d) 12 : 1872

Q28. Three statements are given, followed by three conclusions numbered I, II and III, Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

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All apples are bananas.
All grapes are bananas.
All bananas are nuts.
Conclusion:
I. All apples are nuts.
II. All grapes are nuts.
III. No nuts are bananas.

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

Q29. Select the correct mirror image of the given combination when the mirror is placed at XY as shown.



(a)

(b)



(c)



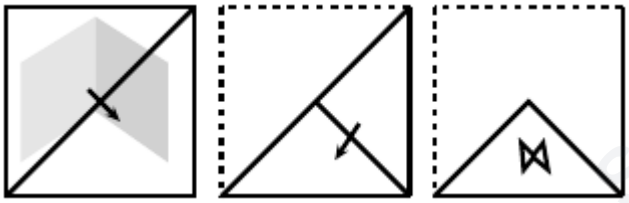
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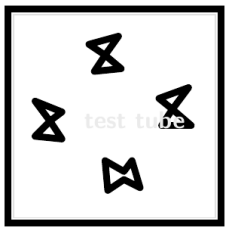
Q30. Which letter cluster will replace the question mark)?) to complete the given series?
XYZA, YACE,?, AEIM, BGLQ

(a) ZCFI
(b) ZCIF
(c) ZCDE
(d) ZCEF

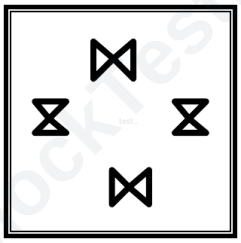
Q31. A paper is folded and cut as shown. How will it appear when unfolded?



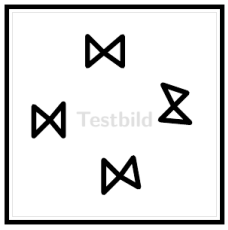
(a)



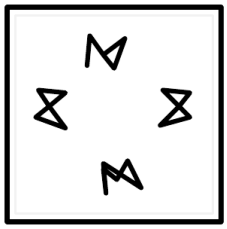
(b)



(c)



(d)



Q32. In a certain code language, 'SCHOOL' is written as 'TDIPPM' and 'COLLEGE' is written as 'DPMMFHF'. How will 'UNIVERSITY' be written in that language?

(a) VJOWSFTJUZ
(b) VOJFWSTJUZ
(c) VOJWJFSTUZ
(d) VOJWFSTJUZ

Q33. Kapil is Rajat's nephew. Nisha is Rajat's mother. Ramesh has only two children Rajat and Nilesh. How is Nilesh related to Kapil ?

(a) Father
(b) Brother
(c) Nephew
(d) Uncle

Q34. If 26 January 2019 was Saturday, then what was the day of the week on 30 January 2022?

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

Q35. Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

ACCURATE : RATEACCU :: ANALYSIS : YSISANAL :: CAPACITY : ?

(a) CITYPACA
(b) YTICAPAC
(c) CITYCAPA
(d) PACACITY

Q36. In a certain code language, "ABROAD" is written as "BDUNYA", and "BECAME" is written as "CGFZKB". How will "CANCER" be written in that language?

(a) DQCBCO
(b) DCQOBC
(c) DCQCBO
(d) DCQBCO

Q37. Which of the following numbers will replace the question mark (?) in the given series?

13, 26, 23, ?, 87, 522

(a) 95
(b) 94
(c) 90
(d) 92

Q38. Select the option that represents the letters that, when sequentially placed from left to right in the blanks below, will complete the letter series.

t _ r a s _ t _ s _ a _ _ _ t _ r _ s r t

(a) s r t r a r t s a
(b) s r a r s r t s a
(c) s r t r s r t s t
(d) s r t r s r t s a

Q39. If P denotes 'x', Q denotes '÷', R denotes '+' and S denotes '-', then what will come in place of '?' in the following equation?

130 S 61 R (23 P 4) S 83 R (62 Q 2) = ?

(a) 120
(b) 109
(c) 115
(d) 104

Q40. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

First row: 187, 164, 141

Second row: 215, 192,169

Third row: 178,155,?

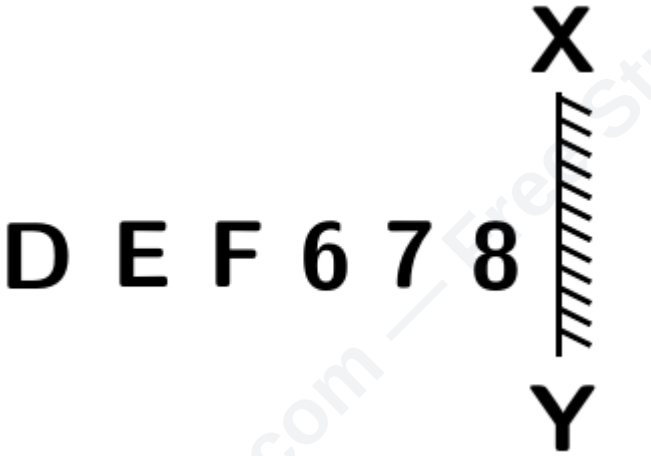
(NOTE: Operations should be performed on the whole numbers, without breaking down the number into its constituent digits. For example, 13 - Operations on 13 such as adding/deleting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1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

(a) 129
(b) 131
(c) 123

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(d) 132

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



(a)



(b)



(c)



(d)



Q42. The second number in the given number pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs, except one. Find that odd number pair.

(a) 100 : 81
(b) 36 : 16
(c) 49 : 25
(d) 81 : 49

Q43. Which two numbers, from amongst the given options, should be interchanged to make the given equation correct?

(40 × 6) ÷ 8 + 14 - (7 × 16) + (13 × 12) = 26

(a) 40 and 16
(b) 8 and 12
(c) 6 and 12
(d) 14 and 16

Q44. Which number will replace the question mark (?) in the following series?

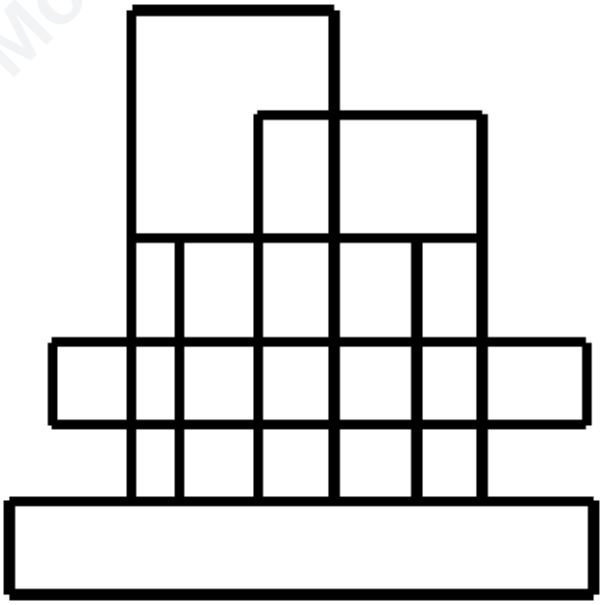
6, 12, 20, 30, ?, 56

(a) 42
(b) 25
(c) 49
(d) 36

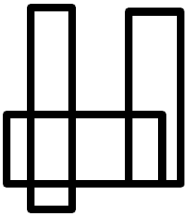
Q45. In a certain code language, 'CHECK' is written as '6165622' and 'SURGE' is written as '382136145'. How will 'PRIEST' be written in that language?

(a) 32369538
(b) 1618101920
(c) 161818101920
(d) 3236953840

Q46. Select the options figure which is embedded in the given figure as its part (rotations is NOT allowed).

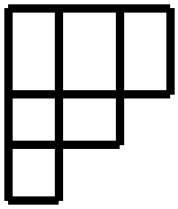


(a)

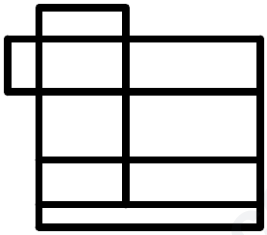


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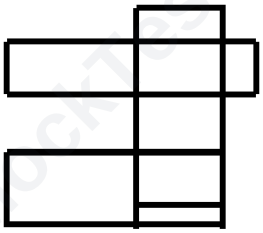
(b)



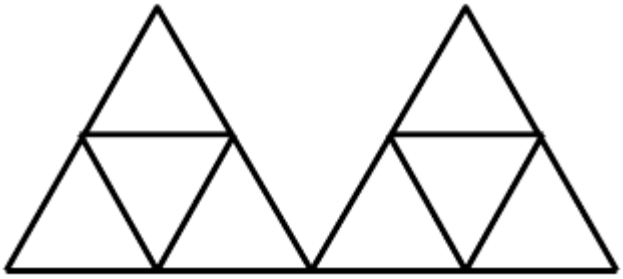
(c)



(d)



Q47. Find the number of triangles in the given figure.



(a) 8
(b) 10
(c) 13
(d) 15

Q48. The second number in the given number pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs except one. Find that odd number pair.

(a) 19 : 323
(b) 43 : 731
(c) 21 : 357
(d) 15 : 256

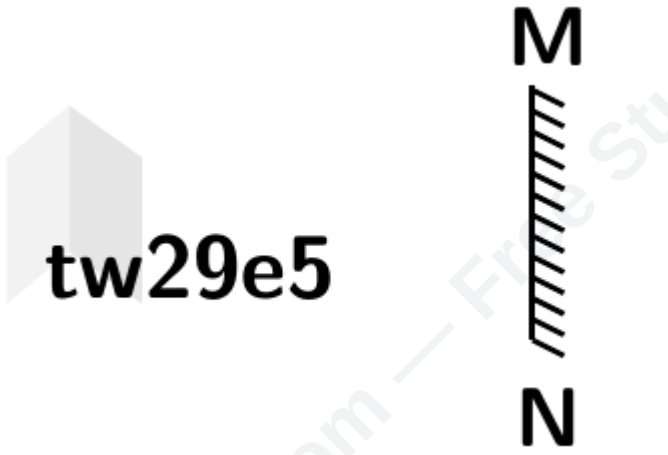
Q49. Which of the following numbers will replace the question mark (?) in the given series?

19, 37, 74, 147, 294, ?

(a) 578
(b) 587
(c) 577
(d) 588

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Q50. Select the correct mirror image of the given combination when the mirror is placed at MN as shown.



(a)



(b)



(c)



(d)



QUANTITATIVE APTITUDE

Q51. By selling a fridge for Rs. 18200, Anu loses 15%. Find the cost price of the fridge. (correct to nearest whole number.)

(a) Rs. 21,820
(b) Rs. 21,412
(c) Rs. 19,680
(d) Rs. 19,411

Q52. The marked price of a mobile phone is Rs. 18,000. It is sold with two successive discounts of 25% and 4%. An additional discount of 5% is offered for cash payment. The selling price of the mobile on cash payment is:

(a) Rs. 12,312
(b) Rs. 12,123
(c) Rs. 12,132

(d) Rs. 12,231

Q53. In still water, the speed of a motorboat is 15 km/h. The boat travels 30 km downstream and returns in 4 hours and 30 minutes. The stream's speed (in km/h) is:

(a) 4
(b) 7
(c) 5
(d) 3

Q54. The table below gives the numbers of students from five different colleges who participated in the Olympiads of five different subjects during a given year.

Subjects	College A	College B	College C	College D	College E
Hindi	110	100	125	103	112
English	98	120	80	122	105
Maths	130	110	250	160	180
Science	100	100	150	200	80
GK	182	200	120	130	183

Find the average number of students per college who participated in the English Olympiad

(a) 105
(b) 106
(c) 104
(d) 100

Q55. A cot was marked for Rs. 15,000 but sold for Rs. 13,500. What was the discount percentage offered on it?

(a) 20%
(b) 15%
(c) 10%
(d) 12%

Q56. Two years ago, the population of a village was 1,000. The population increased by 10% is the first year and decreased by 10% in the second year, Find the present population.

(a) 985
(b) 980
(c) 990
(d) 995

Q57. If x = 5t and y = 1over3 (t +1), then the value of t for which x = 3y is:

(a) 1over3
(b) 1over2
(c) 1over4
(d) 1over5

Q58. If the number 732XY is divisible by 70, then find the minimum value of X+Yover2.

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

Q59. If x > 0 and x^4+ 1overx^4 = 2207, what is the value of (x^5+1/(x^5))

(a) 15,127
(b) 15,134
(c) 15,141

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(d) 15,130

Q60. As part of Diwali offer, a jeweller allows a discount of 15%. Even after giving the discount, he makes a profit of 6.25%. Rani bought a gold chain which was marked at Rs. 5000 from this jeweller. Find the cost price of the chain for the jeweller.

(a) Rs. 5,000
(b) Rs. 4,400
(c) Rs. 3,400
(d) Rs. 4,000

Q61. The average weight of 18 boys in a class is 45 kg and that of the remaining 8 boys is 48.75 kg. Find the average weight (in kg) of all the boys in the class. (Correct to two decimal places)

(a) 47.5
(b) 44.98
(c) 46.15
(d) 42

Q62. If m is a natural number, then the average of five consecutive natural numbers, starting with m, is:

(a) 2m
(b) m + 2
(c) (4m+6)over 5
(d) 5m + 10

Q63. If 5 persons can prepare 5 tables in 5 days, then how long will it take 25 persons to prepare 25 tables?

(a) 25 days
(b) 15 days
(c) 20 days
(d) 5 days

Q64. What is the value of $(4 \sin^3 x - 3 \sin x + \sin 3x)$?

(a) 1
(b) 0
(c) 4
(d) 3

Q65. The average weight of a family of 4 members is 45 kg. The grandfather and the grandmother come to visit the family. Now the average weight of the 6 members of the family is 48 kg. Find the average weight of the grandparents (in kg).

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

Q66. A chord of 10 cm passes through the centre of a circle. What is the diameter of the circle?

(a) 5 cm
(b) 15 cm
(c) 20 cm
(d) 10 cm

Q67. $(2x + 3y + 4z)(4x^2 + 9y^2 + 16z^2 - 6xy - 12yz - 8xz) = ?$

(a) $8x^3 + 27y^3 + 64z^3 + 72xyz$
(b) $8x^3 + 27y^3 + 64z^3 - 72xyz$
(c) 8x3 + 27y3 - 64z^3 + 72xyz
(d) 8x3 - 27y3 - 64z^3 - 72xyz

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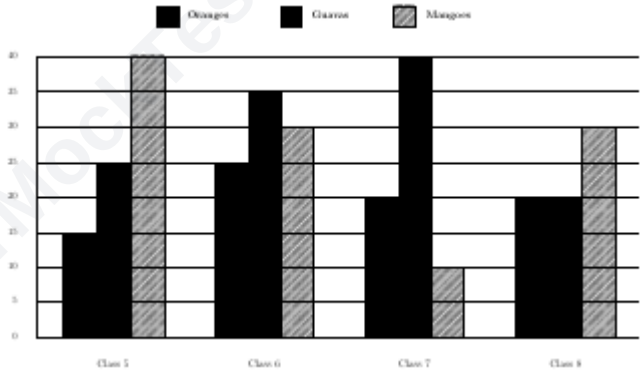
Q68. Study the given table and answer the question that follows.

Partners	Present share in percentage
Shourya	18%
Tanmay	22%
Bhanu	25%
Dhanya	35%

If the company had Initally issued 10000 share between its four partners, and if Tanmay then sold 1000 of his shares to Dhanya, then how many shares did Dhanya finally have?

(a) 3000
(b) 4000
(c) 3500
(d) 4500

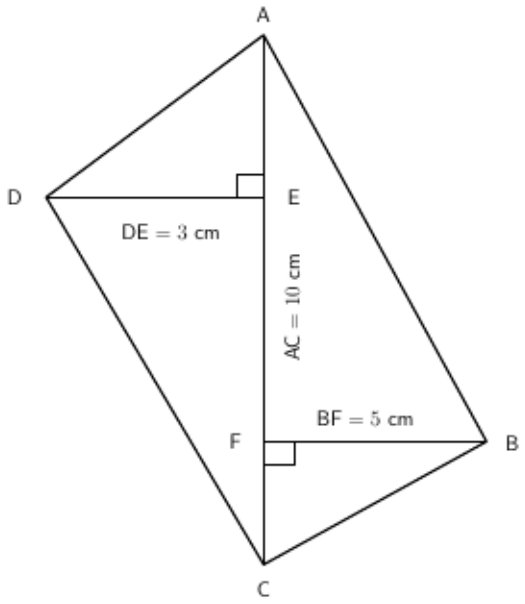
Q69. The following bar graph shows the data of the number of students of different classes who like to eat different types of fruits



What percentage of the students of class 8 mentioned here like guavas?

(a) 36%
(b) 50%
(c) 16 2over 3 %
(d) 60%

Q70. Find the area of the given quadrilateral ABCD



(a) 50 cm²

(b) 35 cm²
(c) 45 cm²
(d) 40 cm²

Q71. The diameter of a solid hemisphere is 10 cm. Find its total surface area (use π = 3.14).
(a) 288 cm²
(b) 265.8 cm²
(c) 235.5 cm²
(d) 245 cm²

Q72. A cone-shaped temple top has slant height of 11 m and radius of base is 10 m. Find the total cost for painting its curved surface area at the rate of Rs. 7/m². [Use π = 22/7]
(a) Rs. 2,440
(b) Rs. 2,040
(c) Rs. 2,420
(d) Rs. 2,240

Q73. Two numbers, A and B, are such that the sum of 10% of A and 8% of B is 3over5 th of the sum of 12% of A and 16% of B. The ratio A : B is:
(a) 2 : 3
(b) 4 : 7
(c) 2 : 7
(d) 4 : 3

Q74. Find the mean proportional between 144 and 225.
(a) 4over5
(b) 27over2
(c) 180
(d) 5over4

Q75. [21/4÷3/4]+[52/3÷17/13]-[31/3×6/5]+[17.98÷6.2]+[1.25÷0.5]=?
(a) 3.9
(b) 69.2
(c) 8.7
(d) 4.5

GENERAL AWARENESS

Q76. Surendranath Banerjee's autobiography is called _____
(a) Hind Swaraj
(b) A Nation in the Making
(c) Young India
(d) Hints for Self Culture

Q77. Who termed Article 32 as the 'heart and soul of the Constitution of India'?
(a) MV Pylee
(b) BR Ambedkar
(c) Jawaharlal Nehru
(d) Sachchidananda Sinha

Q78. Which phylum of the Kingdom Animalia includes animals such as Hydra, Adamsia, Physalia and Corals?
(a) Coelenterata
(b) Platyhelminthes
(c) Annelida
(d) Porifera

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Q79. Payment of loan by the government is an example of _____.

(a) revenue expenditure
(b) revenue receipts
(c) capital receipts
(d) capital expenditure

Q80. Which of the following pairs is NOT correctly matched?

(a) Pandit Hariprasad Chaurasia - Bamboo flute
(b) Miyan Tansen - One of the nine jewels
(c) Ali Akbar Khan - Sarod
(d) Ustad Bismillah Khan - Sitar

Q81. At the December 2021 BWF World Tour Finals in Bali, Indonesia, shuttler _____ clinched the silver medal.

(a) Aakarshi Kashyap
(b) Mugdha Agrey
(c) Saina Nehwal
(d) PV Sindhu

Q82. Pandit Sunder Prasad who was awarded with the Sangeet Natak Akademi Award in 1959 was a _____ dancer.

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

Q83. Which of the following states present Kalidas Samman annually?

(a) Chhattisgarh
(b) Madhya Pradesh
(c) Maharashtra
(d) Andhra Pradesh

Q84. Totaram Sharma is an exponent of _____.

(a) flute
(b) nadaswaran
(c) ghatam
(d) pakhawaj

Q85. The 10^(th)Women's Hockey Asia Cup was held at _____.

(a) India
(b) Bahrain
(c) Qatar
(d) Muscat

Q86. In April 2021, Nethra Kumanan became the first Indian woman ever to qualify for the Olympics in_____.

(a) modern pentathlon
(b) Alpine skiing
(c) sailing
(d) fencing

Q87. Who among the following won the first National Film Award for Best Choreography in 1992?

(a) Saroj Khan
(b) Laxmibai Kolhapurkar
(c) Vaibhavi Merchant
(d) Shiamak Davar

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Q88. BS Yediyurappa resigned as the Chief Minister of Karnataka for the _____ time in July 2021.

(a) second
(b) third
(c) fifth
(d) fourth

Q89. From which of the following years was the National Kalidas Samman started in India?

(a) 1989
(b) 1992
(c) 1984
(d) 1980

Q90. The famous novel 'Ananda Math' was originally written in _____ language.

(a) Bengali
(b) Hindi
(c) Sanskrit
(d) Odia

Q91. Who among the following was the first Indian musician conferred with the Ramon Magsaysay Award and also the first Indian to have performed in United Nations General Assembly in 1966?

(a) Gangubai Hangal
(b) Vansundhara Komkali
(c) Lata Mangeshkar
(d) M S Subbulakshmi

Q92. Which enzyme is responsible for the oxidation reaction that occurs in some foods, mostly fruits and vegetables, that turns the food brown?

(a) Polyphenol oxidase
(b) Bromelain
(c) Serrapeptase
(d) Papain

Q93. Which is the fourth largest water body in the world recognised by the US Board on Geographic Names as a body of water extending off the coast of Antarctica?

(a) Southern Ocean
(b) Indian Ocean
(c) Arctic Ocean
(d) Atlantic Ocean

Q94. Who among the following is the author of the book 'The Inheritance of Loss'?

(a) Arundhati Roy
(b) Sudha Murthy
(c) Kiran Desai
(d) Jhumpa Lahiri

Q95. Which water body is adjacent to the Atlantic Ocean, located in the southeast of the Gulf of Mexico?

(a) Arabian Sea
(b) Baltic Sea
(c) Caspian Sea
(d) Caribbean Sea

Q96. Who among the following was given the title of Mallika-e-Ghazal?

(a) Begum Akhtar
(b) Iqbal Bano
(c) Nayyara Noor

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(d) Farida Khanum

Q97. Which of the following minerals' primary constituent is iron oxide containing equal amounts of iron (II) and iron (III) that is mainly used for steel manufacturing?

(a) Magnetite
(b) Mica
(c) Limestone
(d) Bauxite

Q98. Identify the component found only in a eukaryotic cell.

(a) Ribosomes
(b) Plasma membrane
(c) Nuclear membrane
(d) Cytoplasm

Q99. Which of the following pairs are NOT correctly matched?

I. 13^(th) ICC One Day Cricket World Cup - India
II. 12^(th) ICC Women's one day Cricket World Cup - New Zealand
III. 8^(th) T20 Women's Cricket World Cup - South Africa
IV. 8^(th) T20 Men's Cricket World Cup - India

(a) IV
(b) I
(c) II
(d) III

Q100. When is the approximate arrival of the Arabian Sea branch of monsoon in Mumbai?

(a) March 10
(b) August 10
(c) June 10
(d) September 10

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (d) write her

The erroneous part is 'write her'.

Key Points

• The given sentence is grammatically incorrect.
• Here, 'writing her' should be used instead of 'write her'.

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• The future continuous tense, sometimes also referred to as the future progressive tense, is a verb tense that indicates that something will occur in the future and continue for an expected length of time.
• It is formed using the construction will + be + the present participle (the root verb + -ing).
• Example: Michael will be running a marathon this Saturday.
• Thus, the correct answer is Option 4.
Correct Sentence: She will be writing her examination by this time tomorrow.

Q2. Answer: (d) Polemical

The solution is in Hindi. Read it online.

Q3. Answer: (c) on

The solution is in Hindi. Read it online.

Q4. Answer: (b) Luminary

The solution is in Hindi. Read it online.

Q5. Answer: (d) Polite

The solution is in Hindi. Read it online.

Q6. Answer: (a) calm

The solution is in Hindi. Read it online.

Q7. Answer: (d) Whipe

The solution is in Hindi. Read it online.

Q8. Answer: (a) Wisedom

The solution is in Hindi. Read it online.

Q9. Answer: (a) sea

The solution is in Hindi. Read it online.

Q10. Answer: (a) To express loyalty, respect, or support for something insincerely

The solution is in Hindi. Read it online.

Q11. Answer: (b) but Rhea is better

The correct answer is 'but Rhea is better'.
Key Points
• The given sentence is grammatically incorrect.
• Here, 'but Rhea is better' should be used instead of 'but Rhea is the best'.
• In the given sentence two dancers are being compared. In these kinds of cases, we should use a comparative degree.
• So the use of superlative degree is incorrect.
• Thus, the correct answer is Option 2.
Correct Sentence: Rhea and Heena are both great dancers, but Rhea is better.

Q12. Answer: (a) In the theatre, flowers were thrown by the audience.

The correct answer is 'In the theatre, the audience threw flowers on the screen.'
Key Points
• The given sentence is in Active Voice. As per the given question, we have to change it into Passive Voice.
• The structure of the given sentence is as follows:
• Subject + V2 + Object. (Active Voice)
• Subject (objective case) + was/were + V3 + Object (subjective case). (Passive Voice)
• Example:
• Their cousin showed them some rare photographs. (Active Voice)
• They were shown some rare photographs by their cousin. (Passive Voice)
• The subject of the given sentence is 'the audience'.
• The object of the given sentence is 'Flowers.
• The subject will be put in place of the object and the object will be put in place of the subject.
• And 'threw' will be changed into 'were thrown'.

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• Lastly, the preposition 'by' will be added.

Correct Sentence: In the theatre, flowers were thrown by the audience.

Q13. Answer: (c) necessary

The solution is in Hindi. Read it online.

Q14. Answer: (c) Solusion

The solution is in Hindi. Read it online.

Q15. Answer: (c) Contemporaries

The solution is in Hindi. Read it online.

Q16. Answer: (c) Foolish

The solution is in Hindi. Read it online.

Q17. Answer: (c) Everyone has good luck or success at a point of time

The correct answer is 'Everyone has good luck or success at a point of time'.

Key Points

• The most appropriate meaning of the given idiom 'Every dog has his day' is 'Everyone has good luck or success at a point of time'.

• It is a saying which is said to emphasize that everyone is successful or happy at some time in their life.

• Example: I've been waiting a long time for success — four years — but every dog has its day.

Correct Answer: Everyone has good luck or success at a point of time.

Q18. Answer: (d) stalked, tendrils, concealment

The solution is in Hindi. Read it online.

Q19. Answer: (a) To happen

The solution is in Hindi. Read it online.

Q20. Answer: (a) ACBD

The correct answer is 'ACBD'.

Key Points

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

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

• Sentence A will be the first sentence because it is an introductory statement that tells us about the love story of the Taj Mahal.

• Sentence C will be used after it because it tells us how Prince Khurram fell in love with Arjumand Banu Begum in 1607.

• Banu Begum was the niece of Meherunissa (Nur Jahan). Meherunissa was the wife of Jahangir. Hence, Sentence B will be used next.

• Lastly, Sentence D will be used.

• Thus, the correct sequence:

• A: The Taj Mahal's history is also one of the world's greatest love stories known to everyone.

• C: It all started in 1607, when Mughal Prince Khurram, first laid eyes on the lovely Arjumand Banu Begum.

• B: She was the neice of Meherunissa who was married to Prince Salim (later the Empress Nur Jahan.)

• D: Khurram, the son of Emperor Jahangir, Voiced his wish to marry Arjumand, and their marriage was celebrated with great pomp.

Correct Sequence: The Taj Mahal's history is also one of the world's greatest love stories known to everyone. It all started in 1607, when Mughal Prince Khurram, first laid eyes on the lovely Arjumand Banu Begum. She was the neice of Meherunissa who was married to Prince Salim (later the Empress Nur Jahan.) Khurram, the son of Emperor Jahangir, Voiced his wish to marry Arjumand, and their marriage was celebrated with great pomp.

Q21. Answer: (a) value

The solution is in Hindi. Read it online.

Q22. Answer: (a) that

The solution is in Hindi. Read it online.

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Q23. Answer: (d) negative

The solution is in Hindi. Read it online.

Q24. Answer: (d) while

The solution is in Hindi. Read it online.

Q25. Answer: (a) positive

The solution is in Hindi. Read it online.

Q26. Answer: (d) ÷, -, +, ×, =

The logic followed here is:

By using BODMAS (Brackets of division, multiplication, addition and subtraction) and going by the options,

Option (1) -, +, ÷, ×, =

Given equation: 25 * 5 * 10 * 2 * 4 * 3

Putting the signs: 25 - 5 + 10 ÷ 2 × 4 = 3

25 - 5 + 5 × 4 = 3

25 - 5 + 20 = 3

45 - 5 = 3

40 = 3

LHS ≠ RHS

Option (2) ×, ÷, -, +, =

Given equation: 25 * 5 * 10 * 2 * 4 * 3

Putting the signs: 25 × 5 ÷ 10 - 2 + 4 = 3

25 × 0.5 - 2 + 4 = 3

12.5 + 2 = 3

14.5 = 3

LHS ≠ RHS

Option (3) ÷, ×, +, -, =

Given equation: 25 * 5 * 10 * 2 * 4 * 3

Putting the signs: 25 ÷ 5 × 10 + 2 - 4 = 3

5 × 10 + 2 - 4 = 3

52 - 4 = 3

48 = 3

LHS ≠ RHS

Option (4) ÷, -, +, ×, =

Given equation: 25 * 5 * 10 * 2 * 4 * 3

Putting the signs: 25 ÷ 5 - 10 + 2 × 4 = 3

5 - 10 + 2 × 4 = 3

5 - 10 + 8 = 3

13 - 10 = 3

3 = 3

LHS = RHS

Hence, the correct answer is option (4).

Q27. Answer: (c) 15 : 3150

In the above question, following pattern in followed.

n : $n^2 \times (n+1)$

$(7)^2 \times 8 = 49 \times 8 = 392$

$(9)^2 \times 10 = 81 \times 10 = 810$

$(15)^2 \times 16 = 225 \times 16 = 3600$ (not 3150)

$(12)^2 \times 13 = 144 \times 13 = 1872$

All the options, except option (3) follow this pattern

Hence, the correct answer is option (3)

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Q28. Answer: (c) Only conclusions I and II follow

The least possible Venn diagram for the given statements is as follows-

Conclusion:

I. All apples are nuts. → True (as all apples are bananas and all bananas are nuts)

II. All grapes are nuts. → True (as all grapes are bananas and all bananas are nuts)

III. No nuts are bananas. → False (as all bananas are nuts; some nuts will definitely be bananas)

Hence, only conclusions (I) and (II) follow.

Q29. Answer: (b) [figure]

The logic followed here is:

When the mirror is placed vertically to the object, the mirror image will be laterally inverted. In other words, the Left Hand Side and Right Hand Side will interchange their positions while the top and bottom will be same.

Hence, the correct answer is option (2).

Q30. Answer: (a) ZCFI

In the above series, following pattern is followed.

Hence, the correct answer is ZCFI.

Q31. Answer: (d) [figure]

The logic followed here is :

Just unfold the paper as it was folded. The diagonal lines are just the folding of the paper.

Only option (4) is showing the correct cut on the pa

per after unfolding.

Hence, the correct answer is option (4)

Mistake Points

Option2:

Option 4:

Both the option appear to be same but are not same. Direction of the part indicated with in box is different in both the options.

Q32. Answer: (d) VOJWFSTJUZ

The logic followed here is:

In the above code, every letter is replaced by +1 letter of them in the English alphabet series.

S (19) +1 = T (20)

C (3) + 1 = D (4)

H (8) +1 = I (9)

0 (15) +1 = P (16)

0 (15) +1 = P (16)

L (12) +1 = M (13)

'SCHOOL' is written as 'TDIPPM'

C (3) + 1 = D (4)

0 (15) +1 = P (16)

L (12) +1 = M (13)

L (12) +1 = M (13)

E (5) + 1 = F (6)

G (7) + 1 = H (8)

E (5) + 1 = F (6)

'COLLEGE' is written as 'DPMMFHF'

U (21) + 1 = V(22)

N (14) + 1 = O (15)

I (9) + 1 = J(10)

V (22) + 1 = W(23)

E (5) + 1 = F(6)

R (19) + 1 = S(20)

S (19) +1 = T (20)
I (9) + 1 = J(10)
T(20) +1 = U(21)
Y(25) + 1 = Z(26)
'UNIVERSITY' is written as 'VOJWFSTJUZ'
Hence, the correct answer is VOJWFSTJUZ.

Q33. Answer: (a) Father

Family chart:
According to the statement:
Nilesh is Kapil's father.
Hence, Nilesh is father of Kapil.

Q34. Answer: (b) Sunday

The logic followed here is:
i) In any two consecutive ordinary years, date of the next year will be one day ahead of the same day in the previous year.
ii) And if a leap year comes immediately after an ordinary year, then the day on a certain date of leap year will
(1) 1 day ahead of the same day of the ordinary year upto February,
(2) 2 days ahead of the same day of the ordinary year from March to December.
Therefore,
26 January 2019 = Saturday
26 January 2020 = Sunday
26 January 2021 = Tuesday
26 January 2022 = Wednesday
From 26 January to 30 January 2022
30 - 26 = 4 days
4 days after Wednesday is Sunday
Hence, the correct answer is Sunday.

Q35. Answer: (c) CITYCAPA

The correct answer is option(3).
The coding is as follows
Ist letter is interchanged with 5th letter.
2nd, 3rd,and 4th letters are interchanged with 6th, 7th, and 8th letter.
ACCURATE : RATEACCU
A is interchange with R
CCU is interchange with ATE
ANALYSIS : YSISANAL
A is interchange with Y
NAL is interchange with SIS.
CAPACITY : ?
C will be interchange with C
APA will be interchange with ITY
Therefore,
CAPACITY : CITYCAPA
Hence, the correct answer is CITYCAPA.

Q36. Answer: (d) DCQBCO

The logic followed here is:
The code follows like this
A(1) + 1 = B(2)
B(2) + 2 = D(4)
R(18) + 3 = U(21)

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O(15) - 1 = N(14)
A(1) - 2 = Y(25)
D(4) - 3 = A(1)
"ABROAD" is written as "BDUNYA"
B(2) + 1 = C(3)
E(5) + 2 = G(7)
C(3) + 3 = F(6)
A(1) - 1 = Z(26)
M(13) - 2 = K(11)
E(5) - 3 = B(2)
"BECAME" is written as "CGFZKB"
Therefore,
C(3) + 1 = D(1)
A(1) + 2 = C(3)
N(14) + 3 = Q(17)
C(3) - 1 = B(2)
E(5) - 2 = C(3)
R(18) - 3 = O(15)
"CANCER" is written as "DCQBCO"
Hence, the correct answer is DCQBCO.

Q37. Answer: (d) 92

The logic followed here is:
There are 2 operations going on, first multiplying by even number and subtraction of prime number. And the series goes like this
13 × 2 = 26
26 - 3 = 23
23 × 4 = 92
92 - 5 = 87
87 × 6 = 522
So, the series is 13, 26, 23, 92, 87, 522
Hence, the correct answer is 92.

Q38. Answer: (d) s r t r s r t s a

The correct answer is option (4)
Given Series: t _ r a s _ t _ s _ a _ _ _ t _ r _ s r t
Option 1: t s r a s r t /t s r a a r t/ t s r a s r t
Option 2: t s r a s r t /a s r a s r t/ t s r a s r t
Option 3: t s r a s r t /t s r a s r t/ t s r t s r t
Option4: t s r a s r t /t s r a s r t/ t s r a s r t
Series pattern: t s r a s r t /t s r a s r t/ t s r a s r t.
Therefore, only s r t r s r t s a follows the pattern.
Hence, the correct answer is s r t r s r t s a.

Q39. Answer: (b) 109

The logic followed here is
By using BODMAS (brackets, of, division, multiplication, addition and subtraction). And

Code	P	Q	R	S
Meaning	×	÷	•	•

Given equation: 130 S 61 R (23 P 4) S 83 R (62 Q 2) = ?
Putting × in place of P, ÷ in place of Q, + in place of R, - in place of S
130 - 61 + (23 × 4) - 83 + (62 ÷ 2) = ?
130 - 61 + 92 - 83 + 31 = ?

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253 - 61 - 83 = ?

253 - 144 = ?

109 = ?

Hence, the 109 will come in place of '?'

Q40. Answer: (d) 132

The logic followed here is:

In the above question, 23 is subtracted from the number to get the next number.

First row: 187- 23 =164

164 - 23 = 141

Therefore, the series is 187, 164, 141

Second row 215 - 23 = 192

192 - 23 = 169

Therefore, the series is 215, 192, 169

Third row 178 - 23 = 155

155 - 23 = 132

Therefore, the series is,178, 155,132

Hence, the correct answer is 132.

Q41. Answer: (a) [figure]

The logic followed here is

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

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

The letter adjacent to the mirror, will appear adjacent to it after the mirror just with the left changed to right and right changed to left.

Also, the starting letter of the word will be at last after the mirror.

Hence, the correct answer is option 1)

Q42. Answer: (a) 100 : 81

The pattern used in the given optionsis:

$(\sqrt{\text{First term}} - 2)^2 = \text{Second term}$

Let's consider the option by applying the following logic:

Option 1) 100:81

$(\sqrt{100} - 2)^2 = 81$

(10 - 2)2 = 81

(8)2 = 81

64 ≠ 81

thus this logic doesn't get applied over here, thus is this is the odd pair.

Option 2) 36:16

(√36 - 2)2 = 16

(6 - 2)2 = 16

(4)2 = 16

16 = 16

Option 3) 49:25

(√49 - 2)2 = 25

(7 - 2)2 = 25

(5)2 = 25

25 = 25

Option 4) 81:49

(√81 - 2)2 = 49

(9 - 2)2 = 49

(7)2 = 49

49 = 49

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Hence the correct answer is option 1)

Q43. Answer: (b) 8 and 12

The logic followed here is:
lets interchange the numbers given in the option and solve this question by BODMAS RULE.
Option 1) 40 and 16
equation: (40 × 6) ÷ 8 + 14 - (7 × 16) + (13 × 12) = 26
(16 × 6) ÷ 8 + 14 - (7 × 40) + (13 × 12) = 26
LHS:
96 ÷ 8 + 14 - 280 + 156
12 + 14 - 280 + 56
182 - 280
-98
Thus, LHS is not equal to RHS.
Option 2) 8 and 12
equation: (40 × 6) ÷ 8 + 14 - (7 × 16) + (13 × 12) = 26
(40 × 6) ÷ 12 + 14 - (7 × 16) + (13 × 8) = 26
LHS:
240 ÷ 12 + 14 - 112 + 104
20 + 14 - 112 + 104
138 - 112
26
Thus LHS is equal to RHS.
Option 3) 6 and 12
equation: (40 × 6) ÷ 8 + 14 - (7 × 16) + (13 × 12) = 26
(40 × 12) ÷ 8 + 14 - (7 × 16) + (13 × 6) = 26
LHS:
480 ÷ 8 + 14 - 112 + 78
60 + 14 - 112 + 78
152 - 112
40
Thus LHS is not equal to RHS.
Option 4)14 and 16
equation: (40 × 6) ÷ 8 + 14 - (7 × 16) + (13 × 12) = 26
(40 × 6) ÷ 8 + 16 - (7 × 14) + (13 × 12) = 26
LHS:
240 ÷ 8 + 16 - 98 + 156
30 + 16 - 98 + 156
202 - 98
104
Thus LHS is not equal to RHS.
Hence, 8 and 12 is the correct answer.

Q44. Answer: (a) 42

The logic followed here is:
The series is as follows:,
6, 12, 20, 30, ?, 56
lets see the applied logic:
12 - 6 = 6
20 - 12 = 8
30 - 20 =10
if u see clearly the difference between two numbers increases by two in the next term.

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Thus,
? - 30 = 12 (? = 42)
56 - 42 = 14
Hence, 42 is the correct answer.

Q45. Answer: (d) 3236953840

The table in alphabets place value:
the pattern followed here is:
STEP 1: Consonants are coded as place value × 2
STEP2: Vowels are coded as place value.
'CHECK is written as 6165622
And, SURGE is written as 382136145
Similarly,
PRIEST =?
HENCE, PRIEST is coded as,3236953840

Q46. Answer: (b) [figure]

The figure is given below:
The shaded portion is the embedded figure.
Hence, 'option 2' is the correct answer.

Q47. Answer: (b) 10

The logic followed here is:
Lets count the total number of triangles:
total number of small triangles enclosed in big triangles:8
total no of big triangles enclosing small triangles:2
Thus the total number of triangles = 8 + 2 = 10
Hence, the correct answer is 10.

Q48. Answer: (d) 15 : 256

The logic followed here is:
The applied logic in all pairs: first number × 17 = second number
option 1) 19 : 323
19 × 17= 323
option 2) 43 : 731
43 × 17 = 731
option 3) 21 : 357
21 × 17 = 357
option 4) 15 : 356
15 × 17 = 255
Thus this is the odd pair which doesn't follow the logic as followed by other pairs.
Hence, the correct answer is 15 : 356.

Q49. Answer: (b) 587

The logic followed here is:
Given : 19, 37, 74, 147, 294, ?
now lets find out the logic in the given series
19 × 2 - 1 = 37
37 × 2 = 74
74 × 2 - 1=147
147 × 2 = 294
Here, first the number is multiplied by two and then subtracted by 1 and in the next one it is only multiplied by 2.
thus continuing the series,
294 × 2 - 1 = 587

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Hence, 587 will be the answer.

Q50. Answer: (a) [figure]

The logic followed here is

i) In a mirror image left changes to right and the right changes to left.

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

iii) The letter adjacent to the mirror will be adjacent to it after the mirror image just with the left change to right and right changes to left vice-versa.

iv)The starting letter of the word will be at last after the mirror.

Hence,

is the correct answer.

Q51. Answer: (b) Rs. 21,412

GIVEN:

Selling price = Rs18200

loss% = 15

FORMULA USED:

loss % = Lossover C.P. × 100 where, C.P. is Cost Price

Loss = C.P. - S.P. where C.P. is Cost Price and S.P. is Selling Price

CALCULATION:

Loss = C.P. - 18200

Loss % = (C.P. - 18200)over C.P. × 100

=> 15 = (C.P.. -18200)over C.P. × 100

=> 15 C.P. = 100 C.P. - 1820000

=> 85C.P. = 1820000 <=> C.P. = Rs. 21,411.76 ≈ Rs. 21,412

Hence, Cost price of the fridge is Rs. 21,412.

Shortcut Trick Loss% = 15% = 3/20

Ratio of C.P to S.P. = 20 : 17

=> 17 units = 18200

=> 20 units = (18200/17) × 20

=> Rs. 21411.76 = Rs. 21412 (approx)

Q52. Answer: (a) Rs. 12,312

GIVEN:

Marked price is Rs. 18000

successive discounts is 25% and 4%

additional discount is 5%

FORMULA USED:

S.P. = (1 – d1/100) × (1 – d2/100) × M.P. where,

d1 and d2 are successive discount percentages respectively.

S.P. = Selling Price. and M.P. = marked price

CALCULATION:

Here, d1 = 25% and d2 = 4% and M.P. = 18,000

S.P. = (1-25/100) × (1-4/100) × 18000 = (1 -1/4) × (1 -1/25) × 18,000

=> S.P. = 3/4 × 24/25 × 18,000

=> S.P. = Rs. 12,960

Now,

There is an additional discount of 5% on cash payment,

Hence, additional discount of 5% in amount = 12960 × 5/100 = Rs. 648

S.P. after additional discount = (12,960 – 648) = Rs. 12,312.

Hence, Selling price of the mobile on cash payment is Rs. 12,312.

Shortcut TrickNet effective discount = x + y - xy/100

So, 25% + 4% - (25 × 4)/100 = 29 - 1 = 28%

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So, the cost after 2 successive discount given
=> 18,000 × 72% = Rs. 12,960
S.P. after an additional discount of 5%
=> Rs. 12,960 ×(100 - 5)%
=> Rs. 12,960 × (95/100)
=> Rs. 12,312

Q53. Answer: (c) 5

GIVEN:
Speed of a motorboat is 15 km/h
distance of boat in downstream is 30 km
distance of boat in upstream is 30 km
Total time is 4hrs 30 minutes
FORMULA USED:
Distance = Speed × Time
Relative speed in downstream = (speed of motorboat + speed of stream)
Relative speed in upstream = (speed of motorboat – speed of stream)
CALCULATION :
As 1hour = 60 minutes
To convert minutes into hours divide it by 60,
=> Time = (4 + 30/60) hours = 9/2 hours
Now, let the stream's speed be x
=> Downstream speed = (15 + x) km/h
=> Upstream speed = (15 -x) km/h
Now, Distance = speed × time
=> Hence, Distance over Speed = Time
=> 30over(15 + x) + 30over (15 -x) = 9/2
=> (15 +x +15 - x)over225- x^2 = 9/60 = 30 over(225 - x^2) = 9 over 60
=> (200 = 225 - x^2) = x^2 = 25
=> x = 5.
Hence, the speed of the stream is 5 km/h.
Shortcut TrickBy hit and trial method
Let the speed of boat = u = 15km/h (given)
Let speed of the stream = v
Considering option(3), let v = 5km/h
So, Downstream speed (D) = 15 + 5 = 20km/h
Upstream speed (U) = 15 - 5 = 10km/h
Now, Total time taken = Distance/D + Distance/U
=> 30/20 + 30/10 = 3/2 + 3
=> 9/2 h = 4 h 30 mins
It satisfies the given condition.
Hence, the speed of the stream is 5 km/h.

Q54. Answer: (a) 105

GIVEN:
Five colleges A, B, C, D, and E
Five different subjects i.e. Hindi, English, Maths, Science, and G.K.
number of students participated in olympiad from 5 different colleges in 5 different subjects
FORMULA USED:
Average = sum of valuesover number of values × 100
CALCULATION:
Number of students participated in English

=> From college A = 98
=> From college B = 120
=> From college C = 80
=> From college D = 122
=> From college E = 105
Hence, sum of all the students in English olympiad from 5 colleges,
=> 98 + 120 + 80 + 122 + 105 = 525
Number of colleges = 5
=> Average = 525/5 = 105.
Hence, the average no. of students per college participated is 105.

Q55. Answer: (c) 10%

Given:
Marked Price (M.P.) is Rs. 15,000
Selling Price (S.P.) is Rs. 13,500
Formula Used:
Discount % = discountover M.P. × 100
Discount = M.P. - S.P.
Calculation:
Discount = (M.P. – S.P.)
=> Discount = (15,000 – 13,500)
=> Discount = Rs 1,500
Now, Discount% = 1,500over 15,000 × 100 = 10%.
Hence, Discount percentage is 10%.

Q56. Answer: (c) 990

GIVEN :
2 years ago,
The population of a village was 1,000.
1^(st)year population increased by 10%
2^(nd)year population decreased by 10%
FORMULA USED:
Present population = Actual population × (1± R over 100), where
R is rate of increase and decrease and n is time.
CALCULATION:
Population after 1^(st) year increase,
=> 1,000 × (1+10/100) = 1,000 × 11/10 = 1,100
Population after 2^(nd) year decrease
=> 1,000 × 11/10 × (1-1/10) = 1,000 × 11/10 × 9/10 = 990.
Hence, Present population is 990.

Q57. Answer: (c) 1over4

GIVEN :
X = 5t
Y = 1/3 (t +1)
X = 3Y
CALCULATION :
We have, X = 3Y ... (1)
So, put the value of X from equation (1) in X = 5t
=> 3Y = 5t ... (2)
Now, put the value of Y i.e. Y = 1/3(t +1) in equation (2) we have,
=> 3 × 1/3 × (t+1) = 5t
=> t +1 = 5t

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=> 4t = 1

=> t = 1/4.

Hence, the value of t is 1/4.

Q58. Answer: (b) 1

CONCEPT USED:

Divisibility rule :

10 = last digit should be zero.

7 =[Last 3 digit – remaining digits] should be multiple of 7.

CALCULATION:

Number = 732XY

Divisor = 10 × 7

According to the divisibility rule of 10,

Y should be zero.

=> Then the value of Y = 0.

And number = 732X0

Now, check the divisibility of 7,

=> 32X - 7

=> Here, possible values of X are = 1,2,3,4,5,6,7,8,9,0.

Now, put X =1,

321- 7 = 314.

=> 314/7 not divisible by 7.

Put X = 2,

322-7 = 315

=> 315/7 =45, which is divisible by 7.

Our required value of X = 2. Y = 0.

Now, the value of (X +Y) /2 = (2+0)/2 = 1.

Hence, the required value is 1.

Q59. Answer: (a) 15,127

GIVEN:

x^4 + 1/(x^4) =2207

FORMULA USED:

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

where a and b = 1st and 2nd term respectively.

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

CALCULATION:

Now, x^4 + 1/(x^4) can be written as,

$(x^2 + 1/(x^2))^2 = x^4 + 1/(x^4) + 2.x^2.1/(x^2)$

Here, a = x and b = 1/x respectively.

=> $x^4 + 1/(x^4) = (x^2 + 1/(x^2))^2 - 2 \times x^2.1/x^2$

=> $2207 = (x^2 + 1/(x^2))^2 - 2$

=> $(x^2 + 1/(x^2))^2 = 2209$.

=> $(x^2 + 1/(x^2)) = 47$ ... (1)

Now, again $(x^2 + 1/(x^2))$ can be written as,

=> $(x+ 1/x)^2= x^2 + 1/(x^2) + 2.x .1/x$

=> $(x^2+ 1/(x^2))= (x+1/x)^2 - 2$

=> $47 = (x+ 1/x)^2 -2$

=> $(x+ 1/x)^2 = 49$

=> $(x +1/x) = 7$ ... (2)

Now, take the cube of equation (2) on both sides, we get

$(x + 1/x)^3 = x^3 +1/(x^3) +3.x.1/x(x+1/x)$

Here a = x and b = 1/x.
=> 343 = (x^3 + 1/(x^3)) + 3(7)
=> (x^3 + 1/(x^3)) = 322.
Now. (x^5 + 1/(x^5)) can be written as,
=> (x^5 + 1/(x^5)) = (x^2 + 1/(x^2))(x^3 + 1/(x^3)) -(x+ 1/x)
=> (47 × 322 - 7) = 15127.
Hence, the value is 15,127.

Q60. Answer: (d) Rs. 4,000

GIVEN:
Discount is 15%
Profit is 6.25%
Marked Price is Rs. 5,000.
FORMULA USED:
Discount% = (Discount /M.P.)× 100
Discount = M.P. – S.P. where,
M.P. is Marked Price and S.P. is Selling Price.
Profit% = (Profit/C.P.) × 100
Profit = S.P. – C.P.
C.P. = Cost Price.
CALCULATION:
Discount = 5000 – S.P.
=> Discount% = (Discount /M.P.) × 100
=> 15 = (5000 - S.P.)over5000 × 100
=> 750 = 5000 – S.P.
=> S.P. = Rs. 4,250
Profit = (4,250 – C.P.)
=> Profit% = (Profit/C.P.) × 100
=> 6.25 = (4250 -C.P.) over C.P. × 100
=> 6.25 C.P. = 4,25,000 - 100C.P.
=> 106.25 C.P. = 4,25,000
=> C.P. = Rs 4,000.
Hence, Cost Price of the chain is Rs 4,000.
Shortcut TrickHere, Discount = 15% = 3/20
Then, the Ratio of M.P. to S.P. = 20 : 17
Also, Profit% = 6.25% = 1/16
Then the Ratio of C.P. to S.P. = 16 : 17
Combining both the ratio, we get
C.P : S.P : M.P = 16 : 17 : 20
Now, 20 units = Rs. 5,000
=> 1 unit = 5000/20 Rs. 250
=> 16 units = 250 × 16 = Rs. 4000

Q61. Answer: (c) 46.15

GIVEN:
Average weight of 18 boys is 45 kg.
Average weight of 8 boys is 48.75 kg.
FORMULA USED:
Average = (Sum of Values)/(Number of Values)
CALCULATION:
Average of 18 boys = sum of 18 Boys/Number
=> 45 = sum of 18 boys/18

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=> Sum of 18 boys = (45 × 18) = 810
Average of remaining 8 Boys = Sum of 8 Boys/Number of boys.
=> 48.75 = Sum/8
=> Sum of the remaining 8 boys = 390.
Sum of all the boys = (sum of 18 boys + Sum of remaining 8 boys)
=> Sum of all the boys = (810 + 390) = 1,200.
=> Number of all the boys = (18 + 8) = 26.
Average = Sum of all the Boys/Number of Boys.
=> Average = 1200/26 = 46.15 kg.
Hence, Average Weight of all the boys is 46.15 kg.

Q62. Answer: (b) m + 2

FORMULA USED:
Average = sum of observation/ no. of observation.
CALCULATION:
Let the consecutive natural numbers starting with 'm' as,
=> m, (m+1), (m+2), (m+3), (m+4)
Sum of numbers,
=> m + (m+1) + (m+2) + (m+3) + (m+4) = (5m + 10)
=> Total numbers = 5.
=> Average = Sum/Total Numbers
=> Average = 5 (m+2)over 5 = (m+2).
Hence, The average is (m+2).
Shortcut TrickIf the numbers are written in consecutive form,
i.e. m, (m+1), (m+2), (m+3), (m+4)
Then the middle no. will be the average of the given numbers i.e. (m+2)

Q63. Answer: (d) 5 days

GIVEN:
5 Persons prepare 5 Tables in 5 days.
FORMULA USED:
M1 × D1 × W2 = M2 × D2 × W1 Where,
M is no. of persons,
D is no. of days,
W is total work.
CALCULATION:
Here, M1 = 5, D1 = 5, W1= 5
And, M2 = 25, W2 = 25. D2 = ?
Now, using formula, we get,
=> M1 × D1 × W2 = M2 × D2 × W1
=> 5 × 5 × 25 = 25 × D2 × 5
=> D2 = 5.
Hence, It will take 5 days to complete 25 tables.

Q64. Answer: (b) 0

FORMULA USED :
($4 \sin^3 x = 3 \sin x - \sin 3x$)
CALCULATION:
($4 \sin^3 x - 3 \sin x + \sin 3x$) ... (1)
Now,
We know that, $4 \sin^3 x = 3 \sin x - \sin 3x$
=> 3 sinx - sin3x -3 sinx + sin3x = 0.
Hence, the value of the equation is 0.

Q65. Answer: (d) 54

Given:

The average weight of Family of 4 members is 45 kg.

After grandmother and grandfather's visit the average becomes 48 kg with total 6 members.

Concept Used:

Average = Sum of all numbers/Total number

Calculation:

There are four members in the family.

Total weight is

=> Average weight × total number of members

=> 45 × 4

=> 180 kg

Total weight after 6 members in the family

=> Average weight × total members

=> 48 × 6

=> 288 kg

Grandmother and Grandfather's age together is

=> 288 - 180

=> 108

Now, average age of grandmother and Grandfather

=> Sum of their ages / 2

=> 108/2 = 54 kg

Therefore The Required average weight is 54 kg.

Q66. Answer: (d) 10 cm

Given:

A chord of 10 cm passes through the centre of a circle.

Concept used:

The chord passing through the centre of the circle is its Diameter.

Calculations:

The chord which passes through the centre of circle is it's diameter,

hence, The chord of length 10 cm is also it's diameter.

Therefore The Diameter of the circle is 10 cm.

Q67. Answer: (b) $8x^3 + 27y^3 + 64z^3 - 72xyz$

Formula used:

a3 + b3 + c3 – 3abc = (a + b + c) (a2 + b2 + c2 – ab – bc – ca)

Calculation:

a3 + b3 + c3 – 3abc = (a + b + c) (a2 + b2 + c2 – ab – bc – ca)

(2x)3 + (3y)3 + (4z)3 – 3 × 2x × 3y × 4z = (2x + 3y + 4z) (2x2 + 3y2 + 4z2 – 2x × 3y – 3y × 4z – 2x × 4z)

=> 8x3 + 27y3 + 64z3 – 72xyz = (2x + 3y + 4z) (4x2 + 9y2 + 16z2 – 6xy – 12yz – 8xz)

Therefore The required value is 8x3 + 27y3 + 64z3 – 72xyz.

Q68. Answer: (d) 4500

Given:

Shares among four members of a company is 18%, 22%, 25% and 35% to Shourya, tanmay, bhanu and dhanya respectively according to the table given.

The total shares initially is 10,000 and then tanmay sold 1000 shares to dhanya.

Calculations:

Dhanya share initially

=> 35% of 10,000

=> 35/100 × 10,000

=> 3,500.

Now, total shares of dhanya after tanmay sold 1000 to her
=> 3,500 + 1,000
=> 4,500
Therefore Total shares of Dhanya is 4500.

Q69. Answer: (c) 16 2over 3 %

Calculations:
According to question,In class 8 we have,
No. of students who likes guava = 10
No. of students who likes Orange = 20
No. of students who likes Mangoes = 30
Total students in class 8 = 10 + 20 + 30 = 60
Now, percentage of no. of students who likes guava is = 10/60 × 100 = 50/3 = 162/3 %
Therefore Percentage of students who likes guavas is class 8 is 162/3 %.

Q70. Answer: (d) 40 cm²

Formula used:
Area of Triangle = 1/2 × Base × Height
Calculations:
According to the Question,
Area of quadrilateral ABCD,
=> Area of ΔABC + Area of Δ ADC
=> 1/2 × AC × BF + 1/2 × AC × DE
=> 1/2 × AC (BF + DE)
=> 1/2 × 10 (5 + 3)
=> 40 cm²
Therefore The area of quadrilateral ABCD is 40 cm².

Q71. Answer: (c) 235.5 cm²

Given:
Diameter of solid hemisphere is 10 cm.
Formula used:
Total surface area of hemisphere = 3πr²
Calculations:
Total surface area of hemisphere = 3πr2
Total surface area of hemisphere,
=> 3 × (3.14) × (10/2) ²
=> 3 × (3.14) × 25
=> 235.5 cm2
Therefore Total surface area of hemisphere is 235.5 cm².

Q72. Answer: (c) Rs. 2,420

Given:
Slant height is 11 m,
Radius of base is 10 m,
Rate of painting is Rs. 7 per m².
Formula used:
Total curved surface area = πrL
Calculations:
Total curved surface of Temple,
=> π.r.L
=> 22/7 × 11 × 10
=> 110π m²

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Cost of painting,

=> 110π × 7 = 770 × 22/7

=> Rs. 2420

Therefore Cost of painting the curved surface area of Temple is Rs. 2,420.

Q73. Answer: (b) 4 : 7

Concept used:

a% of b = a over 100 × b

Calculation:

10% of A + 8% of B = (3/5) (12% of A + 16% of B)

=> [(10A/100) + (8B/100)] = (3/5) [(12A/100) + (16B/100)]

=> (10A + 8B) = (3/5) (12A + 16B)

=> (10A + 8B) × 5 = 3 × (12A +16B)

=> 50A + 40B = 36A + 48B

=> 50A – 36A = 48B – 40B

=> 14A = 8B

=> A/B = 8/14

=> A : B = 8 : 14 = 4 : 7

Therefore The ration of A : B is 4 : 7.

Additional Information10% = 10/100

8% = 8/100

12% = 12/100

16% = 16/100

Q74. Answer: (c) 180

Formula used:

Mean proportion = √ab

Calculations:

= √ab

Mean proportion of 144 and 225

=> √(144 × 225)

=> √(32400)

=> 180

Therefore Mean proportion of 144 and 225 is 180.

Q75. Answer: (c) 8.7

Concept used:

Calculations:

[21/4÷3/4]+[52/3÷17/13]-[31/3×6/5]+[17.98÷6.2]+[1.25÷0.5]

=> [9/4×4/3] + [17/3×13/17]-[10/3×6/5]+2.9 +2.5

=> 3 + 13/3 - 4 + 5.4

=> 8.4 + 4.3 - 4

=> 8.7

Therefore The Required simplified value is 8.7.

Q76. Answer: (b) A Nation in the Making

The correct answer is A Nation in the Making.

Key Points

• Sir Surendranath Banerjee often known as Rashtraguru was an Indian nationalist leader during British Rule.

• He founded a nationalist organization called the Indian National Association and was one of the founding members of the Indian National Congress.

• Surendranath supported Montagu–Chelmsford Reforms, unlike Congress, and with many liberal leaders he left Congress and founded a new organization named Indian National Liberation Federation in 1919.

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• Surendranath Banerjee was born in Calcutta, in the province of Bengal to a Rarhi Kulin Brahmin family, suggesting that the ancestral seat of the family was in the Rarh region of present-day West Bengal.

• In 1879, he bought the newspaper, The Bengalee(founded in 1862 by Girish Chandra Ghosh) and edited it for 40 years in b, when Banerjee was arrested for publishing remarks in his paper.

Additional Information

• A Nation in the Making written in the last years of Sir Surendranath Banerjea's life, is not only the autobiography of a pioneering leader in Indian politics but also a commentary on public life.

• This book is originally published in 1925.

Q77. Answer: (b) BR Ambedkar

The correct answer is BR Ambedkar.

Key Points

• Remedies for enforcement of rights are conferred by this Part. The right to move the Supreme Court by appropriate proceedings for the enforcement of the rights conferred by this Part is guaranteed.

• Article 32 of the Indian Constitution is known as 'the heart and soul of the Constitution which provides the Fundamental Rights of an Indian citizen while Article 226 of the Indian Constitution gives discretionary power to the High Courts and provides the Constitutional Rights of an Indian citizen.

• The Supreme Court shall have the power to issue directions or orders or writs, including writs in the nature of habeas corpus, mandamus, prohibition, quo warranto, and certiorari, whichever may be appropriate, for the enforcement of any of the rights conferred by this Part.

• The right guaranteed by this Article shall not be suspended except as otherwise provided for by this Constitution.

Additional Information

• The Constitution of India is the supreme law of India. The document lays down the framework that demarcates the fundamental political code, structure, procedures, powers, and duties of government institutions and sets out fundamental rights, directive principles, and the duties of citizens.

• It had written in 2 years 11 months and 18 days by BR Ambedkar and the team.

Q78. Answer: (a) Coelenterata

The correct answer is Coelenterata.

Key Points

• Coelenterata is a term encompassing the animal phyla Cnidaria (coral animals, true jellies, sea anemones, sea pens, and their relatives) and Ctenophora (comb jellies).

• They have very simple tissue organization, with only two layers of cells, and radial symmetry.

• These are mostly aquatic or marine habitat animals.

• The mouth is enclosed by thin and short tentacles.

• They have cavities in their body.

Additional Information

• Platyhelminthes or platyhelminths are a phylum of relatively simple bilaterian, unsegmented, soft-bodied invertebrates.

• The annelids, also known as the ringed worms or segmented worms, are a large phylum, with over 22,000 extant species including ragworms, earthworms, and leeches.

• The members of the phylum Porifera, are a basal animal clade as a sister of the Diploblasts. They are multicellular organisms that have bodies full of pores and channels allowing water to circulate through them, consisting of jelly-like mesohyl sandwiched between two thin layers of cells.

Q79. Answer: (d) capital expenditure

The correct answer is capital expenditure.

Key Points

• Capital expenditure is the money spent by the government on the development of machinery, equipment, building, health facilities, education, etc.

• It also includes the expenditure incurred on acquiring fixed assets like land and investment by the government that gives profits or dividends in the future.

• Capital expenditure is classified into three main forms

• Expenditure made to reduce costs;

• Expenditure made to increase revenue;

• Expenditure is justified on non-economic grounds.

Additional Information

• Revenue expenditures include the expenses required to meet the ongoing operational costs of running a business, and thus are essentially the same as operating expenses.

• Revenue receipts can be defined as those receipts that neither create any liability nor cause any reduction in the assets of the government.

• Capital receipts are receipts that create liabilities or reduce financial assets. They also refer to incoming cash flows.

Q80. Answer: (d) Ustad Bismillah Khan - Sitar

The correct answer is Ustad Bismillah Khan - Sitar.

Key Points

• Bismillah Khan (born Qamaruddin Khan) often referred to by the title Ustad, was an Indian musician credited with popularizing the shehnai, a reeded woodwind instrument.

• While the shehnai had long held importance as a folk instrument played primarily schooled in traditional ceremonies, Khan is credited with elevating its status and bringing it to the concert stage.

• He was awarded India's highest civilian honor, the Bharat Ratna, in 2001, becoming the third classical musician of India after M. S. Subbalakshmi and Ravi Shankar to be awarded the Bharat Ratna.

• He was born on 21 March 1916 in Dumraon, Shahabad district, Bihar and Orissa Province, British India.

• He died on 21 August 2006 (aged 90) in Varanasi, Uttar Pradesh, India.

Additional Information

• Bismillah Khan often referred to by the title Ustad, was an Indian musician credited with popularizing the shehnai, a reeded woodwind instrument.

• Hariprasad Chaurasia is an Indian music director and classical flutist, who plays the flute, in the Hindustani classical tradition.

• Tansen was a prominent Classical Music Composer & Musician. He was an extraordinarily gifted vocalist, known for a large number of compositions.

• Ali Akbar Khan was an Indian Hindustani classical musician of the Maihar Gharana, known for his virtuosity in playing the sarod.

Q81. Answer: (d) PV Sindhu

The correct answer is PV Sindhu.

Key Points

• The Badminton World Federation is the international governing body for the sport of badminton recognized by the International Olympic Committee.

• It was founded in 1934 as the International Badminton Federation with nine member nations.

• The BWF World Championships, formerly known as IBF World Championships, and also known as the World Badminton Championships, is a badminton tournament.

Additional Information

• Pusarla Venkata Sindhu is an Indian badminton player. Considered one of India's most successful sportspersons, Sindhu has won medals at various tournaments such as the Olympics and on the BWF circuit, including a gold at the 2019 World Championships.

• Aakarshi Kashyap is an Indian badminton player. She has been selected to be part of the Indian team at the 2018 Asian Games. She was part of the national women's team that won the gold medal in 2019 South Asian Games.

• Mugdha Agrey is a professional Indian Badminton Player who is born in India. She plays her last match during the Round of 32 in the Syed Modi International Women tournament in the year 2019. Her BWF world ranking in the women's singles team of 90 and she represents as Indian team in the BWF World Series tournaments.

• Saina Nehwal is an Indian professional badminton player. A former world no. 1, she has won 24 international titles, which includes ten Superseries titles. Although she reached the world's 2nd in 2009, it was only in 2015 that she was able to attain the world no.

Q82. Answer: (c) Kathak

The correct answer is Kathak.

Key Points

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

• He also trained under Bindadin Maharaj of Lucknow Gharana. Sunder Prasad performed all over the country.

• Kathak is one of the eight major forms of Indian classical dance.

• It is the classical dance form of Uttar Pradesh. The origin of Kathak is traditionally attributed to the traveling bards in of ancient northern India known as Kathakars or storytellers.

Additional Information

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• Kathakali is a major form of classical Indian dance. It is a "story play" genre of art, but one distinguished by the elaborately colorful make-up, costumes, and face masks that the traditionally male actor-dancers wear.

• Odissi also referred to as Orissa in old literature, is a major ancient Indian classical dance that originated in the Hindu temples of Odisha – an eastern coastal state of India. Odissi, in its history, was performed predominantly by women and expressed religious stories and spiritual ideas, particularly of Vaishnavism.

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

Q83. Answer: (b) Madhya Pradesh

The correct answer is Madhya Pradesh.

Key Points

• The Kalidas Samman is a prestigious arts award presented annually by the government of Madhya Pradesh in India.

• The award is named after Kālidāsa, a renowned Classical Sanskrit writer of ancient India.

• The Kalidas Samman was first awarded in 1980. It was initially conferred in alternate years in the fields of Classical Music, Classical Dance, Theatre, and Plastic Arts.

• From 1986-87 onwards, the awards were presented in all four fields every year. The award is presented for outstanding achievement in one of the four categories.

Additional Information

The recipients of the Kalidas Samman:

Year 1980-81	**Semmangudi Srinivasa Iyer**
Year 1881-82	K. G. Subramnyan
Year 1882-83	Sombhu Mitra
Year 1883-84	Rukmini Devi arundale
Year 1884-85	Kumar Gandharva

Q84. Answer: (d) pakhawaj

The correct answer is pakhawaj.

Key Points

• The pakhavaj is a barrel-shaped, two-headed drum, originating from the Indian subcontinent, the oldest version of the double-sided drum and its descendants are the mridangam of Southern India and the kendang of Maritime Southeast Asia and other South Asian double-headed drums.

• It is the percussion instrument most commonly used in the dhrupad style of Indian classical music and less often used as a rhythm accompaniment for various other sub-forms of music and dance performances (e.g. kathak, Odissi, Marathi).

• It was originally made from clay and you still can find clay versions, but very rarely.

Additional Information

• The flute is a family of classical music instruments in the woodwind group. Unlike woodwind instruments with reeds, a flute is an aerophone or reedless wind.

• The nadaswaran is a double reed wind instrument from South India. It is used as a traditional classical instrument in Tamilnadu, Andhra Pradesh, Karnataka, and Kerala.

• The ghatam is one of the most ancient percussion instruments of India. It is a clay pot with a narrow mouth. From the mouth, it slants outwards to form a ridge.

Q85. Answer: (d) Muscat

The correct answer is Muscat.

Key Points

• The Women's Hockey Asia Cup is a women's international field hockey tournament organized by the Asian Hockey Federation.

• The winning team becomes the champion of Asia and qualifies for the FIH Hockey World Cup.

• Japanese the defending champion winning the 2022 edition.

Additional Information

• The 2022 Women's Hockey Asia Cup was the 10th edition of the Women's Hockey Asia Cup, the quadrennial international women's field hockey championship of Asia organized by the Asian Hockey Federation. It was held from 21 to 28 January 2022 at the Sultan Qaboos Sports Complex in Muscat, Oman.

• The tournament was originally scheduled to be held in Bangkok, Thailand but on 29 December 2021, the tournament was moved

to Muscat, Oman.

• India was the defending champions. Japan won its third title after a final win over South Korea.

• Eight teams participated in the tournament they are: China, India, Indonesia, Japan, Malaysia, Singapore, South Korea, and Thailand.

Q86. Answer: (c) sailing

The correct answer is sailing.

Key Points

• Nethra Kumanan is the first Indian woman sailor to qualify for the Olympics.

• The first among the 10 Indian sailors, including men to have done so directly and by placing first in a qualifying event for the 2020 Tokyo Olympics.

• The nine Indians before her managed to get to the Games only because the quotas were not filled up.

• Earlier in January 2020, Nethra Kumanan became the first Indian woman to win a bronze medal at the Hempel Sailing World Cup Series, in Miami, U.S.A.

Additional Information

• The sport of sailing involves a variety of competitive sailing formats that are sanctioned through various sailing federations and yacht clubs.

• Racing disciplines include matches within a fleet of sailing craft, between a pair thereof, or among teams.

• The modern pentathlon is an Olympic sport consisting of fencing, freestyle swimming, equestrian show jumping, pistol shooting, and cross country running. The event is inspired by the traditional pentathlon held during the ancient Olympics.

• Fencing is a group of three related combat sports. The three disciplines in modern fencing are the foil and the sabre; winning points are made through the weapon's contact with an opponent.

Q87. Answer: (b) Laxmibai Kolhapurkar

The correct answer is Laxmibai Kolhapurkar.

Key Points

• The first National Film Award for Best Choreography in 1992 went to Laxmibai Kolhapurkar for choreographing a song from Marathi Film “Ek Hota Vidushak”.

• She became the first woman choreographer to win this National Award in India.

• Laxmibai Kolhapurkar is known for Gandh Matila Aala(1995) ,Ek Hota Vidushak(1992).

Additional Information

• Saroj Khan was an Indian dance choreographer in Hindi cinema. She was born in Bombay State, India. She was best known for the dance form mujra and was the first woman choreographer in Bollywood. She choreographed more than 3000 songs.

• Vaibhavi Merchant is an Indian dance choreographer working in Bollywood films. She won National Film Award for Best Choreography for the song Dholi Taaro Dhol Baaje from Hum Dil De Chuke Sanam in 1999.

• Shiamak Davar is an Indian choreographer, noted as one of the first to bring contemporary jazz and western forms of dance to India. He is known as the guru of contemporary dance in India.

Q88. Answer: (d) fourth

The correct answer is fourth.

Key Points

• After days of speculation, Yediyurappa resigned as Chief Minister on 26 July 2021, the second anniversary of his fourth term. He was succeeded by his Protege, Basavaraj Bommai, on 28 July 2021.

• Bookanakere Siddalingappa Yediyurappa often referred to by his initials BSY, is an Indian politician who served as the 19th chief minister of karnataka and currently a Member of the Karnataka Legislative Assembly.

• He is a member of the Bharatiya Janta Party. He is also the only politician so far in Karnataka to have served four times as Chief Minister and three times as Leader of the opposition in the karnataka legislative assembly.

• In 1965, he was appointed a first-division clerk in the social welfare department but he quit the job and moved on to Shikaripura where he joined as a clerk at Veerabhadra Shastri's Shankara rice mill.

Additional Information

• In 2011, he resigned after being indicted over a corruption case; he was acquitted in 2016.Owing to alleged ill-treatment meted out to Yediyurappa by the BJP High Command, he left BJP and formed his own party, the Karnataka Janata Paksha

• On 17 May 2018, he was sworn in as the chief minister, his third term in the office .Unable to get majority support in the Assembly, he resigned just two days after taking office, after which H.D Kumaraswamy took oath as the chief minister.

• After the government of kumaraswamy lost its majority in July 2019 with the resignation of 17 MLAs, Yediyurappa took oath as the chief minister and proved his majority. In the December by-elections, BJP won 12 seats out of 15 and gained a majority of 117

seats under his leadership, cementing his win.

Q89. Answer: (d) 1980

The correct answer is 1980.

Key Points

• Kalidas Samman

• The Kalidas Samman was first awarded in 1980.

• It was initially conferred in alternate years in the fields of Classical Music, Classical Dance, Theatre, and Plastic Arts.

• From 1986-87 onwards, the awards were presented in all four fields every year.

• The Kalidas Samman is a prestigious arts award presented annually by the government of Madhya Pradesh in India.

• The award is named after Kalidasa, a renowned Classical Sanskrit writer of ancient India.

• The first recipients were Semmangudi Srinivasa Iyer and Mallikarjun Mansur.

• It was initially conferred in alternate years in the fields of Classical Music, Classical Dance, Theatre, and Plastic Arts.

• From 1986-87 onwards, the awards were presented in all four fields every year. The award is presented for outstanding achievement in one of the four categories.

Q90. Answer: (a) Bengali

The correct answer is Bengali.

Key Points

• Ananda math is a Bengali fiction, written by Bankim Chandra Chattopadhyay.

• Ananda math was published in 1882.

• It is inspired by and set in the background of the Sannyasi Rebellion in the late 18th century, it is considered one of the most important novels in the history of Bengali and Indian literature.

Additional Information

• Ananda math was published in English in year 2005, 1941, 1906.

• A Hindu “Santana”(who were not true sanyasis but common people who took the symbol of sanyasis and left their household so as to rebel against the British east india company), Jiban took the daughter to his home handing her to his sister while he shifted Kalyani to his ashram.

• Anand Math is a 1952 Indian Hindi-language historical drama film directed by Hemen Gupta, based on the famous Bengali novel Anandamath.

Q91. Answer: (d) M S Subbulakshmi

The correct answer is M S Subbulakshmi

Key Points

• M S Subbulakshmi was an Indian Carnatic singer from Madurai, Tamil Nadu.

• She was the first musician ever to be awarded the Bharat Ratna, India's highest civilian honour.

• Her particular shade of blue Kanjeevaram made her a style icon and she would spread Carnatic music beyond the borders of her country, to go on to be the first musician to win India's highest civilian honour – the Bharat Ratna.

• She is the first Indian musician to receive the Ramon Magsaysay award in 1974 with the citation reading "Exacting purists acknowledge Srimati M. S. Subbulakshmi as the leading exponent of classical and semi-classical songs in the carnatic tradition of South India.

Additional Information

• GANGUBAI HANGAL

• She was an Indian singer of the khayal genre of Hindustani classical music from Karnataka, who was known for her deep and powerful voice. Hangal belonged to the Kirana gharana.

• Vasundhara Komkali

• She is popularly known as Vasundhara Tai, was an Indian classical musician and one of the leading exponents of the Gwalior gharana, an old Khyal tradition of Hindustani music. She was the wife of renowned musician, Kumar Gandharva, and was a recipient of the 2009 Sangeet Natak Akademi Award.

• Lata mangeshkar

• She was an Indian playback singer and occasional music composer. She is widely considered to have been one of the greatest and most influential singers in India. Her contribution to the Indian music industry in a career spanning eight decades gained her honorific titles such as the "Queen of Melody", "Nightingale of India", and "Voice of the Millennium".

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Q92. Answer: (a) Polyphenol oxidase

The correct answer is Polyphenol oxidase

Key Points

• Polyphenol oxidases (PPOs) are a group of copper-containing enzymes that catalyze the o-hydroxylation of monophenols to o-diphenols

• any of several copper-containing enzymes (as laccase) that catalyze the oxidation especially of diphenols and polyphenols to quinones — compare phenol oxidase, tyrosinase.

• Polyphenol oxidases also known as tyrosinase, phenolase, catechol oxidase, monophenol oxidase, creso-lase, and catecholase, was first discovered in 1856 by Schoenbein (1856) in mushrooms.

Additional Information

• Bromelain

• It is a group of enzymes found in the fruit and stem of the pineapple plant. Pineapple is native to the Americas but is now grown throughout the world in tropical and subtropical regions.

• Serrapeptase

• It is used for conditions such as back pain, osteoarthritis, and rheumatoid arthritis, and for conditions generally associated with pain and swelling (inflammation), but there is no good evidence to support these uses..

• Papain

• It is an enzyme found in the white fluid (latex) that occurs in raw papaya fruit. It is a protease, meaning it breaks down proteins. Papain contains substances that might help fight infection and heal wounds.

Q93. Answer: (a) Southern Ocean

The correct answer is Southern Ocean.

• The Southern Ocean has been recognised by the US Board on Geographic Names as the body of water extending from the coast of Antarctica to the line of latitude at 60 degrees South.

Key Points

• The Southern Ocean is recognized by the American Board on Geographic Names as the body of water extending from the coast of Antarctica to the line of latitude at 60 degrees South.

• National Geographic Society geographer Alex Tait stresses that the waters surrounding Antarctica form a “distinct ecological region defined, by ocean currents and temperatures”

• National Geographic announced that it is officially recognizing the body of water surrounding the Antarctic as the Southern Ocean, making it the fifth ocean alongside the Arctic, Atlantic, Indian, and Pacific.

• The Southern Ocean “encompasses unique and fragile marine ecosystems that are home to wonderful marine life such as whales, penguins, and seals,

• Thousands of species live in the Southern Ocean and nowhere else, and the impacts of fishing on the region have been felt for decades.

Additional Information

• There are four named oceans: the Atlantic, Pacific, Indian, and Arctic. However, most countries - including the United States - now recognize the Southern (Antarctic) as the fifth ocean.

• The Pacific, Atlantic, and Indian are the most commonly known.

• The Southern Ocean is the 'newest' named ocean.

• The Pacific Ocean is the largest and deepest of the world's ocean basins.

Q94. Answer: (c) Kiran Desai

The correct answer is Kiran Desai.

• The Inheritance of Loss is the second novel by Indian author Kiran Desai.

Key Points

• The Inheritance of Loss, a 2006 book by Kiran Desai, explores immigration, identity, and relationships on both the interpersonal and international scales.

• It won a number of awards, including the Man Booker Prize for that year, the National Book Critics Circle Fiction Award in 2007, and the 2006 Vodafone Crossword Book Award.

• Kiran Desai became popular after publishing her second novel The Inheritance of Loss, which was able to grab the attention of people worldwide.

• In January 2015, Kiran Desai was listed as one of the 20 "most influential" global Indian women by The Economics Times.

• Kiran Desai became the youngest-ever woman to win the Booker Prize at the age of 35.

• Kiran Desai was awarded a 2013 Berlin Prize Fellowship at the American Academy in Berlin.

• Kiran Desai's first novel, Hullabaloo in the Guava Orchard, was published in 1998 and received accolades from Salman Rushdie.

• It won the Betty Trask Award, a prize given by the Society of Authors for best new novels by citizens of the Commonwealth of Nations under the age of 35.

Additional Information

• Suzanna Arundhati Roy is an Indian author best known for her novel The God of Small Things, which won the Man Booker Prize for Fiction in 1997 and became the best-selling book by a non-expatriate Indian author.

• Sudha Murty, occasionally spelt in media as Sudha Murthy, is an Indian educator, author, and philanthropist who is chairperson of the Infosys Foundation.

• Nilanjana Sudeshna Jhumpa Lahiri is an American author known for her short stories, novels, and essays in English, and, more recently, in Italian.

Q95. Answer: (d) Caribbean Sea

The correct answer is Caribbean Sea.

• The Gulf of Mexico is connected to the Caribbean Sea via the Yucatán Channel and with the Atlantic Ocean through the Straits of Florida.

Key Points

• The Gulf of Mexico borders the southeastern coast of North America.

• It is connected to the Atlantic Ocean by the Straits of Florida, running between the peninsula of Florida and the island of Cuba, and to the Caribbean Sea by the Yucatán Channel, which runs between the Yucatán Peninsula and Cuba.

• Both of these channels are about 100 miles (160 km) wide.

• The gulf's greatest east-west and north-south extents are approximately 1,100 and 800 miles (1,800 and 1,300 km), respectively, and it covers an area of some 600,000 square miles (1,550,000 square km).

• To the northwest, north, and northeast it is bounded by the southern coast of the United States, while to the west, south, and southeast it is bounded by the east coast of Mexico.

• Additional Information

• The Caribbean Sea, the suboceanic basin of the western Atlantic Ocean, lying between latitudes 9° and 22° N and longitudes 89° and 60° W. It is approximately 1,063,000 square miles (2,753,000 square km) in extent.

• The Arabian Sea is, the Northwestern part of the Indian Ocean, lying between India and the Arabian Peninsula. It has an area of about 1,491,000 sq miles (3,862,000 sq km) and an average depth of 8,970 feet (2,734 m).

• The Baltic Sea is surrounded by nine countries: Denmark, Germany, Poland, Lithuania, Latvia, Estonia, Russia, Finland and Sweden.

• The Caspian Sea is the world's largest inland body of water, often described as the world's largest lake or a full-fledged sea

Q96. Answer: (a) Begum Akhtar

The correct answer is Begum Akhtar.

• Akhtari Bai Faizabadi, also known as Begum Akhtar, was an Indian singer and actress who was given the title of "Mallika-e-Ghazal" (Queen of Ghazals).

Key Points

• The legendary Begum Akhtar was a doyen of Hindustani classical music, particularly in the ghazal genre.

• Her musical tradition was so unique that she came to be associated with her own distinct style of singing. She was rightly called the 'Mallika-e-Ghazal'.

• She came to be associated with Hindustani classical music, excelling in ghazal, Dadra, and thumri.

• As a child, Begum Akhtar or Akhtari Bai Faizabadi, began her classical music training rather early as she reportedly showed sparks even as a kid, captivated by the music of Chandra Bai, a touring theatre artist of the day.

• She received the Sangeet Natak Akademi Award for vocal music and was awarded Padma Shri and Padma Bhushan (posthumously) by Govt. of India.

Additional Information

• Iqbal Bano was a ghazal singer from Pakistan. She was known for her semi-classical Urdu ghazal songs and classical thumris but also sang easy-listening numbers in 1950s films.

• Nayyara Noor is a Pakistani playback singer who is considered one of the Indian subcontinent's popular film songs playback singers and a stage performer. She performs in live ghazal singing concerts on Pakistan television shows or in concert halls in the country.

• Farida Khanum is a Pakistani classical singer from the city of Kolkata West Bengal. She is also known for her honorific title Malika-e-Ghazal in both Pakistan and India.

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Q97. Answer: (a) Magnetite

The correct answer is Magnetite.

• Magnetite is a mineral whose primary component is an iron oxide that contains equal amounts of iron(II) and iron(III). Its empirical formula is Fe3O4, and it is often expressed as iron(II, III) oxide.

Key Points

• Magnetite is found in igneous, metamorphic, and sedimentary rocks.

• As its name implies, it is magnetic; it and other inherently magnetic iron-containing minerals are described as being ferrimagnetic.

• Magnetite is in the hexoctahedral crystal class; in the 3-D crystal structure, the purple atoms are iron, and the red atoms are oxygen.

• Magnetite's greatest use is as important as iron ore for steel manufacture.

• Other applications are as a catalyst in the Haber process for making ammonia, as a pigment for paints and ceramics, and as magnetic micro- and nanoparticles for a variety of processes and materials.

Additional Information

• Iron oxides are among the most common minerals formed during rock weathering.

• They vary in mineral species (goethite, hematite, lepidocrocite, maghemite, ferrihydrite) and, additionally for any mineral, in crystallinity and Al- for Fe-substitution in the structure.

• Ferrous oxide, commonly known as iron(II) oxide contains iron that lost 2 electrons in the oxidation process. So it is able to bond with other atoms that have an extra 2 electrons. Ferric oxide, is commonly known as iron(III) oxide. It contains iron that lost 3 electrons.

Q98. Answer: (c) Nuclear membrane

The correct answer is Nuclear membrane.

• The nuclear envelope, also known as the nuclear membrane, is made up of two lipid bilayer membranes that in eukaryotic cells surrounds the nucleus, which encloses the genetic material.

Key Points

• The nuclear envelope is also called nuclear membrane. It is made up of two lipid bilayer membranes.

• The nuclear membrane is present in both the plant and animal cells.

• Cells carry out a multitude of functions such as protein building, conversion of molecules into energy and elimination of unnecessary products.

• This membrane guards the genetic material of the cells against the exterior of the nucleus where chemical reactions are taking place.

• Also, it carries several proteins which are crucial in the organization of DNA and to control genes.

Additional Information

• The plasma membrane forms the physical barrier between the cytoplasm and extracellular space, allowing for biochemical reactions necessary for life to occur

• Ribosomes, also called Palade granules, are macromolecular machines, found within all cells, that perform biological protein synthesis.

• The cytoplasm is all of the material within a eukaryotic cell, enclosed by the cell membrane, except for the cell nucleus.

Q99. Answer: (a) IV

The correct answer is the 8th T20 Men's Cricket World Cup - India.

Key Points

• The 2022 ICC Men's T20 World Cup is scheduled to be the eighth ICC Men's T20 World Cup tournament, scheduled to be played in October and November 2022 in Australia.

• Originally, the tournament was to be held in 2020, however, in July 2020, the International Cricket Council (ICC) confirmed that the tournament had been postponed, due to the COVID-19 Pandemic.

• In August 2020, the ICC also confirmed that Australia would host the rearranged tournament in 2022.

Additional Information

• The ICC has its headquarters in Dubai, UAE.

• The ICC has 106 member nations currently: 12 Full Members that play Test matches and 94 Associate Members.

• Greg Barclay is the chairman of ICC.

• The ICC awarded three new countries membership status during the ongoing ICC Annual Conference in Birmingham. Cambodia and Uzbekistan from Asia, and Cote D'Ivoire from Africa, were all awarded Associate membership status, taking ICC's total

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members to 108 countries, including 96 Associates.

Q100. Answer: (c) June 10

The correct answer is June 10.

• The Arabian Sea branch reaches Mumbai about ten days later on approximately the 10th of June.

Key Points

• The monsoon arrives at the southern tip of the Indian peninsula generally by the first week of June.

• Subsequently, it proceeds into two – the Arabian Sea branch and the Bay of Bengal branch.

• The Arabian Sea branch of the monsoon arrives over Saurashtra-Kuchchh and the central part of the country by mid-June.

• The Arabian Sea and the Bay of Bengal branches of the monsoon merge over the northwestern part of the Ganga plains.

Additional Information

• The Arabian Sea is a region of the northern Indian Ocean bounded on the north by Pakistan, Iran and the Gulf of Oman, on the west by the Gulf of Aden, Guardafui Channel and the Arabian Peninsula, and on the southeast by the Laccadive Sea and the Maldives, on the southwest by Somalia, and on the east by India.

• Most of the ships that use the Arabian Sea for transportation purposes are large tankers, whose travels often conclude in East Asia, Europe or The Americas.

• The Arabian Sea is a principal route connecting Europe and Asia, particularly India, and has been crossed since the 3rd millennium BCE.

• Besides India, the sea drains six other countries; Pakistan, Somalia, Iran, Oman, Maldives, and Yemen.

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