RRB NTPC CBT-I Official Paper (Held On: 1 Feb 2021 Shift 1) (Previous Year Paper)

RRB NTPC • 2021 • 100 questions • 90 minutes • Answer key and solutions

Take this paper as a timed mock test

Practise under exam conditions, then review your answers after you submit.

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Scan the QR code or click the link to open it.

Q1. The ephedra plant is grouped under:

(a) bryophytes
(b) angiosperm
(c) gymnosperm
(d) pteridophytes

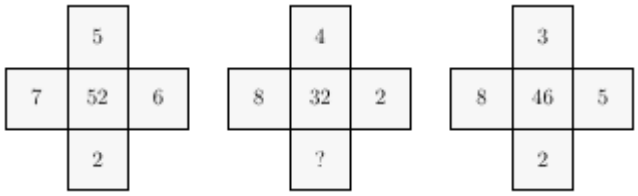
Q2. Which of the following is NOT a UN Agenda for Sustainable Development 2030?

(a) Reduce the total population of the world by 1/3 rd
(b) Achieve food security by 2030
(c) End poverty in all its forms everywhere
(d) Reduce inequality within and among nations

Q3. As of October 2020, how many Public Sector banks are there in India?

(a) 21
(b) 22
(c) 20
(d) 12

Q4. Study the given pattern carefully and select the number that can replace the question mark (?) in it.



(a) 4
(b) 6
(c) 1
(d) 16

Q5. Three of the four given options are alike in some manner. Select the odd one out.

Cotton, Nylon, Silk, Cashmere

(a) Cotton
(b) Silk
(c) Nylon
(d) Cashmere

Q6. Three of the four given options are alike in some manner. Select the odd one out.

Bangkok, Russia, Kuala Lumpur, Paris

(a) Bangkok
(b) Paris
(c) Russia

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(d) Kuala Lumpur

Q7. Penicillium is a/an _____.

(a) bacteria
(b) fungi
(c) algae
(d) virus

Q8. The pre-monsoon showers which are a common phenomenon in Kerala and the coastal areas of Karnataka are locally known as _____.

(a) mango showers
(b) Nor Westers
(c) winter showers
(d) blossom showers

Q9. A deposited Rs. 8,000 in a bank at 8% per annum simple interest. B deposited Rs. 6,000 at 10% compound interest per annum. After 3 years the difference between their interest will be:

(a) Rs. 66
(b) Rs. 78
(c) Rs. 88
(d) Rs. 68

Q10. Find the area of a rhombus whose diagonals are of lengths 10 cm and 8.2 cm.

(a) 39 cm^2
(b) 41 cm^2
(c) 37 cm^2
(d) 35 cm^2

Q11. In which of the following cities is the Charminar situated?

(a) Bangalore
(b) New Delhi
(c) Kanpur
(d) Hyderabad

Q12. Which of the following in polluted air causes Hay fever?

(a) Particulate matter
(b) Pollen
(c) Carbon monoxide
(d) Ozone

Q13. If the numerator of a fraction is increased by 30% and its denominator is decreased by 35%, the value of the fraction becomes 3/15. Find the original fraction.

(a) 1/5
(b) 1/10
(c) 3/10
(d) 3/5

Q14. Anuj is the son of the only daughter of the father of Ajay's brother. How is Ajay related to Anuj?

(a) Mother's brother
(b) Sister's son
(c) Sister's husband
(d) Father's brother

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Q15. The District and Sessions Judge works directly under the control of the:

(a) governor of the state
(b) high court of the state
(c) district collector
(d) law minister of the state

Q16. Income and expenditure of a person are in the ratio of 9 : 5. If the income of the person is Rs. 27,000, then find his savings.

(a) Rs. 10,000
(b) Rs. 9,678
(c) Rs. 13,564
(d) Rs. 12,000

Q17. Who was the runner-up in the men's singles Australian Open final in 2020?

(a) Rafael Nadal
(b) Frances Tiafoe
(c) Dominic Thiem
(d) Novak Djokovic

Q18. If $\sin(A - B) = 1/2$ and $\cos(A + B) = 1/2$ with $0° < (A + B) \leq 90°$, $A > B$, then find the measure of A and B.

(a) 40°, 35°
(b) 35°, 15°
(c) 25°, 20°
(d) 45°, 15°

Q19. Select the letter that can replace the question mark (?) in the following series.

E, J, O, T, ?

(a) A
(b) Z
(c) X
(d) Y

Q20. Which of the following is the birthplace of Lord Mahavira in early 6th century BC?

(a) Patliputra
(b) Sarnath
(c) Vaishali
(d) Magdha

Q21. The full form of LPG is:

(a) Liquefied Petroleum Gas
(b) Liquid Petrol Gas
(c) Liquid Petroleum Gas
(d) Liquided Petrol Gas

Q22. Find the smallest of three positive numbers if the numbers are in ratio of 3 : 7 : 8 and sum of their squares is 7808.

(a) 27
(b) 30
(c) 24
(d) 36

Q23. The length of a rectangle is three-fifths of the radius of a circle. The radius of the circle is equal to twice the side of a square, whose area is 3025 sq. units. The breadth of the rectangle is one-fifth of the side of the square. What is the area (in sq. units) of the rectangle?

(a) 726
(b) 689

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(c) 708
(d) 305

Q24. The cost of a flower vase is Rs. 120. If the shopkeeper sells it at a loss of 5%, what will be the selling price (in Rs.)?
(a) 115
(b) 125
(c) 114
(d) 126

Q25. Find √(1521/1849)
(a) 29/23
(b) 39/43
(c) 32/33
(d) 37/56

Q26. World Red Cross day is celebrated on:
(a) 15^(th) June
(b) 8^(th) May
(c) 8^(th) July
(d) 18^(th) May

Q27. Find the smallest 4-digit number which when divided by 2, 3 and 5 leaves a remainder of 1 in each case?
(a) 1001
(b) 1041
(c) 1021
(d) 1091

Q28. Internet was started in India on:
(a) 11^(th) August, 1995
(b) 8^(th) August, 1994
(c) 15^(th) August, 1995
(d) 9^(th) August, 1996

Q29. Age of A is 3 times that of B and half as that of C. If the sum of their ages is 120 years, what is the age (in years) of A?
(a) 26
(b) 36
(c) 65
(d) 34

Q30. Who inspired the Young Bengal Movement?
(a) Henry Vivian Derozio
(b) Krishna Mohan Banerjee
(c) Ram Gopal Ghosh
(d) Madhusudan Dutt

Q31. The total measure of angles in a triangle is:
(a) 90°
(b) 270°
(c) 180°
(d) 360°

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Q32. The Dilwara temple is situated at _____.

(a) Bhubaneswar
(b) Mount Abu
(c) Aurangabad
(d) Khajuraho

Q33. The first Lokpal Bill was introduced in the Indian Parliament in:

(a) 1968
(b) 1965
(c) 1975
(d) 1972

Q34. Six friends, A, B, C, D, E and F, sitting around a hexagonal table, each at one corner, are facing the centre of the table. A is second to the left of F. B is the neighbour of C and D. E is second to the left of D. Who is the third person sitting to the left of B?

(a) E
(b) A
(c) F
(d) C

Q35. In India, National Income is computed by:

(a) NITI Aayog
(b) Central Statistical Organisation
(c) Ministry of Finance
(d) National Sample Survey Office

Q36. Who is considered to be the Father of Modern Computers?

(a) James Gosling
(b) Alan Turing
(c) Gordon E Moore
(d) Charles Babbage

Q37. In which year did Gandhiji begin a defiant march to the sea to protest against the British monopoly on salt?

(a) 1929
(b) 1927
(c) 1928
(d) 1930

Q38. In a farmer's house, there are Chickens and goats. The total number of their heads is 42 and the total number of their legs is 138. Find the number of Chickens.

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

Q39. In which year was the World Happiness Report published for the first time?

(a) 2015
(b) 2012
(c) 2017
(d) 2010

Q40. The Jallianwala Bagh massacre took place on _____.

(a) 20 December 1919
(b) 25 May 1919
(c) 13 April 1919

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(d) 15 August 1919

Q41. The Poona Pact was signed between:

(a) M K Gandhi and M A Jinnah
(b) M K Gandhi and B R Ambedkar
(c) M K Gandhi and S C Bose
(d) M K Gandhi and Lord Irwin

Q42. The ages of A and B are in the ratio of 5 : 3. After 5 years the ratio of their ages will be 10 : 7. What is the difference between present ages of A and B (in years)?

(a) 3
(b) 4
(c) 6
(d) 5

Q43. ABC is a triangle. BI and CI are angle bisectors of angle ABC and angle ACB. angle BAC = 45°. Find the measure of angle BIC.

(a) 135°
(b) 112.5°
(c) 118.5°
(d) 120°

Q44. Read the given statements and decide which of the conclusions given in the options logically follow from the statements.

Statements:

I. The police has increased vigilance during late night hours.

II. Incidents of petty crimes have reduced in the late night hours.

(a) Statement I is the likely cause and statement II is its likely effect.
(b) Both statements I and II are effects of a common cause.
(c) Both statements I and II are independent causes.
(d) Statement II is the likely cause and statement I is its likely effect.

Q45. What form of art is used to decorate the floor in front of the house?

(a) Worli
(b) Mehndi
(c) Madhubani
(d) Kolam

Q46. 15 men can complete a task in 30 days. In how many days can 20 men complete the task?

(a) 26
(b) 22.5
(c) 24
(d) 28.5

Q47. 'R $ S' means that R is the brother of S.

'R @ S' means R is the wife of S.

'R # S' means R is the daughter of S.

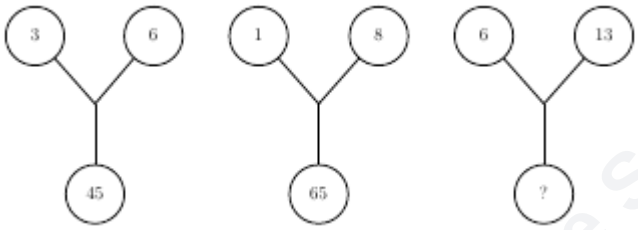
'R > S' means R is the father of S.

Based on the above, which option indicates that D is the father-in-law of A?

(a) A @ E $ B > C # D
(b) A @ B $ C # D > E
(c) A @ B $ E > C # D
(d) A @ B $ C # E > D

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Q48. Study the given pattern carefully and select the number that can replace the question mark (?) in it.



(a) 205
(b) 163
(c) 136
(d) 85

Q49. A light-year is a unit of _____
(a) Distance
(b) Mass
(c) Time
(d) Intensity of light

Q50. The points A (1, 2), B (3, 4) and C (4, 1) are the vertices of a triangle which is:
(a) right-angled
(b) isosceles
(c) scalene
(d) equilateral

Q51. If a positive number is subtracted from its square, we get 812. Find the number.
(a) 23
(b) 27
(c) 25
(d) 29

Q52. If the simple interest for 7 years is equal to 56% of the principal, it will be equal to the principal after:
(a) 12 years 6 months
(b) 7 years 6 months
(c) 9 years 8 months
(d) 10 years 9 months

Q53. Two trains 136 m and 185 m in length respectively are running in opposite directions, one at a speed of 70 km/h and the other at a speed of 65 km/h. In what time will they be completely clear of each other from the moment they meet?
(a) 7.43 s
(b) 9.67 s
(c) 8.56 s
(d) 4.78 s

Q54. The sum of 4 consecutive odd numbers is 160. Find the smallest number.
(a) 37
(b) 35
(c) 25
(d) 27

Q55. The Directive Principles of State Policy are mentioned in which of the following parts of the constitution of India?
(a) Part 3
(b) Part 6
(c) Part 5
(d) Part 4

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Q56. Two numbers are in the ratio of 11 : 19. If each one is subtracted by 7, then the ratio of the new numbers becomes 5 : 9. Find the absolute difference between the actual numbers.

(a) 45
(b) 34
(c) 56
(d) 78

Q57. Read the given statements and decide which of the conclusions given in the options logically follow from the statements.

Statements:

I. Some artists are painters.

II. Some painters are writers.

III. All writers are poets.

(a) All artists are poets.
(b) Some poets are painters.
(c) Some poets are artists.
(d) All writers are artists.

Q58. If untreated, HIV can lead to _____.

(a) AIDS
(b) plague
(c) hepatitis
(d) cancer

Q59. There is a regular hexagon of side 5 cm. Find its area.

(a) $(75\sqrt{3})/2$ cm²
(b) $(50\sqrt{3})/3$ cm²
(c) $36\sqrt{3}$ cm²
(d) $25\sqrt{3}$ cm²

Q60. In India, impeachment process is NOT applicable to _____ for removal from office.

(a) Chief Election Commissioner
(b) The Prime Minister
(c) Chief Justice of India
(d) President of India

Q61. Which city is popularly called the "Detroit of Asia" and the "Automobile Capital" of India?

(a) Coimbatore
(b) Chennai
(c) Jaipur
(d) Hyderabad

Q62. Which of the following is India's largest oil company?

(a) Hindustan Petroleum
(b) Bharat Petroleum
(c) Indian Oil Corporation Limited
(d) Oil and Natural Gas Company

Q63. What is the 50^(th) term of Arithmetic Progression 3, 8, 13, 18, 23, ...?

(a) 248
(b) 150
(c) 267
(d) 345

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Q64. The first nuclear bomb experiment test in India was carried out in the year:

(a) 1976
(b) 1974
(c) 1973
(d) 1999

Q65. A number consists of 3 digits whose sum is 18 and the middle digit is equal to the sum of the other two. If the number increases by 297 when its digits are reversed, then what is the number?

(a) 396
(b) 495
(c) 486
(d) 585

Q66. Diphu pass is situated in:

(a) Kashmir or North western Himalayas
(b) Arunachal Himalayas
(c) Darjeeling and Sikkim Himalayas
(d) Pir Panjal range in Himalayas

Q67. A merchant sold his goods for Rs. 171 at a profit percent equal to cost price. What was the cost price (in Rs.)?

(a) 78
(b) 70
(c) 90
(d) 98

Q68. Which one among the following is the Asia's first stock exchange?

(a) Tokyo Stock Exchange
(b) Shanghai Stock Exchange
(c) National Stock Exchnage
(d) Bombay Stock Exchange

Q69. Which of the following vitamins is rich in yeast?

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

Q70. Select the number that can replace the question mark (?) in the following series.

12, 16, 11, 15, 10, 14, ?

(a) 9
(b) 8
(c) 18
(d) 19

Q71. What is correct about the Khilafat Movement in India?

(a) It was a movement in demand of Pakistan
(b) It was a movement in support of the Turkish Sultan
(c) It was a movement against the massacre of Jallianwala Bagh
(d) It was a movement to restore the Mughal Royal family in India

Q72. Which of the following is a renewable energy resource?

(a) Petroleum
(b) Coal
(c) Natural gas
(d) Syngas

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Q73. Select the option that is related to the third term in the same way as the second term is related to the first term.

Game : Chess : : Device : ?

(a) Engineer
(b) Chair
(c) Cupboard
(d) Computer

Q74. In a certain code language, 'Tuesday is sunny' is written as 'CNG', 'Sunny loves ice-cream' is written as 'PGD', 'Ice-cream melts fast' is written as 'PWL' and 'Jack runs fast' is written as 'LAT'.

Which of the options below would most likely be used to write 'Sunny bowls fast' in that language?

(a) PLD
(b) GLP
(c) GDP
(d) GXL

Q75. A chord of length 24 cm is at a distance of 5 cm from the centre of a circle. The radius of the circle is _____ cm.

(a) 12
(b) 10
(c) 14
(d) 13

Q76. Two-fifth of seven-seventeenth of three-fifth of a number is 84. Find 40% of that number.

(a) 280
(b) 850
(c) 340
(d) 570

Q77. Find the HCF of 2/9, 16/81, 32/117 and 54/189

(a) 4/6459
(b) 8/8483
(c) 4/1899
(d) 2/7371

Q78. Who among the following created history by becoming the first girl student of the Indian Institute of Technology – Madras (IIT-M) to win the President of India Prize 2019?

(a) Payal Jangid
(b) Kalli Purie
(c) Kavitha Gopal
(d) Kavitha Swaminathan

Q79. A car can go 150 km with 20 L of petrol. How far (in km) can it go with 30 L of petrol?

(a) 175
(b) 160
(c) 225
(d) 200

Q80. Which of the following Book authored by Jean Pierre Harrison is based on the biography of Kalpana Chawla?

(a) Sleeping on Jupiter
(b) The Edge of Time
(c) The Luminaries
(d) The Sense of an Ending

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Q81. Who was the first Indian woman president of the Indian National Congress?

(a) Annie Besant
(b) Indira Gandhi
(c) Sarojini Naidu
(d) Vijay Laxmi Pandit

Q82. 18 years is the average age of 36 boys and their professor. The average becomes 17 years if we leave the professor out. What is the age (in years) of the professor?

(a) 34
(b) 44
(c) 64
(d) 54

Q83. Select the number that can replace the question marks (?) in the following series.

730, 1001, 1332, ?

(a) 1663
(b) 1632
(c) 1729
(d) 1792

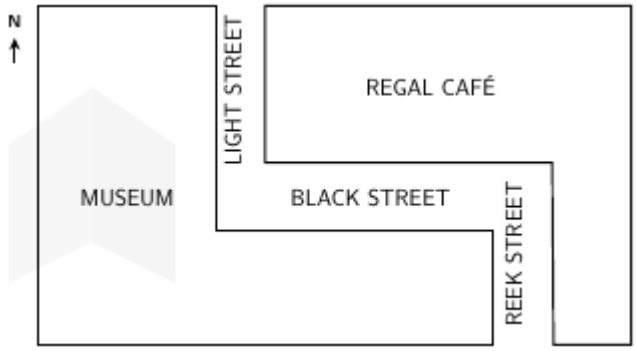
Q84. Who is the first women Indian Police Service officer to reach the South pole?

(a) Kiran Bedi
(b) Aparna Kumar
(c) Raisina Dialogue
(d) Kavita Desai

Q85. Which country in the world has the highest natural gas reserves?

(a) Iraq
(b) Russia
(c) Iran
(d) UAE

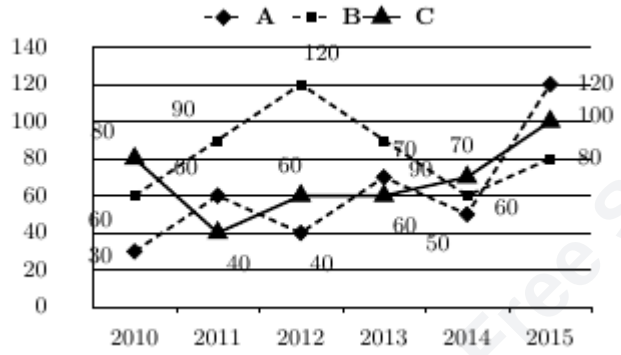
Q86. Jack is walking on Light Street and can see the Regal Café to his left. What direction is Jack facing?



(a) East
(b) South
(c) North
(d) West

Q87. The following graph shows the profit made by three companies, A, B and C, over 6 years. Answer the question given below based on the graph.

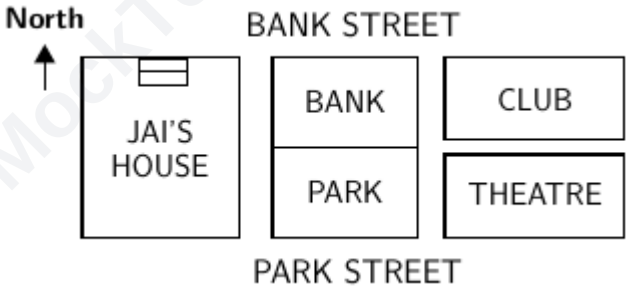
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For which two years was the total profit made by the three companies the same?

(a) 2013 and 2014
(b) 2012 and 2015
(c) 2012 and 2013
(d) 2013 and 2015

Q88. Jai leaves his home and turns towards the east on to Bank Street. He walks two blocks and then turns towards the south. He continues until the end of the road. Jai is closest to which of the following?



(a) Club
(b) Theatre
(c) Park
(d) Bank

Q89. The following table shows the salary, incentive and tax paid by a factory over 5 years. Based on the table answer the question given below.

Year	Salary	Incentive	Tax
2010	188	4	68
2011	232	4.52	75
2012	224	4.84	46
2013	236	5.68	78
2014	320	4.96	84

Find the percentage of the total incentive paid over the 5 years as compared to the total salary paid over the same period.

(a) 0.02%
(b) 0.2%
(c) 2%
(d) 20%

Q90. If the following series is written in the reverse order, then which character will be 6^(th) to the right of the 15^(th) character from the right end?

4 + R P q – T & V % f 3 G A B S

(a) &

(b) V
(c) –
(d) 3

Q91. A statement is given followed by two arguments. Decide which of the arguments is/are strong with respect to the statement.

Statement:

Healthcare services should be nationalised.

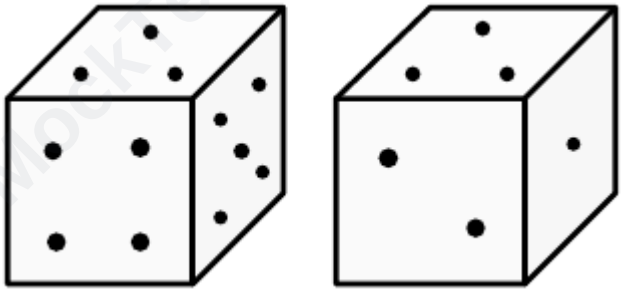
Arguments:

I. Healthcare services are provided nationally in many countries.

II. Nationalisation of healthcare services will reduce the career prospects of doctors.

(a) Either argument I or II is strong.
(b) Argument I is strong.
(c) Neither argument I nor argument II is strong.
(d) Argument II is strong.

Q92. Two different positions of the same dice are shown. Select the number of dots that will be on the face opposite to the one with 2 dots.



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

Q93. How will you write 1.85 hours in hours, minutes and seconds?

(a) 1 hour, 5 minutes, 10 seconds
(b) 2 hour, 15 minutes
(c) 1 hour, 8 minutes, 5 seconds
(d) 1 hour, 51 minutes

Q94. Among the following words, which one will come first if they are arranged as per their order in an English dictionary?

(a) Penguin
(b) Peasant
(c) Peacock
(d) People

Q95. Three of the four publications listed are alike in some manner. Select the odd one out.

(a) The Indian Express
(b) Outlook
(c) Hindustan Times
(d) The Times of India

Q96. Select the option that is related to the third term in the same way as the second term is related to the first term.

VERGT : TCPER :: FMZQO : ?

(a) GNARP
(b) DKXOM

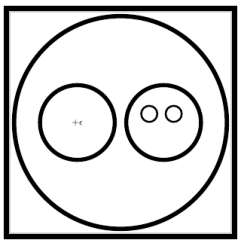
(c) HOBSQ
(d) ELYPN

Q97. How will you write 9.08 hours in hours, minutes and seconds?
(a) 9 hours, 8 minutes
(b) 9 hours, 4 minutes, 48 seconds
(c) 9 hours, 8 seconds
(d) 9 hours, 10 minutes, 8 seconds

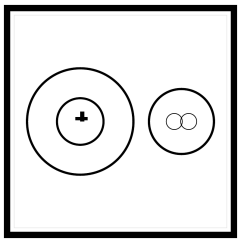
Q98. A beautician's income includes her salary and the tips she gets for her services. During a particular week, if her tips were 5/4 of her salary, then what fraction of her income came from the tips?
(a) 5/9
(b) 9/5
(c) 4/9
(d) 4/5

Q99. Select the option in which the words share the same relationship as that shared by the given pair of words.
Square : Pentagon :: ?
(a) Diagonal : Hypotenuse
(b) Triangle : Rhombus
(c) Side : Angle
(d) Radius : Perimeter

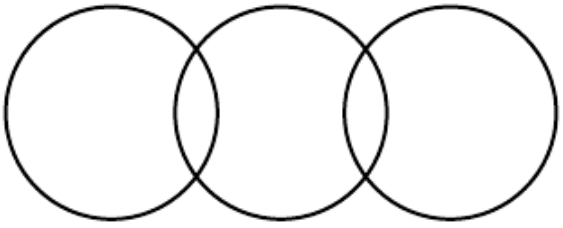
Q100. Select the Venn diagram that best represents the relationship between fruits, pomegranates and grapes.
(a)



(b)

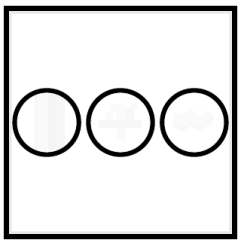


(c)



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(d)



ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) gymnosperm

The correct answer is gymnosperm.

Key Points

• Ephedra, (genus Ephedra), genus of 65 species of gymnosperm shrubs. Ephedra is an evolutionally isolated group and is the only genus in the order Ephedrales, Species are distributed in dry regions in both the Eastern and Western hemispheres.

• Gymnosperms are a group of seed-producing plants that includes conifers, cycads, Ginkgo, and gnetophytes, forming the clade Gymnospermae, the living members of which are also known as Acrogymnospermae.

Additional Information

• Bryophytes are small, non-vascular plants, such as mosses, liverworts and hornworts. They play a vital role in regulating ecosystems because they provide an important buffer system for other plants, which live alongside and benefit from the water and nutrients that bryophytes collect

• Angiosperms are plants that produce flowers and bear their seeds in fruits. They are the largest and most diverse group within the kingdom Plantae, with about 300,000 species. Angiosperms represent approximately 80 percent of all known living green plants

• Pteridophytes are vascular plants that reproduce using spores. They do not produce flowers and seeds and hence are also known as cryptogams

Q2. Answer: (a) Reduce the total population of the world by 1/3 rd

The correct answer is Reduce the total population of the world by 1/3rd

Key Points

• The 2030 Agenda for Sustainable Development was launched by a UN Summit in New York on 25-27 September 2015 and is aimed at ending poverty in all its forms.

• The UN 2030 Agenda envisages “a world of universal respect for human rights and human dignity, the rule of law, justice, equality and non-discrimination”.

• The 2030 Agenda is universal, transformative, and rights-based. It is an ambitious plan of action for countries, the UN system, and all other actors. The Agenda is the most comprehensive blueprint to date for eliminating extreme poverty, reducing inequality, and protecting the planet.

Additional Information

• The Agenda goes beyond rhetoric and lays down a concrete call to action for people, planet, and prosperity.

• It encourages us to take bold and transformative steps which are urgently needed to shift the world onto a sustainable and resilient path.

• At the heart of the 2030 Agenda are five critical dimensions: people, prosperity, planet, partnership and peace, also known as the 5P's.

• Traditionally viewed through the lens of three core elements— social inclusion, economic growth, and environmental protection.

Q3. Answer: (d) 12

The correct answer is 12

Key Points

• There are 12 public sector banks in India. These are Union Bank of India, UCO Bank, State Bank of India, Punjab National Bank, Punjab and Sind Bank, Indian Overseas Bank, Indian Bank, Central Bank of India, Canara Bank, Bank of Maharashtra, Bank of India, and Bank of Baroda.

• Public sector bank is a bank in which the government holds a major portion of the shares.

• Say for example, SBI is public sector bank, the government holding in this bank is 58.60%

Additional Information

• Public Sector Banks are a major type of government owned banks in India, where a majority stake is held by the Ministry of Finance of the Government of India or State Ministry of Finance of various State Governments of India.

• The shares of these banks are listed on stock exchanges

Q4. Answer: (a) 4

Explanation:

The pattern followed in the given series is:

[Middle term - (Left term × Right term)] ÷ Upper term = Lower term

Lets apply the pattern in the given series:

1) [52 - (7 × 6)] ÷ 5 = 2

[52 - 42] ÷ 5 = 2

10 ÷ 5 = 2

2 = 2

3) [46 - (8 × 5)] ÷ 3 = 2

[46 - 40] ÷ 3 = 2

6 ÷ 3 = 2

2 = 2

2) [32 - (8 × 2)] ÷ 4 = ?

[32 - 16] ÷ 4 = ?

16 ÷ 4 = ?

4 = Answer

Hence the correct answer is option 1.

Q5. Answer: (c) Nylon

Explanation:

From the given options:

Cotton, Nylon, Silk, Cashmere

1) Cotton -- Natural Fiber

2) Nylon -- Man-made Fiber

3) Silk -- Natural Fiber

4) Cashmere -- Natural Fiber

Therefore, Nylon is odd one.

Hence correct answer is option 3.

Q6. Answer: (c) Russia

Explanation:

From the given options:

Bangkok, Russia, Kuala Lumpur, Paris

1) Bangkok -- Capital city

2) Russia -- Country

3) Kuala Lumpur -- Capital city

4) Paris -- Capital city

Therefore, Russia is odd one.

Hence, correct answer is option 3.

Q7. Answer: (b) fungi

The correct answer is fungi

Key Points

• Penicillium is a genus of fungi. Some of the species are used to get penicillin, which is an antibiotic used for bacterial infection.

• Some of the species are also used in cheesemaking, enzymes and organic acid production. It is also used for the bioremediation process.

Additional Information

• Bacteria are small single-celled organisms. Bacteria are found almost everywhere on Earth and are vital to the planet's ecosystems. Some species can live under extreme conditions of temperature and pressure.

• Algae are important microbes that can exist in different ecosystems, that is, marine and fresh water, deserts, hot springs, and even in snow and ice. Since ancient times, algae are used for human welfare.

• Viruses are noncellular entities that consist of a nucleic acid core (DNA or RNA) surrounded by a protein coat. Viruses cannot reproduce outside a host cell and cannot metabolize on their own.

Q8. Answer: (a) mango showers

The correct answer is mango showers

Key Points

• Mango showers is the name of the pre-monsoon showers in Karnataka, Kerala, Konkan and Goa that help in the ripening of mangoes.

• They are also known as April rains or summer showers.

• The reason of the Mango Showers is thunderstorms over the Bay of Bengal.

Additional Information

• Violent thunderstorms in the Gangetic plains of India are locally known as Kal Baisakhi or Nor'westers. These localised events are generally associated with thunderstorms accompanied by strong squally winds and torrential rainfall.

• The winter showers occur in the north western part of India due to cyclonic rain due depression over the Mediterranean sea. This depression is known as western depression.

• Blossom Showers means the rainfall received between 1st March to 15th April (Robusta) and 1st March to 30th April (Arabica) for the bud to flower (bud enlargement and anthesis). The normal requirement of rainfall is 25 mm.

Q9. Answer: (a) Rs. 66

GIVEN:

A's principle = 8,000

Rate = 8% at S.I.

B's principle = 6,000

Rate = 10%at C.I.

FORMULA USED:

S.I. = (P × R × T)/100

A = P × (1 +R/100)^t

C.I. = Amount - Principle

Where, A = Amount, S.I. = Simple Interest, C.I.= Compound Interest

P = Principle, R = Rate, t = time in years

CALCULATION:

As, we have, A's Principle = Rs8,000, Rate = 8%, Time = 3 years

=> S.I. = (P × R × T)/100 = (8000 × 8 × 3)/100 = Rs1,920.

Now, we have B's Principle = Rs6,000, Rate = 10%, Time = 3 years

=> A = P × (1 + R/100)^t

=> A = 6000 × (1 +10/100)³ = 6000 × 11/10 × 11/10 × 11/10 = Rs7,986.

Now, the Compound Interest = (Amount - Principle) = (7986 - 6000) = Rs1,986

After 3 years, Difference = (1,986 - 1,920) = Rs66.

Hence, the required difference after 3 years is Rs66.

Q10. Answer: (b) 41 cm²

GIVEN:

Length of the diagonals are 10 cm, and 8.2 cm

FORMULA USED:

Area of a rhombus = 1/2 × Product of its diagonals

CALCULATION:

Here, Length of diagonals are 10 cm and 8.2 cm respectively

=> Area = 1/2 × 10 × 8.2 = 41 cm².

Area of a rhombus are 41 cm².

Q11. Answer: (d) Hyderabad

The correct answer is Hyderabad

Key Points

• The Charminar constructed in 1591, is a monument located in Hyderabad, Telangana, India.

• The landmark has become known globally as a symbol of Hyderabad and is listed among the most recognised structures in India.

• The monument was built in 1591 by Muhammad Qulī Qutb Shah, the fifth king of the Qutb Shāhī dynasty, reportedly as the first building in Hyderabad, his new capital.

Additional Information

• Charminar is famous for its intricate architecture, which makes it one of the most recognized structures of India.

• The surrounding Laad Bazaar and the 400 years old mosque on the top floor of Charminar make it famous amongst locals as well as the tourists.

Q12. Answer: (b) Pollen

The correct answer is Pollen

Key Points

• Hay fever, also called allergic rhinitis, causes cold-like symptoms.

• These may include a runny nose, itchy eyes, congestion, sneezing and sinus pressure. But unlike a cold, hay fever isn't caused by a virus

• Grass pollen, which is common in late spring and summer. Ragweed pollen, which is common in fall. Dust mites and cockroach droppings, which are present year-round. Dander from pets, which can be bothersome year-round but might cause worse symptoms in winter, when houses are closed up

Additional Information

• Particulate matter (PM) is made of solid particles and liquid droplets in the air. PM can come from many places. In general, any type of burning or any dust-generating activities are sources of PM. Here are some examples: Emissions (from vehicles and industrial plant smokestacks).

• Carbon dioxide (chemical formula CO 2) is a chemical compound made up of molecules that each have one carbon atom covalently double bonded to two oxygen atoms, found in the gas state at room temperature.

• Ozone (O3) is a highly reactive gas composed of three oxygen atoms. It is both a natural and a man-made product that occurs in the Earth's upper atmosphere. (the stratosphere) and lower atmosphere (the troposphere).

Q13. Answer: (b) 1/10

GIVEN:

Numerator increased by 30%

Denominator decreased by 35%

Final value becomes = 3/15

CALCULATION:

Let the fraction be x/y, where x = numerator, y = denominator

=> Now, According to the given Question,

x increases by 30% and denominator decreases by 35%

=> (x + x× 30/100)/(y-y× 35/100) = 3 over15

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=> (10x +3xover 10)/(20y-7yover20) = 3over15

=> 13xover10 × 20over 13y = 1over5

=> 2xover y = 1over 5

=> x/y = 1/10

Hence, the original fraction x/y = 1/10.

Q14. Answer: (a) Mother's brother

Explanation:

Preparing the family tree using the following symbols:

Anuj is the son of the only daughter of the father of Ajay's brother.

Only daughter of father of Ajay's brother means = All three of them are siblings.

So we have, Ajay is mother's brother of Anuj.

Hence the correct answer is option 1.

Q15. Answer: (b) high court of the state

The correct answer is high court of the state

Key Points

• Court of Sessions Judge is presided over by a Judge appointed by the government and Courts of Magistrate are presided by a Judicial Magistrate.

• The district Judge exercises the powers of appellate court and hear the appeals against the judgment & decree passed by the Civil Judge.

• The High Courts of India are the highest courts of appellate jurisdiction in each State and Union Territory of India. However, a high court exercises its original civil and criminal jurisdiction only.

Additional Information

• The Ministry of Law and Justice in the Government of India is a cabinet ministry which deals with the management of the legal affairs, legislative activities and administration of justice in India

• Governors, all of whom are popularly elected, serve as the chief executive officers of the fifty states and five commonwealths and territories, governors are responsible for implementing state laws and overseeing the operation of the state executive branch.

• The District Collector is the highest officer of the revenue administer in the District.

Q16. Answer: (d) Rs. 12,000

GIVEN:

Income : expenditure = 9:5

Income of the person = 27,000

FORMULA USED:

Income = Savings + Expenditure

CALCULATION:

Here, we have ratio of Income: Expenditure = 9:5, Income = 27,000

Now, Let the Income and Expenditure be 9x and 5x

According to the given Question, 9x = 27,000

=> x = 3,000

=> Expenditure = 5x = 5 × 3,000 = Rs15,000

Now, Income = Savings + Expenditure

=> 27,000 = Savings + 15,000

=> Savings = Rs12,000.

Hence, his savings are Rs12,000.

Q17. Answer: (c) Dominic Thiem

The correct answer is Dominic Thiem

Key Points

• The 2020 Australian Open was a Grand Slam tennis tournament that took place at Melbourne Park, from 20 January to 2 February 2020.

• It was the 108th edition of the Australian Open, the 52nd in the Open Era, and the first Grand Slam of the year

• Defending champion Novak Djokovic defeated Dominic Thiem in the final, 6–4, 4–6, 2–6, 6–3, 6–4 to win the men's singles title

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at the 2020 Australian Open. It was his record-extending eighth Australian Open title and 17th major singles title overall. With the win, Djokovic won.

Additional Information

• Frances Tiafoe Jr. is an American professional tennis player. He has been ranked by the Association of Tennis Professionals as high as No. 24 in men's singles achieved on 8 August 2022 and No. 160 in doubles achieved on 1 November 2021

• Rafael Nadal Parera is a Spanish professional tennis player. He is currently ranked world No. 3 in singles by the Association of Tennis Professional.

• Novak Djokovic is a Serbian professional tennis player. He is currently ranked world No. 6 in singles by the Association of Tennis Professionals. He has been ranked world No. 1 for a record total 373 weeks, and has finished as the year-end No. 1 a record seven times

Q18. Answer: (d) 45°, 15°

GIVEN;

sin(A - B) = 1over 2

Cos (A + B) = 1over 2

FORMULA USED:

sin 30° = 1over2

Cos 60° = 1over2

CALCULATION:

Here, we have, sin (A - B) = 1over2 and Cos (A +B) = 1over2

=> As, we know that sin 30° = 1over2 and Cos 60° = 1over2

=> Hence, A - B = 30° .....(1)

A + B = 60° .....(2)

Now, add these equations (1) and (2)

=> 2 A = 90°

=> A = 45°

Now, put the value of A in equation (1), we get

=> A - B = 30° <=>(45° - B)= 30°

=> B = (45° - 30°) = 15°

Hence, the value of A and B are 45° and 15° respectively.

Q19. Answer: (d) Y

Explanation:

According to the English alphabets and their positional values:

The pattern followed in the given series is:

The alphabets are increased to 5 positional values.

Hence, the correct answer is option 4.

Q20. Answer: (c) Vaishali

The correct answer is Vaishali

Key Points

• Mahavira also known as Vardhamana, was the 24th Tirthankara of Jainism. He was the spiritual successor of the 23rd Tirthankara Parshvanatha. Mahavira was born in the early part of the 6th century BCE into a royal Kshatriya Jain family in ancient India.

• Mahavira practiced intense meditation and severe austerities for twelve and a half years, after which he attained Kevala Jnana (omniscience).

Additional Information

• Mahavira belonged to the Ikshvaku dynasty.

• Lord Mahavir was named Vardhamana, which means “one who grows

• Mahavira taught ahimsa (non-violence), Satya (truth), asteya (non-stealing), brahmacharya (chastity) and aparigraha (non-attachment) to his disciples and his teachings were called Jain Agama

• It is believed that the Mahavira passed away and attained moksha (liberation from the cycle of birth and death) at the age of 72 in 468 BC at a place called Pavapuri near modern Rajgir in Bihar.

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Q21. Answer: (a) Liquefied Petroleum Gas

The correct answer is Liquefied Petroleum Gas.

Key Points

• Liquefied Petroleum Gas (LPG) is a mixture of hydrocarbon gases, primarily propane and butane, used as fuel in heating appliances, cooking equipment, and vehicles.

• It is called 'liquefied' because the gas is turned into liquid at normal temperature by application of pressure to facilitate storage, transport, and handling.

• LPG is colorless, odorless, and heavier than air. An identifying odor is added to it so that leaks can be detected easily.

• LPG is a clean-burning fuel that produces less soot and lower emissions than coal or oil.

• It is stored in cylinders under pressure and is a common alternative to electric, heating oil, or natural heating systems.

Additional Information

Key Term	Description
Propane	A major component of LPG, propane is used on its own for BBQ grills, portable stoves, and residential heating.
Butane	Another component of LPG, butane is used as a fuel for cooking and as a propellant in aerosols.
Applications	LPG is widely used in industrial, commercial, agricultural, horticultural, and manufacturing applications as an efficient fuel.
Energy Content	LPG has a high calorific value, providing a high amount of energy per unit weight, making it an efficient fuel choice.

Q22. Answer: (c) 24

GIVEN:

Numbers are in the ratio 3:7:8

Sum of their squares = 7808

CALCULATION:

Here, we have numbers are in the ratio 3 : 7 :8

=> Let the numbers be 3x, 7x and 8x respectively

=> Now, According to the given Question sum of their squares = 7808

=> $(3x)^2 + (7x)^2 + (8x)^2 = 7808$

=> $9x^2 + 49x^2 + 64x^2 = 7808$

=> $122\ x^2 = 7808$

=> $x^2 = 7808/ 122 = 64$

=> $x = 8$

Since, the smallest positive integer is 3x

=> $3x = 3 \times 8 = 24$.

Hence, the smallest positive integer is 24.

Q23. Answer: (a) 726

GIVEN;

Length of a rectangle = 3/5 of the radius of a circle

Radius of a circle = 2 side of a square

Area of a square = 3025 sq. units

Breadth of a rectangle = 1/5 of the side of the square

FORMULA USED:

Area of a rectangle = Length × Breadth

Area of a square = $(side)^2$

CALCULATION:

Let us assume side of a square be a

Now, Radius = 2a

=> Area of a square = 3025

=> $(a)^2 = 3025$

=> a = 55

Now, Radius = 2a = 2 × 55 = 110

Now, Length of a rectangle = 3/5 of the radius of a circle = 3/5 × 110 = 66

Breadth of a rectangle = 1/5 × a = 1/5 × 55 = 11

=> Area of a rectangle = Length × Breadth = 66 × 11 = 726 sq. units

Hence, Area of a rectangle is 726 sq. units.

Q24. Answer: (c) 114

GIVEN:

Cost price of a flower = Rs120

Loss% = 5%

FORMULA USED:

Loss = C.P. - S.P.

Loss% = (Loss/ C.P.) × 100

Where, C.P. = Cost price, S.P. = Selling price

CALCULATION:

Here, we have C.P. = Rs120 and S.P. be x

=> Loss = (C.P. - S.P.) = (120 - x)

Now, Loss% = 5

=> Loss% = (Loss/C.P.) × 100

=> 5 = (120 -x) over 120 × 100

=> 600 = (120 -x) × 100

=> 6 =(120 - x)

=>x = Rs114.

Hence, the Selling Price is Rs114.

Q25. Answer: (b) 39/43

GIVEN:

√1521over √1849

CALCULATION:

Here, we have √1521over √1849

=> √1521over √1849 = 39/ 43

Hence, the required value is 39/43.

Q26. Answer: (b) 8^(th) May

The correct answer is 8th May

Key Points

• World Red Cross and Red Crescent Day is an annual celebration of the principles of the International Red Cross and Red Crescent Movement. World Red Cross Red Crescent Day is celebrated on 8 May each year.

• This date is the anniversary of the birth of Jean-Henry Dunant, who was born on 8 May 1828

• Every year, on May 8, the commemoration of the International Red Cross and Red Crescent Movement as a humanitarian network of 14 million volunteers around the world is celebrated.

Additional Information

• This date marks the birthday anniversary of Henry Dunant, the founder of the Movement

• Every year, the day is celebrated under a particular theme, and the theme for 2022 is 'Be Human Kind'. With this year's theme, the International Federation of Red Cross and Red Crescent Societies (IFRC) is putting kindness in the picture and is encouraging all to be kind to each other.

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Q27. Answer: (c) 1021

GIVEN:

Smallest 4 - digit number leaves 1 remainder when divided by 2,3 and 5

CONCEPT USED;

Lowest Common Multiple (L.C.M)

The smallest four digit number is 1000

CALCULATION:

L.C.M of 2,3 and 5

=> Prime factorization

2 = 2 × 1

3 = 3 × 1

5 = 5 × 1

=> L.C.M = 2 × 3 × 5 ×1 = 30

When we divide 1000 by 30, we get 10 as the remainder

The smallest four - digit number which is divisible by 2,3 and 5 = 1000 - 10 + 30 = 1020

The smallest four - digit number which when divided by 2,3 and 5 leaves remainder 1 in each case = (1020 +1) = 1021.

Hence, the smallest four- digit number is 1021.

Q28. Answer: (c) 15^(th) August, 1995

Correct answer is the 15th August, 1995.

Key Points

• Internet in India began in 1986 and was available only to the educational and research community. General public access to the internet began on 15 August 1995, and as of 2020 there are 718.74 million active internet users that comprise 54.29% of the population.

• The introduction of internet in India began with launch of ERNET (Education Research Network) in 1986.

• Although this was limited to only educational and research institutes. The program was initiated by DoE (Department of Electronics) and funded by Goverment of India & UNDP (United Nations Development Program) The participating institutes were NCST Bombay, IISc, IITs and DoE New Delhi.

Additional Information

• In 1988 the NICnet was established for communication between Government institutions and was operated by National Informatics Center (NIC).

• The first publiclly available internet was launched by stateowned Videsh Sanchar Nigam Limited (VSNL) on 14th August 1995.

• The service was known as GIAS (Gateway Internet Access Service) which provided a speed of 9. 6kbits/s and was priced at $160 for 250 Hours usage (for individuals) and $500 for dial-upo connections for institutions. The service was immediately available to metro cities.

Q29. Answer: (b) 36

GIVEN:

Age of A = 3 B

Age of A = Age of C/2

Sum of their ages = 120 years

CALCULATION:

Here, we have A's age = 3B's age, A's age = C's age/2

Now, According to the given Question,

Sum of their ages = 120 years

=> A's age + B's age + C's age = 120

=> A's age + A's age/3 + 2 A's age = 120 (As, B's age = A's age/3)

=> 10A's age /3 = 120

=> 10 A's age = 360

=> A's age = 36 years.

Hence, age of A is 36 years.

Q30. Answer: (a) Henry Vivian Derozio

The correct answer is Henry Vivian Derozio

Key Points

• Henry Louis Vivian Derozio was an Indian poet and assistant headmaster of Hindu College, Kolkata.

• He was a radical thinker of his time and one of the first Indian educators to disseminate Western learning and science among the young men of Bengal.Henry Louis Vivian Derozio was famous for his radical movement, the Young Bengal and for setting a new

precedent for patriotic poetry in India

Additional Information

• Krishna Mohan Banerjee was a 19th-century Indian thinker who attempted to rethink Hindu philosophy, religion and ethics in response to the stimulus of Christian ideas. He himself became a Christian, and was the first president of the Bengal Christian Association.

• Ramgopal Ghosh was a leader of the Young Bengal Group, a successful businessman, orator and social reformer. He is called the 'Demosthenes of India'. Ghosh was one of the personalities who helped John Elliot Drinkwater Bethune establish a girls' school in Calcutta.

• Dutt is widely said to be one of the greatest poets in Bengali literature. He is the father of the Bengali sonnet.

Q31. Answer: (c) 180°

GIVEN:

The total measure of a triangle

CALCULATION:

A triangle is a closed plane figure having three sides and three angles. The sum of the interior angles is always 180°

Types of triangles:

=> Equilateral triangle → It is a triangle having all three sides equal. Also, all the three angles are equal to 60°

=> Isosceles triangle → It has two of its sides equal. The angles opposite to the two equal sides are also equal.

=> Scalene triangle → It has all the three sides unequal in lengths. All the three angles are also unequal.

=> Obtuse- angled triangle → It has one of the angles as more than 90°

=> Right- angled triangle → It is the one in which one of the angles is equal to 90° .The side opposite to right angle is called hypotenuse.

Hence, the total measure of the angles in a triangle is 180°.

Q32. Answer: (b) Mount Abu

The correct answer is Mount Abu

Key Points

• The Dilwara Temples or Delvada Temples are a group of svetambara Jain temples located about 2+1⁄2 kilometres from the Mount Abu settlement in Sirohi District, Rajasthan's only hill station.

• The earliest were built by Bhima-1 and supposedly designed or at least financed by Vastupala, Jain minister of DholkaKnown for their architectural splendour and exquisite stone carvings, the Dilwara temples in Rajasthan are dedicated to Jain Tirthankars.

• Located about 2.5 km from Mount Abu, the temples were built in 11th and 13th centuries AD.

Additional Information

• The temples were built between the 11th and 13th A.D. by the Chalukya Dynasty.

• These temples are in the style of 'Maru-Gurjara' architecture, famous for their use of very pure white marble and intricate marble carvings

Q33. Answer: (a) 1968

The correct answer is 1968

Key Points

• The Lokpal bill was first introduced in the Lok Sabha in 1968. The version enacted in 2013 was from a draft prepared in 2010

• The bill is an implementation of the Prevention of Corruption Act, 1988.

• The first Jan Lokpal Bill was proposed by Adv Shanti Bhushan in 1968 and passed in the 4th Lok Sabha in 1969, but did not pass through the Rajya Sabhnto force on 16th January, 2014 and has been amended once in 2016 since its notification.

Additional Information

• Vide notification dated 26th May 2022, Shri Justice Pradip Kumar Mohanty, Member (Judicial) has been authorised to act as the Chairperson, Lokpal with effect from 28th May,2022.

• The Lokpal Bill, also referred to as the Citizen's Ombudsman Bill, was a bill drawn up by civil society activists in India seeking the appointment of a Jan Lokpal, an independent body to investigate corruption cases and complete the investigation within a year for envisaging trial in the case getting completed

Q34. Answer: (a) E

Explanation:

From the given information:

Step 1: A is second to the left of F.

Step 2: B is the neighbour of C and D.

B sits between C and D because this is the only way B can be neighbor to both.

Now we can place C and D anywhere but due to next condition we have to place D such that second left is available.

Step 3: E is second to the left of D.

So, third left of B is E.

Hence the correct answer is option 1.

Q35. Answer: (b) Central Statistical Organisation

The correct answer is Central Statistical Organisation

Key Points

• The Central Statistics Office is a governmental agency in India under the Ministry of Statistics and Programme Implementation.

• Responsible for co-ordination of statistical activities in India, and evolving and maintaining statistical standards. It has a Graphical Unit.

• The CSO is located in Delhi.

• Main functions of C.S.O is to provide advisory services to other statistical agencies, keeping liaison (public relation) with international statistical bodies, preparing and publishing national accounts statistics, industrial statistics, conducting economic census and training statistical personal in official

Additional Information

• The NITI Aayog serves as the apex public policy think tank of the Government of India, the nodal agency tasked with economic development, and fostering cooperative federalism through the involvement of State Governments of India in the economic policy-making.

• The Ministry of Finance is a ministry within the Government of India concerned with the economy of India, serving as the Treasury of India. In particular, it concerns itself with taxation, financial legislation, financial institutions, capital markets, centre and state finances.

• The National Sample Survey(NSS) headed by a Director General is responsible for conduct of large scale sample surveys in diverse fields on All India basis. Primarily data are collected through nation-wide household surveys on various socio-economic subjects.

Q36. Answer: (b) Alan Turing

The correct answer is Alan Turing

Key Points

• Often considered the father of modern computer science, Alan Turing was famous for his work developing the first modern computers, decoding the encryption of German Enigma machines during the second world war,

• An English mathematician, logician and cryptographer, Alan Turing was responsible for breaking the Nazi Enigma code during World War II.

Additional Information

• He is known as the father of the Java programming language. He got the idea for the Java VM while writing a program to port software from a PERQ by translating Perq Q-Code to VAX assembler and emulating the hardware. He is generally credited with having invented the Java programming language in 1994.

• Moore. In 1965 Gordon Moore predicted that the number of transistors that would fit on a computer chip would double every year—the famed Moore's law. Three years later he cofounded Intel Corporation, now the largest manufacturer of silicon microchips in the world.

• Charles Babbage was an English polymath. A mathematician, philosopher, inventor and mechanical engineer, Babbage originated the concept of a digital programmable computer. Babbage is considered by some to be "father of the computer".

Q37. Answer: (d) 1930

The correct answer is 1930

Key Points

• The Salt March, which took place from March to April 1930 in India, was an act of civil disobedience led by Mohandas Gandhi to protest British rule in India.

• During the march, thousands of Indians followed Gandhi from his religious retreat near Ahmedabad to the Arabian Sea coast, a distance of some 240 miles.

• In early 1930 Gandhi decided to mount a highly visible demonstration against the increasingly repressive salt tax by marching through what is now the western Indian state of Gujarat from his ashram (religious retreat) at Sabermati (near Ahmadabad) to the town of Dandi (near Surat) on the Arabian Sea coast.

Additional Information

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• The Salt March, also known as the Salt Satyagraha,

• Dandi March and the Dandi Satyagraha, was an act of nonviolent civil disobedience in colonial India led by Mahatma Gandhi

Q38. Answer: (a) 15

GIVEN:

Total number of heads of chickens and goats = 42

Total number of legs of chickens and legs = 138

CONCEPT USED:

As per fact, Chickens and goats have one head and 2 legs and 4 legs respectively

CALCULATION:

Let the numbers of chickens and goats be x and y respectively

Now, According to the given Question, Total number of heads = 42

=> x + y = 42 ..... (1)

Also, total number of their legs = 138

=> 2x + 4y = 138 ..... (2)

Now, multiply by 2 in equation (1) we get

=> 2x + 2y = 84 .....(3)

=>Now, subtract equation(3) from equation (2) ,we get

=> 2y = 54

=> y = 27

Now, x + y = 42 <=> x + 27 = 42

=> x = (42 - 27) = 15

Hence, the number of chickens were 15.

Q39. Answer: (b) 2012

The correct answer is 2012

Key Points

• The first World Happiness Report was published in April, 2012, in support of the UN High Level Meeting on happiness and well-being.

• Since then the world has come a long way. Increasingly, happiness is considered to be the proper measure of social progress and the goal of public policy.

Additional Information

• The World Happiness Report is a publication that contains articles and rankings of national happiness, based on respondent ratings of their own lives, which the report also correlates with various (quality of) life factors.

• World's happiest countries in 2022 revealed by leading annual report. Finland Is The Happiest Country in The World 2022

Q40. Answer: (c) 13 April 1919

The correct answer is 13 April 1919

Key Points

• The Jallianwala Bagh massacre, also known as the Amritsar massacre, took place on 13 April 1919

• A large peaceful crowd had gathered at the Jallianwala Bagh in Amritsar, Punjab, to protest against the Rowlatt Act and arrest of pro-independence activists Saifuddin Kitchlew and Satyapal

• The Jallianwala Bagh massacre took place 103 years ago today (April 13, 1919).

Additional Information

• Protests took place throughout the country in opposition to the British government.

• Two days after the massacre, martial law was imposed on Lahore, Amritsar, Gujranwala, Gujarat and Lyallpore

• According to British government records, 379 people including men, women, and children were killed while 1,200 were injured in the indiscriminate firing ordered by Colonel Reginald.

Q41. Answer: (b) M K Gandhi and B R Ambedkar

The correct answer is M K Gandhi and B R Ambedkar

Key Points

• The Poona Pact was an agreement between Mahatma Gandhi and Dr. B. R. Ambedkar on behalf of Dalits, depressed classes, and upper caste Hindu leaders on the reservation of electoral seats for the depressed classes in the legislature of British India.

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• Poona Pact, (September 24, 1932), agreement between Hindu leaders in India granting new rights to Dalits (low-caste Hindu groups then often labeled “untouchables”).

Additional Information

• For Gandhi, no good thing could grew out of bad and truth is indivisible” or “Gandhi excelled as an active protestor, Jinnah was the most skilful of passive opponents” and again, “Gandhi was a leader by example, Jinnah, was leader by inspiration

• Subhas Chandra Bose (also called Netaji) is known for his role in India's independence movement. A participant of the noncooperation movement and a leader of the Indian National Congress, he was part of the more militant wing and known for his advocacy of socialist policies.

• Edward Frederick Lindley Wood, more commonly known as Lord Irwin, was a senior British Conservative politician of the 1930s and the Viceroy of British India from 3 April 1926 to 18 April 1931

Q42. Answer: (c) 6

GIVEN;

The ratio of ages of A : B = 5 :3

After 5 years ratio of their ages = 10:7

CALCULATION:

Let the ages of A and B be 5x and 3x

Now, According to the given Question, we have

After 5 years the ratio of ages will become = 10 : 7

=> (5x + 5)/(3x + 5) = 10/7

=> 7(5x + 5) = 10(3x + 5)

=> 35x + 35 = 30x + 50

=> 5x = 15

=> x = 3

Now, the ages of A and B respectively are 5x = 5 × 3 = 15 and 3x = 3 × 3 = 9

Now, difference of ages = (15 - 9) = 6 years

Hence, the difference of ages of A and B is 6 years.

Q43. Answer: (b) 112.5°

Given:

Concept used:

The sum of all interior angles of the triangle = 180°

Bisector means to divide the angle online into two equal parts.

Calculation:

angle BAC = 45° [given]

angle (B + C)= 180° - 45° = 135°

Now,

As we know, BI and CI bisects angle B & C,

angle IBC + angle ICB = 135°/2 = 67.5°

Now, angle BIC = 180° - 67.5° = 112.5°

Q44. Answer: (a) Statement I is the likely cause and statement II is its likely effect.

Explanation:

From the statements given:

I. The police has increased vigilance during late night hours.

II. Incidents of petty crimes have reduced in the late night hours.

Statement I is an action which was taken in order to reach to an effect and statement II is the effect that was caused by the action taken such that when police increased vigilance during late night hours the effect of that was incidents of petty crimes have reduced in the late night hours.

So statement I is the likely cause and statement II is its likely effect.

Hence the correct answer is option 1.

Q45. Answer: (d) Kolam

The correct answer is Kolam

Key Points

• Kolam, also known as Muggu or Tharai Aalangaram Rangoli is a form of traditional decorative art that is drawn by using rice flour as per age-old conventions.

• It is also drawn using white stone powder, chalk or chalk powder, often along with natural or synthetic color powdersKolam, which means “beauty”,[1] is a floor drawing made from coloured flour, and is used for ornamental or ceremonial design during traditional Indian festivities.

• In Gujarat and Maharashtra in Northern India, it is known as rangoli. History and purpose.

Additional Information

• Warli paintings were mainly done by the women folk. The most important aspect of the painting is that it does not depicts mythological characters or images of deities, but depict social life.

• Mithila painting (or Madhubani art) is a style of painting practiced in the Mithila region of India and Nepal. It was named after the Madhubani District of Bihar, India, which is where it originated.

• Mehndi, the art of henna painting on the body, Dried henna plant leaves are made into a paste that produces a temporary dye that lasts up to three weeks. This dye is used to make designs to decorate the skin – usually on hands and feet.

Q46. Answer: (b) 22.5

GIVEN:

15men completes a task = 30 days

FORMULA USED:

M1 × D1 = M2 × D2

Where M1 and M2 are numbers of man respectively

D1 and D2 are no. of days respectively

CALCULATION:

Here, we have M1 = 15, D1 = 30, M2 = 20, D2 = ?

=> M1× D1 = M2 × D2

=> 15 × 30 = 20 × D2

=> 450/20 = D2

=> D2 = 22.5 days.

Hence, 20 men completes the task in 22.5 days.

Q47. Answer: (b) A @ B $ C # D > E

Explanation:

From the given information:

'R $ S' means that R is the brother of S.

'R @ S' means R is the wife of S.

'R # S' means R is the daughter of S.

'R > S' means R is the father of S.

Now we substitute the values and solve the equation in the options:

Option 1) A @ E $ B > C # D

From the relations given, the equation becomes:

A is the wife of E, E is the brother of B, B is the father of C, C is the daughter of D.

In this option D is a female and can't be father-in-law.

Option 2) A @ B $ C # D > E

A is the wife of B, B is the brother of C, C is the daughter of D, D is the father of E.

Since B and C are siblings, so D is also father of B which means D is father-in-law of A.

Now we can discard rest of the options.

Hence the correct answer is option 2.

Q48. Answer: (a) 205

Explanation:

The pattern followed in the given series is:

(First term)² + (Second term)²= Term below

Let's apply the pattern of the given series:

1) $(3)^2 + (6)^2 = 45$

9 + 36 = 45

45 = 45

2) (1)2 + (8)2 = 65

1 + 64 = 65

65 = 65

3) (6)2 + (13)2 = ?

36 + 169 = ?

205 = Answer

Hence the correct answer is option 1.

Q49. Answer: (a) Distance

The correct answer is Distance

Key Points

• Light-year is the distance light travels in one year. Light zips through interstellar space at 186,000 miles (300,000 kilometers) per second and 5.88 trillion miles (9.46 trillion kilometers) per year.

• For most space objects, we use light-years to describe their distance. A light-year is the distance light travels in one Earth year.

• One light-year is about 6 trillion miles (9 trillion km).

Additional Information

• Distance is a numerical measurement of how far apart objects or points are.Distance may refer to a physical length or an estimation based on other criteria.

• Mass is the quantity of matter in a physical body. It is also a measure of the body's inertia, the resistance to acceleration when a net force is applied. An object's mass also determines the strength of its gravitational attraction to other bodies.

• The intensity of light is the energy of light passing through unit area of plane, taken normal to the direction of propagation of light, in one second

Q50. Answer: (b) isosceles

GIVEN:

The points A (1,2), B (3,4) and C (4,1)

FORMULA USED:

If the points are (x, y) (w, z)

Distance = $\sqrt{((w- x)^2 + (z -y)^2)}$

Isosceles triangle : A triangle that has two sides of equal length.

CALCULATION:

Here, points are A(1,2) B (3,4)

Where, x = 1, y = 2, w = 3, z = 4

Now, we have to find the distance of the side AB

Distance = $\sqrt{((3 - 1)^2 + (4 - 2)^2)} = \sqrt{8}$

Now, take the points B (3,4) C (4,1)

Where, x = 3, y = 4, w = 4, z = 1

Now, Distance of BC = $\sqrt{((4 - 3)^2 + (1- 4)^2)} = \sqrt{10}$

Now, take the points C (4,1) A (1,2)

Where, x = 4, y = 1, w = 1, z = 2

Now, Distance of CA = $\sqrt{((1 - 4)^2 + (2 -1)^2)} = \sqrt{10}$

As, side AB = $\sqrt{8}$, BC = CA = $\sqrt{10}$

Since, Isosceles triangle has two sides equal .So, it is an isosceles triangle.

Hence, the given points are the vertices of an isosceles triangle.

Q51. Answer: (d) 29

GIVEN:

A number when subtracted from its square = 812

CALCULATION:

Let the number be x

=> Its square = x^2

Now, According to the given Question,

=> $x^2 - x = 812$

=> $x^2 - x - 812 = 0$

=> $x^2 - 29x + 28x - 812 = 0$

=> $x(x - 29) + 28(x - 29) = 0$

=> $(x + 28)(x - 29) = 0$

=> $x + 28 = 0$ or $(x - 29) = 0$

=> $x = -28$ or $x = 29$

Since, the number cannot be negative.

So, the number is 29

Hence, the number is 29.

Q52. Answer: (a) 12 years 6 months

GIVEN;

S.I. for 7 years = 56% of the principal

FORMULA USED;

S.I. $= (P \times R \times T)/100$

Where, S.I. = Simple Interest, P = Principal, R = Rate of interest, T = Time in years

CALCULATION:

Let the Principal be P

According, to the given Question

=> $56/100 \times P = (P \times R \times 7)/100$

=> $56 = 7R$

=> $R = 8\%$

Now, S.I. will be equal to the principal at certain time and we have to find the number of years

=> $P = (P \times 8 \times T)/100$

=> $T = 100/8 = 25/2$ years or 12.5 years or 12years 6 months

Hence, the required time is 12 years 6 months.

Q53. Answer: (c) 8.56 s

GIVEN:

Lengths of the two trains 136 m and 185 m respectively

Speed of one train 70 km/h and other trains speed is 65 km/h

CONCEPT USED:

When two trains travel in opposite directions, then

Relative Speed = addition of the speed of two trains

Distance = Speed × Time

CALCULATION:

Here, as trains are moving in the opposite directions

=> Relative Speed = (70 + 65) = 135 km/h

Now, to convert km/h into m/s multiply the number by 5/18 <=> $135 \times 5/18 = 37.5$ m/s

Now, Distance = Addition of the length of the two trains = (136 + 185) = 321 m

=> Time = Distance/ Speed = 321/37.5 = 8.56 s

Hence, the required time is 8.56 s.

Q54. Answer: (a) 37

GIVEN:

The sum of 4 consecutive odd numbers = 160

CONCEPT USED:

Consecutive number = Numbers that follow each other in order. They have a difference of 1 between every two numbers.

CALCULATION:

Let the consecutive odd numbers be x, (x + 2), (x + 4), (x+ 6)

=> As, their sum = 160

=> 4x + 12 = 160

=> 4x = 148

=> x = 37.

Hence, the smallest number is 37.

Q55. Answer: (d) Part 4

The correct answer is Part 4

Key Points

• The Directive Principles of State Policy of India are the guidelines or principles given to the institutes for governing India and are provided Part IV of the Constitution of India

• Directive Principles of State Policy aim to create social and economic conditions under which the citizens can lead a good life.

• They also aim to establish social and economic democracy through a welfare state.Directive principles are classified under the following categories; economic, socialistic, political, executive, justice and legal, administrative, environment, protection of monuments, peace and security.

Additional Information

• The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India. Definition. Laws inconsistent with or in derogation of the fundamental rights. Equality before law which is present in part 3

• Part 5 and 6 states that the executive power of the Union shall be vested in the President and shall be exercised by him either directly or through officers subordinate to him in accordance with this Constitution.

Q56. Answer: (c) 56

GIVEN:

2 numbers are in the ratio = 11 :19

If each one is subtracted by 7, then new ratio becomes = 5 : 9

CALCULATION:

Let the numbers be 11x and 19x

=> (11x -7)over (19x - 7) = 5over9

=> 99x - 63 = 95x - 35

=> 4x = 28

=> x = 7

Hence, numbers are 11x = 11 × 7 = 77 and 19x = 19 × 7 = 133

=> Difference = (133 - 77) = 56

Hence, difference between the actual numbers is 56.

Q57. Answer: (b) Some poets are painters.

Explanation:

From the given statements, the Venn diagram is:

I. Some artists are painters.

II. Some painters are writers.

III. All writers are poets.

Now we check the conclusions given in the option:

Option 1) All artists are poets: There is no evidence for the relation between artists and poets, we can see there is no possibility of artists are poets so it will be wrong to say all artists are poets. Thus the conclusion does not follow.

Option 2) Some poets are painters: From the statements, 'some painters are writers' and ' all writers are poets' we can say that there is a relation between painters and poets & from the diagram we can see that some poets are painters. Thus the conclusion follows.

Option 3) Some poets are artists: From the statements and the diagram obtained, we can see that there is no relation between artists and poets also there is no relation between artists and writers. So there is no chance that some poets are artists. So the conclusion does not follow.

Option 4) All writers are artists: 'All writers are poets' and 'some painters are writers' since no poets are artists therefore no writers are artists and thus the conclusion does not follow.

Hence the correct answer is option 2.

Q58. Answer: (a) AIDS

The correct answer is AIDS.

Key Points

• HIV (human immunodeficiency virus) is a virus that attacks the body's immune system.

• If HIV is not treated, it can lead to AIDS (acquired immunodeficiency syndrome).

• There is currently no effective cure. Once people get HIV, they have it for life.But with proper medical care, HIV can be controlled.

• People with HIV who get effective HIV treatment can live long, healthy lives and protect their partners.

• HIV infection in humans came from a type of chimpanzee in Central Africa.

• Studies show that HIV may have jumped from chimpanzees to humans as far back as the late 1800s.

• The chimpanzee version of the virus is called simian immunodeficiency virus.

• It was probably passed to humans when humans hunted these chimpanzees for meat and came in contact with their infected blood.Over decades, HIV slowly spread across Africa and later into other parts of the world.

• The virus has existed in the United States since at least the mid to late 1970s.

Additional Information

• Plague is a disease that affects humans and other mammals. It is caused by the bacterium, Yersinia pestis.

• Hepatitis means inflammation of the liver. The liver is a vital organ that processes nutrients, filters the blood, and fights infections.

• Cancer refers to any one of a large number of diseases characterized by the development of abnormal cells that divide uncontrollably and have the ability to infiltrate and destroy normal body tissue

Q59. Answer: (a) (75√3)/2 cm²

GIVEN:

Side of a hexagon = 5 cm

FORMULA USED:

Area = 3√3a²over 2

CALCULATION:

Here, we have side = a = 5cm

=> Area = 3√3a²over 2 = 3√3 (5)² over 2 = 3 √3 × 25over 2 = 75√3over2 cm².

Area of regular hexagon is 75√3over2 cm².

Q60. Answer: (b) The Prime Minister

The correct answer is The Prime Minister.

Key Points

• Impeachment is done only if the representative is independent and not answerable to Parliament, the elected and nominated representatives of India.

• But, Prime Minister is answerable to the Parliament of India.

• He should take decisions upon the consensus of Member of Parliaments.

• So, any wrong decision or misuse of power is to be raised by the Parliament and be supported by simple majority of Lower House or Lok Sabha through no confidence motion.

• That is the way we are supposed to remove a Prime Minister, who is a representative of either houses of Parliament.

• Impeachment in India is generally applicable to selected and nominated representatives like President, Governor, Chief Justice of Supreme Court of India, etc. And Chief Minister of state and Prime Minister are removed by no confidence motion in respective state assembly and Parliament for Prime Minister.

Additional Information

• The Chief Election Commissioner of India heads the Election Commission of India, a body constitutionally empowered to conduct free and fair elections to the national and state legislatures and of President and Vice-President.

• The chief justice of India is the chief judge of the Supreme Court of India as well as the highest-ranking officer of the Indian federal judiciary.

• The president of India is the head of state of the Republic of India. The president is the nominal head of the executive,the first citizen of the country, as well as the commander-in-chief of the Indian Armed Forces

Q61. Answer: (b) Chennai

The correct answer is Chennai.

Key Points

• Chennai is nicknamed The Detroit of Asia (or the Detroit of India) due to the presence of major automobile manufacturing units and allied industries around the city.

• Chennai aka 'Detroit Of India', is the hub of automobile manufacturing facilities for leading car makers like Ford, Hyundai, Nissan/Renault/Datsun & Royal Enfield and a few more.

• Apart from that, Chennai is also the biggest city in southern India, providing home for close to 1 crore people.

• The city is base to around 40 percent of India's automobile industry and 45 percent of auto components industry.

• The city is served by two major ports, Chennai Port, one of the largest artificial ports in India, and Ennore Port.

• Chennai Port is the largest in the Bay of Bengal, with an annual cargo tonnage of 61.46 million, and the second-largest container-hub in India, with an annual container volume of 1.523 million TEUs.

• The port handles transportation of automobiles, motorcycles and general industrial cargo.

Additional Information

• Chennai, formerly Madras, city, capital of Tamil Nadu state, southern India, located on the Coromandel Coast of the Bay of Bengal. Known as the "Gateway to South India," Chennai is a major administrative and cultural centre.

• Muthuvel Karunanidhi Stalin, often referred to by his initials MKS is an Indian politician serving as the 8th and current Chief Minister of Tamil Nadu.

• Ravindra Narayana Ravi is an Indian politician and former bureaucrat serving as the current and 15th Governor of Tamil Nadu.

Q62. Answer: (c) Indian Oil Corporation Limited

The correct answer is Indian Oil Corporation Limited.

Key Points

• Indian Oil Corporation Limited is an Indian government-owned oil and gas explorer and producer, headquartered in New Delhi.

• It is a public sector undertaking whose operations are overseen by the Ministry of Petroleum and Natural Gas.

• Indian Oil is ranked 212th on the Fortune Global 500 list of the world's biggest corporations as of 2021.

• It is the largest government owned oil corporation in the country, with a net profit of $6.1 billion for the financial year 2020-21.

• As of 31 March 2021, Indian Oil's employee strength is 31,648, out of which 17,762 are executives and 13,876 non-executives, while 2,775 are women, comprising 8.77% of the total workforce.

• Indian Oil's business interests overlap the entire hydrocarbon value-chain, including refining, pipeline transportation, marketing of petroleum products, exploration and production of crude oil, natural gas and petrochemicals.

• Indian Oil has ventured into alternative energy and globalisation of downstream operations.

• It has subsidiaries in Sri Lanka, Mauritius and the Middle East.

Additional Information

• Hindustan Petroleum Corporation Limited is an Indian oil and gas refining company headquartered in Mumbai.

• Bharat Petroleum Corporation Limited is an Indian government-owned oil and gas explorer and producer, headquartered in Mumbai.

• The Oil and Natural Gas Corporation is an Indian oil and gas explorer and producer, headquartered in New Delhi.

Q63. Answer: (a) 248

GIVEN:

Numbers are 3,8,13, 23.....

FORMULA USED :

$a_n = a + (n - 1) d$

Where a_n = nth term, a = 1st term, n = number of terms, d= common difference (second term - first term)

CALCULATION:

Here, we have a = 1st term = 3, 2nd term = 8 n = 50, d = (2nd term - 1st term) = (8 - 3) = 5

=> So, $a_n = a + (n - 1) d$

=> $a50 = 3 + (50 - 1)5 = 3 + 49 \times 5 = (3 + 245) = 248$.

Hence, 50th term is 248.

Q64. Answer: (b) 1974

The correct answer is 1974.

Key Points

• On the morning of May 18, 1974, a nuclear device was detonated in the Rajasthan desert near Pokhran, India.

• This event came as a shock to the entire world. Work on a nuclear fission device had been authorized by Indian Prime Minister Indira Gandhi on September 7, 1972.

• A small team of about 75 scientists and engineers at the Bhabha Atomic Research Center (BARC) began the process of designing and developing an atomic bomb.

• The head of the development team was Raja Ramanna.

• The plutonium for the device was extracted from the CIRUS (Canada-India Reactor U.S.) research reactor, a 40-megawatt reactor supplied by Canada that began operating in 1960.

• The device's design was similar to the implosion design used on the Fat Man bomb, but the Indian design was simpler and less sophisticated than the American system.

Additional Information

• Nuclear bombs are weapons of mass destruction.

• They harness the forces that hold the nucleus of an atom together by using the energy released when the particles of the nucleus are either split or merged.

• Nuclear fission produces the atomic bomb, a weapon of mass destruction that uses power released by the splitting of atomic nuclei.

• When a single free neutron strikes the nucleus of an atom of radioactive material like uranium or plutonium, it knocks two or three more neutrons free. Energy is released when those neutrons split off from the nucleus, and the newly released neutrons strike other uranium or plutonium nuclei, splitting them in the same way, releasing more energy and more neutrons.

• This chain reaction spreads almost instantaneously. Atomic bombs were exploded in war in Hiroshima and Nagasaki at the end of World War II.

Q65. Answer: (a) 396

GIVEN:

3 digit number whose sum = 18

middle digit = sum of the other two

CALCULATION:

Let us assume 3- digit number to be xyz

=> Then, According to the given Question, sum of the digits = 18 and middle digit = sum of the other two

=> x + y + z = 18 and y = (x + z)

Now, x + x + z + z = 18 (As, y = x +z)

=> 2 (x + z) = 18

=> (x + z) = 9.

As, x + y + z = 18 <=> y + 9 = 18 <=> y = 9

So, the number is either 396 or 693

Since, the number increases on reversing the digits, So the hundred's digits is smaller than the unit's digit.

Hence, the required number is 396.

Hence, the required number is 396.

Q66. Answer: (b) Arunachal Himalayas

The correct answer is Arunachal Himalayas.

Key Points

• Diphu Pass is a mountain pass around the area of the disputed tri-point borders of India, China, and Myanmar.

• Diphu Pass is also a strategic approach to eastern Arunachal Pradesh in India. It lies on the McMahon Line.

• It is located in Anjaw district of Arunachal Pradesh, 120 km northeast of district headquarter at Hawai via Hawai-Walong-Dong-Kibithu-Kaho-Dhipu Pass route.

• In October 1960 China and Burma demarcated their border to the Diphu Pass, which is 5 miles south of the watershed of the mountain ranges.

• However, this caused a diplomatic row with India, which expected the tri-point to be at the watershed.

• The dispute has become part of the ongoing border disagreement between China and India regarding Arunachal Pradesh.

Additional Information

• The Kashmir or North-Western Himalayas is a mountainous grassland and shrubland ecoregion found in the heights of Kashmir or the northwestern part of Indian Himalayas.

• The Sikkim-Darjeeling Himalaya encompasses a stretch of tectonically active Eastern Himalaya. It is made up of three primary tectonic units: the Higher Himalaya, Lower Himalaya, and Siwaliks, which are separated by thrusts yet linked by the Tista River's enormous fluvial system.

• Pir Panjal is the largest range of the Lesser Himalayas. Near the bank of the Sutlej River, it dissociates itself from the Himalayas and forms a divide between the Beas and Ravi rivers on one side and the Chenab on the other. The renowned Galyat mountains

are also located in this range.

Q67. Answer: (c) 90

GIVEN:

Selling price = Rs171

Profit % = C.P.

FORMULA USED:

Profit = S.P. - C.P.

Profit% = (Profit / C.P.) × 100

Where, S.P. = Selling price, C.P. = Cost price

CALCUALTION:

Here, we have S.P. = Rs171 and Profit% = C.P.

=> Profit = S.P. - C.P. = (171 - C.P.)

=> Profit% = (Profit/ C.P.) × 100

=> C.P. = (171 - C.P.)over C.P. × 100

=> $C.P.^2$ = 17100 - 100 C.P.

=> $C.P.^2$ + 100 C.P. - 17100 = 0

=> $C.P.^2$ + 190 C.P. - 90 C.P. - 17100 = 0

=> C.P.(C.P. + 190) - 90(C.P.+ 190) = 0

=> (C.P. - 90) (C.P. + 190) = 0

=> C.P. = 90 or C.P. = -190

As, C.P. cannot be negative. Hence, C.P. = Rs90.

Hence, Cost price is Rs90.

Q68. Answer: (d) Bombay Stock Exchange

The correct answer is Bombay Stock Exchange.

Key Points

• Established in 1875, Bombay Stock Exchange Ltd. is Asia's first Stock Exchange and one of India's leading exchange groups and has played a prominent role in developing the Indian capital market.

• Bombay Stock Exchange is a corporatized and demutualised entity, with a broad shareholder-base which includes two leading global exchanges, Deutsche Bourse and Singapore Exchange as strategic partners.

• Bombay Stock Exchange provides an efficient and transparent market for trading in equity, debt instruments, derivatives, mutual funds.

• It also has a platform for trading in equities of small-and-medium enterprises (SME).

• Bombay Stock Exchange also provides a host of other services to capital market participants including risk management, clearing, settlement, market data services and education.

Additional Information

• The Tokyo Stock Exchange, abbreviated as Tosho or TSE/TYO, is a stock exchange located in Tokyo, Japan.

• The Shanghai Stock Exchange is a stock exchange based in the city of Shanghai, China.

• National Stock Exchange of India Limited is the leading stock exchange of India, located in Mumbai, Maharashtra.

Q69. Answer: (c) Vitamin B

The correct answer is Vitamin B.

Key Points

• The B-complex vitamins in brewer's yeast include B1 (thiamine), B2 (riboflavin), B3 (niacin), B5 (pantothenic acid), B6 (pyridoxine), B9 (folic acid), and H or B7 (biotin).

• These vitamins help break down carbohydrates, fats, and proteins, which provide the body with energy.

• They also support the nervous system, help maintain the muscles used for digestion, and keep skin, hair, eyes, mouth, and liver healthy.

• Brewer's yeast does not contain vitamin B12, an essential vitamin found in meat and dairy products.

• Brewer's yeast is made from a one-celled fungus called Saccharomyces cerevisiae and is used to make beer.

• It has been grown and used as a nutritional supplement for years.

• Brewer's yeast is a rich source of minerals -- particularly selenium; protein; B-complex vitamins, and chromium, an essential trace mineral that helps the body maintain normal blood sugar levels.

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• Brewer's yeast tastes bitter and should not be confused with baker's yeast, nutritional yeast, or torula yeast. All those types of yeast are low in chromium

Additional Information

• Vitamin K refers to structurally similar, fat-soluble vitamers found in foods and marketed as dietary supplements.

• Vitamin C is an essential vitamin that must be consumed in the diet. Good sources include fresh fruits and vegetables, especially citrus fruits.

• Vitamin A, also known as retinol, has several important functions. These include: helping your body's natural defence against illness and infection (the immune system) work properly.

Q70. Answer: (a) 9

Explanation:

The pattern followed in the given series is:

The difference between all odd placed numbers is 1.

The difference between all even placed number is 1.

Hence the correct answer is option 1.

Q71. Answer: (b) It was a movement in support of the Turkish Sultan

The correct answer is It was a movement in support of the Turkish Sultan.

Key Points

• The Khilafat Movement (1919-20): It was essentially a movement to express Muslim support for the Caliph of Turkey against the allied powers particularly Britain.

• The khilafat movement was launched by Shaukat Ali, Abdul Kalam Azad and other religious leaders, who wanted to develop Muslim participation on behalf of the caliphate Abdul Hamid II, to protect the Ottoman empire from western attack.

• The Khilafat movement (1919-1924) was an agitation by Indian Muslims allied with Indian nationalism in the years following World War I.

• Its purpose was to pressure the British government to preserve the authority of the Ottoman Sultan as Caliph of Islam following the breakup of the Ottoman Empire at the end of the war.

• The movement collapsed by late 1922 when Turkey gained a more favorable diplomatic position and moved towards Nationalism. By 1924, Turkey had simply abolished the role of caliph.

Additional Information

• The Ottoman dynasty consisted of the members of the imperial House of Osman, also known as the Ottomans.

• According to Ottoman tradition, the family originated from the Kayı tribe branch of the Oghuz Turks, under Osman I in northwestern Anatolia in the district of Bilecik Söğüt.

• The Ottoman dynasty, named after Osman I, ruled the Ottoman Empire from c. 1299 to 1922.

• During much of the Empire's history, the sultan was the absolute regent, head of state, and head of government, though much of the power often shifted to other officials such as the Grand Vizier.

• During the First (1876–78) and Second Constitutional Eras (1908–20) of the late Empire, a shift to constitutional monarchy was enacted, with the Grand Vizier taking on a prime ministerial role as head of government and heading an elected General Assembly.

Q72. Answer: (d) Syngas

Correct Answer Syngas

Key Points:

Concept:

Renewable Energy	Non-Renewable Energy
Also called non-conventional energy	Also called conventional energy.
These can be replenished in a short duration of time	These can not be replenished or will take a large amount of time.
Often these are available continuously	Often these exist after use.
Eg, solar, wind energy.	Eg, coal, petroleum, Natural gas.

Explanation:

Syngas:

• Syngas is also called synthesis gas.

• It is a fuel gas mixture consisting primarily of:

• Hydrogen
• Carbon monoxide
• Carbon dioxide
• Methane
• Syngas which is derived from wood, waste wood, cellulose, or lignin.
• Making Renewable source of energy.
• Heat and electricity can be generated directly from syngas combustion.
Thus, syngas is a renewable energy resource.

Q73. Answer: (d) Computer

Explanation:
The pattern followed in the given series is:
Game : Chess -- Chess comes in the category of Games.
Similarly,
Device : ? -- ? will come in the category of Devices.
From the options:
Option 1) Engineer - It is an occupation and is not relevant to the pattern.
Option 2) Chair - It is an object and cannot be categorized as device.
Option 3) Cupboard - It is an object and cannot be categorized as device.
Option 4) Computer - It comes in the category of devices.
Hence the correct answer is option 4.

Q74. Answer: (d) GXL

Explanation:
From the given information:
The code for 'Sunny' is G and the code for 'fast' is L.
So the 'Sunny bowls fast' as 'G _ L'.
From the given options we get GXL.
Hence the correct answer is option 4.

Q75. Answer: (d) 13

GIVEN:
Length of the chord = 24cm
Distance = 5 cm
CONCEPT USED:
The perpendicular from the centre of a circle to a chord bisects the chord
In right angled triangle $H^2 = P^2 + B^2$
Where, H = Hypotenuse, P = Perpendicular, B = Base
CALCULATION:
Let the length of the chord be AB and O be the centre of the circle
Let the distance from the centre O of the circle be OP = 5cm
OA is the radius
Now in Right angled triangle OAP ,we have OA (Hypotenuse)= radius of the circle,
AP(Base) = AB/2 = 12 cm ,OP (Perpendicular) = 5 cm
$\Rightarrow H^2 = P^2 + B^2$
$\Rightarrow OA^2 = 5^2 + 12^2 = 25 + 144 = 169$
$\Rightarrow OA = 13cm.$
Hence, radius of the circle is 13 cm.

Q76. Answer: (c) 340

GIVEN:
2/5th of seven-seventeenth of 3/5 of a number = 84
CALCULATION:

Let the number be x

Here, 2/5 of 7/17 of 3/5 of a number = 84

=> 2/5 × 7/17 × 3/5 × x = 84

=> 42/425 × x = 84

=> 42x = 84 × 425 = 35700

=> x = 35700/42 = 850

Hence, 40% of the number = 40/100 × 850 = 340.

Hence, 40% of the number is 340.

Q77. Answer: (d) 2/7371

GIVEN:

Numbers are 2/9, 16/81,32/117 and 54/189

CONCEPT USED:

Highest Common Factor : HCF is found by finding all common factors of two numbers and selecting the largest one

HCF of fractions = (HCF of the numerators)/ (LCM of the denominators)

CALCULATIONS:

Here, we have 2/9, 16/81, 32/117 and 54/189

Now, HCF =(HCF of the numerators)/(L.C.M of the denominators)

Now,

HCF of 2,16, 32 and 54 is 2

And

L.C.M of 9, 81, 117 and 189 is 7371.

H.C.F = 2/ 7371.

Hence, H.C.F is 2/7371.

Q78. Answer: (c) Kavitha Gopal

The correct answer is Kavitha Gopal.

Key Points

• Kavitha Gopal, who graduated with a B. Tech degree in Computer Science and Engineering on Monday, created history by becoming the first girl student of the Indian Institute Technology-Madras to win the President of India Prize.

• At the Institute's 56th convocation, she received the prize and medals from Prime Minister Narendra Modi.With a CGPA of 9.95, she also bagged the Bharat Ratna M. Visvesvaraya Memorial Prize and the B. Ravichandran Memorial Prize for the highest CGPA in B. Tech CSE.

• The President of India prize is conferred to recognize outstanding academic performance by a student. In the 60 years of IIT Madras history, this is the first time that the 'President of India Gold Medal' has been conferred to a girl student. Only male students had won the prize earlier at the institute.

• Kavitha Gopal, with her hat-trick successes, ended the long male-dominated legacy of the prestigious honour.

Additional Information

• The President of India prize is conferred to recognize outstanding academic performance by a student.

• In the 60 years of IIT Madras history, this is the first time that the 'President of India Gold Medal' has been conferred to a girl student.

• Only male students had won the prize earlier at the institute.

Q79. Answer: (c) 225

GIVEN:

Distance = 150 km in 20 L petrol

CALCUALTION:

As, in 20 L of petrol a car can 150 km

So, in 1 L of petrol a car can 150/20 = 7.5

30L of petrol a car can go = 7.5 × 30 = 225.

Hence, 225 km can go with 30L of petrol.

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Q80. Answer: (b) The Edge of Time

The correct answer is The Edge of Time.

Key Points

• The Edge of Time is The Authoritative Biography of Kalpana Chawla by Jean-Pierre Harrison.

• Kalpana Chawla was an Indian-born American astronaut and mechanical engineer who was the first woman of Indian origin to go to space.

• She first flew on Space Shuttle Columbia in 1997 as a mission specialist and primary robotic arm operator.Her second flight was on STS-107, the final flight of Space Shuttle Columbia in 2003.

• Kalpana Chawla was one of the seven crew members who died in the Space Shuttle Columbia disaster when the spacecraft disintegrated during its re-entry into the Earth's atmosphere on 1 February 2003.

• Kalpana Chawla was posthumously awarded the Congressional Space Medal of Honor, and several streets, universities, and institutions have been named in her honor.She is regarded as a national hero in India.

Additional Information

• Sleeping on Jupiter is a novel by Anuradha Roy. It is her third novel and was published by Hachette India on 15 April 2015.

• The Luminaries is a story about a hoard of gold, found, stolen, lost, found, stolen, lost, and finally found hidden in plain sight.

• The Sense of an Ending is a 2011 novel written by British author Julian Barnes. The book is Barnes's eleventh novel written under his own name and was released on 4 August 2011 in the United Kingdom.

Q81. Answer: (c) Sarojini Naidu

The correct answer is Sarojini Naidu.

Key Points

• Sarojini Naidu was the first Indian woman president of the Indian National Congress.

• Sarojini Naidu was an Indian political activist and poet.

• A proponent of civil rights, women's emancipation, and anti-imperialistic ideas, she was an important person in India's struggle for independence from colonial rule.

• Sarojini Naidu's work as a poet earned her the sobriquet 'the Nightingale of India', or 'Bharat Kokila' by Mahatma Gandhi because of colour, imagery and lyrical quality of her poetry.

• She was appointed the President of the Indian National Congress in 1925 and later became the Governor of the United Provinces in 1947, becoming the first woman to hold the office of Governor in the Dominion of India.

Additional Information

• Annie Besant was a British socialist, theosophist, women's rights activist, writer, orator, political party member, educationist, and philanthropist. Regarded as a champion of human freedom, she was an ardent supporter of both Irish and Indian self-rule.

• Indira Priyadarshini Gandhi was an Indian politician and a central figure of the Indian National Congress. She was elected as 3rd prime minister of India in 1966 and was also the first and, to date, only female prime minister of India.

• Vijaya Lakshmi Pandit was an Indian diplomat and politician who was the 6th Governor of Maharashtra from 1962 to 1964 and 8th President of the United Nations General Assembly from 1953 to 1954, the first woman appointed to either post.

Q82. Answer: (d) 54

GIVEN:

Average age of boys and professor = 18 years

Average age of only boys = 17 years

FORMULA USED:

Average = Sum of values/ No. of values

CALCULATION:

Here, Average age of boys and professor = 18

No. of boys and professor = 36 + 1 = 37

Average = Sum of boys and professor/Number of boys and professor

18 = Sum/37

Sum of age of boys and professor = 18 × 37 = 666

Now, According to the given Question,

Average of only boys excluding professor = 17

Number of boys = 36

Average = Sum of boys /Number of boys

17 = Sum of boys/36

Sum of age of boys = 36 × 17 = 612

Age of professor = Sum of age of boys and professor - Sum of age of boys = (666 - 612) = 54

Hence, Age of professor is 54 years.

Q83. Answer: (c) 1729

Explanation:

The pattern followed in the given series is:

The difference between the terms is multiple of 6.

Hence the correct answer is option 3.

Q84. Answer: (b) Aparna Kumar

The correct answer is Aparna Kumar.

Key Points

• Aparna Kumar, who become the first woman Indian Police Service (IPS) DIG and Indo-Tibetan Border Police (ITBP) officer to successfully complete the South Pole expedition, is now aiming to set her foot on the North Pole in April, to mark the achievement of conquering both the poles.

• Aparna has successfully reached the South Pole after covering 111 kilometres of walking on the snow.

• She also carried equipment weighing 35 Kilograms along with her.

• She has already scaled the top six mountain peaks of the six continents of the globe.

• The first person to reach the south pole was Roald Amundsen.

• Lieutenant Ram Charan of the Indian Navy, was the first Indian to visit the South Pole.

• Colonel J.K. Bajaj became the first Indian to reach the South Pole at a 0-degree latitude in Antarctica, South Pole.

Additional Information

• Kiran Bedi is an Indian social activist, former-tennis player who became the first woman in India to join the officer ranks the Indian Police Service in 1972 and was the 24th Lieutenant Governor of Puducherry from 28 May 2016 to 16 February 2021.

• The Raisina Dialogue is India's premier conference on geopolitics and geoeconomics committed to addressing the most challenging issues facing the global community.

Q85. Answer: (b) Russia

The correct answer is Russia.

Key Points

• Russia holds the largest amount of natural gas reserves in the world.

• The country was estimated to possess about 1,688 trillion cubic feet (Tcf) of proven gas reserves as of January 2013, accounting for about one fourth of the world's total proven gas reserves.

• More than half of Russia's gas reserves are located in Siberia.

• Three of the major Siberian fields, namely Yamburg, Urengoy and Medvezh'ye, account for approximately 45% of the country's gas reserves.

• The majority of the country's gas reserves under development and production are located in the Nadym-Pur-Taz (NPT) region of upper Western Siberia.

Additional Information

• Vladimir Vladimirovich Putin is a Russian politician and former intelligence officer who has been serving as the president of Russia since 2012.

• The capital of Russia is Moscow and the currency used is the Russian Ruble.

• India holds 43 trillion cubic feet (Tcf) of proven gas reserves as of 2017, ranking 22nd in the world and accounting for about 1% of the world's total natural gas reserves of 6,923 Tcf.

• India has proven reserves equivalent to 22.1 times its annual consumption.

Q86. Answer: (b) South

Given: Jack is walking on Light Street and can see the Regal Café to his left.

Hence, Jack is facing south.

Q87. Answer: (c) 2012 and 2013

GIVEN:

Profit by three companies over six years

CALCULATION:

Total Profit made by three companies in 2010 by A, B and C respectively= (30 +80 +60) = 170

Total Profit made by companies in 2011 by A, B and C respectively = (60 +90 +40) = 190

Total Profit made by companies in 2012 by A, B and C respectively = (40 +120 +60) = 220

Total Profit made by companies in 2013 by A,B and C respectively = (70 + 90 +60) = 220

Total Profit made by companies in 2014 by A, B and C respectively = (50 + 60 + 70) = 180

Total Profit made by companies in 2015 by A,B and C respectively = (120 +80 +100) = 300

As, Total Profit made by companies A, B and C in 2012 and 2013 = 220.

Hence, in the year 2012 and 2013 the total Profit made by the companies A, B and C are same.

Q88. Answer: (b) Theatre

Explanation:

From the given information:

Step 1: Jai leaves his home and turns towards the east on to Bank Street. He walks two blocks and then turns towards the south.

Step 2: He continues until the end of the road.

As we can see in the figure, Jai is closest to the theatre.

Hence the correct answer is option 2.

Q89. Answer: (c) 2%

GIVEN:

Salary, incentive and tax paid by a factory over 5 years

CALCULATION:

Here, Total incentive paid over 5 years = (4 + 4.52 + 4.84 + 5.68 + 4.96) = 24

Total salary over 5 years = (188 + 232 + 224 + 236 +320) = 1200

Percentage =(24/1200) × 100 = 2%.

Hence, the required percentage is 2%.

Q90. Answer: (b) V

When we reverse the given equation we get:

S B A G 3 f % V & T - q P R + 4

Now to find 6th to the right of the 15th character from the right end:

Firstly we count 15th from the right end,

Now we count 6th right of B,

So V is the 6th to the right of the 15th character from the right end.

Hence the correct answer is option 2)

Q91. Answer: (c) Neither argument I nor argument II is strong.

Explanation:

We have the given statement:

Healthcare services should be nationalized.

Now we consider the given arguments:

I. Healthcare services are provided nationally in many countries: In the statement, we see an advice that should be implemented but there is no relation of it with other countries. Also the statement does not have any strong indication towards comparison or discussion about the healthcare services in other countries. So this argument is not strong.

II. Nationalization of healthcare services will reduce the career prospects of doctors: Here the statement is made for the goodwill of people and their basic needs and which is why healthcare services should be nationalized for the betterment of the people and it does not point towards any harm to career prospects of doctors. This argument makes no sense as nationalizing healthcare services will not affect career of doctors. Thus the argument is not strong.

Therefore, neither argument I nor argument II is strong.

Hence the correct answer is option 3.

Q92. Answer: (a) 4

Explanation:

In the given image we can see two positions of same dice:

Here we can see the similarity that the face with 3 dots remains at the same position which means the the dice was rotated as:

From the difference in the faces we can say that the face with 5 dots will be opposite to face with 1 dot.
Similarly the face with 4 dots will be opposite to the face with 2 dots.
Hence the correct answer is option 4.

Q93. Answer: (d) 1 hour, 51 minutes

GIVEN:
1.85 hours
FORMULA USED:
1 hour = 60 minutes
1 minute = 60 seconds
CALCULATION:
1.85 hours = 1 hr + 0.85 hour
= 1 h + (0.85 × 60) minutes
= 1 h 51 minutes (As, 1hour = 60 minutes).
Hence, 1.85 hour is equal to 1 h 51 minutes.

Q94. Answer: (c) Peacock

Explanation:
According to the English dictionary
Penguin
Peasant
Peacock
People
'Peac' will come first.
Hence the correct answer is option 3.

Q95. Answer: (b) Outlook

Explanation:
From the given options:
1) The Indian Express - It is a newspaper
2) Outlook - It is a software system
3) Hindustan Times - It is a newspaper
4) The Times of India - It is a news paper
Therefore, Outlook is odd one.
Hence correct answer is option 2.

Q96. Answer: (b) DKXOM

Explanation:
According to the English alphabets and their positional values:
The pattern followed in the given series is:
Alphabets are decreased by 2 positional values.
Similarly,
Hence the correct answer is option 2

Q97. Answer: (b) 9 hours, 4 minutes, 48 seconds

GIVEN:
9.08 hours
FORMULA USED:
1 hour = 60 minutes
1 minute = 60 seconds
CALCULATION:
Here, 9.08 hours = 9 hour + 0.08 hour
= 9 hour + (0.08 × 60) minutes
= 9 hour and 4.8 minutes

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Now, 9 hour 4.8 minutes
= 9 h + 4 min +(0.8 × 60) seconds
= 9 hour 4 min 48 sec
Hence, 9.08 hours is equal to 9hours, 4 minutes, 48 seconds.

Q98. Answer: (a) 5/9

Given:
Tips amount = 5/4 of the salary
Calculation:
=> Let the salary be Rs x.
=> Tips amount = 5x/4
=> Total income = Salary + Tips Amount = x+5x/4
=> Total income = (4x+5x)/4=9x/4
=> Fraction of income came from tips = (5x/4)/(9x/4)=5x×4/(9x× 4)=5/9
Therefore, the fraction of her income came from tips is 5/9.

Q99. Answer: (b) Triangle : Rhombus

Explanation:
The relation between the given words is:
Square : Pentagon -- 4-sided shape : 5-sided shape
Now from the given options,
Option 1) Diagonal : Hypotenuse - Terms related to a triangle.
Option 2) Triangle : Rhombus - 3 sided shape : 4 sided shape
Option 3) Side : Angle - Terms related to a shape.
Option 4) Radius : Perimeter - Term related to measure distance in a shape.
Hence the correct answer is option 2.

Q100. Answer: (a) [figure]

Explanation:
From the given words:
Fruits, pomegranates and grapes
We know that pomegranates and grapes comes under fruits. So the vein diagram will be:
Now from the given options, the Venn diagram that matches is option 1)
Hence the correct answer is option 1.

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