SSC CHSL Previous Paper 1 (Held On: 17 March 2020 Shift 1) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2020 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

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

EXTENSIVE

(a) Elaborate
(b) Intricate
(c) Lengthy
(d) Intensive

Q2. Select the most appropriate synonym of the given word.

TRUST

(a) Welfare
(b) Safety
(c) Belief
(d) Ability

Q3. Select the word with the incorrect spelling.

(a) Quantity
(b) Quarrell
(c) Argument
(d) Aisle

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

Several environmentalists from the city conducted a meet to discuss issues related to the _____ pollution levels created by the growing number of pharmaceutical companies.

(a) rise in
(b) raising of
(c) rising from
(d) raise in

Directions

Direction: 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.

One of the most fascinating archaeological sites in Maharashtra, the Ellora Caves, date back __(1) about 1,500 years ago, and (2) the epitome of Indian rock-cut architecture. _(3) 34 caves are actually Buddhist, Hindu, and Jain religious monuments _(4)__ in the rock. They were given the __(5)____ of World Heritage Site in 1983. Created between the 6th and 10th century, the 12 Buddhist, 17 Hindu, and 5 Jain caves carved in proximity at Ellora are proof of the religious harmony prevalent during this period of Indian history.

Q5. Select the most appropriate option to fill in blank No.1.

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

Q6. Select the most appropriate option to fill in blank No.2.

(a) were
(b) are
(c) be
(d) is

Q7. Select the most appropriate option to fill in blank No.3.

(a) The
(b) Many
(c) An
(d) Few

Q8. Select the most appropriate option to fill in blank No.4.

(a) carved
(b) created
(c) constructed
(d) erected

Q9. Select the most appropriate option to fill in blank No.5.

(a) role
(b) symbol
(c) status
(d) function

Q10. Select the word which means the same as the group of words given.

Close-fitting cover for a sword or knife

(a) Guard
(b) Sheath
(c) Screen
(d) Shield

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

Hats off to someone

(a) Make new hats for
(b) Congratulations to
(c) Give hats to
(d) Announce a prize for

Q12. Select the wrongly spelt word.

(a) Expidition
(b) Extempore
(c) Extinct
(d) Experiment

Q13. Directions: Each item in this section has a sentence with three underlined parts labelled as (a), (b) and (c). Read each sentence to find out whether there is any error in any underlined part and indicate your response on the answer sheet against the corresponding letter, i.e., (a) or (b) or (c). If you find no error, your response should be indicated as (d).

They had to wait for the luggages (a)/ to be put into the cab (b)/ before they themselves got into it(c)/ No error(d).

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

Q14. Select the alternative that will improve the underlined part of the sentence. In case there is no improvement select 'No improvement'.

I had no informations about the bank strike so I went there yesterday.

(a) no information about
(b) no informations concerning
(c) No improvement
(d) not got informations about

Q15. Select the option that is the passive form of the sentence.

The sub-committee is presenting its report in a week's time.

(a) The report of the sub-committee is presenting in a week's time.
(b) The report of the sub-committee had been presented in a week's time.
(c) The report of the sub-committee is being presented in a week's time.
(d) The report of the sub-committee has been presented in a week's time.

Q16. Select the segment in the sentence, which contains the grammatical error.

Did you know whether or not we can exchange the dress if my sister doesn't like it?

(a) doesn't like it
(b) we can exchange the dress
(c) Did you know whether
(d) if my sister

Q17. Directions: Each of the following questions has underlined idioms/phrases. Each sentence is followed by four options. Choose the option that best describes the meaning of the underlined idiom/phrase.

A lot of work has gone on behind the scenes for the special event which is being planned for the next week.

(a) In the theatre
(b) Unknown to everyone
(c) For spreading the news
(d) To complete the arrangements

Q18. Select the alternative that will improve the underlined part of the sentence. In case there is no improvement select 'No improvement'.

Harry and Meghan have decided to work and become financially independent.

(a) No improvement
(b) have decide to work and become
(c) has decided to work and become
(d) have decided to work and became

Q19. Select the most appropriate ANTONYM of the given word.

ABBREVIATE

(a) Challenge
(b) Dispute
(c) Expand
(d) Oppose

Q20. Given below are four jumbled sentences. Select the option that gives their correct order.

A. "It is mine. I saw it first," claimed one cat.

B. Suddenly they spotted a loaf of bread lying beneath a tree.

C. Once upon a time, two cats were passing through a street.

D. Both pounced upon it and caught the loaf at the same time.

(a) ADBC
(b) BADC
(c) DBCA
(d) CBDA

Q21. Given below are four jumbled sentences. Select the option that gives their correct order.

A. Ibn Al-Haitham wrote a book in seven volumes namely 'Kitāb al-Manāzir' also known as 'The Book of Optics.'

B. However, during the medieval period, the notable work of an Arab writer and scientist, Ibn Al-Haitham revolutionised the concept of physics.

C. During the ancient period, the development of Physics took place simultaneously with the development of astronomy.

D. In this book, Ibn Al-Haitham disproved the ancient Greek concept of vision and introduced a new theory.

(a) CBAD
(b) BCDA
(c) ADBC
(d) ACBD

Q22. Select the most appropriate synonym of the given word.

ALLURING

(a) Attractive
(b) Cheating
(c) Deceitful
(d) Distracting

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

Astronomy enthusiasts and sky gazers will be able to watch six eclipses in 2020, but only three of them are expected to be _____ in India.

(a) evident
(b) exposed
(c) revealed
(d) visible

Q24. Select the option that is the direct form of the sentence.

The doctor advised Jaya to put the eye drops into her eyes four times a day from the next day.

(a) The doctor advised Jaya, "From tomorrow put the eye drops into her eyes four times a day."
(b) The doctor advises Jaya, "From the next day put the eye drops into your eyes four times a day."
(c) The doctor advised Jaya, "From tomorrow put the eye drops into your eyes four times a day."
(d) The doctor had advised Jaya, "From the next day you put the eye drops into your eyes four times a day."

Q25. Select the word which means the same as the group of words given.

A large natural or artificial lake used as a source of water supply

(a) Pond
(b) Creek
(c) Reservoir
(d) Pool

GENERAL INTELLIGENCE

Q26. Select the option that is related to the third word in the same way as the second word is related to the first word.

Farmer : Field :: Artist : ?

(a) Theatre
(b) Hero

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(c) Actor
(d) Action

Q27. 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.

Statements:

All woods are roots.

All fruits are roots.

No woods are a fruit.

Conclusion:

(I) Some roots are fruits.

(II) All roots are woods.

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

Q28. Of the four given equations, the first three are solved on the basis of a certain system. Find the correct answer for the unsolved fourth equation on the same basis.

6 ? 5 = 91

8 ? 7 = 169

10 ? 9 = 271

22 ? 5 = ?

(a) 993
(b) 331
(c) 845
(d) 678

Q29. Select the number that can replace the question mark (?) in the following pattern.

10	**17**	**8**
5	3	15
6	14	?
42	68	92

(a) 23
(b) 25
(c) 46
(d) 10

Q30. Select the letter that can replace the question mark (?) in the following series.

A, C, E, D, C, E, G, F, ?

(a) E
(b) D
(c) H
(d) C

Q31. Select the option that does NOT belong to the given series:

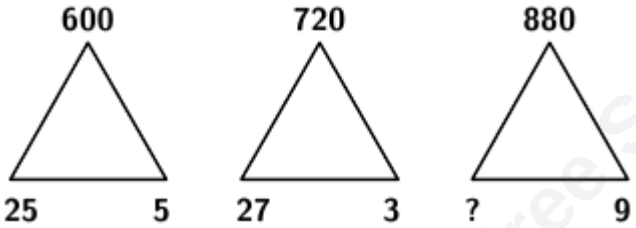
EC, H, HF, N, KI, U

(a) HF
(b) EC
(c) N

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(d) U

Q32. Select the number that can replace the question mark (?) in the following pattern.



(a) 23
(b) 21
(c) 31
(d) 17

Q33. In a certain code language, RUMMY is written as QVLNX. How is CHESS written in that code?

(a) BIFRT
(b) BGDTR
(c) BGFTR
(d) BIDTR

Q34. Choose the correct cluster of letters to complete the given series.

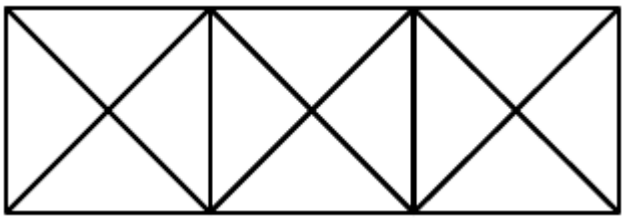
_bac_ac_acb_ _ ba

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

Q35. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) Chirp
(b) Caw
(c) Foal
(d) Howl

Q36. Find the number of triangles in the given figure.



(a) 18
(b) 46
(c) 24
(d) 28

Q37. Select the option that is related to the third number in the same way as the second number is related to the first number.

27 : 125 :: 343 : ?

(a) 1000
(b) 1343
(c) 729
(d) 512

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

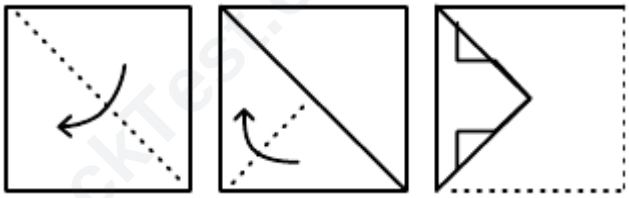
CAG : GEK :: HEL : ?

(a) LIP
(b) LEP
(c) GAC
(d) INP

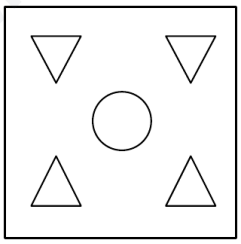
Q39. Four numbers have been given, out of which three are alike in some manner and one is different. Select the one that is different.

(a) 144
(b) 256
(c) 676
(d) 81

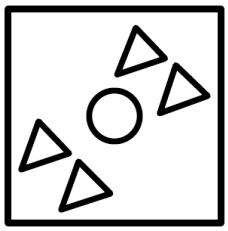
Q40. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?



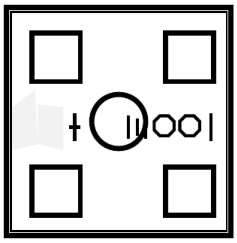
(a)



(b)

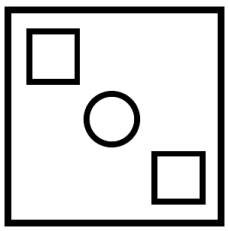


(c)



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(d)



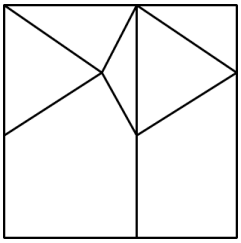
Q41. If 683 is coded as FOX, 654 is FIN, 4581 is NIOC, then what will be the code of 654513?

(a) FIXICN
(b) FNINXC
(c) FINICX
(d) FINNCX

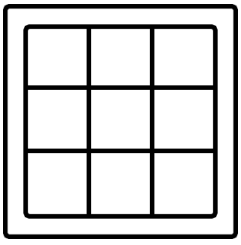
Q42. Select the option in which the given figure is embedded. (Rotation is not allowed)



(a)

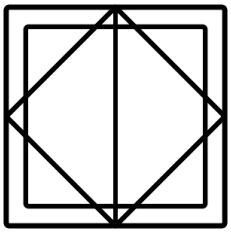


(b)

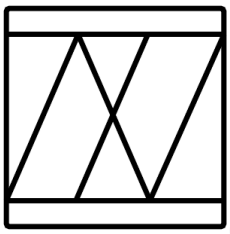


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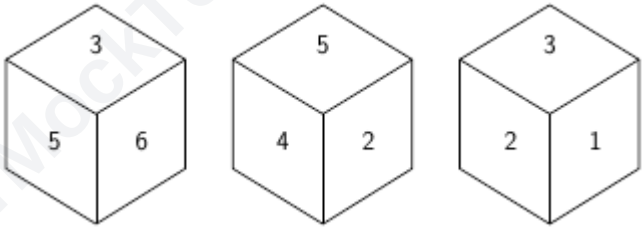
(c)



(d)

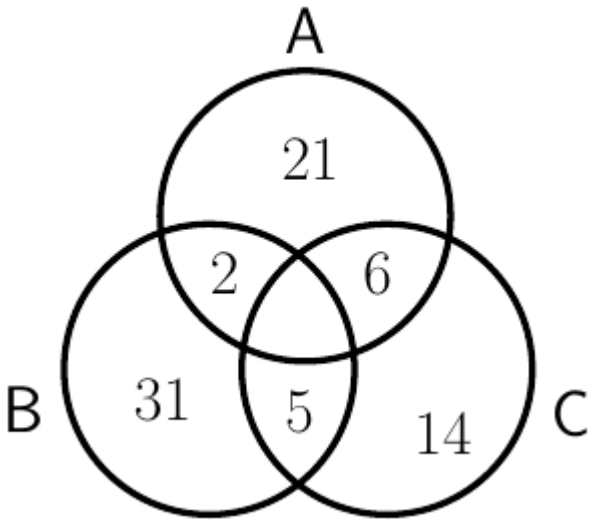


Q43. Three different positions of the same dice are shown. Select the number that will be on the face opposite to the one having 5.



(a) 1
(b) 4
(c) 6
(d) 3

Q44. In the given Venn diagram, A denotes mangoes, B denotes bananas, C denotes apples, and the numbers in each section represent the number of persons who like those fruits. How many persons like only bananas?



(a) 38
(b) 7
(c) 31
(d) 33

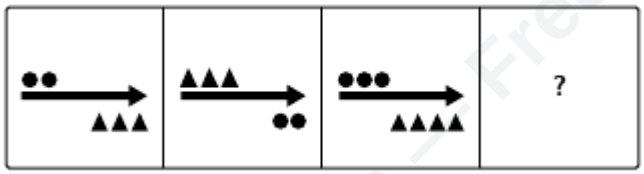
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Q45. Select the number that can replace the question mark (?) in the following series.

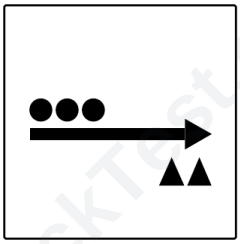
213, 217, 233, 269, ?

(a) 296
(b) 333
(c) 428
(d) 312

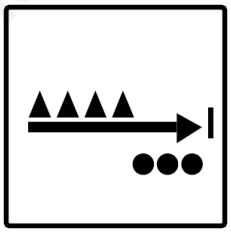
Q46. Select the figure that can replace the question mark (?) in the following figure series.



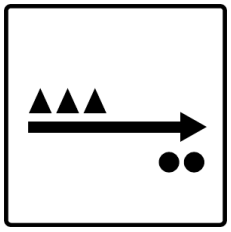
(a)



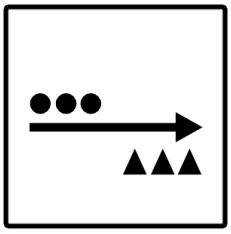
(b)



(c)



(d)



Q47. If '#' means '—', '&' means '÷', '@' means '×', and '÷' means '+', then 15 @ 2 ÷ 900 & 30 # 10 = ?

(a) 21
(b) 210
(c) 50
(d) 600

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Q48. Select the number that can replace the question mark (?) in the following series.

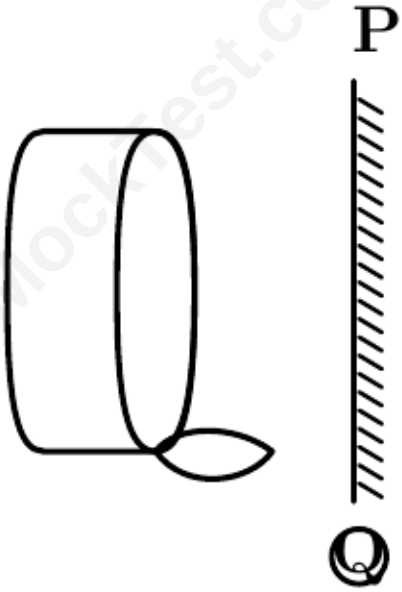
126, 217, 344, ?

(a) 513
(b) 521
(c) 729
(d) 512

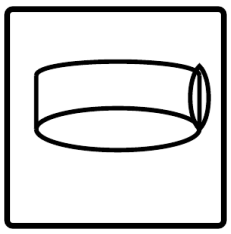
Q49. P is the brother of Q. R is the daughter of Q. S is the sister of P. Q is the sister of S. T is the brother of R. Who is the uncle of T?

(a) P
(b) Q
(c) C
(d) S

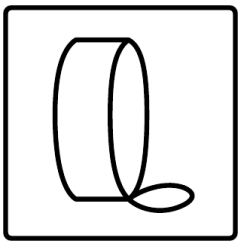
Q50. Select the correct mirror image of the given figure when a mirror is placed on the line PQ.



(a)

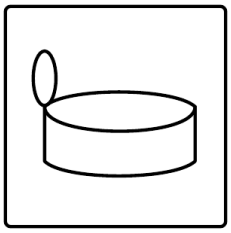


(b)

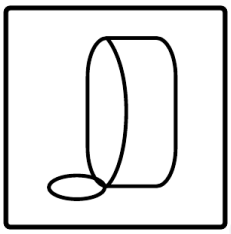


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(c)

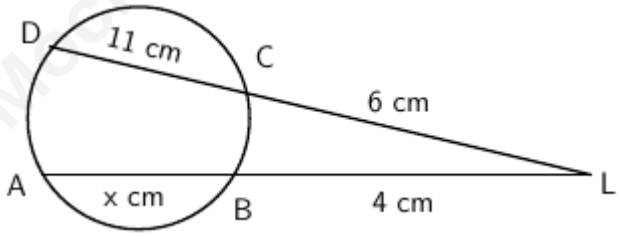


(d)



QUANTITATIVE APTITUDE

Q51. In the given figure, chords AB and CD are intersecting each other at point L. Find the length of AB



(a) 23.5 cm
(b) 21.5 cm
(c) 22.5 cm
(d) 24.5 cm

Q52. A dealer marks his goods at 30% above the cost price. Then he allows 35% discount on it. What would be his loss percentage?

(a) 15.5%
(b) 16.5%
(c) 17.5%
(d) 18.5%

Q53. The difference between two numbers is 43 and their product is 50. Find the sum of their squares.

(a) 1947
(b) 1949
(c) 1946
(d) 1948

Q54. The perimeter of a rectangle is 50 cm. Its area and length are in the ratio of 5 : 1. Find the length of the rectangle.

(a) 22 cm
(b) 18 cm
(c) 20 cm
(d) 15 cm

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Q55. Two sides of a triangle are of length 3 cm and 8 cm. If the length of the third side is 'x' cm, then:

(a) $x > 11$
(b) $0 < x < 11$
(c) $5 < x$
(d) $5 < x < 11$

Q56. What will come at place of x, (x < 10) for $(132 \div 12 \times x - 3 \times 3)/(5^2 - 6 \times 4 + x^2) = 1$?

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

Q57. If $x + y = 4$, $xy = 2$, $y + z = 5$, $yz = 3$, $z + x = 6$ and $zx = 4$, then find the value of $x^3 + y^3 + z^3 — 3xyz$.

(a) 151.75
(b) 152.75
(c) 153.75
(d) 150.75

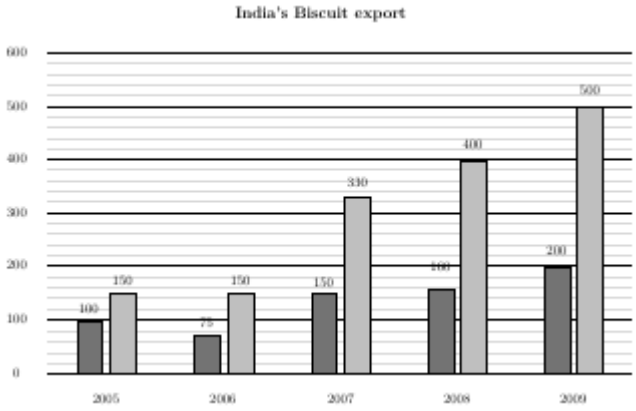
Q58. How much should be added to each term of 4 : 7 so that it becomes 2 : 3?

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

Q59. M is the mid-point of the side BC of ΔABC, and the area ofΔABM is $18cm^2$, then the area of ΔABC is

(a) $36cm^2$
(b) $34\ cm^2$
(c) $30\ cm^2$
(d) $32\ cm^2$

Q60. Study the following graph and answer the question.



If the first bar represents the weight of biscuits (In tonne) exported and the 2nd bar represents the total cost of the biscuits (in crore) in a year then In which year the value per tonne of biscuits was minimum?

(a) 2009
(b) 2007
(c) 2005
(d) 2006

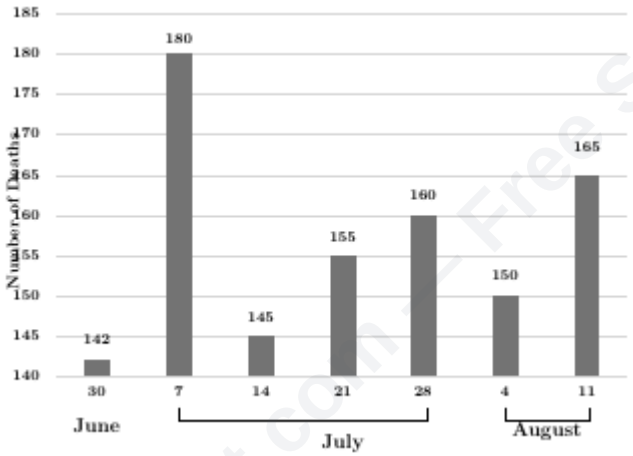
Q61. X and Y together can finish a piece of work in 15 days, while Y alone can finish it in 40 days. X alone can finish the work in:

(a) 24 days
(b) 26 days
(c) 25 days

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(d) 23 days

Q62. The following bar graph shows the number of deaths from road accidents occurred during the rainy season in the year 1992. Study the graph carefully and answer the question.



Between which two consecutive weeks was the rise in the number of deaths the greatest?

(a) 4 August to 11 August
(b) 30 June to 7 July
(c) 14 July to 21 July
(d) 21 July to 28 July

Q63. Find the value of (cos 30° - sin 30°)/(sin 60° + cos 60°)

(a) 2 - √3
(b) 2 + √3
(c) 1 - √3
(d) 1 + √3

Q64. Sachin’s income is 25% more than Dileep’s income. By how much percentage is Dileep’s income less than Sachin’s income ?

(a) 15%
(b) 20%
(c) 18%
(d) 22%

Q65. Sohan sold a plot for Rs 2,55,000at a 15% loss. At what price should he sell the plot to gain a 10% profit?

(a) Rs 3,00,000
(b) Rs 3,33,000
(c) Rs 3,30,000
(d) Rs 3,33,300

Q66. A batsman in his 11th innings makes a score of 77 runs, thereby increasing his average scores by 3. What is his average score after the 11^(th) inning?

(a) 46
(b) 47
(c) 48
(d) 49

Q67. If cosec θ + cot θ = 2, then sin θ is:

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

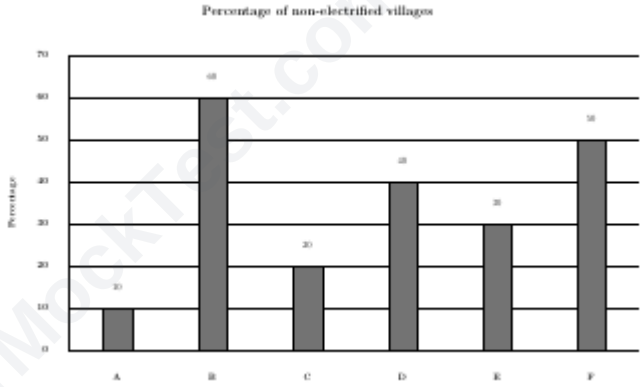
Q68. If $a^3 + b^3 = 20$ and $a + b = 5$, then find the value of a^4 + b^4

(a) 26
(b) 23
(c) 25
(d) 24

Q69. If $\sec^2 x - 3 \sec x + 2 = 0$, then the value of $x(0 < x < 90°)$ is:

(a) 30°
(b) 15°
(c) 60°
(d) 45°

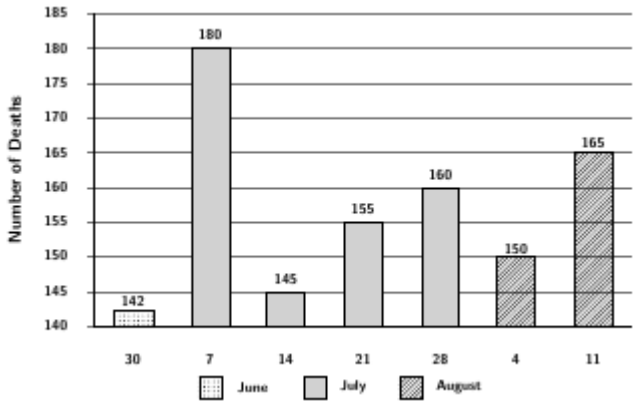
Q70. The given bar graph represents the Percentage of non-electrified villages in 6 states A, B, C, D, E and F. Study the graph and answer the question that follows.



How many states have at most 30% or less non-electrified villages?

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

Q71. The following bar graph shows the number of deaths from road accidents occurred during the rainy season in the year 1992. Study the graph carefully and answer the question



Between which two consecutive weeks was the fall in the number of deaths the greatest?

(a) 7 July to 14 July
(b) 21 July to 28 July
(c) 30 June to 7 July
(d) 28 July to 4 August

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Q72. A 5 cm long perpendicular is drawn from the centre of a circle to a 24 cm long chord. Find the diameter of the circle.

(a) 26 cm
(b) 32 cm
(c) 13 cm
(d) 30 cm

Q73. Which of the following numbers will completely divide 7^(81) + 7^(82) + 7^(83) ?

(a) 389
(b) 399
(c) 387
(d) 397

Q74. The difference of simple interest on a sum of money for 8 years and 10 years is Rs. 200. If the rate of interest is 10 % p.a, then what is the sum of money?

(a) Rs. 1,600
(b) Rs. 1,000
(c) Rs. 1,200
(d) Rs. 1,400

Q75. A man walks from point X to Y at a speed of 20 km/h, but comes back from point Y to X at a speed of 25 km/h. Find his average speed.

(a) 22 2/9 km/h
(b) 24 2/9 km/h
(c) 23 2/9 km/h
(d) 25 2/9 km/h

GENERAL AWARENESS

Q76. Which of the following states is included in the sixth schedule of the Constitution of India?

(a) Mizoram
(b) Nagaland
(c) Arunachal Pradesh
(d) Manipur

Q77. Who among the following received the Padma Bhushan in 2019?

(a) Sunil Chhetri
(b) Mohanlal Viswanathan
(c) Virat Kohli
(d) Bhupen Hazarika

Q78. When is 'International Ozone Day' celebrated?

(a) 16 September
(b) 31 October
(c) 9 August
(d) 2 October

Q79. As of January 2020, who held the national record in both, 800 m and 1500 m sprint events?

(a) Muhammad Anas
(b) Jinson Johnson
(c) Avinash Sable
(d) Ayyasamy Dharun

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Q80. In which city is Indian Railway-Rail Coach Factory located?

(a) Bengaluru
(b) Kapurthala
(c) Chennai
(d) Chittaranjan

Q81. River Sharavati plunges as which of the following waterfalls?

(a) Hogenakkal
(b) Gerusoppa
(c) Soochipara
(d) Athirapally

Q82. Which is the largest river island in the world?

(a) Srirangam Island
(b) Majuli Island
(c) Bhavani Island
(d) Agatti Island

Q83. As of January 2020, who was the president of the BCCI?

(a) Sourav Ganguly
(b) Harsha Bogle
(c) Ravi Shastri
(d) Sunil Gavaskar

Q84. Sachin Tendulkar scored his first ODI century in his ____ match.

(a) 79^(th)
(b) 77^(th)
(c) 76^(th)
(d) 78^(th)

Q85. Which of the following is a water soluble vitamin?

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

Q86. What was the weight of the Chandraayan-2 spacecraft launched in July 2019?

(a) 2.9 tonne
(b) 4.3 tonne
(c) 3.3 tonne
(d) 3.8 tonne

Q87. As of January 2020, who held the title of India's youngest chess grandmaster?

(a) Rameshbabu Praggnanandhaa
(b) Viswanathan Anand
(c) Parimarjan Negi
(d) D Gukesh

Q88. How many members represent the state of Uttar Pradesh in Lok Sabha?

(a) 48
(b) 39
(c) 80
(d) 62

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Q89. Which of the following is a pension scheme introduced by the Government of India exclusively for senior citizens in May 2017?

(a) PMGAY
(b) PMVVY
(c) PMGSY
(d) PMMVY

Q90. 'Nibble' in computer terminology is also called _____.

(a) Half bit
(b) Byte
(c) Bit
(d) Half byte

Q91. Where is the tomb of Sher Shah Suri located?

(a) Chausa
(b) Sasaram
(c) Delhi
(d) Rohtasgarh

Q92. Who is the author of the book 'Kerala: God's Own Country'?

(a) Shashi Tharoor
(b) Jeet Thayil
(c) Sudha Murthy
(d) Thakazhi Sivasankara Pillai

Q93. Which of the following is an example of a Chola empire temple?

(a) Chennakesava temple
(b) Airavateswara temple
(c) Virupaksha temple
(d) Badami cave temple

Q94. Flagella are the hair-like structures which act as organelles of locomotion in which of the following organisms?

(a) Virus
(b) Paramecium
(c) Bacteria
(d) Amoeba

Q95. Mekhela Chador' is a traditional dress from the state of:

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

Q96. _____ is the tube that carries urine from the kidney to the urinary bladder.

(a) Sphincter
(b) Urethra
(c) Ureter
(d) Aorta

Q97. Who among the following is the co-founder of Twitter?

(a) Bill Gates
(b) Narayan Murthy
(c) Jack Dorsey
(d) Tim Berners-Lee

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Q98. As of January 2020, who is the managing director of YES Bank?

(a) Ravneet Gill
(b) Aditya Puri
(c) Arundhati Bhattacharya
(d) Amitabh Chaudhry

Q99. In which year was UNICEF founded?

(a) 1949
(b) 1948
(c) 1945
(d) 1946

Q100. Laterite soil is rich in:

(a) Phosphorus
(b) Calcium carbonate
(c) Potassium
(d) Iron oxide

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (d) Intensive

The solution is in Hindi. Read it online.

Q2. Answer: (c) Belief

The correct answer is Belief.

Key Points

• Let's look at the meanings of the given word and marked option:
• Trust- firm belief in the reliability, truth, ability, or strength of someone or something
• Belief- an acceptance that a statement is true or that something exists
• Let's look at the meanings of the other given options:
• Welfare- the health, happiness, and fortunes of a person or group
• Safety- the condition of being protected from or unlikely to cause danger, risk, or injury
• Ability- possession of the means or skill to do something
• Hence from the given meanings, we find that Trust and Belief are synonyms.

Q3. Answer: (b) Quarrell

The solution is in Hindi. Read it online.

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Q4. Answer: (a) rise in

The correct answer is rise in.

Key Points

• There are some verbs/nouns/adjectives which are followed by fixed prepositions as given below:

• Exonerate from, refrain from, a rise in something, land on, aptitude for, inured to, accused of, a predilection for, differ from, vexed at, etc.

• Example:

• August has seen a large rise in the number of unemployed.

Hence, according to the phrases given above, 'rise in' will be the correct choice.

• The given phrase 'a rise in something' means an increase in degree or importance.

Correct Sentence: Several environmentalists from the city conducted a meet to discuss issues related to the rise in pollution levels created by the growing number of pharmaceutical companies.

Additional Information

• There are some fixed prepositional phrases given below:

• by the dint of, out of jealousy, in danger, by car/bus/train, owing to, on a trip, for a change, etc.

• For example:

• I went on a trip to Goa last month.

Q5. Answer: (a) to

The correct answer is to.

Key Points

• There are some fixed prepositional phrases given below:

• by dint of, out of jealousy, on sale, date back to, at a discounted price, by the dozen, owing to, on a trip, for a change, etc.

• For example:

• This house dates back to 1780.

The phrase 'date back to' means to have existed for a particular length of time or since a particular time.

• Thus the preposition 'to' will be the correct choice in the 1st blank.

Additional Information

• There are some verbs/nouns/adjectives which are followed by fixed prepositions given below:

• Exonerate from, refrain from, suspicious of, interested in, inured to, accused of, a predilection for, a respite from, vexed at, etc.

• Example:

• **After spending some time on the island they became inured to the hardships.

Q6. Answer: (b) are

The correct answer is are.

Key Points

• In a sentence, the verb is used according to person and number.

• The verb always conforms to the main subject of the sentence.

• In the given sentence, the main subject is 'the Ellora caves' which is plural.

• Hence, the auxiliary verb will also be plural i.e. 'are' in the 2nd blank as the given sentence is in the present tense.

Additional Information

• If an article is used before every subject, it denotes different people/things. Hence, a plural verb will be used.

• Example:

• The writer and the poet has come. (incorrect)

• The writer and the poet have come. (correct)

Q7. Answer: (a) The

The correct answer is The.

Key Points

• Articles are words that define a noun as specific or unspecific.

• The definite article 'the' is used with the name of things that are unique or already mentioned before.

• The article 'a' is used with the name of things that are not specific.

• The article 'an' is used with the words having the first letter as a vowel and having the sound of a vowel.

• In the given 3rd blank part of the cloze test, the article 'the' will be used as the 34 caves have already been mentioned in the cloze test.

Additional Information

• If a word starts with a vowel but has the sound of a consonant, it will be preceded by the article 'a'.

• Example: a university, a union, a one rupee note, etc.

Q8. Answer: (a) carved

The correct answer is carved.

Key Points

• Let's look at the meanings of the given options:

• carved- cut (a hard material) in order to produce an object, design, or inscription

• created- bring (something) into existence

• constructed- build or erect (something, typically a building, road, or machine)

• erected- construct (a building, wall, or other upright structure)

• **As per the possible context of the sentence, the 34 caves were made from the parent rock.

• Hence, from the given meanings, we find that the 1st option i.e. carved is the correct choice in the 4th blank.

Q9. Answer: (c) status

The correct answer is status.

Key Points

• Let's look at the meanings of the given options:

• role- an actor's part in a play, movie, etc.

• symbol- a thing that represents or stands for something else, especially a material object representing something abstract

• status- the official classification given to a person, country, or organization, determining their rights or responsibilities

• function- an activity or purpose natural to or intended for a person or thing

• **As per the possible context of the sentence, the caves were accorded the position/title of the World Heritage Site in 1983.

• Hence, from the given meanings, we find that the 3rd option i.e. status is the correct choice in the 5th blank.

Q10. Answer: (b) Sheath

The solution is in Hindi. Read it online.

Q11. Answer: (b) Congratulations to

The correct answer is Congratulations to.

Key Points

• Let's look at the meaning of the given idiom:

• Hats off to someone- to give (someone) praise or credit

• Example:

• I take my hat off to anyone who is involved in political life for such a long time.

Additional Information

• Let's look at the origin of the idiom:

• This particular idiom is considered to have emerged during the middle of the 19th when men used to wear hats.

• Usually, at that time when a man meets a woman on the street, he took his hat off as a way to show respect.

Q12. Answer: (a) Expidition

The correct answer is Expidition.

Key Points

• Let's look at the correct spelling and meaning of the marked option:

• Expedition- a journey or voyage undertaken by a group of people with a particular purpose, especially that of exploration, scientific research, or war

• Example:

• Scott died while he was on an expedition to the Antarctic in 1912.

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• Let's look at the meanings of the other given options:
• Extempore- spoken or done without preparation
• Extinct- (of a species, family, or other groups of animals or plants) having no living members; no longer in existence
• Experiment- a scientific procedure undertaken to make a discovery, test a hypothesis, or demonstrate a known fact

Q13. Answer: (a) (a)

The solution is in Hindi. Read it online.

Q14. Answer: (a) no information about

The correct answer is no information about.

Key Points

• There are some uncountable nouns (followed by a singular verb) which don't take the articles 'a/an', many, few, and plural form:
• Furniture, scenery, luggage, temper, hair, knowledge, equipment, pottery, music, jewellery, etc.
• Example:
• The sceneries at my friend's house enchanted me.
• The scenery at my friend's house enchanted me.
• As per the rule given above, 'information' will be used instead of 'informations' in the underlined part of the given question.
• Thus we are left with the 1st option as the only correct choice.

Correct sentence: I had no information about the bank strike so I went there yesterday.

Additional Information

• The nouns given below seem plural in form but in actuality are singular:
• news, billiards, summons, physics, measles, innings, etc.
• Example:
• Physics is an interesting subject.

Q15. Answer: (c) The report of the sub-committee is being presented in a week’s time.

The correct answer is The report of the sub-committee is being presented in a week’s time.

Key Points

• The structures for both the active and passive forms for present continuous tense are given below:
• Active form- Subject + is/am/are + V1 + ing + Object
• Passive form- Object + is/am/are + being + V3 + by + Subject
• Example:
• He is playing a Cricket match. (active voice)
• A Cricket match is being played by him. (passive voice)
• The given sentence is an assertive one and in the Active voice form.
• Follow the passive form structure for the present continuous tense given above:
• Exchange the places of the subject and object. (The sub-committee - its report)
• Since the given subject 'the report' is a singular noun, the auxiliary verb 'is' will also be singular.
• Now the verb will be used accordingly. (being presented)
• At last line up the remaining part.

Following these steps, we finally get- The report of the sub-committee is being presented in a week’s time.

Q16. Answer: (c) Did you know whether

The correct answer is Did you know whether.

Key Points

• The simple present tense is used when an action is happening right now, to state or ask about things in general, or when it happens regularly or unceasingly.
• The structure is given below:
• Subject + V1 + object.
• The verb will take 's/es' if the given noun/pronoun (3rd person) is singular.
• Example:
• He plays badminton daily.
• In the given part of the sentence, we need a simple present verb tense as a general statement has been given here.

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• Since 'you' is a plural pronoun, the plural auxiliary verb i.e., 'do' will be used.

Correct Sentence: Do you know whether or not we can exchange the dress if my sister doesn't like it?

Additional Information

• Certain verbs used only in the simple present tense are given below:

• See, think, know, possess, like, want, desire, hate, seem, imagine, etc.

• Example:

• My brother is owning a car. (incorrect)

• My brother owns a car. (correct)

Q17. Answer: (b) Unknown to everyone

The correct answer is Unknown to everyone.

Key Points

• Let's look at the meaning of the given idiom:

• behind the scenes- unknown to the public

• Example:

• Any discrepancy between cognitive and neurobiological results indicates that something unexpected may be going on behind the scenes.

Additional Information

• Let's look at the origin of the idiom:

• The term comes from the theater, where, in the seventeenth and eighteenth centuries, violent action such as a murder or execution generally took place backstage (behind the scenery).

• By the late eighteenth century, the expression was used figuratively for any activity that took place out of the public eye.

Q18. Answer: (a) No improvement

The correct answer is No improvement.

Key Points

• The present perfect tense is a verb tense that shows an action or state that either occurred at an indefinite time in the past or began in the past and continued to the present time.

• The structure is given below:

• Subject + has/have + V3 + object. (active voice)

• Object + has/have + been + V3 + subject. (passive voice)

• Example:

• He has played some matches for the Indian Cricket team. (active voice)

• Some matches have been played by him for the Indian Cricket team. (passive voice)

• In the given sentence, we need to follow the structure in the active voice form.

• Hence according to the rule given above, 'have decided' is the most appropriate choice of the verb form as the subject (Harry and Meghan) is plural.

• Thus we are left with the 1st option as the only correct choice.

Correct Sentence: Harry and Meghan have decided to work and become financially independent.

Q19. Answer: (c) Expand

The correct answer is Expand.

Key Points

• Let's look at the meanings of the given word and marked option:

• Abbreviate- shorten (a word, phrase, or text)

• Expand- become or make larger or more extensive

• Let's look at the meanings of the other given options:

• Challenge- a call to take part in a contest or competition, especially a duel

• Dispute- a disagreement, argument, or debate

• Oppose- disapprove of and attempt to prevent, especially by argument

• Hence from the given meanings, we find that Abbreviate and Expand are antonyms.

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Q20. Answer: (d) CBDA

The correct answer is CBDA.

Key Points

• While arranging the parts of the passage, we should find some grammatical or contextual connections between them:

• Sentence C introduces us to the subject 'two cats'. It is the introductory sentence and will be put in the first place.

• Sentence B tells us about the instance of the cats spotting a loaf of bread. It will be put in second place.

• Sentence D tells us the reaction of the cats after seeing the loaf of bread. It will be put in third place.

• The last sentence is A as it mentions the conviction of one of the cats that the loaf was hers as she first spotted it.

Thus, the correct order is - Once upon a time, two cats were passing through a street. Suddenly they spotted a loaf of bread lying beneath a tree. Both pounced upon it and caught the loaf at the same time. “It is mine. I saw it first," claimed one cat.

Q21. Answer: (a) CBAD

The correct answer is CBAD.

Key Points

• While arranging the parts of the passage, we should find some grammatical or contextual connections between them:

• Sentence C introduces us to the simultaneous development of Physics and astronomy in ancient times. It is the introductory sentence and will be put in the first place.

• Sentence B tells us about an Arab writer and scientist 'Ibn Al-Haitham'. It will be put in second place.

• Sentence A tells us the book 'Kitab al- Manazir' written by the above-mentioned author. It will be put in third place.

• The last sentence is D as it mentions the contents (disproving of the ancient Greek concept of vision and introduction of a new theory) of the above-mentioned book.

Thus, the correct order is - During the ancient period, the development of Physics took place simultaneously with the development of astronomy. However, during the medieval period, the notable work of an Arab writer and scientist, Ibn Al-Haitham revolutionised the concept of physics. Ibn Al-Haitham wrote a book in seven volumes namely ‘Kitāb al-Manāzir’ also known as ‘The Book of Optics.’ In this book, Ibn Al-Haitham disproved the ancient Greek concept of vision and introduced a new theory.

Q22. Answer: (a) Attractive

The correct answer is Attractive.

Key Points

• Let's look at the meanings of the given word and marked option:

• Alluring- powerfully attract or charm; tempt

• Attractive- (of a thing) pleasing or appealing to the senses

• Let's look at the meanings of the other given options:

• Cheating- act dishonestly or unfairly in order to gain an advantage, especially in a game or examination

• Deceitful- guilty of or involving deceit; deceiving or misleading others

• Distracting- preventing concentration or diverting attention; disturbing

• Hence from the given meanings, we find that Alluring and Attractive are synonyms.

Q23. Answer: (d) visible

The correct answer is visible.

Key Points

• Let's look at the meanings of the given options:

• evident- plain or obvious; clearly seen or understood

• exposed- cause someone to be vulnerable or at risk

• revealed- make (previously unknown or secret information) known to others

• visible- able to be perceived or noticed easily

• The given options are very close in meanings but as per the possible context (the six eclipses will be perceived by the sky gazers), we find that the 4th option i.e. visible is the correct choice.

Correct Sentence: Astronomy enthusiasts and sky gazers will be able to watch six eclipses in 2020, but only three of them are expected to be visible in India.

Q24. Answer: (c) The doctor advised Jaya, “From tomorrow put the eye drops into your eyes four times a day.”

The correct answer is The doctor advised Jaya, “From tomorrow put the eye drops into your eyes four times a day.”

Key Points

• Let's look at the steps to change the sentence from indirect to direct speech:

• When the indirect speech is in an assertive form, we follow the steps given below:
• Change the sentence in the direct speech from assertive to imperative.
• The tense of reported speech is changed only when the reporting verb is in the past tense.
• The reporting verb 'advised' will remain the same.
• 'To infinitive' is replaced by a comma and inverted commas.
• Words showing time and place are changed accordingly. (the next day - tomorrow)
• The personal pronouns will be changed according to the subject and object of the reporting verb.
• Here 'her' will be converted into 'your' as per the subject.
• 'to put' changes into 'put'.
• At last line up the remaining part.

Following these steps, we finally get- The doctor advised Jaya, “From tomorrow put the eye drops into your eyes four times a day.”

Additional Information

• The sentence which expresses a prayer, keen wish, curse, etc. is called an optative sentence.
• This kind of sentence generally starts with 'may' and 'wish'.

Q25. Answer: (c) Reservoir

The correct answer is Reservoir.

Key Points

• Let's look at the meaning of the marked option:
• Reservoir- a large natural or artificial lake used as a source of water supply
• Let's look at the meanings of the other given options:
• Pond- a small body of still water formed naturally or by hollowing or embanking
• Creek- a stream, brook, or minor tributary of a river
• Pool- a small area of still water, typically one formed naturally
• Hence, from the given meanings, we find that Reservoir is the correct one-word substitute.

Q26. Answer: (a) Theatre

Given,

Farmer : Field :: Artist : ?

The pattern followed here is,

The farmer works in the field similarly, an artist works in the theatre.

Hence, the correct answer is Theatre.

Q27. Answer: (c) Only conclusion I follows

Concept:

1) We have to check the conclusions are 100% match with the statement. If the conclusion is 100% match with the given statement then the conclusion is true. If there is a 1% chance of not following the statement then the conclusion is considered to be false.

2) The possibility case can be considered to be "false" in "definite case".

3) In Possibility case, either "can" or "possible" word must be present.

Explanation

Given,

Statements:

All woods are roots.

All fruits are roots.

No woods are a fruit.

The least possible Venn diagram is as follows,

Conclusion:

(I) Some roots are fruits - True

As it is given in the statements that All fruits are roots then some roots will definitely fruits.

(II) All roots are woods - False

As it is given in statements that "No woods are a fruit" and "All fruits are roots" hence all roots can not be woods.

Hence, the Only conclusion I follow.

Additional Information

Q28. Answer: (b) 331

The pattern followed here is,

6 ? 5 = 30 ? 3 = 90 + 1 = 91

8 ? 7 = 56 ? 3 = 168 + 1 = 169

10 ? 9 = 90 ? 3 = 270 + 1 = 271

Similarly,

22 ? 5 = 110 ? 3 = 330 + 1 = 331

Hence, the answer is 331.

Q29. Answer: (a) 23

Given,

10	**17**	**8**
5	3	15
6	14	?
42	68	92

The pattern followed here is,

Column 1:

10 * 2 = 20, 5 * 2 = 10, 6 * 2 = 12

So, 20 + 10 + 12 = 42

Column 2:

17 * 2 = 34, 3 * 2 = 6, 14 * 2 = 28

So, 34 + 6 + 28 = 68

Column 3:

8 * 2 = 16, 15 * 2 = 30, X * 2 = 2X

16 + 30 + 2X = 92

2X + 46 = 92

2X = 92 - 46 = 46

So, X = 23

Hence, the answer is 23.

Q30. Answer: (a) E

Given,

A, C, E, D, C, E, G, F, ?

The pattern followed here is,

Hence, the correct answer is E.

Q31. Answer: (d) U

Given,

EC, H, HF, N, KI, U

The pattern followed here is,

EC = E + C = 5 + 3 = 8

H = 8

So, EC = H

HF = H + F = 8 + 6 = 14

N = 14

So, HF = N

KI = K + I = 11 + 9 = 20

U = 21

Here, KI ≠ U

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Hence, U does not belong to the group.

Q32. Answer: (c) 31

Given,

The pattern followed here is,

$25^2 - 5^2 = 625 - 25 = 600$

$27^2 - 3^2 = 729 - 9 = 720$

Similarly,

$X^2 - 9^2 = 880$

$X^2 = 880 + 81 = 961$

$X = \sqrt{961} = 31$

Hence, the correct answer is 31.

Q33. Answer: (d) BIDTR

Given,

RUMMY is written as QVLNX.

The pattern followed here is,

Similarly,

Hence, the correct answer is BIDTR.

Q34. Answer: (d) c, b, b, a, c

Given,

_bac_ac_acb_ _ ba

1) cbacaacbacbbcba

2) abacbacbacbacba

3) abaccaccacbbbba

4) cba/cba/cba/cba/cba

Here we see the pattern is followed in the fourth option.

Hence, the correct answer is c, b, b, a, c.

Q35. Answer: (c) Foal

Given,

Chirp, Caw, Foal, Howl

The relation between all the words is that all are sounds made by birds and animals except Foal.

Foal means small horse.

Hence, the correct answer is Foal.

Q36. Answer: (d) 28

Given,

The number of triangles is,

Small triangles = 12

The number of triangles consists of triangles = 12

The number of triangles consists of triangles = 4

Therefore The total number of triangles = 28

Hence, the correct answer is 28.

Q37. Answer: (c) 729

Given,

27 : 125 :: 343 : ?

The pattern followed here is,

$27 = (3^3) : 125 = (5^3) : : 343 = (7^3) : 729 = (9^3)$

Hence, the correct answer is 729.

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Q38. Answer: (a) LIP

Given,

CAG : GEK :: HEL : ?

The pattern followed here is,

In the same way,

Hence, the correct answer is LIP.

Q39. Answer: (d) 81

Given,

144, 256, 676, 81

The relation here is,

144 - 12^2

256 - 16^2

676 - 26^2

81 - 9^2

Here we see all the numbers are square of even numbers except 81, which is the square of an odd number.

Hence the correct answer is 81.

Q40. Answer: (c) [figure]

Given,

The paper will look as follow when unfolded,

Hence the correct answer is option 3.

Q41. Answer: (c) FINICX

Given,

683 is coded as FOX, 654 is FIN, 4581 is NIOC

The pattern followed here is,

Similarly,

Hence, the correct answer is FINICX.

Q42. Answer: (d) [figure]

Given,

The above-given figure is embedded in

Hence, the correct answer is option 4.

Q43. Answer: (a) 1

Given,

The opposite faces are,

1	2	4
5	6	3

Hence, the correct answer is 1.

Q44. Answer: (c) 31

Given,

A denotes mangoes, B denotes bananas, C denotes apples.

Here we see only 31 persons like only Bananas.

Hence the correct answer is 31.

Q45. Answer: (b) 333

Given,

213, 217, 233, 269, ?

The pattern followed here is,

Hence, the correct answer is 333.

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Q46. Answer: (b) [figure]

Given,

The pattern followed here is, all the symbols are moving alternative above and below the arrow, and the number of dots, triangles is increasing alternatively.

Therefore, the image in the place of the question mark (?) is

Hence, the correct answer is option 2.

Q47. Answer: (c) 50

Operator	#	&	@	÷
Meaning	–	÷	×	•

Given expression, 15 @ 2 ÷ 900 & 30 # 10 = ?

Therefore After replacing the operators by their meaning, we get:

15 × 2 + 900 ÷ 30 - 10

= 15 × 2 + 30 - 10

= 30 + 30 - 10 = 50

Hence, the correct answer is 50.

Q48. Answer: (a) 513

Given,

126, 217, 344, ?

The pattern followed here is,

Hence, the correct answer is 513.

Q49. Answer: (a) P

Given,

P is the brother of Q. R is the daughter of Q. S is the sister of P. Q is the sister of S. T is the brother of R.

The family tree is as follows,

Hence, P is the uncle of T.

Q50. Answer: (d) [figure]

In the mirror image, the left and the right part of the image changes and top and the bottom part of the image remains the same.

So, the mirror image is,

Hence, the correct answer is option 4.

Q51. Answer: (b) 21.5 cm

Given data:

LC = 6, CD = 11, LB = 4, and AB = x

Formula used:

LC × LD = LB × AL

Solution:

According to the problem:

LC × LD = LB × AL

6 × (6 + 11) = 4 × (4 + x)

=> 4 + x = 51/2

=> 4 + x = 25.5

=> x = AB = 21.5

Therefore The length of AB is 21.5 cm.

Q52. Answer: (a) 15.5%

Given :

The dealer marks goods by 30% above the cost price

He gives a discount of 35% while selling.

Concept used :

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Marked price = cost price + increment on cost price
Selling price = Marked price - discount on marked price
Calculations :
Let the cost price be 100x
Marked price = 100x + 30% of 100x
=> 130x
Selling price = 130x - 35% 0f 130x
=> 84.5x
Required loss percent = (Cost price - selling price)/cost price) × 100
=> (100x - 84.5x)/(100x) × 100
=> 15.5%
Therefore The loss percent will be 15.5.

Q53. Answer: (b) 1949

Given :
The difference between two numbers is 43 and their product is 50
Calculations :
Let the numbers be x and y
According to the question
x - y = 43
xy = 50
Now squaring (x-y)
$(x - y)^2 = x^2 + y^2 - 2xy$
x2 + y2 = $(x - y)^2 + 2xy$
=> $(43)^2 + 2 \times 50$
=> 1849 + 100
=> 1949
Therefore The Correct answer will be option 2.

Q54. Answer: (c) 20 cm

Given :
The perimeter of the rectangle is 50 cm
The ratio of area of the rectangle to the length is 5 : 1
Concept used :
Perimeter of the rectangle = 2(Length + Breadth)
Area of the rectangle = Length × Breadth
Calculations :
Let the length of the rectangle be 'L'
Let the breadth of the rectangle be 'B'
Area of the rectangle = L × B
=> 2(L + B) = 50
=> L + B = 25
According to the question
=> (L × B) : L = 5 : 1
=> (L × B)/L = 5/1
=> L × (25 - L) = 5L (B = 25 - L)
=> $25L - L^2 = 5L$
=> L = 20
Therefore The length of the rectangle is 20 cm.

Q55. Answer: (d) 5 < x < 11

Given :
Two sides of the triangle are 3 cm and 8 cm respectively

Concept used :

Sum of length of two sides is greater than the third side in a triangle

Calculations :

Let the third side be 'x' cm

Now for 1st condition

3 + x > 8

=> x > 5

For condition 2nd

3 + 8 > x

=> x < 11

Values of 'x' concluded

=> 5 < x < 11

Therefore The correct answer will be option number 4.

Q56. Answer: (b) 1

Calculations :

Use above given table to solve this problem

Solving numerator first

132 ÷ 12 × x - 3 × 3

=> 11 × x - 9

=> 11x - 9

Now solving denominator

5^2 - 6 × 4 + x^2

=> 25 - 6 × 4 + x^2

=> 25 - 24 + x^2

=> x^2 + 1

Now according to the question

(11x - 9)/(x^2 + 1) = 1

11x - 9 = x^2 + 1

x^2 + 1 + 9 - 11x = 0

x^2 - 11x + 10 = 0

=> x^2 - 10x - x + 10 = 0

=> x.(x - 10) -1(x - 10) = 0

=> (x - 1).(x - 10) = 0

=> x = 1 or 10

But x < 10

So,

=> x = 1

Therefore The value of x will be 1.

Q57. Answer: (c) 153.75

Mistake Points x + y = 4, y + z = 5, z + x = 6

So,

x + y + z = 15/2 = 7.5

We know that

x3 + y3 + z3 - 3xyz = (x + y + z) × [(x + y + z)2 – 3(xy + yz + zx)]

=> 7.5 × [7.5^2 - 3(2 + 3 + 4)]

=> 7.5 × (56.25 - 27)

=> 7.5 × 29.25

=> 219.375

But this was not the option in the real exam we have to ignore it.

Given :

If x + y = 4, xy = 2, y + z = 5, yz = 3, z + x = 6 and zx = 4

Formula used :

$x^3 + y^3 + z^3 - 3xyz = (x + y + z) \times (x^2 + y^2 + z^2 – xy – yz – zx)$

$(x + y)^2 = x^2 + y^2 + 2xy$

Calculations :

x + y = 4, y + z = 5, z + x = 6

So,

x + y + z = 15/2 = 7.5

xy + yz + zx = 2 + 3 + 4 = 9

Now,

$(x + y)^2 = x^2 + y^2 + 2xy$

$x^2 + y^2 = 16 – 4$ ....(2xy = 4)

=> 12

$(y + z)^2 = y^2 + z^2 + 2yz$

$y^2 + z^2 = 25 – 6$ ....(2yz = 6)

=> 19

$(x + z)^2 = x^2 + z^2 + 2xz$

$x^2 + z^2 = 36 – 8$ ....(2zx = 8)

=> 28

So,

$2x^2 + 2y^2 + 2z^2 = 12 + 19 + 28 = 59$

$x^2 + y^2 + z^2 = 29.5$

Now,

$x^3 + y^3 + z^3 - 3xyz = (x + y + z) \times (x^2 + y^2 + z^2 – xy – yz – zx)$

=> (7.5) × (29.5 – 9)

=> 7.5 × 20.5

=> 153.75

Therefore The correct value will be 153.75.

Note : This question is incorrect in the official paper and we have made changes accordingly to satisfy options.

There can be multiple answers but we have to choose the correct answer from the given options.

Other answer to the same question is 219.375 with a formula given below.

$x3 + y3 + z3 - 3xyz = (x+y+z)((x+y+z)^2 - 3(xy+yz+zx))$

Q58. Answer: (a) 2

Given :

Ratio of two numbers is 4 : 7

Calculations :

Let the number added to denominator and numerator be 'x'

Now according to the question

(4 + x)/(7 + x) = 2 : 3

=> 12 + 3x = 14 + 2x

=> x = 2

Therefore 2 will be added to make the term in the ratio of 2 : 3.

Q59. Answer: (a) 36cm²

Given :

M is the midpoint of the triangle ABC

Concept used :

The area of two triangles is directly proportional to their base if they have the same height.

Calculations :

Area of the ΔABM = (1/2) × (BM × AM)

=> (1/2) × (BM × AM) = 18

=> BM × AM = 36

Now

Area of ΔABC = (1/2) × (BC × AM)

=> (1/2) × (2 × BM × AM) (BC = 2 BM because M is the mid point)

=> BM × AM

=> 36

Therefore The area of the triangle ABC is 36 cm²

Q60. Answer: (c) 2005

Concept used :

Cost per unit weight = Total cost/Total weight

Calculations :

Cost per tonne for the year 2005 = 150/100 = 1.5 cr

Cost per tonne for the year 2006 = 150/75 = 2 cr

Cost per tonne for the year 2007 = 330/150 = 2.2 cr

Cost per tonne for the year 2008 = 400/160 = 2.5 cr

Cost per tonne for the year 2009 = 500/200 = 2.5 cr

Therefore Minimum value per tonne is in the year 2005

Q61. Answer: (a) 24 days

Given :

X and Y together can finish a piece of work in 15 days, while Y alone can finish it in 40 days.

Concept used :

Number of working days = Total work/Work done per day

Calculations :

Total work = LCM of 15 and 40

=> 120 units

Now,

X and Y per day work = 120/15

=> 8 units

Y's per day work = 120/40

=> 3 units

X's per day work = 8 - 3

=> 5 units

Total working days for X = 120/5

=> 24 days

Therefore Total working days for X will be 24.

Q62. Answer: (b) 30 June to 7 July

Calculations :

Rise of deaths for all weeks

From 30 June to 7 July = 180 - 142 = 38 deaths

From 14 July to 21 July = 155 - 145 = 10 deaths

From 21 July to 28 July = 160 - 155 = 5 deaths

From 4 August to 11 August = 165 - 150 = 15 deaths

We can see that greatest rise is from 30 June to 7 July

Therefore The correct answer will be option 2

Q63. Answer: (a) 2 - √3

Given :

(cos 30° - sin 30°)/(sin 60° + cos 60°)

Formula used :

Cos 30° = sin 60° = √3/2

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cos 60° = sin 30° = 1/2

Calculations :

Putting all values in the equation

[(√3/2) - (1/2)]/[(√3/2) + (1/2)]

=> (√3 - 1)/(√3 + 1)

Now rationalising

=> [(√3 - 1)/(√3 + 1)] × [(√3 - 1)/(√3 - 1)]

=> (√3 - 1)²/2

=> (3 + 1 - 2√3)/2

=> (4 - 2√3)/2

=> 2 - √3

Therefore Option 1 will be the correct answer.

Q64. Answer: (b) 20%

Given :

Sachin's income is 25% more than Dileep's.

Calculations :

Let the income of Dileep be 100x

Sachins's income = 100x + 25% of 100x

=> 125x

Now,

Required percent = (Sachin's income - Dileep's income)/(Sachin's income) × 100

=> (125x - 100x)/(125x) × 100

=> (25x/125x) × 100

=> 20%

Therefore Correct answer is option 2.

Q65. Answer: (c) Rs 3,30,000

Given :

Sohan sold his plot at 15% loss for 255000 rupees

Formula used :

Selling price(at profit) = Cost price + Profit on cost price

Selling price(at loss) = Cost price - loss on cost price

Calculations :

Let the cost price be 'C'

According to the question

Selling price = C - 15% of C

255000 = C - 15% of C

=> C = 300000 rupees

Now Selling price at 10% profit

Selling price = 300000 + 10% of 300000

=> 300000 + 30000

=> 330000 rupees

Therefore Selling price at 10% profit will be Rs 330000.

Q66. Answer: (b) 47

Given :

A batsman in his 11^(th) innings makes a score of 77 runs, thereby increasing his average scores by 3.

Formula used :

Average = Total value of all observations/Number of observations

Calculations :

Let the average score per match up to 10 matches be 'x'

Total score up to 10 matches = 10 × x = 10x

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Total score up to 11 matches = 10x + 77

Now according to the question

(10x + 77)/11 = x + 3

=> 10x + 77 = 11x + 33

=> x = 44

Average score after 11th innings = x + 3

=> 44 + 3

=> 47

Therefore His average after 11th innings will be 47 runs

Q67. Answer: (a) 4/5

Given :

cosec θ + cot θ = 2

Formula used :

$\text{cosec}^2\theta - \cot^2\theta = (\text{cosec}\ \theta + \cot\theta)(\text{cosec}\ \theta - \cot\theta) = 1$

Calculations :

cosec θ + cot θ = 2 ....(1)

cosec θ - cot θ = 1/2 ....(2)

Solving equation 1 and 2, we get

cosec θ = 5/4

=> sinθ = 4/5 (sin θ = (1/cosec θ)

Therefore sin θ is equal to 4/5.

Q68. Answer: (b) 23

Given :

$a + b = 5$ and $a^3 + b^3 = 20$

Formula used :

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

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

Calculations :

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

$5^3 = a^3 + b^3 + 3ab(5)$

=> 3ab(5) = 125 – 20

=> ab = 7

Now,

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

$=> 5^2 = a^2 + b^2 + 2 \times 7$

$=> a^2 + b^2 = 25 – 14 = 11$

So,

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

$11^2 = a^4 + b^4 + 2 \times 49$

=> a^4+ b^4 = 121 – 98

=> 23

Therefore The value of a^4 + b^4 is equal to 23.

Q69. Answer: (c) 60°

Given :

$\text{Sec}^2\theta – 3\text{sec}\ \theta + 2 = 0$

Calculations :

$\text{Sec}^2\theta – 3\text{sec}\ \theta + 2 = 0$

$\text{Sec}^2\theta – 2\text{sec}\ \theta – \text{sec}\ \theta + 2 = 0$

$\text{Sec}\theta\ (\text{sec}\ \theta – 2) – 1(\text{sec}\ \theta – 2) = 0$

$=> (\text{sec}\ \theta – 1)\ (\text{sec}\ \theta – 2) = 0$

=> sec θ = 1 and 2

But θ is between 0° and 90°

So,

Sec θ = 2

=> θ = 60°

Therefore θ will be 60°

Q70. Answer: (a) 3

Calculations :

For village A = 10%

For village C = 20%

For village E = 30%

Therefore There are 3 villages which at most or 30% or less non-electrified villages.

Q71. Answer: (a) 7 July to 14 July

Calculations :

Fall in number of deaths for different years

For 7 July to 14 July = 180 - 145 = 35

For 28 July to 4 August = 160 - 150 = 10

We can conclude the greatest fall in deaths is from 7 July to 14 July

Therefore The correct answer will be option 1.

Q72. Answer: (a) 26 cm

Given :

A 5 cm long perpendicular is drawn from the centre of a circle to a 24 cm long chord

Concept used :

The line is drawn from the centre of a circle towards a chord always divides the chord in two equal parts and also perpendicular to the chord.

Calculations :

Let the centre of the circle be 'O' and 'OC' is the radius

Let the chord be 'AB' where 'M' is the midpoint of the chord.

Length of chord AC is 24 cm so MC is equal to 12 cm

Now according to the question

$OC^2 = OM^2 + MC^2$

$OC^2 = 5^2 + 12^2$

$OC^2 = 25 + 144$

$OC^2 = 169$

=> OC = √169

=> 13

Now,

Diameter of the circle = 2 × Radius

=> 2 × 13

=> 26 cm

Therefore The diameter of the circle is 26 cm.

Q73. Answer: (b) 399

Calculations :

7^(81) + 7^(82) + 7^(83)

=> 7^(81) (1 + 7 + 7²)

=> 7^(81) (57)

So the number must be multiple of 19, 3, and 7 to divide this number.

From all options, only 399 is multiple of 19, 3, and 7.

Therefore 399 will divide 7^(81) + 7^(82) + 7^(83) completely.

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Q74. Answer: (b) Rs. 1,000

Shortcut Trick

Difference in Time = 10 years − 8 years = 2 years.

Effective Interest Rate difference = 2 years × 10% = 20%.

Given that 20% of the Principal (Sum) = Rs. 200.

Sum (100%) = (200 ÷ 20) × 100 = Rs. 1,000.

Therefore The correct answer is Rs. 1,000.

Alternate Method

Given:

Difference in Simple Interest (SI) = Rs. 200

Rate of Interest (R) = 10% p.a.

Time periods: T1 = 8 years and T2 = 10 years

Formula Used:

Simple Interest (SI) = (P × R × T) ÷ 100

Calculations:

=> SI10 − SI8 = 200

=> [(P × 10 × 10) ÷ 100] − [(P × 10 × 8) ÷ 100] = 200

=> (100P ÷ 100) − (80P ÷ 100) = 200

=> P − 0.8P = 200

=> 0.2P = 200

=> P = 200 ÷ 0.2

=> P = 1000

Therefore The correct answer is Rs. 1,000.

Additional Information

Simple Interest Difference Rule

When the principal and rate are constant, the difference in interest is directly proportional to the difference in time: SI_(diff) = P × R × (T2 − T1) ÷ 100.

Total Amount Formula

The total amount (A) after T years is the sum of Principal (P) and Simple Interest (SI): A = P + (P × R × T ÷ 100) = P(1 + RT ÷ 100).

Effective Rate of Interest

The effective interest for a period is the product of the annual rate and the number of years (R × T) expressed as a percentage of the principal.

Q75. Answer: (a) 22 2/9 km/h

Shortcut Trick

When the distance traveled is the same (X to Y and Y to X), Average Speed = [2 × a × b] ÷ [a + b].

Average Speed = [2 × 20 × 25] ÷ [20 + 25] = 1000 ÷ 45.

Average Speed = 200 ÷ 9 = 22 2/9 km/h.

Therefore The correct answer is 22 2/9 km/h.

Alternate Method

Given: Speed from X to Y (v1) = 20 km/h, Speed from Y to X (v2) = 25 km/h.

Formula Used: Average Speed = Total Distance ÷ Total Time

=> Let the distance between X and Y be the LCM of 20 and 25, which is 100 km.

=> Time taken from X to Y (t1) = 100 ÷ 20 = 5 hours.

=> Time taken from Y to X (t2) = 100 ÷ 25 = 4 hours.

=> Total distance = 100 + 100 = 200 km.

=> Total time = 5 + 4 = 9 hours.

=> Average Speed = 200 ÷ 9 = 22 2/9 km/h.

Therefore The correct answer is 22 2/9 km/h.

Additional Information

Average Speed for Equal Time

If a person travels for equal time intervals at speeds v1 and v2, then the Average Speed = (v1 + v2) ÷ 2.

Relative Speed

When two objects move in opposite directions, their relative speed is the sum of their individual speeds (u + v). When in the same direction, it is the difference (u − v).

Average Speed for Three Equal Distances

If three equal distances are covered at speeds a, b, and c, then Average Speed = (3 × a × b × c) ÷ (ab + bc + ca).

Q76. Answer: (a) Mizoram

The correct answer is Mizoram.

Important Points

• The Sixth Schedule consists of provisions for the administration of tribal areas in the states of Assam, Meghalaya, Tripura, and Mizoram, in accordance with Article 244 of the Indian Constitution.

• Passed by the Constituent Assembly in 1949, it aimed at the establishment of Autonomous District Councils (ADC), which seek to protect the interests of the tribal community.

• ADCs are bodies serving a district within the state legislature to which the Constitution has granted varying degrees of autonomy.

• These states' governors are empowered to reorganize the tribal areas' borders.

• She or he can choose to include or exclude any region, increase or decrease the limits, and unite two or more autonomous districts into one.

• They may also, without separate legislation, modify or change the names of autonomous regions.

Additional Information

• Mizoram is a state in northeastern India, with Aizawl as its seat of government and capital city.

• Total area: 21,081 km²

• Total population: 1,091,014

• Official language: Mizo, English, and Hindi

Q77. Answer: (b) Mohanlal Viswanathan

The correct answer is Mohanlal Viswanathan.

Important Points

• The Padma Bhushan is the third-highest civilian award in the Republic of India and is granted in any field to acknowledge distinguished service of a high order to the country.

• Padma Bhushan, in the hierarchy, comes after Bharat Ratna and Padma Vibhushan, but before Padma Shri.

• Announced annually on the occasion of National Republic Day, it is conferred by the President of India at a function held sometime around March/April at Rashtrapati Bhavan.

• Mohanlal Viswanathan (born 21 May 1960) was awarded the Padma Bhushan in 2019 along with several other personalities.

• Mohanlal Viswanathan is an Indian actor, producer, playback singer, distributor and philanthropist, known mononymously as Mohanlal, who predominantly works in Malayalam cinema.

• Mohanlal, one of the most admired Indian actors, has had a prolific career spanning over four decades, in which he has appeared in over 340 films.

• He has also appeared in other regional Indian films, in addition to Malayalam.

Mohanlal

Q78. Answer: (a) 16 September

The correct answer is 16 September.

Important Points

• A fragile shield of gas, the ozone layer, protects the Earth from the harmful portion of the sun's rays, thus helping to preserve life on the planet.

• September 16 was designated as the International Day for Ozone Layer Preservation by the United Nations General Assembly.

• In 1994, the United Nations General Assembly declared the International Day for the Protection of the Ozone Layer on 16 September, commemorating the signing, in 1987, of the Montreal Protocol on Substances that Deplete the Ozone Layer.

• Governments, scientists, and industry worked together to cut 99 per cent of all ozone-depleting compounds under the Convention's Montreal Protocol.

• The ozone layer is recovering, thanks to the Montreal Protocol, and is predicted to return to pre-1980 levels by mid-century.

• Held on the 16th of September, World Ozone Day honours this achievement.

• It shows that the only way to address major global problems is through joint decisions and action, driven by science.

• We were reminded by the slogan of World Ozone Day 2020, "Ozone for life" that not only is ozone vital to life on Earth, but we must continue to protect the ozone layer for decades to come.

Ozone hole

Q79. Answer: (b) Jinson Johnson

The correct answer is Jinson Johnson.

Important Points

• Jinson Johnson (born 15 March 1991) is an Indian middle-distance runner and Junior Commissioned Officer (JCO) of the Indian Army who specializes in the 800 and 1500 meter events.

• At the 2015 Asian Athletics Championships in Wuhan, Johnson won the silver medal in the 800-meter race with a time of 1:49.69.

• At the Asian Grand Prix in Thailand the same year, he also won three gold medals.

• By clocking his personal best time of 1:45.98 in Bangalore in July 2016, Johnson qualified for the 800-meter event at the 2016 Summer Olympics, meeting the Olympics qualification standard of 1:46.00.

• In June 2018, Johnson broke Sriram Singh's long-standing national record of 800 meters when he clocked a time of 1:45.65 secs in the Inter-State Senior Athletics Championships.

• He finished fifth in the 2018 Commonwealth Games, setting a new national record in the 1500-metre race by shattering Bahadur Prasad's 23-year-old record.

• Later in 2018, at the Asian Games in Jakarta, Indonesia, with a time of 3:44.72 in the final event, as well as a silver medal in 800 meters, he went on to win the gold medal in the men's 1500m.

Jinson Johnson

Q80. Answer: (b) Kapurthala

The correct answer is Kapurthala.

Important Points

• Kapurthala Rail Coach Factory is a coach manufacturing unit for the Indian Railways, located in the state of Punjab.

• It is located on the Jalandhar-Firozpur railway line.

• Established in 1986, RCF has manufactured more than 30,000 passenger coaches of various types, including self-propelled passenger vehicles, making up more than 50% of the total Indian Railway coach population.

• It is a production unit with a per-year target of 1025 coaches.

• This production accounts for over 35 per cent of the total Indian Railway coach population.

• In the financial year 2013-14, the Rail Coach Factory (RCF) generated a record number of coaches as it achieved the mark of 1701 coaches against an installed capacity of 1500 per annum.

• RCF manufactured 23 different coach variants for high-speed trains such as Rajdhani, Shatabdi, double-decker, and other trains during the year.

• A highly cost-effective indigenous technology for the treatment of biowaste in coaches was also developed by the factory in association with DRDE.

• In 2013–14, approximately 2096 bio-toilets were installed.

• Linke-Hofmann-Busch (LHB) coaches have already been exported by the factory to Southeast Asian and African countries with Metre Gauge rail networks and the experience of Indian Railways in Meter Gauge rolling stock has proven handy in serving these markets.

Railways coach factory, Kapurthala

Q81. Answer: (b) Gerusoppa

The correct answer is Gerusoppa.

Important Points

• Jog Falls, Gerosoppa Falls, or Jogada Gundi Falls, situated in Sagara taluk in Karnataka, is India's second-highest plunge waterfall (after the Nohkalikai Falls).

• It is situated on the boundary between the Shimoga and Uttara Kannada districts.

• Jog Falls, formed by the Sharavati River dropping from a height of 253 meters, is a massive waterfall 30 km (19 mi) downstream (829 ft) with an elevation of 488 meters.

• Jog Falls is India's highest untiered waterfall i.e. it drops directly and does not stream onto rocks.

• It generates 30% of the electricity for the state of Karnataka.

• The Falls were discovered by British explorers 150 years ago.

• Jog Falls is three times higher than the Niagara Falls in the United States.

• The water flow rate is 153 m^3/s or 5,387 cu ft/s.

Jog falls in Karnataka

Hogenakkal Falls:

• Hogenakkal Falls is a waterfall in South India on the Kaveri river on the border between Dharmapuri district of Tamil Nadu and Chamrajnagar district of Karnataka.

• It is sometimes referred to as the "Niagara Falls of India,".

• It is known for bathing areas and hired boat rides and is a major tourist attraction.

Soochipara Falls:

• Soochipara Falls also known as Sentinel Rock Waterfalls is a three-tiered waterfall in Vellarimala, Wayanad, India.

• It is surrounded by deciduous, evergreen and montane forests.

Athirappilly Falls

• Athirapplu Falls is situated in Athirappilly Panchayat, Chalakudy Taluk, Thrissur District of Kerala, India on the Chalakudy River,.

• This river originates from the upper reaches of the Western Ghats at the entrance to the Sholayar ranges. It is the largest waterfall in Kerala, which stands tall at 80 feet.

Q82. Answer: (b) Majuli Island

The correct answer is Majuli island.

Important Points

• The Guinness Book of World Records has named Majuli as the world's largest river island.

• The beautiful river island is located on the River Brahmaputra in Assam.

• It is formed by the Brahmaputra River in the South, and Kherkutia Xuti, an anabranch of Brahmaputra, joined by the Subansiri River in the north.

• The island is populated by the Mising, Deori, and Sonowal Kachri tribes.

• The people of the island speak the languages of Mising, Assamese, and Deori.

• It is home to about 1,60,000 individuals and is a hub of neo-Vaishnavite Assamese culture.

• It covers about 880 sq km of land and is one of Assam's popular tourist destinations.

• Majuli suffers from heavy erosion due to the regular flooding of the Brahmaputra river.

• It is estimated that it has lost approximately one-third of its territory in the last 30-40 years due to erosion.

• It was recently declared a district and was previously a subdivision under the district of Jorhat.

• It has also been included in the tentative list of UNESCO's World Heritage Sites.

Majuli island

Q83. Answer: (a) Sourav Ganguly

The correct answer is Sourav Ganguly.

Important Points

• Sourav Chandidas Ganguly, affectionately known as Dada, is the 39th and current president of the Board of Control for Cricket in India, an Indian cricket administrator, commentator, and former national cricket team captain.

• On October 23, 2019, Ganguly became the 39th BCCI president, thus ending the 33-month reign of the Supreme Court-appointed Committee of Administrators (CoA) to run the cricket board's daily affairs.

• Sourav Ganguly is only the second cricketer from India to become the president of the BCCI.

• Ganguly, who played 113 tests and 311 one-day internationals and led India to 21 test wins, has already been an administrator for the Cricket Association of Bengal, his home state association (CAB).

• In the past, he was part of the BCCI's technical panel and also, alongside Sachin Tendulkar and VVS Laxman, part of a three-member Cricket Advisory Committee.

Sourav Ganguly

Q84. Answer: (a) 79^(th)

The correct answer is 79^(th).

Important Points

• Sachin Ramesh Tendulkar is a former international Indian cricketer who served as the Indian national team's captain.

• He is widely known in the history of cricket as one of the greatest batsmen.

• In International Cricket, he is the top running scorer of all time.

• On September 9, 1994, five years after his ODI debut, the former Indian cricketer Sachin Tendulkar scored his first ODI century

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in his 79th ODI match.

• Sachin scored 110 (130) in Colombo, opening the innings against Australia, before registering three consecutive ducks in his next three ODI innings.

• As India won by 31 runs, his innings played a key role in the side's victory in the match.

• The Player of the Match award was also given to Tendulkar for his knock that was studded with two sixes and eight fours.

• Sachin then went on in his ODI career to score 49 hundred.

Sachin Tendulkar in his 79th ODI match

Q85. Answer: (c) Vitamin C

The correct answer is Vitamin C.

Key Points

• Vitamin C is a water-soluble vitamin.

• it is necessary for normal growth and development.

• Water-soluble vitamins dissolve readily in water.

• Leftover vitamin quantities leave the body through the urine.

Additional Information

• Vitamin C, also known as L-ascorbic acid, is a water-soluble vitamin that is naturally found in certain foods, added to others, and also available as a dietary supplement.

• The best sources of vitamin C are fruits and vegetables.

• The primary contributors to vitamin C are citrus fruits, tomato and tomato juice, and potatoes.

• Since ascorbic acid is water-soluble and is damaged by heat, the vitamin C content of food may be decreased by prolonged storage and cooking.

• Acute Vitamin C deficiency can lead to a disease called Scurvy.

Sources of Vitamin C

Q86. Answer: (d) 3.8 tonne

The correct answer is 3.8 tonne.

Important Points

• Chandrayaan-2, one of the most ambitious lunar missions of India designed by the Indian Space Research Organization (ISRO) was launched on 22nd July 2019 from Satish Dhawan Space Center, Sriharikota.

• Chandrayaan-2 is India's second lunar mission and the first attempt to make a soft landing in the South Polar Area of the Moon.

• The Chandrayaan-2 has a total weight of 3,850 kg (8,490 lb).

• The mission's overall cost was roughly US$141 million.

• Chandrayaan-2 was originally expected to be launched in 2011 and was intended to carry a Russian-made lander and rover. As Russia pulled out, ISRO had to build its own lander and rover, resulting in delays.

• Chandrayaan-2's primary aim is to chart the location and availability of lunar water.

• The project also intends to research the lunar topography, mineralogy, lunar exosphere, and elemental abundance.

• India became the fourth nation to soft-land on the lunar surface with Chandryaan-2.

Chandrayaan-2

Q87. Answer: (d) D Gukesh

The correct answer is D Gukesh.

Important Points

• Dommaraju Gukesh (born 29 May 2006), commonly referred to as Gukesh D, is a chess player from India.

• He is the second youngest person in history to be given the title of Grandmaster by FIDE in March 2019.

• At 12 years, 7 months and 17 days, D. Gukesh became India's youngest Grandmaster on 15 January 2019.

• With this accomplishment, Gukesh has overtaken Praggnanandhaa, who holds the record in June 2018 at 12 years and 10 months.

• In the Under 12 category, Gukesh won the Under-9 division of the Asian School Chess Championship in 2015 and the World Youth Chess Championship in 2018.

• At the 2018 Asian Youth Chess Championships, he also won five gold medals, in the U-12 individual rapid and blitz, U-12 team rapid and blitz, and the U-12 classical individual formats.

• In March 2018, at the 34th Cappelle-la-Grande Open, he completed the criteria for the title of International Master.

• As the youngest grandmaster ever, Gukesh nearly surpassed Sergey Karjakin but missed the record by 17 days.

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Gukesh D

Q88. Answer: (c) 80

The correct answer is 80.

Key Points

• A member of Parliament in the Lok Sabha represents the voice of the Indian people in the Lok Sabha, the lower house of Parliament in India.

• Members of the Lok Sabha legislature are elected by direct elections based on adult suffrage for 5 years.

• With two houses, the Parliament of India is bicameral; consisting of the Rajya Sabha (upper house i.e. Council of States) and Lok Sabha (lower house i.e. House of the People).

• In the Lok Sabha, the highest allowed strength of members of parliament is 552 of these, 543 members are directly elected by the people from single-member constituencies, while the President of India can nominate up to two members from the Anglo-Indian community if deemed necessary for representation.

• The faction, or alliance of parties, with a majority in the Lok Sabha, selects India's Prime Minister.

• The state of Uttar Pradesh is currently represented by the strength of 80 members in the Lok Sabha.

Additional Information

• Uttar Pradesh is a state in Northern India.

• With approximately 200 million people, it is India's most populous state and the world's most populous subdivision of countries.

• Capital: Lucknow

• Chief Minister: Yogi Adityanath (BJP)

The Lok Sabha

Important Points

• The reservation for the Anglo-Indian community in the Lok Sabha was abolished with the 104th Constitutional Amendment Act, 2019.

• As a result, there are no longer nominated seats for Anglo-Indian members in the Lok Sabha.

Q89. Answer: (b) PMVVY

The correct answer is PMVVY.

Important Points

• In May 2017, the Government of India introduced a pension scheme for senior citizens i.e. Pradhan Mantri Vaya Vandan Yojana and implemented through Life Corporation of India.

• In this scheme, a guaranteed return of 8% per annum, payable monthly is assured on payment of minimum Rs. 1.5 lakh initially for Rs. 1000 per month pension to a maximum of Rs. 7.5 lakh initially for Rs. 5000 per month pension.

• It also offers a death benefit.

Additional Information

PMGAY: Pradhan Mantri Gramin Aawas Yojana

• It aims to provide houses to people living in rural India.

• It was previously known as Indira Aawas Yojana launched in 1985 by the then Prime Minister of India Rajiv Gandhi.

• This Yojana now aims to provide houses to all by 2022.

PMGSY: Pradhan Mantri Gram Sadak Yojana

• Launched to provide road connectivity to the unconnected part of the country to eradicate poverty.

• Under this yojana, 3.71 lakh km road will be constructed to connect 1.67 lakh unconnected habitations and 3.68 lakh km roads will be upgraded.

PMMVY: Pradhan Mantri Matru Vandana Yojana

• Introduced in 2017 by Ministry of Women and Child Development which involves financial aid to pregnant and lactating women having age of 19 years or above as women generally suffer wage loss during the time of childbirth and childcare.

Mistake Points

• PMVVY is only for people of age 60 years or above.

• No medical certificate is required to opt for this scheme.

Q90. Answer: (d) Half byte

The correct answer is Half Byte.

• Nibble is also known as half-byte or tetrade and has sixteen possible values represented by a hex digit.

• It is used to state the memory consumption to store a digit in packed decimal format within an IBM mainframe to enhance the

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computation and the process of debugging.

Important Points

Unit Conversion Table:

• 4 bit = 1 Nibble

• 8 bit = 1 byte

• 1 KB (kilobyte) = 1024 byte

• 1 MB (megabyte) = 1024 KB

• 1 GB (gigabyte) = 1024 MB

• 1 TB (terabyte) = 1024 GB

• 1 PB (petabyte) = 1024 TB

• 1 XB (Exabyte) = 1024 PB

• 1 ZB (zettabyte) = 1024 XB

• 1 YB (yottabyte) = 1024 ZB

Key Points

• Decimal value of 10 in 8-bit byte system = 00001010 = 0 × 2^0 + 1 × 2^1 + 0 × 2^2 + 1 × 2^3 + 0 × 2^4 + 0 × 2^5 + 0 × 2^6 + 0 × 2^7 = 2 + 8 = 10

• Decimal value of 10 in 4-bit nibble system = 1010

Mistake Points

• In data communication, Nibble is known as Quadbits.

• The smallest unit of information which can be stored is called as Bit.

• A single bit can only hold 1 or 0.

Q91. Answer: (b) Sasaram

The correct answer is Sasaram.

• Sher Shah Suri was a Pathan from Bihar who founded the Suri empire after defeating the Mughal empire.

• In his memory, a tomb designed by Mir Muhammad Aliwal Khan was built in Sasaram, Bihar and it is an example of Indo-Islamic Architecture.

Important Points

• Sher Shah Suri died in a gunpowder explosion in the fort of Kalinjar.

• The tomb of Sher Shah Suri is also known as the Second Taj Mahal of India as it is built in between an artificial lake.

Mistake Points

• In Delhi, the construction of Purana Qila was begun during the time of Humayun which was continued till the time of Sher Shah Suri.

• The son of Suri, Salim Shah Suri built the Salimgarh fort in Delhi.

• Grand Trunk Road connecting Central Asia and India was built by Sher Shah Suri.

Sher Shah Suri tomb in Sasaram, Bihar

Q92. Answer: (a) Shashi Tharoor

The correct answer is Shashi Tharoor.

Key Points

• Shashi Tharoor, a Member of Parliament from Kerala since 2009 authored the book titled, Kerala: God’s Own Country.

• This book is based on the illustration of MF Hussain.

• Shashi Tharoor received the Sahitya Akademi Award in 2019 for his book ‘An Era of Darkness’

• Books of Shashi Tharoor: Bookless in Baghdad, India: From Midnight to Millennium, Inglorious Empire, Nehru: The Invention of India, The Paradoxical Prime Minister, Why I am a Hindu

Additional Information

• Jeet Thayil: Names of the Women, Narcopolis, The Book of Chocolate Saints, Collected Poems.

• Sudha Murthy: The Serpent’s Revenge, The bird with the Golden Wings, Wise and Otherwise, House of Cards.

• Thakazhi Sivasankara Pillai: Kayar, Chemmeen, Randidangazhi.

Mistake Points

• Dr Vipin Goel, who originally coined the term Kerala: God’s Own Country, also created the first webpage to promote the tourism and rich culture of Kerala.

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Q93. Answer: (b) Airavateswara temple

The correct answer is Airavateswara temple.

• Airavateswara Temple at Darasuram, near Kumbakonam, in Thanjavur district was built by Rajaraja Chola II of Chola Empire.

• It is based on Dravidian Architecture and a UNESCO World Heritage Site.

• This temple is dedicated to Lord Shiva.

Key Points

• Other temples built by the Chola Dynasty are Brihadisvara temple in Thanjavur and Temple of Gangaikondacholisvaram. All 3 temples are part of Great Living Chola Temples.

Additional Information

• Chennakesava Temple: Built on the banks of Yagchi river in Belur in Karnataka and commissioned by King Vishnuvardana. This temple was built in 103 years and dedicated to Lord Vishnu.

• Virupaksha Temple: located on the banks of Tungabhadra river in Hampi in Karnataka and dedicated to Lord Virupaksha, a form of Lord Shiva. It was built by Lakkan Dandesha of Vijayanagar empire.

• Badami Cave Temple: Hindu and Jain cave temples in Badami in Karnataka representing Indian rock-cut architecture. There are 4 caves dedicated to Lord Shiva (Nataraja form), Lord Vishnu (Trivikrama form) and Jain figures.

Airavateswara Temple at Darasuram

Q94. Answer: (c) Bacteria

The correct answer is Bacteria.

• Flagella have a filamentous structure that helps in the locomotion of Archea, Bacteria, and Eukaryotes.

• Flagellum means ‘whip’ and this whip-like structure enables a cell to propel in liquid.

• Some flagella act as sensory organs in few organisms that sense changes in pH and temperature.

Key Points

Flagella are composed of flagellin protein which makes its helical structure. Its structure is divided into three parts –

• Basal Body: attached to the cell membrane and cytoplasmic membrane and consists of rings surrounded by MotB protein.

• Hook: connects motor protein in the base to the filament.

• Filament: thin hair-like structure arising from the Hook.

Functions of Flagella:

1. Helps in locomotion

2. Act as sensory organs (sense pH and temperature)

3. Increase reproduction rates in few eukaryotes

4. Used as a Secretary organelle in Chlamydomonas

Types of Flagella:

1. Monotrichous: Single flagellum at one pole

2. Amphitrichous: Single flagellum at each pole

3. Lophotrichous: 2 or more flagellum at one or both poles

4. Peritrichous: Flagellum all over the surface

Structure of Flagella

Q95. Answer: (c) Assam

The correct answer is Assam.

Mekhela Chador is a traditional dress worn by women of Assam. This dress has two pieces –

• Mekhela - Bottom Portion: draped from the waist downwards and a wide cylindrical piece cloth. Strings are not used to tie Mekhela around the waist.

• Chador – Top Portion: long cloth piece having one end tucked into the top of Mekhela and the rest is draped around the chest and back.

Important Points

Traditional Dresses –

• Odisha: Kataki Sari and Sambalpuri Sari (Women); Dhoti with Kurta or Gamcha (Men)

• West Bengal: Sari (Women); Dhoti (Men)

• Assam: Gamosa (men); Dokhna (Women)

• Tripura: Rikutu Gamcha with Kubai and Pagri (Men); Rinai and Khakloo (Women)

Key Points

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• Traditional Mekhela Chador is made of Cotton, Muga, Pat Silk, and Eri Silk.

• In past, Riha was worn as a Chador.

• Riha is still included in the dress as a part of Assamese bridal trousseau and sometimes in traditional events like Bihu and other Assamese festivals.

Traditional Mekhela Chador – Dress of Assam

Q96. Answer: (c) Ureter

The correct answer is Ureter.

Key Points

• In humans, the kidney is one of the main organs of the excretory system.

• The kidney's function is the filtration of the blood and removing waste(toxic) products.

• Waste products and excess fluid are removed through the urine.

• If the kidney fails person needs to undergo dialysis.

• Dialysis is a treatment that filters and purifies the blood using a machine

• The human excretory system includes certain organs that eliminate the wastes such as salts, carbon dioxide, urea, uric acid and water produced by the body.

• The path of the urine in the human excretory system is -

• After filtering from the kidney → The urine through Ureter → Stored in the Urinary bladder → Exits through the urethra.

Q97. Answer: (c) Jack Dorsey

The correct answer is Jack Dorsey.

Mistake Points

• Current CEO of Twitter is Linda Yaccarino.

• He joined Twitter as an Ads Engineer in the month of October 2011 and gradually moved up to hold the title, 'Distinguished Software Engineer.'

• In 2018, he was appointed as the Chief Technology Officer (CTO).

Important Points

• Twitter is an American microblogging and social networking site in which users post messages known as tweets and communicate through them.

• In Mar 2006, Twitter was founded by Jack Dorsey, Noah Glass, Biz Stone, and Evan Williams & launched in July 2006.

• Twitter is having headquarters in San Francisco, California, and has more than 25 offices across the world.

• Jack Patrick Dorsey was born on November 19, 1976, in St. Louis, Missouri in America.

• He is an American internet pioneer and philanthropist, co-founder and CEO of Twitter, and also CEO of Square, a financial payments firm.

Jack Dorsey- founder of Twitter

Q98. Answer: (a) Ravneet Gill

The correct answer is Ravneet Gill.

Important Points

• Mr. Ravneet Gill is a veteran banker by profession and was the managing director of Yes Bank as of January 2020.

• He joined Yes Bank as MD & CEO in Mar-19 and left the bank in Mar-20.

• Prior to joining Yes Bank, he served as Deutsche Bank AG (world's 11^(th)largest bank) for more than 25 years.

• Yes bank is an Indian private bank founded by Mr. Rana Kapur & Ashok Kapur in 2004.

• Present MD & CEO of Yes bank :- Mr. Prashant Kumar

• Chairman of Yes bank:- Sunil Mehta

• Yes bank is having 3 subsidiaries - Yes Bank, Yes Capital and Yes Asset Management Services.

Ravneet Gill

Q99. Answer: (d) 1946

The correct answer is 1946.

Important Points

• Full form of UNICEF- United Nations International Children's Emergency Fund / United Nations Children's Fund.

• UNICEF was created by United Nations General Assembly on 11 Dec 1946.

• UNICEF is the successor of the International Children's Emergency Fund (ICEF) which was created in 1946 by the U.N. Relief

Rehabilitation Administration with the prime objective of providing immediate relief to children and mothers affected by World War II.

• The primary objective of the agency is to provide humanitarian and development aid to children worldwide.

• UNICEF is having more than 150 country offices across the globe & having a presence in 192 countries & Territories.

• Via a specific partnership mechanism established with the host country, UNICEF depends on national offices to help carry out its mission.

The UNICEF Flag

Q100. Answer: (d) Iron oxide

The correct answer is Iron Oxide.

Key Points

• Laterite is a Latin word that means "Later".

• Francis Hamilton (a Scottish Physician) first described and named a laterite formation in Southern India in 1807.

• Laterite is both soil and a rock type and rich in Iron & Aluminium.

• Nearly all laterites are of rusty-red coloration, because of high iron oxide content.

• They evolve by intense and sustained weathering of the underlying parent rock.

• Laterite soils have a high content of clay, which ensures that they have a greater ability to exchange cations and retain water than sandy soils, and can thus be used as a hard material like a brick.

• It is formed in hot & wet tropical areas & majorly found between the Tropics of Cancer and Capricorn.

• Angkor wat in Cambodia is an example for use of laterite soil as a construction material.

Example of construction with Laterite in Angkor, Cambodia

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