RRB NTPC CBT-I Official Paper (Held On: 8 Feb 2021 Shift 1) (Previous Year Paper)

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

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Q1. The corresponding altitudes of two similar triangles are 8 cm and 11 cm. Find the ratio of their areas:

(a) 8 : 11
(b) 121 : 64
(c) 64 : 121
(d) 11 : 8

Q2. On dividing 15,971 by a certain number, the quotient is 55 and the remainder is 21. Find the divisor.

(a) 285
(b) 280
(c) 275
(d) 290

Q3. Which of the following is NOT a series of the supercomputer PARAM that was developed by Indian scientists?

(a) PARAM MITRA
(b) PARAM 8000
(c) PARAM 8600
(d) PARAM BRAHMA

Q4. Select the number from among the given options that can replace the question mark (?) in the following series.

3, 8, 18, 33, 53, ?

(a) 83
(b) 78
(c) 68
(d) 73

Q5. Which of the following schemes of the Govt. of India aims at enhancing the livelihood security of people in rural areas by guaranteeing hundred days of wage-employment?

(a) Skilled India Yojana
(b) PMJDY
(c) PMGSY
(d) MGNREGA

Q6. Which of the following organizations' headquarters is NOT correctly matched?

(a) NATO-Brussels
(b) World Bank-Washington
(c) OPEC-Zurich
(d) UNICEF-New York

Q7. For his involvement in the Jallianwala Bagh massacre, Michael Francis O'Dwyer was assassinated by:

(a) Chandrashekar Azad
(b) Udham Singh
(c) Bhagat Singh

(d) Mangal Pandey

Q8. Arrange the following in the correct chronological order as they occurred during the freedom struggle.

A. Jallianwala Bagh massacre;

B. Quit India movement;

C. Flag Satyagraha;

D. Non-cooperative movement

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

Q9. Which of the following taxes/duties is NOT covered under GST?

(a) Stamp duty
(b) Entertainment tax
(c) Central excise duty
(d) VAT

Q10. FTTP stands for:

(a) Frame To The Permission
(b) Fiber To The Premises
(c) Fusion To The Premises
(d) Fiber To The Permission

Q11. Which of the following plants is NOT a thallophyte?

(a) Chara
(b) Ulothrix
(c) Ulva
(d) Funaria

Q12. Who among the following stepped down as the Director-General of the World Trade Organization on 31st Aug 2020?

(a) Roberto Azevedo
(b) Pascal Lamy
(c) Charles Gomez
(d) David Walker

Q13. According to the National Institutional Ranking Framework (NIRF) 2019, which university/institute ranked No.1 in India in overall Category?

(a) BHU Varanasi
(b) IIT Madras
(c) JNU New Delhi
(d) ICT Mumbai

Q14. The perimeter of a rectangle is 240 metres. If its length is thrice its breadth, then its areas is:

(a) 2800 m^2
(b) 2700 m2
(c) 2500 m2
(d) 2600 m2

Q15. Which Indian state is NOT among the top 5 in terms of forest cover area?

(a) Chhattisgarh
(b) Punjab
(c) Maharashtra
(d) Madhya Pradesh

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Q16. Read the given statement and courses of action carefully and decide which of the courses of action logically follow(s) from the statement.

Statement:

If none of the employees submit their work report by tomorrow, then the monthly project will be in a crisis.

Courses of action:

i. The date of submission of work report must be extended.

ii. Some employees must speed up and submit their work report by tomorrow.

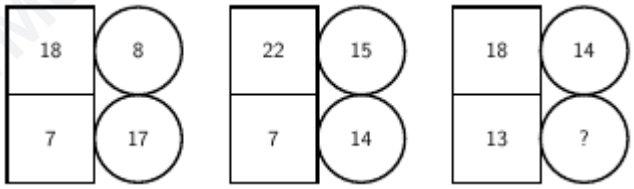
iii. The cause of late submission of work report by most employees must be figured out and proper counter; measures must be taken.

(a) Only action (iii) follows.
(b) Only actions (ii) and (iii) follow.
(c) Only actions (i) and (ii) follow.
(d) All actions (i), (ii) and (iii) follow.

Q17. Institute of Teaching and Research in Ayurveda (ITRA) at _____ will be the first institution with Institution of National Importance (INI) status in the AYUSH Sector.

(a) Haridwar
(b) Jamnagar
(c) Dehradun
(d) New Delhi

Q18. Study the given pattern carefully and select the number than can replace the question mark (?) in the third figure.



(a) 26
(b) 17
(c) 20
(d) 12

Q19. Selena is the sister of James and James is the father of Eden. Marco is James' sister's son. Eden's husband Robert has a friend, Ileana, who is Selena's aunt. How is Robert related to James?

(a) Son
(b) Sister's Son
(c) Daughter's Husband
(d) Wife's Father

Q20. Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) FIUR
(b) BDYW
(c) NPMK
(d) GIVO

Q21. Which of the following is a land locked country of South America?

(a) Peru
(b) Brazil
(c) Paraguay
(d) Argentina

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Q22. Which of the following statements is NOT correct regarding banks of India?

(a) SBI has the maximum number of branches all over India.
(b) Allahabad Bank is the oldest public sector bank of India.
(c) Mobile ATM was first introduced by ICICI bank.
(d) Reserve Bank of India is private bank of India.

Q23. The sum of two numbers is 30. If the sum of their reciprocals is 6/25, find the two numbers.

(a) 7 and 23
(b) 11 and 19
(c) 9 and 21
(d) 5 and 25

Q24. Which schedule of the Indian Constitution contains the list of states and union territories and their territories?

(a) 8^(th)
(b) 1^(st)
(c) 12^(th)
(d) 5^(th)

Q25. The latitudes that pass through Kerela also pass through:

(a) Tamil Nadu
(b) Rajasthan
(c) Uttarakhand
(d) Telangana

Q26. In 2019, United Nations General Assembly adopted the resolution to hold an International Day of Clean Air for blue skies every year on _____.

(a) 7^(th) September
(b) 1st October
(c) 30^(th) September
(d) 15^(th) September

Q27. Pallavi walked from her college library, 70 m towards the north, then 60 m towards the West, then 45 m towards the north and then 60 m towards the East. She stopped at this point to buy some candies from a candy shop. She again walked 50 m towards the north. How far and in which direction is Pallavi's college library from the candy shop?

(a) 115 m, south
(b) 150 m, east
(c) 165 m, south
(d) 115 m, north

Q28. The song Ekla Chalo Re (Walk alone) was written by:

(a) Ishwar Chandra Vidyasagar
(b) Rabindra Nath Tagore
(c) BC Chatterjee
(d) Aurobindo Ghosh

Q29. The population of Ludhiana city increases by 20% annually. If it's present population is 8,47,000, What will the population be in 2 years?

(a) 12,14,682
(b) 12,19,680
(c) 12,12,068
(d) 12,10,681

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Q30. Silk is obtained from:

(a) Butterfly
(b) Bombyx mori
(c) Culex
(d) Musca domestica

Q31. The first chairman of ISRO was:

(a) Dr Vikram Sarabhai
(b) Prof Satish Dhawan
(c) Dr K Kasturirangan
(d) Prof UR Rao

Q32. Three numbers are in ratio 11 : 16 : 23. If their sum is 150, find the greatest number.

(a) 69
(b) 115
(c) 46
(d) 92

Q33. A man's income at first increased by 20% and later on increased again by 30%. Find the total percent increase.

(a) 56
(b) 60
(c) 54
(d) 58

Q34. The difference between the interior and exterior angles at a vertex of a regular polygon is 140°. The number is sides of the polygon is:

(a) 24
(b) 18
(c) 20
(d) 22

Q35. _____ was conferred with 'Rashtriya Khel Protsahan Puruskar 2020' for the outstanding contribution in helping sportsperson to excel in their respective disciplines and implement robust sports welfare measures.

(a) Hockey India
(b) BCCI
(c) AFSCB
(d) SAI

Q36. Which of the following is NOT correctly matched?

(a) Kaiga Atomic Power Plant-Karnataka
(b) Narora Nuclear Reactor-Rajasthan
(c) Kudankulam Nuclear Power Plant-Tamil Nadu
(d) Tarapur Nuclear Reactor-Maharashtra

Q37. What is the measure of each exterior angle of a regular octagon?

(a) 30°
(b) 60°
(c) 50°
(d) 45°

Q38. The upper house of Indian parliament is:

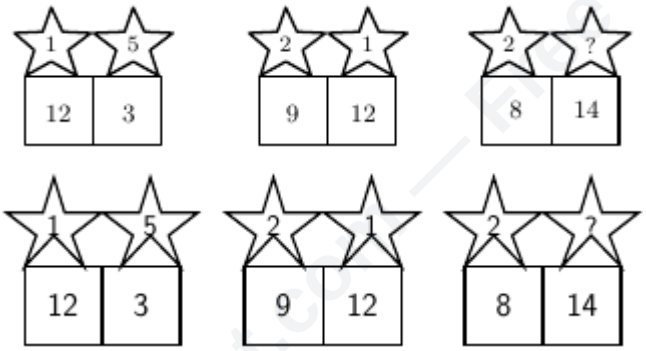
(a) Rajya Sabha
(b) Rashtrapati Bhawan
(c) Vidhan Sabha
(d) Lok Sabha

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Q39. How many of the integers between 109 and 121, both inclusive, are prime numbers?

(a) 2
(b) 1
(c) 3
(d) 0

Q40. Study the given pattern carefully and select the number that can replace the question mark (?) in the third figure.



(a) 16
(b) 21
(c) 3
(d) 2

Q41. Which of the following 'State - Number of Vidhan Sabha MLAs', combination is INCORRECT?

(a) Rajasthan-200
(b) Delhi-50
(c) Uttarakhand-70
(d) Maharashtra-288

Q42. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

1. Some of the language taught in this school are English, Portuguese, Tamil and Sanskrit.
2. Neither Arabic nor French is taught in this school.
3. All language are taught by well-qualified teachers in this school.

Conclusions:

(i) Some other languages are also taught in this school apart from English, Portuguese, Sanskrit and Tamil.
(ii) Tamil is taught by a well-qualified teacher in this school.
(iii) Either Arabic or French is taught in this school.

(a) Only conclusion (i) follows.
(b) Only conclusions (i) and (ii) follow.
(c) Only conclusion (iii) follows.
(d) Only conclusions (i) and (iii) follow.

Q43. What is Optical Distribution Network (ODN)?

(a) The physical fibres that distribute signals to users in a telecommunications network.
(b) The physical fibres that distribute signals to users in an electronic circuit.
(c) The physical fibre and optical devices that distribute signals to users in a telecommunications network.
(d) The optical devices that cannot distribute signals.

Q44. Find the value of cos37° sec143° + sin34° cosec146°

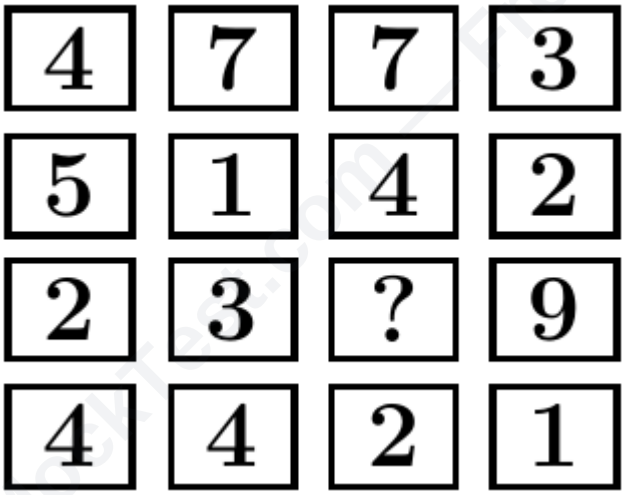
(a) 0
(b) 1/2
(c) 1

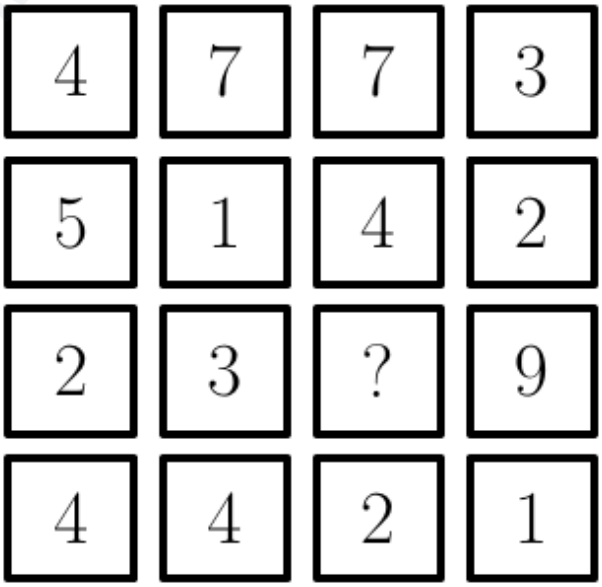
(d) -1

Q45. The sum of the greatest and smallest numbers of six digits is:

(a) 999999
(b) 100000
(c) 1099999
(d) 199999

Q46. Study the given pattern carefully and select the number that can replace the question mark (?) in it.





(a) 5
(b) 2
(c) 1
(d) 11

Q47. Who wrote the great Indian literary works 'Meghdoot' and 'Abhijanam Shakuntalam'?

(a) Bhasa
(b) Shudraka
(c) Chanakaya
(d) Kalidas

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Q48. Who wrote the 'Brihat Samhita', a collection of scientific information on diverse subjects?

(a) Kalhana
(b) Nagarjuna
(c) Varahamihira
(d) Charaka

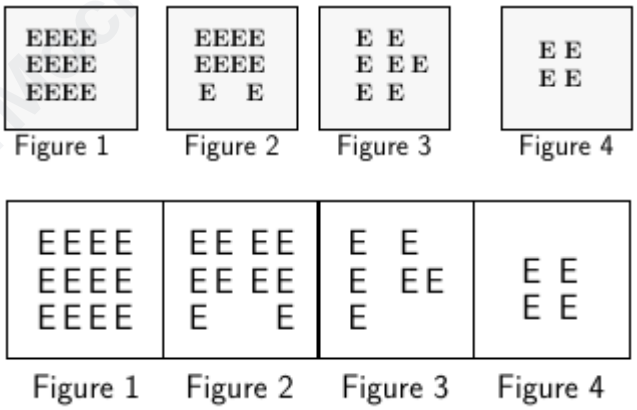
Q49. Heena covers a certain distance by train at 110 km/h and she returned to the starting point covering the same distance, driving a car at 50 km/h. Find her average speed for the whole journey.

(a) 68.25 km/h
(b) 69.25 km/h
(c) 68.75 km/h
(d) 69.75 km/h

Q50. A sum of money was lent on compound interest. It became Rs. 500 at the end of the first year and Rs. 550 at the end of second year. Find the rate of compound interest per annum.

(a) 20%
(b) 10%
(c) 5%
(d) 15%

Q51. Four figures have been given, out of which three are alike in some manner and one is different. Select the odd one.



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

Q52. The Nobel Prize in Physiology or Medicine 2020 was awarded jointly to Alter, Houghton and Rice for which of the following discoveries?

(a) Mechanisms for autophagy
(b) Molecular mechanisms controlling the circadian rhythm
(c) Therapy against malaria
(d) Identification of Hepatitis C virus

Q53. What is the smallest four digit number formed by using the digits 3, 5, 0, 6?

(a) 3506
(b) 3056
(c) 0536
(d) 0356

Q54. 10 years ago, the average age of a husband and his wife was 42 years. Now, the average age of the family consisting of the husband, wife and their son is 39 years. The present age of the son is:

(a) 20 Years
(b) 15 Years

(c) 10 Years
(d) 13 Years

Q55. In which of the following is the plant body NOT differentiated into root, stem and leaves?
(a) Spirogyra
(b) Marsilea
(c) Thuja
(d) Fern

Q56. Who wrote the famous book 'Ignited Minds'?
(a) Jhumpa Lahiri
(b) Chetan Bhagat
(c) Robin Sharma
(d) A. P. J. Abdul Kalam

Q57. A maximum of how many pieces of exact 17 cm length can be cut from a 960 cm long rod?
(a) 60
(b) 54
(c) 58
(d) 56

Q58. Vicky can complete a piece of work in 40 days. He worked for 8 days, then Gurpreet Singh finished it in 32 days. In how many days can Vicky and Gurpreet Singh together complete the work?
(a) 20 days
(b) 15 days
(c) 25 days
(d) 10 days

Q59. The HCF and LCM of two numbers are 75 and 450 respectively. If the first number is divided by 3, the quotient is 75. The second number is:
(a) 225
(b) 450
(c) 75
(d) 150

Q60. The area of a rectangle is 1287 cm^2 and its length and breadth are in the ratio of 13 : 11 respectively. What is its perimeter?
(a) 142 cm
(b) 138 cm
(c) 144 cm
(d) 140 cm

Q61. 'Bhotiya' is a caste of scheduled tribes of which of the following states in India?
(a) Uttarakhand
(b) Rajasthan
(c) Maharashtra
(d) Madhya Pradesh

Q62. Select the option in which the words share the same relationship as that shared by the given pair of words.
Writer : Pen
(a) Chef : Pan
(b) Tailor : Dress
(c) Swimmer : Float
(d) Dancer : Program

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Q63. Select the number from among the given options that can replace the question mark (?) in the following series.

2, 7, 22, 67, ?

(a) 607
(b) 97
(c) 202
(d) 82

Q64. Rs. 110 are contained in a box which consists of one rupee, 50 paise and 25 paise coins in the ratio 1 : 2 : 3. What is the number of 50 paise coins?

(a) 77
(b) 78
(c) 80
(d) 79

Q65. Select the option that is related to the third term in the same way as the second term is related to the first term.

Judge : Verdict : : Coach : ?

(a) Sports
(b) Team
(c) Player
(d) Train

Q66. The Red Data Book provides data on:

(a) red lions
(b) endangered plants and animals
(c) list of plant and animals
(d) red birds

Q67. Which country won the Sultan Azlan Shah Hockey tournament 2019?

(a) India
(b) Pakistan
(c) South Korea
(d) Malaysia

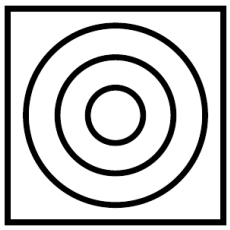
Q68. What is the scientific name of the fruit 'mango'?

(a) Solanum tuberosum
(b) Mangifera indica
(c) Pyrus malus
(d) Musa paradisicum

Q69. Select the Venn diagram that best represents the relationship between the following classes.

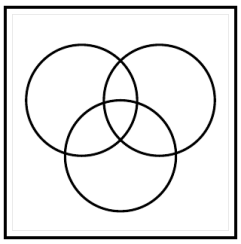
Students, Boys, Swimmers.

(a)

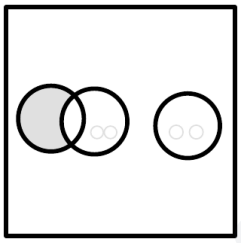


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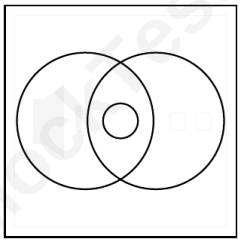
(b)



(c)



(d)



Q70. Niagara falls is situated on the border of:

(a) France and Germany
(b) USA and Mexico
(c) Mexico and Guatemala
(d) Canada and USA

Q71. How many cubes of side 8 cm can be formed by melting a cuboid of length 24 cm, breadth 16 cm and height 16 cm?

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

Q72. If one angle of parallelogram is 39° less than twice the smallest angle, then the smallest angle of the parallelogram is:

(a) 72°
(b) 75°
(c) 74°
(d) 73°

Q73. Rinku is twice as efficient a Deepak and together, they finish a piece of work in 28 days. Rinku alone can finish the work in:

(a) 43 days
(b) 41 days
(c) 44 days
(d) 42 days

Q74. Which of the following replaced the Planning Commission of India?

(a) Commission for Agricultural Costs and Prices
(b) Knowledge commission
(c) NITI Aayog

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(d) UPSC

Q75. Which of the following movements is related to forceful cultivation of Indigo?

(a) Bardoli satyagrah
(b) Dandi Yatra
(c) Champaran Satyagraha
(d) Non-cooperation movement

Q76. Find the remainder when 7^6 + 5 is divided by 6

(a) 3
(b) 0
(c) 1
(d) 2

Q77. Which scheme of the Government of India facilitates bank loans between Rs. 10 lakh and Rs. 1 crore to at least one scheduled caste/ scheduled tribe borrower and at least one woman borrower per bank branch for setting up greenfield enterprises?

(a) Pradhan Mantri Jeevan Jyoti Bima Yojana
(b) Stand Up India Scheme
(c) Pradhan Mantri Suraksha Bima Yojana
(d) Pradhan Mantri Jan Dhan Yojana

Q78. How much should we add to each 7 and 9 so that the ratio of the two numbers thus formed is 13 : 14.

(a) 17
(b) 16
(c) 18
(d) 19

Q79. The product of the LCM and HCF of two positive numbers is 72. The difference of these two numbers is 1. Find the numbers.

(a) 8 and 9
(b) 6 and 8
(c) 9 and 7
(d) 8 and 7

Q80. The Kolkata Port is located on which river?

(a) Mahanadi
(b) Godavari
(c) Ganges
(d) Hoogly

Q81. What is the sum of the cube of the natural numbers from 1 to 10, both inclusive?

(a) 3024
(b) 3025
(c) 3022
(d) 3023

Q82. Which Indian sepoy in the British army played a key part in events immediately preceding the outbreak of the Indian rebellion of 1857?

(a) Lokmanya Tilak
(b) Mangal Singh
(c) Mangal Pandey
(d) Bhagat Singh

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Q83. 18 apple trees, 21 mango trees and 39 orange trees have to be planted in rows such that each row contains the same number of trees and all of the same variety only. The minimum number of rows in which the trees may be planted is:

(a) 28
(b) 24
(c) 22
(d) 26

Q84. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) Tractor
(b) Plough
(c) Seed Drill
(d) Loom

Q85. A book was sold for Rs. 230 with a profit of 15%. If it was sold for Rs. 210, then what would have been the percentage of profit or loss?

(a) 4% loss
(b) 5% loss
(c) 5% profit
(d) 4% profit

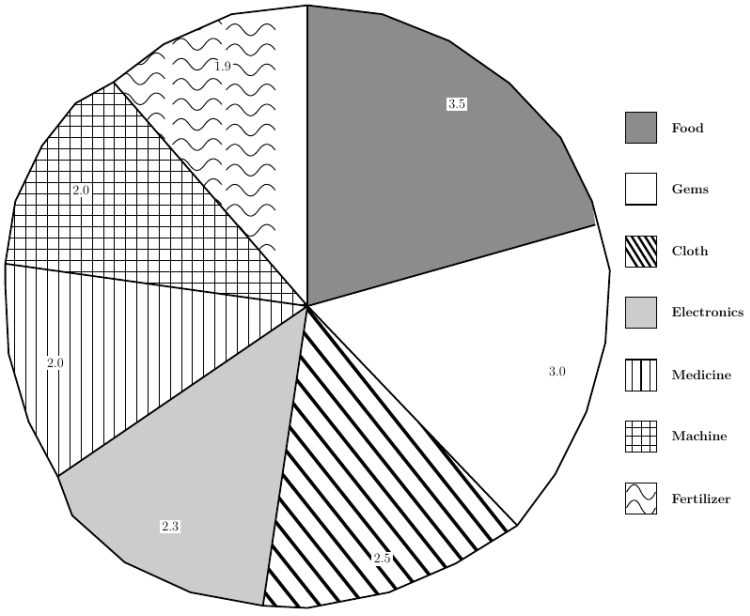
Q86. The given table shows the number of passengers on an aircraft and their corresponding weight (in kg), for a total of 40 passengers. Answer the question given below based on the table.

No of passengers	4	15	6	5	3	7
Weight in kg	90	60	75	78	72	45

What is the average weight of all the 40 passengers?

(a) 65.77 kg
(b) 80.57 kg
(c) 75.77 kg
(d) 72.57 kg

Q87. The given pie chart shows the spending of a country (in Rs. crore) on importing various products from a neighboring country during a particular year. Answer the question given below based on the pie chart.

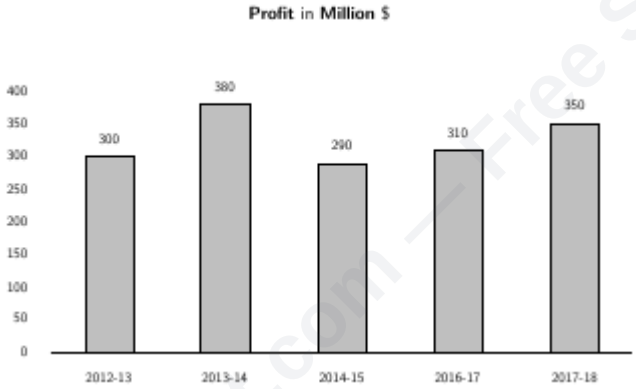


What is the ratio of spends on Food and Cloth to the spends on Machine and Medicine?

(a) 2 : 3

(b) 3 : 2
(c) 6 : 5
(d) 4 : 6

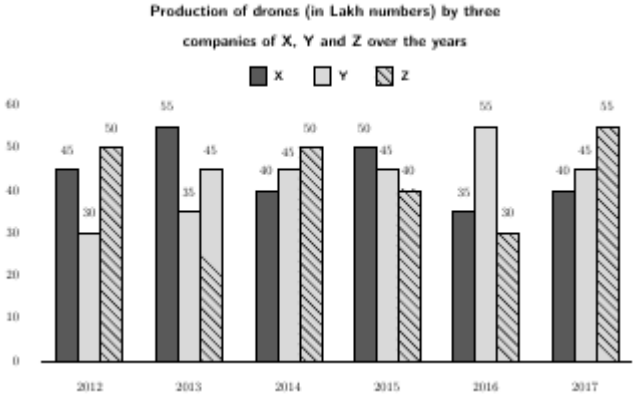
Q88. The given bar graph shows the profit made by a software company (in $ million) over 5 years (from 2012 to 2018). Answer the question given below based on the bar graph.



What was the percentage increase in the profit made by the software company in 2013-14 over 2012-13?

(a) 50%
(b) 30%
(c) 26.66%
(d) 20.50%

Q89. The given bar graph shows the production of drones (in lakhs) by three companies X, Y and Z over 6 years (from 2012 to 2017). Answer the question given below based on the bar graph.



What is the ratio of the average production of company X in the period 2014-2016 to the average production of company Y in the same period?

(a) 23 : 25
(b) 15 : 23
(c) 17 : 19
(d) 25 : 29

Q90. Select the number from the given options that can replace the question marks (?) in the following series.

6, 7, 11, 20, 36, ?

(a) 61
(b) 57
(c) 60
(d) 51

Q91. Read the given statements carefully and decide which conclusion from the given options DOES NOT logically flow from the statements.

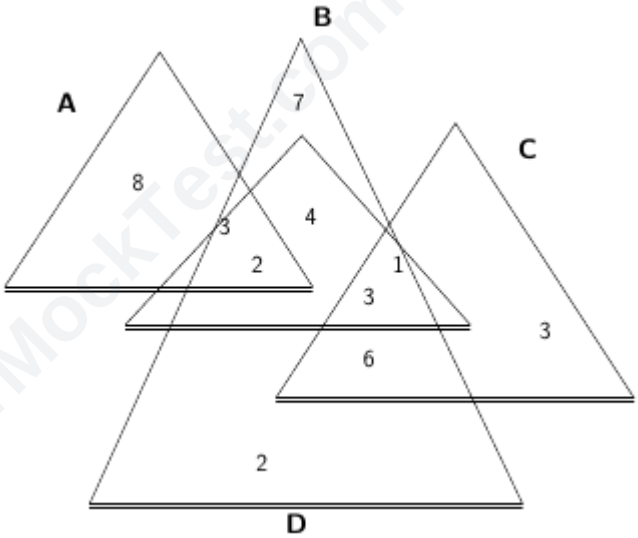
Statement 1: All potatoes are garlic

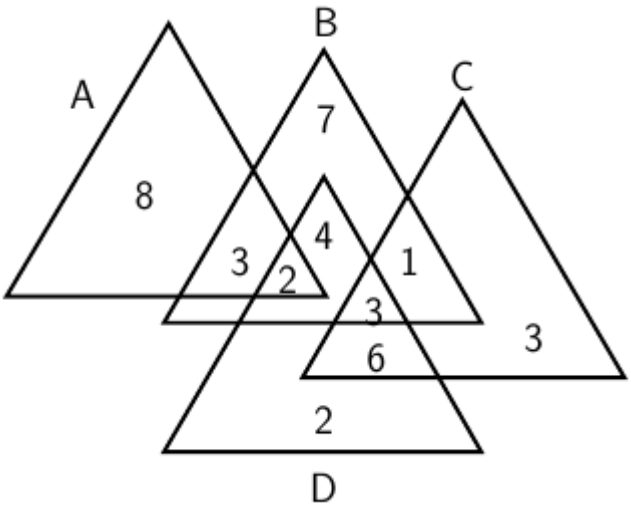
Statement 2: Some garlic are apples.

Statement 3: Some potatoes are not apples.

(a) Some garlic are neither apples nor potatoes.
(b) Some apples are garlic.
(c) Some apples are not potatoes but they are garlic.
(d) All garlic are either apples or potatoes.

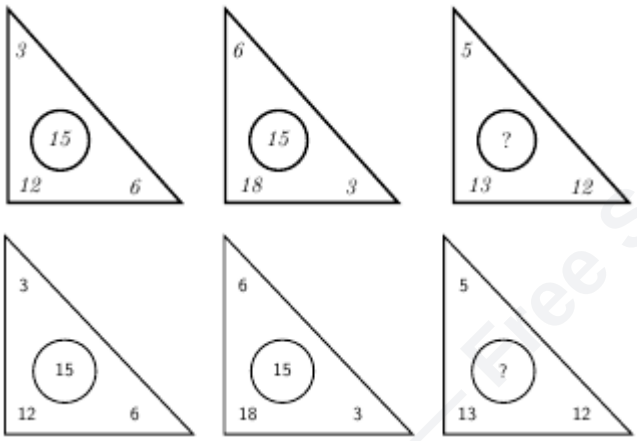
Q92. The following figure is a combination of 4 figures, A, B, C and D. Figure A represents the number of people who drink Coca Cola. Figure B represents the number of people who drink Pepsi. Figures C and D represent the number of people who drink Sprite and Fanta, respectively. How many people drink both Pepsi and Sprite but NOT Fanta?





(a) 7
(b) 1
(c) 4
(d) 11

Q93. Study the given pattern carefully and select the number that can replace the question mark (?) in the third figure.



(a) 20
(b) 4
(c) 15
(d) 30

Q94. Four numbers have been given, out of which three are alike in some manner and one is different. Select the number that is different from the rest.

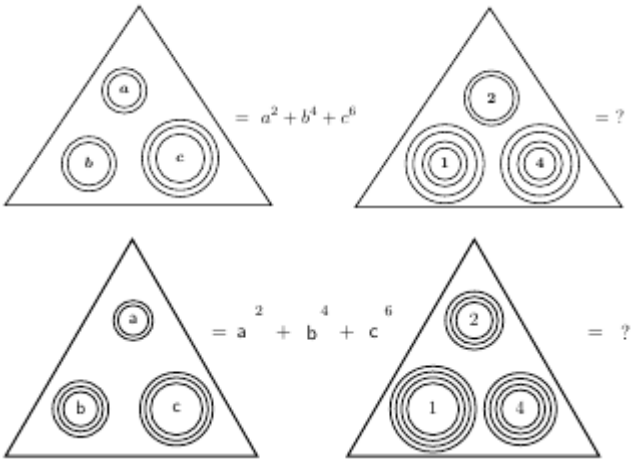
(a) 416
(b) 864
(c) 749
(d) 463

Q95. Study the given grid carefully and select the number from the given options than can replace the question mark (?) in it.

16	**16**	**14**
128	?	126
8	5	9

(a) 80
(b) 124
(c) 130
(d) 7

Q96. Study the given pattern carefully and select the number that can replace the question mark (?) in it.



(a) 1040
(b) 8
(c) 4113
(d) 256

Q97. In a certain code language FREE is written as IUHH and TREE is written as WUHH. How will MORE be written as in that language?

(a) QSUH
(b) PRUH
(c) OQUH
(d) PSUH

Q98. If you are the only child of your mother, Mary. Your maternal uncle, Christopher, is the husband of Merciya. Sophie is the only sister of Merciya. Jonathan is Sophie's sister's son. How is your mother related to Jonathan?

(a) Mother's Mother
(b) Father's Mother
(c) Father's Sister
(d) Mother's Sister

Q99. In a certain code language, DAISY is written as CYFOT. How will ROSE be written in that language?

(a) QMPA
(b) PMOY
(c) QMOY
(d) SPTF

Q100. Which of the following letters is 8th to the right of the 12th letter in the English alphabets?

(a) S
(b) T
(c) D
(d) U

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) 64 : 121

Given:

The corresponding altitudes of two similar triangles are 8 cm and 11 cm.

Concept used:

In similar triangles, the Ratio of areas is equal to the ratio of squares of the corresponding sides and altitudes.

Calculations:

According to the concept,

area of first Δ : area of second Δ = (altitude of firstΔ)² : (altitude of second Δ)²

=>area of first Δ : area of second Δ = (8)² : (11)²

=>area of first Δ : area of second Δ = 64 : 121

Hence, The Required ratio is 64 : 121.

Q2. Answer: (d) 290

Given:

On dividing 15,971 by a certain number, the quotient is 55 and the remainder is 21.

Concept used:

Dividend = Divisor × Quotient + Remainder

Calculations:

Let the quotient be x.

According to the question,

15,971 = 55 x + 21

=> 15,971 - 21 = 55x

=> 15,950 = 55x

=> x = 15,950/55

=> x = 290

Hence, The Required value of the Quotient is 290.

Q3. Answer: (a) PARAM MITRA

The correct answer is PARAM MITRA

Key Points

• Param Mitra Investments Private Limited is an Indian Non-Government Company. It's a private company and is classified as'company limited by shares

• Company's authorized capital stands at Rs 916.0 lakhs and has 83.48308% paid-up capital which is Rs 764.71 lakhs

• Param Mitra Investments Private Limited is majorly in Finance business and currently, company operations are active.

• Company is registered in Delhi (Delhi) Registrar Office.

Additional Information

• PARAM 8000, India's 1st Giga-scale supercomputer in 1990. PARAM 10000, 100 Gigaflop supercomputer in 1998. PARAM Padma, 1Teraflop supercomputer in 2002. This was India's first supercomputer to enter the Top500 list of supercomputers of the world (ranked 171 in June 2003).

• The state-of-the-art supercomputing system is a supercomputing facility is being established at IISER, Pune under build approach of National Supercomputing Mission with a peak computing power of 797 TeraFlops.

• PARAM 8600 was an improvement over PARAM 8000. In 1992 C-DAC realised its machines were underpowered and wished to integrate the newly released Intel i860 processor.

Q4. Answer: (b) 78

The pattern followed in the given series is:

The difference between the numbers is an increasing multiple of 5.

Hence the correct answer is option 2.

Q5. Answer: (d) MGNREGA

The correct answer is MGNREGA.

Key Points

• The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), also known as Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS) is Indian legislation enacted on August 25, 2005.

• The MGNREGA provides a legal guarantee for one hundred days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work at the statutory minimum wage.

• National Rural Employment Guarantee Act 2005 or NREGA, later renamed as the Mahatma Gandhi National Rural Employment Guarantee Act.

Additional Information

• The Pradhan Mantri Gram Sadak Yojana is a nationwide plan in India to provide good all-weather road connectivity to unconnected villages

• Pradhan Mantri Jan Dhan Yojana is a financial inclusion program of the Government of India open to Indian citizens, that aims to expand affordable access to financial services such as bank accounts, remittances, credit, insurance and pensions.

• Skill India or the National Skills Development Mission of India is a campaign launched by Prime Minister Narendra Modi. It is managed by the National Skills Development Corporation of India

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Q6. Answer: (c) OPEC-Zurich

The correct answer is OPEC- Zurich

Key Points

• OPEC (Organization of the Petroleum Exporting Countries) is an intergovernmental organization oil demand supply market upstream downstream Vienna Austria

• Currently, the Organization comprises 15 Member Countries – namely Algeria, Angola, Congo, Ecuador, Equatorial Guinea, Gabon, IR Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela.

Additional Information

• The World Bank is an international financial institution that provides loans and grants to the governments of low- and middle-income countries for the purpose of pursuing capital projects

• The North Atlantic Treaty Organization is headquartered in a complex in Haren, part of the City of Brussels municipality of Belgium.

• UNICEF, in full originally called the United Nations International Children's Emergency Fund, now officially United Nations Children's Fund, is an agency of the United Nations responsible for providing humanitarian and developmental aid to children worldwide

Q7. Answer: (b) Udham Singh

The correct answer is Udham Singh

Key Points

• Udham Singh was an Indian revolutionary belonging to Ghadar Party and HSRA.

• Best known for assassinating Michael O'Dwyer, the former lieutenant governor of the Punjab in India, on 13 March 1940

Additional Information

• Bhagat Singh was a charismatic Indian revolutionary who participated in the mistaken murder of a junior British police officer in what was to be retaliation for the death of an Indian nationalist.

• Chandra Shekhar Tiwari under its new name of Hindustan Socialist Republican Association (HSRA) after the death of its founder, Ram Prasad Bismil, and three other prominent party leaders, Roshan Singh, Rajendra Nath Lahiri and Ashfaqulla Khan.

• Mangal Pandey was an Indian soldier who played a key part in the events immediately preceding the outbreak of the Indian rebellion of 1857. He was a sepoy in the 34th Bengal Native Infantry regiment of the British East India Company. In 1984, the Indian government issued a postage stamp to remember him..

Q8. Answer: (c) A - D - C - B

The correct answer is A-D-C-B

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.

• Massacre took place 103 years ago today (April 13, 1919). 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 Dyer.

Additional Information

• Noncooperation movement, unsuccessful attempt in 1920–22, organized by Mahatma Gandhi, to induce the British government of India to grant self-government, or swaraj, to India. It was one of Gandhi's first organized act.

• The Flag Satyagraha was a term coined to describe the hoisting of the flag as a defiance against British-imposed restrictions on civil freedom and also the legitimacy of British rule in India altogether.

• The Quit India Movement, also known as the August Movement, was a movement launched at the Bombay session of the All India Congress Committee by Mohandas Gandhi on 8th August 1942, during World War II, demanding an end to British rule in India.

Q9. Answer: (a) Stamp duty

The correct answer is Stamp duty

Key Points

• Stamp duty is a tax that is levied on single property purchases or documents.

• A physical revenue stamp had to be attached to or impressed upon the document to show that stamp duty had been paid before the document was legally effective

Additional Information

• In India, Entertainment Tax is a tax imposed by the government on feature films getting a wide release in the country and are reduced from gross collections, major commercial shows and big private festivals.

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• The amount after deducting entertainment tax is known as net.Central excise duty is an indirect tax, i.e. each person, rich or poor, is liable to pay tax indirectly on purchase of goods which have already been charged to duty.

• Value-added tax (VAT) is a consumption tax on goods and services that is levied at each stage of the supply chain where value is added, from initial production to the point of sale.

Q10. Answer: (b) Fiber To The Premises

The correct answer is Fibre To The Premises

Key Points

• The term residential fiber to the premises (FTTP) refers to equipment used in fiber access deployments.

• Fibers extend all the way to the end-user premises and the equipment is designed and optimized for use in residential applications.

Additional Information

• Fibre to the premises connections require an NBN access network device (pictured) that is to be installed in your home.

• If you aren't yet connected, you may be required to pay $300 to set the connection up

Q11. Answer: (d) Funaria

The correct answer is Funaria

Key Points

• Funaria is a genus of approximately 210 species of moss.

• Funaria hygrometrica is the most common specie

• The name is derived from the Latin word “funis”, meaning "a rope".

Additional Information

• Ulothrix is a genus of non-branching filamentous green algae, generally found in fresh and marine water. Its cells are normally as broad as they are long, and they thrive in the low temperatures of spring and winter.

• Ulva is a small genus of marine and brackish water green algae. It is edible and is often called 'Sea Lettuce'. Species with hollow, one-layered thalli were formerly included in Enteromorpha, but it is widely accepted now that such species should be included in Ulva.

• Chara is a genus of charophyte green algae in the family Characeae. They are multicellular and superficially resemble land plants because of stem-like and leaf-like structures

Q12. Answer: (a) Roberto Azevedo

The correct answer is Robert Azevedo

Key Points

• Roberto Carvalho de Azevêdo is a Brazilian career diplomat who served as Director-General of the World Trade Organization from 2013 until 2020. Since 2020, he has been Executive Vice President and Director of Corporate Affairs at PepsiCo

• Succedded To Pascal Lamy as an Director- General of the World Trade Organization.

Additional Information

• Pascal Lamy is a French political consultant and businessman. He was the Director-General of the World Trade Organization. He was then succeeded by Roberto Azevêdo.

• Charles A. Gomez is a Gibraltarian lawyer, Principal Barrister of Charles Gomez & Company, politician, Leader of the right of centre New Gibraltar Democracy Party and an Honorary Professor of International Law at the University of Cadi

• David Walker was an American abolitionist, writer, and anti-slavery activist. Though his father was enslaved, his mother was free; therefore, he was free as well.

Q13. Answer: (b) IIT Madras

The correct answer is IIT Madras.

Key Points

• The National Institutional Ranking Framework (NIRF) was approved by the MHRD.

• Launched by Honourable Minister of Human Resource Development on 29th September 2015.

• This framework outlines a methodology to rank institutions across the country.

Additional Information

• The Indian Institute of Technology Madras is known both nationally and internationally for excellence in technical education, basic and applied research, innovation, entrepreneurship and industrial consultancy.

• In 1969 these three colleges were amalgamated to form the Institute of Technology. The Institute of Technology, Banaras Hindu University (IT-BHU), has been converted into Indian Institute of Technology (Banaras Hindu University),Varanasi by the Government of India on 29th June, 2012.

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• Jawaharlal Nehru University is a public major research university located in New Delhi, India. It was established in 1969 and named after Jawaharlal Nehru, India's first Prime Minister. The university is known for leading faculties and research emphasis on social sciences and applied sciences

Q14. Answer: (b) 2700 m2

Given:

The length of a rectangle is thrice its breadth.

The perimeter of the rectangle = 240 m

Formula used:

Perimeter of a rectangle = 2(Length + Breadth)

Calculation:

Let the breadth be = b,

then, length is 3b

240 m = 2(3b + b)

=> 240 = 8b

=> b = 30 m

Now, length = 3b

=> 3b = 3(30) = 90

=> length = 90 m

So, Area = l × b = 90 × 30 = 2700 m²

Therefore The Area of the rectangle is 2700 m².

Q15. Answer: (b) Punjab

The correct answer is Punjab

Key Points

• India's forest cover is now7,13,789 square kilometers (21.71% of the country's geographical area) which is an increase from 67% in 2019.

• Tree cover is defined as all tree patches of size less than one hectare occurring outside the recorded forest area.

Additional Information

• The Union Territory of Lakshadweep has the highest forest cover of 90.33%.

• Area-wise Madhya Pradesh has the largest forest cover in the country followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra. In terms of forest cover as percentage of total geographical area.

• The top five States are Mizoram (84.53%), Arunachal Pradesh (79.33%), Meghalaya (76.00%), Manipur (74.34%) and Nagaland (73.90%). 17 states/UT's have above 33 percent of the geographical area under forest cover

Q16. Answer: (b) Only actions (ii) and (iii) follow.

Explanation:

From the given statement:

If none of the employees submit their work report by tomorrow, then the monthly project will be in a crisis.

We consider the given courses of action:

i. The date of submission of work report must be extended: The statement suggests that being late will result in crisis and there is no indication towards the date being extended so it will be wrong to assume. Thus this course of action does not follow.

ii. Some employees must speed up and submit their work report by tomorrow: After the reminder of the due date the work will be done as soon as possible which means those employees who are behind the schedule will definitely speed up the working rate. Therefore this course of action follows.

iii. The cause of late submission of work report by most employees must be figured out and proper counter; measures must be taken: If the work is submitted late then there will be a discussion about why it happened and then the mistakes will be avoided in the next projects. Thus this course of action follows.

So, only actions (ii) and (iii) follow.

Hence the correct answer is option 2.

Q17. Answer: (b) Jamnagar

The correct answer is Jamnagar

Key Points

• Institute of Teaching and Research in Ayurveda Jamnagar, Gujarat, India which was founded in 1967.

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• It has a joint campus with, an Institute of National Importance, established in 2020.

• Established in 1967, Institute of Teaching & Research in Ayurveda or Gujarat Ayurved University is the first university to offer education and training in the field of Ayurveda across the world.

Additional Information

• The institution was formed by an act approved by Gujarat State legislative Assembly in the year 1965.

• Located in Jamnagar city of Gujarat, the university is devoted to Ayurvedic studies and Research and is administratively associated with the Health Ministry at State and Centre level.

• This university is a self-governing institution supported by the Government of Gujarat State.

Q18. Answer: (b) 17

Explanation:

The pattern followed in the given series is:

(Difference of top two terms) + third term = Fourth term

Let's apply the pattern on the given series:

1) (18 - 8) + 7 = 17

10 + 7 = 17

17 = 17

2) (22 - 15) + 7 = 14

7 + 7 = 14

14 = 14

3) (18 - 14) + 13 = ?

4 + 13 = ?

17 = Answer

Hence the correct answer is option 2.

Q19. Answer: (c) Daughter's Husband

Explanation:

Preparing the family tree using the following symbols:

From the given information:

Step 1: Selena is the sister of James and James is the father of Eden.

Step 2: Marco is James' sister's son.

Step 3: Eden's husband Robert has a friend, Ileana, who is Selena's aunt.

We don't have to draw any further because the relation we want is already in the diagram.

We can see that, Robert is daughter's husband to James.

Hence the correct answer is option 3.

Q20. Answer: (d) GIVO

Explanation:

The pattern followed in the given options are:

Option 1) FIUR:-

Option 2) BDYW:-

Option 3) NPMK:-

Option 4) GIVO:-

So, GIVO is the odd one.

Hence the correct answer is option 4.

Q21. Answer: (c) Paraguay

The correct answer is Paraguay

Key Points

• South America is the fourth largest continent in the world and has twelve sovereign countries and two non-sovereign areas

• Of these countries in South America there are two countries that are landlocked: Bolivia and and Paraguay.

Additional Information

• South America is a continent entirely in the Western Hemisphere and mostly in the Southern Hemisphere, with a relatively small portion in the Northern Hemisphere.

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• It can also be described as the southern subregion of a single continent called America

-

Q22. Answer: (d) Reserve Bank of India is private bank of India.

The correct answer is Reserve Bank of India is private bank of India.

Key Points

• The Reserve Bank of India (RBI) is the central bank of India whose primary function is to manage and govern the financial system of the country.

• It is a statutory body established in the year 1935 under the Reserve Bank of India Act, 1934.

• The central bank regulates the issue and supply of the Indian rupee.

Additional Information

• State Bank of India is an Indian multinational public sector bank and financial services statutory body headquartered in Mumbai, Maharashtra. SBI is the 43rd largest bank in the world.

• Allahabad Bank was an Indian nationalised bank with its headquarters in Kolkata, India. Founded in Allahabad in 1865 and nationalized by the government of India in 1969, the bank provided banking and financial services for 155 years.

• ICICI Bank, India's largest private sector bank, today announced the launch of “ATM on Wheels”, India's first Mobile ATM, in Mumbai. The fully networked mobile ATM will be stationed at specific locations.

Q23. Answer: (d) 5 and 25

Given:

Sum of two numbers = 30

Sum of their reciprocals = 6/25

Calculation:

Let the two numbers be a and b.

a + b = 30 and 1/a+1/b=6/25

Sum of their reciprocals:

(1/a) + (1/b) = (a + b)/ab

=> 6/25=30/ab

=> ab = 125

=> a(30 - a) = 125

=> a^2 - 30a + 125 = 0

=> a2 - 25a - 5a + 125 = 0

=> a(a - 25) - 5(a - 25) = 0

=> (a - 25)(a - 5) = 00

=> a = 25, 5

=> b = 5, 25

Therefore The numbers are 5 and 25.

Q24. Answer: (b) 1^(st)

The correct answer is 1st

Key Points

• The list of states and union territories is mentioned in the first schedule of the Constitution of India.

• Schedule of the constitution states: Names of the States and their territorial jurisdiction.

Additional Information

• Eighth Schedule to the Constitution of India lists the official languages of the Republic of India and English is not one of them. At the time of writing the Constitution of India, there were only 14 languages mentioned in the 8th schedule.

• The Fifth Schedule of the Constitution deals with the administration and control of Scheduled Areas as well as of Scheduled Tribes residing in any State other than the States of Assam, Meghalaya, Tripura and Mizoram.

• 12th Schedule of the Indian Constitution deals with the provisions that specify the powers, authority and responsibilities of Municipalities. This schedule was added by the 74th Amendment Act of 1992. It has 18 matters. Urban planning including town planning.

Q25. Answer: (a) Tamil Nadu

The correct answer is Tamil Nadu

Key Points

• Kerala, is situated between the Arabian Sea (Lakshadweep Sea) to the west and the Western Ghats to the east. Kerala's coast runs some 580 km in length.

• Kerala lies between northern latitude of 8°.17'.30" N and 12°. 47'.40" N and east longitudes 74°.27'.47" E and 77°.37'.12" E.

• The latitude of Tamil Nadu, India is 11.127123, and the longitude is 78.656891.

• Tamil Nadu, India is located at India country in the States place category with the gps coordinates of 11° 7' 37.6428'' N and 78° 39' 24.8076'' E.

Additional Information

• Rajasthan geographical location is 23.3 to 30.12 North latitude and 69.30 to 78.17 East longitude, with the Tropic of Cancer passing through its southernmost tip.

• Biodiversity Profile of Uttarakhand. Uttarakhand the 27th state of Republic of India lies between 28o 44' & 31o 28' N Latitude and 77o 35' & 81o 01' East longitude. It was carved out of UP on 9th November 2000. The geographical area of the state is 53483 sq.

Q26. Answer: (a) 7^(th) September

The correct answer is 7th September.

Key Points

• International Day of Clean Air for Blue Skies – September 7, 2022. International Day of Clean Air for Blue Skies on September 7 is observed to recognize the importance of clean air in our health and daily lives.

• Nairobi, 7 September 2021 – The world today marked the second International Day of Clean Air for blue skies under the theme Healthy Air, Healthy Planet, which highlights the link between air quality and planetary and human health.

Additional Information

• The theme for this year's International Day of Clean Air for blue skies is “Healthy Air, Healthy Planet” which emphasizes the health effects of air pollution, particularly during the COVID-19 pandemic

Q27. Answer: (a) 115 m, south

Explanation:

From the given information:

Step 1: Pallavi walked from her college library, 70 m towards the north, then 60 m towards the east.

Step 2: Then 45 m towards the north and then 60 m towards the west.

Step 3: She stopped at this point to buy some candies from a candy shop. She again walked 50 m towards the north.

Now we can see that the distance from candy shop to the starting point i.e library will be:

45m + 70m = 115m and the direction will be south.

Hence the correct answer is option 1.

Q28. Answer: (b) Rabindra Nath Tagore

The correct answer is Rabindra Nath Tagore

Key Points

• Rabindranath Tagore, was a South Asian Bengali polymath who worked as a poet, writer, playwright, composer, philosopher, social reformer and painter.

• He reshaped Bengali literature and music as well as Indian art with Contextual Modernism in the late 19th and early 20th century.

Additional Information

• Ishwar Chandra Vidhyasagar, is considered the "Father of Bengali prose". He was the most prominent campaigner for Hindu widow remarriage, petitioning the Legislative council despite severe opposition.

• Bankim Chandra Chatterjee also known as Bankim Chandra Chattopadhyay was one of the greatest novelists and poets of India. He is famous as author of Vande Mataram, the national song of India.

• Sri Aurobindo was an Indian philosopher, yoga guru, maharishi, poet, and Indian nationalist. He was also a journalist, editing newspapers such as Vande Mataram

Q29. Answer: (b) 12,19,680

Given:

Current population is 8,47,000

Growth percentage is 20%

Time is 2 years

Formula used:

A = P(1 + r/100)t

Here, A = Total population after 3 year

P = Current population

r = Growth percentage

t = Time

Calculation:

Population = 847000(1 + 20/100)2

=> Population = 847000(1 + 1/5)2

=> Population = 847000(6/5)²

=> Population = (847000 × 6 × 6)/(5 × 5)

=> Population = 30492000/25

=> A = 12,19,680

Therefore Population of town after 2 year is 12,19,680.

Q30. Answer: (b) Bombyx mori

The correct answer is Bombyx mori

Key Points

• Bombyx mori, the domestic silk moth, is an insect from the moth family Bombycidae.

• It is the closest relative of Bombyx mandarina, the wild silk moth. The silkworm is the larva or caterpillar of a silk moth. It is an economically important insect, being a primary producer of silk.

• Bombyx mori produce a fluid in their silk glands that is forces through spinnerets on their mouths. This fluid hardens in the air to produce the silk thread that they will wrap around themselves to form their cocoons.

Additional Information

• A butterfly is a flying insect with a small body and large, often colorful wings. Some gardeners plant specific flowers that attract butterflies. Butterflies are closely related to moths, which also have wings that are large in proportion to their bodies and antennae.

• Culex is a genus of mosquitoes, several species of which serve as vectors of one or more important diseases of birds, humans, and other animals.

• The house fly, Musca domestica Linnaeus, is a well-known cosmopolitan pest of both farm and home. This species is always found in association with humans or the activities of humans. It is the most common species found on hog and poultry farms, horse stables and ranches.

Q31. Answer: (a) Dr Vikram Sarabhai

The correct answer is Dr Vikram Sarabhai

Key Points

• Vikram Ambalal Sarabhai was an Indian physicist and astronomer who initiated space research and helped develop nuclear power in India.

• He was honoured with Padma Bhushan in 1966 and the Padma Vibhushan in 1972.

• He is internationally regarded as the Father of the Indian Space Program

Additional Information

• Satish Dhawan was an Indian mathematician and aerospace engineer, widely regarded as the father of experimental fluid dynamics research in India. Born in Srinagar, Dhawan was educated in India and further on in United States.

• Dr. Kasturirangan is a member of several important scientific academies, both within India and abroad. He is presently the President of the Indian Academy of Sciences at Bangalore and General President of the Indian Science Congress.

• Chairman, Space Commission and Secretary, Department of Space in 1984, Prof. Rao accelerated the development of rocket technology, resulting in the successful launch of ASLV rocket and the operational PSLV launch vehicle, which can launch 2.0 ton class of satellites into polar orbit.

Q32. Answer: (a) 69

Given:

Numbers are in the ratio 11 : 16 : 23.

Sum of numbers is 150.

Calculations:

Let the first, second and third number is 11x, 16x and 23x.

According to the question,

11x + 16x + 23x = 150

=> 50x = 150

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=> x = 3
So, the first number is = 11(3) = 33
and The second number = 16(3) = 48
And the third number = 23(3) = 69
As, 69 > 48 > 33
Therefore The greatest number is 69.

Q33. Answer: (a) 56

Given:
A man's income is increased by 20% and later on, increased again by 30%.
Concept used:
Increase% = (total increase / initial) × 100
Calculations:
Let the income be 100.
Then, according to the question,
first increased income = 100 + 20 = 120
Second increased income
= 120 + 30% of 120
= 120 + 0.3 × 120
= 120 + 36
= 156
So, the Total increase
= Second increased income - initial income
= 156 - 100
= 56
Therefore, the total increase percentage
= 56/100×100
= 56%
Hence, The Total increase Percentage is 56%.

Q34. Answer: (b) 18

Given:
The difference between the exterior and interior angles at a vertex of a regular polygon is 140°
Formula Used:
Interior angle of a polygon having side n = (n – 2)180°/n
Calculations:
Let Ai and Ae be interior and exterior angles
Sum of Ai and Ae = 180°,
So, Ai + Ae = 180
Therefore Ai - Ae = 140
So, solving for Ae & Ai
Ae = 20°
Ai = 160°
Interior angle of a polygon having side n = (n – 2)180°/n
Therefore 160° = (n – 2)180°/n
=> 160n = 180n – 360
=> 360 = 20n
=> n = 18
Thus the number of sides are 18.

Q35. Answer: (c) AFSCB

The correct answer is AFSCB
Key Points

• AFSB has been conferred with this prestigious award on 8 December 2020 by the eminent jury of FICCI India Sports Awards 2020 that was chaired by Justice Mudgal.

• The award function took place virtually through video conferencing on 8 December 2020 and Air Commodore Ashutosh Chaturvedi, chairman, AFSCB, received the prestigious award from the president of FICCI

Additional Information

• Hockey India plans, directs and conducts all the activities for both men and women hockey in India. It is recognized by the Ministry of Youth Affairs & Sports, Govt. of India as the sole body responsible towards promoting Hockey in India. It was formed after Indian Hockey Federation was dismissed in 2008 by IOA.

• The Board of Control for Cricket in India is the governing body for cricket in India. Its headquarter. The BCCI is an autonomous organisation and does not fall under the purview of the National Sports Federation of India

• The Sports Authority of India is the apex national sports body of India, established in 1982 by the Ministry of Youth Affairs and Sports of Government of India for the development of sports in India.

Q36. Answer: (b) Narora Nuclear Reactor-Rajasthan

The correct answer is Narora Nuclear Reactor-Rajasthan

Key Points

• Narora Atomic Power Station (NAPS) is a nuclear power plant located in Narora, Bulandshahar District in Uttar Pradesh, India.

• There are two operational units called IN-7 Narora 1 and IN-8 Narora 2 power plants.

• The design, construction, and operation of Narora are managed by the NPCIL

Additional Information

• It is the third-largest nuclear power plant in India, Kaiga Atomic Power Station (KAPS), located in Karwar district, is near river Kali in Karwar district of Karnataka, operated by state-run Nuclear Power Corporation of India Ltd (NPCIL)

• Kudankulam Nuclear Power Plant is the largest nuclear power station in India, situated in Kudankulam in the Tirunelveli district of the southern Indian state of Tamil Nadu.

• Tarapur Atomic Power Station is located in Tarapur, Palghar, India. It was the first commercial nuclear power station built in India

Q37. Answer: (d) 45°

Given:

Exterior angles of a regular octagon

Concept Used:

Measure each exterior angle of a regular octagon = 360º ÷ Number of sides

Calculation:

=> Total sum of all exterior angles of a regular octagon = 360º

=> Number of sides in octagon = 8

=> So, Measure of each angle = 360/8=45 º

Therefore, the measure of each exterior angle of a regular octagon is 45º.

Q38. Answer: (a) Rajya Sabha

The correct answer is Rajya sabha.

Key Points

• Rajya Sabha:

• The Rajya Sabha should consist of not more than 250 members 238 members representing the States and Union Territories, and

• 12 members nominated by the President.

• Rajya Sabha is a permanent body and is not subject to dissolution.

• The Rajya Sabha or Council of States is the upper house of the Parliament of India.

• However, one-third of the members retire every second year and are replaced by newly elected members.

• Each member is elected for a term of six years.

• The Vice President of India is the ex-officio Chairman of Rajya Sabha.

• The senior-most minister, who is a member of Rajya Sabha, is appointed by the Prime Minister as Leader of the House.

Additional Information

• Indian Parliament

• The Parliament consists of the two Houses-

• the Lok Sabha and the Rajya Sabha and the President of India.

• According to Article 79 of the Indian Constitution, there shall be a Parliament for the Union which shall consist of the President and two Houses to be known respectively as the Council of States and the House of the People.

Q39. Answer: (a) 2

Given:

Numbers between 109 and 121, including 109 and 121.

Concept used:

Prime numbers: Numbers divisible by 1 and itself.

Calculations:

Numbers between 109 and 121, including 109 and 121.

=> 109, 110, 111, 112, 113, 114, 115, 116, 117, 118,119, 120 and 121

As we know,

110, 112, 114, 116, 118, and 120 are divisible by 2.

and 111, 114, and 117 are divisible by 3.

Also, 115 is divisible by 5, 119 is divisible by 17, and 121 is divisible by 11.

109 and 113 are two prime numbers.

Hence, The Required number of prime numbers is 2.

Q40. Answer: (d) 2

Explanation:

The pattern followed in the given figures is:

Sum of numbers in the squares = Two digit numbers in the star

Let's apply the pattern:

1) 12 + 3 = 15

15 = 15

1) 9 + 12 = 21

21 = 21

1) 8 + 14 = 22

2?

So, the digit missing is 2.

Hence the correct answer is option 4.

Q41. Answer: (b) Delhi-50

Explanation:

From the given options:

Option 1) Rajasthan-200 : It is correct

Option 2) Delhi-50 : It is not correct. Delhi has 70 Vidhan Sabha MLAs.

Option 3) Uttarakhand-70 : It is correct

Option 4) Maharashtra-288 : It is correct

So, Delhi-50 is odd one.

Hence the correct answer is option 2.

Q42. Answer: (b) Only conclusions (i) and (ii) follow.

Explanation:

From the given statements:

1. Some of the language taught in this school are English, Portuguese, Tamil and Sanskrit.

2. Neither Arabic nor French is taught in this school.

3. All language are taught by well-qualified teachers in this school.

Now we consider the given conclusions:

(i) Some other languages are also taught in this school apart from English, Portuguese, Sanskrit and Tamil: We have some languages that are taught and some languages that are not taught but there is no information about exactly how many languages are taught so there is a possibility that there are some other languages that are not mentioned are taught. So the conclusion follows.

(ii) Tamil is taught by a well-qualified teacher in this school: From statement 1 and 3 we can clearly see that Tamil is taught and it

is taught by well-qualified teacher so this conclusion is on point. Thus the conclusion follows.

(iii) Either Arabic or French is taught in this school: According to statement 2 the information given is completely contradicting with this conclusion which means this conclusion does not follow.

So, only conclusions (i) and (ii) follow.

Hence the correct answer is option 2.

Q43. Answer: (c) The physical fibre and optical devices that distribute signals to users in a telecommunications network.

The correct answer is The physical fibre and optical devices that distribute signals to users in a telecommunications network.

Key Points

• The Optical Distribution Network (ODN) is a key segment of fiber-based networks, connecting the central office and terminal user.

• Its design, construction process and operational management features are strategic for operators.

Additional Information

• Costs associated to the ODN represent about 60% of the total cost.

• Which of them are needed for connecting a household to an FTTx network, and the ODN needs to be easy to expand in order to cover new households in the long run.

Q44. Answer: (a) 0

Given:

cos37° sec143° + sin34° cosec146°

Concept used:

secA = - sec(180° - A), where A is in second quadrant.

cosecA = cosec(180° - A), where A is in second quadrant.

Calculations:

According to question,

cos37° sec143° + sin34° cosec146°

= cos37° [-sec(180° - 143°)] + sin34°cosec (180° - 146°)

= cos37°[- sec 37°] + sin34°cosec34°

= - cos37° × 1/cos37° + sin34° × 1/sin34°

= -1 + 1

= 0

Hence, The Required value is 0.

Q45. Answer: (c) 1099999

Explanation:

The smallest six digit number is - 100000

the greatest six digit number is - 999999

Sum = 100000 + 999999

Answer = 1099999

Hence the correct answer is option 3.

Q46. Answer: (b) 2

Explanation:

The pattern followed in given series is:

Sum of numbers in each column = 15

Let's apply the pattern on the given series:

Column 1) 4 + 5 + 2 + 4 = 15

15 = 15

Column 2) 7 + 1 + 3 + 4 = 15

15 = 15

Column 4) 3 + 2 + 9 + 1 = 15

15 = 15

Column 3) 7 + 4 + ? + 2 = 15

13 + ? = 15

From the given options we substitute the value,

13 + 2 = 15

15 = 15

Hence the correct answer is option 2.

Q47. Answer: (d) Kalidas

The correct answer is Kalidas

Key Points

• Kalidasa was a Classical Sanskrit author who is often considered ancient India's greatest poet and playwright.

• His plays and poetry are primarily based on the Vedas, the Ramayana, the Mahabharata and the Puranas.

• His surviving works consist of three plays, two epic poems and two shorter poems.

Additional Information

• Shudraka was an Indian playwright, to whom three Sanskrit plays are attributed: Mrichchhakatika, Vinavasavadatta, and a bhana, Padmaprabhritaka. According to the prologue of Mrichchhakatika, he was a king; according to one theory, he may have been a third century Abhira king

• Bhāsa is one of the earliest and most celebrated Indian playwrights in Sanskrit, predating Kalidasa. His name was already well-known by the 1st century BCE and he belongs to the late-Mauryan period at the earliest, but the thirteen plays attached to his name are commonly dated closer to the first or second.

• Chanakya, also called Kautilya or Vishnugupta, Hindu statesman and philosopher who wrote a classic treatise on polity, Artha-shastra “The Science of Material Gain”.

Q48. Answer: (c) Varahamihira

The correct answer is Varahamitra

Key Points

• The Brihat-Samhita by Varaha Mihira is an encylopedia of wide ranging subjects of human interest, including astrology, planetary movements, eclipses, rainfall, clouds, architecture, growth of crops, matrimony, domestic relations, gems, pearls and rituals.

• It contains one hundred and six chapters

Additional Information

• Kalhana was the author of Rajatarangini, an account of the history of Kashmir. He wrote the work in Sanskrit between 1148 and 1149. All information regarding his life has to be deduced from his own writing.

• Nagarjuna, Indian Buddhist philosopher who articulated the doctrine of emptiness (shunyata) and is traditionally regarded as the founder of the Madhyamika (“Middle Way”) school, an important tradition of Mahayana Buddhist philosophy.

• Charaka was one of the principal contributors to Ayurveda, a system of medicine and lifestyle developed in Ancient India. He is known as an editor of the medical treatise entitled Charaka Samhita, one of the foundational texts of classical Indian medicine and Ayurveda.

Q49. Answer: (c) 68.75 km/h

Given:

Speed = 110 km/h and returning speed = 50 km/h

Formula used:

Average speed = 2ab/(a + b)

Calculation:

a = 110 km/h, b = 50 km/h

According to the concept:

S = (2 x 110 x 50)/160

=> S = 68.75 km/h

Therefore The average speed is 68.75 km/h.

Q50. Answer: (b) 10%

Given:

A sum of money becomes 500 after 1 year and 550 after 2 years when compounded annually.

Calculations:

Let the sum of money be P and the rate of interest be R.

Then, According to the question, we have:

500 = P(1 + R/100)¹ ----------(1)

and 550 = P(1 + R/100)²----------(2)

On dividing equation (2) by (1), we get:

550/500 = 1 + R/100

=> 1.1 = 1 + (0.01)R

=> (0.01)R = 0.1

=> R = 10 %

Hence, The Required rate of interest is 10% p.a.

Q51. Answer: (d) Figure 3

Explanation:

A quartet is a group of 4 similar things, in this case a quartet looks like this:

We consider the given figures:

Figure 1) There is at least one quartet present in the pattern.

Figure 2) There is at least one quartet present in the pattern.

Figure 3) There is no quartet present in the pattern.

Figure 4) There is at least one quartet present in the pattern.

So, Figure 3 is odd one.

Hence the correct answer is option 4.

Q52. Answer: (d) Identification of Hepatitis C virus

The correct answer is Identification of Hepatitis C virus

Key Points

• Hepatitis C is a liver infection caused by the hepatitis C virus (HCV).

• Hepatitis C is spread through contact with blood from an infected person,An infection caused by a virus that attacks the liver and leads to inflammation

• Hepatitis C is treated with antiviral medication.

• HCV is usually curable with oral medications taken every day for two to six months.

Additional Information

• The new drug, Krintafel (tafenoquine), prevents relapse of malaria caused by Plasmodium vivax, one of several parasites that causes the disease. Currently, patients with P. vivax require a 10-day treatment and many don't complete the regimen, leading to malaria recurrence.

• Autophagy is a highly conserved cellular degradation process in which portions of cytosol and organelles are sequestered into a double-membrane vesicle, an autophagosome, and delivered into a degradative organelle, the vacuole/lysosome, for breakdown and eventual recycling of the resulting macromolecules.

Q53. Answer: (b) 3056

Given:

4 digits are given 3, 5, 0, and 6.

Calculations:

As we know,

0 < 3 < 5 < 6

To get the smallest number of four digits,

Thousands digit place should be the least possible digit.

i.e., 0 but when we use 0 then the number becomes 3 digits so, we use the next possible least digit i.e., 3

=>3, ,,__

Now, in hundred digit place, there should be the least unused digit i.e., 0

=>3, 0,,

now, on the tenth digit place next least possible unused digit will be placed i.e.,5

=>3, 0, 5,__

now, only 6 are left so, the number is 3056.

Hence, The Required number is 3056.

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Q54. Answer: (d) 13 Years

Given:

10 years ago, the average age of a husband and his wife was 42 years. Now, the average age of the family consisting of the husband, wife, and son is 39 years.

Concept Used:

Average = (Sum of the value of all the numbers)/(Total numbers)

Calculations:

The average age of husband and wife 10 yrs back was 42

Therefore Present average age of husband and wife = 42 + 10 = 52

Average = (Sum of the value of all the numbers)/(Total numbers)

52 = Sum of ages/2

=> Sum of ages of husband and wife = 104

Also, the Sum of ages of Husband, wife, and son together = 39 × 3 = 117

Age of son

= sum of Family's age - a sum of husband and wife's age

= 117 - 104

= 13 years

Hence, The son's age is 13 years.

Q55. Answer: (a) Spirogyra

The correct answer is Spioogyra

Key Points

• Spirogyra is a filamentous charophyte green alga of the order Zygnematales, named for the helical or spiral arrangement of the chloroplasts that is characteristic of the genus. It is commonly found in freshwater habitats, and there are more than 400 species of Spirogyra in the world

Additional Information

• Marsilea is a genus of approximately 65 species of aquatic ferns of the family Marsileaceae.These small plants are of unusual appearance and do not resemble common fern

• Thuja is a tree. The leaves and leaf oil have been traditionally used as medicine. Thuja is used as a flavoring agent in foods and beverages and as a fragrance in the manufacturing of cosmetics and soaps.

• Ferns are vascular plants differing from lycophytes by having true leaves (megaphylls), which are often pinnate. They differ from seed plants (gymnosperms and angiosperms) in reproducing by means of spores and they lack flowers and seeds.

Q56. Answer: (d) A. P. J. Abdul Kalam

The correct answer is A.P.J. Abdul Kalam

Key Points

• Ignited Minds: Unleashing the Power Within India is a book written by A. P. J. Abdul Kalam, President of India from 2002 to 2007.

• The book is a logical step forward from Dr. Kalam's earlier book, India 2020.

• A Vision for the New Millennium and consists of many inspirational messages by A P J Abdul Kalam.

Additional Information

• Robin Sharma is a Canadian writer, best known for his The Monk Who Sold His Ferrari book series. Sharma worked as a litigation lawyer until age 25, when he self-published MegaLiving, a book on stress management and spirituality.

• Nilanjana Sudeshna "Jhumpa" Lahiri is an American author known for her short stories, novels and essays in English, and, more recently, in Italia

• Chetan Baghat, a rising star in the contemporary modern Indian literature, is a multitalented personality. He is a novelist, columnist, public speaker and a screenplay writer. His notable works include Five Point Someone, The 3 Mistakes of My Life and 2 States.

Q57. Answer: (d) 56

Given:

960 cm long rod is cut into small pieces of 17 cm length.

Calculations:

According to the question,

No. of small pieces

= 960 ÷ 17

= 56.470

But we need to find a maximum number of pieces of length 17 cm cut from 960 cm long rod.

Hence, The Required number of pieces is 56.

Q58. Answer: (a) 20 days

Given:

Vicky can complete the work in 40 days,

Vicky worked for 8 days and the rest work was finished by Gurpreet Singh in 32 days.

Calculations:

No of the days taken by Vicky to finish the work= 40

So part of the work done by Vicky in 1 day= 1/40

Part of work done by Vicky in 8 days= 8/40 = 1/5

The remaining part = 1 - 1/5 = 4/5

No of days taken by Gurpreet to finish 4/5 part = 32

Part of the work done by Gurpreet in 1 day = (4/5)/32

= 4/5×1/32 = 1/40

Part of work done by both together in 1 day = (1/40) + (1/40) = 2/40 = 1/20

So, the number of days taken both together to finish the work = 1/(1/20) = 20 days

Hence, They both can together complete the work in 20 days.

Q59. Answer: (d) 150

Given:

The HCF and LCM of the two numbers are 75 and 450 respectively.

If the first number is divided by 3, the quotient is 75.

Concept used:

HCF × LCM = Product of the numbers

Dividend = Divisor × Quotient + Remainder

Calculations:

According to the question,

First number is

= 3 × 75

= 225

And, According to the concept:

HCF × LCM = 225 × (second number)

=> 75 × 450 = 225 × second number

=> second number = 150

Hence, The Second number is 150.

Q60. Answer: (c) 144 cm

Given:

The area of the rectangle = 1287 cm2

Ratio of length and breadth = 13 : 11

Formula used:

Area of rectangle = length × breadth

Perimeter of rectangle = 2(l + b)

Calculation:

Let the length and breadth of the rectangle be l and b respectively

=> l : b = 13 : 11

=> l = 13b/11 ...(1)

Area of rectangle = 1287 cm2

=> l × b = 1287 cm2 .....(2)

Solving equations (1) and (2) we get,

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=> (13b/11) × b = 1287

=> (b)2 = 1287 × 11/13 = 1089

=> b = 33 cm

Put the value of b in equation (1) we get,

=> l = (13 × 33)/11 cm

=> l = 39 cm

Now,

Perimeter of rectangle = 2(39 + 33) cm

=> 144 cm

Therefore Perimeter of the rectangle is 144 cm.

Q61. Answer: (a) Uttarakhand

The correct answer is Uttarakhand

Key Points

• The Bhotiya, tribe people are native (indigenous) people belonging to Himalayan Belt.

• In Nepal they live in the northern and eastern regions of Nepal, where they and other Tibetans are the region's autochthonous (indigenous) people.

Additional Information

• Bhil is the largest tribal group in India as per 2011 Census. They constitute approximately 38% of the total scheduled tribal population of India.

• Bhil tribes are found in the states of Maharashtra, Chhattisgarh, Gujarat, Rajasthan, Madhya Pradesh, as well as in Tripura.

• A major tribal groups of Madhya Pradesh consist of Gond, Bhil, Baiga, Korku, Bhariya, Halba, Kol, Mariya and Sahariya.

• Among them, Baiga, Bhariya and Sahariya are notified as Particularly Vulnerable Tribal Groups (PVTGs).

Q62. Answer: (a) Chef : Pan

Explanation:

The relation between the given pair is:

Writer : Pen -- Occupation : Essential object to work

Now we consider the given options:

Option 1) Chef : Pan - Chef uses a pan to cook.

Option 2) Tailor : Dress - Tailor uses thread and needle to stitch and not dress.

Option 3) Swimmer : Float - Swimmer uses water to swim and not float.

Option 4) Dancer : Program - Dancer uses floor to dance and not program.

So, Chef : Pan matches the relation.

Hence the correct answer is option 1.

Q63. Answer: (c) 202

The pattern followed in the given series is:

The difference between the terms is a multiple of 5 multiplied by increasing power of 3.

Hence the correct answer is option 3.

Q64. Answer: (c) 80

Given:

Rs.110 contained in a box consists of one rupee, 50 paise, and 25 paise coins in the ratio of 1 : 2 : 3.

Calculation :

Let the number of coins = x

So, the number of Rs. 1 coins = x

Number of 50 paise coins = 2x

Number of 25 paise coins = 3x

According to the question,

1(x) + 1/2 (2x) + 1/4 (3x) = 110

=>x + x + 3/4 x = 110

=>2x + 3/4 x = 110

=> 11x/4 = 110

=>x = 10 × 4

=>x = 40

Hence, x = 40

The number of 50 paise coins are 2x = 2(40) = 80

Therefore The number of 50 paise coins is 80.

Q65. Answer: (d) Train

Explanation:

The relation used in the given pair is:

Judge : Verdict -- Occupation : Main work

Similarly,

Coach : ? -- ? will be the main work of a coach.

Now we consider the given options:

Option 1) Sports - Coach is a teacher of sports.

Option 2) Team - Coach makes the team.

Option 3) Player - Coach select the player.

Option 4) Train - Training is the main work of a coach.

So, Train matches the relation.

Hence the correct answer is option 4.

Q66. Answer: (b) endangered plants and animals

The correct answer is endangered plants and animals.

Key Points

• Red Data Book of the Russian Federation, also known as Red Book or Russian Red Data Book.

• It is a state document established for documenting rare and endangered species of animals, plants and fungi.

Additional Information

• Red data book is The document establishded by IUCN for documenting the rare and endangered species of plants, animals, fungi and also a few local species that exist within a state or country.

• It divides species into nine categories: Not Evaluated, Data Deficient, Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild and Extinct.

Q67. Answer: (c) South Korea

The correct answer is South Korea

Key Points

• South Korea won the tournament for the third time after defeating India 4–2 on penalties, after the match ended in a draw at 1–1, in the final.

• The number of teams for this year's cup is the same as last year's tournament where six teams competed. India, Canada, Japan, Malaysia, Poland, and South Korea participated in this edition of the Sultan Azlan Shah Cup.

Additional Information

• The Sultan Azlan Shah Cup is an annual invitational international men's field hockey tournament held in Malaysia.

• It began in 1983 as a biennial contest. The tournament became an annual event after 1998, following its growth and popularity

Q68. Answer: (b) Mangifera indica

The correct answer is Mangifera indica

Key Points

• Mangifera indica, commonly known as mango, is a species of flowering plant in the family Anacardiaceae.

• It is a large fruit tree, capable of growing to a height of 30 metres.

• There are two distinct genetic populations in modern mangoes – the "Indian type" and the "Southeast Asian type".

Additional Information

• The apple tree (Malus pumila, commonly and erroneously called Malus domestica) is a deciduous tree in the rose family best known for its sweet, pomaceous fruit, the apple.

• The potato (Solanum tuberosum) is a herbaceous annual that produces a tuber, also called a potato.

• Musa × paradisiaca is the accepted name for the hybrid between Musa acuminata and Musa balbisiana. Most cultivated

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bananas and plantains are triploid cultivars either of this hybrid or of M. acuminata alone.

Q69. Answer: (b) [figure]

Explanation:

From the given words:

Students, Boys, Swimmers

Students can be boys and they can be swimmers so there is a possibility of having all three in common.

Now the Venn diagram will be:

So, the option 2 matches the Venn diagram.

Hence the correct answer is option 2.

Q70. Answer: (d) Canada and USA

The correct answer is Canada and USA

Key Points

• Niagara Falls consists of two waterfalls on the Niagara River, which marks the border between New York and Ontario, Canada.

• The American Falls, located on the American side of the border, and the Canadian or Horseshoe Falls located on the Canadian sideMost of the tallest falls in the world have very little water flowing over them.

Additional Information

• It's the combination of height and volume that makes Niagara Falls so breathtaking.

• The rapids above the falls reach a maximum speed of 40 km/hr or 25 mph, with the fastest speeds occur at the falls themselves (recorded up to 68 mph.)

Q71. Answer: (b) 12

Given:

Dimensions of Cuboid = 24 cm × 16 cm × 16 cm

Side of cube = 8 cm

Calculations:

According to the question,

Volume of the cuboid

= 24 × 16 × 16

= 6144 cm3

And, Volume of one cube

= 8 × 8 × 8 cm3

= 512 cm^3

Now, The number of cubes = Volume of Cuboid/ Volume of cube = 6144/512 = 12

Therefore The Required number of cubes is 12.

Q72. Answer: (d) 73°

Given:

One angle of a parallelogram is 39° less than twice the smallest angle.

Concept:

The total sum of all angles of parallelogram = 360°

Diagonally opposite angles in a parallelogram are equal.

Calculation:

Let the smaller angle be x, then

Larger angle = 2x – 39°,

(2x - 39°) + (2x - 39°) + x + x = 360°

=> 2x + 2x + 2x – 78° = 360°

=> 2x + 2x + 2x = 360° + 78°

=> 6x = 438°

=> x = 438°/6

=> x = 73°

Therefore The Smallest angle of a parallelogram is 73°.

Q73. Answer: (d) 42 days

Given:

Rinku does twice the work as done Deepak,

They both together take 28 days to complete the work.

Calculations:

Let Rinku does the work in x days then Deepak does the same work in 2x days.

So, Rinku's one-day work = 1/x,

Deepak's one day's work = 1/2x

and (Rinku + Deepak)'s one-day work = 1/28,

Now, According to the question,

1/x + 1/2x = 1/28

=> 3/2x = 1/28

=> 2x = 28 × 3

=> x = 42

So, Rinku takes x = 42 days to finish the work alone.

Therefore Rinku alone can complete the work in 42 days.

Q74. Answer: (c) NITI Aayog

The correct answer is NITI Ayoyog

Key Points

• The NITI Aayog serves as the apex public policy think tank of the Government of India.

• The nodal agency tasked with catalyzing economic development, and fostering cooperative federalism through the involvement of State Governments of India in the economic policy-making process using a bottom-up approach

Additional Information

• National Knowledge Commission was an Indian think-tank charged with considering possible policies that might sharpen India's comparative advantage in the knowledge-intensive service sectors. It was constituted on 13 June 2005, by the then Prime Minister of India.

• Commission for Agricultural Costs and Prices is a decentralised agency of the Government of India. It was established in 1965 as the Agricultural Prices Commission, and was given its present name in 1985.

• The Union Public Service Commission, commonly abbreviated as UPSC, is India's premier central recruitment agency for recruitment of all the Group 'A' officers under Government of India

Q75. Answer: (c) Champaran Satyagraha

The correct answer is Champaran Satyagraha

Key Points

• The Champaran Satyagraha of 1917 was the first Satyagraha movement led by Gandhi in India and is considered a historically important revolt in the Indian Independence Movement.

• It was a farmer's uprising that took place in Champaran district of Bihar, India, during the British colonial period.

Additional Information

• 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

• The Bardoli Satyagraha, 1928 was a movement in the independence struggle led by Sardar Vallabhai Patel for the farmers of Bardoli against the unjust raising of taxes.

• The Non-cooperation movement was a political campaign launched on 4 September 1920, by Mahatma Gandhi to have Indians revoke their cooperation from the British government, with the aim of inducing the British to grant self-governance.

Q76. Answer: (b) 0

Given:

76 + 5 is divided by 6 to get a reminder.

Calculations:

According to the question, we have

(7^6 + 5)/6

On diving 7 by 6, we get 1 as a remainder,

So, Remainder = [(1)6 + 5]/6 = [1 + 5]/6 = 6/6

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On dividing 6 by 6, we get 0 as a remainder,

Thus, 0 is the remainder.

Hence, The Required value of Remainder is 0.

Q77. Answer: (b) Stand Up India Scheme

The Correct answer is Stand Up India Scheme.

Key Points

• Stand-Up India Scheme facilitates bank loans between Rs 10 lakh and Rs 1 Crore to at least one Scheduled Caste (SC) or Scheduled Tribe (ST) borrower and at least one woman borrower per bank branch for setting up a greenfield enterprise.

• This enterprise may be in the manufacturing, services, or trading sector.

• The scheme was launched by PM Modi on 5th April 2016. Stand Up India scheme was extended till 2025.

Additional Information

• Mudra loan is extended for a variety of purposes which provide income generation and employment creation.

• The individual must be above 18 years of age. The entrepreneur must either be a woman or belong to the SC or ST community.

• Several entrepreneurial success stories have come out in the district by means of the Standup India Scheme.

Q78. Answer: (d) 19

Given:

Ratio before adding = 7 : 9

Ratio after adding = 13 : 14.

Calculations:

Let the number added be x.

Then, According to the question,

(7+x)/(9+x) = 13/14

=> (7 + x)14 = (9 + x)13

=> 98 + 14x = 117 + 13x

=> x = 19

Hence, The number added is 19.

Q79. Answer: (a) 8 and 9

Given:

Product of L.C.M and H.C.F = 72

Difference between two numbers = 1

Formula used:

L.C.M × H.C.F = Product of numbers

Calculation:

Let the numbers be a and b

Now, ab = 72 ----(1)

And, a - b = 1 ----(2)

Factors of ab are

(2, 36), (3, 24), (4, 18), (6, 12), (8, 9)

As the difference is 1.

So, thhe numbers are 8 and 9.

Therefore The two numbers are 8 and 9.

Q80. Answer: (d) Hoogly

The correct answer is Hoogly

Key Points

• Kolkata harbour is situated on the Hugli river, near the Bay of Bengal. Iit is not a natural port. It is developed artificially.

• Hugli-Chuchura or Hooghly-Chinsurah is a city and a municipality of Hooghly district in the Indian state of West Bengal.

• It lies on the bank of Hooghly River, 35 km north of Kolkata.

• It is located in the district of Hooghly and is home to the district headquarters.

Additional Information

• The Godavari is India's second longest river after the Ganga river and drains into the third largest basin in India, covering about 10% of India's total geographical area. Its source is in Trimbakeshwar, Nashik, Maharashtra

• The Ganges is a trans-boundary river of Asia which flows through India and Bangladesh. The 2,525 km river rises in the western Himalayas in the Indian state of Uttarakhand.

Q81. Answer: (b) 3025

Given:

First 10 natural numbers are 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10

Concept used:

Sum of cube of n natural numbers = n2 × (n + 1)2/4

Calculation:

Sum of cube of n natural numbers

= n2 × (n + 1)2/4

Sum of cube of 10 natural numbers

= 102 × (10 + 1)2/4

= 25 × 121

= 3025

Therefore The required value is 3025.

Q82. Answer: (c) Mangal Pandey

The correct answer is Mangal Pandey

Key Points

• Mangal Pandey was an Indian soldier who played a key part in the events immediately preceding the outbreak of the Indian rebellion of 1857.

• He was a sepoy in the 34th Bengal Native Infantry regiment of the British East India Company.

• In 1984, the Indian government issued a postage stamp to remember him.

Additional Information

• Bal Gangadhar Tilak, endeared as Lokmanya, was an Indian nationalist, teacher, and an independence activist. He was one third of the Lal Bal Pal triumvirate. Tilak was the first leader of the Indian independence movement. The British colonial authorities called him "The father of the Indian unrest"

• Bhagat Singh was a charismatic Indian revolutionary who participated in the mistaken murder of a junior British police officer in what was to be retaliation for the death of an Indian nationalist.

Q83. Answer: (d) 26

Given:

Number of Mango trees = 21

Number of Apple trees = 18

Number of Orange trees = 39

Calculations:

Let the minimum number of rows be n.

=> maximum number of plant in each row = HCF (18, 21, 39) = 3

=> minimum row = (18/3) + (21/3) + (39/3) = 6 + 7 + 13 = 26

Therefore minimum number of row is 26.

Q84. Answer: (d) Loom

Explanation:

From the given options:

Option 1) Tractor : It is used in agricultural work.

Option 2) Plough : It is used in agricultural work.

Option 3) Seed Drill : It is used in agricultural work.

Option 4) Loom : It is used in weaving cloth.

So, Loom is the odd one.

Hence the correct answer is option 4.

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Q85. Answer: (c) 5% profit

Given:

A book was sold for Rs. 230 with a profit of 15%.

New selling price is Rs. 210.

Concept used:

Profit %= (SP - CP)×100/CP

Calculations:

According to the question,

115% of CP = 230

=> 1.15 × CP = 230

=> CP = 230/1.15

=> CP = Rs. 200

And new SP = Rs.210(given)

So, Profit %

= (210-200)/200 × 100

= 5%

Hence, on selling the book for Rs. 210, a Profit of 5% is made.

Q86. Answer: (a) 65.77 kg

Formula Used:

Average weight = Total weight / Number of passenger

Calculation:

Total weight can be calculated as follows:

(4 × 90) + (15 × 60) + (6 × 75) + (5 × 78) + (3 × 72) + (7 × 45)

= 360 + 900 + 450 + 390 + 216 + 315

= 2631 kg

Average weight = Total weight / Number of passengers = 2631 / 40 = 65.77 kg

So, the average weight of all the 40 passengers is approximately 65.77 kg.

Q87. Answer: (b) 3 : 2

Given:

The given pie chart shows the spending of a country (in Rs. crore) on importing various products from a neighboring country during a particular year.

Calculations:

Expenditure on Food and cloth

= 2.5 + 3.5

= 6

Expenditure on machine and medicine

= 2 + 2

= 4

Ratio of expenditure on food and cloth to expenditure on machine and medicine

= 6 : 4

= 3 : 2

Hence, The Required ratio is 3 : 2.

Q88. Answer: (c) 26.66%

Given:

The given bar graph shows the profit made by a software company (in $ million) over 5 years (from 2012 to 2018).

Calculations:

According to question,

Profit in year 2013-2014

= 380

And Profit in year 2012-2013

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= 300

Increase in profit made by company in year 2013-2014 over 2012-2013 is

= 380 - 300

= 80

Percentage increase

= 80/300 × 100

= 26.66%

Hence, The Required percentage value is 26.66%.

Q89. Answer: (d) 25 : 29

Given:

The bar graph shows the production of drones (in lakhs) by three companies X, Y and Z over 6 years (from 2012 to 2017).

Calculations:

Average production of Company X in period 2014-2016

= (40 + 50 + 35)/3

= 125/3

Average production of Company Y in period 2014-2016

= (45 + 45 + 55)/3

= 145/3

Required Ratio

= 125/3 : 145/3

= 125 : 145

= 25 : 29

Hence, The Required ratio is 25 : 29.

Q90. Answer: (a) 61

Explanation:

The pattern followed in the given series is:

The difference between the numbers is the sum of increasing odd numbers.

Hence the correct answer is option 1.

Q91. Answer: (d) All garlic are either apples or potatoes.

Explanation:

From the given statements:

Statement 1: All potatoes are garlic

Statement 2: Some garlic are apples.

Statement 3: Some potatoes are not apples.

Now we consider the given options:

Option 1) Some garlic are neither apples nor potatoes: We can see from the figure, some garlic are neither apples nor potatoes. Therefore, the conclusion is logically correct.

Option 2) Some apples are garlic: From statement 2 'some garlic are apples' which can be also said as some apples are garlic and the conclusion is logically correct.

Option 3) Some apples are not potatoes but they are garlic: According to the figure, it is safe to say that some apples are garlic but not potatoes and thus the conclusion is logically correct.

Option 4) All garlic are either apples or potatoes: This conclusion is contradictory with conclusion 1 which is correct. So this conclusion is not logical.

Hence the correct answer is option 4.

Q92. Answer: (b) 1

Explanation:

From the given figure we have:

Figure A represents the number of people who drink Coca Cola.

Figure B represents the number of people who drink Pepsi.

Figure C represent the number of people who drink Sprite.

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Figure D represent the number of people who drink Fanta.

We have to find the people who drink both Pepsi and Sprite but NOT Fanta which means we have to find out the area in the figure that includes both B and C but excludes D:

The area have only 1 person.

Hence the correct answer is option 2.

Q93. Answer: (a) 20

Explanation:

The pattern followed in the given series is:

Sum of numbers at base - Number at top = Number in circle

Let's apply the pattern on the given series:

1) 12 + 6 - 3 = 15

18 - 3 = 15

15 = 15

1) 18 + 3 - 6 = 15

21 - 6 = 15

15 = 15

1) 13 + 12 - 5 = ?

25 - 5 = ?

20 = Answer

Hence the correct answer is option 1.

Q94. Answer: (d) 463

Explanation:

The pattern followed in the given numbers is:

(First digit)^2 = Second and third digit

Let's apply the pattern on the given options:

1) 416 -- $(4)^2 = 16$

16 = 16

2) 864 -- (8)2 = 64

64 = 64

3) 749 -- (7)2 = 49

49 = 49

4) 463 -- (4)2 = 63

16 ≠ 63

So, 463 is the odd one.

Hence the correct answer is option 4.

Q95. Answer: (a) 80

Explanation:

The pattern followed in the given grid:

In each column, First term × Third term = Middle term

Let's apply the pattern to the given grid:

Column 1) 16 × 8 = 128

128 = 128

Column 3) 14 × 9 = 126

126 = 126

Column 2) 16 × 5 = ?

80 = Answer

Hence the correct answer is option 1.

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Q96. Answer: (c) 4113

Explanation:

From the given figure we have:

One ring = x^2

Two rings = x^4

Three rings = x^6

Now we apply the conditions to find ?:

2 is in two ring which means 2^4

4 is in three rings which means 4^6

1 is in four rings which means 1^8

So, 24 + 46 + 18 = ?

16 + 4096 + 1 = ?

4113 = Answer

Hence the correct answer is option 3.

Q97. Answer: (b) PRUH

Explanation:

According to the English alphabets and their positional values:

The pattern followed in the given codes is:

The alphabets are increased to 3 positional values.

Similarly,

Hence the correct answer is option 2.

Q98. Answer: (c) Father's Sister

Explanation:

Preparing the family tree using the following symbols:

From the given information:

Step 1: If you are the only child of your mother, Mary. Your maternal uncle, Christopher.

Maternal uncle = Brother of mother

Step 2: Christopher, is the husband of Merciya.

Step 3: Sophie is the only sister of Merciya. Jonathan is Sophie's sister's son.

Sophie is the only sister of Merciya so Jonathan is Merciya's son.

So, Mary is Father's sister of Jonathan.

Hence the correct answer is option 3.

Q99. Answer: (a) QMPA

Explanation:

According to the English alphabets and their positional values:

The pattern followed in the given code is:

The alphabets are decreased to a certain positional values: 1st letter is decreased by 1, 2nd letter is decreased by 2, 3rd letter is decreased by 3, 4th letter is decreased by 4 and 5th letter is decreased by 5 positional values.

Similarly,

Hence the correct answer is option 1.

Q100. Answer: (b) T

Explanation:

According to the English alphabets:

We have to find 8th to the right of the 12th letter, for which we have to find the 12th letter,

The 12th letter is L and now 8th to the right of L is T.

Hence the correct answer is option 2.

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