SSC CHSL 2020 Official Paper 13 (Held On: 19 April 2021 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. Direction: Select the option that expresses the given sentence in the active or passive voice.

Celebrate the New Year with amazing offers.

(a) The New Year should be celebrated with amazing offers.
(b) Let the New Year be celebrated with amazing offers.
(c) Amazing offers will be celebrate in the New Year.
(d) The New Year will be celebrated with amazing offers.

Q2. Directions: Select the option that expresses the given sentence in reported speech.

He said to his sister, “Please help me with my homework.”

(a) His sister told him that he should help her with her homework.
(b) His sister was asked by her brother that she should help him with his homework.
(c) He told his sister that she should help him with his homework.
(d) He requested his sister to help him with his homework.

Q3. Choose the most appropriate meaning of the given idiom.

To make both ends meet

(a) To try to do two different things at the same time
(b) To try to bring two parties together
(c) To have just enough money to live
(d) To try to solve a problem between friends

Q4. Pick out the wrongly spelt word from the given words.

(a) Saspence
(b) Secrecy
(c) Suppress
(d) Suspicion

Q5. Directions: Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the right order to form a meaningful and coherent paragraph.

A. But he has reached out to millions of people the world over and helped to improve their lives.
B. Born in downtown Los Angeles in 1960, Tony Robins came from very humble beginnings.
C. Now he travels by private jet and owns properties in many parts of the world.
D. His family had been fed by others when they did not have enough money for food.

(a) BDCA
(b) ADBC
(c) CABD
(d) DABC

Q6. Directions: The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

Public speaking / is one of / the most feared form / of communication.

(a) the most feared form
(b) Public speaking
(c) of communication
(d) is one of

Q7. Directions: Select the option that can be used as a one-word substitute for the given group of words.

Withdraw from a forward position in battle

(a) Resort
(b) Retreat
(c) Restore
(d) Relocate

Q8. Directions: Select the most appropriate word to fill in the blank.

We admit students with _____ academic backgrounds like life sciences, physical sciences, and business and commerce.

(a) diverse
(b) simple
(c) same
(d) similar

Q9. 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 substitution required'.

I cannot help you if you tell me your problem.

(a) unless you don’t tell me
(b) No substitution required
(c) unless you tell me
(d) until you don’t tell me

Q10. Directions: Select the most appropriate ANTONYM of the given word.

Malicious

(a) Biased
(b) Perverted
(c) Culpable
(d) Decent

Q11. Directions: Select the INCORRECTLY spelt word.

(a) Adamant
(b) Acheivmant
(c) Relevant
(d) Eligibility

Q12. Select the most appropriate word to fill in the blank.

Please complete the short questionnaire _____ and return it to us.

(a) attached
(b) separated
(c) concluded
(d) excluded

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Q13. Directions: Select the most appropriate ANTONYM of the given word.

Resign

(a) Accept
(b) Reject
(c) Sign
(d) Join

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

To drag one's feet

(a) To walk with a limp
(b) To delay taking a decision
(c) To walk unsteadily
(d) To pull someone's legs

Q15. Directions: The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

After a long gap, / we went shopping / last Sunday and bought / that we wanted.

(a) last Sunday and bought
(b) that we wanted
(c) we went shopping
(d) After a long gap

Q16. Directions: Select the most appropriate synonym of the given word.

Abode

(a) Dwelling
(b) Aboard
(c) Annex
(d) Habituation

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 substitution required'.

Fermented vegetables can be stored for about a year without going bad.

(a) with going bad
(b) No substitution required
(c) without going worst
(d) to go bad

Q18. Directions: Select the most appropriate synonym of the given word.

Mandatory

(a) Unnecessary
(b) Imperative
(c) Impervious
(d) Optional

Q19. Directions: Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the right order to form a meaningful and coherent paragraph.

A. The other aspect touches upon certain issues that have arisen in recent years, such as brain-death, mercy killing and cloning.

B. There are two major aspects relating to the medical profession and its practice the world over.

C. These issues must be discussed and debated in the public domain in terms of our cultures and value systems.

D. One of these is the ethics of medical practitioners in their day-to-day relationship with their patients and with one another.

(a) BCAD
(b) DABC

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(c) BDAC
(d) CDAB

Q20. Directions: Select the option that can be used as a one-word substitute for the given group of words.

Relating to the present time

(a) Preceding
(b) Ancient
(c) Contemporary
(d) Corollary

Directions

Directions: In the following passage, some words have been deleted. Select the most appropriate option to fill in each blank.

All of us know that the American astronaut Neil Armstrong was the first _(1)_ to set foot on the Moon in July 1969. Human footprints on the lunar _(2)_ won't disappear for millions of years. That is because there is no rain or wind to _(3)_ them. The surface area of the Moon is 25% larger than that of Africa. Astronauts have so far brought back hundreds of kilos of rock and dust from the Moon to _(4)_. It takes the Moon 27.3 days to travel around the Earth. As it does so, we see different amounts of its side _(5)_ by the Sun. That is why it appears to get larger and then smaller.

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

(a) organism
(b) creature
(c) object
(d) human

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

(a) rock
(b) dust
(c) surface
(d) eclipse

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

(a) replicate
(b) erode
(c) restore
(d) recreate

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

(a) show
(b) store
(c) sell
(d) study

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

(a) heated
(b) hidden
(c) lit
(d) covered

GENERAL INTELLIGENCE

Q26. Select the correct option that indicates the arrangement of the following words in a logical and meaningful order.

1. Restaurant
2. Eating
3. Cooking

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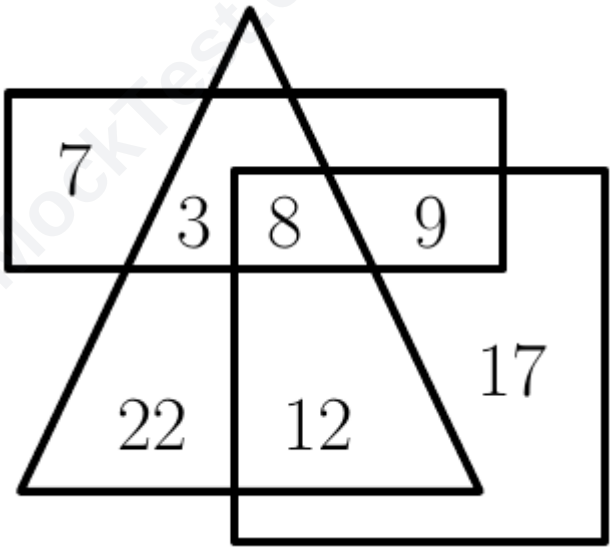
4. Order food
5. Serve food

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

Q27. Three of the following four letter-cluster pairs are alike in a certain way and one is different.

(a) FIST : IFTS
(b) LIMB : BMIL
(c) PORT : TROP
(d) MODE : EDOM

Q28. In the Venn Diagram given below, if 'Square' represents 'Doctors', 'Triangle' represents 'Tennis Players' and ' Rectangle' represents 'Indian', Numbers represents the individuals in that category. How many doctors are Indians but NOT tennis players?



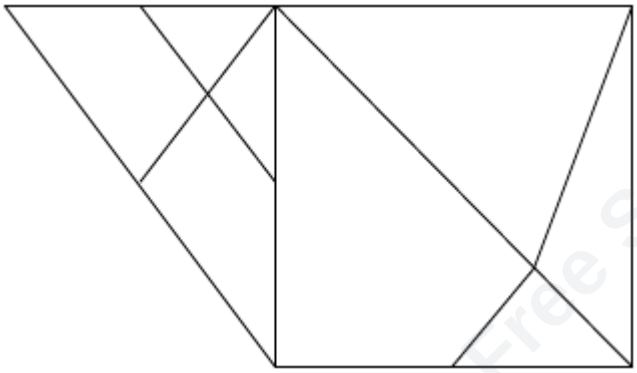
(a) 8
(b) 12
(c) 7
(d) 9

Q29. Select the number from among the given options that can replace the question mark (?) in the following series.

33, 34, 30, 39, 23, 48, 12, ?

(a) 16
(b) 41
(c) 14
(d) 61

Q30. How many triangle are there in the figure given below?



(a) 12
(b) 11
(c) 10
(d) 13

Q31. Select the correct mirror image of the given combination when the mirror is placed at 'PQ' as shown.



(a)



(b)



(c)



(d)



Q32. Select the word-pair in which the two words are related in the same way as are the two words in the following word-pair.

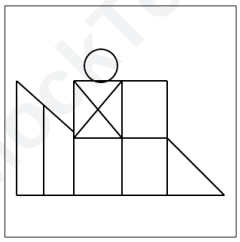
Litre : Milli litre

(a) Inch : Height
(b) Luminance : Tesla
(c) Metre : Distance
(d) Kilogram : Gram

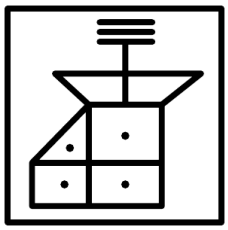
Q33. Select the option in which the given figure is embedded (rotation is NOT allowed).



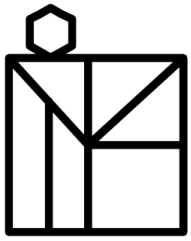
(a)



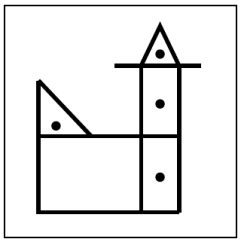
(b)



(c)



(d)



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Q34. Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the one that is different.

(a) 18 : 144
(b) 11 : 122
(c) 21 : 168
(d) 14 : 112

Q35. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

_ _ c f b _ c _ b d _ f

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

Q36. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

14	**22**	**5**
18	42	11
22	35	?

(a) 7
(b) 12
(c) 8
(d) 9

Q37. Select the correct combination of mathematical signs that can sequentially replace the * signs and balance the given equation.

25 * 48 * 6 * 12 * 2 = 41

(a) −, ×, +, ÷
(b) −, ÷, +, ×
(c) ÷, ×, +, −
(d) +, ÷, −, ×

Q38. Select the option in which the numbers share the same relationship as that shared by the numbers in the given set.

(12, 18, 225)

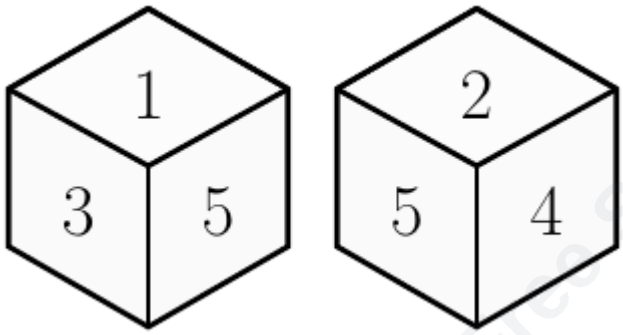
(a) (13, 17, 140)
(b) (23, 13, 272)
(c) (25, 15, 400)
(d) (21, 10, 324)

Q39. Pointing to the portrait of a gentleman, Rashmi said, "He is the father-in-law of the wife of my son." How is the man related to Rashmi?

(a) Brother-in-law
(b) Brother
(c) Cousin
(d) Husband

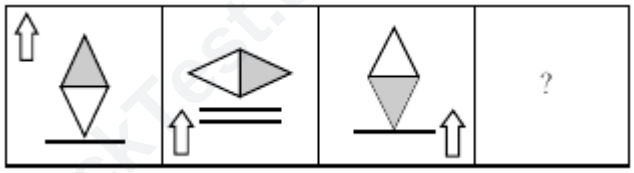
Q40. Two different positions of the same dice are shown, the six faces of which are numbered from 1 to 6. Select the number that will be on the face opposite to the having '5'.

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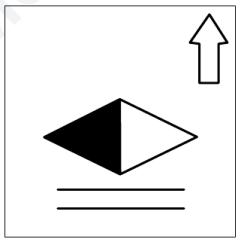


(a) 6
(b) 3
(c) 1
(d) 4

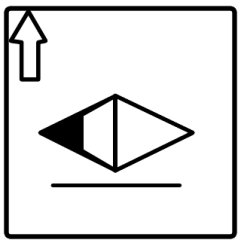
Q41. Select the figure that will replace the question mark (?) in the following figure series.



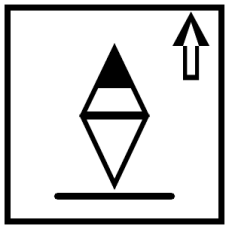
(a)



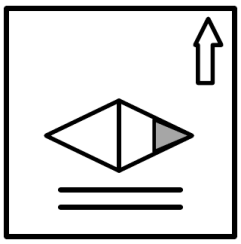
(b)



(c)



(d)



Q42. 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:

Some planets are stars.

All stars are satellites.

Conclusions:

I. All satellites are stars.

II. Some satellites are planets.

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

Q43. Select the option that is related to the third term in the same way as the second term is related to the first term.

SEVERAL : MZSDWDT : : HEADING : ?

(a) HMICBDJ
(b) HMJCBDI
(c) JDBCIMH
(d) IDBCJMH

Q44. Four words have been given, out of which three are alike in some manner and one is different. Select the word that is different.

(a) Consensus
(b) Rapport
(c) Dislike
(d) Amicability

Q45. Select the option that is related to the fourth number in the same way as the first number is related to the second number and the fifth number is related to the sixth number.

19 : 362 : : ? : 442 : : 17 : 290

(a) 21
(b) 22
(c) 20
(d) 18

Q46. A total of 1012 candies are to be distributed among Virat, Ketan and Rohan in the ratio of 6 : 9 : 8, respectively. How many candies will Rohan get?

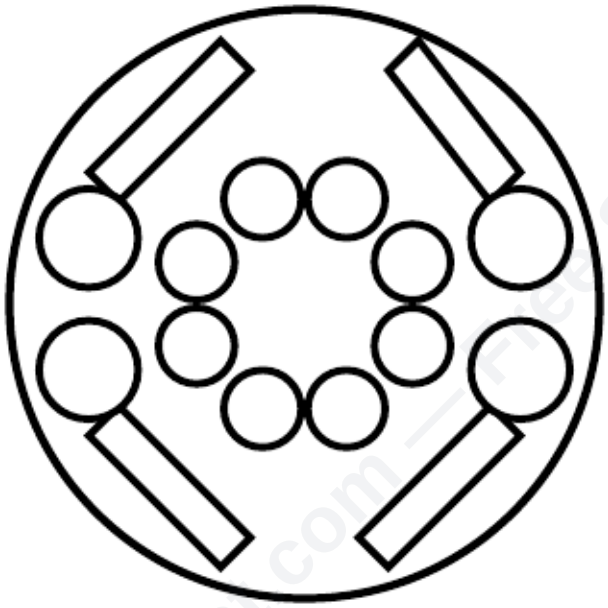
(a) 264
(b) 352
(c) 396
(d) 450

Q47. In a certain code language, THICK is written as FELHW. How will RAISE be written in that language?

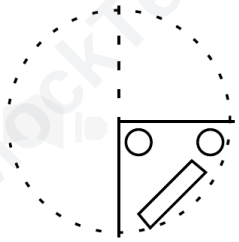
(a) XFHBJ
(b) DLBOV
(c) DBLOV
(d) XHFUV

Q48. A sheet of paper is folded in a particular manner and several punches are made. When unfolded, the paper looks like the given figure. Select the option that follows the manner in which the paper is folded and punched.

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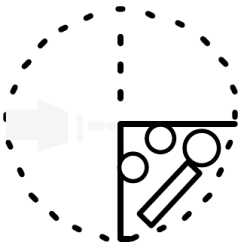
(a)



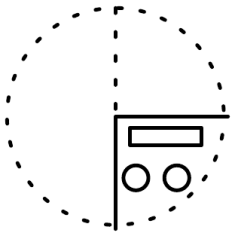
(b)



(c)



(d)



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Q49. In a code language, if VISION is written as 176, then how will SEEING be written in the same language?

(a) 153
(b) 140
(c) 118
(d) 148

Q50. Select the option that is related to the third word in the same way as the second word is related to the first word.

France : Euro : : Myanmar : ?

(a) Euro
(b) Yen
(c) Kyat
(d) Ringgit

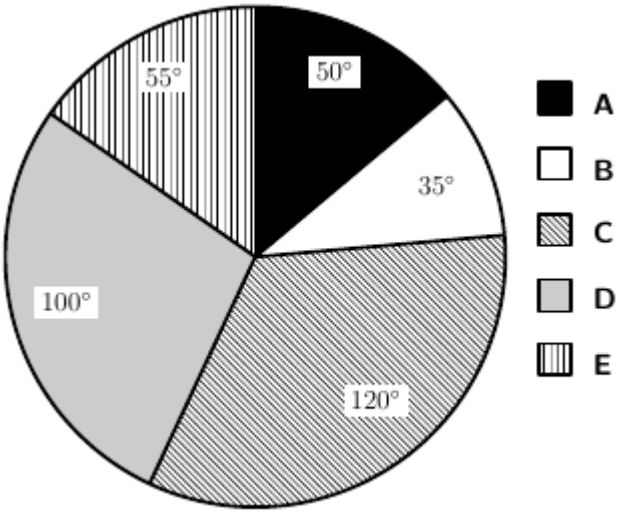
QUANTITATIVE APTITUDE

Q51. ABCD is a cyclic quadrilateral whose diagonals intersect at P. If angle DBC = 72° and angle BAC = 42°, then the measure of angle BCD (in degrees) is:

(a) 66
(b) 60
(c) 65
(d) 57

Q52. Study the pie chart that shows the quantity wise sales distribution of five products (A, B, C, D and E) of a company in 2019 and answer the question that follows.

Quantity wise sales distribution of five products (A. B. C. D and E)



If 2100 units of product C were sold in 2019 and the total number of units sold by the company in 2020 was 28% more than that in 2019, then how many units were sold by the company in 2020?

(a) 8064
(b) 8576
(c) 6300
(d) 7428

Q53. In Δ ABC, DE || BC, where D and E are points on the sides AB and AC, respectively. If AD = 2 cm, BD = 5.2 cm, AC = 9 cm and AE = x cm, then what is the value of x?

(a) 2.5
(b) 4
(c) 3
(d) 3.5

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Q54. ΔPQR is inscribed in a circle. The bisector of angle P cuts QR at S and the circle at T .If PR = 5 cm, PS = 6 cm and ST = 4 cm, then the length (in cm) of PQ is:

(a) 13
(b) 15
(c) 12
(d) 10

Q55. A sum of Rs. 11,236 is divided among A, B and C such that the ratio of the shares of A and B is 3 : 5 and the ratio of the shares of A and C is 4 : 7. The share of B is:

(a) Rs. 4452
(b) Rs. 3392
(c) Rs. 4240
(d) Rs. 2544

Q56. A, B and C can complete a work in x, 30 and 45 days, respectively. B and C worked together for 6 days. The remaining work was completed by A alone in 12 days. The value of x is:

(a) 24
(b) 20
(c) 18
(d) 15

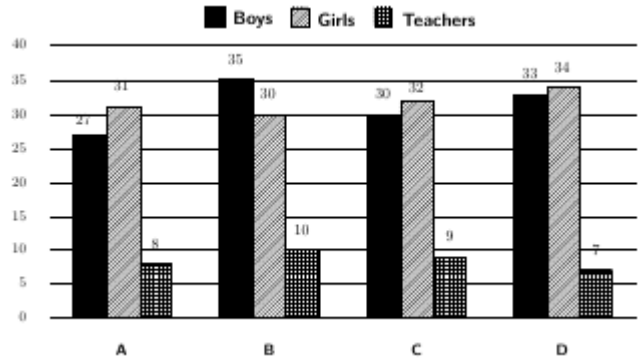
Q57. If x + y + z = 3, x2 + y2 + z2 = 45 and x3 + y3 + z3 = 69, then what is the value of xyz?

(a) 30
(b) 40
(c) -30
(d) -40

Q58. If $\sin\theta(2\sin\theta + 3) = 2$, $0° < \theta < 90°$, then what is the value of $(\sec^2\theta + \cot^2\theta - \cos^2\theta)$?

(a) 43/12
(b) 13/3
(c) 31/12
(d) 7/2

Q59. The given bar-graph shows the number of boys and girls in classes A, B, C and D ina school, and the number of teachers allotted to each class.



Which class has the least percentage of girls?

(a) A
(b) C
(c) D
(d) B

Q60. Two cars X and Y start running towards each other from two places 216 km apart. The ratio of the speeds of X and Y is 5 : 7 and the speed of X is 60 km/h. After how many minutes will X and Y meet each other?

(a) 75
(b) 90
(c) 80
(d) 72

Q61. A sum of Rs. x amounts to Rs. 9,246 in 4 years and to Rs. 11,298.75 in 71/2 years, at y% p.a. simple interest. The values of x and y are, respectively:

(a) 6500 and 8
(b) 6800 and 8.5
(c) 6900 and 8.5
(d) 7200 and 7.5

Q62. If $4\sqrt{3}x^2 + 5x - 2\sqrt{3} = (Ax + 2)(Bx + C)$. then what is the value of (A + B + C)?(A>0)

(a) 4
(b) $4 + \sqrt{3}$
(c) $4 - \sqrt{3}$
(d) $2\sqrt{3}$

Q63. In ΔABC, D and E are points on sides AB and BC, respectively, such that BD : DA = 1 : 2 and CE : EB = 1 : 4, If DC and AE intersect at F, then FD : FC is equal to:

(a) 3 : 2
(b) 4 : 1
(c) 5 : 2
(d) 8 : 3

Q64. The area of a triangular field whose sides are 65 m 72 m, and 97 m is equal to the area of a rectangular park whose sides are in the ratio of 5 : 13. What is the perimeter (in m) of the rectangular park?

(a) 144
(b) 180
(c) 108
(d) 216

Q65. The value of 6 × 3 ÷ 8 of 6 - 6 ÷ 4 × (5 - 7) + 5 - 3 × 4 ÷ 6 of 3 is:

(a) 511/24
(b) 55/8
(c) 41/3
(d) 717/24

Q66. if $\sin\theta = 11/15$ then the value of $(\sec\theta - \tan\theta)$ is:

(a) $\sqrt{26}/13$
(b) $1/\sqrt{26}$
(c) $4/\sqrt{26}$
(d) $2\sqrt{26}/13$

Q67. $((1+\cos\theta)(\text{cosec}\,\theta - \cot\theta)\sec\theta)/(\sin\theta(1-\sin\theta)(\sec\theta+\tan\theta)) = ?$

(a) $\cos^2\theta$
(b) $\sin^2\theta$
(c) $\text{cosec}^2\theta$
(d) $\sec^2\theta$

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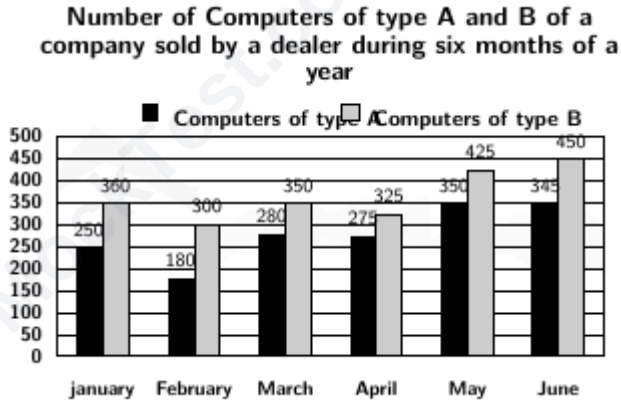
Q68. The average weight of some students in a group is 58 kg. If 8 students of average weight 54 kg leave the group, and 3 students weighing 53.6 kg, 54 kg and 57.4 kg join the group, then the average weight of the remaining students in the group will increase by 575 g. The number of students, initially, in the group is

(a) 35
(b) 45
(c) 50
(d) 40

Q69. If $x + 1/x=\sqrt{7}$, then what is the value of $(x^2 + 1)\div[x^4+(1/(x^2))]$?

(a) 1/4
(b) $2\sqrt{7}$
(c) 1/2
(d) $3\sqrt{7}$

Q70. Study the given graph and answer the question that follows.



The total number of computers of type A sold in January and May is what percentage less than the total number of computers of type B sold from March to May? (correct to one decimal place)

(a) 45.5
(b) 40.9
(c) 54.5
(d) 83.3

Q71. A shopkeeper earns 17% profit by selling an article at 10% discount on its marked price. If its cost price is Rs. 480, then the marked price (in Rs.) of the article is:

(a) 640
(b) 624
(c) 600
(d) 636

Q72. The price of an article increases by 5% every year. If the difference between its price at the end of the second and the third year is Rs. 52.50, then what will be its price at the end of the first year?

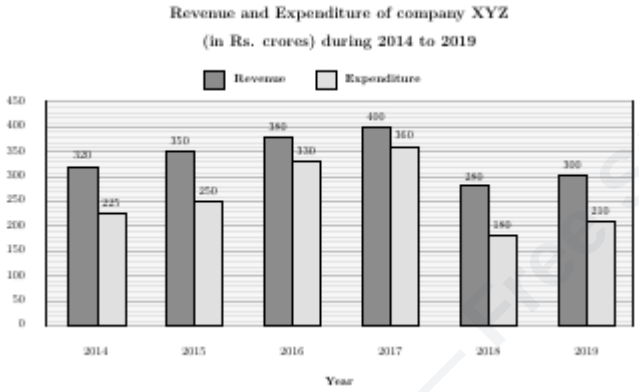
(a) Rs. 950
(b) Rs. 1000
(c) Rs. 840
(d) Rs. 900

Q73. A man buys goods for Rs. 8,000. He sells 30% of those goods at a profit of 12% and 40% of the remaining goods at a profit of 25%. At what profit percentage should he sell the remaining goods to gain 30% in the entire transaction (correct to one decimal place)?

(a) 46.2%
(b) 48.4%
(c) 31.6%
(d) 42.6%

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Q74. Study the given graph and answer the question that follows.



What is the ratio of the total revenue of the company in 2015 and 2018 to the total expenditure in 2017 and 2018?

(a) 5 : 4
(b) 6 : 5
(c) 7 : 6
(d) 9 : 10

Q75. The six-digit number 537xy5 is divisible by 125. How many such six-digit numbers are there?

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

GENERAL AWARENESS

Q76. Infrared optical _____ can be used for measuring and monitoring temperatures and hot spots of jet engine rotor blades.

(a) hygrometer
(b) ammeter
(c) pyrometer
(d) machmeter

Q77. New Development Bank (NDB) is a multilateral development bank established in 2014. How many countries are members of NDB?

(a) 12
(b) 25
(c) 5
(d) 9

Q78. In which of the following states was organized the 4th edition of Khelo India Youth Games ?

(a) Assam
(b) Haryana
(c) Bihar
(d) Chhattisgarh

Q79. Who among the following is the Regional Ambassador for India for UNEP (United Nations Environment Programme) as of December 2020?

(a) Dia Mirza
(b) Akshay Kumar
(c) Khushi Chindaliya
(d) Virat Kohli

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Q80. In which of the following years did the Supreme Court of India come into existence after Independence?

(a) 1950
(b) 1955
(c) 1948
(d) 1952

Q81. Who among the following cricketers has won the 'Sir Garfield Sobers Award' for the ICC Male Cricketer of the Decade and ICC Men's ODI Cricketer of the Decade Award in December 2020?

(a) Mahendra Singh Dhoni
(b) Virat Kohli
(c) Steve Smith
(d) Joe Root

Q82. An/A _____ is a finite set of instructions which, when followed, accomplish a particular task.

(a) data
(b) algorithm
(c) array
(d) node

Q83. Who among the following is the brand ambassador of Entri, a local learning app for jobs?

(a) Robin Uthappa
(b) Rohit Sharma
(c) Mary Kom
(d) Sania Mirza

Q84. With which of the following banks has the Government of India signed a $500 million project to build safe and green national highway corridors in Rajasthan, Himachal Pradesh, Andhra Pradesh and Uttar Pradesh?

(a) IMF
(b) ADB
(c) World Bank
(d) AIIB

Q85. When was the Jal Jeewan Mission launched by the Prime Minister, with the goal of 'Har Ghar Jal'?

(a) 2015
(b) 2020
(c) 2019
(d) 2014

Q86. Who among the following rulers inscribed his messages to his subjects and officials on stone surfaces?

(a) Chandragupta Maurya
(b) Ashoka
(c) Bindusara
(d) Chandragupta I

Q87. In which of the following states is the Losoong festival celebrated?

(a) Karnataka
(b) Himachal Pradesh
(c) Sikkim
(d) Andhra Pradesh

Q88. Trachoma is a preventable disease that results from poor hygiene and sanitation. Which of the following body parts does it affect?

(a) Heart
(b) Ear
(c) Eye

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(d) Stomach

Q89. Who among the following has assumed the charge of Director General of the Armed Forces Medical Services on 1 January 2021?

(a) JG Roach
(b) Rajat Datta
(c) AK Hooda
(d) MS Batola

Q90. Linganamakki Dam is built across which of the following rivers?

(a) Krishna
(b) Tunga Bhadra
(c) Sharavathi
(d) Yamuna

Q91. Which of the following is the full form of ASCII?

(a) American Standard Code for Information Interchange
(b) Analytical Scientific Code for Information Interchange
(c) Asian Standard Code for Information Interchange
(d) Analytical Standard Code for Intermitted Information

Q92. Which of the following state's government has launched the flagship programme 'Pedalandariki Illu' (housing for the poor) scheme in December 2020?

(a) Andhra Pradesh
(b) Tamil Nadu
(c) Karnataka
(d) Kerala

Q93. BWF (Badminton World Federation) has imposed a 5-year ban on shuttler Nikita Khakimov on the charges of betting, wagering and irregular match results. He represents which of the following countries?

(a) Russia
(b) Japan
(c) Portugal
(d) Canada

Q94. The polity of a country is designed according to its _____ and any change to the polity is possible only when an amendment is made.

(a) Government
(b) Constitution
(c) People
(d) Preamble

Q95. Kolhapur city is located on the banks of which of the following rivers?

(a) Panchganga
(b) Sarayu
(c) Chambal
(d) Musi

Q96. In which of the following states/union territories is India's highest Meteorological Centre situated?

(a) Assam
(b) Ladakh
(c) Meghalaya
(d) Jammu and Kashmir

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Q97. In which of the following cities was the International Gita Mahotsav held in November- December 2020?

(a) Patna
(b) Amritsar
(c) Kurukshetra
(d) Mumbai

Q98. In which of the following years was the Supreme Court set up in Calcutta by the East India Company?

(a) 1890
(b) 1850
(c) 1773
(d) 1734

Q99. Which of the following is the only state in India that produces diamonds?

(a) Kolkata
(b) Madhya Pradesh
(c) Andhra Pradesh
(d) Uttarakhand

Q100. Who has been nominated as a member on the GAVI Board by the Global Alliance for Vaccines and Immunisation in December 2020?

(a) Harsh Vardhan
(b) Smriti Irani
(c) Narendra Modi
(d) Amit Shah

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (b) Let the New Year be celebrated with amazing offers.

The solution is in Hindi. Read it online.

Q2. Answer: (d) He requested his sister to help him with his homework.

The solution is in Hindi. Read it online.

Q3. Answer: (c) To have just enough money to live

The solution is in Hindi. Read it online.

Q4. Answer: (a) Saspence

The solution is in Hindi. Read it online.

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Q5. Answer: (a) BDCA

The solution is in Hindi. Read it online.

Q6. Answer: (a) the most feared form

The solution is in Hindi. Read it online.

Q7. Answer: (b) Retreat

The solution is in Hindi. Read it online.

Q8. Answer: (a) diverse

The solution is in Hindi. Read it online.

Q9. Answer: (c) unless you tell me

The solution is in Hindi. Read it online.

Q10. Answer: (d) Decent

The solution is in Hindi. Read it online.

Q11. Answer: (b) Acheivmant

The solution is in Hindi. Read it online.

Q12. Answer: (a) attached

The solution is in Hindi. Read it online.

Q13. Answer: (d) Join

The solution is in Hindi. Read it online.

Q14. Answer: (b) To delay taking a decision

The solution is in Hindi. Read it online.

Q15. Answer: (b) that we wanted

The solution is in Hindi. Read it online.

Q16. Answer: (a) Dwelling

The solution is in Hindi. Read it online.

Q17. Answer: (b) No substitution required

The solution is in Hindi. Read it online.

Q18. Answer: (b) Imperative

The solution is in Hindi. Read it online.

Q19. Answer: (c) BDAC

The solution is in Hindi. Read it online.

Q20. Answer: (c) Contemporary

The solution is in Hindi. Read it online.

Q21. Answer: (d) human

The solution is in Hindi. Read it online.

Q22. Answer: (c) surface

The solution is in Hindi. Read it online.

Q23. Answer: (b) erode

The solution is in Hindi. Read it online.

Q24. Answer: (d) study

The solution is in Hindi. Read it online.

Q25. Answer: (c) lit

The solution is in Hindi. Read it online.

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Q26. Answer: (b) 1, 4, 3, 5, 2

The logical sequence is:-

In the restaurant first, we order the food, then chef cooking, then serve food and then eating, which is given below:-

1. Restaurant

4. Order food

3. Cooking

5. Serve food

2. Eating

Hence, "option 2" is the correct answer.

Q27. Answer: (a) FIST : IFTS

The logic followed here is:

From option 1:-

From option 2:-

From option 3:-

From option 4:-

Option 1 is different from others.

Hence, "option 1" is the correct answer.

Q28. Answer: (d) 9

The Venn diagram are given below:-

The shaded part represents "doctors are Indians but NOT tennis players"

9 doctors are Indians but NOT tennis players.

Hence, "option 4" is the correct answer.

Q29. Answer: (d) 61

The logic followed here is:

Hence, "option 4" is the correct answer.

Q30. Answer: (b) 11

The pattern followed here is:

We know that

1. Counting the numbers of triangles.

Counting the figure separately:

Total Triangles = 3 + 3 + 3 + 1 + 1 = 11

Hence, the correct answer is "11".

Alternate Method

The diagram is given below:-

The triangles are ACE, AEG, AEH, BKC, CJD, CED, DEJ, ELI, EFI, FEL and EGH.

There are total of 11 triangles present.

Hence, "option 2" is the correct answer.

Q31. Answer: (d) [figure]

The mirror image is given below:-

Hence, "option 4" is the correct answer.

Q32. Answer: (d) Kilogram : Gram

The logic followed here is:

A liter is related to milliliters in that way 1 liter is equal to 1000 (10^3) milliliters.

Similarly,

In option 4:-

1 Kilogram is equal to 1000 grams (10^3).

In option 1:-

Inch is the unit of height.

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In option 2:-
Luminance is the unit of Tesla.
In option 3:-
The meter is the unit of distance.
Hence, "option 4" is the correct answer.
Additional Information
• One tesla is equal to one weber per square metre (1 Wb · m ^(-2)).

Q33. Answer: (a) [figure]

The option in which the given figure is embedded when rotation is not allowed is shown below:
Hence, "option 1" is the correct answer.

Q34. Answer: (b) 11 : 122

The logic followed here is:
2nd number is completely divisible by the 1st number.
In option 1:-
144 ÷ 18 = 8, which means 144 is divisible by 18.
In option 2:-
122 ÷ 11 = 11.09, which means 122 is not divisible by 11.
In option 3:-
168 ÷ 21 = 8, which means 168 is divisible by 21.
In option 4:-
112 ÷ 14 = 8, which means 112 is divisible by 14.
Thus option 2 is different from others.
Hence, "option 2" is the correct answer.

Q35. Answer: (d) b d d f c

The logic followed here is:
Filling the blanks with each set of the given letters,
From option 1:- b c c f / b f c d / b d c f → No pattern or series can be formed.
From option 2:- f d c f / b c c b / b d c f → No pattern or series can be formed.
From option 3:- d c c f / b d c f / b d b f → No pattern or series can be formed.
From option 4:- b d c f / b d c f / b d c f → This forms a series with a set pattern.
(Repetition of b d c f).
Hence, "option 4" is the correct answer.

Q36. Answer: (c) 8

The logic followed here is:
[2nd number - (1st number / 2)] / 3 = 3rd number.
Row 1: 14, 22, 5
=> [22 - (14 / 2)] / 3
=> (22 - 7) / 3
=> 15 / 3 = 5
Row 2: 18, 42, 11
=> [42 - (18 / 2)] / 3
=> (42 - 9) / 3
=> 33 /3 = 11
Similarly,
Row 3: 22, 35, ?
=> [35 - (22 / 2)] / 3
=> (35 - 11) / 3
=> 24 / 3 = 8
Hence, the correct answer is "8".

Q37. Answer: (b) −, ÷, +, ×

Given equation

25 * 48 * 6 * 12 * 2 = 41

From equation 1:-

−, ×, +, ÷

25 − 48 × 6 + 12 ÷ 2 = 41

Applying BODMAS rule:-

25 − 48 × 6 + 6 = 41

25 − 288 + 6 = 41

31 − 288 = 41

-257 = 41, It is not balance equation.

From equation 2:-

−, ÷, +, ×

25 − 48 ÷ 6 + 12 × 2 = 41

Applying BODMAS rule:-

25 − 8 + 12 × 2 = 41

25 − 8 + 24 = 41

49 − 8 = 41

41 = 41, It is balance equation.

From equation 3:-

÷, ×, +, −

25 ÷ 48 × 6 + 12 − 2 = 41

Applying BODMAS rule:-

0.52 × 6 + 12 − 2 = 41

3.12 + 12 − 2 = 41

15.12 − 2 = 41

13.12 = 41, It is not balance equation.

From equation 4:-

+, ÷, −, ×

25 + 48 ÷ 6 − 12 × 2 = 41

Applying BODMAS rule:-

25 + 8 − 12 × 2 = 41

25 + 8 − 24 = 41

33 − 24 = 41

9 = 41, It is not balance equation.

Hence, "option 2" is the correct answer.

Q38. Answer: (c) (25, 15, 400)

The logic is followed here-

We add the first number and second number and divide by 2 and get the number, that number is added in the first number and that number subtract from the second number and we multiply both resultant numbers and get the third number.

For (12, 18, 225)

12 + 18 = 30 ÷ 2 = 15

= 15^2 = 225

Similarly,

From option 3:-

For (25, 15, 400)

25 + 15 = 40 ÷ 2 = 20

= 20^2 = 400, It is correct.

From option 1:-

For (13, 17, 140)

13 + 17 = 30 ÷ 2 = 15

= 152 = 225 ≠ 140, It is not correct.

From option 2:-

For (23, 13, 272)

23 + 13 = 36 ÷ 2 = 18

= 182 = 324 ≠ 272, It is not correct.

From option 4:-

For (21, 10, 324)

21 + 10 = 31 ÷ 2 = 15.5

= 15.52 = 240.25 ≠ 324, It is not correct.

Hence, "option 3" is the correct answer.

Q39. Answer: (d) Husband

The family tree is given below:-

Man is the husband of Rashmi.

Hence, "option 4" is the correct answer.

Q40. Answer: (a) 6

For this question, the relation is given below -

Dice A	Dice B
5	6
3	2
1	4

From figure (A) and figure (B), only 5 is common.

Now we take clockwise direction from 5 in figure (A) and figure (B) respectively, then letter opposite to each other.

From figure (A) take a clockwise direction from 5 which is 3 and 1 respectively.

From figure (B) take a clockwise direction from 5 which is 2 and 4 respectively.

From figure (A) 3 is opposite to figure (B) 2.

From figure (A) 1 is opposite to figure (B) 4.

From figure (A) 5 is opposite to figure (B) 6.

Hence, "6" is the correct answer.

Q41. Answer: (a) [figure]

The logic followed here is:

1) Arrow (

) moves from the top left side to the bottom left side, then arrow (

) moves from the bottom left side to the bottom right side and then finally arrow (

) moves from the bottom right side to the top right side.

• The arrow symbol in the given images is rotating anti-clockwise direction.

2) The single line (

) parallel to the rectangle then the next two lines (

) are parallel to the rectangle then next take the single line (

) parallel to the rectangle then next two lines (

) are parallel to the rectangle.

• The number of lines in below the diamond symbol keeps on increasing or decreasing in each step.

3) Diamond moves clockwise direction with 90° each block.

Hence, "option 1" is the correct answer.

Q42. Answer: (d) Only conclusion II follows.

The Venn diagram is given below:-

Conclusions:

I. All satellites are stars. → False (If all stars are satellites then never be all satellites are stars.)

II. Some satellites are planets. → True (Some planets are stars, all stars are satellites then some satellites are planets are possible.)

Hence, "option 4" is the correct answer.

Q43. Answer: (b) HMJCBDI

The logic followed here is:

Similarly,

Hence, "option 2" is the correct answer.

Q44. Answer: (c) Dislike

The logic followed here is:

Except dislike, all words are synonyms to each other whereas dislike is the antonyms.

Option 1 → Consensus means agreement among a group of people.

Option 2 → Rapport means a friendly relationship in which people understand each other very well.

Option 4 → Amicability means characterized by or showing goodwill, friendly.

Thus dislike is different from others.

Hence, "option 3" is the correct answer.

Q45. Answer: (a) 21

The logic followed here is:

Square of the 1st number + 1 = 2nd number.

For 19 : 362;

$19^2 + 1 = 361 + 1 = 362$

For 17 : 290;

$17^2 + 1 = 289 + 1 = 290$

Similarly,

For ? : 442 ;

$?^2 + 1 = 442$

$?^2 = 442 - 1 = 441$

$? = 21$

Hence, "option 1" is the correct answer.

Q46. Answer: (b) 352

Total number of candies = 1012

Distributed among Virat, Ketan and Rohan respectively = 6 : 9 : 8

Let number of candies taken by Virat = 6x, Number of candies taken by Ketan = 9x and number of candies taken by Rohan = 8x

$6x + 9x + 8x = 1012$

$23x = 1012$

$x = 44$

Number of candies taken by Rohan = $8 \times 44 = 352$

Hence, "option 2" is the correct answer.

Q47. Answer: (c) DBLOV

Table show alphabet serial number –

Given: THICK is written as FELHW

The logic followed here is,

1) Given letters in a word are arranged in alphabetical order i.e. A to Z

2) Then alternate alphabets increasing and decreasing by +3 and -3.

'THICK' is written as 'FELHW'

1) THICK → Alphabetical order → CHIKT

2) Then alternate alphabets increasing and decreasing by +3 and -3.

Similarly,

RAISE = ?

1) RAISE → Alphabetical order → AEIRS

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2) Then alternate alphabets increasing and decreasing by +3 and -3.
Hence, ‘’RAISE is coded as ‘DBLOV’.

Q48. Answer: (c) [figure]

The paper when unfolded appear as shown below-
Hence, "option 3" is the correct answer.

Q49. Answer: (c) 118

The logic followed here is:
We add place value of all letters and then multiply by 2, we get answer:-
VISION is written as 176.
V(22) I(9) S(19) I(9) 0(15) N(14) Multiply by 2
= 22 + 9 + 19 + 9 + 15 + 14 = 88 × 2 = 176, and
Similarly,
SEEING = ?
S(19) E(5) E(5) I(9) N(14) G(7) Multiply by 2
= 19 + 5 + 5 + 9 + 14 + 7 = 59 × 2 = 118.
Hence, "option 3" is the correct answer.

Q50. Answer: (c) Kyat

The logic followed here is:
Euro is the currency of France.
Similarly,
Kyat is the currency of Myanmar.
Hence, "option 3" is the correct answer.
Additional Information
• Euro is the currency of France, Germany.
• Yen is the currency of Japan
• Ringgit is the currency of Malaysia.

Q51. Answer: (a) 66

Given:
angle DBC = 72°
angle BAC = 42°
Calculation:
For chord CD,
angle CBD = angle CAD ....(Angles in same segment)
angle CAD = 72°
angle BAD = angle BAC + angle CAD = (42° + 72°)
=> 114°
angle BCD + angle BAD 180° ..(opposite angles of a cyclic quadrilateral)
=> angle BCD + 114° = 180°
=> angle BCD = (180° – 114°)
=> angle BCD = 66°
Therefore The required angle of angle BCD is 66°

Q52. Answer: (a) 8064

Calculation:
C = 120°
C = 2100 Units
120° = 2100 Units
Total Units sold by company in 2019 (360°) = (2100/120 × 360)
=> 6300
Total units sold by company in 2020 = 28% more than that in 2019

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=> 6300 + (6300 × 28/100)

Units sold by company in 2020 = (6300 + 1764)

=> 8064

Therefore Required units were sold by company in 2020 is 8064

Q53. Answer: (a) 2.5

Given:

AD = 2 cm

BD = 5.2 cm

AC = 9 cm

Formula used:

AD/AB = AE/AC

Calculation:

According to the question

=> AD/AB = AE/AC

=> 2/(2 + 5.2) = x/9

=> 2/7.2 = x/9

=> 7.2x = 18

=> x = 2.5 cm

Therefore The value of x is 2.5

Q54. Answer: (c) 12

Given:

PR = 5 cm

PS = 6 cm

ST = 4 cm

Concept used:

Angle bisector theorem - The angle bisector theorem is concerned with the relative lengths of the two segments that a triangle's side is divided into by a line that bisects the opposite angle.

Calculation:

According to the question

PT = (PS + ST)

=> (6 + 4) cm

=> PT = 10 cm

Now,

In ΔPQS and ΔPTR

angle P = angle P

angle PQR = angle PTR (Angles made by same chord on circumference)

So, ΔPQS ~ ΔPTR

=> PS/PR = PQ/PT

=> 6/5 = PQ/10

=> 5PQ = 60

=> PQ = 12 cm

Therefore The value pf PQ is 12 cm.

Q55. Answer: (c) Rs. 4240

Given:

The total sum of money = Rs. 11,236

Ratio of A and B = 3 : 5

Ratio of A and C = 4 : 7

Calculation:

Let the total sum be x

Simplifying the ratios to get the same unit by cross multiplication

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Ratio of A and B = (3 : 5) × 4
=>12 : 20
Ratio of A and C = (4 : 7) × 3
=> 12 : 21
Ratio of A, B and C = 12 : 20 : 21
Total sum = Rs. (12x + 20x + 21x)
=> 53x = 11,236
=> x = 212
The share of B = 20x = (20 × 212)
=> Rs. 4240
Therefore The share of B is Rs. 4240

Q56. Answer: (c) 18

Given:
Time taken to complete the work by A = x days
Time taken to complete the work by B = 30 days
Time taken to complete the work by C = 45 days
Time taken to complete the work by B and C together = 6 days
Remaining work completed by A = 12 days
Formula used:
Work = Efficiency × Time
Calculation:
LCM of 30 and 45 is 90
Efficiency of B = 90/30 = 3 units/day
Efficiency of C = 90/45 = 2 units/day
Total units of work by B and C together = [(3 + 2) × 6]
=> 30 units
Efficiency of B and C together = (90 – 30) = 60 units
Efficiency of A = (60/12) = 5 units/day
Hence, A can complete the whole work in = (90/5) days
=> x = 18 days
Therefore The value of x is 18

Q57. Answer: (d) -40

Given:
x + y + z = 3, x2 + y2 + z2 = 45 and x3 + y3 + z3 = 69
Formula used:
(x + y + z)2 = x2 + y2 + z2 + 2(xy + yz + zx)
x3 + y3 + z3 – 3xyz = (x + y + z){(x2 + y2 + z2) – (xy + yz +zx)}
Calculation:
x + y + z = 3, x2 + y2 + z2 = 45 and x3 + y3 + z3 = 69
=> $(x + y + z)^2 = x2 + y2 + z^2 + 2(xy + yz + zx)$
=> $(3)^2 = 45 + 2(xy + yz +zx)$
=> 9 = 45 + 2(xy + yz +zx)
=> -36 = 2(xy + yz +zx)
=> (xy + yz +zx) = -18
Now,
x3 + y3 + z^3 – 3xyz = (x + y + z){(x2 + y2 + z2) – (xy + yz +zx)}
=> 69 – 3xyz = 3 {(45) – (-18)}
=> 69 – 3xyz = 3 × {(45 + 18)}
=> 69 – 3xyz = 3 × 63
=> 69 – 3xyz = 189

=> 3xyz = (69 – 189)
=> 3xyz = -120
=> xyz = -40
Therefore The value of xyz is -40

Q58. Answer: (a) 43/12

Given:
sin θ(2 sin θ + 3) = 2
Formula used:
Sin 30° = 1/2
Sec 30° = 2/√3
Cos 30° = √3/2
Cot 30° = √3
Calculation:
sin θ(2 sin θ + 3) = 2
=> $2\sin^2\theta + 3\sin\theta – 2 = 0$
=> 2sinθ(sinθ + 2) – 1(sinθ + 2)
=> sinθ = 1/2
=> θ = 30°
Now,
(sec2 θ + cot2 θ - cos2 θ)
=> $(2/\sqrt{3})^2 + (\sqrt{3})^2 – (\sqrt{3}/2)^2$
=> (4/3 + 3 – 3/4)
=> (16 + 36 – 9)/12
=> 43/12
Therefore Required value is 43/12

Q59. Answer: (d) B

Calculation:
The number of girls in class A = 31
Total number of boys, girls and teachers allotted in the class A = (27 + 31 + 8) = 66
Percentage of girls in class A = (31/66 × 100)
=> 46.96%
The number of girls in class B = 30
Total number of boys, girls and teachers allotted in the class B = (35 + 30 + 10) = 75
Percentage of girls in class B = (30/75 × 100)
=> 40%
The number of girls in class C = 32
Total number of boys, girls and teachers allotted in the class C = (30 + 32 + 9) = 71
Percentage of girls in class C = (32/71 × 100)
=> 45.07%
The number of girls in class D = 34
Total number of boys, girls and teachers allotted in the class D = (33 + 34 + 7) = 74
Percentage of girls in class D = (34/74 × 100)
=> 45.94%
Therefore The least percentage of girls in class B

Q60. Answer: (b) 90

Given:
X and Y start running towards each other from two places = 216 km
The ratio of X and Y = 5 : 7
The speed of X = 60 km/h
Formula used:

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Time = Distance/Speed
1 hr = 60 min
Calculation:
Let the ratio of speed of X and Y be 5x and 7x respectively
According to the question
=> 5x = 60
=> x = 12
Then,
Speed of Y = 7x = (7 × 12) = 84 km/h
Now,
Time = [216/(60 + 84)]
=> (216/144)
=> 1.5 Hour = (1.5 × 60) min
=> 90 min
Therefore Time taken to meet X and Y is 90

Q61. Answer: (c) 6900 and 8.5

Given:
Amount1 = Rs. 9,246
Time1 = 4 years
Amount2 = Rs. 11,298.75
Time2 = 71/2 years
Calculation:
Let the Principal be x and Rate be y respectively
According to the question
SI on Rs. 9246 for (15/2 – 4) years = Rs. (11298.75 – 9,246)
=> 7/2 years = Rs. 2052.75
=> 1 year = (2052.75 × 2)/7
=> 1 year = Rs. 586.5
=> 4 years = Rs. (586.5 × 4)
=> Rs 2346
Principal = (9246 – 2346) = Rs. 6900
Now,
Rate = (586.5/6900 × 100)
=> (58650/6900)
=> 8.5
Therefore The value of x and y is 6900 and 8.5

Q62. Answer: (a) 4

Given:
$4\sqrt{3}x2 + 5x – 2\sqrt{3} = (Ax + 2)(Bx + C)$
Calculation:
$4\sqrt{3}x2 + 5x – 2\sqrt{3}$
$=> 4\sqrt{3}x^2 + 8x – 3x – 2\sqrt{3}$
$=> 4x(\sqrt{3}x + 2) – \sqrt{3}(\sqrt{3}x + 2)$
$=> (\sqrt{3}x + 2)(4x – \sqrt{3})$
Now,
$=> A = \sqrt{3}$, B = 4 and $C = -\sqrt{3}$
$(A + B + C) = (\sqrt{3} + 4 + (-\sqrt{3})$
$=> (\sqrt{3} + 4 – \sqrt{3})$
=> 4
Therefore The required value is 4

Q63. Answer: (d) 8 : 3

Concept Used:

Mass point geometry - It is a geometry problem-solving technique which applies the physical principle of the center of mass to geometry problems involving triangles and intersecting cevians.

Ceva's theorem is a theorem regarding triangles in Euclidean Plane Geometry. Consider a triangle ABC. Let CE, BG and AF be a cevians that forms a concurrent point i.e. D.

A/GC × CF/FB × BE/EA = 1

Calculation:

Here, F is the cevian, So,

(BD/DA) × (AG/GC) × (CE/BE) = 1

=> (1/2) × (AG/GC) × (1/4) = 1

=> (AG/GC) × (1/8) = 1

=> (AG/GC) = 8 : 1

Now, As per the other theorem

(CF/FD) = (GC/AG) + (CE/BE)

=> (CF/FD) = (1/8) + (1/4)

=> (CF/FD) = (1 + 2)/8 = 3/8

=> FD/FC = 8/3

Therefore FD : FC is 8 : 3

Q64. Answer: (d) 216

Given:

Length of triangle = 97 m

Base of a triangle =65 m

Height of triangle = 72 m

Ratio of length and breadth of a rectangle = 5 : 13

Formula used:

Area of triangle = 1/2 × base × height

Area of rectangle = length × breadth

Perimeter of rectangle = 2(l + b)

Calculation: h

Please note that 65 m 72 m, and 97 m is a right-angle triangle as

$65^2 + 72^2 = 97^2$

Let the ratio of length and breadth of rectangle be 5x and 13x

According to the question

=> (1/2 × 65 × 72) = (5x × 13x)

=> (65 × 36) = $65x^2$

=> $x^2 = (65 \times 36)/65$

=> $x^2 = 36$

=> x = 6 m

Perimeter of rectangle = 2(5x + 13x)

=> (2 × 18x)

=> 36x

Now,

=> (36 × 6) = 216 m

Therefore Perimeter of rectangle is 216 m

Q65. Answer: (d) 717/24

Concept Used:

Follow the BODMAS rule according to the table given below:

Calculation:

6 × 3 ÷ 8 of 6 – 6 ÷ 4 × (5 - 7) + 5 – 3 × 4 ÷ 6 of 3

=> 6 × 3 ÷ 8 of 6 – 6 ÷ 4 × (-2) + 5 – 3 × 4 ÷ 6 of 3

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=> 6 × 3 ÷ 48 – 6 ÷ 4 × (-2) + 5 – 3 × 4 ÷ 18
=> 6 × 3/48 – 6 ÷ 4 × (-2) + 5 – 3 × 4 ÷ 18
=> 3/8 – 6 ÷ 4 × (-2) + 5 – 3 × 4 ÷ 18
=> 3/8 – 6/4 × (-2) + 5 – 3 × 4 ÷ 18
=> 3\8 – (-3) + 5 – 3 × 4 ÷ 18
=> 3/8 + 3 + 5 – 3 × 4 ÷ 18
=> 3/8 + 3 + 5 – 3 × 4/18
=> 3/8 + 3 + 5 – 2/3
=> 3/8 + 8 – 2/3
=> (9 + 192 – 16)/24
=> (201 – 16)/24
=> 185/24
=> 717/24
Therefore The required value is 717/24

Q66. Answer: (a) √26/13

Given:
sinθ = 11/15
Formula used:
$b^2 = \sqrt{(h^2 – p^2)}$
sinθ = p/h
secθ = h/b
tanθ = p/b
Calculation:
We know that,
sinθ = p/h = 11/15
b^2 = (h2 – p2)
=> b^2 = ((15)2 – (11)2)
=> b^2 = (225 – 121)
=> b^2 = 104
=> b = 2√26
secθ = h/b = 15/2√26
tanθ = p/b = 11/2√26
(sec θ – tan θ) = (15/2√26 – 11/2√26)
=> 4/2√26
=> 2/√26
Multiplying numerator and denominator by √26 we get,
=> (2/√26 × √26/√26)
=> (2√26)/26
=> √26/13
Therefore Required value is √26/13

Q67. Answer: (d) sec^2 θ

Given:
((1+cos θ)(cosec θ-cot θ)sec θ)/(sin θ(1-sin θ)(sec θ+tan θ))=?
Formula used:
cosecθ = 1/sinθ
secθ = 1/cosθ
cotθ = cosθ/sinθ
tanθ = sinθ/cosθ
$1 – \cos^2\theta = \sin^2\theta$
$1 – \sin^2\theta = \cos^2\theta$

Calculation:

((1+cos θ)(cosec θ-cot θ)sec θ)/(sin θ(1-sin θ)(sec θ+tan θ))=?

=> [(1 + cosθ)(1/sinθ – cosθ/sinθ) 1/cosθ]/[sinθ(1 – sinθ)(1/cosθ + sinθ/cosθ)]

=> [(1 + cosθ)(1 – cosθ/sinθ) 1/cosθ]/[sinθ(1 – sinθ)(1 + sinθ/cosθ)]

=> [(1 – cos²θ)/sinθ × 1/cosθ]/[sinθ (1 – sin²θ)/cosθ]

=> (sin²θ/sinθ × 1/cosθ)/(sinθ × cos²θ/cosθ)

=> (sinθ/cosθ)/(sinθ × cosθ)

=> 1/cos²θ

=> sec²θ

Therefore The value of ? is sec²θ

Q68. Answer: (b) 45

Given:

The average weight of some students = 58 kg

Weight of 8 students who leave the group = 54 kg

Number of three students who joined the group = 53.6, 54 and 57.4 kg

Average weight of the remaining students increase = 575 g

Formula used:

Average = sum of observations/Number of observations

Calculation:

Let the number of students be x

According to the question

=> [(58 × x) – (8 × 54) + (53.6 + 54 + 57.4)] = (x – 8 + 3) (58 + 0.575)

=> 58x – 432 + 165 = (x – 5) (58.575)

=> 58x – 267 = (58.575x – 292.875)

=> (58.575x – 58x) = (292.875 – 267)

=> 0.575x = 25.875

=> x = (25.875/0.575)

=> x = 45

Therefore The number of the students in the group is 45

Q69. Answer: (a) 1/4

Given:

x + 1/x=√7

Calculation:

(x² + 1)÷[x^4+(1/(x²))]

Dividing by x we get,

=> (x² + 1)/x ÷ [x^4 + (1/x²)/x]

=> (x + 1/x)/(x³ + 1/x³).....(1)

If (x + 1/x) = √7

Then,

(x³ + 1/x³) = [(√7)³ – 3√ 7]

Putting the value of x + 1/x in equation (1) we get,

=> (√7)/(7√7 – 3√ 7)

=> √7/4√7

=> 1/4

Therefore The required value is 1/4

Q70. Answer: (a) 45.5

Calculation:

Total number of computers of type A sold in January and May = (250 + 350)

=> 600

Total number of computers of type B sold from March to May = (350 + 325 + 425)

=> 1100
Required percentage = [(1100 – 600)/1100 × 100]
=> (500/1100 × 100)
=> 45.5%
Therefore The required percentage is 45.5

Q71. Answer: (b) 624

Given:
Cost price of an article = Rs. 480
Profit = 17%
Discount = 10%
Formula used:
Marked price = [(100 + Profit)/(100 – Discount) × CP]
Calculation:
According to the question
Marked price = [(100 + Profit)/(100 – Discount) × CP]
Marked price = [(100 + 17)/(100 – 10) × 480]
=> (117/90 × 480)
=> (56,160/90)
=> Rs. 624
Therefore The value of marked price of an article is 624

Q72. Answer: (b) Rs. 1000

Shortcut Trick Let the starting price be 100 units.
Price after one year = 100 + 5 = 105 units
Price after second year = 105 + (105 × 5)/100 = 110.25 units
Price after third year = 110.25 + (110.25 × 5)/100 = 115.7625 units
According to the question,
115.7625 - 110.2500 = 52.50
=> 5.5125 units = 52.50
=> 1 unit = 9.5238
=> 100 units = 952.38
=> 105 units = 1000
Alternate MethodGiven:
The price of an article increases = 5%
The difference between its price at the end of the second and third year = Rs. 52.50
Calculation:
Let the initial price be 10000x
Price at the end of the first year = (10000x × 105/100) = 10500x
Price at the end of the second year = (10500x × 105/100) = 11025x
Price at the end of the third year = (11025x × 105/100) = 11576.25x
According to the question
=> 11576.25x – 11025x = 52.50
=> 551.25x = 52.50
=> x = 52.50/551.25
=> x = 0.0952
Price at the end of the first year = 10500x = (10500 × 0.0952)
=> Rs. 999.6 ~ Rs. 1000
Therefore Required first year price is Rs. 1000.

Q73. Answer: (a) 46.2%

Given:
Cost price of goods = Rs. 8000

Formula used:
Profit = SP – CP
Profit% = Profit/CP × 100
Calculation:
According to the question
30%of goods = (8000 × 30/100)
=> Rs. 2400
Profit = 12%
SP = (2400 × 112/100)
=> Rs. 2688
CP of 40% of remaining goods = (8000 – 2400) = Rs. 5600
=> (5600 × 40/100)
=> Rs. 2240
CP of 40% of remaining goods = Rs. 2240
Profit = 25%
SP = (2240 × 125/100)
=> Rs. 2800
He has to gain 30% on whole transaction
SP = (8000 × 130/100)
=> Rs. 10400
CP left = [8000 – (2400 + 2240)
=> (8000 – 4640)
=> Rs. 3360
SP left = [10400 – (2688 + 2800)]
=> (10400 – 5488)
=> Rs. 4912
Profit ended on remaining goods = Rs. (4912 – 3360)
=> Rs. 1552
Profit% = (1552/3360 × 100)
=> Rs.(155,200/3360)
=> 46.2%
Therefore Required profit percentage is 46.2%

Q74. Answer: (c) 7 : 6

Calculation:
Total revenue of company in 2015 and 2018 = (350 + 280)
=> 630
Total expenditure in 2017 and 2018 = (360 + 180)
=> 540
Required ratio = (630 : 540)
=> 7 : 6
Therefore Required ratio is 7 : 6

Q75. Answer: (d) 4

Given:
The six digit numbers = 537xy5
Concept used:
Divisibility rule of 125: The number formed by the hundred, tens and units digit of the number must be divisible by 125
Calculation:
If we multiply last 3 digit number with the even number i.e. 2, 4, 6 and 8 we get 0 at the last digit
which is not possible.
So, we can multiply last three digit number by odd number

We need the last digit to be 5

=> 125 × 1 = 125 (acceptable)

=> 125 × 2 = 250

=> 125 × 3 = 375 (acceptable)

=> 125 × 4 = 500

=> 125 × 5 = 625 (acceptable)

=> 125 × 6 = 750

=> 125 × 7 = 875 (acceptable)

=> 125 × 8 = 1000

We cannot multiply (125 × 9 = 1125) because it has three-digit units

So,

=> 12, 37, 62, 87 are the 4 values of x and y that are the possible cases

Therefore There are 4 such digit six-digit numbers

Q76. Answer: (c) pyrometer

The correct answer is Pyrometer.

Key Points

• A pyrometer is a sort of remote-sensing thermometer that measures the temperature of things that are far away.

• Pyrometers have appeared in many forms throughout history.

• It can be used for measuring and monitoring temperatures and hot spots of jet engine rotor blades.

• It is a device that determines the temperature of a surface from a distance based on the quantity of thermal radiation it produces, a process known as pyrometry and sometimes radiometry.

• The majority of pyrometers work by detecting radiation from the body being measured.

• It is founded on the idea that the intensity of light received by the observer is proportional to the distance between the observer and the distant source's temperature.

• A modern pyrometer consists of an optical system and a detector.

Additional Information

• A hygrometer is a device that measures the amount of water vapour present in the air, soil, or restricted places.

• An ammeter is a device that measures the current flowing through a circuit.

• A Machmeter is a flight instrument in an aircraft's pitot-static system that displays the ratio of true airspeed to sound speed, a dimensionless quantity known as Mach number.

Q77. Answer: (d) 9

The correct answer is 9.

Key Points

• New Development Bank (NDB) is a multilateral development bank established in 2014.

• It is formerly referred to as the BRICS Development Bank.

• New Development Bank was established by the BRICS states.

• New Development Bank consists of 9 member countries.

• In July 2015, the New Development Bank Agreement came into force with the official declaration of all five states who signed it.

• Through loans, guarantees, equity participation, and other financial instruments, the Bank will support public and private projects.

Important Points

• Brazil, Russia, India, China, and South Africa are among the Bank's five founding members. and Recently 4 new members joined BRICS. Those are Bangladesh, UAE, Uruguay, Egypt.

• The headquarters of the New Development Bank is located in Shanghai, China.

• The National Development Bank's first regional office is in Johannesburg, South Africa.

• In 2019, So Paulo, Brazil, became the second regional office, followed by Moscow, Russia.

• As of November 2021, Marcos Troyjo is the President of the New Development Bank (NDB).

• India suggested the establishment of the bank at the 4th BRICS meeting in Delhi in 2012.

• India's K. V. Kamath is the NDB's first elected president.

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Q78. Answer: (b) Haryana

The correct answer is Haryana.

Key Points

• The 4th edition of the Khelo India Youth Games will be held in Haryana.

• The Games will be held in Panchkula.

• The Haryana government has decided to organise the Khelo India Youth Games in February 2022, in view of the possible third wave of the Covid-19 pandemic.

• Gatka, Kalaripayattu, Thang-Ta, and Mallakhamba, four indigenous games were added in December 2020.

• Haryana came second in both Khelo India Youth Games 2019 and 2020 editions (200 medals in 2020 and 159 medals in 2019).

Additional Information

• The Khelo India Youth Games are an annual multidisciplinary grassroots game organised at a national level in India in January or February.

• Previously known as Khelo India School Games (KISG).

• It is held for two groups of students: under-17-year-olds in high school and under-21-year-olds in college.

• Every year, the top 1,000 children will be awarded a 5-lakh annual scholarship for the next eight years in order to prepare them for international sporting events.

• The first edition of the Khelo India Youth Games was held in Delhi in 2018.

• The second edition of the Khelo India Youth Games was held in Pune in 2019.

• The third edition of the Khelo India Youth Games was held in Guwahati in 2020.

Q79. Answer: (c) Khushi Chindaliya

The correct answer is Khushi Chindaliya.

Key Points

• As of December 2020, Khushi Chindaliya was appointed as Regional Ambassador for India by the United Nations Environment Programme (UNEP).

• Khushi Chindaliya was a 17-year-old girl from Surat, Gujarat.

• She intends to raise awareness about climate change, the necessity of environmental protection, and the need to protect natural resources.

• Until February 2021, she will collaborate with the United Nations Environment Programme (UNEP)- Tunza Eco-Generation on several environmental awareness programmes.

• Khushi is one of 100 young Indians whose articles were selected by UNESCO for publication in a book titled "Year 1 AC (After Coronavirus): Essays by 100 Young Indians."

• In 2019, she was inducted as a member and worldwide ambassador of the National Society of High School Scholars, an international organisation administered by Sir Alfred Nobel's descendants.

Important Points

• The United Nations Environment Programme (UNEP) is in charge of organising the UN system's response to environmental challenges.

• After the United Nations Conference on the Human Environment in Stockholm in June 1972, it was founded by Maurice Strong, its first director.

• The Headquarters of the United Nations Environment Programme is located in Nairobi, Kenya.

Additional Information

• Dia Mirza was appointed brand ambassador for the Wildlife Trust of India on World Environment Day 2017.

• Akshay Kumar is the brand ambassador for the Union Ministry of Road Transport and Highway’s Road Safety campaigns.

• Virat Kohli was appointed as the brand ambassador of the London-based social networking startup 'Sport Convo' in late 2014.

Q80. Answer: (a) 1950

The correct answer is 1950.

Key Points

• The Supreme Court of India is the country's highest judicial court, according to the Indian Constitution.

• The Supreme Court is established and constituted according to Article 124.

• The Supreme Court is the highest court in the country's judicial system.

• The King of England's Regulating Act of 1773 cleared the stage for the formation of the Supreme Court of Judicature in Calcutta.

• The Supreme Court of India was established on January 26, 1950.

• It is located in Tilak Marg, New Delhi.

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Important Points

• On October 29, 1954, the first President of India, Dr Rajendra Prasad, laid the foundation stone for the Supreme Court Building.

• After its inauguration on January 28, 1950, the Supreme Court commenced its sittings in a part of the Parliament House.

• The Court moved into the present building in 1958.

• Parliament has the authority to increase or decrease the number of judges on the Supreme Court.

• The Supreme Court's strength has increased from 30 to 34 upon the appointment of the new four judges on September 18, 2019.

• The Supreme Court of India is led by the Chief Justice of India.

Q81. Answer: (b) Virat Kohli

The correct answer is Virat Kohli.

Key Points

• Virat Kohli is an Indian cricketer who now serves as the Test captain for the Indian cricket team.

• Virat Kohli won the 'Sir Garfield Sobers Award' for the ICC Male Cricketer of the Decade and ICC Men's ODI Cricketer of the Decade Award in December 2020.

• He scored 20,396 runs in all international cricket during the time period.

• Virat Kohli was a member of the Indian squad that won the 2011 ICC Cricket World Cup and the 2013 ICC Champions Trophy.

• He was also named ICC Cricketer of the Year in both 2017 and 2018.

• He is the first cricketer to have won the T20 World Cup Player of the Tournament twice.

• In one-day internationals, he has the second-most centuries (43), after only Sachin Tendulkar (49).

• He is the fastest player to reach 10,000 runs in an ODI in terms of innings, taking 54 fewer than the previous record of 259 innings.

• The ICC Decade Awards honour the top players in cricket during the previous ten years.

Additional Information

• The ICC Men's Test Cricketer of the Decade award went to Steve Smith.

• The ICC Spirit of Cricket Award of the Decade went to MS Dhoni.

• Ellyse Perry has been named the International Cricket Council's Women's T20I Cricketer of the Decade.

• Joe Root won the ICC Player of the Month in August 2021.

Q82. Answer: (b) algorithm

The correct answer is algorithm.

Key Points

• An algorithm is a finite set of instructions that, if followed, accomplishes a particular task.

• It is the step by step procedure for solving any problem.

• Algorithms are used to specify how calculations, data processing, automated reasoning, automated decision-making, and other tasks should be carried out.

• All algorithms must meet the following requirements:

• The inputs to an algorithm can be zero or more and come from a specific set of objects.

• An algorithm has one or more outputs that are related to the inputs in some way.

• Each step must be properly stated, and each instruction must be concise and clear.

• After a finite number of steps, the algorithm must always end.

• All operations must be sufficiently fundamental to be completed precisely and in a finite amount of time.

Q83. Answer: (a) Robin Uthappa

The correct answer is Robin Uthappa.

Key Points

• Robin Uthappa is appointed as the brand ambassador of Entri, a local learning app for jobs.

• 'Entri' is a local language learning app for jobs based in Kerala.

• Mohammed Hisamuddin is the founder and Chief Executive Officer of Entri application.

• Entri started in 2017 from Kerala with Malayalam content and has since launched Tamil, Kannada, Telugu, and Hindi content.

• Robin Uthappa is a cricketer from India who represents Kerala in domestic cricket.

• He was a part of the Indian cricket squad that won the ICC World Twenty20 Championship in 2007.

• In the IPL, Robin Uthappa currently plays for Chennai Super Kings.

Additional Information

• Rohit Sharma is the first non-footballer to become the brand ambassador of La Liga in India.

• M C Mary Kom is the brand ambassador of the TRIFED Aadi Mahotsav.

• Sania Mirza was appointed brand ambassador of Telangana in 2014.

Q84. Answer: (c) World Bank

The correct answer is World Bank.

Key Points

• The Indian government and the World Bank signed a $500 million agreement to create safe and environmentally friendly national highway corridors in Rajasthan, Himachal Pradesh, Uttar Pradesh, and Andhra Pradesh.

• The project will also help the Ministry of Road Transport and Highways (MoRTH) improve its ability to mainstream safety and green technologies.

• On behalf of the Indian government, Dr C S Mohapatra, Additional Secretary, Department of Economic Affairs, Ministry of Finance, and Sumila Gulyani, Acting Country Director, India, signed the agreement.

• The International Bank for Reconstruction and Development (IBRD) loan, worth $500 million, has a maturity of 18.5 years, with a five-year grace period.

• The Green National Roadways Corridors Project will help MoRTH build 783 km of highways across a variety of geographies by incorporating safe and green technology designs including local and marginal materials, industrial byproducts, and other bioengineering solutions.

• The initiative will aid in the reduction of GHG(greenhouse gas) emissions from highway building and maintenance.

• The chosen stretches in Uttar Pradesh, Andhra Pradesh, Rajasthan, and Himachal Pradesh would also assist in improving connectivity and promoting economic development.

Important Points

• The World Bank is an international financial agency that helps low- and middle-income countries with loans and grants to fund capital projects.

• The headquarters of the World Bank is located in Washington, D.C., U.S.

• World Bank was formed in 1944.

Additional Information

• The International Monetary Fund (IMF) is an international financial institution.

• The headquarters of the IMF is located in Washington, D.C., U.S.

• IMF was formed on 27 December 1945.

• The Asian Development Bank (ADB) is a regional development bank established to promote social and economic development in Asia.

• The headquarters of the ADB is located in Manila, Philippines.

• ADB was formed on 19 December 1966.

• The Asian Infrastructure Investment Bank (AIIB) is an international development bank dedicated to improving Asia's economic and social conditions.

• The headquarters of the AIIB is located in Beijing, China.

• AIIB was formed on 16 January 2016.

Q85. Answer: (c) 2019

The correct answer is 2019.

Key Points

• Jal Jeewan Mission was launched by the Prime Minister in 2019.

• It was announced by Prime Minister Shri Narendra Modi on 15th August 2019.

• The Jal Jeevan Mission aims to supply clean and sufficient drinking water to all rural Indian homes through individual household tap connections by 2024.

• The Jal Jeevan Mission is being carried out in collaboration with the states with the goal of providing drinkable water in sufficient quantity and of prescribed quality on a regular and long-term basis.

• Under this mission, Goa became the country's first state to give 100% tap water, followed by Telangana and the Andaman and Nicobar Islands.

• Jal Jeevan Mission provides assured tap water supply to every family living in 56 districts and over 86 thousand villages.

• Source sustainability measures, such as recharge and reuse through greywater management, water conservation, and rainwater collecting, will be obligatory aspects of the programme.

• The Jal Jeevan Mission will be centred on a community-based approach to water, with substantial information, education, and

communication as a vital component.

• The Centre has set aside Rs 50,000 crore for this massive project.

Q86. Answer: (b) Ashoka

The correct answer is Ashoka.

Key Points

• Ashoka was an Indian emperor of the Maurya Dynasty.

• Ashoka was also known as Devanam Priyadasi.

• Ashoka invaded Kalinga in 261 B.C, In Kalinga War.

• He inscribed his messages to his subjects and officials on stone surfaces.

• Ashoka was the first king in Indian history who has left his records engraved on stones.

• Many edicts were built by Ashoka throughout India, including in modern-day Nepal and Pakistan.

• Pataliputra (Patna) was his capital, and Taxila and Ujjain were his regional capitals.

• Ashoka personally led the battle against the Kalingas in 265 BC, and he was successful in defeating the Kalingas.

• He was so shocked by the horrors of war that he determined to abstain from violence for the rest of his life and devote himself to Buddhism.

• Ashoka converted to Buddhism around 263 BC.

• A Buddhist monk named Moggaliputta Tissa became his mentor.

• In 250 BC, under the chair of Moggaliputta Tissa, Ashoka convened the third Buddhist Council at Pataliputra.

Additional Information

• Chandragupta Maurya was the founder of the Maurya Empire in ancient India who ruled between 321–297 BCE.

• Bindusara was the second Mauryan emperor of India who ruled between 297- 273 BCE.

• Chandragupta I was the first emperor of the Gupta dynasty.

Q87. Answer: (c) Sikkim

The correct answer is Sikkim.

Key Points

• The Losoong Festival is one of the most prominent events in Sikkim, a state in North East India.

• The Sikkimese New Year begins with Losoong, which is celebrated with tremendous enthusiasm and zeal throughout the province.

• The event takes place at the end of the harvesting season, providing much-needed joy and excitement for all of the farmers who have worked hard all year.

• Losoong festival was formerly restricted to the Bhutia people; however, it gradually extended to the Lepchas, and it is today celebrated by other minor tribes from Sikkim, Darjeeling, and Nepal.

• Cham dances performed by the Buddhist Monks are this festival's main attraction.

Important Points

• Major festivals In Sikkim are:

• Saga Dawa

• Drupka Teshi

• Losoong

• Barahimzong

• Phang Lhabsol

• Kagyed Dance

Additional Information

• Major festivals In Karnataka are:

• Ganesha Chaturthi

• Hampi Festival

• Gowri Festival

• Karaga Festival

• Pattadakal Dance Festival

• Major festivals In Himachal Pradesh are:

• Halda festival

• Chet Festival

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• Haryali
• Jagra
• Kullu Dussehra
• Major festivals In Andhra Pradesh are:
• Ugadi
• Peerla Panduga
• Krishna Pushkaralu
• Kanuma
• Bhogi

Q88. Answer: (c) Eye

The correct answer is Eye.

Key Points

• Trachoma is a preventable disease that results from poor hygiene and sanitation.
• Trachoma is a disease of the eye caused by the Chlamydia trachomatis bacteria.
• Trachoma causes irreversible blindness.
• It is a public health issue in 44 nations, causing around 1.9 million individuals to become blind or visually impaired.
• 137 million people live in trachoma-endemic areas and are in danger of trachoma blindness, according to data from March 2020.
• The infection is spread through infected people's eye and nose discharges, which can be transmitted directly or indirectly.
• Trachoma causes about 1.4% of all blindness worldwide.
• Through an innovative, multi-faceted public health strategy known as S.A.F.E, the World Health Organization has set a goal of eliminating trachoma by 2020.
• Cataract also affects the human eyes.

Additional Information

• Carditis is a disease that affects the human Heart.
• Gastritis is a disease that affects the Stomach.
• Otitis is a disease that affects the Ear.

Q89. Answer: (b) Rajat Datta

The correct answer is Rajat Datta.

Key Points

• Rajat Datta has assumed the charge of Director-General of the Armed Forces Medical Services on 1 January 2021.
• He is the senior-most military doctor in the Indian Armed forces.
• Before becoming India's senior-most military doctor, Admiral Datta led the navy's medical wing.
• He previously served as the director of the Army's flagship Research and Referral Hospital.
• He is a graduate of the Armed Forces Medical College in Pune, where he received his MBBS in 1982 and was commissioned into the AMC on December 27, 1982.
• From February 1, 2020, the Flag Officer will serve as Honorary Surgeon to the President of India.
• He is a member of the Society of Cardiovascular Angiography and Interventions in the United States of America.
• He was given the VSM in 2005, SM (D) in 2014, and AVSM in 2017 for his dedication and devotion to the military.

Q90. Answer: (c) Sharavathi

The correct answer is Sharavathi,

Key Points

• The Linganamakki Dam located in the Kargal village of Sagara taluk, Karnataka,
• It was constructed by the Karnataka State Government in 1964.
• Linganamakki Dam is built across the Sharavathi river.
• The dam has a length of 2.74 kilometres stretching across the Sharavathi river.
• It is located near Jog Falls.

Important Points

• Sharavati is a river in Karnataka, India, that originates and flows fully within the state.
• The Sharavati originates in the Karnataka district of Shimoga and drains a catchment area of 2,209 square kilometres.
• It is one of India's few westward-flowing rivers.

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• The Western Ghats make up a large section of the river basin.

• The river and the surrounding area are both rich in biodiversity, with numerous uncommon species of flora and fauna.

Additional Information

• Dams built across the Krishna river are:

• Almatti Dam.

• Nagarjuna Sagar Dam.

• Srisailam Dam.

• Pampa Sagar Dam, commonly known as Tungabhadra Dam, is a multipurpose dam built across the Tungabhadra River.

• The Lakhwar-Vyasi Dam project is built on the Yamuna River.

Q91. Answer: (a) American Standard Code for Information Interchange

The correct answer is American Standard Code for Information Interchange.

Key Points

• ASCII stands for American Standard Code for Information Interchange.

• It's a standard data-transmission code used by smaller and less powerful computers to represent textual data (letters, numbers, and punctuation marks) as well as non-input-device commands (control characters).

• Like other coding systems, it turns data into standardised digital formats that let computers communicate with one another and process and store data more efficiently.

• The ASCII code was created for teletypewriters but has now found widespread use in personal computers.

• Seven-digit binary integers, or numbers made up of multiple sequences of 0s and 1s, are used in the standard ASCII coding.

• Because there are 128 different possible combinations of seven 0s and 1s, the code can represent 128 different characters.

• A lowercase "p" is represented by the binary sequence 1110000, while an uppercase "P" is represented by the binary sequence 1010000.

• The seven information bits plus a parity bit (used for error-checking purposes or to represent special symbols) in ASCII code are usually placed in an eight-bit field.

Q92. Answer: (a) Andhra Pradesh

The correct answer is Andhra Pradesh.

Key Points

• The Government of Andhra Pradesh has launched a new initiative named Pedalandariki Illu Scheme to distribute the houses among the EWS section people.

• People from Andhra Pradesh who belong to the economically weaker sections of society will be given free houses under this scheme.

• It is part of Andhra Pradesh's existing YSR Housing Scheme.

• The major goal of introducing this programme is to offer them a better place to reside so that they do not have to worry about their stay in different places.

• Under this initiative, poor individuals in the state's Kurnool, Nellore, and Visakhapatnam districts will be able to obtain well-maintained and quality houses.

• On November 18, 2020, Chief Minister YSR Jagan Mohan Reddy announced this scheme via video conference.

• Pedalandariki Illu' (housing for the poor) scheme was a part of Navratnu created by the CM Jagan Mohan Reddy.

• The houses will be distributed to around 2500000 persons in the state who do not have a place to reside.

Additional Information

• Kudimaramathu is a scheme launched by Tamil Nadu for managing small water bodies like ponds, tanks and reservoirs in the state.

• Kerala LIFE (Livelihood Inclusion and Financial Empowerment) is a comprehensive housing programme launched by the Kerala government for all landless and homeless residents.

• Devaraj Urs Housing Scheme is a government-sponsored scheme in Karnataka which considers beneficiaries whose family annual income is less than Rs 32,000 in urban areas.

Q93. Answer: (a) Russia

The correct answer is Russia.

Key Points

• Nikita Dmitrievich Khakimov is a professional badminton player from Russia.

• BWF (Badminton World Federation) has imposed a 5-year ban on shuttler Nikita Khakimov on the charges of betting, wagering and irregular match results.

• After receiving testimony from a whistleblower, the BWF launched an inquiry into Khakimov, alleging that the shuttler asked him to falsify match results during the European Teams Championships in February 2018.

• Khakimov violated the BWF's integrity laws by approaching a player and proposing money to control a match, betting on badminton games, and "deliberately destroying evidence of a corruption violation to conceal from the BWF," according to an independent panel.

• This decision comes only days after the Court of Arbitration for Sport banned Russia from using its name, flag, or national anthem at the next two Olympics or any world championships for the next two years.

• The ruling also blocked Russia from bidding to host major sporting events for two years.

• Nikita Khakimov was a member of the Russian national team that won bronze in the European Men's Team Championships in 2020.

Q94. Answer: (b) Constitution

The correct answer is Constitution.

Key Points

• The polity of a country is designed according to its Constitution and any change to the polity is possible only when an amendment is made.

• The Indian Constitution can be amended to meet the changing demands of the country.

• A constitution that can be very easily changed or amended is often called flexible.

• A constitution that is very difficult to amend is described as rigid.

• The Indian Constitution combines both flexible and rigid characteristics.

• When an amendment seeks to change an article relating to the allocation of powers between the states and the federal government, or an article relating to the representation, the States must be contacted and consented to.

Additional Information

• During its 74-year existence, the Soviet Union had four constitutions (1918, 1924, 1936, and 1977).

• The Communist Party of the Soviet Union's control ended in 1991, and the Soviet Union rapidly collapsed.

• In 1993, the newly formed Russian Federation adopted a new constitution as a result of this political upheaval.

Q95. Answer: (a) Panchganga

The correct answer is Panchganga.

Key Points

• Kolhapur is a city in the Indian state of Maharashtra.

• It is located on the banks of river Panchganga.

• Because of its spiritual history and the antiquity of its shrine Mahalaxmi, Kolhapur is known as 'Dakshin Kashi' or Kashi of the South.

• Kolhapur is famed for its hand-crafted and braided leather slippers known as Kolhapuri chappal, which was awarded Geographical Indication status in 2019.

Important Points

• The Panchganga River, located in Maharashtra, is one of India's most important rivers.

• It is a major tributary of the Krishna River, joining it at Narsobawadi.

• It flows through the borders of Kolhapur city.

• It originates from Prayag Sangam.

Additional Information

• The Sarayu is a river in Uttarakhand, India, that originates on a ridge south of the Nanda Kot mountain.

• The river is mentioned several times in the Ramayana, an ancient Indian epic.

• It flows through the Kumaon Himalayas, passing past the cities of Kapkot, Bageshwar, and Seraghat on its way to Pancheshwar, where it joins the Sharda River.

• The Chambal River is a tributary of the Yamuna River.

• The river forms the boundary between Rajasthan and Madhya Pradesh before turning southeast to join the Yamuna in Uttar Pradesh state.

• Musi River is a tributary of the Krishna River in the Deccan Plateau.

• It flows through Telangana state in India.

• The river originates in Ananthagiri Hills near Vikarabad in Telangana.

Q96. Answer: (b) Ladakh

The correct answer is Ladakh.

Key Points

• India’s highest Meteorological Centre is situated in Ladakh.

• It is located at 3,500 metres above sea level in Leh.

• Dr Harsh Vardhan, Minister of Earth Sciences (MoES), virtually inaugurated the centre.

• The Leh centre is the second Meteorological Centre in the Himalayas, after Itanagar in Arunachal Pradesh.

• It would give localised weather predictions and early warnings for the Union Territory's Leh and Kargil districts, as well as various tourist destinations.

• All stakeholders will receive regular updates from the new meteorological centre, which will provide weather forecasts for short (3 days), medium (12 days), and long (1 month) periods.

Additional Information

• The India Meteorological Department (IMD) intends to set up ten Automatic Weather Stations (AWS) in key sites such as Drass, Kargil, Pangong Tso, Zanskar Valley, and Nubra Valley.

• Currently, India has 28 meteorological centres located throughout the country.

• The India Meteorological Department (IMD), the country's primary agency for meteorological observations and forecasting, relies on these centres to deliver accurate and timely weather-related information.

Q97. Answer: (c) Kurukshetra

The correct answer is Kurukshetra.

Key Points

• The International Gita Mahotsav held in November- December 2020 was held in Kurukshetra, Haryana.

• In the state of Haryana, a total of 55,000 school kids will recite 19 verses from the Hindu scripture Bhagavad Gita.

• The international Gita Mahotsav 2020 was held from December 17 to 25.

• Around 9,000 students will come from Kurukshetra, where the international festival is held every year, while the rest will come from the state's other 21 districts.

• It is celebrated to commemorate the birth of ‘Srimad Bhagwat Gita’.

• International Gita Mahotsav is traditionally marked by the chanting of Bhagavad Gita verses, the offering of oblations in fire sacrifices (yajna), and the distribution of prasad to devotees.

• The Education Department has been tasked with ensuring that all schools are connected to this programme.

Additional Information

• Patna is an ancient city in Bihar.

• Patna's original name was Pataliputra, and its history dates back to the sixth century B.C.

• Amritsar is a city in Punjab.

• Amritsar is home to Harmandir Sahib, popularly known as "the Golden Temple.

• Mumbai is the capital city of Maharashtra.

• Mumbai is the financial capital of India.

Q98. Answer: (c) 1773

The correct answer is 1773.

Key Points

• The Supreme Court was set up in Calcutta by the East India Company in 1773.

• The King of England's Regulating Act of 1773 cleared the stage for the formation of the Supreme Court of Judicature in Calcutta.

• On March 26, 1774, Letters of Patent were issued to establish the Supreme Court of Judicature at Calcutta.

• It was established as a Court of Record, with full power and authority to hear and determine all complaints about any crimes, as well as to entertain, hear, and determine any suits or actions brought against any of His Majesty's subjects in Bengal, Bihar, and Orissa(present-day Odisha).

• King George – III founded the Supreme Courts of Madras and Bombay on December 26, 1800, and December 8, 1823, respectively.

• The Constitution of India was enacted on January 26, 1950, after India gained independence in 1947.

• The Supreme Court of India was also established, with its inaugural meeting on January 28, 1950.

• The Supreme Court is established and constituted according to Article 124.

• The Supreme Court is the highest court in the country's judicial system.

• It is located in Tilak Marg, New Delhi.

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Q99. Answer: (b) Madhya Pradesh

The correct answer is Madhya Pradesh.

Key Points

• Madhya Pradesh is the only state in India that produces diamonds.

• Panna in Madhya Pradesh is famous for diamond mining in India.

• Panna is famous by the name of 'The City of Diamonds'.

• Since 2021, only 77.72-carat diamond has been discovered in Panna, Madhya Pradesh.

• For almost 3000 years, India was the world's only supply of diamonds until diamond resources were discovered in Brazil and South Africa.

Important Points

• Madhya Pradesh is the second-largest Indian state by area.

• Until 2000, when the southeastern Chhattisgarh region was declared as a distinct state, Madhya Pradesh was India's largest by area.

• Madhya Pradesh is rich in mineral resources and contains India's greatest diamond and copper reserves.

• More than a third of Madhya Pradesh's land is covered with forest.

Additional Information

• Kolkata is the capital of West Bengal.

• Kolkata is recognised as India's Cultural Capital.

• Andhra Pradesh has the second longest coastline in India after Gujarat.

• On October 1, 1953, Andhra Pradesh became India's first linguistically based state.

• Uttarakhand is known as the "Land of Gods"

Q100. Answer: (a) Harsh Vardhan

The correct answer is Harsh Vardhan.

Key Points

• Harsh Vardhan was nominated as a member of the GAVI Board by the Global Alliance for Vaccines and Immunisation in December 2020.

• He will be representing the South East Area Regional Office(SEARO)/ Western Pacific Regional Office (WPRO) constituency on the GAVI Board.

• Mr MyintHtwe of Myanmar previously holds the seat.

• Dr Harsh Vardhan will represent India from January 1st, 2021 to December 31st, 2023.

• The GAVI Board is in charge of strategic direction and policy-making, as well as overseeing the Vaccine Alliance's operations and monitoring programme implementation.

• The Board meets twice a year in June and November/December, as well as holding an annual retreat in March or April. Normally, all of these meetings are attended in person.

• GAVI, the Vaccine Alliance, has helped vaccinate more than 822 million children in the world's poorest nations, averting more than 14 million future deaths, as part of its objective to save lives, decrease poverty, and safeguard the world from diseases.

Important Points

• Harsh Vardhan was a former union minister in the BJP-led NDA government of Prime Minister Narendra Modi from 30 May 2019 to 7 July 2021.

• He served as the Minister of Health and Family Welfare, Minister of Science and Technology and Minister of Earth Sciences.

• As a Member of Parliament in the 17th Lok Sabha, he represents Chandni Chowk in Delhi.

• From May 22, 2020, he served as Chairperson of the World Health Organization's Executive Board.

• He has played a key role in India's response to the COVID-19 outbreak.

• He later resigned from his government role in July 2021, ahead of a cabinet reshuffle.

Additional Information

• Smriti Zubin Irani is the Minister of Women and Child Development in the Union Cabinet of India since May 2019.

• Narendra Modi serving as the 14th and current prime minister of India since 2014.

• Amit Shah is currently serving as the Minister of Home Affairs and the First Minister of Co-operation of India.

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