SSC CHSL Previous Paper 13 (Held On: 13 Oct 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. Directions: Select the most appropriate word to fill in the blank in the given sentence.

Some people think that the credit card culture encourages people to shop compulsively and merely _____ debts.

(a) stimulate
(b) formulate
(c) accumulate
(d) simulate

Q2. Directions: Select the most appropriate word to fill in the blank in the given sentence.

This winter _____ weather conditions have led people to remain indoors.

(a) adverse
(b) averse
(c) traverse
(d) inverse

Q3. Directions: In the given sentence identify the segment which contains the grammatical error.

A Royal Bengal tigress and her three cubs was poisoned and their carcasses left to rot in the Wildlife Sanctuary in Goa

(a) A Royal Bengal tigress
(b) and her three cubs was poisoned
(c) and their carcasses left to rot
(d) in the Wildlife Sanctuary in Goa

Q4. Directions: Select the most appropriate ANTONYM of the given word.

MALIGNANT

(a) Hesitant
(b) Fatal
(c) Benign
(d) Indignant

Directions

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

One complaint parents and teachers have about children these days is that they are simply not interested in (1)____. In his weekly column ‘Down in Jungle land’ Ranjit Lal, an (2)__ offers some useful suggestions. Keeping a dog or cat as a pet (3)__ to be made mandatory. Regular visits to national parks and (4)__ are another way to get children hooked. Treks in wilderness areas are even (5)____ as children can then engage with all kinds of life-forms on their turf

Q5. Select the most appropriate option for blank number 5.

(a) best
(b) worse
(c) good
(d) better

Q6. Select the most appropriate option for blank number 4.

(a) sanctorum
(b) sanctity
(c) sanctuaries
(d) sanctuary

Q7. Select the most appropriate option for blank number 3.

(a) will
(b) can
(c) must
(d) needs

Q8. Select the most appropriate option for blank number 2.

(a) environmentalist
(b) environmental
(c) environs
(d) environment

Q9. Select the most appropriate option for blank number 1.

(a) natural
(b) nature
(c) naturalist
(d) unnaturalness

Q10. In the given sentence identify the segment which contains the grammatical error.

Scientist have recently announced that a more effective antidote for snakebite venom has been made.

(a) recently announced
(b) that a more effective antidote
(c) Scientist have
(d) for snakebite venom has been made

Q11. Directions: Select the word which means the same as the group of words given.

A natural skill at doing something

(a) Knack
(b) Stack
(c) Quack
(d) Snack

Q12. Directions: Select the most appropriate synonym of the given word.

OPULENT

(a) Luxurious
(b) Shabby
(c) Virulent
(d) Distant

Q13. Directions: Select the word which means the same as the group of words given.

Very careful and precise

(a) Meticulous
(b) Garrulous

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(c) Tremulous
(d) Tumultuous

Q14. Select the most appropriate meaning of the given idiom.

Like talking to a brick wall

(a) Curious
(b) Fascinated
(c) Inattentive
(d) Frightened

Q15. Directions: Select the most appropriate ANTONYM of the given word.

DIVERSE

(a) Parallel
(b) Identical
(c) Practical
(d) Farcical

Q16. Directions: Given below are four jumbled sentences. Select the option that gives their correct order.

A. Some returned in the 80's but they were not allowed to reclaim or buy land.
B. In the 70's many Vietnamese living in Cambodia faced deportation after a change in government.
C. Their only solution was to live in wooden homes floating on the lake.
D. Even today they can be found living on the lake surviving on fishing and tourism.

(a) ABDC
(b) CBDA
(c) DACB
(d) BACD

Q17. Directions: Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No improvement'.

Sele, is a near extinct language, spoken for just five villages in Nepal, which lie close to Tibet.

(a) spoken in
(b) No improvement
(c) spoken out
(d) spoken of

Q18. Directions: Select the INCORRECTLY spelt word.

(a) Business
(b) Fattening
(c) Decieve
(d) Dessert

Q19. Directions: Select the correct indirect form of the given sentence.

Ravi asked, "Ritu, how many sets of class 12 practice papers have you finished?"

(a) Ravi asked Ritu how many sets of class 12 practice papers had she been finishing.
(b) Ravi asked Ritu how many sets of class 12 practice papers she had finished.
(c) Ravi asked Ritu how many sets of class 12 practice papers she has been finishing.
(d) Ravi asked Ritu how many sets of class 12 practice papers was she finishing.

Q20. Direction: Select the INCORRECTLY spelt word.

(a) Quizzes
(b) Acceptable
(c) Beginning
(d) Accomodate

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Q21. Select the most appropriate meaning of the given idiom.

Bite off more than one can chew

(a) To cheat someone and get away
(b) To eat quickly and run away
(c) To taste something while cooking
(d) To take on more than one can deal with

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

ENRAGE

(a) Infuriate
(b) Alleviate
(c) Moderate
(d) Placate

Q23. Directions: Select the correct passive form of the given sentence.

Rains lashed Delhi and brought the temperature down by a few degrees.

(a) Delhi is being lashed by rain and the temperature was brought down by a few degrees.
(b) Delhi was lashed by rains and the temperature was brought down by a few degrees
(c) Delhi had been lashed by rain and the temperature had been brought down by a few degrees.
(d) Delhi was being lashed by rain and the temperature was being brought down by a few degrees

Q24. Directions: Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No improvement'.

The Arabian Sea region is very important for India as several major ports are locating there.

(a) was locating
(b) No improvement
(c) are located
(d) have been locating

Q25. Directions: Given below are four jumbled sentences. Select the option that gives their correct order.

A. For example, our project files were kept pending for a few years.

B. However, such hindrances did not stop us from tirelessly working towards the establishment of 450 clinics.

C. We initially constructed over 150 clinics.

D. But very soon many roadblocks were put in our path of expansion.

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

GENERAL INTELLIGENCE

Q26. Select the option in which the words share the same relationship as that shared by the given pair of words

Weight : Kilogram

(a) Resistance : Ohm
(b) Distance : Hertz
(c) Height : Length
(d) Time : Clock

Q27. Four numbers-pairs have been given, out of which three are alike in some manner and one is different. Select the number-pair that is different from the rest.

(a) 3 : 27
(b) 12 : 1757
(c) 7 : 343

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(d) 11 : 1331

Q28. If the following interchanges are made in sings and numbers, which equation would be correct?

Interchanges:

Sign ÷ and -

Numbers: 15 and 5

(a) 4 × 30 - 5 ÷ 15 + 14 = 21

(b) 4 × 30 - 15 ÷ 5 + 12 = 27

(c) 4 × 30 - 15 ÷ 5 + 12 = 21

(d) 12 × 30 - 15 ÷ 5 + 4 = 37

Q29. A × B means 'A is the wife of B',

A ÷ B means 'A is the father of B'.

Which of the following expression means R is the paternal grandfather of S?

(a) S ÷ U × J ÷ R

(b) R ÷ J ÷ S × U

(c) S × U × R ÷ J

(d) J × S ÷ R × U

Q30. Select the option that is related to the third number in the same way as the second number is related to the first number.

88 : 308 : : 126 : ?

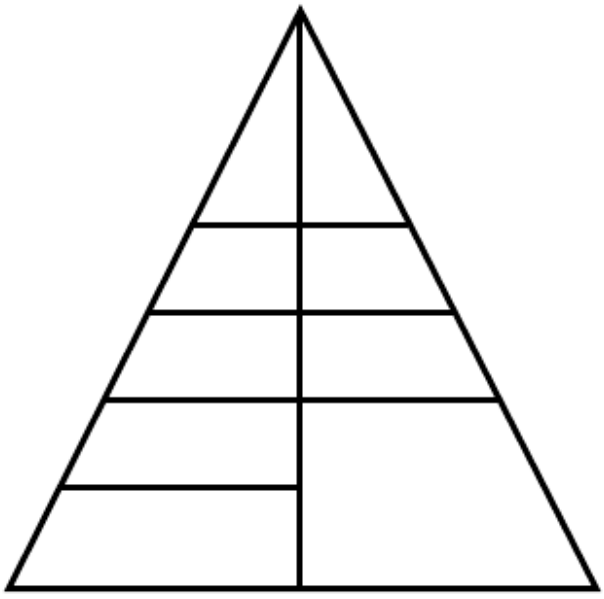
(a) 456

(b) 379

(c) 441

(d) 450

Q31. How many triangles are there in the given figure?



(a) 11

(b) 12

(c) 13

(d) 14

Q32. Which option represents the correct order of the given words as they would appear in an English dictionary

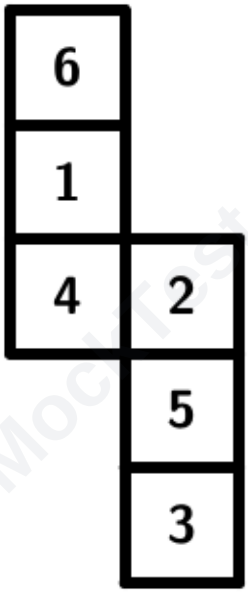
1. Mankind
2. Manner

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3. Manuscript
4. Management
5. Making

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

Q33. A cube is made by folding the given sheet. In the cube so formed, which number would be on the face opposite to the one showing '5'?



(a) 6
(b) 2
(c) 4
(d) 1

Q34. 'Human-beings' is related to 'mammals' in the same way as 'Snake' is related to '_____'.

(a) Mammals
(b) Reptile
(c) Non-chordates
(d) Amphibian

Q35. Select the letter-cluster that can replace the question mark (?) in the following series.

EQM, GRL, ISK, KTJ, ?

(a) MUI
(b) NUS
(c) MTJ
(d) MVR

Q36. 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 conclusions logically follow(s) from the statements.

Statements:

1. Some computers are phones.
2. All phones are televisions.

Conclusions:

I. Some phones are computers.

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II. Some televisions are computers.

III. No television is a computer.

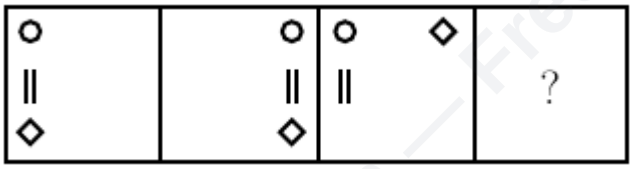
(a) Either conclusion II or III follows.

(b) Only conclusions I and II follow.

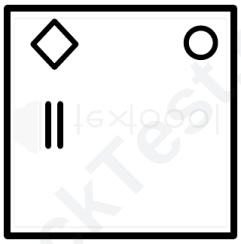
(c) Only conclusion III follows

(d) Only conclusion I and III follow.

Q37. Select the option figure that can replace the question mark (?) in the following figure series.



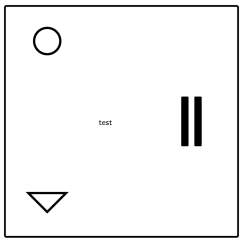
(a)



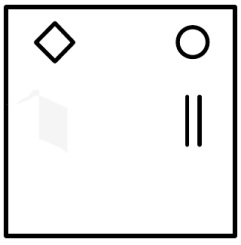
(b)



(c)



(d)



Q38. In a certain code language, 'TENDER' is coded as '185414520'. How will 'REQUESTED' be coded as in that language?

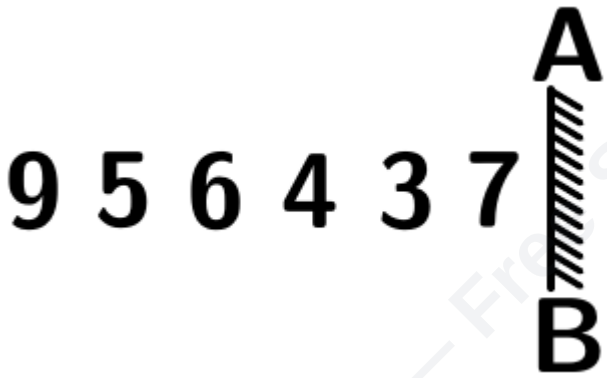
(a) 65101852117516

(b) 45221942116518

(c) 45201952117518

(d) 45203952017558

Q39. Select the correct mirror image of the given number-cluster when a mirror is placed on the right side of the cluster



(a)



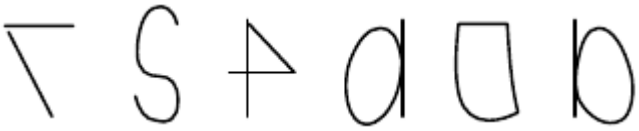
(b)



(c)



(d)



Q40. Select the option in which the numbers are related in the same way as the numbers in the given set.

(15, 49, 201)

(a) (17, 55, 220)
(b) (29, 91, 369)
(c) (18, 58, 290)
(d) (24, 76, 307)

Q41. Select the option in which the numbers are related in the same way as are the numbers in the given set.

(15, 556, 331)

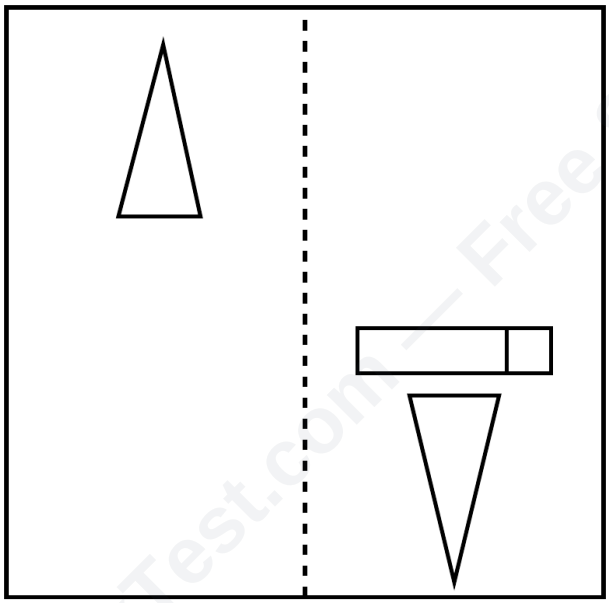
(a) (17, 495, 104)
(b) (4, 331, 305)
(c) (12, 228, 74)
(d) (9, 159, 78)

Q42. In a certain code language, 'SECTION' is written as 'PHZQLRK'. How will 'HOSTELS' be written as in that language?

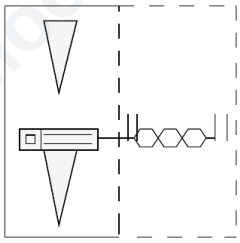
(a) FSPQHIQ
(b) ERPQHOP
(c) EQPSHIP

(d) ERPRGIP

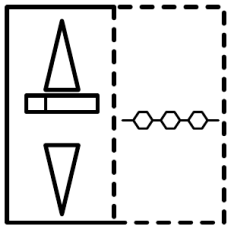
Q43. Select the option that depicts how the given transparent sheet of paper would appear if it is folded at the dotted line.



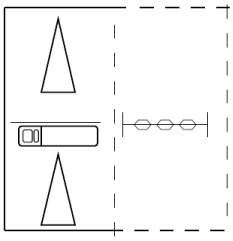
(a)



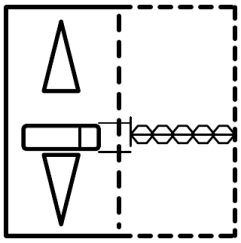
(b)



(c)



(d)



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Q44. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.

LZ : OA : : UR : ?

(a) FS
(b) GK
(c) HB
(d) FI

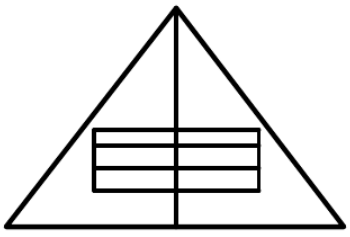
Q45. Select the figure from the option that is embedded in the given figure X. (Rotation is not allowed)



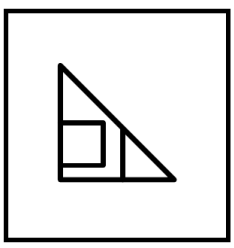
(a)



(b)

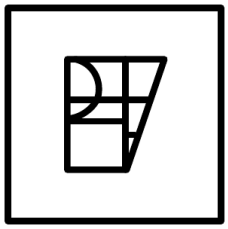


(c)

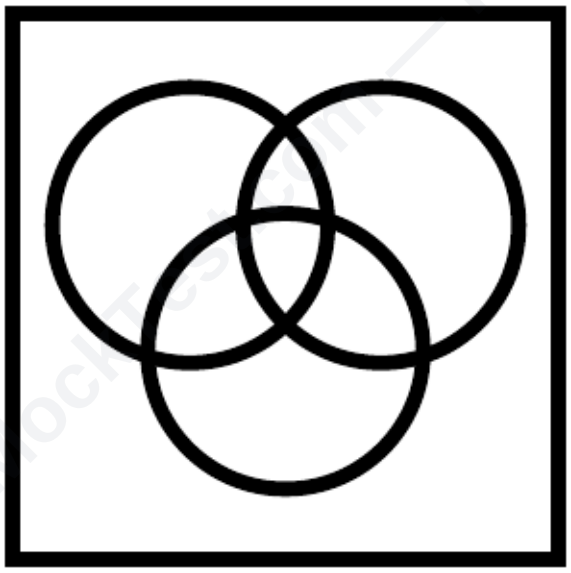


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(d)



Q46. Which of the following options best represents the given Venn diagram?



(a) Mothers, Females, Aunts
(b) Mothers, Sisters, Daughters
(c) Accountants, Literates, Human beings
(d) Fathers, Nurses, Males

Q47. An amount of Rs 504 is to be divided among three persons A, B and C in the ratio of 7 : 8 : 9, respectively. How much amount will B and C receive in total?

(a) Rs. 317
(b) Rs. 357
(c) Rs. 268
(d) Rs. 419

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

88, 95, 106, 119, 136, 155, 178, ?

(a) 217
(b) 207
(c) 197
(d) 249

Q49. Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the odd letter-cluster.

(a) PUZ
(b) BGL
(c) AFK
(d) NSW

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Q50. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) Malaria
(b) Depression
(c) Dengue
(d) Typhoid

QUANTITATIVE APTITUDE

Q51. A person purchases 40 items at Rs. 10 each. He sells a part of them at 25% profit and the remaining at 10% loss. The net profit is 4% in this transaction. The number of items he sold at a loss, is:

(a) 8
(b) 22
(c) 16
(d) 24

Q52. The value of $1/((9-4\sqrt{5})^2) + 1/((9 + 4\sqrt{5})^2)$ is:

(a) 322
(b) 286
(c) 424
(d) 246

Q53. A cylindrical vessel with radius 6 cm and height 5 cm is to be made by melting a number of spherical metal balls of diameter 2 cm. The minimum number of balls needed is:

(a) 115
(b) 105
(c) 135
(d) 125

Q54. The average of 35 consecutive natural numbers is N. Dropping the first 10 numbers and including the next 10 numbers, the average is changed to M. If the value of $M^2 - N^2 = 600$, then the average of 3M and 5N is:

(a) 90
(b) 115
(c) 100
(d) 120

Q55. If A = 2(sin^6θ + cos^6θ) - 3(sin^4θ + cos^4θ) then the value of 3α such that cosα = √(3+A)/(5+A) is:

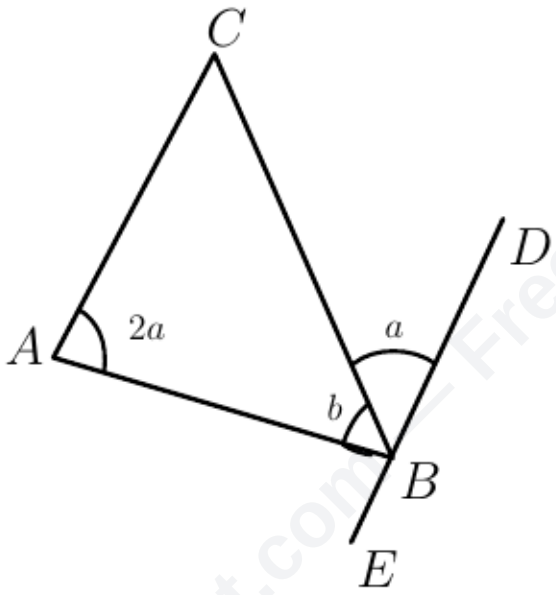
(a) 180^?
(b) 90^?
(c) 45^?
(d) 135^?

Q56. If, 2^(x+y-2z) = 8^(8z-5-y); 5^(4y-6z) = 25^(y+z); 3^(4x-3z) = 9^(x+z) then the value of 2x +3y + 5z is:

(a) 56
(b) 32
(c) 28
(d) 44

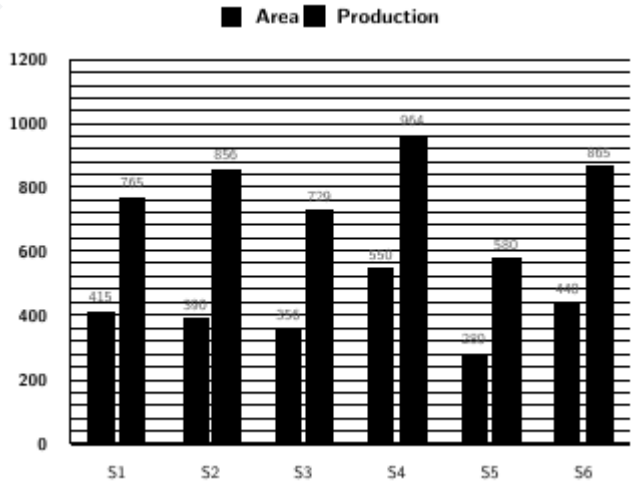
Q57. In the given figure, if AC, DE are parallel and angle CAB = 38^?, then the value of angle ABC + 5angle CBD is:

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(a) 218^?
(b) 158^?
(c) 178^?
(d) 196^?

Q58. The following graph shows the production of paddy in the agricultural land available the 6 places S1, S2, S3, S4, S5, S6 (area in hundreds of hectares and production in thousand of tonnes)



Based on the information, the production ratio (production to land) is highest and lowest, respectively, in:

(a) S5, S3
(b) S2, S1
(c) S2, S4
(d) S3, S6

Q59. If 117 Cos2 A + 129 Sin2 A = 120 and 170 Cos^2 B + 158 Sin^2 B = 161, then the value of $Cosec^2$ A Sec^2 B is:

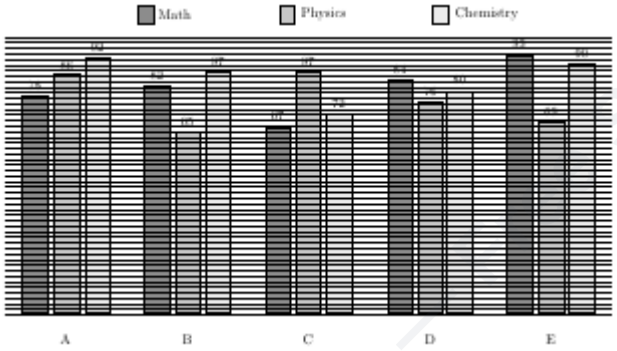
(a) 16
(b) 9
(c) 1
(d) 4

Q60. If A = [3/7 of 41/5 ÷ 18/25 + 17/24] of [289/16 ÷ (3/4 + 2/3)²] then the value of 8A is:

(a) 231
(b) 213
(c) 321

(d) 132

Q61. The following graph gives the performance of five students A, B, C, D, E is Math, Physics and Chemistry.



Based on the given information - considering that a performance is based on the difficulty level of the paper, which of the following statements is correct?

(a) For C, Math is the most difficult and Chemistry is the easiest
(b) For D, all subjects are of the same difficulty
(c) Physics is easier for C than for B and E
(d) Math is easier for B than for E and A

Q62. A sells an item at 20% profit to B, and B sells the same at 10% profit to C and receives Rs. 1,32,000.0. Had C purchased the same item from A, he would have spent 5% less than what he spent with B. What profit would A have made when C purchased the same item from A?

(a) Rs. 24,540
(b) Rs. 25,400
(c) Rs. 25,540
(d) Rs. 24,450

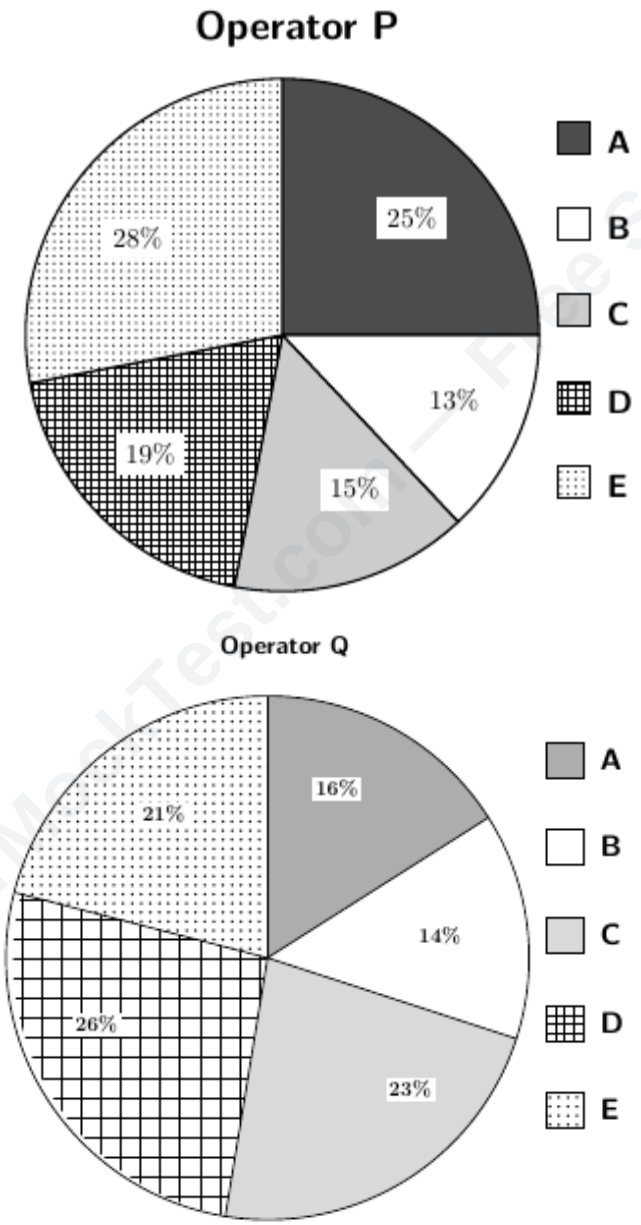
Q63. The distance between railway station is 1176 km. To cover this distance, an express train takes 5 hours less than a passenger train while the average speed of the passenger train is 70 km/h less than that of the express train. The time taken by the passenger train to complete the travel is:

(a) 23 hours
(b) 17 hours
(c) 12 hours
(d) 18 hours

Q64. If 2145 : x :: 3003 : 42, then the value of y so that x : 2508 :: y : 11704, is:

(a) 96
(b) 212
(c) 140
(d) 156

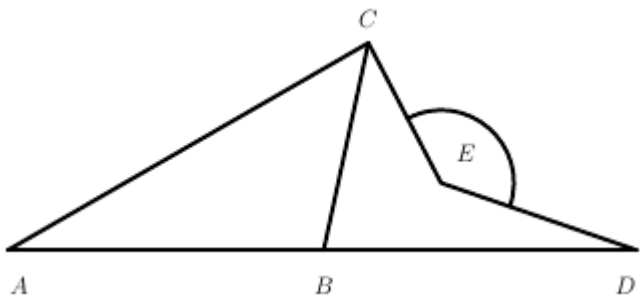
Q65. The percentage of customers of two network operators P and Q across the cities A, B, C, D, E is shown in the given pie charts.



Based on the information in the pie charts if the customers of operator P are 3.6 lakhs, and the customers of operator Q are 4.2 lakhs, then in the city C, the positive difference between the customers of the operators is:

(a) 48,000
(b) 42,600
(c) 52,000
(d) 44,500

Q66. If in the given figure, angle ACB + angle BAC = 80^?; angle BDE = 35^?; angle BCE = 45^?, then the marked angle angle CED is:



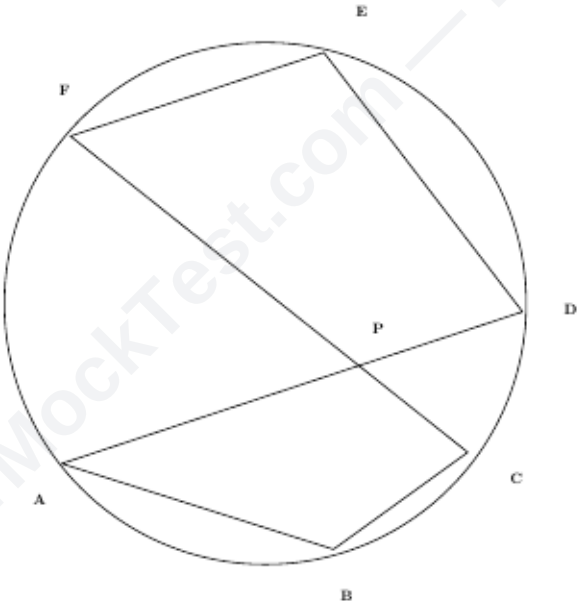
(a) 135^?
(b) 120^?

(c) 160^?
(d) 150^?

Q67. Which of the following numbers is divisible by 6?

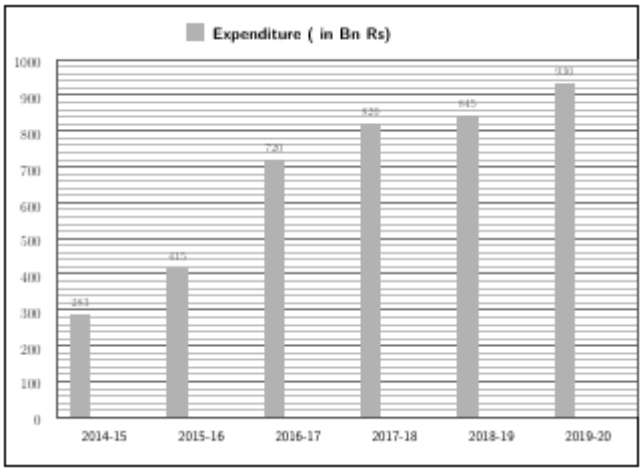
(a) 3,49,722
(b) 1,00,246
(c) 23,408
(d) 43,923

Q68. In the following figure, if angles angle ABC = 95^?angle FED = 115^?(not to scale). Then the angle angle APC is equal to?:



(a) 120^?
(b) 150^?
(c) 155^?
(d) 135^?

Q69. The following graph shows the expenditure on education sector by Indian government for the years-2014 - 15 to 2019 - 20



If the government plans to increase the expenditure by 30% on the average of the expenditures in 2016-17, 2017-18, 2018-19, then the approximate amount (in billions of rupees) to be spent in 2019-20 is:

(a) Rs. 1,162.6
(b) Rs. 1,129.5
(c) Rs. 1087.3
(d) Rs. 1,033.5

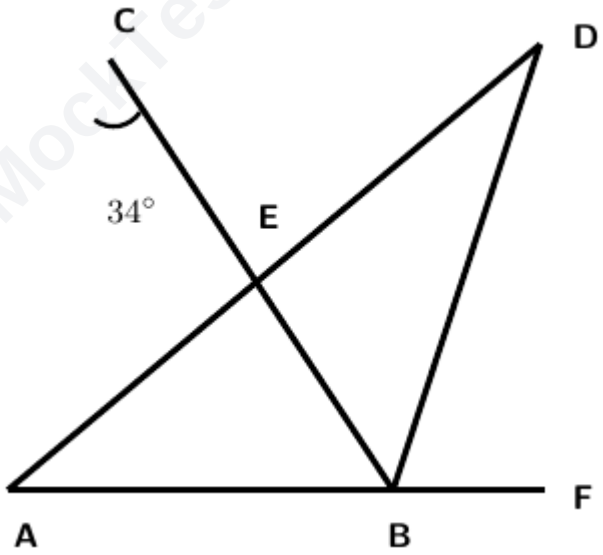
Q70. A man purchased a car for Rs. 12 lakh and was insured at 80% of the cost. He sold the car at a 15% loss but had not yet delivered it to the buyer when he met with an accident. After the accident, the car damaged a lot and the insurance company paid 90% of the insured amount. The net difference in the two transactions is:

(a) Rs. 1.56 lakhs
(b) Rs. 92 lakhs
(c) Rs. 88 lakhs
(d) Rs. 1.38 lakhs

Q71. A sum of Rs. 12,000 was taken at simple interest at some rate. After four months, Rs. 6,000 more was added and the total principal was charged at double the earlier rate of interest. At the end of the year, if the total interest was Rs. 2,800, what was the initial rate of interest?

(a) 12%
(b) 10%
(c) 14%
(d) 16%

Q72. In the given figure, AD is bisector of angle angle CAB and BD is bisector of angle angle CBF. If the angle at C is 34^?, the angle angle ADB is:



(a) 34^?
(b) 16^?
(c) 17^?
(d) 32^?

Q73. The value of $[(\sqrt{3} + 2SinP)/(1-2CosP)]^3 + [(1 + 2CosP)/(\sqrt{3} - 2SinP)]^3$ is :

(a) Sin P Cos P
(b) 1
(c) 2Sin P Cos P
(d) 0

Q74. The value of : $(a^{(2/3)} + 2a^{1/2} + 3a^{1/3} + 2a^{1/6} + 1)(a^{1/3} - 2a^{1/6}+1) -a^{1/2}(a^{1/2} - 2)$, when a = 7 is?

(a) 0
(b) √7
(c) 7
(d) 1

Q75. 5 men and 8 women can complete a task in 34 days, whereas 4 men and 18 women can complete the same task in 28 days. In how many days can the same task be completed by 3 men and 5 women?

(a) 72
(b) 56
(c) 64
(d) 36

GENERAL AWARENESS

Q76. What is the full form of PROM?

(a) Primary read-only memory
(b) Programmable read-only memory
(c) Program read-output memory
(d) Program read-only memory

Q77. On 30 October 2019, CBSE and NCERT, New Delhi developed an Aptitude Test for Senior School Students. What is the name of that test?

(a) Udaan
(b) Lakshya
(c) Akanksha
(d) Tamanna

Q78. 'Mayurbhanj Chhau' is a folk dance form of which state?

(a) Odisha
(b) Rajasthan
(c) Maharashtra
(d) Karnataka

Q79. Which sanctuary is famous for endangered Estuarine Crocodiles conservation in India?

(a) Bhitarkanika Wildlife Sanctuary, Odisha
(b) Dandeli Wildlife Sanctuary, Karnataka
(c) Chinnar Wildlife Sanctuary, Kerala
(d) Indira Gandhi Wildlife Sanctuary

Q80. Garo-Khasi range is located in which Indian state?

(a) Mizoram
(b) Meghalaya
(c) Sikkim
(d) Odisha

Q81. Which Indian social activist and politician led the Self-Respect Movement or Dravidian Movement against Brahminism?

(a) C Rajagopalachari
(b) P Theagaraya Chetty
(c) C Annadurai
(d) Erode Venkatappa Ramasamy

Q82. Who threw a bomb in the central legislative assembly along with Bhagat Singh to protest against the Public Safety Bill in 1929?

(a) Subhash Chandra Bose
(b) Chandra Shekhar Azad
(c) Rajguru
(d) Batukeshwar Dutt

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Q83. Which of the following state's legislative assembly adopted a redesigned logo consisting of the National Emblem and the State flower - the Foxtail Orchid (Rhynchostylis Retusa) on 9 January 2020?

(a) Kerala Legislative Assembly
(b) Jharkhand Legislative Assembly
(c) Chhattisgarh Legislative Assembly
(d) Arunachal Pradesh Legislative Assembly

Q84. The December 1929 session of Congress, in which the resolution for 'Poorna Swaraj' was passed, was presided over by?

(a) Vallabhbhai Patel
(b) Jawaharlal Nehru
(c) Subhash Chandra Bose
(d) CR Das

Q85. Who described the preamble of Indian Constitution as the 'Political horoscope of the Indian Constitution'?

(a) Thakurdas Bhargav
(b) Kanhaiyalal Maniklal Munshi
(c) NA Palkhiwala
(d) Bhimrao Ramji Ambedkar

Q86. The tallest waterfall of India with a height of 1,493 ft is _____.

(a) Meenmutty Falls, Kerala
(b) Kunchikal Falls, Karnataka
(c) Barkana Falls, Karnataka
(d) Thalaiyar Falls, Tamil Nadu

Q87. In which year did UNESCO include Yoga in its Intangible Cultural Heritage list?

(a) 2016
(b) 2014
(c) 2018
(d) 2015

Q88. Which law states that the volume of an ideal gas at constant pressure is directly proportional to its absolute temperature?

(a) Boyle's law
(b) Charles's law
(c) Avogadro's law
(d) Joule's law

Q89. With reference to metals and their ores, which of the following pairs is INCORRECT?

(a) Mercury (Hg) – Greenockite
(b) Gold (Au) – Calaverite
(c) Aluminium (Al) – Cryolite
(d) Cobalt (Co) – Smelite

Q90. Who was the first Asian player to win the Junior Wimbledon's Boys singles title?

(a) Vijay Amritraj
(b) Ramanathan Krishnan
(c) Sumit Nagal
(d) Mahesh Bhupathi

Q91. Who is the only Indian to have won the United Nations Award in the field of human rights?

(a) Ela Bhatt
(b) Kanshi Ram
(c) Baba Amte

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(d) Verghese Kurien

Q92. Who won the ‘Most Valuable Player of the Series’ award in IPL 2019?

(a) Shubman Gill
(b) KL Rahul
(c) Andre Russell
(d) David Warner

Q93. How many districts of Uttar Pradesh started the second phase of Mission Indradhanush 2.0 at the block level on 7 January 2020?

(a) 25
(b) 30
(c) 35
(d) 40

Q94. Which company was ranked as the largest profit making PSU in India for the fiscal year 2018-2019?

(a) Power Finance Corporation
(b) Power Grid Corporation
(c) Indian Oil
(d) Oil & Natural Gas Corporation

Q95. Which of the following eye disorders is known as ‘lazy eye’?

(a) Presbyopia
(b) Hypermetropia
(c) Myopia
(d) Amblyopia

Q96. In which battle did Ahmad Shah Abdali defeat the Marathas?

(a) Third battle of Panipat
(b) Battle of Khanwa
(c) Battle of Buxar
(d) First battle of Tarain

Q97. The novel 'Quichotte' was shortlisted for the ‘2019 Booker Prize’. Who is the author of this book?

(a) Arundhati Roy
(b) Salman Rushdie
(c) Vikram Seth
(d) Shashi Tharoor

Q98. Which river originates from Tibet and enters India through Arunachal Pradesh?

(a) Brahmaputra River
(b) Godavari River
(c) Chambal River
(d) Kaveri River

Q99. On August 2019, Rambir Singh Khokhar won the ‘Dronacharya award’ in the lifetime category for his contribution in _____.

(a) Boxing
(b) Football
(c) Hockey
(d) Kabaddi

Q100. Who is known as the ‘Father of Public Sector Undertakings’ in India?

(a) Ashok Desai
(b) Prasanta Chandra Mahalanobis
(c) V Krishnamurthy

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(d) Sashi Sivramkrishna

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) accumulate

The correct answer is '3' i.e. 'Accumulate'

Key Points

• Let's see the meaning of the given words-

• Stimulate→ It is a verb that means 'apply or act as a stimulus to'

• Formulate→ It is a verb that means 'create or prepare methodically.'

• Accumulate→ It is a verb that means 'gather together'

• Simulate→ It is a verb that means 'imitate or reproduce the appearance'

Hence, according to the meaning of the verb 'Accumulate' it fits in the blank because debts are going to be accumulated by people.

Q2. Answer: (a) adverse

The correct answer is 'A' i.e. 'Adverse'

Key Points

• Let's see the meanings of the given words-

• Adverse→ It is an adjective that means 'preventing success or development'

• Averse→ It is an adjective that means 'Strongly disliking something'

• Traverse→ It is a verb that means 'travel or extend across or through'

• Inverse→ It is an adjective that means 'opposite in position or direction'

• We need an adjective to qualify the noun 'weather conditions.' Hence, according to the meaning of the words 'Adverse' is the correct answer.

So the correct sentence is→ This winter Adverse weather conditions have led people to remain indoors.

Q3. Answer: (b) and her three cubs was poisoned

The correct answer is '2' i.e. error lies in part 2 of the sentence

Key Points

In part 2 of the sentence the usage of 'was' is incorrect instead, use 'were'

• According to grammar, Whenever we have a plural subject we should always use a plural verb hence in the given sentence there are two subjects which are joined with the coordinating conjunction 'and' the subjects are 'A Royal Bengal tigress and her three cubs' So use a plural verb.

So the correct sentence→ A Royal Bengal tigress and her three cubs were poisoned and their carcasses left to rot in the Wildlife Sanctuary in Goa

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Q4. Answer: (c) Benign

The solution is in Hindi. Read it online.

Q5. Answer: (d) better

The correct answer is 'Better'

Key Points

• In the given blank, we need to use 'Better' because 'Even better' is a phrase that means 'when talking about something that's more positive or exciting or a better option than that which preceded it.'

• We cannot use 'best' because it is a superlative degree of 'good' and we don't need a superlative degree.

So the correct sentence is→ Treks in wilderness areas are even better as children can then engage with all kinds of life-forms on their turf.

Q6. Answer: (c) sanctuaries

The correct answer is 'Sanctuaries'

Key Points

• In the given blank, we need to write a noun which is in plural form because before the blank the coordinate conjunctions 'and' is used and before 'and' the noun is in a plural form which is 'parks'.

• Hence, we need to follow the rule of parallelism.

• In the given options only option 3 is in plural form 'Sanctuaries' so this is the correct answer.

So the correct sentence is→ Regular visits to national parks and sanctuaries are another way to get children hooked.

Q7. Answer: (d) needs

The correct answer is 'Needs'

Key Points

• In the given blank, we need to write a verb for the subject 'a dog or cat as a pet' which acts as a singular subject because of the usage of coordinate conjunction 'or' hence use a singular verb for them.

• In the given options, 'Will', 'Can', 'Must' are all modal verbs that can not be used as a main verb hence the correct answer is 'needs' which acts as a main verb in the singular form.

So the correct sentence is→ Keeping a dog or cat as a pet needs to be made mandatory.

Q8. Answer: (a) environmentalist

The correct answer is 'Environmentalist'

Key Points

• In the given blank we have to fill a noun that starts with a vowel sound because the indefinite article has been used before the blank. Also, this noun will work as a noun apposition.

• Let's us check out the meanings of the given words-

• Environmentalist- A person who is concerned about protecting the environment.

• Environmental- It is an adjective.

• Environs- The surrounding area or district.

• Environment- The surroundings or area in which the person lives.

• So in the given options only option 1 works as a noun apposition hence it is the correct answer.

So the correct sentence is→ In his weekly column ‘Down in Jungle land’ Ranjit Lal, an environmentalist offers some useful suggestions.

Q9. Answer: (b) nature

The correct answer is 'Nature'

Key Points

• Before the blank, the preposition has been mentioned which 'in' hence after this we have to write a noun which acts as a prepositional object.

• In the given options, 'Natural' has been eliminated because it is an adjective so we can't it as a prepositional object.

• If we look at the meanings of the other given options then the most appropriate is 'Nature'

• 'Naturalist' is also a noun which means 'an expert in something' if we think rationally then why the children would be interested in the 'naturalist' hence this word is contextually incorrect.

So the correct sentence is→ One complaint parents and teachers have about children these days is that they are simply not interested in nature.

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Q10. Answer: (c) Scientist have

The correct answer is '3' i.e. error lies in this part of the sentence.

Key Points

In option 3, the usage of 'Scientist have' is incorrect instead use 'Scientists have'

• According to grammar, whenever we have a plural subject always use a plural verb or vice-versa.

• In the given sentence, we haven't used 'Scientist has' because before 'Scientist' the speaker of the sentence hasn't used any article.

• If the 'Scientist' is singular then we have to use the indefinite article which is not used in the sentence hence we can't change the sentence contextually so make the subject of the sentence in a plural form.

So the correct sentence is→ Scientists have recently announced that a more effective antidote for snakebite venom has been made.

Q11. Answer: (a) Knack

The correct answer is 'Knack'

Key Points

• Let's see the meanings of the given words-

• Knack→ An acquired or natural skill at performing a task.

• Stack→ A pile especially a neat one.

• Quack→ An unqualified person who dishonestly claims to have medical knowledge.

• Snack→ A small quantity of food or a light meal.

So according to the meaning of the given words, the most appropriate word is 'Knack'

Q12. Answer: (a) Luxurious

The correct answer is 'Luxurious'

Key Points

• Let's see the meanings of the given words-

• Opulent→ It is an adjective that means 'Ostentatiously rich and luxurious.'

• Shabby→ It is an adjective that means 'worn out or dilapidated.'

• Virulent→ It is an adjective that means 'extremely severe or harmful in its effect.'

• Distant→ It is an adjective that means 'Far away from space or time.'

• Hence, according to the meanings, the most appropriate synonyms is 'Luxurious' hence it is the correct answer.

• 'Shabby' is an antonym of the given word 'Opulent'

Q13. Answer: (a) Meticulous

The correct answer is 'Meticulous'

Key Points

• Let's see the meanings of the given words-

• Meticulous→ Very careful and precise.

• Garrulous→ Excessively talkative.

• Tremulous→ Slightly or quivering slightly; timid or nervous.

• Tumultuous→ Very loud or uproarious, excited, confused or disorderly.

• So, according to the meanings of the given words 'Meticulous' is the correct answer.

Q14. Answer: (c) Inattentive

The correct answer is 'Inattentive'

Key Points

• The meaning of the given idiom is→ If talking to someone is like talking to a brick wall, the person you are speaking to does not listen.

• Let's see an example-

• I've tried to discuss my feelings with her, but it's like talking to a brick wall.

Additional Information

• Mnemonic to remember the idiom→ See the image given below. In the image, the person is talking with a wall which is a nuisance because the wall will not listen to anything. Hence, remember this image in your mind.

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Q15. Answer: (b) Identical

The solution is in Hindi. Read it online.

Q16. Answer: (d) BACD

The correct answer is 'BACD'

Key Points

• Sentence B- is the independent sentence which is going to be the first sentence of the passage.

• Sentence A- Connects sentence B because it tells what happened after the '70s.

• Sentence C- Connects sentence A because it tells further that after not allowing people to reclaim what they are going to do next.

• Sentence D will be the last sentence because it tells what is the condition of people now.

So the correct sequence is 'BACD' which is given in option 4

Q17. Answer: (a) spoken in

The correct answer is 'Spoken in'

Key Points

• In the underlined part, 'For' preposition is incorrect because it is used for the following things:-

• To show reason or cause

• having as a destination

• representing something.

• Affecting or with regard to.

• Hence, none of the usages of 'for' connect with the other statement which is written after the preposition hence this needs to be improved.

• 'In' preposition is correct because it is used to show an enclosed space or a place that is surrounded by boundaries.

• In the given sentence, 'Villages' are the enclosed spaces 2-dimensional spaces hence with 2-D objects always use the preposition 'in'

• Let's see an example-

• The dog is in the garden. (Garden is the 2-D space.)

So the correct sentence is→ Sele, is a near-extinct language, spoken in just five villages in Nepal, which lie close to Tibet.

Q18. Answer: (c) Decieve

The solution is in Hindi. Read it online.

Q19. Answer: (b) Ravi asked Ritu how many sets of class 12 practice papers she had finished.

The correct answer is '2' i.e. 'Ravi asked Ritu how many sets of class 12 practice papers she had finished.'

Key Points

• According to the rule of Direct-Indirect speech, Whenever the tense in the reported speech is the present perfect tense convert this tense into the past perfect tense.

• In the given Options there is only one option which is given in the past perfect tense which is option 2.

• Option 1→ is incorrect because it is written in the past perfect continuous tense which is incorrect.

Additional Information

Reporting Verb →The first verb part of the sentence that comes before the quotation marks are called the Reporting verb.

Reported Speech→ The statement (words) spoken by the speaker and which is written in quotation marks (“ ”) is called the Reported speech.

• Present tense changed into→ a Past tense

• If the Reported speech is a universal truth or a general fact, then its ‘tense’ does not change irrespective of the Reporting verb.

• Present continuous tense changed into→past continuous tense.

• Present Perfect Changes into→ Past Perfect

• Present Perfect Continuous Changes into→ Past Perfect Continuous

Q20. Answer: (d) Accomodate

The solution is in Hindi. Read it online.

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Q21. Answer: (d) To take on more than one can deal with

The correct answer is '4' i.e. To take on more than one can deal with

Key Points

• 'Bite off more than one can chew' means 'take on a commitment one cannot fulfill.'

• Let's see an example:-

• We bit off more than we could chew in our original reform proposals.

Additional Information

• Mnemonic to remember the idiom→ As we can see in the image a baby is eating a fruit which is impossible to eat by him. Remember this image for this idiom.

Q22. Answer: (a) Infuriate

The solution is in Hindi. Read it online.

Q23. Answer: (b) Delhi was lashed by rains and the temperature was brought down by a few degrees

The correct answer is '2' i.e. 'Delhi was lashed by rains and the temperature was brought down by a few degrees'

Key Points

• While changing Active to passive remember the following points-

• First, look at the tense of the sentence. Because tense doesn't change while changing the active to passive.

• Second, find out the subject and the object of the sentence. Be cautious about the prepositional phrase and infinitive.

• In the given sentence, The subject is 'Rains' and the verb is 'lashed' which is written in the past tense hence the tense will not be changed.

• The tense hasn't changed in option 2 only. Hence, it is the correct.

Additional Information

• We use 'Being' when the tense is in continuous tense.

Q24. Answer: (c) are located

The correct answer is '3' i.e. 'are located'

Key Points

In the given sentence, the underlined phrase to be replaced with 'are located'

• In the given sentence, 'as' is a conjunction and it makes the clause the subject of this clause is 'ports' hence the verb is used in the plural form and the verb V3 'located' should be used instead of 'locating' because 'be + located' means 'be situated in a particular place'

• Let's see an example-

• These factories should not be located in the center of the city.

So the correct sentence is→ The Arabian Sea region is very important for India as several major ports are located there.

Additional Information

• The forms of 'be' are 'is, am, are, was, were' all are linking verbs which are used to connect the subject and its complement.

Q25. Answer: (c) CDAB

The correct answer is 'CDAB'

Key Points

• Sentence C- will be the opening sentence for the passage because it starts with the pronoun 'We' also, it is an independent sentence.

• Sentence D- will be the second sentence because 'but' conjunction is used to show the contrast or this sentence is opposing sentence C also, it tells what happens after constructing the clinics.

• Sentence A- will be the third sentence because it gives the example of the 'roadblocks' or what are the obstructions while making the clinics.

• Sentence B- will be the last sentence of the passage because 'however' is used to show the contrast and it shows the contrasts to sentence A.

So the correct sequence is- 'CDAB'

Q26. Answer: (a) Resistance : Ohm

Given,

Weight : Kilogram

Here we see the unit of weight is Kilogram.

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Similarly,
The unit of Resistance is Ohm.
All other options do not share the same relationship.
Hence, the correct answer is Resistance : Ohm.

Q27. Answer: (b) 12 : 1757

Given,
3 : 27
12 : 1757
7 : 343
11 : 1331
The pattern followed here is
$3 = 3^3 = 27$
$12 = 123 \neq 1757$ ($12^3 = 1728$)
$7 = 73 = 343$
$11 = 113 = 1331$
Hence, the correct answer is 12 : 1757.

Q28. Answer: (c) 4 × 30 - 15 ÷ 5 + 12 = 21

Given,
Interchanges:
Sign ÷ and -
Numbers: 15 and 5
We have to interchange "÷" with "-" and 15 with 5
1) 4 × 30 - 5 ÷ 15 + 14 = 21
After interchanges
4 × 30 ÷ 15 - 5 + 14
4 × 2 - 5 + 14
17 ≠ 21
2) 4 × 30 - 15 ÷ 5 + 12 = 27
After interchanges
4 × 30 ÷ 5 - 15 + 12
4 × 6 - 15 + 12
= 24 - 15 + 12
21 ≠ 27
3) 4 × 30 - 15 ÷ 5 + 12 = 21
After interchanges
4 × 30 ÷ 5 - 15 + 12
4 × 6 - 15 + 12
24 - 15 + 12 = 21 = RHS
4) 12 × 30 - 15 ÷ 5 + 4 = 37
After interchanges
12 × 30 ÷ 5 - 15 + 4
12 × 6 - 15 + 4
72 - 15 + 4
61 ≠ 37
Hence, the correct answer is 4 × 30 - 15 ÷ 5 + 12 = 21.

Q29. Answer: (b) R ÷ J ÷ S × U

Given,
A × B means 'A is the wife of B',
A ÷ B means 'A is the father of B'.
1) S ÷ U × J ÷ R

2) R ÷ J ÷ S × U
3) S × U × R ÷ J
4) J × S ÷ R × U
Here, the expression in option 2 means R is the paternal grandfather of S.
Hence, the correct answer is R ÷ J ÷ S × U.

Q30. Answer: (c) 441

Given,
88 : 308 : : 126 : ?
The pattern followed here is,
88/2 × 7 = 308
Similarly,
126/2 × 7 = 441
Hence, 441 is the correct answer.

Q31. Answer: (c) 13

Concept Used:
Triangles = n× (n + 1)/2×H
Where,
n= number of small triangles
H = number of 'end to end' horizontal lines
→ In, ΔABC:
n= number of small triangles = 2
H = number of 'end to end' horizontal lines = 4 (BC, HI, FG, and DE)
Triangles = 2× (2 + 1)/2×4 = 12
Hence, Total triangles in ΔABC = 12
→ Now, the remaining Triangles: 1(ΔAJK)
→ Now Adding all the Δs:
Total Δs = 12 + 1 = 13
Hence, the correct answer is 13.

Q32. Answer: (a) 5, 4, 1, 2, 3

Given,
1. Mankind
2. Manner
3. Manuscript
4. Management
5. Making
According to English alphabetical order, the words must be in the following order,
5. Making
4. Management
1. Mankind
2. Manner
3. Manuscript
Hence, the correct answer is 5, 4, 1, 2, 3.

Q33. Answer: (d) 1

Given,
When the cube is formed after folding the sheet the following numbers will be opposite to each other as shown below,

1	**4**	**2**
5	6	3

Hence, the correct answer is 1.

Q34. Answer: (b) Reptile

Given,

Mammals, Reptile, Non-chordates, Amphibian

These are the class in animal classification. According to this Snake is a reptile.

Hence, the correct answer is Reptile.

Q35. Answer: (a) MUI

Given,

EQM, GRL, ISK, KTJ, ?

The pattern followed here is,

Hence, the correct answer is MUI.

Q36. Answer: (b) Only conclusions I and II follow.

Given,

Statements:

1. Some computers are phones.

2. All phones are televisions.

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

Conclusions:

I. Some phones are computers → True (From Venn diagram we see some phones are computers)

II. Some televisions are computers → True (From Venn diagram we see some Televisions are computers)

III. No television is a computer → False (From Venn diagram we see some Televisions are computers)

Hence, the correct answer is Only conclusions I and II follow.

Q37. Answer: (d) [figure]

Given,

Here we see in 1st and 2nd figure is mirror image of each other.

Similarly,

In option 4, this is the mirror image of 3rd figure.

Hence, option 4 is the correct answer.

Q38. Answer: (c) 45201952117518

The pattern followed here is;

Given,

TENDER - 185414520

The pattern followed here is,

Similarly,

Hence, the correct answer is 45201952117518.

Q39. Answer: (b) [figure]

Given,

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

Therefore, we get

Hence, the correct answer is

Q40. Answer: (b) (29, 91, 369)

Given,

(15, 49, 201)

The pattern followed here is

$15 \times 3 + 4 = 49 \times 4 + 5 = 201$

The same pattern is followed by

$29 \times 3 + 4 = 91 \times 4 + 5 = 369$

Hence, the correct answer is (29, 91, 369).

Q41. Answer: (d) (9, 159, 78)

Given,

(15, 556, 331)

The pattern followed here is,

$15^2 = 225$; $556 - 331 = 225$

Similarly,

$9^2 = 81$; $159 - 78 = 81$

Hence, the correct answer is (9, 159, 78).

Q42. Answer: (b) ERPQHOP

The pattern followed here is;

Given,

SECTION → PHZQLRK

Similarly,

Hence, the correct answer is ERPQHOP.

Q43. Answer: (b) [figure]

Given,

When folded at the dotted line we get,

Hence, the correct answer is

Q44. Answer: (d) FI

The pattern followed here is;

Given,

LZ : OA : : UR : ?

From the above table, we see L is related O and Z is related to A

Similarly, U is related to F and R is related to I

Therefore, FI is related to third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.

Hence, the correct answer is FI.

Q45. Answer: (d) [figure]

Given,

Here, we see

this figure is embedded in figure X.

Hence, the correct answer is

Q46. Answer: (b) Mothers, Sisters, Daughters

Given,

In the above Venn diagram, we see there must be some part where all three circles must show common characteristics.

Hence, the correct answer is Mothers, Sisters, Daughters.

Q47. Answer: (b) Rs. 357

Given,

Amount = 504

Ratio = 7 : 8 : 9

$7x + 8x + 9x = 504$

$24x = 504$

$x = 21$

Amount received by B and C,

$8 \times 21 + 9 \times 21 = 168 + 189 = 357$

Hence, the correct answer is Rs. 357.

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Q48. Answer: (b) 207

Given,

88, 95, 106, 119, 136, 155, 178, ?

The pattern followed here is,

Addition of prime numbers in numbers, (7, 11, 13, 17, 19, 23)

88 + 7 = 95

95 + 11 = 106

106 + 13 = 119

119 + 17 = 136

136 + 19 = 155

155 + 23 = 178

178 + 29 = 207

Here, we see addition of consecutive prime number in each term.

Hence, the correct answer is 207.

Q49. Answer: (d) NSW

The pattern followed here is;

Given,

PUZ, BGL, AFK, NSW

The pattern followed here is,

P + 5 = U + 5 = Z

B + 5 = G + 5 = L

A + 5 = F + 5 = K

N + 5 = S + 4 = W

Hence, the correct answer is NSW.

Q50. Answer: (b) Depression

Given,

Malaria, Depression, Dengue, Typhoid

All the above are infectious diseases except depression.

Hence, the correct answer is Depression.

Q51. Answer: (d) 24

Given:

A person purchases 40 items at Rs. 10 each.

He sells a part of them profit of = 25%

He sells remaining at loss of = 10%

Net profit earned by him = 4%

Formula:

Profit = SP – CP

Profit % = Profit/CP × 100

Loss = CP – SP

Loss % = Loss/CP × 100

Mixture and Allegation method:

a b

c

p q

Where a > c > b

(a - c)/(c - b) = p/q

Calculation:

25% (-10%)

4%

14 : 21

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Ratio of times sell at 25% to that of 10% loss = 14 : 21 = 2 : 3

According to the question

2 + 3 = 5 unit

5 unit = 40 items

1 unit = 40/5 = 8 unit

Number of items sells at 10% loss = 8 × 3 = 24 items.

Q52. Answer: (a) 322

Given:

$1/(9 - 4\sqrt{5})^2 + 1/(9 + 4\sqrt{5})^2$

Formula:

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

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

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

Calculation:

1/(9 - 4√5)2 + 1/(9 + 4√5)2

=> [(9 + 4√5)2 + (9 - 4√5)2]/[(9 - 4√5)2 (9 + 4√5)2]

=> (81 + 80 + 72√5 + 81 + 80 - 72√5)/(81 - 80)

=> 322

Formula:

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

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

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

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

Calculations:

$1/((9-4\sqrt{5})^2) + 1/((9 + 4\sqrt{5})^2)$

$a = (9 - 4\sqrt{5})$ ...1)

$=> 1/a = 1/(9 - 4\sqrt{5})$

$=> 1/a = \{1/(9 - 4\sqrt{5})\} \times \{(9 + 4\sqrt{5})/(9 + 4\sqrt{5})\}$

$=> 1/a = (9 + 4\sqrt{5})/\{(9)^2 - (4\sqrt{5})^2\}$

$=> 1/a = 9 + 4/\sqrt{5}$ ...2)

So, $1/((9-4\sqrt{5})^2) + 1/((9 + 4\sqrt{5})^2)$

From eq.(1) and (2)

$=> (1/a^2) + 1/(1/a)^2$

$=> a^2 + 1/a^2$

$=> a^2 + 1/a^2 + 2 - 2$

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

$=> \{9 - 4\sqrt{5} + (9 + 4/\sqrt{5})\}^2 - 2$

$=> (9 - 4\sqrt{5} + 9 - 4\sqrt{5})^2 - 2$

$=> 324 - 2 = 322$

Therefore The correct answer is 322

Q53. Answer: (c) 135

Given:

Radius of cylindrical vessel R = 6 cm

Height of cylindrical vessel H = 5 cm

Diameter of spherical metal each ball = 2 cm

Formula:

Volume of cylinder = $\pi r^2 h$

Volume of sphere = $(4/3)\ \pi r^3$

Calculation:

Radius of each ball r = 2/2 = 1 cm

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Let number of balls be x

According to the question

$x \times (4/3) \times \pi \times 1^3 = \pi \times 6^2 \times 5$

=> $x = 180 \times (3/4)$

=> $x = 135$

Therefore Number of balls are 135.

Q54. Answer: (b) 115

Shortcut Trick

When 10 numbers are dropped from the start and 10 next numbers are added, the average increases by the number of terms shifted.

Shift = 10 terms => $M - N = 10$.

Given $M^2 - N^2 = 600$ => $(M - N)(M + N) = 600$.

$10 \times (M + N) = 600$ => $M + N = 60$.

Solving: $M = 35$, $N = 25$.

Average of 3M and 5N = $(3 \times 35 + 5 \times 25) \div 2 = (105 + 125) \div 2 = 115$.

Therefore The correct answer is 115.

Alternate Method

Given: Average of 35 consecutive natural numbers = N.

Formula: Average of consecutive numbers = (First + Last) ÷ 2.

=> Let the first number be a. Then $N = (a + a + 34) \div 2 = a + 17$.

=> New set starts from a + 10. Then $M = (a + 10 + a + 10 + 34) \div 2 = a + 27$.

=> Difference $M - N = (a + 27) - (a + 17) = 10$.

=> $M^2 - N^2 = 600$ => $(M - N)(M + N) = 600$.

=> $10(M + N) = 600$ => $M + N = 60$.

=> Adding $(M - N)$ and $(M + N)$: $2M = 70$ => $M = 35$.

=> Subtracting: $2N = 50$ => $N = 25$.

=> Required Average = $(3M + 5N) \div 2 = (3 \times 35 + 5 \times 25) \div 2$.

=> Required Average = $(105 + 125) \div 2 = 230 \div 2 = 115$.

Therefore The correct answer is 115.

Additional Information

Consecutive Numbers Average

For n consecutive numbers, if the first term is a, the average is $a + (n - 1)/2$.

Average Shift Property

If the first k terms are replaced by the next k terms in a consecutive series, the average increases by exactly k.

Algebraic Identity

The identity $a^2 - b^2 = (a - b)(a + b)$ is frequently used to solve difference of squares in average problems.

Q55. Answer: (d) 135^?

Given:

$A = 2 (\sin6\ \theta + \cos6\ \theta) - 3 (\sin4\ \theta + \cos4\ \theta)$

Formula:

$(\sin6\ \theta + \cos6\ \theta) = (1 - 3 \sin^2\ \theta \cos^2\ \theta)$

Proof:

$(\sin6\ \theta + \cos6\ \theta) = (\sin^2\ \theta + \cos^2\ \theta) (\sin^4\ \theta + \cos^4 - \sin^2\ \theta \cos^2\ \theta)$

=> $(\sin6\ \theta + \cos6\ \theta) = 1 [(\sin^2\ \theta + \cos^2)^2 - 3 \sin^2\ \theta \cos^2\ \theta]$

=> $(\sin6\ \theta + \cos6\ \theta) = (1 - 3 \sin^2\theta \cos^2\ \theta)$

$(\sin4\ \theta + \cos4\ \theta) = (1 - 2 \sin2\ \theta \cos2\ \theta)$

Proof:

=> $(\sin4\ \theta + \cos4\ \theta) = [(\sin2\ \theta + \cos2)2 - 2 \sin2\ \theta \cos2\ \theta]$

=> $(\sin4\ \theta + \cos4\ \theta) = (1 - 2 \sin2\ \theta \cos2\ \theta)$

Calculation:

A = 2 (sin6 θ + cos6 θ) - 3 (sin4 θ + cos4 θ)
=> A = 2 (1 - 3 sin² θ cos² θ) - 3 (1 - 2 sin2 θ cos2 θ)
=> A = 2 - 6 sin² θ cos² θ - 3 + 6 sin² θ cos² θ
=> A = 2 - 3
=> A = - 1
Now,
cos α = √[(3 + A)/(5 + A)]
=> cos α = √[(3 - 1)/(5 - 1)]
=> cos α = √(2/4)
=> cos α = 1/√2
=> cos α = cos 45°
=> α = 45°
Now
3α
=> 3 × 45°
=> 135°
Shortcut Trick
Let θ = 90°
A = 2(1 - 0) - 3(1 + 0)
=> A = -1
So cos α = √2/4 = 1/√2
=> α = 45°
Therefore 3α = 135°

Q56. Answer: (d) 44

Given:
2x+y-2z = 88z-5-y
54y-6z = 25y+z
34x-3z = 9x+z
Formula:
a^m × aⁿ = a^({m + n})
Calculation:
2x+y-2z = 88z-5-y
=> 2x+y-2z = 23(8z-5-y)
Comparing on power
=> x + y - 2z = 24z - 15 - 3y
=> x + 4y - 26z = -15 ----(1)
54y-6z = 25y+z
=> 54y - 6z = 52 (y + z)
Comparing on power
=> 4y - 6z = 2 (y + z)
=> 4y - 6z = 2y + 2z
=> 2y = 8z
=> y = 4z ----(2)
34x-3z = 9x+z
=> 34x-3z = 32(x + z)
Comparing on power
=> 4x - 3z = 2x + 2z
=> 4x - 2x = 2z + 3z
=> 2x = 5z
=> x = 2.5z ----(3)
From equation (1), equation (2) and equation (3)

=> x + 4y - 26z = -15
=> 2.5z + 4 (4z) - 26z = - 15
=> 2.5z + 16z - 26z = - 15
=> - 7.5z = - 15
=> z = 2
From equation (2)
y = 4 × 2
=> y = 8
From equation (3)
x = 2.5 × 2
=> x = 5
Now,
2x + 3y + 5z
=> 2 × 5 + 3 × 8 + 5 × 2
=> 10 + 24 + 10
=> 44

Q57. Answer: (a) 218^?

Given:
AC and DE are parallel
angle CAB = 38
angle ABC = b
angle CBD = a
Calculation:
angle CAB = 2a
=> 2a = 38
=> a = 38/2
=> a = 19
Therefore angle CBD = 19
angle CAB + angle ABD = 180 (Because AC and BD are parallel)
=> 2a + b + a = 180
=> 38 + b + 19 = 180
=> b = 180 - 57
=> b = 123
Therefore angle ABC = 123
Now,
angle ABC + 5 angle CBD
=> 123 + 5 × 19
=> 123 + 95
=> 218

Q58. Answer: (c) S2, S4

Calculation:
The production ratio of S1 = 765/415 = 1.84
The production ratio of S2 = 856/390 = 2.19
The production ratio of S3 = 729/356 = 2.04
The production ratio of S4 = 964/550 = 1.75
The production ratio of S5 = 580/280 = 2.07
The production ratio of S6 = 865/440 = 1.96
Now we can say
The production ratio (production to land) of S2 and S4 is highest and lowest respectively.

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Q59. Answer: (a) 16

Given;

117 Cos2 A + 129 Sin2 A = 120 and 170 Cos2 B + 158 Sin2 B = 161

Formula:

$\sin^2 A + \cos^2 A = 1$

cosec A = 1/sin A

sec A = 1/cos A

Calculation:

117 Cos2 A + 129 Sin2 A = 120

=> 117 Cos2 A + 117 Sin2 A + 12 $\sin^2 A$ = 120

=> 117 + 12 $\sin^2 A$ = 120

=> 12 $\sin^2 A$ = 120 - 117

=> $\sin^2 A$ = 3/12

=> $\sin^2 A$ = 1/4

Therefore $\text{cosec}^2 A = 4$

170 Cos2 B + 158 Sin2 B = 161

=> 12 $\cos^2 B$ + 158 Cos2 B + 158 Sin2 B = 161

=> 12 $\cos^2 B$ + 158 = 161

=> 12 $\cos^2 B$ = 161 - 158

=> $\cos^2 B$ = 3/12

=> $\cos^2 B$ = 1/4

Therefore $\sec^2 B = 4$

Now,

$\text{cosec}^2 A \sec^2 B$

=> 4 × 4

=> 16

Q60. Answer: (a) 231

Calculations:

Follow BODMAS rule to solve this question, as per the order given below,

A = [3/7 of 41/5 ÷ 18/25 + 17/24] of [289/16 ÷ $(3/4 + 2/3)^2$]

A = [3/7 of 21/5 ÷ 18/25 + 17/24] of [289/16 ÷ $(3/4 + 2/3)^2$]

A = [3/7 × 21/5 × 25/18 + 17/24] × [289/16 ÷ $(17/12)^2$]

A = [3/7 × 21/5 × 25/18 + 17/24] × [289/16 × (12/17)2]

A = [3 × 3 × 5/18 + 17/24] × [144/16]

A = [5/2 + 17/24] × [9]

A = [60/24 + 17/24] × [9]

A = [77/24] × [9]

A = [77/8] × [3]

Therefore 8A = 8 × [77/8] × [3]

Therefore 8A = 231

Therefore The value of 8A is 231

Q61. Answer: (c) Physics is easier for C than for B and E

From option 1

C scored in Math = 67

C scored in Physics = 87

C scored in Chemistry = 72

In the regarding C we can say, Math is the most difficult and Physics is the easiest.

So, option 1 is wrong.

From option 2.

D scored in Math = 84

D scored in Physics = 76
D scored in Chemistry = 80
In the regarding D we can say, Physics is the most difficult and Math is the easiest.
So, option 2 is wrong.
From option 3
B scored in Physics = 65
C scored in Physics = 87
E scored in Physics = 69
Now we can say Physics is easier for C than for B and E.
So option 3 is correct.

Q62. Answer: (b) Rs. 25,400

Formula:
CP = SP × [100/(100 + Profit)]
Calculation:
Cost price of the item for B = 1,32,000 × (100/110) = Rs. 1,20,000
Cost price of the items for A = 1,20,000 × (100/120) = Rs. 1,00,000
If C had purchased the items for A instead of B, then cost price for C = 1,32,000 × (95/100) = Rs. 1,25,400
Therefore Profit of A = 1,25,400 - 1,00,000 = Rs. 25,400

Q63. Answer: (c) 12 hours

Shortcut Trick
Let the time taken by the passenger train be T hours.
Speed of passenger train = 1176 / T
Speed of express train = 1176 / (T − 5)
Difference in speed: [1176 / (T − 5)] − [1176 / T] = 70
Testing option (3): If T = 12, then speed = 1176 / 12 = 98 km/h. Express speed = 1176 / 7 = 168 km/h.
Difference = 168 − 98 = 70 km/h. Condition satisfied.
Therefore The correct answer is 12 hr.
Alternate Method
Given: Distance = 1176 km, Time difference = 5 hours, Speed difference = 70 km/h.
Formula Used: Speed = Distance ÷ Time
=> Let time taken by passenger train = T
=> Speed of passenger train (S_p) = 1176 / T
=> Speed of express train (S_e) = 1176 / (T − 5)
=> S_e − S_p = 70
=> [1176 / (T − 5)] − [1176 / T] = 70
=> 1176 [(T − (T − 5)) / (T(T − 5))] = 70
=> 1176 × 5 / (T^2 − 5T) = 70
=> 5880 = 70(T^2 − 5T)
=> 84 = T^2 − 5T
=> T^2 − 12T + 7T − 84 = 0
=> T(T − 12) + 7(T − 12) = 0
=> T = 12 (Time cannot be negative)
Therefore The correct answer is 12 hr.
Additional Information
Speed-Time Relation
For a constant distance, speed is inversely proportional to time (S1 / S2 = T2 / T1).
Average Speed formula
When a distance is covered at different speeds, Average Speed = Total Distance ÷ Total Time.
Distance Formula for Speed Difference
Distance = [(S1 × S2) / (S1 − S2)] × Time Difference.

Q64. Answer: (c) 140

Given:

2145 : x :: 3003 : 42

Formula:

If a : b :: c : d ,then

a/b = c/d

Calculation:

2145 : x :: 3003 : 42

=> 2145/x = 3003/42

=> x = 2145 × (42/3003)

Therefore x = 30

Now,

x : 2508 :: y : 11704

=> 30 : 2508 :: y : 11704

=> 30/2508 = y/11704

=> y = (30/2508) × 11704

Therefore y = 140

Q65. Answer: (b) 42,600

Given:

Number of customers of operator P = 3.6 lakhs

Number of customers of operator Q = 4.2 lakhs

Percentage in city C who are customer of operators P = 15%

Percentage in city C who are customer of operators Q = 23%

Formula:

x% of a number = Actual number × (x/100)

Calculation:

Number of people in city C who are customer of operator P = 3,60,000 × (15/100) = 54,000

Number of people in city C who are customer of operator Q = 4,20,000 × (23/100) = 96,600

Therefore Required difference = 96,600 - 54,000 = 42,600

Q66. Answer: (c) 160^?

Given:

angle ACB + angle BAC = 80?

angle BDE = 35?

angle BCE = 45?

Concept used:

The sum of two interior opposite angles is equal to exterior angle of a triangle.

i.e. angle ACD = angle ABC + angle BAC

Calculation:

From the following figure join E to P, then

angle DBC = angle ACB + angle BAC (According to Theorem)

Therefore angle DBC = 80^?

angle DBC + angle BCE = angle CPD (According to Theorem)

angle CPD = 80^? + 45^?

Therefore angle CPD = 125^?

angle CED = angle CPD + angle BDE (According to Theorem)

angle CED = 125^? + 35^?

Therefore angle CED = 160^?

Q67. Answer: (a) 3,49,722

Formula:

If a number is divisible by 2 and 3, then we can say the number also divisible by 6.

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Divisibility Law of 2: A number divisible by 2 if its unit digit is 2, 4, 6, 8 or 0.
Divisibility Las of 3: A number divisible by 3 if sum of its digit is divisible by 3.
Calculation:
Check option 1.
3,49,722 is divisible by 2 because unit digit of the number is 2.
3 + 4 + 9 + 7 + 2 + 2
27
3,49,722 is divisible by 3 because sum of digit of the number is divisible by 3.
Therefore 3,49,722 is divisible by 6.

Q68. Answer: (b) 150^?

Given:
angle ABC = 95° and angle FED = 115°
Formula:
The sum of the opposite angle of cycle quadrilateral is 180°.
Calculation:
Join A to F
In quadrilateral ABCF
angle ABC + angle AFC = 180
=> 95 + angle AFC = 180
=> angle AFC = 180 - 95
=> angle AFC = 85
In quadrilateral AFED
angle FAD + angle FED = 180
=> angle FAD + 115 = 180
=> angle FAD = 180 - 115
=> angle FAD = 65
In ΔAFP
=> angle AFP + angle FAP + angle FPA = 180
=> 85 + 65 + angle FPA = 180
=> angle FPA = 180 - 150
=> angle FPA = 30
angle APC + angle FPA = 180 (linear pair)
=> angle APC + 30 = 180
=> angle APC = 180 - 30
Therefore angle APC = 150

Q69. Answer: (d) Rs. 1,033.5

Given:
Expenditure in 2016-2017 = 720
Expenditure in 2017-2018 = 820
Expenditure in 2018-2019 = 845
Formula:
Average = Sum of all observations/Total number of all observations
Calculation:
Average expenditure of all three years = (720 + 820 + 845)/3 = 2385/3 = 795
Therefore Expenditure in 2019-2020 = 795 × (130/100) = 1033.5

Q70. Answer: (a) Rs. 1.56 lakhs

Given:
A man purchased a car for price = Rs. 12 lakh
Car was insured at = 80% of the cost of the car
Car was sold at the loss of = 15%

The percentage of the insured amount paid by the insurance company = 90%
Formula:
x% of a number = Actual number × (x/100)
Given:
SP = 12,00,000 × (85/100) = 10,20,000
Amount paid by the insurance company = 12,00,000 × (80/100) × (90/100) = 8,64,000
Therefore Required difference = 10,20,000 - 8,64,000 = 1,56,000 or 1.56 lakhs

Q71. Answer: (b) 10%

Given:
Case-1
Principal = 12,000
Rate = r%
Time = 4 month
Case-2
Principal = (12,000 + 6,000) = 18,000
Rate = 2r%
Time = 8 months
Total SI = Rs. 2800
Formula:
SI = Prt/100
Calculation:
According to the formula
2800 = [(12,000 × r × 4/12)/100] + [(18,000 × 2r × 8/12)/100]
=> 2800 = 40r + 240r
=> 280r = 2800
=> r = 2800/280
=> r = 10%
Therefore The initial rate of interest was 10%.

Q72. Answer: (c) 17^?

Given:
AD is bisector of angle angle CAB.
BD is bisector of angle angle CBF.
angle ACB = 34°
Formula:
If AD is bisector of angle angle CAB and BD is bisector of angle angle CBF, then
angle ADB = (1/2) angle ACB
Calculation:
According to the question
angle ADB = (1/2) × 34°
Therefore angle ADB = 17°

Q73. Answer: (d) 0

Given:
$[(\sqrt{3} + 2\sin P)/(1-2\cos P)]^3 + [(1 + 2\cos P)/(\sqrt{3} - 2\sin P)]^3$
Calculation:
$[(\sqrt{3} + 2\sin P)/(1-2\cos P)]^3 + [(1 + 2\cos P)/(\sqrt{3} - 2\sin P)]^3$
Put P = 30°
$=> [(\sqrt{3} + 2\sin 30)/(1-2\cos 30)]^3 + [(1 + 2\cos 30)/(\sqrt{3} - 2\sin 30)]^3$
$=> [(\sqrt{3} + 2(1/2))/(1-2(\sqrt{3}/2))]^3 + [(1 + 2(\sqrt{3}/2))/(\sqrt{3} - 2(1/2))]^3$
$=> [(\sqrt{3} + 1)/(1-\sqrt{3})]^3 + [(1 + \sqrt{3})/(\sqrt{3} - 1)]^3$
$=> [(\sqrt{3} + 1)/(1-\sqrt{3})]^3 - [(1 + \sqrt{3})/(1-\sqrt{3})]^3$

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=> 0

The value of $[(\sqrt{3} + 2\sin P)/(1-2\cos P)]^3 + [(1 + 2\cos P)/(\sqrt{3} - 2\sin P)]^3$ is 0.

Q74. Answer: (d) 1

Given:

$(a^{(2/3)} + 2a^{1/2} + 3a^{1/3} + 2a^{1/6} + 1)(a^{1/3} - 2a^{1/6}+1) - a^{1/2}(a^{1/2} - 2)$

Calculation:

Put $a^{(1/6)} = k$, then

$\Rightarrow (k^4 + 2k^3 + 3k^2 + 2k + 1)(k^2 - 2k + 1) - k^3 (k^3 - 2)$

$\Rightarrow k^6 + 2k^5 + 3k^4 + 2k^3 + k^2 - 2k5 - 4k4 - 6k3 - 4k2 - 2k + k4 + 2k3 + 3k2 + 2k + 1 - k^6 + 2k^3$

$\Rightarrow 1$

Q75. Answer: (b) 56

Given:

5 men and 8 women can complete a task = 34 days

4 men and 18 women can complete the same task = 28 days

Formula:

Total work = Efficiency × Time

Calculation:

Let efficiency of 1 man and 1 woman be x and y respectively, then

$(5x + 8y) \times 34 = (4x + 18y) \times 28$

$\Rightarrow (5x + 8y) \times 17 = (4x + 18y)\ 14$

$\Rightarrow 85x + 136y = 56x + 252y$

$\Rightarrow 85x - 56x = 252y - 136y$

$\Rightarrow 29x = 116y$

$\Rightarrow x/y = 116/29$

$\Rightarrow x : y = 4 : 1$

Total work = $(5 \times 4 + 8 \times 1) \times 34$

Total work = $(20 + 8) \times 34$

Total work = 28×34

Efficiency of 3 men and 5 women in 1 day = $(3 \times 4 + 5 \times 1) = 12 + 5 = 17$

Therefore Time taken by 3 men and 5 women to complete the whole work = $(28 \times 34)/17 = 56$ days

Q76. Answer: (b) Programmable read-only memory

The correct answer is Programmable read-only memory

Key Points

• PROM stands for Programmable Read-Only Memory.

• Read-only memory (ROM) is a type of memory that is used in electronics and computers.

• It is a non-volatile memory, that is, information stored in such memory is permanent and cannot be changed.

• The other two types of ROM are

• Electrically Erasable Programmable ROM (EEPROM)

• Erasable Programmable ROM (EPROM)

Additional Information

• Primary memory can be divided into RAM (Random Access Memory) and ROM (Read Only Memory)

RAM	ROM
It is a Volatile or temporary memory	It is Non Volatile or permanent memory
Data gets erased when the power supply is off	Data stored permanently
Faster memory	Slow memory
It is used in the normal operations of a computer after starting up and loading the operating system	A ROM chip is used primarily in the start-up process of a computer

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Q77. Answer: (d) Tamanna

The correct answer is Tamanna.

• CBSE and NCERT have launched an online aptitude test called Tamanna'.

• Tamanna stands for Try And Measure Aptitude And Natural Abilities.

• Tamanna is an aptitude test that aims to help students of Class 9 and 10 to make a better choice of subjects, eventually helping them in making an informed decision while choosing subjects in Class 11 and 12.

Q78. Answer: (a) Odisha

The correct answer is Odisha.

Key Points

• Chhau means shadow its a form of mask dance.

• There are 3 main styles of Chhau dance

• Jharkhand - Saraikella Chhau

• Odisha - Mayurbhanj Chhau- In this type of Chhau, the artists don't wear a mask.

• West Bengal - Purulia Chhau

Additional Information

Dances	Place of origin
Chhau	Jharkhand-Saraikella Chhau Odisha-Mayurbhanj Chhau West Bengal-Purulia Chhau
Garba	Gujarat
Dandiya Raas	Gujarat
Tarangamel	Goa
Ghoomar or Gangore	Rajasthan

Q79. Answer: (a) Bhitarkanika Wildlife Sanctuary, Odisha

The correct answer is Bhitarkanika Wildlife Sanctuary, Odisha.

• Bhitarkanika Mangroves is a part of Bhitarkanika Wildlife Sanctuary.

• It is located in Odisha.

• It covers an area of 650 square kilometres.

• The core area of the sanctuary was declared Bhitarkanika National Park.

• It is famous for its Saltwater crocodiles and Olive ridley sea turtle.

• It was designated a Ramsar Wetland of International Importance in 2002.

• Bhitarkanika Wildlife Sanctuary includes Gahirmatha Marine Wildlife Sanctuary.

Q80. Answer: (b) Meghalaya

The correct answer is Meghalaya.

• The Garo Khasi And Jayantia Hills were formed in the same age as of the Malwa Plateau.

• The Garo, Khasi, And Jayantia Hills are located in Meghalaya.

• The hills are named after the tribes found particularly in that region.

• Meghalaya is also known as the Scotland of the East.

Q81. Answer: (d) Erode Venkatappa Ramasamy

The correct answer is Erode Venkatappa Ramasamy.

Key Points

• E.V. Ramaswami Naicker started the Self Respect Movement.

• He is also known as Periyar.

• The objective of the movement was to end Bramhanical domination in society.

• He felt that it was the prime instrument of exploitation of the lower caste.

• One of the methods he employed was to organise marriage without Brahmins.

• He was a pioneer of social justice and fought against untouchability.

• He said Manu's law as unhuman and Puranas as fairy tales.

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• He opposed the imposition of Hindi upon Dravidians.

• He tore caste name hoards on hotels, cut off the holy thread of Brahmins, broke the idols and beat up the deities with a chappal.

Additional Information

• C. Rajagopalachari was the first and last Governor-General of independent India.

• He was the first governor of West Bengal (15 August 1947 to 21 June 1948).

• Apart from this, he was also Minister for Home Affairs of the Indian Union and Chief Minister of Madras state.

• He was the first recipient of India's highest civilian award, the "Bharat Ratna".

• C. N. Annadurai was the first Chief Minister of Tamil Nadu.

• He was an Indian politician who served as Tamil Nadu's 1st chief minister for 20 days in 1969 and as Madras state's fifth and last chief minister from 1967 to 1969 when Madras state name was changed to Tamil Nadu.

Q82. Answer: (d) Batukeshwar Dutt

The correct answer is Batukeshwar Dutt.

• Batukeshwar Dutta along with Bhagat Singh was the main accused in Assembly Bomb Case.

• They were members of the Hindustan Socialist Republican Association.

• In 1929, they threw bombs at the Central Legislative Assembly.

• They did not want to injure anyone but wanted to make a statement that they would not bear the colonial rule of Britishers.

• It was against the Public Safety Bill and the Trade Dispute Bill.

• Dutta also initiated a historic hunger strike along with Bhagat Singh to protest against the abusive treatment of Indian political prisoners.

• Ram Prasad Bismil participated in the Mainpuri conspiracy of 1918, and the Kakori conspiracy of 1925.

• He also resisted the British rule in India.

• Ashafaqulla was also a revolutionary like Bhagat Singh and stood against the atrocities of Britishers.

• Surya Sen was best known for leading the 1930 Chittagong armoury raid.

Additional Information

• The Forward Bloc of the Indian National Congress was formed on June 22, 1939, by Netaji Subhas Chandra Bose, who had resigned from the presidency of the Indian National Congress on 29 April after being outmanoeuvred by Mohandas K. Gandhi.

• Subhas Chandra Bose was elected as the President of the Indian National Congress (INC) in 1939 against Dr Pattabhi Sitaramayya.

• Subhash Chandra Bose and Sardul Singh Kavishar were the party's first president and vice-president respectively.

• Bhagat Singh, Rajguru and Sukhdev were sentenced to death in the Lahore conspiracy case and ordered to be hanged on 23 March 1931.

• Chandra Shekhar Azad was born in Jhabua, Madhya Pradesh on 23 July 1906, he died on 27 February 1931 in Allahabad.

• He was an Indian revolutionary who reorganised the Hindustan Republican Association under its new name of Hindustan Socialist Republican Association (HSRA) after the death of its founder, Ram Prasad Bismil, and three other prominent party leaders, Roshan Singh, Rajendra Nath Lahiri and Ashfaqulla Khan.

• https://economictimes.indiatimes.com/news/politics-and-nation/remembering-bhagat-singh-on-his-110th-birth-anniversary/bombing-of-the-assembly/slideshow/60868938.cms#:~:text=On%20April%208%2C%201929%2C%20Bhagat,protest%20against%20an%20unfavourable%20Bill.

Q83. Answer: (d) Arunachal Pradesh Legislative Assembly

The correct answer is Arunachal Pradesh Legislative Assembly.

• The Arunachal Pradesh Legislative Assembly (APLA) adopted a new logo, reflecting the distinct identity and culture of the state.

• The new logo consists of the national emblem and foxtail orchid (Rhynchostylis Retusa), the state flower.

• The national emblem in the logo signifies the federal system of the Indian Constitution.

• The flower foxtail orchid represents the state, its people and culture of the state.

• The blue color of the logo denotes the autonomy of the assembly secretariat.

Note: State’s Legislative Assemblies of Tripura, Meghalaya, and Mizoram uses the National Emblem of India.

Q84. Answer: (b) Jawaharlal Nehru

The correct answer is Jawaharlal Nehru.

Key Points

• Congress passed the Poorna Swaraj resolution in December 1929 in the Lahore session.

• Jawaharlal Nehru was the president of the December 1929 Lahore session.

• Lord Irwin (1926-1931) was The Viceroy of India when Congress passed the resolution for Poorna Swaraj.

• Important sessions

Lahore Session 1929	**• The Purna Swaraj declaration or Declaration of the Independence of India was promulgated by the Indian National Congress on 19 December 1929. - President: Pt Jawaharlal Nehru. - Viceroy of India - Lord Irwin**
Gaya Session-1922	• C.R.Das and other leaders broke out from Congress. - Presided by CR Das
Kanpur Session 1925	• Sarojini Naidu is the first Indian woman president of INC in the 1925 Kanpur session. - Sarojini Naidu became the second woman to preside over the Congress after Annie Besant
Surat Session 1907	• The Surat session was presided by Dr. Rash Behari Ghosh. - The Indian National Congress split into two groups-the the extremists and the moderates-at the Surat session in 1907. - The extremists were led by Lok Manya Tilak, Lajpat Rai and Bipin Chandra Pal and the moderates were led by Gopal Krishna Gokhale.
Karachi Session 1931	• The Karachi Congress Session 1931 was presided over by Sardar Vallabhbhai Patel. - The session was to endorse the Gandhi Irwin Pact 1931.

Q85. Answer: (b) Kanhaiyalal Maniklal Munshi

The correct answer is Kanhaiyalal Maniklal Munshi.

• Kanhaiyalal Maniklal Munshi described the preamble of the Indian Constitution as the 'Political horoscope of the Indian Constitution'.

Additional Information

• The Preamble of the Indian constitution is based on "Objectives Resolution".

• It was drafted and moved by Pandit Jawahar Lal Nehru and adopted by the constituent assembly.

• In the historic case of Kesavananda Bharati (1973), Supreme Court held that Preamble is a part of the constitution and can be amended under article 368, subject to the condition that no amendment is done to the "Basic structure".

• The Preamble has been amended only once so far, in 1976 by the 42nd Constitutional amendment Act.

• The term ‘Socialist’, ‘Secular’, and ‘Integrity’ were added to the preamble through 42nd Amendment Act, 1976.

• ‘Socialist’ and ‘Secular’ were added between ‘Sovereign’ and ‘Democratic’.

• ‘Unity of the Nation’ was changed to ‘Unity and Integrity of the Nation’.

• By the 42nd Constitutional amendment act 1976, three new words - Socialist, Secular and Integrity are added to the preamble.

Q86. Answer: (b) Kunchikal Falls, Karnataka

The correct answer is Kunchikal Falls, Karnataka.

Key Points

• Kunchikal Falls, also called Kunchikal Abbe, is located near Masthikatte-Hulikal bordering the Udupi-Shimoga districts of the state of Karnataka.

• Kunchikal falls is formed by the Varahi River.

• Kunchikal falls cascade down rocky boulders and the total height of the fall is 455 meters.

Additional Information

• The Thalaiyar Falls is the 6th highest waterfall in India.

• Thalaiyar Falls also known as Rat Tail Falls is located in the Devadanapatti Dindigul District, Tamil Nadu.

• It is 975 ft (297 m) tall and is the highest waterfall in Tamil Nadu.

• It is the 267th highest waterfall in the world.

Q87. Answer: (a) 2016

The .correct answer is 2016.

• The United Nations Educational, Scientific and Cultural Organization (UNESCO) has formally inscribed Yoga on 2016 in its representative list of Intangible Cultural Heritage of Humanity.

Additional Information

• Prahalad Singh Patel has launched the National list of intangible cultural heritage of India.

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• The aim of this list is to create awareness about the various intangible cultural heritage sites at national and international level and to ensure their protection.

• It is a part of the vision 2024 of Ministry of Culture.

• The list of intangible cultural heritage have been collected from the projects approved under the scheme for ‘Safeguarding the Intangible Cultural Heritage and Diverse Cultural Traditions of India’.

• The General Assembly of UNESCO adopted the Convention on the Protection of Intangible Heritage as an international treaty in 2003.

Q88. Answer: (b) Charles's law

The correct answer is Charles's law.

Explanation:

• In 1787, Jacques Charles formulated Charles' Law or the Law of Volume.

• According to this law, at constant pressure, the volume of a given mass of gas is directly proportional to its temperature.

• This is mathematically represented as V/T = Constant, at constant pressure.

• If the pressure remains constant, the volume of the given mass of a gas is directly proportional to its absolute temperature.

• i.e. V prop. to T

Additional Information

• Boyle's law:

• For a fixed mass of gas at a constant temperature, the volume is inversely proportional to the pressure.

• P prop. to 1/V

• PV = constant (If the temperature remains constant, the product of pressure and volume of a given mass of a gas is constant.)

• Avogadro's law:

• Avogadro’s Law states that at constant temperature and pressure, all equal volumes of gases will have an equal number of molecules" which means 'V' is directly proportional to the 'Number of molecules'.

• Joule's law:

• The ratio of the energy consumed in mechanical work (W) and the heat generated (H) by that work remains constant.

• J is Joule's constant. J = 4.186 joule/calorie

Q89. Answer: (a) Mercury (Hg) – Greenockite

The correct answer is Mercury (Hg) – Greenockite.

• Cinnabar is an ore of Mercury (Hg).

• Cinnabar is an ore of Mercury (Hg) with chemical formula HgS.

• Cinnabar is a source of brilliant red pigment, called Vermilion.

• It consists of mercury sulphide and is bright scarlet to brick red in colour.

Additional Information

• An Ore is a naturally occurring rock or mineral from which metals can be extracted.

• Calaverite is an ore of gold (Au).

• The chemical formula of Calaverite is AuTe2.

• It is also known as Gold Telluride.

• Aluminium ores are

• Bauxite.

• Cryolite.

• Corundum.

• Feldspar.

• Cobalt ores are

• Smelite.

• Cobaltite.

• Erythrite.

Q90. Answer: (b) Ramanathan Krishnan

The correct answer is Ramanathan Krishnan.

• Ramanathan Krishnan was the first Asian player to win the Junior Wimbledon's Boys singles title.

• He was the first Indian to reach the semi-final in Wimbledon Tennis Championship.

• He is the first Indian player to reach an ATP world tour singles final since Somdev Devvarman.

• He achieved his highest singles ranking of 111 on 30 July 2018 and represents India in the Davis Cup.

• He was awarded the Arjuna award in 1961, Padma Bhushan in 1967 and Padma Shri in 1962.

Additional Information

• Vijay Amritraj:

• The only tennis player in the world to have won the Hall of Fame Tennis Tournament in the USA thrice. Semi-finalist at Wimbledon in 1973.

• Represented India in the Olympic Games at Seoul in 1988.

• Awarded the Arjuna award in 1974 and Padma Shri in 1983.

• Mahesh Bhupati:

• Finalist in Wimbledon Junior Doubles Championship.

• He was a member of the India Davis Cup team in 1995.

• He won the mixed doubles in the French Open tennis tournament.

• He was awarded Arjuna award in 1996.

• Sumit Nagal was an Indian tennis player.

• He has been handed a direct entry into the US Open singles main draw after several top stars pulled out of the Grand Slam.

Q91. Answer: (c) Baba Amte

The correct answer is Baba Amte.

• Baba Amte was the only Indian to have won the United Nations Award in the field of human rights.

• He was an Indian social worker and social activist known particularly for his work for the rehabilitation and empowerment of people suffering from leprosy.

• He was won the Ramon Magsaysay award in 1985.

• Ela Bhatt was a civil right activist under the banner of Self-employed women's association which was women wing of Textile Labour Association formed by Gandhiji in 1918.

• Verghese Kurien:

• He was known as the Father of the White Revolution in India.

• He was associated with the co-operative model for generating employment and elimination of poverty.

• Kanshi Ram was the founder of Bahujan Samaj Party(BSP) political party.

• It is symbolic to the 'Majority of People' and representing the oppressed sections of the society such as the Scheduled Castes, the Scheduled Tribes, Other Backward Classes as well as religious minorities.

Q92. Answer: (c) Andre Russell

The correct answer is Andre Russell.

• Andre Russell won the ‘Most Valuable Player of the Series’ award in IPL 2019.

• The award for IPL Emerging Player of the season 2019 was won by Shubman Gill.

• Mumbai Indians won the 2019 IPL against Chennai Super Kings by 1 run in a last-ball thriller.

• Jasprit Bumrah won the Man of the Match award in the final of IPL 2019.

• David Warner won the Orange Cap in the 2019 VIVO IPL.

• Imran Tahir, of Chennai Super Kings, was awarded the Purple Cap for finishing as the leading wicket-taker of the tournament.

Q93. Answer: (c) 35

The correct answer is 35.

• The second phase of Intensified Mission Indradhanush 2.0 rolled out on 6 January 2020 at the block level in 35 districts of Uttar Pradesh.

• The aim of the program launched by the central government in 2017 is to achieve 90% vaccination coverage in children of less than 2 years in the state.

• Under the program, around 66 thousand sessions will be organized for vaccination of more than 5.5 lakh children.

• Salient features:

• Four rounds of activity will be conducted over 7 working days excluding holidays.

• Enhanced focus will be on the left-outs.

• Focus on the Urban and underserved tribal population will be laid.

• Interministerial coordination.

• Enhanced immunisation sessions.

Additional Information

• Mission Indradhanush:

• It was launched in 2014 by the union government after realising the incompetence of the Universal Immunisation Programme which could achieve 65% immunisation only.

• This mission was launched to achieve full immunisation for the children up to 2 years of age and all pregnant ladies.

• 201 districts were identified in 28 states under this mission.

• Intensified Mission Indradhanush:

• It was launched in October 2017 to reach out to all the children and Pregnant ladies who were left under Mission Indradhanush.

• This programme aimed to ensure full vaccination of more than 90% of the target population.

• It was also conducted in 4 rounds in 173 focus districts.

Q94. Answer: (d) Oil & Natural Gas Corporation

The correct answer is Oil & Natural Gas Corporation.

• Oil & Natural Gas Corporation was ranked as the largest profit-making PSU in India for the fiscal year 2018-2019.

• ONGC, Indian Oil Corporation and NTPC were the top three profitable PSUs in 2018-19.

• BSNL, Air India and MTNL incurred highest losses for a third consecutive year.

Q95. Answer: (d) Amblyopia

The correct answer is Amblyopia.

• Amblyopia: Also known as Lazy eye.

• It represents a type of muscular defect of the eyes that causes a loss of vision due to muscle imbalance.

• It leads to double vision.

• The brain tries to repress the vision in one eye, resulting in loss of sight to the unused eye.

Additional Information

• Presbyopia:

• Decreases the power of accommodation and can be corrected by using bi-focal lenses.

• Hypermetropia:

• The focal length of the eye lens is too long and can be corrected by the convex lens of suitable power.

• Myopia:

• Also known as near-sightedness.

• The far point is nearer than infinity.

• A person with this defect can see nearby objects but cannot see distant objects distinctly.

• Image of the distant object is formed in front of the retina.

• Arise due to - (a) excessive curvature of the eye lens, (b) elongation of the eyeball.

• Correction - concave lens of suitable power.

Q96. Answer: (a) Third battle of Panipat

The correct answer is Third battle of Panipat.

• Ahmad Shah Abdali defeated the Marathas in the third battle of Panipat.

Additional InformationThere is three battle of Panipat.

First Battle of Panipat (21 April 1526)	**Babur vs Lodi (Babur won)**
Second Battle of Panipat (November 5, 1556)	Hemu vs Akbar (Akbar won)
Third Battle of Panipat (14 January 1761)	Abdali vs Marathas (Abdali won)

Q97. Answer: (b) Salman Rushdie

The correct answer is Salman Rushdie.

• The novel titled 'Quichotte' is authored by Salman Rushdie.

• It was originally published on 29 August 2019.

• It is the fourteenth novel published by Jonathan Cape in the United Kingdom and Penguin Books India in India.

• It was published in the United States on 3 September 2019 by Random House.

• It is nominated for the Booker Prize 2019.

• Other important books by Salman Rushdie:

Book	Details
Midnight's Children	• Published in 1981. - Talks about pre and post Independence events.
The Satanic Verses	• Published in 1988. - A work of fiction that used magical realism.
Shame	• Published in 1983. - Discusses the problems of post-independence and the country's division.

Additional Information

• Arundhati Roy won Man Booker Prize in 1997 for her book "The God of Small Things".

• Vikram Seth is an Indian novelist and poet.

• He has written several novels and poetry books.

• He has received several awards including Padma Shri, Sahitya Akademi Award, Pravasi Bharatiya Samman.

• Dr Shashi Tharoor has written Show Business, The Great Indian Novel, Bookless in Baghdad and many more books.

Q98. Answer: (a) Brahmaputra River

The correct answer is Brahmaputra River.

• The Brahmaputra River originates from the Angsi Glacier in Tibet which is an is an autonomous region of China.

• It is knowns as Tsangpo in Tibet.

• It flows eastwards parallel to the Himalayas.

• On reaching the Namcha Barwa (7757 m), it takes a ‘U’ turn and enters India in Arunachal Pradesh through a gorge.

• Here, it is called the Dihang and it is joined by the Dibang, the Lohit, and many other tributaries to form the Brahmaputra in Assam.

• The river flows for about 3,848 km (2,391 mi) long which makes it the world's 15th Longest river.

• Majuli Island is the first island to be made a district in India between the channels of the Brahmputra river is the largest river island in the world.

• The Brahmputra river forms the world's largest and the deepest canyon, Yarlung Tsangpo Grand Canyon while leaving the Tibetan Plateau.

Q99. Answer: (d) Kabaddi

The correct answer is Kabaddi.

• 6 Dronacharya Awards were presented to coaches:

• In the regular category,

• Vimal Kumar (badminton),

• Sandeep Gupta (table tennis), and

• Mohinder Singh Dhillon (athletics)

• In the life-time category,

• Merzban Patel (Hockey),

• Rambir Singh Khokhar (kabaddi) and

• Sanjay Bhardwaj (cricket)

Additional Information

• Winners of the Dronacharya Award 2020 are:

• Jude Sebastian (Hockey).

• Yogesh Malviya (Mallakhamb).

• Jaspal Rana (Shooting).

• Kuldeep Kumar Handoo (Wushu).

• Gaurav Khanna (Badminton).

Q100. Answer: (c) V Krishnamurthy

The correct answer is V Krishnamurthy.

• Dr V. Krishnamurthy is known as the ‘Father of Public Sector Undertakings’ in India.

• Ashok Desai was the 10th Attorney General of India from 9 July 1996 – 6 April 1998.

• Prasanta Chandra Mahalanobis was the person responsible for the formation of the Central Statistical Organization.

• Indian statistics day is observed on June 29 (Birthday of Mahalanobis) in the memory of Mahalanobis.

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- The second five-year plan is also called Mahalanobis plan.
- Father of Indian Statistics: P.C. Mahalanobis.

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