SSC CHSL Previous Paper 14 (Held On: 13 Oct 2020 Shift 2) (Previous Year Paper)

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

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ENGLISH LANGUAGE

Q1. Select the INCORRECTLY spelt word.

(a) Rogue
(b) Lacquer
(c) Placque
(d) Boutique

Q2. Select the option that will improve the underlined part of the sentence. In case no improvement is needed, select ‘No improvement’.

As we’ve been neighbours, I have known Mrs. Shashi Singh since more than 16 years.

(a) by more than 16 years
(b) from more than 16 years
(c) No improvement
(d) for more than 16 years

Q3. Identify the segment in the given sentence which contains the grammatical error.

If India will win this match they will win the series

(a) If India will win
(b) this match
(c) they will win
(d) the series

Q4. Select the word which means the same as the group of words given.

A collection of drawings, documents, etc. That represent a person's, especially an artist's, work

(a) Portfolio
(b) Profile
(c) Dossier
(d) Sketch

Directions

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

Hampi is a UNESCO World Heritage Site in India located near Hospet town in Karnataka state, India. (1)____ the attractions of Hampi (2)__ beautiful temples, ruins of palaces (3)__ of aquatic structures, ancient market streets, royal pavilions, bastions, royal platforms, treasury buildings...the list is practically (4)__. Most of the visitors to Hampi arrive at the well-connected Hospet Junction railway station, (5)____ about 13km from Hampi. Roads to Hampi are in great shape. Driving all the way to Hampi from the neighbouring cities is not a bad idea either.

Q5. Select the most appropriate option to fill in blank number 1.

(a) Along
(b) Aside
(c) Away
(d) Among

Q6. Select the most appropriate option to fill in blank number 2.

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

Q7. Select the most appropriate option to fill in blank number 3.

(a) returns
(b) remains
(c) refunds
(d) revenues

Q8. Select the most appropriate option to fill in blank number 4.

(a) endless
(b) finite
(c) finished
(d) written

Q9. Select the most appropriate option to fill in blank number 5.

(a) located
(b) fitted
(c) placed
(d) settled

Q10. Select the option that will improve the underlined part of the sentence. In case no improvement is needed, select 'No improvement'.

Finally, Ananya found her pet kitten over the top branch of a tree in their garden.

(a) in a top branch of a tree
(b) across the top branch in the tree
(c) No improvement
(d) on the top branch of the tree

Q11. Given below are four jumbled sentences. Select the option that gives their correct order.

A. "Today, respect is shown in different ways," she said, "students have a more questioning bent of mind."

B. Vidya Subramaniam occupies a small but privileged place in the dance world that has seen the old guard giving place to the new.

C. Back in the day, respect meant not sitting on even the same level as one's gurus but that's no longer true, especially for those who live in Western milieus.

D. For instance, she spoke of how the very idea of 'respect' has changed over time.

(a) BCAD
(b) BDCA
(c) DCAB
(d) DBAC

Q12. Select the most appropriate ANTONYM of the given word.

ALTRUISTIC

(a) Outstanding
(b) Selfish

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(c) Soft-spoken
(d) Serene

Q13. Select the most appropriate synonym of the given word.

FOLIAGE

(a) Firmness
(b) Greenery
(c) Foolishness
(d) Urgency

Q14. Given below are four jumbled sentences. Select the option that gives their correct order.

A. He put it down to dry and went to count his coins.
B. When he came back, it seemed like the teapot had moved.
C. Akito walked into an old curiosity shop and bought a teapot and took it home.
D. Later that day, he cleaned the teapot till it shone like the sun.

(a) CDAB
(b) BCDA
(c) CABD
(d) ABDC

Q15. Select the most appropriate option to fill in the blank in the given sentence.

Timers at traffic signals, that help motorists save fuel by switching off their engines while waiting, will soon be phased out due to technical _____.

(a) symbols
(b) glitches
(c) illuminations
(d) streamers

Q16. Select the word which means the same as the group of words given.

A group of ships sailing together

(a) Cruisers
(b) Navy
(c) Vessels
(d) Fleet

Q17. Select the most appropriate synonym of the given word.

CONSTRAINT

(a) Control
(b) Concern
(c) Hazard
(d) Burden

Q18. Select the most appropriate option to fill in the blank in the given sentence.

A _____ of small stones is called a mosaic.

(a) Design
(b) Pattern
(c) Mound
(d) Structure

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

DISCLOSE

(a) Conceal
(b) Disguise
(c) Complete

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(d) Disrupt

Q20. Select the option that is the direct form of the given sentence.

Brinda told her doctor that she was leaving for Boston the next day.

(a) Brinda told to her doctor, “I will be leaving for Boston the next day”.
(b) Brinda told her doctor, “I was leaving for Boston tomorrow”.
(c) Brinda said to her doctor, “I am leaving for Boston tomorrow.”
(d) Brinda had told her doctor, “She was leaving for Boston the next day”.

Q21. Directions: Each of the following questions has underlined idioms/phrases. Each sentence is followed by four options. Choose the option that best describes the meaning of the underlined idiom/phrase.

It took Rohan a long time to get the hang of the machine in the new factory.

(a) Clean and dry
(b) Put up safely
(c) Learn how to use
(d) Bring someone to run

Q22. Select the correctly spelt word.

(a) Fassion
(b) Injecshun
(c) Intention
(d) Transishion

Q23. Select the option that is the passive form of the given sentence.

She did not forget me even though I have been away for a year.

(a) I was not forgotten by her even though I have been away for a year.
(b) Even though I have been away for a year she had not been forgotten.
(c) Even though I have been away for a year she did not forget me.
(d) Though I have been away for a year she has not forgot me.

Q24. Select the most appropriate meaning of the given idiom.

Fit as a fiddle

(a) Of the right size
(b) Singing happily
(c) Playing a musical instrument
(d) Healthy and strong

Q25. Identify the segment in the given sentence which contains the grammatical error.

I don’t recognize none of the politicians who have been invited to be the speakers today.

(a) the politicians who have been
(b) invited to be
(c) the speakers today
(d) I don’t recognize none of

GENERAL INTELLIGENCE

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

11 * 15 * 78 * 6 * 18 * 160

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

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Q27. Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the off letter-cluster.

(a) NTZ
(b) LRX
(c) FLR
(d) BGQ

Q28. Select the option that is related to the third number in the same way as the second number is related to the first number and the sixth number is related to the fifth number.

8 : 81 : : 12 ? : : 11 : 144

(a) 196
(b) 256
(c) 169
(d) 144

Q29. 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. All boys are robots.

2. All girls are robots.

Conclusions:

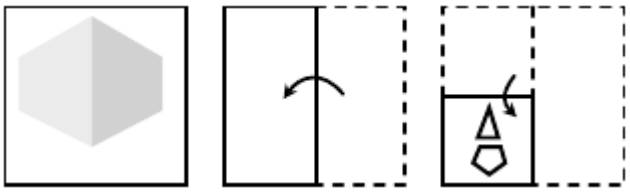
I. Some robots are boys.

II. No robot is a girl.

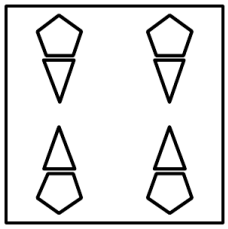
III. Some robots are girls.

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

Q30. The sequence of folding a paper and the manner in which the folded paper has been cut is shown in the following figures. Select from the option figures, how would this paper look when unfolded?

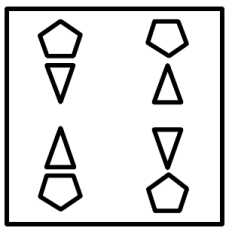


(a)

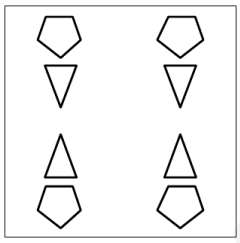


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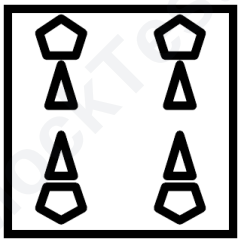
(b)



(c)



(d)



Q31. Four number-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) 11 : 142
(b) 22 : 506
(c) 17 : 306
(d) 14 : 210

Q32. Select the option in which the numbers are related in the same way as are the numbers in the given set.

(13, 17, 442)

(a) (11, 19, 628)
(b) (15, 14, 415)
(c) (18, 15, 540)
(d) (17, 21, 367)

Q33. In a certain code language, 'BEAUTY' is written as 'ZUVBFC'. How will 'MARTYR' be written as in that language?

(a) SZUSBN
(b) SYUSDM
(c) TXURBN
(d) SZUQDN

Q34. 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.

KRZ : HOW : : CUX : ?

(a) YTU
(b) ZRU
(c) YSU
(d) ZTV

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Q35. Which option represents the correct order of the given words as they would appear in an English dictionary?

1. Dovetail
2. Domestic
3. Dominate
4. Donate
5. Dorsal

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

Q36. Select the letter that can replace the question mark (?) in the following series.

K, B, N, D, Q, F, T, H, ?

(a) K
(b) V
(c) J
(d) W

Q37. 'Nagaland' is related to 'Kohima' in the same way as 'Assam' is related to '_____'

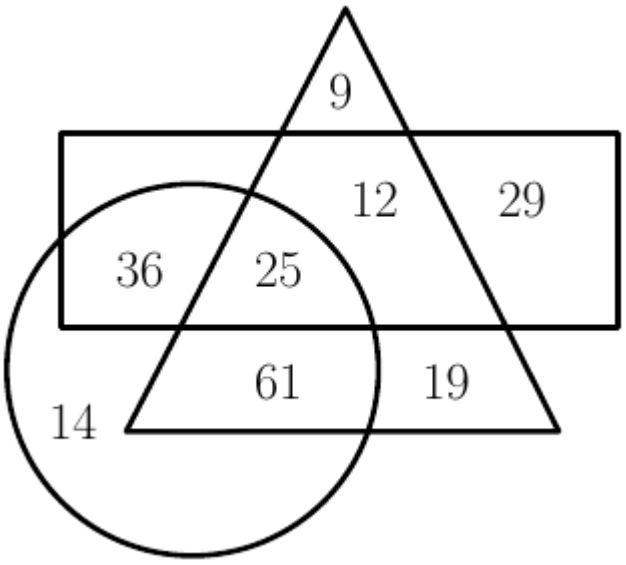
(a) Dispur
(b) Itanagar
(c) Konkani
(d) Assamese

Q38. Select the option in which the words share the same relationship as that shared by the given pair of words.

Wheat : Cereal

(a) Tea : Coffee
(b) City : Traffic
(c) Cinnamon : Spices
(d) Winner : Prize

Q39. In the given Venn Diagram, if the 'circle' represents 'senior lawyers', the 'triangle' represents 'fathers' and the 'rectangle' represents 'Indians', then how many Indian senior lawyers are there who are NOT fathers?



(a) 36
(b) 12
(c) 25
(d) 61

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

(789, 501, 645)

(a) (455, 573, 514)
(b) (645, 705, 573)
(c) (224, 640, 330)
(d) (701, 538, 600)

Q41. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.

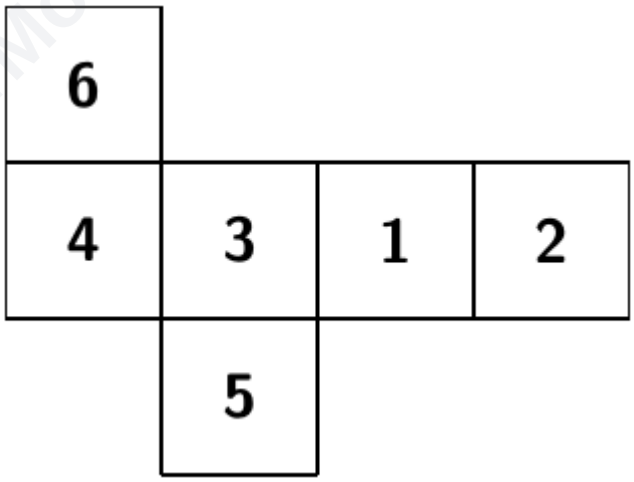
(a) Spade
(b) Spoon
(c) Knife
(d) Fork

Q42. Select the number that can replace the question mark (?) in the following series.

65, 70, 80, 95, 115, ?, 170

(a) 145
(b) 130
(c) 140
(d) 165

Q43. A cube is made by folding the given sheet. In the cube so formed, which of the following pairs of numbers will be on opposite faces?



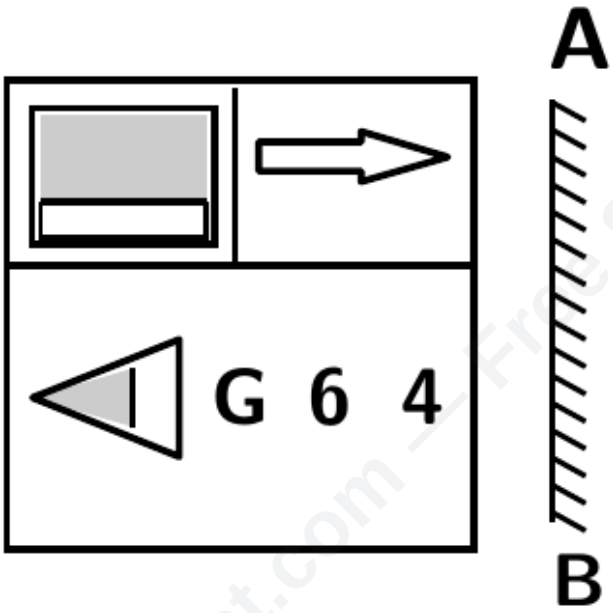
(a) 1 and 5
(b) 2 and 3
(c) 1 and 6
(d) 6 and 3

Q44. If 29 January 2003 is a Wednesday, then what day of the week will be 26 February 2005?

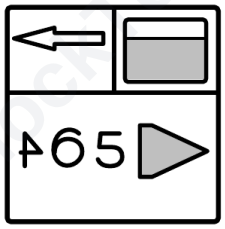
(a) Sunday
(b) Thursday
(c) Friday
(d) Saturday

Q45. Select the correct mirror image of the given figure when a mirror is placed on the right side of the figure

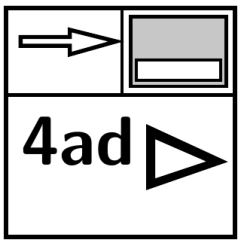
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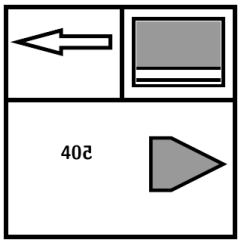
(a)



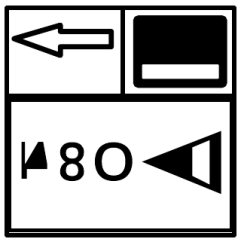
(b)



(c)

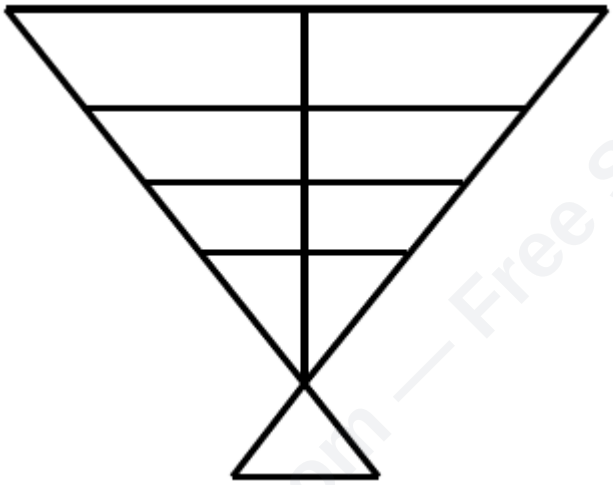


(d)



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Q46. How many triangles are there in the given figure?



(a) 13
(b) 15
(c) 11
(d) 14

Q47. Select the option figure that is embedded in the given figure X. (Rotation is not allowed)

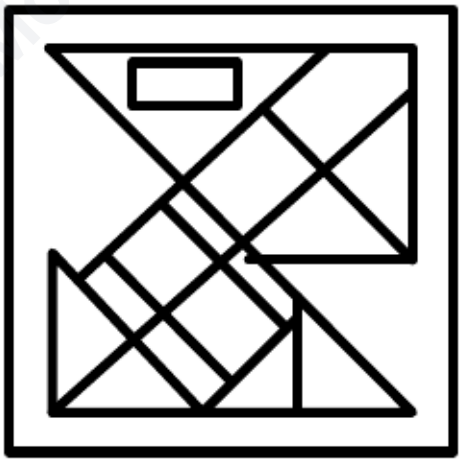
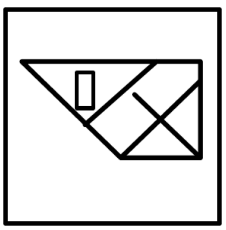


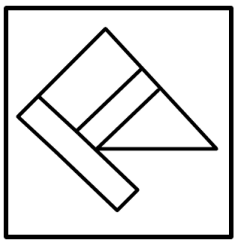
Figure X

(a)

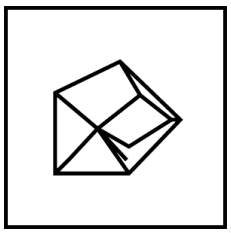


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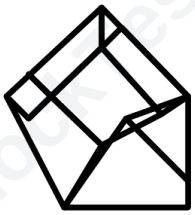
(b)



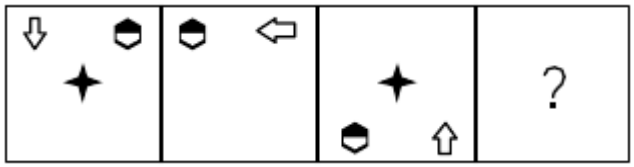
(c)



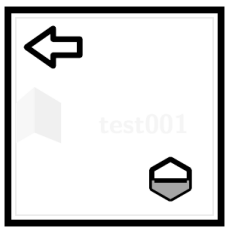
(d)



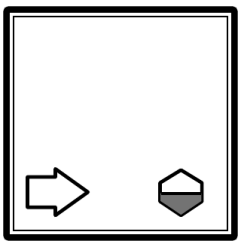
Q48. Select the option figure that can replace the question mark (?) in the following series.



(a)

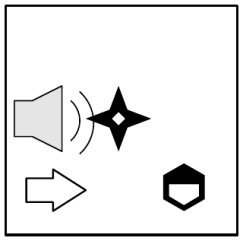


(b)

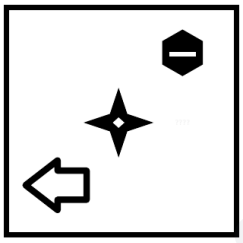


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(c)



(d)



Q49. A + B means 'A is the mother of B';

A - B means 'A is the sister of B';

A × B means 'A is the son of B';

A ÷ B means 'A is the father of B'.

If, K + U - T × R ÷ M, then how is K related to M?

(a) Mother

(b) Sister

(c) Wife

(d) Maternal grandmother

Q50. In a certain code language, 'REQUIRE' is coded as '100'. How will 'ARRANGE' be coded as in that language?

(a) 77

(b) 68

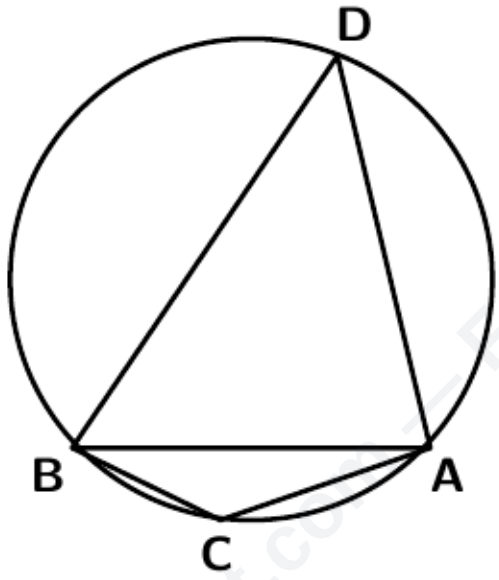
(c) 71

(d) 88

QUANTITATIVE APTITUDE

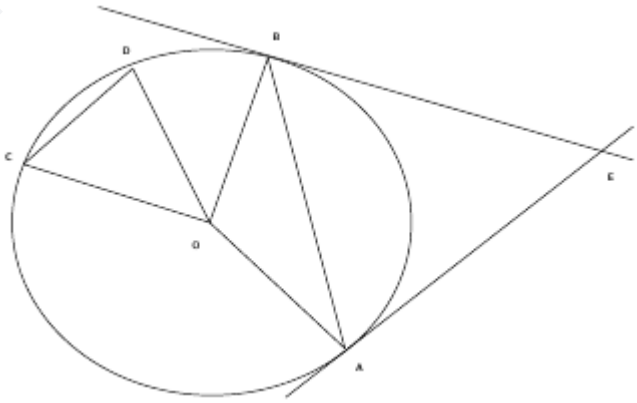
Q51. If in the following figure (not to the scale), angle ACB = 135° and the radius of the circle is 2 √2 cm, then the length of the chord AB is:

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(a) 6 cm
(b) 4√2 cm
(c) 3√2 cm
(d) 4 cm

Q52. In the following figure (not to scale), at the centre O, if the chord AB subtends double the angle that is subtended by chord CD and the angle angle AEB = 2 angle AOB, then angle COD is equal to:



(a) 75°
(b) 60°
(c) 30°
(d) 45°

Q53. If SecA = √11/3, then the value of $(Cosec^2 A + Tan^2 A)/(Sin^2 A + Cot^2 A)$ is:

(a) 4/9
(b) 9/4
(c) 11/9
(d) 2/11

Q54. If A = $((0.1)^3 + (0.2)^3+(0.3)^3+3(0.005+0.016+0.027)+0.036)/((0.1)^2+(0.2)^2+(0.3)^2+0.04+0.06+0.12)$, then the value of 60A is:

(a) 36
(b) 30
(c) 20
(d) 60

Q55. The ratio of a man's age to his father's age is 4 : 5, and the ratio of his age to his son's age is 6 : 1. Four years ago these ratios were 11 : 14 and 11 : 1, respectively. The ratio of the age of the grandfather to that of the grandson 12 years from now will be:

(a) 12 : 5
(b) 18 : 7
(c) 18 : 5
(d) 14 : 3

Q56. A triangle has sides 25, 39, 34 units. If the area of a square exceeds the area of this triangle by 21 units, then the side of the square is:

(a) 21 units
(b) 25 units
(c) 18 units
(d) 22 units

Q57. If the number 59a44b is divisible by 36, then the maximum value of a + b is:

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

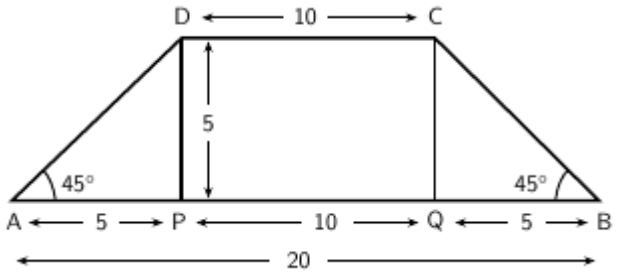
Q58. If $(1 +\sin\theta-\cos\theta)/(1 +\sin\theta +\cos\theta) + (1 + \sin\theta +\cos\theta)/(1 + \sin\theta-\cos\theta) = 4$, then which of the following values will be suitable for θ ?

(a) 45°
(b) 30°
(c) 90°
(d) 60°

Q59. A sphere is placed in a cube so that it touches all the faces of the cube. If 'a' is the ratio of the volume of the cube to the volume of the sphere, and 'b' is the ratio of the surface area of the sphere to the surface area of the cube, then the value of ab is:

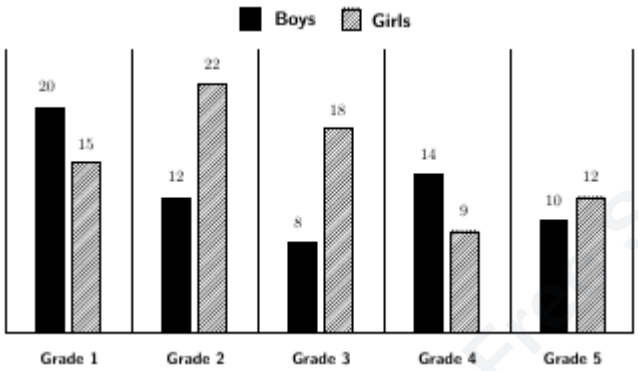
(a) $36/(\pi^2)$
(b) $(\pi^2)/36$
(c) 1
(d) 4

Q60. If in the following figure (not to scale), angle DAB + angle CBA = 90°, BC = AD, AB = 20 cm, CD = 10 cm then the area of the quadrilateral ABCD is:

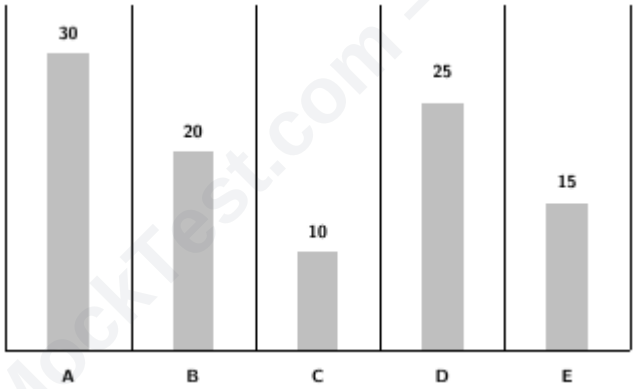


(a) 150 cm^2
(b) 120 cm^2
(c) 100 cm^2
(d) 75 cm^2

Q61. The first graph shows the number of students (boys and girls in thousands) in Grade 1 to Grade 5.



And the bar graph below shows the percentage share of five schools in the total students studying in that class.



Based on the information, if the boys to girls ratio in school D is 3: 1, then the number of boys studying in School D is:

Note:- Above data is given in the number of thousands.

(a) 25550
(b) 26250
(c) 28750
(d) 22450

Q62. The numbers 24, 45, a, 35, 59, 83, 46, b, 29, 74 are serially numbered as they appear in the sequence. When each number is added to its serial number, then the average of the new numbers formed is 55. The average of the missing numbers (a and b) is:

(a) 50
(b) 62
(c) 38
(d) 58

Q63. If $a + b = 8$ and $a + a^2 b + b + ab^2 = 128$ then the positive value of $a^3 + b^3$ is:

(a) 152
(b) 224
(c) 96
(d) 344

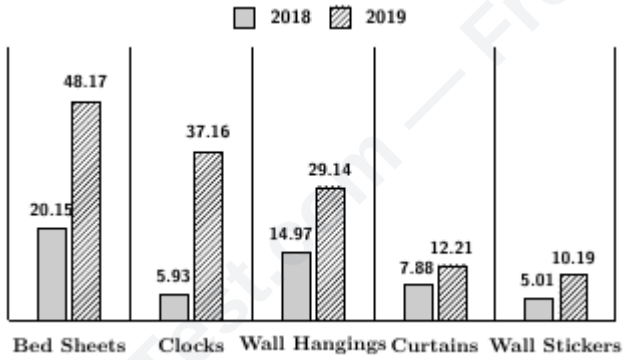
Q64. The distance between the places H and O is D units. The average speed that gets a person from H to O in a stipulated time is S units. He takes 20 minutes more time than usual if he travels at 60 km/h, and reaches 44 minutes early if he travels at 75 km/h. The sum of the numerical values of D and S is:

(a) 358
(b) 384
(c) 376
(d) 344

Q65. If CosA, SinA, CotA are in geometric progression, then the value of Tan^6A - Tan²A is:

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

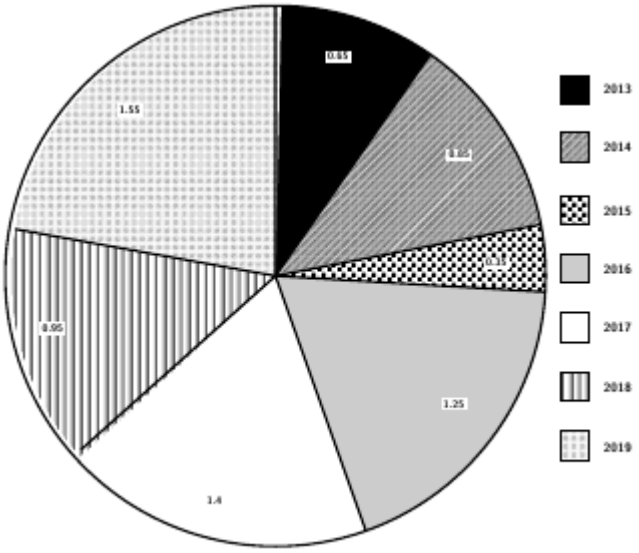
Q66. A home decor company produces five different products - Bed sheets, Clocks, Wall hangings, Curtains and Wall stickers. The sales of these five products (in lakh number of packs) during 2018 and 2019 are shown in the following bar-graph.



Based on the given information, sales have increased by nearly 55% from 2018 to 2019 in the case of:

(a) Wall stickers
(b) Bed sheets
(c) Curtains
(d) Wall hangings

Q67. The following pie chart shows the ratio of the amount of imports by a company to the amount of exports from that company from 2013 to 2019.



If the imports in 2016 were Rs. 250 million and the total exports in the year 2016 and 2017 together were Rs. 500 million, then the imports in 2017 were:

(a) Rs. 420 million
(b) Rs. 320 million
(c) Rs. 520 million
(d) Rs. 620 million

Q68. If each edge of a cube is increased by 10%, then the percentage increase in its surface area is:

(a) 20%
(b) 19%
(c) 21%
(d) 22%

Q69. Evaluate 45 - 5 of (6.3 ÷ 9) + 7 × 0.5.

(a) 40
(b) 42
(c) 50
(d) 45

Q70. A person marks his 40 items at 20% above the cost price. He sells 10 items at a 10% discount and 20 items at a 15% discount on the marked price. What is the maximum discount (rounded off) he can offer on the remaining items if he still gets some profit?

(a) 21%
(b) 26%
(c) 28%
(d) 25%

Q71. If x^4 + 1/(x^4) = 257/16 then find 8/13 (x^3 + 1/(x^3)), where x > 0.

(a) 5
(b) 8
(c) 4
(d) 6

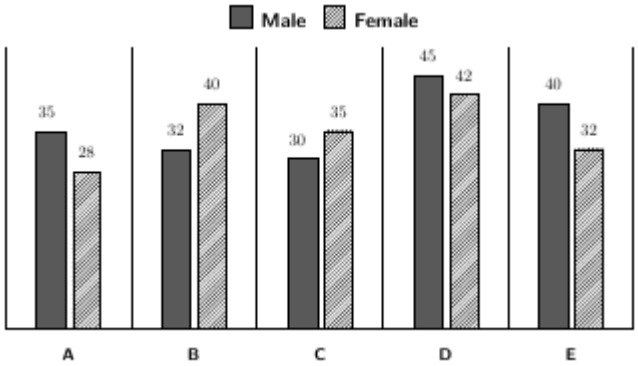
Q72. Rs. 4,000 is given at 5% per annum for one year and interest is compounded half yearly, Rs. 2,000 is given at 40% per annum compounded quarterly for 1 year. The total interest received is nearest to:

(a) Rs. 1,130.70
(b) Rs. 1,333.30
(c) Rs. 1,444.40
(d) Rs. 1,888.80

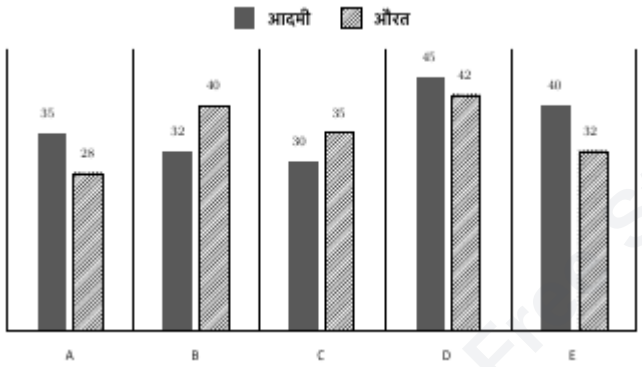
Q73. An oil merchant wants to make a minimum profit of Rs. 2,100 by selling 50 litres of oil he purchased at Rs. 236 per litre. For this, he adds a few litres of duplicate oil whose cost price is Rs. 180 per litre and sells at Rs. 250 per litre. How many litres of duplicate oil is needed for this purpose?

(a) 18 litres
(b) 22 litres
(c) 20 litres
(d) 16 litres

Q74. The following graph given the details of the male and female population (in thousands) across five places A, B, C, D and E.



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Based on the information, the total number of females in all five places is approximately what percentage of the total number of males in all five places?

(a) 97%
(b) 95%
(c) 94%
(d) 99%

Q75. A can finish a piece of work in a certain number of days. B takes 45% more number of days to finish the same work independently. They worked together for 58 days and then the remaining work was done by B alone in 29 days. In how many days could A have completed the work, had he worked alone?

(a) 118 days
(b) 98 days
(c) 120 days
(d) 110 days

GENERAL AWARENESS

Q76. Which of the following companies was conferred with Maharatna status in October 2019?

(a) Hindustan Petroleum Corporation Limited
(b) GAIL (India) Limited
(c) Bharat Petroleum Corporation Limited
(d) Steel Authority of India limited

Q77. Which Chola ruler was popularly called ‘Victor of the Ganges’?

(a) Vijayalaya Chola
(b) Gandaraditya Chola
(c) Parantaka Chola I
(d) Rajendra Chola I

Q78. In which year did the JavaScript Programming language come into existence?

(a) 1999
(b) 2000
(c) 1995
(d) 1990

Q79. When was the first Constituent Assembly election held in India?

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

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Q80. Which Indian banknote released in November 2016 features Mangalyaan on the reverse side?

(a) Rs. 500
(b) Rs. 2,000
(c) Rs. 200
(d) Rs. 100

Q81. India shares its land boundaries with which countries in the east?

(a) China, Nepal and Bhutan
(b) Bhutan and Afghanistan
(c) Myanmar and Bangladesh
(d) Pakistan and Afghanistan

Q82. Which function key displays the Print Preview window in Microsoft Office?

(a) Alt + Ctrl + F2
(b) Alt + F2
(c) Shift + F2
(d) Ctrl + F2

Q83. How many agro-climatic zones (ACZ) are characterized by the Planning Commission of India?

(a) 20
(b) 10
(c) 15
(d) 30

Q84. Which famous personality said the following?

"Don't take rest after your first victory because if you fail in second, more lips are waiting to say that your first victory was just luck?"

(a) APJ Abdul Kalam
(b) Amartya Sen
(c) Homi Bhabha
(d) Atal Bihari Vajpayee

Q85. The Maharaja Ranjit Singh Gold Cup is associated with _____.

(a) Polo
(b) Hockey
(c) Cricket
(d) Football

Q86. In which state was the 8th edition of the India-China joint training exercise 'Hand-in-Hand 2019' held?

(a) Meghalaya
(b) Maharashtra
(c) Manipur
(d) Kerala

Q87. Which former Indian cricketer was honored with the 'Bharat Gaurav Award' by the East Bengal Football Club in 2019?

(a) Sachin Tendulkar
(b) Kapil Dev
(c) Rahul Dravid
(d) Sunil Gavaskar

Q88. What is the mission life of the Cartosat-3 satellite launched by PSLV C-47 on 27 November 2019?

(a) 5 years
(b) 4 years
(c) 3 years

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(d) 2 years

Q89. 'Sattriya' is a traditional Hindu classical dance form of which state?

(a) Odisha
(b) Assam
(c) Manipur
(d) Goa

Q90. Which of the following is a famous fossil site in India where a full-fledged skeleton of a dinosaur was found?

(a) Hathnora, Madhya Pradesh
(b) Waddham, Maharashtra
(c) Manendragarh, Chhattisgarh
(d) Zanskar Valley, Kashmir

Q91. Which Indian writer was awarded the 'Rabindranath Tagore Literary Prize 2019'?

(a) Shashi Tharoor
(b) Ramachandra Guha
(c) Rana Dasgupta
(d) Arundhati Roy

Q92. Which governor general of India abolished Sati system in 1829 by declaring it an offence?

(a) Lord Dalhousie
(b) Lord Cornwallis
(c) Lord Wellesley
(d) Lord William Bentinck

Q93. Which of the following is an example of the most explosive type of volcano?

(a) Shield volcanoes
(b) Flood basalt volcanoes
(c) Calderas volcanoes
(d) Cinder cones volcanoes

Q94. How many parathyroid glands are present on the back side of the thyroid gland in humans?

(a) Six
(b) Five
(c) Three
(d) Four

Q95. In 1930, which scientist was awarded the Nobel Prize for describing the human ABO blood group system?

(a) Karl Landsteiner
(b) Albert Claude
(c) George Wald
(d) Roger Guillemin

Q96. As per 'India State of Forest Report 2019', which state secured first position for the highest growth in forest area in the country?

(a) Karnataka
(b) Andhra Pradesh
(c) Madhya Pradesh
(d) Odisha

Q97. Who was conferred with the 'Female Sportsperson of the Year' award at the 'FICCI India Sports Awards 2019'?

(a) Mary Kom
(b) Rani Rampal
(c) PV Sindhu

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(d) Geeta Phogat

Q98. How many elements of India were listed in the UNESCO Representative List of the Intangible Cultural Heritage of Humanity as of March 2018?

(a) 18
(b) 14
(c) 13
(d) 15

Q99. Cinnabar (HgS) is an ore of which metal?

(a) Aluminum
(b) Mercury
(c) Gold
(d) Silver

Q100. When was the Backward and Minority Communities Employees Federation (BAMCEF) established in India?

(a) 1980
(b) 1978
(c) 1979
(d) 1982

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) Placque

The correct answer is 'placque'.

Key Points

• Out of the given options only option 3 has an incorrect spelling.

• The meaning of the words are listed in the following table along with their usage in a sentence.

Word	Meaning	In a Sentence
rogue	a dishonest or unprincipled man.	In the Italian Job you play the part of the lovable rogue Charlie Crocker.
lacquer	a liquid made of shellac dissolved in alcohol, or of synthetic substances, that dries to form a hard protective coating for wood, metal, etc.	As a lacquer painter he left a strong mark upon the work of his contemporaries and successors.

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plaque	an ornamental tablet, typically of metal, porcelain, or wood, that is fixed to a wall or other surface in commemoration of a person or event.	The size of the plaque varies for the different classes.
boutique	a small shop selling fashionable clothes or accessories.	A chic online boutique selling luxurious new brands.

Additional Information

• The word 'plaque' can also mean a sticky deposit on teeth in which bacteria proliferate.

Q2. Answer: (d) for more than 16 years

The correct answer is 'for more than 16 years'.

Key Points

• The underlined part begins with the preposition 'since'.

• When 'since' is used a preposition of time, it is used to refer to a specific point in time.

• So to use it for a period of time (more than 16 years) is incorrect.

• The correct preposition to be used with a period of time is 'for'.

• So, to improve the sentence we need to replace the underlined part with 'for more than 16 years'.

Additional Information

• 'By' as a preposition of time is used to indicate a deadline or the end of a particular time period. (I have to submit this report by Monday.)

• 'From' as a preposition of time is used to indicate the point in time at which a particular process, event, or activity starts. (The charity show will run from 4 p.m. to 6 p.m.)

Q3. Answer: (a) If India will win

The correct answer is 'if India will win'.

Key Points

• In the given context, the main clause is in 'simple future tense'

• Thus, 'If clause' will be in present tense; i.e. 'will win' will be replaced with 'wins'

• The given context is a conditional sentence The structure of the conditional sentence is- If + Simple Present, Simple Future

• In such sentences 'If clause' will be in simple present tense and the 'main clause' in simple future tense

• Let's see the example:

• If I will come to Lucknow, I will meet you.

• If I come to Lucknow, I will meet you.

Hence the correct sentence is- If India wins this match they will win the series.

Q4. Answer: (a) Portfolio

The correct answer is 'portfolio'.

Key Points

To find the correct answer we need to know the meaning of the given options. This has been shown in the table below -

Word	Meaning
Portfolio	a set of pieces of creative work intended to demonstrate a person's ability to a potential employer.
Profile	an outline of something, especially a person's face, as seen from one side.
Dossier	a collection of documents about a particular person, event, or subject.
Sketch	a rough or unfinished drawing or painting, often made to assist in making a more finished picture.

• 'Portfolio' and 'Dossier' are often confused.

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• A portfolio contains creative work like designs, art, or photographs.
• The dossier contains documents and may include photographs of the subject under discussion.

Q5. Answer: (d) Among

The correct answer is 'among'.

Key Points

• To find the correct word for the given blank, we need to first understand the meaning of the given words in the options -
• along - moving in a constant direction on (a road, path, or any more or less horizontal surface). (Preposition)
• aside - to one side; out of the way. (Adverb)
• away - to or at a distance from a particular place, person, or thing. (Adverb)
• among - being a member or members of (a larger set). (Preposition)
• The line with blank (1) talks about the various attractions at a heritage site.
• The given blank needs a preposition to show that the attractions are part of a bigger set.
• This makes option 4, i.e. 'among' the best fit word for the given blank based on its meaning and grammatical position.

Q6. Answer: (a) are

The correct answer is 'are'.

Key Points

• The given blank needs a verb.
• The nouns following the blanks are plural. (temples, palaces etc)
• To maintain subject-verb agreement we need to use the plural verb 'are' in the given blank.

Additional Information

• Although 'were' is also a plural verb, it cannot be used as it represents the past tense.

Q7. Answer: (b) remains

The correct answer is 'remains'.

Key Points

• To find the correct word for the given blank, we need to first understand the meaning of the given words in the options -
• returns - come or go back to a place or person.
• remains - historical or archaeological relics.
• refunds - a repayment of a sum of money.
• revenues - income, especially when of an organization and of a substantial nature.
• The line with blank (3) talks about the various archaeological relics that are found in Hampi.
• This makes option 2, i.e. 'remains' the best fit word for the given blank based on its meaning.

Q8. Answer: (a) endless

The correct answer is 'endless'.

Key Points

• To find the correct word for the given blank, we need to first understand the meaning of the given words in the options -
• endless - countless; innumerable.
• finite - limited.
• finished - completed.
• written - mark (letters, words, or other symbols) on a surface, typically paper, with a pen, pencil, or similar implement.
• The line with blank (4) talks about the various archaeological relics that are found in Hampi and the list is never ending.
• This makes option 1, i.e. 'endless' the best fit word for the given blank based on its meaning.

Q9. Answer: (a) located

The correct answer is 'located'.

Key Points

• To find the correct word for the given blank, we need to first understand the meaning of the given words in the options -
• located - situated in a particular place.
• fitted - made or shaped to fill a space or to cover something closely or exactly.
• placed - put in a particular position.

• settled - resolve or reach an agreement about (an argument or problem).
• The line with blank (5) talks about the location of the train station where tourists first arrive to visit Hampi.
• This makes option 1, i.e. 'located' the best fit word for the given blank based on its meaning.

Q10. Answer: (d) on the top branch of the tree

The correct answer is 'on the top branch of the tree'.

Key Points

• The underlined part is incorrect as it uses the wrong preposition 'over' to show the location of the kitten.
• 'Over' means beyond and falling or hanging from a point.
• The correct preposition here is 'on' which means that physically in contact with and supported by (a surface).

Additional Information

• Both 'in' and 'across' can also be used as prepositions.
• 'In' means inside something.
• 'Across' means to from one side to the other of (a place, area, etc.).

Q11. Answer: (b) BDCA

The correct answer is 'BDCA'.

Key Points

• The passage should begin with a sentence that introduces the subject under consideration.
• This is done by sentence B, which introduces us to a certain well-known dancer. So, sentence B becomes the first sentence.
• From the remaining sentences it is clear that her views regarding the concept of 'respect' is being illustrated in the passage.
• So, sentence D, which introduces this viewpoint should become the second sentence.
• The past views regarding the concept should follow, making sentence C the third sentence.
• The present view as told in sentence A, becomes the fourth sentence.

Q12. Answer: (b) Selfish

The correct answer is 'selfish'.

Key Points

• To find the correct antonym for the given word, we need to understand the meaning of it.
• 'Altruistic' means showing a disinterested and selfless concern for the well-being of others or being unselfish.
• From the above meaning it is clear that the correct antonym for it is 'selfish' which means (of a person, action, or motive) lacking consideration for other people; concerned chiefly with one's own personal profit or pleasure.

Additional Information

• The meaning of the other options are as follows -
• outstanding - exceptionally good.
• soft-spoken - speaking or said with a gentle, quiet voice.
• serene - calm, peaceful, and untroubled

Q13. Answer: (b) Greenery

The correct answer is 'greenery'.

Key Points

• To find the correct synonym for the given word, we need to understand the meaning of it.
• 'Foliage' means plant leaves collectively.
• Example: The hiking trail was surrounded by a thick canopy of foliage, with leaves of various shapes and colors covering the trees.
• From the above meaning it is clear that the correct synonym for it is 'greenery' which means green foliage, growing plants, or vegetation.

Additional Information

• The meaning of the other options are as follows -
• firmness - the quality of having a solid, almost unyielding surface or structure.
• Example: The manager displayed firmness in her decision-making, standing by her choices even in the face of opposition.
• foolishness - lack of good sense or judgement
• Example: Jumping into the lake without knowing how to swim is an act of foolishness that could lead to danger.
• urgency - importance requiring swift action.

• Example: The doctor emphasized the urgency of seeking medical attention for the persistent symptoms to prevent further complications.

Q14. Answer: (a) CDAB

The correct answer is 'CDAB'.

Key Points

• The passage should begin with a sentence that introduces the subject under consideration.

• This is done by sentence C, which introduces us to a person who buys a teapot. So, sentence C becomes the first sentence.

• From the remaining sentences it is clear that the person's interactions with the teapot are listed.

• So, sentence D, which talks about how he cleaned the teapot should become the second sentence.

• Sentence A that talks about how he kept it down to dry becomes the third sentence. This sentence also talks about how he went away after that to count his money.

• His view about the teapot after he came back as told in sentence A, becomes the fourth sentence.

Q15. Answer: (b) glitches

The correct answer is 'glitches'.

Key Points

• We need to first understand the meaning of the given words to find which word would suit the given blank.

• symbols - marks or characters used as a conventional representation of an object, function, or process, e.g. the letter or letters standing for a chemical element or a character in musical notation

• glitches - a sudden, usually temporary malfunction or fault of equipment.

• illuminations - lighting or light.

• streamers - a long, narrow strip of material used as a decoration or symbol.

• The sentence talks about how a certain equipment is going to be phased out.

• 'Phased out' is a term that means to gradually stop using something.

• The cause behind this is mentioned as technical problems.

• So, 'glitches' is the best fit word for the given blank.

Q16. Answer: (d) Fleet

The correct answer is 'fleet'.

Key Points

• To find the correct answer we need to know the meaning of the given options. This has been shown in the table below -

Word	Meaning
Cruisers	relatively fast warships larger than a destroyer and less heavily armed than a battleship.
Navy	the branch of the armed services of a state which conducts military operations at sea.
Vessels	ships or large boats
Fleet	a group of ships sailing together, engaged in the same activity, or under the same ownership.

Q17. Answer: (a) Control

The correct answer is 'control'.

Key Points

• To find the correct synonym for the given word, we need to understand the meaning of it.

• 'Constraint' means a limitation or restriction.

• From the above meaning it is clear that the correct synonym for it is 'control' which means the restriction of an activity, tendency, or phenomenon.

Additional Information

• The meaning of the other options are as follows -

• concern - relate to; be about.

• Usage: His concern with/for the well-being of his family is obvious.

• hazard - a danger or risk.

• Usage: Polluted water sources are a hazard to wildlife.

• burden - a load, typically a heavy one.

• Usage: His illness has placed a huge financial burden on the family.

Q18. Answer: (b) Pattern

The correct answer is 'pattern'.

Key Points

• We need to first understand the meaning of the given words to find which word would suit the given blank.

• design - a plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is made.

• pattern - a repeated decorative design.

• mound - a rounded mass projecting above a surface.

• structures - the arrangement of and relations between the parts or elements of something complex.

• The sentence talks about mosaic which means a picture or pattern produced by arranging together small pieces of stone, tile, glass, etc.

• 'Phased out' is a term that means to gradually stop using something.

• So, 'pattern' is the best fit word for the given blank.

Q19. Answer: (a) Conceal

The correct answer is 'conceal'.

Key Points

• To find the correct antonym for the given word, we need to understand the meaning of it.

• 'Disclose' means make (secret or new information) known.

• From the above meaning it is clear that the correct antonym for it is 'conceal' which means prevent (something) from being known or to keep secret.

Additional Information

• The meaning of the other options are as follows -

• disguise - give (someone or oneself) a different appearance in order to conceal one's identity.

• complete - having all the necessary or appropriate parts.

• disrupt - interrupt (an event, activity, or process) by causing a disturbance or problem.

Q20. Answer: (c) Brinda said to her doctor, “I am leaving for Boston tomorrow.”

The correct answer is 'Brinda said to her doctor, “I am leaving for Boston tomorrow.”'

Key Points

• The given sentence is in indirect form.

• To change it to direct form, we need to do the following -

• Change in pronoun - In direct speech the pronoun changes to first person. So, 'she' will become 'I'.

• Change in statement sentence - In direct speech, the 'told' is converted either to 'said' or remains the same. So, it either remains 'told' or becomes 'said'.

• Change in tense - The past continuous tense (was leaving) in the indirect speech changes to present continuous tense (am leaving) in direct speech.

• Only option 3 covers all three changes making it the correct answer.

Q21. Answer: (c) Learn how to use

The correct answer is 'learn how to use'.

Key Points

• The sentence talks about how Rohan took a long time to understand the machine in the new factory.

• The meaning of the underlined idiom is - Learn the proper way of doing, using or handling something; acquire the knack of something.

• So, option 3 is the correct answer.

Q22. Answer: (c) Intention

The correct answer is 'Intention'.

Key Points

• Out of the given options, only option 3 has the correct spelling.

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• 'Intention' means a thing intended; an aim or plan.

• Example - She had no intention of staying here.

Additional Information

• Let's look at the correct spelling and meaning of the other options:-

• Fashion - a popular or the latest style of clothing, hair, decoration, or behaviour.

• Injection - an instance of injecting or being injected.

• Transition - the process or a period of changing from one state or condition to another.

Q23. Answer: (a) I was not forgotten by her even though I have been away for a year.

The correct answer is 'I was not forgotten by her even though I have been away for a year.'

Key Points

• The given sentence is an assertive sentence.

• We need to follow these instructions while changing the voice of an assertive sentence.

• Find the subject and object of the sentence and exchange their places; make changes in their cases as well if subject and object are pronouns.

• In the given sentence the subject is 'she,' while the object is 'I'.

• Use preposition 'by' before agent 'she'.

Following these steps, we finally get - "I was not forgotten by her even though I have been away for a year."

Q24. Answer: (d) Healthy and strong

The correct answer is 'healthy and strong'.

Key Points

• The meaning of the given idiom is as follows - in very good health.

• So, option 4 is the correct answer.

Additional Information

• The violin/ fiddle was picked out as the exemplar because of the alliteration of fit and fiddle, and because the violin is a beautifully shaped instrument producing a very particular sound. But then fit came to mean 'in good physical shape' and so fit as a fiddle came to mean 'in good condition physically'.

Q25. Answer: (d) I don't recognize none of

The correct answer is 'I don't recognize none of'.

Key Points

Let's look at the following points-

• 'Any' is used for negative and Interrogative sentences respectively

• For e.g.- The Government has annexed specimen orders which do not provide any clear reasons for their issuance.

• Since the given sentence is a negative sentence, none will be replaced with any

• The correct word to be used here is 'any'

Additional Information

• None denotes 'not one' or 'not any'.

• None of is not used when there is already a negative word (not, n't) in the clause

• For e.g.-They didn't invite none of us.

They didn't invite any of us.

Q26. Answer: (c) ×, +, ÷, -, =

1) +, ×, ÷, -, =

Given expression: 11 * 15 * 78 * 6 * 18 * 160

After replacing the * by the signs, we get:

11 + 15 × 78 ÷ 6 - 18 = 160

=> 11 + 15 × 13 – 18 = 160

=> 11 + 195 – 18 = 160

=> 205 – 18 = 160

=> 187 ≠ 160

2) ×, +, -, ÷, =

Given expression: 11 * 15 * 78 * 6 * 18 * 160
After replacing the * by the signs, we get:
11 × 15 + 78 - 6 ÷ 18 = 160
=> 165 + 78 – 0.33 = 160
=> 243 – 0.33 = 160
=> 242.67 ≠ 160
3) ×, +, ÷, -, =
Given expression: 11 * 15 * 78 * 6 * 18 * 160
After replacing the * by the signs, we get:
11 × 15 + 78 ÷ 6 - 18 = 160
=> 165 + 13 – 18 = 160
=> 178 – 18 = 160
=> 160 = 160
4) +, ×, -, ÷, =
Given expression: 11 * 15 * 78 * 6 * 18 * 160
After replacing the * by the signs, we get:
11 + 15 × 78 - 6 ÷ 18 = 160
=> 11 + 1170 – 0.33 = 160
=> 1181 – 0.33 = 160
=> 1180.67 ≠ 160
Hence, '×, +, ÷, -, =' is the correct answer.

Q27. Answer: (d) BGQ

The pattern followed here is:
According to the alphabetical positions of the letters,
1) NTZ → N + 6 = T; T + 6 = Z
2) LRX → L + 6 = R; R + 6 = X
3) FLR → F + 6 = L; L + 6 = R
4) BGQ → B + 5 = G; G + 10 = Q
Hence, 'BGQ' is the odd one out.

Q28. Answer: (c) 169

The logic is:
$8 : 81 \rightarrow 8 : (8 + 1)^2$
$11 : 144 \rightarrow 11 : (11 + 1)^2$
Similarly,
$12 : ? \rightarrow 12 : (12 + 1)^2$
=> ? = 169
Hence, '169' is the correct answer.

Q29. Answer: (a) Only conclusions I and III follow.

The least possible venn diagram is:
I. Some robots are boys. → True (As all boys are robots so some robots will be definitely boys)
II. No robot is a girl. → False (As all girls are robots so some robots are girls, hence false)
III. Some robots are girls → True (As all girls are robots so some robots will be definitely girls)
Hence, only conclusions I and III follow.

Q30. Answer: (a) [figure]

The paper when unfolded will appear as shown below:
Hence, 'option 1' is the correct answer.

Q31. Answer: (a) 11 : 142

The logic is:
The logic followed here is:

First number × (First number+ 1) = second number
1) 11 : 142 → 11 × (11 + 1) = 132 ≠ 142
2) 22 : 506 → 22 × (22 + 1) = 506
3) 17 : 306 → 17 × (17 + 1) = 306
4) 14 : 210 → 14 × (14 + 1) = 210
Hence, '11 : 142' is the odd one out.

Q32. Answer: (c) (18, 15, 540)

The logic is:
(13, 17, 442) → (13 × 2) × 17 = 442
Similarly,
1) (11, 19, 628) → (11 × 2) × 19 = 418 ≠ 628
2) (15, 14, 415) → (15 × 2) × 14 = 420 ≠ 415
3) (18, 15, 540) → (18 × 2) × 15 = 540
4) (17, 21, 367) → (17 × 2) × 21 = 714 ≠ 367
Hence, '(18, 15, 540)' is the correct answer.

Q33. Answer: (a) SZUSBN

The pattern followed here is:
According to the alphabetical positions of the letters,
Similarly,
Hence, 'SZUSBN' is the correct answer.

Q34. Answer: (b) ZRU

The pattern followed here is:
According to the alphabetical positions of the letters,
Similarly,
Hence, 'ZRU' is the correct answer.

Q35. Answer: (b) 2, 3, 4, 5,1

The correct order of the given words as they would appear in an English dictionary is:
2. Domestic
3. Dominate
4. Donate
5. Dorsal
1. Dovetail
Hence, '2, 3, 4, 5,1 ' is the correct answer.

Q36. Answer: (d) W

The pattern followed here is:
According to the alphabetical positions of the letters,
Hence, 'W' is the correct answer.

Q37. Answer: (a) Dispur

The logic is:
The capital of Nagaland is Kohima.
Similarly,
The capital of Assam is Dispur.
Hence, 'Dispur' is the correct answer.

Q38. Answer: (c) Cinnamon : Spices

The logic is:
Wheat : Cereal → Wheat is a cereal.
Similarly,

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Cinnamon : Spices → Cinnamon is a spice.

Hence, 'Cinnamon : Spices' is the correct answer.

Q39. Answer: (a) 36

The number of Indian senior lawyers are who are NOT fathers is shown below:

Hence, '36' is the correct answer.

Q40. Answer: (a) (455, 573, 514)

The logic is:

(789, 501, 645) → (789 + 501) ÷ 2 = 1290 ÷ 2 = 645

Similarly,

1) (455, 573, 514) → (455 + 573) ÷ 2 = 1028 ÷ 2 = 514

2) (645, 705, 573) → (645 + 705) ÷ 2 = 1350 ÷ 2 ≠ 573

3) (224, 640, 330) → (224 + 640) ÷ 2 = 864 ÷ 2 ≠ 330

4) (701, 538, 600) → (701 + 538) ÷ 2 = 1239 ÷ 2 ≠ 600

Hence, '(455, 573, 514)' is the correct answer.

Q41. Answer: (a) Spade

All options except 'spade' are name of utensils, which is used in the kitchen but 'spade' is a tool used for digging and cutting earth.

Hence, 'spade' is the odd one out.

Q42. Answer: (c) 140

The logic is:

Hence, '140' is the correct answer.

Q43. Answer: (b) 2 and 3

The faces opposite to each other is shown below:

Number	Opposite
4	1
3	2
6	5

Option 1) 1 and 5 → Are not opposite faces

Option 2) 2 and 3 → Are opposite faces

Option 3) 1 and 6 → Are not opposite faces

Option 4) 6 and 3 → Are not opposite faces

Hence, '2 and 3' is the correct answer.

Q44. Answer: (d) Saturday

29 January 2003 is a Wednesday

Number of odd days between 29^(th) January 2003 to 26^(th) February 2005 = (2 + 0 + 3 + 2 + 3 + 2 + 3 + 3 + 2 + 3 + 2 + 3) + 2 + (3 + 26) = 59

59 ÷ 7, we get 3 as remainder.

3 days after Wednesday is Saturday.

29 January 2003 => Wednesday.

(Number of odd days from 29 January 2003 to 29 January 2004 is 1)

29 January 2004 => Thursday

(Since February 2004 have 29 days, Number of odd days from 29 January 2004 to 29 January 2005 is 2)

29 January 2005 => Saturday

Number of odd days from 29 January 2005 to 26 February 2005 is 28. i.e. 0 odd days.

26 February 2005 => Saturday

Hence, 'Saturday' is the correct answer.

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Q45. Answer: (c) [figure]

The correct mirror image of the given figure is shown below:

Q46. Answer: (a) 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, DE, FG, and HI)

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, '13' is the correct answer.

Q47. Answer: (c) [figure]

The option figure that is embedded in the given figure X when rotation is not allowed is shown below:

Hence, 'option 3' is the correct answer.

Q48. Answer: (b) [figure]

When 1^(st) image in the series is rotated 180

clockwise direction, we get the 3^(rd) image in the series.

Similarly,

When 2^(nd) image in the series is rotated 180

clockwise direction, we get the 4^(th) image in the series.

Hence, 'option 2' is the correct answer.

Q49. Answer: (a) Mother

A is			
•	•	×	÷
Mother	Sister	Son	Father
To B			

K + U - T × R ÷ M → K is mother of U, U is sister of T, T is son of R, R is father of M.

According to given conditions,

K is mother of M.

Hence, 'Mother' is the correct answer.

Q50. Answer: (c) 71

The pattern followed here is:

According to the alphabetical positions of the letters,

When the position value of letters are added together with the number of letters in the word, we get the code for the word.

Similarly,

Hence, '71' is the correct answer.

Q51. Answer: (d) 4 cm

Given:

angle ACB = 135

Radius of the circle = 2√2 cm

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Formula:

The sum of the opposite angle of the cycle quadrilateral is 180.

The angle at the center of a circle is twice the angle at the circumference

Calculation:

angle ACB + angle ADB = 180

=> 135 + angle ADB = 180

=> angle ADB = 180 - 135

=> angle ADB = 45

O is the center of the circle.

angle BOA = 2 angle BDA

=> angle BOA = 2 × 45

=> angle BOA = 90

OA = OB = 2√2 (radius of the circle)

In right angled triangle BOA

$AB^2 = OB^2 + OA^2$

=> $AB^2 = (2\sqrt{2})^2 + (2\sqrt{2})^2$

=> $AB^2 = 8 + 8$

=> $AB = \sqrt{16}$

Therefore AB = 4

Q52. Answer: (c) 30°

Given:

Chord AB subtends double the angle that is subtended by chord CD.

angle AEB = 2 angle AOB,

angle AOB = 2 angle COD

Formula:

Angle made on tangent is perpendicular to radius.

Calculation:

angle OBE = angle OAE = 90°

In AOBE

angle AOB + angle AEB + angle OBE + angle OAE = 360°

=> angle AOB + angle AEB + 90° + 90° = 360°

=> angle AOB + 2 angle AOB = 360° - 180°

=> 3 angle AOB = 180°

=> angle AOB = 180°/3

=> angle AOB = 60°

=> 2 angle COD = 60°

=> angle COD = 60°/2

Therefore angle COD = 30°

Q53. Answer: (c) 11/9

Given:

sec A = √11/3

Formula:

sec A = 1/cos A

cosec A = 1/sin A

tan A = sin A/cos A

cot A = cos A/sin A

Calculation:

$(\text{cosec}^2 A + \tan^2 A)/(\sin^2 A + \cot^2 A)$

=> (1/(sin²A) + (sin^A)/(cos²A))/(sin²A + (cos²A)/(sin²A))

=> [(cos² A + sin^4 A)/(sin² A cos² A)]/[(sin^4 A + cos² A)/(sin² A)]

=> $1/\cos^2 A$

=> $\sec^2 A$

=> $(\sqrt{11}/3)^2$

=> 11/9

Q54. Answer: (a) 36

Given:

$A = ((0.1)^3 + (0.2)^3+(0.3)^3+3(0.005+0.016+0.027)+0.036)/((0.1)^2+(0.2)^2+(0.3)^2+0.04+0.06+0.12)$

Calculation:

=> $A = ((0.1)^3 + (0.2)^3+(0.3)^3+3(0.005+0.016+0.027)+0.036)/((0.1)^2+(0.2)^2+(0.3)^2+0.04+0.06+0.12)$

Multiply by 1000 in numerator and denominator

=> $A = [1 + 8 + 27 + 3 (5 + 16 + 27) + 36]/[10 + 40 + 90 + 40 + 60 + 120]$

=> $A = (36 + 3 \times 48 + 36)/360$

=> $A = (36 + 144 + 36)/360$

=> $A = 216/360$

Now

$60A = (216/360) \times 60$

Therefore 60A = 36

Q55. Answer: (c) 18 : 5

Given:

The ratio of a man's age to his father's age = 4 : 5

The ratio of his age to his son's age = 6 : 1

Four years ago age ratio of man to his father = 11 : 14

Four years ago age ratio of man to his son = 11 : 1

Calculation:

The ratio of a man's age to his father's age = 4 : 5

Four years ago age ratio of man to his father = 11 : 14

According to the question

$(4x - 4)/(5x - 4) = 11/14$

=> $14 (4x - 4) = 11 (5x - 4)$

=> $56x - 56 = 55x - 44$

=> $56x - 55x = 56 - 44$

=> $x = 12$

Present age of man = $4 \times 12 = 48$ years

Present age of father = $5 \times 12 = 60$ years

The ratio of age of man to his son's age = 6y : y

6y = 48

=> y = 8

Present age of son = 8 years

12 years after, age of father will be = 60 + 12 = 72 years

12 years after, age of his son = 8 + 12 = 20 years

Therefore 12 years after age ratio of man' father to that of his son = 72 : 20 = 18 : 5

Q56. Answer: (a) 21 units

Given:

Sides of triangle are 25, 39 and 34 units.

Area of square is more than that of triangle = 21 units

Formula:

Area of triangle = $\sqrt{[s (s – a) (s – b) (s – c)]}$

$s = (a + b + c)/2$

Perimeter of the triangle = a + b + c

Calculation:

a = 25, b = 39 and c = 34
S = (25 + 39 + 34)/2
=> S = 98/2 = 49 unit
Area of triangle =>
=> √[49 (49 – 25) (49 – 39) (49 – 34)
=> √[49 × 24 × 10 × 15]
=> √(7 × 7 × 2 × 2 × 2 × 3 × 2 × 5 × 3 × 5)
=> 7 × 2 × 2 × 3 × 5
=> 420
Area of square = 420 + 21 = 441
Therefore Side of square = √441 = 21 unit

Q57. Answer: (a) 14

Given:
The number 59a44b is divisible by 36.
Formula:
Divisibility law of 9 => A number is divisible by 9 if sum of its digit is divisible by 9.
Divisibility law of 4 => A number divisible by 4 if its last two digit is divisible by 4
Calculation:
The number 59a44b is divisible by 4 if 4b is divisible by 4.
4b is divisible by 4,
if b = 0, 4 or 8
If b = 0, then 59a440
59a440 divisible by 9 if
5 + 9 + a + 4 + 4 + 0
=> 22 + a (if a = 5)
=> 22 + 5
=> 27 (27 divisible by 9)
Again,
If b = 4, then
=> 5 + 9 + a + 4 + 4 + 4
=> 26 + a (if a = 1)
=> 26 + 1
=> 27 (27 divisible by 9)
Again,
If b = 8, then
=> 5 + 9 + a + 4 + 4 + 8
=> 30 + a (if a = 6)
=> 30 + 6
=> 36 (36 divisible by 9)
For maximum value
b = 8 and a = 6
=> a + b
=> 6 + 8
=> 14

Q58. Answer: (b) 30°

Given:
(1 +sinθ-cosθ)/(1 +sinθ +cosθ) + (1 + sinθ +cosθ)/(1 + sinθ-cosθ) = 4
Formula:
sin 30° = 1/2
Calculation:

(1 +sinθ-cosθ)/(1 +sinθ +cosθ) + (1 + sinθ +cosθ)/(1 + sinθ-cosθ) = 4

=> ((1 +sinθ-cosθ)² + (1 + sinθ +cosθ)²)/(1 + sinθ +cosθ)(1 + sinθ-cosθ) = 4

(1 + sin²θ + cos²θ + 2sinθ - 2sin θ.cosθ - 2cos θ + 1 + sin²θ + cos²θ + 2sinθ + 2sinθ.cosθ + 2cosθ)/((1 + sinθ)² - cos²θ) = 4

=> (1 + 1 + 4sinθ + 1 + 1)/(1 + sin²θ + 2 sinθ - cos²θ) = 4

=> (4 + 4 sinθ)/[1 + sin2θ + 2sinθ - (1 - sin2θ)] = 4

=> [4 (1 + sinθ)]/(1 + sin2θ + 2 sin θ - 1 + sin2θ) = 4

=> [4 (1 + sinθ)]/(2 sin²θ + 2sinθ) = 4

=> [4 (1 + sinθ)]/[2sinθ (1 + sinθ)] = 4

=> 2/sin θ = 4

=> sin θ = 2/4

=> sin θ = 1/2

=> sin θ = sin 30°

Therefore θ = 30°

Shortcut TrickBy hit and trial method, we have

Put θ = 30^?

=> (1 + sin30 - cos30)/(1 + sin30 + cos30) + (1 + sin30 + cos30)/(1 + sin30 - cos30)

=> (1 + 1/2 - √3/2)/(1 + 1/2 + √3/2) + (1 + 1/2 + √3/2)/(1 + 1/2 - √3/2)

=> (3 -√3)/(3 + √3) + (3 + √3)/(3 - √3)

=> 4 satisfied

Q59. Answer: (c) 1

Given:

Ratio of volume of the cube to that of sphere = a

Ratio of surface area of the sphere to that of cube = b

Formula:

Volume of cube = a^3

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

Total surface area of cube = $6a^2$

Total surface area of sphere = $4\pi r^2$

Given:

Let side of cube be 3 m, then

Radius of sphere r = 3/2 m

Volume of cube = $3^3 = 27\ m^3$

Total surface area of cube = $6 \times 3^2 = 54\ m^2$

Volume of sphere = $(4/3) \times \pi \times (3/2)^3 = (4/3) \times \pi \times (27/8) = 9\pi/2\ m^3$

Total surface area of sphere = $4\pi \times (3/2)^2 = 4\pi \times (9/4) = 9\pi\ m^2$

According to the question

a = 27/(9π/2)

=> a = 6/π

b = 9π/54

=> b = π/6

ab = (6/π) × (π/6)

=> ab = 1

Q60. Answer: (d) 75 cm²

Given:

angle DAB + angle CBA = 90°, BC = AD, AB = 20 cm, CD = 10 cm

Formula:

Area of trapezium = (1/2) × (sum of parallel sides) × distance between parallel sides

Calculation:

Drag the point D out side such that the picture becomes trapezium.

Now trapezium ABCD

AD = BC

CD = PQ = 10

AP = QB

AP + PQ + QB = AB

=> AP + 10 + AP = 20

=> 2AP = 20 - 10

=> AP = 10/2 = 5 cm

angle DAB + angle CBA = 90° (Given)

Let angle DAB = angle CBA = 45°

Now in right angled triangle APD

angle DAP + angle APD + angle PDA = 180°

=> 45° + 90° + angle PDA = 180°

=> angle PDA = 180° - 135°

=> angle PDA = 45°

If angle PDA = angle DAP = 45, then

AP = PD = 5 cm

Therefore Area of trapezium = (1/2) × 30 × 5 = 75 cm²

Q61. Answer: (b) 26250

Given:

Total number of students (boys and girls in thousands) in Grade 1 to Grade 5 = 20 + 15 + 12 + 22 + 8 + 18 + 14 + 9 + 10 + 12 = 140 thousands or 1,40,000

Percentage of students in school D = 25%

Ratio of boys to girls in school D = 3 : 1

Formula:

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

Calculation:

Number of students in school D = 1,40,000 × (25/100) = 35000

Number of boys in school D = 3,50,00 × (3/4) = 26,250

Shortcut Trick

The number of boys in school D is 3x according to the ratio given.

That means, the number must be a multiple of 3 or we can say the number is divisible by 3.

According to the divisibility rule of 3, we can see that only option 2 is the possible solution.

Check: number = 26250 = 2+ 6+ 2 + 5 + 0 = 15 divisible by 3.

Therefore The number of boys in school D is 26250.

Q62. Answer: (a) 50

Given:

The given numbers are 24, 45, a, 35, 59, 83, 46, b, 29, 74

Average of 10 numbers when each number is added to its serial number = 55

Formula:

Average = Sum of all observations/total number of all observations

Calculation:

New numbers are when each number is added to its serial number

(24 + 1), (45 + 2), (a + 3), (35 + 4), (59 + 5), (83 + 6), (46 + 7), (b + 8), (29 + 9), (74 + 10)

According to the question

(24 + 1) + (45 + 2) + (a + 3) + (35 + 4) + (59 + 5) + (83 + 6) + (46 + 7) + (b + 8) + (29 + 9) + (74 + 10) = 55 × 10

=> 450 + a + b = 550

=> a + b = 550 - 450

=> a + b = 100

Therefore Average of a and b = 100/2 = 50

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Q63. Answer: (a) 152

Given:

a + b = 8 and a + a2 b + b + ab2 = 128

Formula:

a3 + b3 = (a + b) [(a + b)2 - 3ab]

Calculation:

a + a2 b + b + ab2 = 128

=> a + b + a2 b + ab2 = 128

=> 8 + a2 b + ab2 = 128

=> a2 b + ab2 = 128 - 8

=> a2 b + ab2 = 120

=> ab (a + b) = 120

=> ab × 8 = 120

=> ab = 120/8

=> ab = 15

$a^3 + b^3 = (a + b) [(a + b)^2 - 3ab]$

=> $a^3 + b^3 = 8 [8^2 - 3 \times 15]$

=> $a^3 + b^3 = 8 [64 - 45]$

=> $a^3 + b^3 = 8 \times 19$

Therefore $a^3 + b^3 = 152$

Q64. Answer: (b) 384

Given:

Distance between H and O = D km

Average speed = S km/hr

The average speed that gets a person from H to O in a stipulated time is S units. He takes 20 minutes more time than usual if he travels at 60 km/h, and reaches 44 minutes early if he travels at 75 km/h.

Formula:

Speed = Distance/time

Average speed = Total distance/Total time

Calculation:

Let right time for the train to cover its journey (in minutes) be t hrs, then

As we know,

Distance = Speed × Time

According to the question

60 × (t + 20/60) = 75 × (t - 44/60)

=> 4 (t + 1/3) = 5 (t - 11/15)

=> 4t + 4/3 = 5t - 11/3

=> 5t – 4t = 11/3 + 4/3

=> t = 11/3 + 4/3

=> t = 5 hrs

Distance (D) = 60 × (5 + 20/60)

=> D = 60 × (5 + 1/3)

=> D = 60 × (16/3)

=> D = 320 km

Distance between H and O is 320 km.

Average speed (S) = 320/5 = 64 km/hr

Therefore Sum of numerical values of D and S = 320 + 64 = 384

Q65. Answer: (d) 1

Given:

cos A, sin A, cot A are in geometric progression.

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Formula:

If a, b, c are in GP, then

$b^2 = ac$

sec2 A - tan2 A = 1

Calculation:

$\sin^2 A = \cos A \cot A$

$\Rightarrow \sin^2 A = \cos A \times (\cos A/\sin A)$

$\Rightarrow \sin^2 A \times \sin A = \cos^2 A$

$\Rightarrow \sin^3 A = \cos^2 A$

Divide by $\cos^3 A$

$\Rightarrow \sin^3 A/\cos^3 A = \cos^2 A/\cos^3 A$

$\Rightarrow \tan^3 A = 1/\cos A$

$\Rightarrow \tan^3 A = \sec A$

Square on both sides

$\Rightarrow$ tan^6 A = $\sec^2 A$

Now,

tan^6 A - $\tan^2 A$

$\Rightarrow \sec^2 A - \tan^2 A$

$\Rightarrow 1$

Q66. Answer: (c) Curtains

Given:

Sales of Wall stickers in 2018 = 5.01

Sales of Wall stickers in 2019 = 10.19

Sales of Bed sheets in 2018 = 20.15

Sales of Bed sheets in 2019 = 48.17

Sales of Curtains in 2018 = 7.88

Sales of Curtains in 2019 = 12.21

Sales of Wall hangings in 2018 = 14.97

Sales of Wall hangings in 2019 = 29.14

Calculation:

Percentage of sales of Wall stickers increased from 2018 to 2019

$\Rightarrow [(10.19 - 5.01)/5.01] \times 100 = 103.4\%$

Percentage of sales of Bed sheets increased from 2018 to 2019

$\Rightarrow [(48.17 - 20.15)/20.15] \times 100 = 139\%$

Percentage of sales of Curtains increased from 2018 to 2019

$\Rightarrow [(12.21 - 7.88)/7.88] \times 100 = 55\%$

Now we can say sales of Curtains have increased by nearly 55% from 2018 to 2019.

Q67. Answer: (a) Rs. 420 million

Given:

The imports in 2016 = Rs. 250 million

The total exports in the year 2016 and 2017 = Rs. 500 million

Ratio of import to export in 2016 = 1.25

Ratio of import to export in 2017 = 1.4

Formula:

If N is divided into a : b, then

First part = $N \times a/(a + b)$

Second part = $N \times b/(a + b)$

Calculation:

Ratio of import to export in 2016 = 1.25 = 125/100 = 5/4

Ratio of import to export in 2016 = 5x : 4x

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According to the question
5x = 250
=> x = 250/5 = 50
=> 4x = 50 × 4 = 200
Export in 2016 were = Rs. 200 million
Let exports in 2017 be k, then
200 + k = 500
=> k = 500 - 200
=> k = 300 million
Export in 2017 were = Rs. 300 million
Ratio of import to export in 2017 = 1.4 = 14/10 = 7/5
Ratio of import to export in 2017 = 7y : 5y
According to the question
5y = 300
=> y = 300/5
=> y = 60
7y = 60 × 7
=> 7y = 420
Therefore Import in 2017 were = Rs. 420 million

Q68. Answer: (c) 21%

Given:
Each edge of a cube is increased by 10%.
Formula:
If each edge of cube is increased by x%, then
the percentage increase in its surface area = x + x + (x × x)/100
Total surface area of cube = $6a^2$
Calculation:
Let side of cube be 10 m
Total surface area of cube = $6 \times 10^2 = 600$ m^2
New side of cube = 10 × (110/100) = 11 m
New total surface area of cube = $6 \times 11^2 = 726$ m^2
Area increased by = 726 - 600 = 126 m^2
Therefore Area increased by (in %) = (126/600) × 100 = 21%
Shortcut Trick
The percentage increase in its surface area = 10 + 10 + (10 × 10)/100
=> 20 + 1 = 21%

Q69. Answer: (d) 45

Given:
45 - 5 of (6.3 ÷ 9) + 7 × 0.5
Formula:
Follow the BODMAS rule to solve this question, as per the order given below:
Calculation:
45 - 5 of (6.3 ÷ 9) + 7 × 0.5
=> 45 - 5 × 0.7 + 3.5
=> 45 - 3.5 + 3.5
=> 45

Q70. Answer: (b) 26%

Given:
Total number of items = 40
MP of the items is more than that of cost price is = 20%

The person sells 10 items at a discount = 10%
He sells 20 items at a discount = 15%
Formula:
Discount = MP – SP
Discount % = Discount/MP × 100
Calculation:
Let cost price of each items be Rs. 1
Cost price of 40 items = 1 × 40 = Rs. 40
MP of 40 items = 40 × (120/100) = Rs. 48
Selling price of 10 items = 10 × (120/100) × (90/100) = Rs. 10.8
Selling price of 20 items = 20 × (120/100) × (85/100) = Rs. 20.4
MP of the remaining 10 items = 10 × 120/100 = Rs. 12
Net profit = (12 + 20.4 + 10.8) - Rs. 40 = 43.2 - 40 = Rs. 3.2
If he gives discount Rs. 3.2 on Rs. 12 he gets neither profit nor loss.
Required discount = 3.2/12 × 100 = 26.67%
Now we can say after giving 26% discount he still gets some profit.

Q71. Answer: (a) 5

Given:
x^4 + 1/(x^4) = 257/16
Formula:
$(x + 1/x)^2 = x^2 + 1/x^2 + 2$
(x3 + 1/x3) = (x + 1/x)3 – 3 (x + 1/x)
Calculation:
(x2 + 1/x2)2 = x4 + 1/x4 + 2
=> (x2 + 1/x2)2 = (257/16) + 2
=> $(x^2 + 1/x^2)^2 = (257 + 32)/16$
=> (x2 + 1/x2) = √(289/16)
=> (x2 + 1/x2) = 17/4
Again,
$(x + 1/x)2 = x^2 + 1/x^2 + 2$
=> (x + 1/x)2 = (17/4) + 2
=> (x + 1/x)2 = (17 + 8)/4
=> (x + 1/x) = √(25/4)
=> (x + 1/x) = 5/2
$(x^3 + 1/x^3) = (x + 1/x)^3 – 3 (x + 1/x)$
=> $(x3 + 1/x3) = (5/2)^3 – 3 × (5/2)$
=> (x3 + 1/x3) = (125/8) – (15/2)
=> (x3 + 1/x3) = (125 – 60)/8
=> (x3 + 1/x3) = 65/8
=> (8/13) × (x3 + 1/x3) = (65/8) × (8/13)
=> (8/13) × (x3 + 1/x3) = 5
Therefore The required value is 5.
Shortcut TrickIf $x^2 + 1/(x^2) = a$, then x + 1/x = √(a + 2)
So, if $(x^2)^2 + 1/((x^2)^2) = 257/16$, then $x^2 + 1/(x^2) = √(257/16 + 2)$~ = 17/4
Again, $x^2 + 1/(x^2) = 17/4$, then x + 1/x = √(17/4+ 2)~ = 5/2
Now, (x3 + 1/x3) = (x + 1/x)3 – 3(x + 1/x)
=> (5/2)3 – 3 × (5/2) = 65/8
Therefore (8/13) × (x3 + 1/x3) = (65/8) × (8/13) = 5

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Q72. Answer: (a) Rs. 1,130.70

Alternate MethodRate of interest half yearly = 5/2 = 2.5%

Equivalent rate of interest for one year = 2.5 + 2.5 + (2.5 × 2.5)/100

=> 5.0625%

Compound interest = 4000 × 5.0625/100 = Rs. 202.5

Rate of interest quarterly = 40/4 = 10%

Equivalent rate of interest = [(11/10 × 11/10 × 11/10 × 11/10) - 1] = 46.41%

Compound interest = 2000 × 46.41/100 = Rs. 928.2

Total interest = 202.5 + 928.2 = Rs. 1130.70

Traditional method:

Given

Case-1

Principal = Rs. 4000

Rate = 5%

Time = 1 year

Interest compounded half yearly.

Case-2

Principal = Rs. 2000

Rate = 40%

Time = 1 year

Interest compounded quaterly.

Formula:

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

Calculation:

For case-1

r = 5/2% = 2.5%

Time = 2

According to the formula

A = 4000 × (102.5/100) × (102.5/100)

=> A = 4,202.5

CI = 4,202,5 - 4,000 = 202.5

For case-2

r = 40/4 = 10%

Time = 4

According to the formula

A = 2000 × (110/100) × (110/100) × (110/100) × (110/100)

=> A = 2,928.2

CI = 2,928.2 - 2,000 = Rs. 928.2

Total interest = 202.5 + 928.2 = Rs. 1,130.70

Therefore The total interest is Rs. 1,130.70.

Q73. Answer: (c) 20 litres

Given:

The oil merchant wants to make a minimum profit = Rs. 2100

50 litres of oil purchased = Rs. 236 per litre

Cost of duplicate oil = Rs. 180 per liter

Selling price of 1 liter oil = Rs. 250

Calculation:

Let quantity of duplicate oil added be x litres.

According to the question

50 × 236 + x × 180 + 2100 = (50 + x) × 250

=> 11800 + 180x + 2100 = 50 × 250 + 250x

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=> 13900 - 12500 = 250x - 180x

=> 70x = 1400

=> x = 1400/70

=> x = 20

20 liters of duplicated oil mixed in mixture.

Q74. Answer: (a) 97%

Given:

Total number of males in all five places = 35 + 32 + 30 + 45 + 40 = 182

Total number of females in all five places = 28 + 40 + 35 + 42 + 32 = 177

Formula:

x as a percent of y = x/y × 100

Calculation:

Percentage of the total number of females in all five places approximately the total number of males in all five places is = (177/182) × 100 = 97%

Q75. Answer: (a) 118 days

Given:

B takes 45% more number of days to finish the same work independently.

They worked together for 58 days and then the remaining work was done by B alone in 29 days.

Formula:

Total work = Efficiency × Time

Calculation:

Let number of days taken by A to complete the work be 100 days

Number of days taken by B to complete the work = 100 × (145/100) = 145

Time ratio of A to that of B = 100 : 145 = 20 : 29

Efficiency ratio of A to that of B = 29 : 20

Let efficiency of A = 29 unit/day

Efficiency of B = 20 unit/day

Work done by A and B in 58 days = (29 + 20) × 58 = 49 × 58 = 2842 unit

Remaining work which is done by B in 29 days = 20 × 29 = 580 unit

Total work = 2842 + 580 = 3422 unit

Therefore Time taken by A to complete the whole work = 3422/29 = 118

Q76. Answer: (a) Hindustan Petroleum Corporation Limited

The correct answer is Hindustan Petroleum Corporation Limited.

Key Points

• Hindustan Petroleum Corporation Limited was conferred with Maharatna status in October 2019.

• Two separate orders to this effect were issued by the Department of Public Enterprises, under the Ministry of Heavy Industry and Public Enterprises.

• The grant of Maharatna status to the PSUs will impart enhanced powers to their Boards to take financial decisions.

• The Boards of Maharatna central public sector enterprises (CPSEs) can make equity investments to undertake financial joint ventures and wholly-owned subsidiaries and undertake mergers and acquisitions in India and abroad, subject to a ceiling of 15 percent of the net worth of the concerned CPSE, limited to Rs 5,000 crore in one project.

• Boards can also structure and implement schemes relating to personnel and human resource management and training.

• They can also enter into technology joint ventures or other strategic alliances, among others.

• The holding companies of a 'Maharatna' PSU are also empowered to transfer assets, float fresh equity and divest shareholding in subsidiaries, subject to the condition that the delegation will only be in respect of the subsidiaries set up by the holding company.

• HPCL was incorporated in 1974 after the takeover and merger of erstwhile Esso Standard and Lube India through the Esso (Acquisition of Undertaking in India) Act passed by Parliament.

• Power Grid Corporation of India Limited is India's largest electric power transmission utility firm. It is a listed company since 2007.

Additional Information List of Maharatna Companies in India 2022

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• Bharat Heavy Electricals Limited
• Bharat Petroleum Corporation Limited
• Coal India Limited
• GAIL (India) Limited
• Hindustan Petroleum Corporation Limited
• Indian Oil Corporation Limited
• NTPC Limited
• Oil & Natural Gas Corporation Limited
• Power Grid Corporation of India Limited
• Steel Authority of India Limited

Q77. Answer: (d) Rajendra Chola I

The correct answer is Rajendra Chola I.
• Rajendra Chola I was popularly called 'Victor of the Ganges'.
Key Points
• Rajendra I (1014 AD-1044 AD):
• He conquered Orissa, Bengal, Burma and Andaman and Nicobar islands.
• The Chola dynasty was at its zenith during his reign.
• Rajendra I also assumed the title of 'Gangaikonda Cholam' and built a city called Gangaikonda Cholapuram.
• Rajendra I conquered complete Sri Lanka and made Anuradhapura his capital.
• He defeated the Pala king Mahipala and took the title of Gangaikonda Cholam.
• He also built the Cholamandalam Lake and the city of Gangikonda Cholapuram.
• He won the Java, Sumatra and Malaya areas from the Shailendra king.
Additional Information
• The Chola Empire (850 AD-1279 AD):
• Capital: Tanjore, Gangaikonda Cholapuram.
• The founder of the Chola dynasty was Vijayalaya, who was at first a feudatory of the Pallavas.
• He captured Tanjore in 850 AD.
• The ancient capital of Cholas was Palyarai.
• Vijayalaya revived the Chola Empire in the 9th century AD.
• He took the title of 'Narkesari'.

Q78. Answer: (c) 1995

The correct answer is 1995.
• The JavaScript Programming language came into existence in 1995.
Key Points
• JavaScript is a programming language used in web development.
• It was developed by Netscape to add dynamic and interactive elements to websites.
• JavaScript is influenced by Java.
• It is a client-side scripting language.
• A JavaScript code can be inserted anywhere within the HTML of a webpage.
Important Points
• JavaScript is a scripting language that is used to develop websites.
• JavaScript helps to add functionality and behaviors to your website, allowing your website's visitors to interact with content in many imaginative ways.
• In September 1995, a Netscape programmer named Brandan Eich developed a new scripting language in just 10 days.
• It was originally named Mocha, but quickly became known as LiveScript and, later, JavaScript.

Q79. Answer: (b) 1946

The correct answer is 1946.
Key Points
• The Cabinet Mission envisaged the establishment of a Constituent Assembly to frame a Constitution for the country.
• The first Constituent Assembly election held in India in 1946.

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• Members of the Constituent Assembly were elected by the Provincial Legislative Assemblies.

• Dr. Rajendra Prasad was the President of the Constituent Assembly.

• Evolution OF Indian Constitution: The first Constitution of India framed and given to themselves by the people of India was adopted by the Constituent Assembly on 26 November 1949.

• It came into full operation with effect from 26 January 1950.

• The Constitution as originally adopted had 22 parts, 395 articles and 8 schedules.

• It took two years, eleven months and eighteen days for the Constituent Assembly to finalize the Constitution.

Q80. Answer: (b) Rs. 2,000

The correct answer is Rs. 2,000.

• Rs. 2,000 released in November 2016 features Mangalyaan on the reverse side.

Key Points

• To celebrate India's Mars mission, Rs. 2,000 carry an image of the Mangalyaan on the reverse side along with the motif of animals, right under the Mangalyaan.

• The front side of the currency features an image of Mahatma Gandhi.

• The size of the new notes will be 66mm X 166mm and will be available in a magenta base color.

• There will also be a latent image with a denomination numeral that would be visible when the note is held at a 45-degree angle at the eye level.

• The denomination numerals will be written in Devnagari script

• The security thread will feature three words - 'RBI', 'Bharat' and '2000', which will be imprinted on it and can be viewed on tilting the thread changing colour from green to blue.

Additional Information

Notes	Motifs
20 rupees	Ellora caves,
100 rupees	Rani ki vav
10 rupees	Konark Sun Temple
500 rupees	Red Fort
50 rupees	Hampi
200	Sanchi Stupa

Q81. Answer: (c) Myanmar and Bangladesh

The correct answer is Myanmar and Bangladesh.

• India shares its land boundaries with countries Myanmar and Bangladesh.

Key Points

• India shares a 1,643-km-long border with Myanmar which touches the states of Arunachal Pradesh, Nagaland, Manipur and Mizoram.

• India shares a 4,096-km-long border with Bangladesh which touches Assam, Tripura, Mizoram, Meghalaya and West Bengal.

Additional Information

• The border with Bangladesh is guarded by the Border Security Force(BSF).

• The border with Myanmar is guarded by Assam Rifles(AR).

• The Indo-China border is guarded by Indo-Tibetan Border Police (ITBP).

• The Indo-Pakistan is guarded by Border Border Security Force (BSF).

• The Indo-Nepal is guarded by Border Sashastra Seema Bal (SSB).

• The Indo-Bhutan is guarded by Border Sashastra Seema Bal (SSB).

Q82. Answer: (d) Ctrl + F2

The correct answer is Ctrl + F2.

• Ctrl + F2 function key displays the Print Preview window in Microsoft Office.

Key Points

• Print Preview function lets users see the pages that are about to print and allows the users to see exactly how the pages will look

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when they are printed.

• This feature allows you to see exactly how your pages will look when they are printed.

• We can print directly from the Print Preview page by clicking on the print button

or printer icon

.

Additional Information

Shortcut	Function
Ctrl + B	toggle the Bold attribute
Ctrl + I	toggle the Italic attribute
Ctrl + U	toggle the Underline attribute
Ctrl + Q	remove paragraph formatting
Ctrl + C	copy selected text to the clipboard
Ctrl + X	cut selected text to the clipboard
Ctrl + V	to paste text from clipboard
Ctrl + Z	to undo the last action
Ctrl + Y	to redo the last action
Ctrl + Shift + <	to decrease font size one point
Ctrl + Shift + >	to increase font size one point
Ctrl + space	to remove character formatting
Ctrl + End	go to the end of the document

Q83. Answer: (c) 15

The correct answer is 15.

• 15 agro-climatic zones (ACZ) are characterized by the Planning Commission of India.

Key Points

• An Agro-climatic zone is a land unit in form of major climates that are suitable for a certain range of crops and cultivators.

• National Agricultural Research Project (NARP) was launched by ICAR for initiating agricultural research in the agro-climatic zones of the country.

• The purpose was to set up and upgrade a zonal research station in each agro-climatic zone for creating location-specific, need-based research targeted for specific agro-ecological situations.

• In NARP, the country is divided into 127 agro-climatic zones.

• The agro-climatic zone division helps to achieve optimum utilization in a suitable manner within the framework of resource constraints and potentials of each region.

Additional Information

• Planning Commission of India:

• The Planning Commission formulated India's Five-Year Plans.

• It was formed in March 1950.

• It was replaced by NITI Aayog in the year 2015.

• NITI Aayog:

• NITI Aayog or National Institution for Transforming India Aayog is the replacement of Planning Commission of India.

Q84. Answer: (a) APJ Abdul Kalam

The correct answer is APJ Abdul Kalam.

• APJ Abdul Kalam said, “Don't take rest after your first victory because if you fail in second, more lips are waiting to say that your first victory was just luck”.

Key Points

• APJ Abdul Kalam:

• His full name was Avul Pakir Jainulabdeen Abdul Kalam.

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• He served as the 11th President of India from 2002 to 2007.
• He was famously known as the Missile Man of India.
• He was awarded the Bharat Ratna in the year 1997.
• His notable writings were Wings of Fire: An Autobiography, Ignited Minds: Unleashing the Power within India.

Additional Information

• The Human Development Report was started by Pakistani economist Mahbub-ul-Haq and Amartya Sen.
• He was the First Indian Person to Receive Nobel Prize in Economics.
• Identity and Violence–The Illusion of Destiny was written by Prof. Amartya Sen.
• Homi Bhabha was a nuclear scientist and the founding director of the Tata Institute of Fundamental Research.
• Atal Bihari Vajpayee was the Prime Minister of India from 1999 to 2004.

Q85. Answer: (b) Hockey

The correct answer is Hockey.

Key Points

• The Maharaja Ranjit Singh Gold Cup is associated with Hockey.
• The award was instituted in 1978.
• First-person in to win the Maharaja Ranjit Singh Award was Pargat Singh.
• Lady Ratan Tata Trophy, MCC Trophy, Nehru Trophy, Agha Khan Cup, Beighton Cup are all Hockey trophies
• Maharaja Ranjit Singh (1792 AD-1839 AD): Founded Sikh rule in Punjab.
• He occupied Lahore in 1799 AD and made it his capital.

Additional Information

• Prithi Singh Cup, Ezra Cup, Radha Mohan Cup are Polo cups.
• C.K. Naidu Trophy, Deodhar Trophy, Duleep Trophy, Rani Jhansi Trophy, Ranjit Trophy are all Cricket trophies.
• Durand Cup, Nixon Gold Cup, Bandodkar Trophy, Rovers Cup are all Football trophies.

Q86. Answer: (a) Meghalaya

The correct answer is Meghalaya.

• The 8th edition of the India-China joint training exercise 'Hand-in-Hand 2019' held in Meghalaya.

Key Points

• The joint military exercise between India and China was held at Umroi Cantonment, Meghalaya.
• It is an annual military exercise which is held under a United Nations mandate.
• One of the major objectives of the joint military exercise is to promote mutual cooperation in the fight against terrorism.
• The other objective is to develop joint operational capability, share useful skills of counter-terrorism operations and promote friendly relations between India and China.
• The exercise's first edition was started in the year 2007 in Kunming, China.
• Its second edition was held in Belgaum, Karnataka.

Q87. Answer: (b) Kapil Dev

The correct answer is Kapil Dev.

Key Points

• Kapil Dev was honored with the 'Bharat Gaurav Award' by the East Bengal Football Club in 2019.
• India's first World Cup-winning captain Kapil Dev was one of the notable figures from the world of sport who were felicitated by the club on its 99th foundation day.
• East Bengal set off its centenary celebrations in style in a function that brought together stars from different disciplines at the Netaji Indoor Stadium.
• Former Indian football captain Bhaichung Bhutia was another big attraction as the club honored him as the biggest find of the century.
• Shyam Thapa, Surajit Sengupta, Mohammad Habib and Subhash Bhowmick joined on the podium to honour P.K. Banerjee, who was named the coach of the century.
• The next to be honored were the two stalwarts – Manoranjan Bhattacharya and Bhaskar Ganguly – who were given the lifetime achievement award.
• The club also felicitated one of the most celebrated actors of Bengal, Soumitra Chatterjee, who is known as an avid East Bengal fan.

Q88. Answer: (a) 5 years

The correct answer is 5 years.

• 5 years is the mission life of the Cartosat-3 satellite launched by PSLV C-47 on 27 November 2019.

Key Points

• Cartosat-3 satellite is a third-generation advanced satellite having high-resolution imaging capability.

• Its Overall Mass is 1625 kg.

• It flies at a Mean altitude of 509 km.

• Its specifications are:

• Panchromatic-Captures all visible colours of light

• Hyperspectral-Captures light from the electromagnetic spectrum

• Multispectral-Captures light within specific ranges of the electromagnetic spectrum.

• The Indian Space Research Organization launched 13 commercial nanosatellites of the United States along with the imaging and mapping satellite Cartostat-3.

• PSLV-C47 is a Polar Satellite Launch Vehicle into Sun Synchronous Orbit from Satish Dhawan Space Centre at Sriharikota.

• Eight Cartosats have been launched to date.

• The 13 satellites were of the Luxembourg based space company Kleos.

• They are a part of its multi-satellite constellation mission called the Scouting Mission.

Additional Information

• Indian Space Research Organisation (ISRO):

• ISRO was founded on 15 August 1969.

• Its founder was Vikram Sarabhai.

• Its headquarters are at Bengaluru.

• Current Director is Kailasavadivoo Sivan.

Q89. Answer: (b) Assam

The correct answer is Assam.

• ‘Sattriya’ is a traditional Hindu classical dance form of Assam.

Key Points

• Sattriya—Assam:

• The Sattriya dance of Assam is a classical form of dance, which is highly devotional in character with the spiritual aspect being predominant.

• The word ‘Sattriya’ is derived from ‘Sattra’which means ‘monastery’.

• The dance developed and grew within the Satras, it is named after these religious institutions.

• It emerges from a 500–year-old comprehensive theatre tradition nurtured in the Vaishnav Monasteries of Assam.

• There were two dance forms prevalent in Assam before the neo-Vaishnava movement, such as Ojapali and Devadasi with many classical elements.

• As far as Devadasi dance is concerned, the resemblance of a good number of rhythmic syllables and dance postures along with footwork with Sattriya dance is a clear indication of the influence of the former on the latter.

• Sattriya dance tradition is governed by strictly laid-down principles in respect of hasta mudras, footwork, acharyas, music, etc.

Additional Information

• Ghumura, Chau, Goti Pua, Nacni, Odissi are traditional classical dance form of Odisha.

• Thang-Ta, Dhol Cholom are traditional classical dance form of Manipur.

• Dekhnni, Fugdi, Corridinho, Dashavatara are traditional classical dance form of Goa.

Q90. Answer: (b) Waddham, Maharashtra

The correct answer is Waddham, Maharashtra.

• Wadham, Maharashtra is a famous fossil site in India where a full-fledged skeleton of a dinosaur was found.

Key Points

• Waddham is a reserve forest and is a well-known fossils site where a full-fledged skeleton of a dinosaur was found near the Godavari Basin in 1959.

• Paleolithic(stone age) tools were discovered in Wadham, Maharashtra.

• The well preserved Barapasaurus skeleton found at the site is at present kept in the museum of Indian Statistical Institute (ISI) in Kolkata.

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Additional Information

• Manendragarh, Chhattisgarh is well known for a sanctuary of marine fossils.

• The Marine Gondwana Fossil Park is a unique appearance of fossiliferous marine Permian rocks of the Talchir formation recording back to around 280-240 million years ago.

• Zanskar Valley of Kashmir is known for the world's most diverse marine animals.

• The trilobites at the Kurgiakh region of the Zanskar Valley are from the beginning of the Cambrian age and are similar to those found in South China and parts of Pakistan.

• Hathnora of Madhya Pradesh is well known for India's earliest human fossils.

Q91. Answer: (c) Rana Dasgupta

The correct answer is Rana Dasgupta.

• Rana Dasgupta was awarded the 'Rabindranath Tagore Literary Prize 2019'.

Key Points

• It was the second edition of the Rabindranath Tagore Literary Prize.

• The author Rana Dasgupta was awarded for his 2010 novel "Solo", a tale of estrangement and the ultimate failure of material existence.

• The Rabindranath Tagore Literary Prize for social achievement was awarded to Yohei Sasakawa, for "his incredible efforts to uproot leprosy and great contribution to world peace".

• Taiwan President Tsai Ing-wen was awarded as a beacon of democracy".

Additional Information

• Rabindranath Tagore:

• His first poem was published in the 'Amrita Bazar Patrika' and then he wrote 'Banaphul' (story) and 'Bhanusinher Padavali' (series of lyrics).

• He founded Shantiniketan near Bolpore on 2nd December 1901.

• He wrote Gitanjali, which fetched him the Nobel Prize in 1913.

• He inaugurated the Raksha Bandhan festival to oppose the Partition of Bengal (1905).

• He founded the Vishwa Bharati University.

• In 1915, the British Crown granted him a knighthood, which he renounced after the Jallianwala Bagh Massacre.

• His compositions were chosen as National Anthem by two nations.

• India–Jana Gana Mana.

• Bangladesh–Amar Sonar Bangla.

Q92. Answer: (d) Lord William Bentinck

The correct answer is Lord William Bentinck.

• Lord William Bentinck abolished the Sati system in 1829 by declaring it an offence.

Key Points

• Lord William Bentick(1828 AD-1834 AD):

• Regarded as the 'Father of Modern Western Education in India'.

• Abolition of Sati in 1829 AD.

• Suppression of Thugi (1830 AD), curbed by colonel Sleeman.

• Deposition of Raja of Mysore and annexation of his territories (1831 AD).

• He was the First Governor-General of India.

• First Medical College was opened in Calcutta in 1835 AD.

• Treaty of Friendship with Ranjit Singh (1831 AD).

Additional Information

• Lord Dalhousie (1848 AD-1856 AD):

• Abolished Titles and pensions, Widow Remarriage Act (1856 AD).

• Wars: Introduced Doctrine of Lapse; Captured Satara (1848 AD), Jaitpur and Sambalpur (1849 AD), Baghat (1850 AD), Udaipur (1852 AD), Jhansi (1853 AD), and Nagpur (1854 AD); Fought 2nd Anglo-Sikh War (1848 AD-1849 AD) and annexed the whole of Punjab; Annexation of Berar in 1853 Annexation of Awadh in 1856 AD on charges of mal-administration.

• Santhal uprisings (1855 AD-1856 AD).

• Nationalist Educational Institutions were founded.

• Administrative Reforms: Raised Gurkha regiments.

• Educational Reforms:
• Wood's Educational Despatch of 1854 AD.
• An Engineering College was established at Roorkee.
• Public Works: Started the first railway line in 1853 AD; Started electric telegraph service.
• Laid the basis of the modern Postal System (1854 AD); A separate public works department was set up for the first time.
• Lord Cornwallis (1786 AD-1793 AD)
• First-person to codify laws (1793 AD).
• He started the permanent settlement of Bengal.
• He created the post of District Judge. He is called the Father of Civil Services in India.
• Third Anglo-Mysore War and the Treaty of Srirangapatnam.
• He undertook police reforms.
• Lord Wellesley (1798 AD-1803 AD):
• Introduced the system of the Subsidiary alliance. Madras Presidency was formed during his tenure.
• Fourth Anglo-Mysore War in 1799 AD, Tipu Sultan died.
• First subsidiary treaty with Nizam of Hyderabad.
• In 1800 AD, he set up Fort William College in Calcutta. He was famous as Bengal Tiger.
• He brought the censorship of the Press Act, 1799 AD.
• Treaty of Bassein in 1802 AD.

Q93. Answer: (c) Calderas volcanoes

The correct answer is Calderas volcanoes.
• Calderas volcanoes are an example of the most explosive type of volcano.

Key Points
• Caldera Volcanoes:
• Calderas Volcanoes are known as the most explosive volcanoes on Earth.
• When they erupt, they incline to drop on themselves rather than constructing any structure.
• The fallen depressions are known as calderas.

Additional Information
• Volcanoes:
• A volcano is a vent or fissure in Earth's crust through which lava, ash, rocks, and gases erupt.
• The other types of volcanoes are Shield Volcanoes and Composite Volcanoes.
• Shield volcanoes:
• These are the largest of all the volcanoes on the earth.
• These volcanoes are made up of basalt.
• Eg: Hawaiian shield volcanoes.
• Flood Basalt volcanoes:
• These volcanoes discharge highly fluid lava that flows for long distances.
• Most parts of the world are covered by thick basalt lava flows.

Q94. Answer: (d) Four

The correct answer is Four.
• Four parathyroid glands are present on the backside of the thyroid gland in humans.

Key Points
• Parathyroid Gland:
• The glands are small pea-sized glands located in the neck just behind the butterfly-shaped thyroid gland.
• Everyone has four parathyroid glands, with two parathyroid glands lying behind each 'wing' of the thyroid gland.
• Parathyroid hormone: This hormone is secreted when there is a deficiency of calcium in the blood.
• Calcitonin: This hormone is released when there is an excess of calcium in the blood.
• A hormone secreted by the parathyroid gland controls the quantity of calcium in the blood.

Additional Information
• Exocrine glands: Glands which have duct are called exocrine glands. Secretion of enzymes passes through it.

• Example: Lactic gland, Sweat gland.
• Endocrine glands: These are ductless glands. Hormones are secreted by these glands.
• Hormones are sent to the different parts of the body through blood plasma.
• Example: Pituitary gland, Thyroid gland.

Q95. Answer: (a) Karl Landsteiner

The correct answer is Karl Landsteiner.
• In 1930, Karl Landsteiner was awarded the Nobel Prize for describing the human ABO blood group system
Key Points
• Karl Landsteiner discovered human blood groups in the year 1900.
• The discovery laid the foundation for the modern medical practice of blood transfusion.
• Karl Landsteiner himself considered it an accidental discovery.
• On the basis of the presence of Antigen or Glycoprotein, there are four groups of blood in human:
• That contains Antigen A–Blood Group A.
• That contains Antigen B–Blood Group B.
• That contains both the Antigens A and B–Blood Group AB.
• That contains neither of the Antigens– Blood Group O.
• Blood Group O is called the Universal Donor.
• Blood Group AB is called Universal Receptor.
Additional Information
• The Nobel Prize in Medicine 1974 was awarded jointly to Albert Claude, Christian de Duve and George E. Palade "for their discoveries concerning the structural and functional organization of the cell."
• George Wald with Haldan K. Hartline and Ragnar Granit of Sweden received the Nobel Prize for Physiology or Medicine in 1967 for his work on the chemistry of vision.
• Roger Guillemin and Andrew Schally shared the Nobel Prize in Medicine and Physiology in 1977 for their work on neurohormones.

Q96. Answer: (a) Karnataka

The correct answer is Karnataka.
• As per ‘India State of Forest Report 2019’, Karnataka secured the first position for the highest growth in the forest area in the country.
Key Points
• India State of Forest Report 2019:
• The forest area has grown in Karnataka which is around 1025 km^2.
• According to the report, the other states where forest area has grown include Andhra Pradesh (990 km^2) and Kerala (823 km^2).
• A marginal increase in forest cover was reported in Himachal, Uttarakhand, Uttar Pradesh, Delhi, and Bihar.
• The report also highlights that all hill districts of India have 2,84,006 sq. km of forest area which is 40.30% of the total geographical area of all hill districts of the country.
• It also reported that Mangroves have also increased in coastal areas.
Additional Information
• India State of Forest Report 2019 is prepared by the Forest Survey of India (FSI).
• It is a biannual report.

Q97. Answer: (b) Rani Rampal

The correct answer is Rani Rampal.
Key Points
• Rani Rampal is the Indian women's hockey team captain.
• The Asian Games gold medalist shooter Saurabh Chaudhary won the Sportsperson of the Year Award 2019 (Male).
• Rani Rampal was conferred with the ‘Female Sportsperson of the Year’ award at the ‘FICCI India Sports Awards 2019’.
Important Points
• The Best Company Promoting Sports (Public Sector) was given to -
• Central Coalfields Limited
• Railway Sports Promotion Board
• The Best Company Promoting Sports (Private Sector) was given to -

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• Centre for Sports Science.

Additional Information

• Mangte Chungneijang Mary Kom received the Rajiv Gandhi Khel Ratna award in 2009.

• Pusarla Venkata Sindhu received the Rajiv Gandhi Khel Ratna Award in 2016.

• Geeta Phogat won India's first-ever gold medal in wrestling at the Commonwealth Games in 2010.

Q98. Answer: (c) 13

The correct answer is 13.

• 13 elements of India were listed in the UNESCO Representative List of the Intangible Cultural Heritage of Humanity as of March 2018.

Key Points

• National List of Intangible Cultural Heritage (ICH) of India:

• Ministry of Culture launched the National List of Intangible Cultural Heritage (ICH) of India.

• The National ICH List is an effort to recognize the diversity of Indian culture rooted in its intangible heritage.

• The initiative is also a part of the Vision 2024 of the Ministry of Culture.

• UNESCO's List of Intangible Cultural Heritage:

• The list was established in 2008 when the Convention for Safeguarding of the Intangible Cultural Heritage came into effect.

• UNESCO maintains three lists under its "Intangible Cultural Heritage":

• The list of intangible cultural heritage in need of urgent safeguarding.

• The list of the intangible cultural heritage of humanity.

• The register of good safeguarding practices.

Q99. Answer: (b) Mercury

The correct answer is Mercury.

• Cinnabar (HgS) is an ore of Mercury.

Key Points

• Cinnabar is a toxic mercury sulfide mineral of mercury with a chemical composition of HgS.

• The name cinnabar is derived from the Greek name kinnabari.

• Its appearance is bright scarlet to brick-red colour.

• Because of its colour, it was used as jewellery and ornaments for thousands of years in many parts of the world.

Additional Information

• Bauxite is an ore of aluminium.

Q100. Answer: (b) 1978

The correct answer is 1978.

Key Points

• The Backward and Minority Communities Employees Federation (BAMCEF) established in the year 1978.

• 'BAMCEF' is working since 1973 and is known to Mulnivasi Bahujan Samaj as an organization of the educated employees from the Scheduled castes, Scheduled tribes, Other Backward Classes and the Converted Minority communities.

• The term Backward has been mentioned in article 16(4) of the Constitution of India.

• The S.C., ST. and O.B.C. have been jointly referred to as Backwards because all the castes, falling in these categories, are backward.

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