RRB NTPC CBT-I Official Paper (Held On: 13 Mar 2021 Shift 2) (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. In a certain code, INDIA is coded as 914491. How will DELHI be written as in that code?

(a) 541289
(b) 451289
(c) 128945
(d) 894512

Q2. If 15 March 2015 was a Monday, then 10 July 2015 will be what day?

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

Q3. A box contains 2 black, 6 green and 4 yellow balls. If 2 balls are picked up at random, the probability that both are green is:

(a) 5/22
(b) 1/6
(c) 3/11
(d) 1/22

Q4. Which rank was given by EIU Global Democracy Index to India for the year 2019?

(a) 41^(st)
(b) 31^(st)
(c) 21^(st)
(d) 51^(st)

Q5. Which of the following museum is situated in Kerala?

(a) Napier Museum
(b) Salar Jung Museum
(c) Albert Hall Museum
(d) Dakshinachitra Museum

Q6. Name the satellite launched by NASA to precisely track Earth's shrinking polar ice cover.

(a) CYGNSS
(b) SLINEX-2018
(c) ICESat-2
(d) HYSIS

Q7. A train covers a distance of 35 km in 60 min. How long will it take to cover 105 km?

(a) 120 min
(b) 90 min
(c) 180 min
(d) 140 min

Q8. In the triangle ABC, a = 25, b = 45 and c = 30. The value of cos A is:

(a) 21/27
(b) 25/27
(c) 23/27
(d) 20/27

Q9. An orchard has 5776 trees and the arrangement of trees is such that there are as many rows as there are trees in a row. Then the number of rows is:

(a) 76
(b) 48
(c) 65
(d) 56

Q10. What is the objective of the KUSUM programme launched by the Indian government?

(a) Promotion of organic farming in the country
(b) Providing financial security to farmers through harnessing solar energy capacities
(c) Protection of women
(d) Starts ups for women and youth

Q11. Pons is a part of human:

(a) heart
(b) adrenal gland
(c) brain
(d) kidney

Q12. The human species have genetic roots in:

(a) Australia
(b) Africa
(c) Antarctica
(d) America

Q13. The part of the Himalayan mountains that is lying between Tista and Dihang river is known as:

(a) Punjab Himalayas
(b) Kumaon Himalayas
(c) Assam Himalayas
(d) Kashmir & Himachal Himalayas

Q14. Read the given statements carefully and decide which conclusion from the given options logically follows from the statements.

Statements:

1. All pilots are professionals.

2. No professionals are unemployed.

(a) All professionals are unemployed.
(b) Some professionals are unemployed.
(c) No pilots are unemployed.
(d) All pilots are unemployed.

Q15. What is the SI unit of radioactivity?

(a) Faraday
(b) Becquerel
(c) Rutherford
(d) Curie

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Q16. Which of the following is the operation started by the Government of India in the year 2018-19 to ensure the availability of tomato, onion and potatoes round the year without price volatility?

(a) Operation Green Hunt
(b) Operation Greens
(c) Operation Sukoon
(d) Operation Raahat

Q17. Who is known as the 'Martin Luther of India'?

(a) Pandit Lekhraj
(b) Swami Vivekanand
(c) Bal Gangadhar Tilak
(d) Dayanand Saraswati

Q18. If the number 2893#$ is divisible by 8 and 5, then one possible choice of the digits that come in the places of # and $ can be:

(a) 0, 0
(b) 0, 2
(c) 2, 0
(d) 2, 2

Q19. Name the vehicle developed by DRDO to detect and dispose a bomb.

(a) Rakshak
(b) Vajra
(c) Prahar
(d) Daksh

Q20. Which of the following is NOT listed as a 'fundamental right' in the Indian Constitution?

(a) Right to Freedom
(b) Cultural and Educational Right
(c) Right to Speech
(d) Right to Equality

Q21. Which planet is known as the 'Earth's Twin'?

(a) Venus
(b) Mars
(c) Moon
(d) Carla

Q22. Select the number that can replace the question mark (?) in the following series.

7, 12, 22, 42, 82, ?

(a) 162
(b) 92
(c) 142
(d) 122

Q23. Which country's constitution has been considered by India for the 'Principles of Liberty, Equality & Fraternity'?

(a) France
(b) Britain
(c) Australia
(d) Ireland

Q24. The ratio of simple interest earned by a certain amount at the rate of 5% for 6 years and 8% for 3 years is:

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

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(d) 5 : 4

Q25. Which one of the following is the largest natural freshwater lake in India?

(a) Barapani
(b) Bhimtal
(c) Loktak
(d) Wular

Q26. The LCM of two numbers is 126 and their HCF is 2. If one number is 18 then the other is:

(a) 9
(b) 16
(c) 12
(d) 14

Q27. Dena Bank and Vijaya Bank have recently merged with:

(a) Bank of India
(b) Punjab National Bank
(c) State Bank of India
(d) Bank or Baroda

Q28. Mohan goes to school 5 days a week and the distance between his home and school is 5 km. On all these 5 days, after school he goes to the market which is at a distance of 3 kms from the school, and then from the market he walks 2.5 kms to reach his home. The remaining 2 days of the week, Mohan walks an average of 20 kms. How many kms does Mohan walk in a week?

(a) 92.5 km
(b) 93.5 km
(c) 113.5 km
(d) 72.5 km

Q29. Which statement regarding the "green rail corridor' (launched in Tamil Nadu) is NOT correct?

(a) The stretch of the green rail corridor is 114 km.
(b) The trains under green rail corridor are equipped with bio toilets.
(c) It is India's first green rail corridor.
(d) It was inaugurated by Prime Minister Narendra Modi.

Q30. Which country's President suggested the name "United Nations"?

(a) Russia
(b) United States of America
(c) France
(d) Germany

Q31. At what rate of compound interest per annum will a sum of Rs. 1,500 becomes Rs. 1,591.35 in 2 years?

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

Q32. Who gave M. K. Gandhi a title of Mahatma?

(a) Lokmanya Tilak
(b) Rabindranath Tagore
(c) Gopal Krishna Gokhale
(d) Dadabhai Naoroji

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Q33. Name the first Indian newspaper that became available on the Internet.

(a) The Statesman
(b) Times of India
(c) National Herald
(d) The Hindu

Q34. Desktop computers, laptop computers, tablets and smartphones are different types of:

(a) microcomputers
(b) mainframe computers
(c) super computers
(d) mini computers

Q35. A cylinder has 14 cm height and 660 cm^2 curved surface area. The volume of the cylinder is:

(Take $\pi = 22/7$)

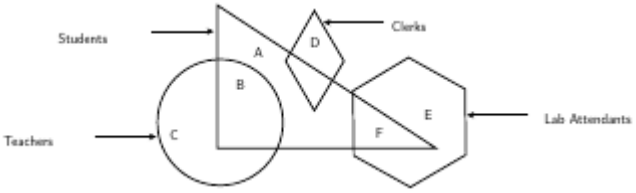
(a) 2475 cm^3
(b) 2425 cm3
(c) 2225 cm3
(d) 2275 cm3

Q36. Which temple is known as 'black pagoda'?

(a) Konark Sun Temple
(b) Suryanar Temple
(c) Martand Sun Temple
(d) Shani Shingnapur

Q37. In the given figure, the circle represents persons who are 'teachers', the triangle represents persons who are 'students', the diamond represents persons who are 'clerks' and the hexagon represents persons who are 'lab attendants'.

Based on the figure, select the region that represents persons who are only teachers.



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

Q38. Read the given statement and conclusions carefully and decide which of the conclusions logically follow(s) from the statement.

Statement:

Internet usage is increasing day by day.

Conclusions:

I. It is becoming easier to access the internet.

II. Internet facilities have no impact on internet usage.

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

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Q39. Which one of the following is the largest compartment of stomach in hoofed animals?

(a) Reticulum
(b) Omasum
(c) Rumen
(d) Abomas

Q40. Who has been appointed as UNICEF India's first ever Youth Ambassador in 2018?

(a) Hima Das
(b) Sakshi Malik
(c) Nahid Aafreen
(d) Mary Kom

Q41. Which term is used for the tropical cyclone that originates in the north eastern Pacific and north Atlantic?

(a) Hurricane
(b) Twister
(c) Typhoon
(d) Tornado

Q42. Name the Indian sportsman who became the youngest Gold Medalist at the "Khelo India" games in Shooting in 2019.

(a) Manu Bhaker
(b) Abhsihek Verma
(c) Abhinav Bindra
(d) Abhinav Shaw

Q43. If the height of a pole is $6\sqrt{3}$ m and the length of its shadow is 6 m, then the angle of elevation of the sun is:

(a) 45°
(b) 60°
(c) 30°
(d) 0°

Q44. The value of (31/7 + 43/7) + 7/6 is:

(a) 267/42
(b) 432/42
(c) 367/42
(d) 342/42

Q45. The process of digestion of food in the humans begins in _____ and is completed in _____.

(a) food pipe; small intestine
(b) stomach; large intestine
(c) food pipe; large intestine
(d) mouth; small intestine

Q46. Which of the following events is the oldest one?

(a) Jallianwala Bagh Massacre
(b) Poona Pact
(c) Non-Cooperation Movement
(d) Quit India Movement

Q47. The book titled 'Soul of New Machine' was awarded with:

(a) Man booker
(b) Pulitzer
(c) Neustadt International Prize for literature
(d) Hugo

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Q48. The value of {(2 - 1/3) + (2/3 × 11/5)} + 3/5 × 25/7 is:

(a) 24/27
(b) 42/27
(c) 42/21
(d) 24/21

Q49. Who was the secretary of UNO between the year 1997-2006?

(a) Ban ki-Moon
(b) Trigvi Li
(c) U-Thant
(d) Kofi Annan

Q50. The square root of 544/49 is:

(a) 12/7
(b) 17/7
(c) 15/7
(d) 16/7

Q51. The word MANGO has been coded using 4 different codes.

Code 1: NBOHP
Code 2: LZMFN
Code 3: OCPIQ
Code 4: NCQKT

Which of the given codes is used to write the word ORANGE as PTDRLK?

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

Q52. Who designed the National Flag of India?

(a) Pingali Venkaya
(b) Ram Prasad Bismil
(c) Tatya tope
(d) Dr. Maghfoor Ahmed Ajazi

Q53. A cyclist covers 650 m distance in 2 min 10 s. The speed of the cyclist in km/h is:

(a) 16
(b) 18
(c) 12
(d) 5

Q54. Ram Nath Kovind is the _____ President of India.

(a) 17^(th)
(b) 14^(th)
(c) 12^(th)
(d) 19^(th)

Q55. The least square number that is exactly divisible by 4, 5, 8, 16 and 32 is:

(a) 900
(b) 400
(c) 1600
(d) 3600

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Q56. Raj is 60% more efficient than Sundar and Sundar can finish a certain task in 16 days. How many days will Raj alone take to complete the same task?

(a) 12
(b) 10
(c) 8
(d) 71/2

Q57. Four cities have been given, out of which three are alike in some manner and one is different. Select the one odd one.

(a) Shimla
(b) Patna
(c) Jodhpur
(d) Kohima

Q58. A dice is cast twice, and the sum of the appearing numbers is 10. Then the probability that the number 5 has appeared at least once is:

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

Q59. A profit of 25% is made when an article is sold for Rs. 750. The profit, if the article is sold for Rs. 660, will be:

(a) 12%
(b) 8%
(c) 10%
(d) 15%

Q60. Kavita goes for yoga practice daily to the Rock Garden. The garden is towards the east from her house. From the garden, she goes to her friend Rekha's house, which is towards the east of the garden. In what direction is Kavita's house from Rekha's hosue?

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

Q61. Four body parts have been given, out of which three are alike in some manner and one is different. Select the one odd one.

(a) Chin
(b) Ears
(c) Eyes
(d) Nose

Q62. The diagonal of a cube is $6\sqrt{2}$ cm. The surface area of the cube is:

(a) 144 cm^2
(b) 36 cm^2
(c) 24 cm^2
(d) 72 cm^2

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

35, 55, 90, 145, 235, 380, ?

(a) 625
(b) 615
(c) 380
(d) 525

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Q64. A bought a horse for Rs. 4,500. He sold it to B at a profit of 5%. B sold it to C at a gain of 20%. How much is the amount paid by C to purchase the horse?

(a) Rs. 5,430
(b) Rs. 5,670
(c) Rs. 5,240
(d) Rs. 5,520

Q65. Rama can finish a task in 50 days. He worked for 10 days then Ravi finished the remaining task alone in 32 days. How much time will Rama and Ravi take, working together, to finish the task?

(a) 222/9 days
(b) 224/9 days
(c) 241/9 days
(d) 242/9 days

Q66. If 2^x = 4^(y+1) and 3^y = 3^(x-9), then the respective values of x and y will be:

(a) (-16, 7)
(b) (16, 7)
(c) (16, -7)
(d) (7, 16)

Q67. The value of 18[4 - 3{6 - (8 × 1/2)}] is:

(a) 36
(b) 16
(c) -36
(d) 20

Q68. The simple interest on Rs. 10,000 for 6 months at the rate of 5 paisa per rupee per month is:

(a) Rs. 1,500
(b) Rs. 1,000
(c) Rs. 3,000
(d) Rs. 2,000

Q69. Which of the following pairs is correct?

(a) Venkateswara Temple - Odisha
(b) Lingraj temple - Madhya Pradesh
(c) Tijara Mandir - Rajasthan
(d) Khajuraho Temple - Andhra Pradesh

Q70. Which of the following scheme is the Micro Finance Scheme for women with rebate in interest.

(a) National Maternity Benefit Scheme
(b) Social Security Pilot Scheme
(c) Mahila samriddhi Yojna
(d) Rajrajeshwari Mahila kalyan Yojna

Q71. Which of the following organs of the digestive system has the shape similar to the English alphabet "J"?

(a) Liver
(b) Mouth
(c) Stomach
(d) Intestine

Q72. Select the option that is related to the third term in the same way as the second term is related to the first term.

Poet : Poetry :: Actor : ?

(a) Dance
(b) Speech
(c) Singing

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(d) Acting

Q73. Study the given figure carefully and select the number that can replace the 'X'.

5	**9**	**13**	**15**
14	19	24	32
9	10	11	17
32	19	X	33
23	9	6	16

(a) 28
(b) 49
(c) 17
(d) 22

Q74. Which institution introduced the Udyam Abhilasha Program?
(a) SIDBI
(b) IDBI
(c) IFCI
(d) ICICI

Q75. Which of the following Nations was the member of "Allied Powers" group in World War II?
(a) Italy
(b) Germany
(c) USA
(d) Japan

Q76. The equation of a straight line passing through (-2, 5) and (1, 3) is:
(a) 2x + 3y - 11 = 0
(b) 2x - 3y - 19 = 0
(c) 3x - 2y - 11 = 0
(d) 3x + 2y + 19 = 0

Q77. In the following group of materials, which group contains only non-biodegradable materials?
(a) Food scraps, animal waste
(b) Plastic, DDT, bakelite
(c) Scraps, cotton, wool
(d) Wood, paper, leather

Q78. The value of $(0.2)^3 - (0.02)^3$ is:
(a) 0.002992
(b) 0.009992
(c) 0.007992
(d) 0.001002

Q79. Which is the highest peak of the Hindu Kush?
(a) Nanda Devi
(b) Udren Zom
(c) Tirich Mir
(d) Karakonam

Q80. In a certain code language, APPLE is written as CRRNG. How will BANANA be written as in that code language?
(a) ZYLYLY
(b) DCPCPC
(c) CBOBOB

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(d) ANANAB

Q81. Ravi's salary is 20% more than Mohan's salary. If Mohan's salary is Rs. 1,600 then Ravi's salary will be:

(a) Rs. 1,750
(b) Rs. 1,800
(c) Rs. 1,890
(d) Rs. 1,920

Q82. Who was the grandson of Bhim and Hidimba as per Mahabharata?

(a) Iravan
(b) Parikshit
(c) Barbarika
(d) Babruvahana

Q83. The least number which when divided by 9, 16, 20 or 24 leaves 3 as remainder in each case is:

(a) 725
(b) 717
(c) 720
(d) 723

Q84. The intercepts made by the plane 3x - 4y - 2z = 6 with the coordinate axis are:

(a) -2, 3/2, 3
(b) -2, -3/2, 3
(c) 2, 3/2, -3
(d) 2, -3/2, -3

Q85. The value of the variable x in the equation 3(5x + 2) - 4 = 2(1 - 4x) is:

(a) 2
(b) 0
(c) -1
(d) 10

Directions

The given table shows the final examination score of senior secondary students from Gujarat from Board X and Board Y over 6 years (from 2014 to 2019). Answer the question given below based on the table.

Years	X	Y		
Boys	Girls	Boys	Girls	
2014	75.85%	77.57%	74.56%	76.65%
2015	72.58%	73.80%	69.68%	71.45%
2016	81.00%	77.80%	68.50%	70.45%
2017	74.45%	82.00%	77.56%	80.67%
2018	70.56%	78.55%	70.50%	76.78%
2019	79.18%	81.48%	73.55%	81.65%

Q86. Which of the following statements regarding the data from the table is CORRECT?

(a) 2016 was the only year in which Boys of Board X outperformed the Girls of Board X.
(b) 2016 is the year in which the difference in performance between Boys and Girls of Board Y was the least.
(c) 2014 is the year in which the difference in performance between Boys and Girls of Board X was the least.
(d) 2018 is the year in which the difference in performance between Boys and Girls of Board Y was the highest.

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Q87. Which among the following groups has the highest average score in the given period?

(a) Boys from Board Y
(b) Girls from Board Y
(c) Girls from Board X
(d) Boys from Board X

Q88. In which year was the absolute increase in the percentage score from the previous year the maximum, in the case of Girls of Board X?

(a) 2017
(b) 2016
(c) 2018
(d) 2019

Q89. The given table shows undergraduate and postgraduate courses and the corresponding number of students for each course. Answer the question given below based on the table.

Total no of students	Course
455	M.B.A.
182	M.C.A.
182	B.B.A.
91	B.C.A.

Determine the ratio of the number of undergraduate students (B.B.A & B.C.A) to that of postgraduate students (M.B.A & M.C.A).

(a) 7 : 3
(b) 2 : 3
(c) 3 : 7
(d) 2 : 7

Q90. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

1. All teachers are doctors.

2. All doctors are students.

Conclusions:

I. All teachers are students.

2. All students are doctors.

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

Q91. Select the correct word-pair.

(a) Mary Kom : Wrestling
(b) Abhinav Bindra : Shooting
(c) Mithali Raj : Badminton
(d) Saina Nehwal : Boxing

Q92. Select the option that is related to the third term in the same way as the second term is related to the first term.

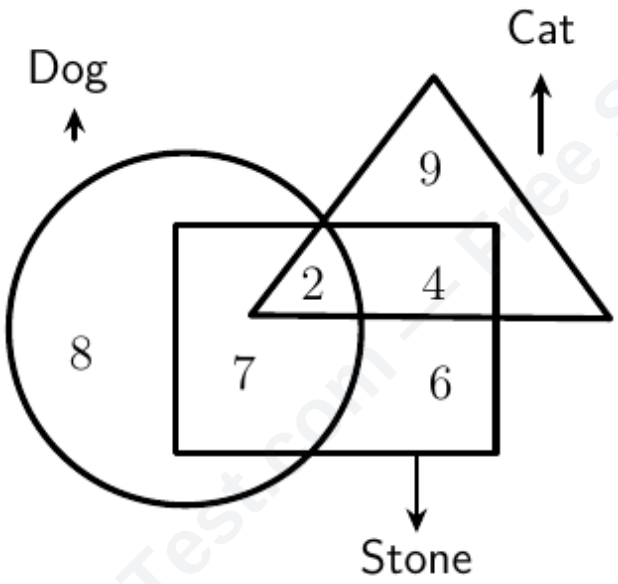
Day : Night :: Sky : ?

(a) Universe
(b) Earth
(c) Clouds

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(d) Sea

Q93. How many stones are neither Dog nor Cat?



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

Q94. If 29 Q 8 R 56 = 176 and 84 R 5 Q 13 = 19, then 51 Q 3 R 46 = ?

(a) 132
(b) 109
(c) 94
(d) 107

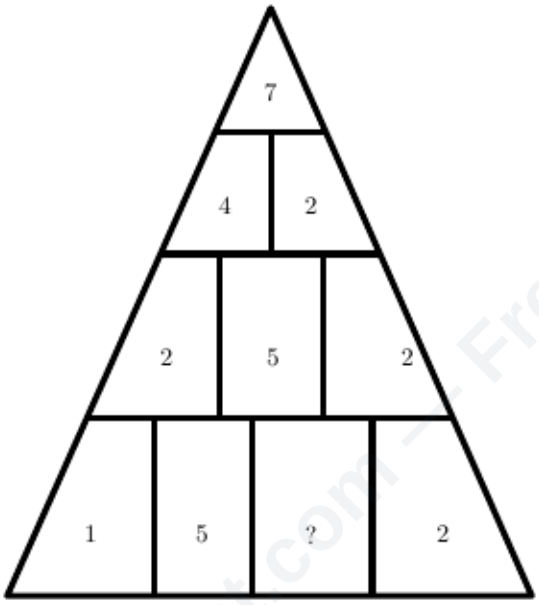
Q95. Select the number that can replace the question mark (?) in the following series.

100, 90, 81, 73, 66, ?

(a) 56
(b) 61
(c) 60
(d) 59

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

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

Q97. Select the letter that can replace the question mark (?) in the following series.
K, M, P, T, Y, ?
(a) F
(b) A
(c) E
(d) G

Q98. Select the option that is related to the third term in the same way as the second term is related to the first term.
MILK : LHKJ :: PEN : ?
(a) NEP
(b) ODM
(c) QFO
(d) NPE

Q99. Four living things have been given, out of which three are alike in some manner and one is different. Select the one odd one.
(a) Dog
(b) Cat
(c) Monkey
(d) Eagle

Q100. Select the number that can replace the question mark (?) in the following series.
5, 10, 20, 40, 80, ?
(a) 100
(b) 120
(c) 140
(d) 160

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ANSWER KEY

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

SOLUTIONS

Q1. Answer: (b) 451289

The logic followed here is:
INDIA is coded as 914491
Similarly,
DELHI will be written as
Hence, "Option 2" is the correct answer.

Q2. Answer: (a) Saturday

According to the given information:
If 15 March 2015 was a Monday,
Count the Days:
• March 15 to March 31: 16 days
• April: 30 days
• May: 31 days
• June: 30 days
• July 1 to July 10: 10 days
15 March 2015 to 10 July 2015:
Total days = 16 + 30 + 31 + 30 + 10 = 117 / 7 = 16 weeks and 5 days remainder
Then, Monday + 5 = Saturday
Thus 10 July 2015 will be Saturday.
Hence, the correct answer is "Saturday".

Q3. Answer: (a) 5/22

Given:
A box contains:
2 black balls
6 green balls
4 yellow balls
Total balls = 2 + 6 + 4 = 12
Formula Used:
Probability (P) = (Number of favorable outcomes) / (Total number of outcomes)
Calculation:
Number of ways to pick 2 balls out of 12:
Total number of outcomes = binom122

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Total number of outcomes = 12C2 = 66

Number of ways to pick 2 green balls out of 6:

Favorable outcomes = binom62

Favorable outcomes = 6C2 = 15

Probability that both balls are green:

=> P(both green) = 15/66

=> P(both green) = 5/22

The correct answer is option 1.

Q4. Answer: (d) 51^(st)

The correct answer is 51st

Key Points

• In the 2019 Global Democracy Index published by the Economist Intelligence Unit (EIU),

• India was ranked 51st out of 167 countries.

• The index measures the state of democracy worldwide based on factors such as electoral process, civil liberties, government functioning, political participation, and political culture.

• Each country is evaluated based on five main categories:

• Electoral Process and Pluralism: This includes the fairness of elections, the availability of a competitive electoral environment, and the openness for political parties to participate freely.

• Functioning of Government: This assesses the effectiveness of the government, including corruption levels, transparency, and accountability.

• Political Participation: This category examines the level of engagement by citizens in the political process, including voter turnout, political activism, and the extent to which people feel empowered to participate.

• Political Culture: This looks at how deeply democratic values are ingrained in society, such as respect for the rule of law and tolerance of different viewpoints.

• Civil Liberties: This encompasses the protection of freedoms like speech, assembly, and access to media, as well as the existence of fair legal systems and personal rights.

• India’s decline in rank in 2019, compared to previous years, was primarily due to concerns over the treatment of minorities, increasing nationalism, and specific government policies impacting civil liberties.

• These factors led to a reassessment of India's status within the "Flawed Democracy" category—a category where democracies function, but have notable weaknesses in certain areas.

Q5. Answer: (a) Napier Museum

The correct answer is Napier Museum

Key Points

• The Napier Museum is located in Thiruvananthapuram, Kerala.

• It was established in the 19th century and is known for its Indo-Saracenic architecture.

• The museum houses a rich collection of artefacts, including ancient sculptures, bronze idols, ornaments, and historical artefacts from Kerala’s cultural heritage.

Additional Information

• Salar Jung Museum: Located in Hyderabad, Telangana, it is one of India’s largest museums, featuring an extensive collection of art and artifacts from around the world.

• Albert Hall Museum: Situated in Jaipur, Rajasthan, it is one of the oldest museums in the state and is known for its collection of paintings, jewelry, and artifacts from Rajasthan’s history.

• Dakshinachitra Museum: Located near Chennai, Tamil Nadu, this museum is dedicated to South Indian culture, showcasing traditional homes, crafts, and lifestyles from the southern states of India.

Q6. Answer: (c) ICESat-2

The correct answer is ICESat-2

Key Points

• NASA launched the ICESat-2 (Ice, Cloud, and Land Elevation Satellite-2) to precisely track Earth’s polar ice cover and monitor changes in ice sheet elevation, sea ice thickness, and other land and sea ice characteristics.

• Launched in 2018, ICESat-2 uses advanced laser technology to measure the height of polar ice with unprecedented accuracy, helping scientists understand how melting ice impacts sea-level rise and climate patterns.

• It builds on data from its predecessor, ICESat, which operated from 2003 to 2010,

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• and aims to provide detailed information on how climate change is affecting the planet's ice-covered regions.
• ICESat-2 uses an instrument called the Advanced Topographic Laser Altimeter System (ATLAS),
• which emits 10,000 laser pulses per second toward the Earth’s surface.
• The laser measures the time it takes for each pulse to bounce back from the ground or ice surface.
Additional Information
• CYGNSS (Cyclone Global Navigation Satellite System):
• Launched by NASA in 2016, CYGNSS is a constellation of eight microsatellites designed to study tropical cyclones,
• specifically to understand their formation and intensity.
• CYGNSS uses signals from GPS satellites that bounce off the ocean surface to measure wind speed near the ocean's surface.
• This data provides insights into hurricane dynamics and helps improve storm forecasting.
• SLINEX-2018:
• SLINEX refers to a series of joint naval exercises between India and Sri Lanka.
• "SLINEX" stands for Sri Lanka–India Naval Exercise.
• The SLINEX exercises include training for maritime security, anti-submarine warfare, and search and rescue operations.
• HYSIS (Hyperspectral Imaging Satellite):
• Launched by ISRO (Indian Space Research Organisation) in 2018, HYSIS was India’s first hyperspectral imaging satellite.
• HYSIS can capture images in multiple spectral bands across the visible and near-infrared regions.
• This allows it to identify and analyze materials based on their unique spectral signatures, making it useful for applications in agriculture, forestry, and environmental monitoring.

Q7. Answer: (c) 180 min

Given:
Distance covered by the train = 35 km.
Time taken to cover 35 km = 60 min.
Formula Used:
Time = Distance / Speed
Calculation:
First, find the speed of the train:
Speed = Distance / Time
Speed = 35 km / 60 min
Speed = 35 km / 1 hr
Speed = 35 km/hr
Now, find the time to cover 105 km:
Time = Distance / Speed
Time = 105 km / 35 km/hr
=> Time = 3 hr
Convert hours to minutes:
=> Time = 3 hr × 60 min/hr
=> Time = 180 min
The correct answer is option 3 (180 min).

Q8. Answer: (c) 23/27

Given:
a = 25
b = 45
c = 30
Formula Used:
cos A = $(b^2 + c^2 - a^2) / (2bc)$
Calculation:
$b^2 = 45^2 = 2025$
$c^2 = 30^2 = 900$
$a^2 = 25^2 = 625$

cos A = (2025 + 900 - 625)/(2 × 45 × 30)

cos A = 2300/2700

cos A = 23/27

The value of cos A = 23/27, which is option 3.

Q9. Answer: (a) 76

Given:

An orchard has 5776 trees. The arrangement of trees is such that there are as many rows as there are trees in a row.

Formula Used:

Number of rows = √(Total number of trees)

Calculation:

Total number of trees = 5776

Number of rows = √5776

=> Number of rows = 76

The number of rows is 76.

Q10. Answer: (b) Providing financial security to farmers through harnessing solar energy capacities

The correct answer is Providing financial security to farmers through harnessing solar energy capacities

Key Points

• The KUSUM scheme, launched by the Indian government, aims to support farmers in installing solar pumps and other renewable power generation setups.

• This helps them reduce dependence on diesel-powered pumps, lower energy costs

• It also allows them to sell surplus solar power back to the grid,

• thereby providing them with an additional income source and promoting sustainable energy use in agriculture.

• KUSUM allows farmers to generate extra income by selling surplus solar power to the grid.

• Farmers with large landholdings can install solar power plants on a portion of their land, producing electricity that can be fed back into the local power grid.

• This power generation setup not only benefits farmers financially but also contributes to India's renewable energy targets.

• The KUSUM programme has three main components, known as Component A, B, and C:

• Component A: Establishment of decentralized, grid-connected renewable energy power plants (up to 2 MW) on barren or fallow lands.

• Component B: Installation of standalone solar-powered agricultural pumps for off-grid use.

• Component C: Solarization of existing grid-connected agricultural pumps to reduce electricity consumption from the grid.

Q11. Answer: (c) brain

The correct answer is brain

Key Points

• The pons is a part of the human brain

• The pons are a part of the brainstem, which is located at the base of the brain and connects the brain to the spinal cord.

• The pons is positioned between the midbrain and the medulla oblongata

• The pons control unconscious processes like breathing and the sleep-wake cycle.

• It also contains nerve junctions that control muscles and carry information from the facial and head senses.

• The pons are a broad, horseshoe-shaped nerve fibre mass connecting the cerebellum and the medulla.

• It has two surfaces, ventral and dorsal, and two borders, superior and inferior.

• The pons are the origin or termination point for four cranial nerves that transfer motor impulses and sensory information to and from the brain and the facial region.

Sleep

Additional Information

• Heart: This muscular organ is responsible for pumping blood throughout the body. It delivers oxygen and nutrients to tissues and removes waste products.

• The heart operates through coordinated contractions of its four chambers, ensuring a consistent flow of blood to organs and tissues.

• Adrenal Glands: These are small, triangular glands located on top of each kidney.

• They produce a variety of hormones, such as adrenaline, cortisol, and aldosterone, which are essential for regulating

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metabolism, immune response, blood pressure, and stress response.

• Kidneys: The kidneys are two bean-shaped organs located on either side of the spine, just below the rib cage.

• They filter blood to remove waste and extra fluid, which is excreted as urine.

• The kidneys also help maintain a balance of electrolytes and regulate blood pressure through hormone release.

Q12. Answer: (b) Africa

The correct answer is Africa

Key Points

• The genetic roots of the human species trace back to Africa.

• The theory of human evolution known as the "Out of Africa" model suggests that modern humans (Homo sapiens) evolved in Africa and then migrated to other parts of the world.

• The oldest fossils of anatomically modern humans have been found in Africa, dating back around 200,000 to 300,000 years.

• Studies of human DNA have shown that the highest levels of genetic diversity exist in African populations, indicating a long period of evolution on the continent before humans spread elsewhere.

Additional Information

• Australia: Humans arrived in Australia around 65,000 years ago, much later than their origins in Africa.

• Antarctica: There is no evidence that humans ever originated in or naturally migrated to Antarctica due to its harsh conditions.

• America: Humans migrated to the Americas much later, around 15,000–20,000 years ago, likely from Asia via the Bering land bridge.

Q13. Answer: (c) Assam Himalayas

The correct answer is Assam Himalayas

Key Points

• The Assam Himalayas are the section of the Himalayan mountain range

• It is located between the Tista River in the west and the Dihang River (also known as the Siang River or Tsangpo in Tibet) in the east.

• This region lies primarily in the eastern Himalayas, covering parts of Arunachal Pradesh and eastern Bhutan.

Additional Information

• Punjab Himalayas:

• This section of the Himalayas extends from the Indus River in the west to the Sutlej River in the east.

• It covers areas in Jammu and Kashmir, as well as parts of Himachal Pradesh.

• Kumaon Himalayas:

• The Kumaon Himalayas lie between the Sutlej River in the west and the Kali River in the east.

• This region primarily covers the Uttarakhand state in India.

• Kashmir & Himachal Himalayas:

• This section of the Himalayas lies between the Indus and Sutlej Rivers and covers the regions of Jammu and Kashmir and Himachal Pradesh.

Q14. Answer: (c) No pilots are unemployed.

The least possible Venn diagram for the given statements is as shown below :

Conclusions:

Option 1) All professionals are unemployed → Does not follow (As no professionals are unemployed. As direct relation is given between professionals and unemployed, therefore it is false.)

Option 2) Some professionals are unemployed → Does not follow (As all pilots are professionals and no professionals are unemployed. As direct relation is given between professionals and unemployed, therefore it is false.)

Option 3) No pilots are unemployed → Follow (As all pilots are professionals and no professionals are unemployed. As whole pilot comes in professionals which cannot be unemployed, therefore it is true.)

Option 4) All pilots are unemployed → Does not follow (As all pilots are professionals and no professionals are unemployed. As whole pilot comes in professionals which cannot be unemployed, therefore it is false.)

Hence, "Option 3" is the correct answer.

Q15. Answer: (b) Becquerel

The correct answer is Becquerel

Key Points

• The SI unit of radioactivity is the Becquerel (Bq).

• It measures the rate of radioactive decay, defined as one disintegration (decay) per second.

Additional Information

• Faraday:

• Named after Michael Faraday, the Faraday is a unit associated with electric charge, not radioactivity. Specifically, it refers to the charge of one mole of electrons (approximately 96,485 coulombs) and is often used in electrochemistry.

• Rutherford:

• The Rutherford (Rd) is an older, non-SI unit of radioactivity. It was defined as 1 million disintegrations per second but has largely been replaced by the Becquerel in modern scientific contexts.

• Curie (Ci):

• The Curie is another unit of radioactivity, named after Marie Curie, and was historically used before the Becquerel. One Curie equals 3.7 × 10¹^0 disintegrations per second (the approximate activity of 1 gram of radium-226).

• Although still sometimes used, the Curie has mostly been replaced by the Becquerel in the SI system.

Q16. Answer: (b) Operation Greens

The correct answer is Operation Greens

Key Points

• Operation Greens was launched by the Government of India in 2018-19 to ensure the availability of tomatoes, onions, and potatoes (TOP) throughout the year and to prevent price volatility. The main goals of this initiative are:

• Price Stabilization: To prevent excessive price fluctuations in these essential commodities by creating a buffer stock, promoting better supply chain management, and encouraging cold storage facilities.

• Supply Chain Improvement: To address issues in the supply chain, storage, and transportation that contribute to price volatility and shortages, particularly during off-season periods.

• Promote Exports: To help improve the export potential of these crops and create a stable domestic market by managing surpluses.

• The scheme aims to increase the production, storage, and transportation of tomatoes, onions, and potatoes in a way that makes them available year-round at stable prices.

Additional Information

• Operation Green Hunt:

• Operation Green Hunt was a counter-insurgency operation launched by the Indian government in 2009 to combat the Naxalite-Maoist insurgency in central and eastern India.

• This operation involved police and paramilitary forces working to control and reduce the influence of Naxalite groups in affected regions.

• It was aimed at maintaining law and order in areas impacted by Maoist activities and improving security for residents, rather than addressing agricultural price volatility.

• Operation Sukoon:

• Operation Sukoon (meaning "Relief") was an evacuation mission conducted by the Indian Navy in 2006 to rescue Indian and other foreign nationals from Lebanon during the Lebanon-Israel conflict.

• This was a humanitarian operation that provided safe passage to evacuees stranded in a conflict zone and brought them safely back to India.

• Operation Sukoon was entirely focused on evacuation and humanitarian relief, unrelated to agricultural commodity prices.

• Operation Raahat:

• Operation Raahat was a rescue and evacuation mission launched by the Indian Armed Forces in 2015 to evacuate Indian citizens and other foreign nationals from Yemen during the Yemen Crisis.

• This operation was conducted by the Indian Navy and Air Force and aimed at providing a safe passage for people stranded in Yemen due to the armed conflict.

• Like Operation Sukoon, Operation Raahat was a humanitarian mission, not related to agriculture or price stabilization.

Q17. Answer: (d) Dayanand Saraswati

The correct answer is Dayanand Saraswati

Key Points

• Swami Dayanand Saraswati is often referred to as the "Martin Luther of India" because,

• much like Martin Luther in Europe, he was a reformer who challenged orthodox practices and sought to bring about religious and social reforms within Hinduism.

• Dayanand Saraswati founded the Arya Samaj in 1875 to reform Hindu society.

• He opposed practices he saw as superstitious or regressive, such as idol worship, the caste system, child marriage, and the

mistreatment of women.

• He promoted a return to the teachings of the Vedas as the original, pure texts of Hinduism.

• Like Martin Luther, who translated the Bible and encouraged Christians to read it themselves,

• Dayanand Saraswati advocated a return to the Vedas and encouraged people to understand Hinduism based on its core texts, free from priestly interpretations.

Additional Information

• Pandit Lekhraj:

• Pandit Lekhraj (or Lekhraj Khubchand), known as the founder of the Radha Soami Satsang Beas, was a spiritual leader who focused on the practice of meditation and spirituality.

• His contributions were in the field of spirituality, not religious reform of the magnitude that Martin Luther's actions represented in Christian Europe.

• Swami Vivekananda:

• Swami Vivekananda was a prominent philosopher, spiritual leader, and reformer who is best known for introducing Hindu philosophy and spirituality to the Western world.

• He was a key figure in the Ramakrishna Mission and inspired many with his ideas on self-realization, universal brotherhood, and service to humanity.

• Bal Gangadhar Tilak:

• Bal Gangadhar Tilak was a key freedom fighter and one of the first leaders of the Indian independence movement.

• He is often called the "Father of Indian Unrest" due to his role in galvanizing Indian public opinion against British colonial rule.

• He was also known for his social and educational reforms and for promoting the revival of Hindu culture and pride.

• He famously said, "Swaraj is my birthright." However, his contributions were more in the political sphere and focused on independence, rather than religious reform.

Q18. Answer: (c) 2, 0

Given:

If the number 2893#$ is divisible by 8 and 5.

Formula Used:

1. A number is divisible by 5 if its last digit is 0 or 5.

2. A number is divisible by 8 if its last three digits are divisible by 8.

Calculation:

Since the number must be divisible by 5, the digit $ must be 0.

Thus, the number becomes 2893#0.

Now, for the number to be divisible by 8, the last three digits (3#0) must be divisible by 8.

Let's check the possible values for #:

When # = 0, the number is 390, not divisible by 8.

When # = 1, the number is 310, not divisible by 8.

When # = 2, the number is 320, divisible by 8.

When # = 3, the number is 330, not divisible by 8.

When # = 4, the number is 340, not divisible by 8.

When # = 5, the number is 350, not divisible by 8.

When # = 6, the number is 360, not divisible by 8.

When # = 7, the number is 370, not divisible by 8.

When # = 8, the number is 380, not divisible by 8.

When # = 9, the number is 390, not divisible by 8.

The only possible value for # is 2.

Thus, the digits that can come in the places of # and $ are 2 and 0, respectively.

The correct answer is option 3.

Q19. Answer: (d) Daksh

The correct answer is Daksh

Key Points

• Daksh is a remotely operated vehicle developed by the Defence Research and Development Organisation (DRDO) in India.

• It is designed to detect, handle, and safely dispose of explosive devices, including bombs.

• features of Daksh:

• Bomb Disposal: Equipped with robotic arms and specialized tools to defuse and safely dispose of bombs and other explosive devices.

• Remote Operation: It can be operated from a safe distance, ensuring the safety of personnel handling dangerous materials.

• Versatile Mobility: Daksh is capable of climbing stairs and traversing rough terrain, which makes it suitable for various environments.

Additional Information

• Rakshak:

• Rakshak is an armoured vehicle developed for the Indian armed forces and police, primarily for personnel protection and patrol duties in high-risk areas.

• Vajra:

• K9 Vajra is a 155mm self-propelled artillery gun system designed for long-range firepower in the Indian Army, developed in collaboration with South Korean defence technology.

• Prahar:

• Prahar is a tactical surface-to-surface missile system developed by DRDO.

• It is designed for precision strikes and short-range tactical uses but is unrelated to bomb disposal.

Q20. Answer: (c) Right to Speech

The correct answer is Right to Speech

Key Points

• In the Indian Constitution, the right to speech is part of the Right to Freedom of Speech and Expression, which is a fundamental right under Article 19.

• However, the term "Right to Speech" alone is not listed as a fundamental right.

• It is framed under the broader concept of freedom of speech and expression.

• This right is one of the fundamental rights but is subject to limitations, such as:

• Security of the State

• Public Order

• Decency or Morality

• Contempt of Court

• Defamation

• Incitement to an offence

• So, while "Right to Speech" is essentially covered under Article 19(1)(a), it is not listed as "Right to Speech" by name in the Constitution.

Additional Information

• Right to Freedom:

• Articles 19 to 22 deal with various freedoms such as speech, movement, assembly, etc.

• It ensures various freedoms essential for the development of individuals and the democratic framework of the country.

• Cultural and Educational Rights:

• Articles 29 and 30 ensure the protection of the rights of minorities in matters of culture and education.

• It ensures that India’s rich cultural and linguistic heritage is protected.

• It facilitates harmony by recognizing and respecting cultural differences.

• Right to Equality:

• Articles 14 to 18 ensure equality before the law and prohibition of discrimination.

• Guarantees the same legal rights and protections for all citizens.

Q21. Answer: (a) Venus

The correct answer is Venus

Key Points

• Venus is often called Earth's Twin because it shares several similarities with Earth:

• Venus is close in size and mass to Earth, with a diameter of about 95% of Earth’s and a similar gravitational pull.

• Both Earth and Venus are rocky planets and have similar compositions.

• Venus is the second planet from the Sun, and Earth is the third, making them close neighbours in the Solar System.

• However, despite these similarities, Venus has a very different atmosphere and surface conditions.

• Its atmosphere is thick with carbon dioxide, creating an intense greenhouse effect that makes it the hottest planet in the Solar System.

Additional Information

• Mars:

• Mars is sometimes called the "Red Planet" due to its reddish appearance.

• Although it's a candidate for exploration and has features that could support human life, it is smaller than Earth and lacks the dense atmosphere needed to make it Earth's twin.

• Moon:

• The Moon is a natural satellite of Earth, not a planet, and does not share Earth's size, atmosphere, or characteristics.

Q22. Answer: (a) 162

The logic followed here is:

Hence, "Option 1" is the correct answer.

Q23. Answer: (a) France

The correct answer is France

Key Points

• The Principles of Liberty, Equality, and Fraternity in the Indian Constitution are inspired by the ideals of the French Revolution.

• These principles were deeply influential in the drafting of the Preamble of the Indian Constitution,

• which emphasizes justice, liberty, equality, and fraternity as fundamental values.

• The phrase "Liberty, Equality, and Fraternity" originates from the French Revolution of 1789 and

• represents the core democratic values that influenced many countries, including India.

Additional Information

• Britain:

• India adopted several features from the British Constitution, including the parliamentary system of government, rule of law, bicameral legislature, and single citizenship.

• Australia:

• From Australia, India adopted provisions for the Concurrent List (subjects shared by the central and state governments) and the process of a joint sitting of Parliament to resolve deadlocks.

• Ireland:

• India adopted the concept of Directive Principles of State Policy from Ireland, which was inspired by Ireland's Constitution.

• These principles guide the Indian state in making policies for social and economic welfare

Q24. Answer: (d) 5 : 4

Given:

Rate of interest for the first period (R1) = 5%

Time for the first period (T1) = 6 years

Rate of interest for the second period (R2) = 8%

Time for the second period (T2) = 3 years

Formula Used:

Simple Interest (SI) = (Principal × Rate × Time) / 100

Ratio = SI1 / SI2

Calculation:

Let the principal amount be P.

SI1 = (P × R1 × T1) / 100

SI2 = (P × R2 × T2) / 100

=> SI1 = (P × 5 × 6) / 100 = 30P / 100

=> SI2 = (P × 8 × 3) / 100 = 24P / 100

Ratio = (30P / 100) / (24P / 100)

=> Ratio = 30 / 24

=> Ratio = 5 / 4

The ratio of simple interest earned is 5 : 4.

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Q25. Answer: (d) Wular

The correct answer is Wular

Key Points

• Wular Lake, located in Jammu and Kashmir, is the largest natural freshwater lake in India.

• It is one of the largest freshwater lakes in Asia and is fed by the Jhelum River.

• The lake plays a crucial role in the local ecosystem, supporting a variety of wildlife and acting as a flood reservoir by absorbing excess water during heavy rains.

Additional Information

• Barapani:

• Also known as Umiam Lake, Barapani is an artificial reservoir in Meghalaya.

• It was created by damming the Umiam River for hydroelectric power generation, so it is not a natural freshwater lake.

• Bhimtal:

• Bhimtal is a lake in the town of Bhimtal, near Nainital city in Nainital district of Kumaon, India with a masonry dam built in 1883 creating the storage facility.

• It is the largest lake of Nainital district, as well as Kumaon, which is known as the "Lake district of India".

• It's the 2nd largest lake by surface area in Uttarakhand.

• The lake provides drinking water supply and supports aquaculture with variety of fish species.

• Loktak:

• Loktak Lake, located in Manipur, is the largest freshwater lake in northeastern India.

• It is famous for its phumdis (floating islands), but it is not as large as Wular Lake.

Q26. Answer: (d) 14

Given:

LCM of two numbers = 126

HCF of two numbers = 2

One number = 18

Formula Used:

Product of two numbers = LCM × HCF

Calculation:

Let the other number be x.

Product of the two numbers = 18 × x

According to the formula,

Product of two numbers = LCM × HCF

=> 18 × x = 126 × 2

=> 18x = 252

=> x = 252 / 18

=> x = 14

The other number is 14.

Q27. Answer: (d) Bank or Baroda

The correct answer is Bank of Baroda

Key Points

• In April 2019, Dena Bank and Vijaya Bank merged with Bank of Baroda as part of the Indian government’s initiative to consolidate public sector banks to create stronger, more competitive entities.

• This merger made Bank of Baroda the third-largest public sector bank in India by assets, after the State Bank of India and Punjab National Bank.

• The merger aimed to improve operational efficiency, reduce costs, and strengthen the bank's financial position.

• Customers of Dena Bank and Vijaya Bank were integrated into Bank of Baroda, including branches, services, and accounts.

Additional Information

• Bank of India: Bank of India is a public sector bank but was not part of this specific merger.

• Punjab National Bank: While Punjab National Bank merged with Oriental Bank of Commerce and United Bank of India in 2020, it was not involved in the merger with Dena and Vijaya Banks.

• State Bank of India (SBI): SBI, India’s largest public sector bank, has undergone its own series of consolidations, including the

merger with its five associate banks in 2017, but was not involved in the Dena Bank and Vijaya Bank merger.

Q28. Answer: (a) 92.5 km

Given:

Mohan goes to school 5 days a week.

Distance between home and school = 5 km.

Distance from school to market = 3 km.

Distance from market to home = 2.5 km.

On the remaining 2 days, Mohan walks an average of 20 km each day.

Formula Used:

Total distance walked in a week = Distance walked on school days + Distance walked on non-school days.

Calculation:

Distance walked on school days:

Distance walked in a day = Home to School + School to Market + Market to Home

Distance walked in a day = 5 km + 3 km + 2.5 km

Distance walked in a day = 10.5 km

For 5 days:

Total distance for 5 days = 10.5 km × 5

Total distance for 5 days = 52.5 km

Distance walked on non-school days:

Total distance for 2 days = 20 km × 2

Total distance for 2 days = 40 km

Total distance walked in a week:

Total distance = Distance for 5 days + Distance for 2 days

Total distance = 52.5 km + 40 km

Total distance = 92.5 km

The correct answer is option 1 (92.5 km).

Q29. Answer: (d) It was inaugurated by Prime Minister Narendra Modi.

The correct answer is Option 4

Key Points

• The "green rail corridor" refers to a rail route where all the passenger trains are equipped with bio-toilets to prevent human waste discharge on the railway tracks.

• This initiative is part of India's broader efforts to enhance sanitation and environmental sustainability in its railway networK.

• It was inaugurated by Prime Minister Narendra Modi.

• This statement is NOT correct.

• The green rail corridor was inaugurated on July 24, 2016, by the then Railway Minister Suresh Prabhu, not by Prime Minister Narendra Modi.

Additional Information

• The stretch of the green rail corridor is 114 km.

• This statement is correct.

• The stretch between Rameswaram and Manamadurai in Tamil Nadu is 114 km long and was declared a green corridor.

• The trains under the green rail corridor are equipped with bio-toilets.

• This statement is also correct.

• The bio-toilets treat waste in a way that reduces pollution and improves hygiene.

• It is India's first green rail corridor.

• This statement is true.

• The Rameswaram-Manamadurai section was India's first fully functional green rail corridor, marking a significant step towards greener rail transport.

Q30. Answer: (b) United States of America

The correct answer is the United States of America

Key Points

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• The name "United Nations" was suggested by United States President Franklin Delano Roosevelt.
• The term was first used in the Declaration by the United Nations on January 1, 1942, during World War II.
• The declaration was signed by representatives of 26 nations who pledged to continue fighting together against the Axis Powers.
• The name was unanimously adopted at the San Francisco Conference as a tribute to the late President.

Additional Information

• The United Nations (UN) is an international organization founded on 24th October 1945.
• Its Headquarters is in New York, United States.
• The present Secretary-general is Antonio Guterres.
• It has 193 Member States and 2 observer states.
• It has 6 official languages: Arabic, Chinese, English, French, Russian, Spanish

Q31. Answer: (b) 3%

Given:

Principal (P) = Rs. 1500

Amount (A) = Rs. 1591.35

Time (T) = 2 years

We need to find the rate of interest (r) per annum for compound interest (compounding annually).

Formula used:

The formula for compound interest is:

$A = P \times (1 + r/100)^T$

Calculations:

Step 1: Substitute the given values into the formula:

$1591.35 = 1500 \times (1 + r/100)^2$

Step 2: Simplify the equation:

$\Rightarrow 1591.35/1500 = (1 + r/100)^2$

$\Rightarrow 1.0609 = (1 + r/100)^2$

Step 3: Take the square root of both sides:

$\Rightarrow \sqrt{1.0609} = 1 + r/100$

$\Rightarrow 1.03 = 1 + r/100$

Step 4: Solve for r:

$\Rightarrow 1.03 - 1 = r/100$

$\Rightarrow 0.03 = r/100$

$\Rightarrow r = 0.03 \times 100 = 3\%$

Therefore The rate of compound interest is 3% per annum.

Q32. Answer: (b) Rabindranath Tagore

The correct answer is Rabindranath Tagore

Key Points

• The title "Mahatma" means "Great Soul" in Sanskrit.
• It was first used by Rabindranath Tagore, the famous Bengali poet, to describe Mahatma Gandhi.
• The term was not officially given to Gandhi at the time, but Tagore used it as a tribute to Gandhi's moral and spiritual stature, particularly about his leadership in the Indian independence struggle and his commitment to non-violence (ahimsa) and truth (satyagraha).
• Gandhi's simple lifestyle, deep spirituality, and his focus on the welfare of the common people made him a revered figure, deserving of such a title in Tagore's eyes.

Additional Information

• Lokmanya Tilak: Known for his slogan "Swaraj is my birthright," Tilak was a prominent freedom fighter and a contemporary of Gandhi, but he did not give Gandhi the title of "Mahatma." Tilak was more known for his fiery nationalism and his leadership in the early stages of India's struggle for independence.
• Gopal Krishna Gokhale: Gokhale was one of Gandhi's early mentors, but he did not give Gandhi the title "Mahatma." Gokhale was known for his moderate approach towards British rule and his focus on social reform.
• Dadabhai Naoroji: Dadabhai Naoroji, an important leader of the Indian National Congress and the first Asian to be a British Member of Parliament, was another influential figure in India's independence movement. He did not use the term "Mahatma" for Gandhi either.

Q33. Answer: (d) The Hindu

The correct answer is The Hindu

Key Points

• The Hindu was the first Indian newspaper to be available online, launching its online edition in 1995.

• It launched its online edition on November 1, 1995, making it the pioneer among Indian newspapers in the digital space.

• The online edition provided key articles from the printed newspaper, enabling readers from across the world to access Indian news and opinions in real time.

• The Kasturi & Sons Limited, the publishers of The Hindu, anticipated the growing influence of the Internet and took an early lead in digital transformation.

Additional Information

• Bengal Gazette

• The first newspaper to be published in India was Hicky's Bengal Gazette, which was released on January 29, 1780.

• Bengal Gazette was the first English-language newspaper published on the Indian subcontinent.

• It was founded in Calcutta, by Irishman James Augustus Hicky in 1779.

• The newspaper was a strong critic of the administration of Governor-General Warren Hastings.

• The newspaper was important for its provocative journalism and its fight for free expression in India

• The first newspaper to be published online was The Columbus Dispatch, which went online on July 1, 1980

• The Times of India

• The Times of India issued its first edition on 3 November 1838 as The Bombay Times and Journal of Commerce.

• The paper was published on Wednesdays and Saturdays under the direction of Raobahadur Narayan Dinanath Velkar, a Maharashtrian social reformer.

• J. E. Brennan was its first editor.

• It is the third-largest newspaper in India by circulation and the largest selling English-language daily in the world.

Q34. Answer: (a) microcomputers

The correct answer is Microcomputers

Key Points

• Microcomputers

• Microcomputers are small, relatively inexpensive computers powered by a microprocessor.

• They are designed for individual use and include devices such as desktop computers, laptops, tablets, and smartphones.

• These devices typically run operating systems like Windows, macOS, iOS, and Android.

• Microcomputers are the most common type of computers used for personal and business purposes.

Additional Information

• Mainframe Computers

• Mainframe computers are large, powerful machines used by organizations to process and store large amounts of data.

• They are typically used by large institutions like banks, government agencies, and airlines for critical applications requiring high processing power, data security, and reliability.

• Mainframes can support thousands of users and handle extensive computing tasks, but they are not intended for personal use.

• Supercomputers

• Supercomputers are the most powerful computers in terms of processing capacity and speed.

• They are used for complex scientific calculations, simulations, and large-scale data analysis, such as climate research, physics simulations, and cryptography.

• Supercomputers are extremely expensive and are generally used by research institutions, governments, and large corporations.

• Mini Computers

• Minicomputers, also called mid-range computers, are smaller than mainframes but larger than microcomputers.

• They were popular in the mid-20th century for business applications and process control, offering multi-user support and moderate computing power.

• However, with advancements in technology, minicomputers are less common today and have mostly been replaced by servers and powerful microcomputers.

Q35. Answer: (a) 2475 cm^3

Given:

Height (h) = 14 cm.

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Curved Surface Area (CSA) = 660 cm².

Formula Used:

1. Curved Surface Area of a Cylinder = 2 π r h

2. Volume of a Cylinder = π r² h

Calculation:

Using the CSA formula:

CSA = 2 π r h

660 = 2 × (22/7) × r × 14

=> 330 = (22/7) × r × 14

=> r = 330/(2 × 22)

=> r = 30 / 4

=> r = 15/2 cm

Now, using the volume formula:

Volume = π r² h

Volume = (22/7) × (15/2)² × 14

=> Volume = (11/7) × 15 × 15 × 7

=> Volume = 11 × 15 × 15

=> Volume = 2475 cm³

The volume of the cylinder is 2475 cm³.

Q36. Answer: (a) Konark Sun Temple

The correct answer is Konark Sun Temple

Key Points

• Konark Sun Temple

• It Located in Odisha, India, the Konark Sun Temple is a 13th-century temple dedicated to the Hindu sun god, Surya.

• Its massive chariot-like structure, with intricately carved wheels and horses, was designed to appear as though the sun god was riding through the sky.

• Due to its dark colour and magnetic aura, sailors called it the "Black Pagoda," as it was visible from afar along the coast and sometimes caused compass deviations.

• It is a UNESCO World Heritage Site and a significant example of Kalinga architecture.

Additional Information

• Suryanar Temple

• Situated in Tamil Nadu, India, Suryanar Temple is a Hindu temple dedicated to Surya, the sun god.

• Built in the 11th century by Chola King Kulothunga, it is part of the Navagraha (nine planetary deities) temples.

• This temple uniquely features shrines for all nine planetary deities in Hindu astrology, with Surya as the central deity.

• It is an important pilgrimage site for followers seeking astrological remedies.

• Martand Sun Temple

• Located in Kashmir, India, the Martand Sun Temple was built by King Lalitaditya Muktapida in the 8th century.

• This ancient temple is dedicated to the sun god, Surya, and showcases a unique blend of Gandharan, Gupta, and Kashmiri architectural styles.

• Although it is now mostly in ruins, it is considered one of the most impressive ancient Hindu temples in North India and reflects the region's rich cultural heritage.

• Shani Shingnapur

• This temple, located in Maharashtra, India, is dedicated to Shani, the god associated with the planet Saturn.

• Unlike other temples, it does not have a traditional structure or idol but rather a simple black stone that symbolizes Shani.

• Shani Shingnapur is famous for its unique open-air shrine, and the village is notable for having houses without doors, as residents believe Shani protects them from theft and crime.

Q37. Answer: (d) C

According to the given Venn diagram:

The shaded region represents persons who are only teachers.

So, persons who are only teachers = C

Hence, the correct answer is "Option 4".

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Q38. Answer: (c) Only conclusion I follows.

Statement:

Internet usage is increasing day by day.

Conclusions:

I. It is becoming easier to access the internet. - True (This conclusion could logically follow from the statement, as an increase in internet usage might suggest that access to the internet is becoming more widespread or convenient. If more people are using the internet, one possible reason could be that it is becoming easier to access.)

II. Internet facilities have no impact on internet usage. - False (This conclusion does not logically follow from the statement. In fact, the statement suggests that something is affecting internet usage, possibly including internet facilities. To conclude that internet facilities have no impact contradicts the idea that internet usage is increasing.)

So, Only conclusion I follows.

Hence, the correct answer is "Only conclusion I follows".

Q39. Answer: (c) Rumen

The correct answer is Rumen

Key Points

• The rumen is the largest compartment of the stomach in hoofed animals, also known as ruminants:

• The rumen is the first part of the stomach and is located on the left side of the animal.

• It can store up to 50 gallons of material in a mature cow.

• The rumen is the primary site for microbial fermentation of ingested feed.

Additional Information

• The other compartments of a ruminant's stomach are:

• Reticulum: The second chamber, also known as the honeycomb.

• It holds about 5 gallons in a mature cow.

• Omasum: The third chamber, also known as the book.

• Abomasum: The fourth chamber, also known as the true stomach.

Q40. Answer: (a) Hima Das

The correct answer is Hima Das

Key Points

• Hima Das, the Indian sprinter and gold medalist at the 2018 Asian Games, was appointed as UNICEF India's first-ever Youth Ambassador in 2018.

• Her appointment was in recognition of her achievements in sports and her ability to inspire youth, especially girls, to break barriers and pursue their dreams.

• As UNICEF's Youth Ambassador, Hima Das aimed to advocate for children's rights, including education, health, and gender equality.

• Hima Das is a celebrated Indian sprinter who gained international fame for winning a gold medal at the 2018 IAAF World U-20 Championships in Finland,

• where she became the first Indian woman to win a global track event.

Additional Information

• Sakshi Malik:

• Sakshi Malik is an Indian wrestler who gained national and international recognition for winning a bronze medal at the 2016 Summer Olympics in Rio de Janeiro.

• She became the first Indian female wrestler to win an Olympic medal, which was a historic achievement for India.

• She was awarded the Padma Shri (India’s fourth-highest civilian award) for her contributions to sports in 2017.

• Nahid Aafreen:

• Nahid Aafreen is an Indian singer and performer, best known for her participation in the popular Indian singing reality show Indian Idol (Season 9).

• Although Nahid Aafreen has been recognized for her musical talent and contributions to the arts, she was not appointed as UNICEF India’s Youth Ambassador in 2018. However, she has used her platform to promote various causes related to youth empowerment and humanitarian work, but she has not been specifically associated with UNICEF in the same way as Hima Das.

• Nahid, being a young artist, is an inspiration to many aspiring singers, especially girls from smaller towns, to pursue their passions and break cultural stereotypes.

• Mary Kom:

• Mary Kom, also known as Magnificent Mary, is one of India’s most celebrated boxers.

• She is a six-time world champion and an Olympic bronze medalist (2012 London Olympics).

• Mary Kom has been an ambassador for various social causes, particularly women's empowerment and youth development.

• She has also been involved in promoting sports for young girls and encouraging them to pursue their dreams, similar to the work Hima Das has done as a youth ambassador.

Q41. Answer: (a) Hurricane

The correct answer is Hurricane

Key Points

• The term "Hurricane" is used for tropical cyclones that form in the North Atlantic Ocean and the Northeastern Pacific Ocean (east of the International Date Line).

• Hurricanes are characterized by strong winds, heavy rainfall, and can cause significant damage in coastal and inland areas.

• Hurricanes typically form in tropical regions where the sea surface temperature is at least 26.5°C (about 80°F).

• This warmth provides the necessary heat and moisture to fuel the storm.

• A hurricane has a well-defined center called the eye, which is calm and clear, surrounded by a rotating mass of strong winds and rain, known as the eyewall.

• The storm extends for hundreds of miles.

Additional Information

• Typhoon:

• A tropical cyclone like a hurricane but forms in the Northwest Pacific Ocean (west of the International Date Line).

• Twister (Tornado):

• A small but extremely powerful rotating column of air, forming in severe thunderstorms. Tornadoes are highly localized and can have wind speeds exceeding 300 mph.

• Tornado:

• Another name for twister, this term refers to a localized and intense storm with rotating winds that can cause massive damage over a small area.

Q42. Answer: (d) Abhinav Shaw

The correct answer is Abhinav Shaw

Key Points

• Abhinav Shaw became the youngest Gold Medalist at the Khelo India Youth Games in 2019 in the sport of shooting.

• At just 10 years old, he won the gold medal in the 10-meter air rifle mixed team event alongside his partner,

• breaking records as the youngest athlete to achieve this feat in the competition.

Additional Information

• Manu Bhaker

• Manu Bhaker is an accomplished Indian shooter who has won multiple gold medals in various national and international shooting competitions. However, she did not hold the title of the youngest gold medalist at the Khelo India Games in 2019.

• Abhishek Verma

• Abhishek Verma is a prominent Indian shooter who has won medals in several international events. He specializes in the 10-meter air pistol event but did not compete in the Khelo India Games in 2019 as the youngest gold medalist.

• Abhinav Bindra

• Abhinav Bindra is a renowned Indian shooter and an Olympic gold medalist, famous for his 2008 Olympic gold in the 10-meter air rifle event. However, he did not participate in the Khelo India Games in 2019.

Q43. Answer: (b) 60°

Given:

Height of the pole = $6\sqrt{3}$ m

Length of the shadow = 6 m

Formula Used:

$\tan(\theta)$ = Opposite / Adjacent

Calculation:

Here, the height of the pole is the opposite side, and the length of the shadow is the adjacent side.

$\tan(\theta) = 6\sqrt{3} / 6$

$\Rightarrow \tan(\theta) = \sqrt{3}$

We know that $\tan(60^\circ) = \sqrt{3}$

So, θ = 60º

The angle of elevation of the sun is 60º.

Q44. Answer: (c) 367/42

Given:

(31/7 + 43/7) + 7/6

We need to simplify this expression.

Formula used:

First, convert mixed numbers to improper fractions:

31/7 = 22/7

43/7 = 31/7

Then, add the fractions.

Calculations:

Step 1: Add the first two fractions:

=> 22/7 + 31/7 = 53/7

Step 2: Add 53/7 + 7/6 by finding a common denominator.

LCM of 7 and 6 is 42.

=> 53/7 = (53 × 6)/(7 × 6) = 318/42

=> 7/6 = (7 × 7)/(6 × 7) = 49/42

Step 3: Add the two fractions:

=> 318/42 + 49/42 = 367/42

Therefore The simplified result is 367/42.

Q45. Answer: (d) mouth; small intestine

The correct answer is mouth, small intestine

Key Points

• Digestion begins in the mouth, where food is broken down mechanically by chewing and chemically by enzymes in saliva, such as amylase, which begins the digestion of carbohydrates.

• Digestion is completed in the small intestine, where enzymes from the pancreas and bile from the liver further break down food.

• Nutrients are then absorbed into the bloodstream through the walls of the small intestine.

Additional Information

• Food pipe; small intestine

• This is incorrect because the food pipe (esophagus) only transports food to the stomach; digestion does not start here.

• Stomach; large intestine

• While digestion continues in the stomach, it does not begin there. The large intestine is primarily involved in water absorption and does not complete digestion.

• Food pipe; large intestine

• This is incorrect because, as noted, the food pipe only transports food, and the large intestine does not play a primary role in the digestion process.

Q46. Answer: (a) Jallianwala Bagh Massacre

The correct answer is Jallianwala Bagh Massacre

Key Points

• Jallianwala Bagh Massacre

• The incident happened in the backdrop of protests against the Rowlatt Act and the subsequent arrest of Dr. Satyapal and Saifuddin Kichlew.

• To control the violence that emerged out after the arrest of the two nationalists, restrictions were imposed on the movement of people and holding the demonstrations in Amritsar.

• But on the day of Baisakhi, April 13, 1919, thousands of people were unaware of the restrictions gathered at Jallianwala Bagh.

• General Dyer following the orders of Michael O'Dwyer (Lt. Governor of Punjab) directed the troops to surround the gathering and shoot the people without any warning.

• As a result, thousands of people were killed and injured.

• After this incident, Rabindra Nath Tagore renounced his Knighthood.

• Mahatma Gandhi gave up the title of Kaiser-i-Hind and withdrew the Satyagrah against Rowlatt act.

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Additional Information

• Poona Pact

• The Poona Pact was an agreement between Dr. B.R. Ambedkar and Mahatma Gandhi, signed on September 24, 1932.

• It addressed the issue of separate electorates for the "Depressed Classes" (now referred to as Scheduled Castes) in India.

• The pact provided reserved seats for these classes in provincial legislatures within the general electorate rather than separate electorates.

• Non-Cooperation Movement

• Launched by Mahatma Gandhi, the Non-Cooperation Movement began in 1920.

• It was a mass protest against British rule, urging Indians to boycott British goods, institutions, and honors.

• This movement was the first large-scale act of nonviolent resistance against colonial rule.

• Quit India Movement

• The Quit India Movement was launched on August 8, 1942, by the Indian National Congress under the leadership of Mahatma Gandhi.

• This movement called for an immediate end to British rule in India and became one of the last major events in the struggle for Indian independence.

Q47. Answer: (b) Pulitzer

The correct answer is Pulitzer

Key Points

• The Soul of a New Machine by Tracy Kidder won the Pulitzer Prize for General Nonfiction in 1982.

• The book provides an in-depth look at the challenges and culture within a computer engineering team as they work to develop a new minicomputer.

• It is celebrated for its exploration of technological innovation and the dedication of engineers in the rapidly advancing field of computing.

• Pulitzer Prize

• The Pulitzer Prize is an American award given for achievements in newspaper, magazine, and online journalism, literature, and musical composition within the United States

Additional Information

• Man Booker Prize

• The Man Booker Prize (now known as the Booker Prize) is awarded for the best original novel written in English and published in the United Kingdom. It primarily focuses on works of fiction rather than nonfiction.

• Neustadt International Prize for Literature

• The Neustadt Prize is a biennial international literary award that recognizes outstanding literary achievement in fiction, poetry, or drama. It is often awarded to writers whose work has had a significant cultural impact but is not typically for nonfiction works on technology.

• Hugo Award

• The Hugo Award is a prestigious award given for the best science fiction or fantasy works and achievements of the previous year. It is not typically awarded for nonfiction works focused on real-world technology or engineering.

Q48. Answer: (c) 42/21

Given:

{(2 - 1/3) + (2/3 × 11/5)} + 3/5 × 25/7

We need to simplify this expression.

Formula used:

Convert the mixed numbers to improper fractions first:

11/5 = 6/5

25/7 = 19/7

Calculations:

Step 1: Simplify 2 - 1/3.

Convert 2 to 6/3 :

=> 2 - 1/3 = 5/3

Step 2: Multiply 2/3 × 6/5.

=> 2/3 × 6/5 = 12/15 = 4/5

Step 3: Multiply 3/5 × 19/7.

=> 3/5 × 19/7 = 57/35

Step 4: Add the results from Step 1 and Step 2.

=> 5/3 + 4/5

Find the LCM of 3 and 5, which is 15.

=> 5/3 = 25/15

=> 4/5 = 12/15

Add them:

=> 25/15 + 12/15 = 37/15

Step 5: Add the results from Step 3 and Step 4.

=> 37/15 + 57/35

Find the LCM of 15 and 35, which is 105.

=> 37/15 = 259/105

=> 57/35 = 171/105

Add them:

=> 259/105 + 171/105 = 430/105 = 86/21= 4 2/21

Therefore The simplified result is 4 2/21.

Q49. Answer: (d) Kofi Annan

The correct answer is Kofi Annan

Key Points

• Kofi Annan

• Kofi Annan, a diplomat from Ghana, served as the Secretary-General from 1997 to 2006.

• He was the first person from sub-Saharan Africa to hold this position.

• Annan focused on human rights, sustainable development, and the fight against HIV/AIDS, and he was awarded the Nobel Peace Prize in 2001 for his efforts to revitalize the UN.

Additional Information

• Ban Ki-Moon

• Ban Ki-Moon, a South Korean diplomat, served as the Secretary-General of the United Nations from 2007 to 2016. He succeeded Kofi Annan and focused on issues such as climate change, sustainable development, and peacekeeping.

• Trygve Lie

• Trygve Lie, from Norway, was the first Secretary-General of the United Nations, serving from 1946 to 1952. He played a key role in the formative years of the UN but resigned due to political pressures during the Cold War.

• U Thant

• U Thant, from Myanmar (then Burma), was the third Secretary-General of the UN, serving from 1961 to 1971. He was known for his efforts in peacekeeping during the Congo crisis and the Cuban Missile Crisis.

Q50. Answer: (b) 17/7

Given:

√(544/49)

Formula Used:

√(ab/c) = (√((a × c) + b))/√c

Calculation:

(5 × 49) + 44= 245 + 44 = 189

√289 = 17

√49 = 7

=> √(544/49) = 17/7

The correct answer is option 2.

Q51. Answer: (a) Code 4

The logic followed here is:

MANGO has been coded using 4 different codes:

Code 1: NBOHP

The logic followed here is: (1) is added to the position value according to the English alphabetic series.

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Code 2: LZMFN

The logic followed here is: (1) is subtracted the position value according to the English alphabetic series.

Code 3: OCPIQ

The logic followed here is: (2) is added to the position value according to the English alphabetic series.

Code 4: NCQKT

The logic followed here is: Increasing number series is added to the position value according to the English alphabetic series.

So, to write the word ORANGE as PTDRLK:

The logic followed here is: Increasing number series is added to the position value according to the English alphabetic series.

Thus, to write the word ORANGE as PTDRLK, logic of Code - 4 is followed here.

Hence, "Option 1" is the correct answer.

Q52. Answer: (a) Pingali Venkaya

The correct answer is Pingali Venkaya.

Key Points

• The ratio of length to the height (width) of the Flag of the Indian national flag is 3:2.

• The National Flag was adopted by the Constituent Assembly of India on 22 July 1947.

• It is a horizontal tricolor of deep saffron (Kesari) at the top, white in the middle, and dark green at the bottom in equal proportion.

• It became the official flag of the Dominion of India on 15 August 1947.

• The Prime Minister hoists the national flag at the Red Fort on Independence Day.

• Pingali Venkayya is the designer of the Indian National Flag.

Q53. Answer: (b) 18

Given:

Distance covered by the cyclist = 650 m

Time taken = 2 min 10 s = 2 × 60 + 10 = 130 s

Formula Used:

Speed (in m/s) = Distance / Time

Speed (in km/h) = Speed (in m/s) × 18/5

Calculation:

Speed (in m/s) = 650 / 130

=> Speed (in m/s) = 5

Speed (in km/h) = 5 × 18/5

=> Speed (in km/h) = 18

The speed of the cyclist in km/h is 18.

Q54. Answer: (b) 14^(th)

The correct answer is 14th

Key Points

• The president is the Supreme Commander of the Indian Armed Forces.

• The president can declare war or conclude peace, on the advice of the Union Council of Ministers headed by the prime minister.

• All important treaties and contracts are made in the president's name.

• Under the draft constitution, the President occupies the same position as the King under the English Constitution.

• He is the head of the state but not of the Executive.

• He represents the Nation but does not rule the Nation.

• He is the symbol of the Nation.

• His place in the administration is that of a ceremonial device on a seal by which the nation's decisions are made known.

The President of the Republic of India is the ceremonial head of the state of India and the Commander-in-chief of the Indian Armed Forces. He/she is not the Head of Government

Q55. Answer: (c) 1600

Given:

We need to find the least square number that is exactly divisible by 4, 5, 8, 16, and 32.

Formula Used:

Least Common Multiple (LCM) of the given numbers, then square that LCM to get the least square number.
Calculation:
Prime factorization:
$4 = 2^2$
$5 = 5^1$
$8 = 2^3$
16 = 2^4
32 = 2^5
LCM is obtained by taking the highest powers of all prime factors:
LCM = 2^5 × 5^1
LCM = 32 × 5
LCM = 160
The least square number is the multiple of LCM:
Only 1600 from the options is a multiple of 160 and a square value.
The least square number that is exactly divisible by 4, 5, 8, 16, and 32 is 1600.

Q56. Answer: (b) 10

Given:
Raj is 60% more efficient than Sundar.
Sundar can finish a certain task in 16 days.
Formula Used:
Efficiency and Time are inversely proportional: Efficiency prop. to 1/Time
Raj's efficiency = Sundar's efficiency + 60%
Calculation:
Let Sundar's efficiency be 100 units/day.
Raj's efficiency = 100 + 60 = 160 units/day.
Sundar's time to finish the task = 16 days.
Work done by Sundar in 16 days = 100 units/day × 16 days = 1600 units.
Time taken by Raj to complete the same task:
Total Work = 1600 units
Raj's efficiency = 160 units/day
=> Time taken by Raj = Total Work / Raj's efficiency
=> Time taken by Raj = 1600 / 160
=> Time taken by Raj = 10 days
The correct answer is option 2.

Q57. Answer: (c) Jodhpur

The logic followed here is:

Shimla	Capital City
Patna	Capital City
Jodhpur	City
Kohima	Capital City

Shimla, Patna and Kohima are Capital City,
Whereas,
Jodhpur are City situated in Rajasthan.
Hence, the correct answer is "Jodhpur".

Q58. Answer: (b) 1/3

Given:
A dice is cast twice, and the sum of the appearing numbers is 10.
Formula Used:

Probability of an event = (Number of favorable outcomes) / (Total number of possible outcomes)
Calculation:
Possible outcomes when the sum is 10: (4,6), (5,5), (6,4)
Total outcomes = 3
Favorable outcomes where number 5 appears at least once: (5,5)
Number of favorable outcomes = 1
Probability = Number of favorable outcomes / Total outcomes
=> Probability = 1 / 3
The correct answer is option 2.

Q59. Answer: (c) 10%

Given:
Selling price of the article when profit is 25% = Rs. 750
Selling price of the article = Rs. 660
Formula Used:
Profit% = (Profit / Cost Price) × 100
Cost Price = Selling Price / (1 + Profit%)
Calculation:
Let the Cost Price (CP) be x.
Given, a profit of 25% is made when the article is sold for Rs. 750.
=> 750 = x × (1 + 0.25)
=> 750 = x × 1.25
=> x = 750 / 1.25
=> x = 600
Now, the Selling Price (SP) is Rs. 660.
Profit = Selling Price - Cost Price
=> Profit = 660 - 600
=> Profit = 60
Profit% = (Profit / Cost Price) × 100
=> Profit% = (60 / 600) × 100
=> Profit% = 0.1 × 100
=> Profit% = 10%
The profit when the article is sold for Rs. 660 is 10%.

Q60. Answer: (a) West

Given:
Kavita goes for yoga practice daily to the Rock Garden.
The garden is towards the east from her house.
From the garden, she goes to her friend Rekha's house, which is towards the east of the garden.
Thus, Kavita's house to the west of Rekha's house.
Hence, "Option 1" is the correct answer.

Q61. Answer: (a) Chin

The logic followed here is:

Chin	Not a Sensory organs
Ears	Sensory organs
Eyes	Sensory organs
Nose	Sensory organs

Eyes, Ear, and Nose are all sensory organs involved in sight, hearing, and smell, respectively.
Whereas,
Chin is not serve a sensory function.

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Hence, the correct answer is "Chin".

Q62. Answer: (a) 144 cm²

Given:

The diagonal of a cube is 6√2 cm.

Formula Used:

1. Diagonal of a cube: a√3 (where a is the side length of the cube)

2. Surface area of a cube: 6a²

Calculation:

Given, diagonal = 6√2 cm

Using the diagonal formula:

a√{3} = 6√{2}

=> a = 6√2/√3

=> a = 6√2/√3 × √3/√3

=> a = 2√6 cm

Now, using the surface area formula:

Surface area = 6a²

=> Surface area = 6(2√{6})²

=> Surface area = 6 × 4 × 6

=> Surface area = 144 cm²

The surface area of the cube is 144 cm².

Q63. Answer: (b) 615

The logic followed here is:

Hence, "Option 2" is the correct answer.

Q64. Answer: (b) Rs. 5,670

Given:

Initial cost of the horse = Rs. 4,500

Profit percentage for A = 5%

Profit percentage for B = 20%

Formula Used:

Sale Price = Cost Price + (Profit Percentage × Cost Price)

Calculation:

1. Calculate the price at which A sold the horse to B:

Cost Price for B (which is Sale Price for A) = 4500 + (5% × 4500)

5% of 4500 = 4500 × 5 / 100

5% of 4500 = 225

=> Cost Price for B = 4500 + 225 = 4725

2. Calculate the price at which B sold the horse to C:

Sale Price for B = 4725 + (20% × 4725)

20% of 4725 = 4725 × 20 / 100

20% of 4725 = 945

=> Sale Price for B = 4725 + 945 = 5670

The amount paid by C to purchase the horse is Rs. 5,670.

Q65. Answer: (a) 222/9 days

Given:

Rama can finish a task in 50 days.

Rama worked for 10 days.

Ravi finished the remaining task alone in 32 days.

Formula Used:

Work done by Rama in 1 day = 1/50

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Work done by Ravi in 1 day = 1/x

Work done by Rama and Ravi together in 1 day = 1/50 + 1/x

Time taken by Rama and Ravi together to finish the task = 1 / (1/50 + 1/x)

Calculation:

Work done by Rama in 10 days = 10/50 = 1/5

Remaining work = 1 - 1/5 = 4/5

Ravi finished 4/5 of the work in 32 days

Work done by Ravi in 1 day = (4/5) / 32 = 4 / (5 × 32) = 1 / 40

Now, work done by Rama and Ravi together in 1 day = 1/50 + 1/40

=> 1/50 + 1/40 = (4 + 5) / 200 = 9 / 200

Time taken by Rama and Ravi together to finish the task = 1 / (9 / 200)

=> 200 / 9 = 22 2/9 days

The correct answer is option 1.

Q66. Answer: (b) (16, 7)

Given:

2^x = 4^(y+1) and 3^y = 3^(x-9)

We need to find the values of x and y.

Formula used:

4 = 2^2, so we can rewrite 4^(y+1) = (2^2)^(y+1).

Using the property of exponents $(a^m)^n = a^{(mn)}$, we can simplify the equations.

Calculations:

Step 1: Rewrite the first equation:

2^x = (2^2)^(y+1)

=> 2^x = 2^(2(y+1)) = 2^(2y+2)

Step 2: Equate the exponents of base 2:

=> x = 2y + 2

Step 3: Rewrite the second equation:

3^y = 3^(x-9)

Step 4: Equate the exponents of base 3:

=> y = x - 9

Step 5: Substitute y = x - 9 into x = 2y + 2:

=> x = 2(x - 9) + 2

=> x = 2x - 18 + 2

=> x - 2x = -16

=> -x = -16

=> x = 16

Step 6: Substitute x = 16 into y = x - 9:

=> y = 16 - 9 = 7

Therefore The values of x and y are 16 and 7, respectively.

Q67. Answer: (c) -36

Given:

The expression to evaluate: 18[4 - 3{6 - (8 × 1/2)}]

Formula Used:

Order of operations (PEMDAS/BODMAS): Parentheses/Brackets, Exponents/Orders (i.e., powers and roots, etc.), Multiplication and Division (left-to-right), Addition and Subtraction (left-to-right)

Calculation:

Start by evaluating the innermost expression:

=> 8 × (1)/(2) = 8 × 0.5 = 4

Now substitute back into the expression:

=> 18[{4 - 3{ {6 - 4} }}]

Evaluate the next innermost expression:

=> 6 - 4 = 2

Substitute back into the expression:

=> 18[{4 - 3{2}}]

Evaluate the next innermost expression:

=> 3{2} = 6

Substitute back into the expression:

=> 18[{4 - 6}]

Evaluate the next expression:

=> 4 - 6 = -2

Finally, multiply by 18:

=> 18 × (-2) = -36

The value of the expression is -36.

Q68. Answer: (c) Rs. 3,000

Given:

Principal (P) = Rs. 10,000

Time (T) = 6 months = 0.5 years

Rate (R) = 5 paisa per rupee per month = 5 × 12 = 60% per annum

Formula Used:

Simple Interest (SI) = (P × R × T) / 100

Calculation:

SI = (10,000 × 60 × 0.5) / 100

SI = (10,000 × 30) / 100

SI = 300,000 / 100

SI = 3,000

The simple interest on Rs. 10,000 for 6 months is Rs. 3,000.

Q69. Answer: (c) Tijara Mandir - Rajasthan

The correct answer is Tijara Mandir - Rajasthan.

Key Points

• Tijara Temple, Alwar

• About 60 kilometres from the Alwar-Delhi route lies this important centre of Jain pilgrimage.

• The exquisitely decorated ancient temple was built to commemorate the eighth Tirthankar, Shri Chandra Prabha Bhagwan.

• The son of King Mahasen and Queen Sulakshana, he ruled his kingdom for several years before receiving Diksha and being initiated.

• After serving the mankind for several years, he meditated for a month and attained Nirvana.

Additional Information

• Venkateswara Temple (Tirupati): Located in Tirumala Hills, Andhra Pradesh, it's dedicated to Lord Venkateswara, a form of Vishnu. Known for its Dravidian architecture and immense religious significance, it's one of the most visited pilgrimage sites globally.

• Lingaraj Temple (Bhubaneswar): Situated in Bhubaneswar, Odisha, it's dedicated to Lord Shiva. Renowned for its Kalinga architecture, it's the largest temple in Bhubaneswar and holds immense religious and cultural importance in the region.

• Khajuraho Temple (Khajuraho): Located in Madhya Pradesh, it's a group of Hindu and Jain temples famous for their intricate sculptures, including erotic ones. Built by the Chandela dynasty between the 9th and 11th centuries, it's a UNESCO World Heritage Site

Q70. Answer: (c) Mahila samriddhi Yojna

The correct answer is Mahila samriddhi Yojna.

Key Points

• Mahila Samriddhi Yojana is a government scheme aimed at empowering women entrepreneurs from backward and poor backgrounds

• Implemented by the National Backward Classes Finance and Development Corporation (NBCFDC) under the Ministry of Social Justice and Empowerment, it provides micro-finance to women either directly or through Self-Help Groups (SHGs).

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• The scheme aims to uplift women economically, promote entrepreneurship, and contribute to their overall socio-economic development.

• It has been successful in reaching a significant number of women beneficiaries and has played a crucial role in empowering them.

Q71. Answer: (c) Stomach

The correct answer is Stomach.

Key Points

• Digestion:

• it is the complex process of turning the food we eat into nutrients, which the body uses for energy, growth and cell repair needed to survive.

• It also involves creating water to be excreted.

• Human Digestive system:

• Human Digestive system consists of the alimentary canal which can be further divided into various components.

• a) Buccal cavity

• b) Food pipe or oesophagus

• c) Stomach

• d) Small intestine

• e) Large intestine

• f) Rectum

• g) Anus

Q72. Answer: (d) Acting

The logic followed here is:

A Poet creates Poetry.

Similarly, an Actor performs Acting.

Hence, the correct answer is "Acting".

Q73. Answer: (c) 17

The logic followed here is: Column wise pattern is followed here.

1st column:

→ (14 - 5) = 9

And,

→ (32 - 23) = 9

2nd column:

→ (19 - 9) = 10

And,

→ (19 - 9) = 10

4th column:

→ (32 - 15) = 17

And,

→ (33 - 16) = 17

Similarly,

3rd column:

→ (24 - 13) = 11

And,

→ (X - 6) = 11 → X = 11 + 6 → X = 17

Hence, "Option 3" is the correct answer.

Q74. Answer: (a) SIDBI

The correct answer is SIDBI.

Key Points

• Small Industries Development Bank of India (SIDBI):

• It was formed in the year 1990.

• It is the apex regulatory body for the licensing and regulation of micro, small and medium enterprise finance companies in India.
• It comes under the jurisdiction of the Ministry of Finance.
• Its headquarters is located at Lucknow, Uttar Pradesh.
• SIDBI is regulated and supervised by the Reserve Bank of India.

Q75. Answer: (c) USA

The correct answer is USA.

Key Points

• World War Two, also known as World War II, was a devastating global conflict that began in 1939 and ended in 1945.
• It involved 100 million people from over 30 countries.
• World War II was the deadliest conflict in human history, marked by 70 to 85 million fatalities.
• Tens of millions of people died due to genocides (including the Holocaust), premeditated death from starvation, massacres, and disease.
• To this date, it remains the deadliest conflict in human history.

Additional Information

• World War 2 was a battle between two groups of countries – the “Allies” and the “Axis“.
• The major Allied Powers were Britain, France, Russia, China and the United States.
• The major Axis Powers were Germany, Italy and Japan.
• Before World War 2 began, Germany was ruled by a man named Adolf Hitler
• Together with the Nazi Party, he wanted Germany to rule Europe. To gain more land and power, on 1 September 1939 German troops invaded Poland.
• After Hitler refused to stop the invasion, Britain and France declared war on Germany – World War II had begun.
• In 1944, an Allied army crossed from Britain to free France from Nazi rule.
• One year later, Allied armies invaded Germany, forcing the Germans to surrender.
• After nuclear attacks on Japan’s major cities Hiroshima and Nagasaki, Japan also surrendered to Allied forces in August of the same year. World War 2 had ended.
• Around 64 million people died in World War 2 – that’s more than the entire population of the United Kingdom.

Q76. Answer: (a) 2x + 3y - 11 = 0

Given:

Points: (-2, 5) and (1, 3)

Formula Used:

Equation of a line passing through two points (x1, y1) and (x2, y2) :

y - y1 = (y2 - y1)/(x2 - x1)(x - x1)

Calculation:

Let's calculate the slope m :

m = (3 - 5)/(1 - (-2))

m = (3 - 5)/(1 + 2)

m = (-2)/3

Using the point-slope form of the equation of a line:

y - 5 = (-2)/3(x + 2)

Multiplying both sides by 3 to clear the fraction:

=> 3(y - 5) = -2(x + 2)

=> 3y - 15 = -2x - 4

Rearranging to get the equation in standard form:

=> 2x + 3y - 11 = 0

The equation of the straight line is: 2x + 3y - 11 = 0

The correct answer is option 1.

Q77. Answer: (b) Plastic, DDT, bakelite

The correct answer is Plastic, DDT, bakelite.

Key Points

• Non-biodegradable materials are substances that cannot be decomposed by natural biological processes like bacteria or fungi.

• They persist in the environment for extended periods, causing pollution and environmental degradation.
• Common examples include plastics, metals, glass, and certain types of synthetic fibers.
• These materials contribute to landfill waste, water pollution, and soil contamination.
• To mitigate their impact, it's crucial to reduce their use, promote recycling, and adopt sustainable practices.

Q78. Answer: (c) 0.007992

Given:

The value of $(0.2)^3 - (0.02)^3$

Formula Used:

Difference of cubes formula: $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

Calculation:

Let a = 0.2 and b = 0.02

Using the formula $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

$=> (0.2)^3 - (0.02)^3$

$=> (0.2 - 0.02)((0.2)^2 + 0.2 \times 0.02 + (0.02)^2)$

$=> 0.18(0.04 + 0.004 + 0.0004)$

$=> 0.18 \times 0.0444$

$=> 0.007992$

The correct answer is option 3.

Q79. Answer: (c) Tirich Mir

The correct answer is Tirich Mir.

Key Points

• Hindu Kush, a great mountain system of Central Asia.
• Broadly defined, it is some 500 miles (800 km) long and as much as 150 miles (240 km) wide.
• The Hindu Kush Himalayan region spans Afghanistan, Bangladesh, Bhutan, China, India, Kyrgyzstan, Mongolia, Myanmar, Nepal, Pakistan, Tajikistan, and Uzbekistan.
• It traverses about 5 million square kilometres and hosts a large and culturally diverse population.
• It is considered the Third Pole (after the North and South Poles) and has significant implications for climate.
• It contains vast cryospheric(cold) zones and is also the world’s largest store of snow and ice outside the polar region.
• SIGNIFICANCE-
• The significance of the Hindu Kush mountain ranges has been recorded since the time of Darius I of Persia.
• Alexander the Great entered the Indian subcontinent through the Hindu Kush as his army moved past the Afghan Valleys in the spring of 329 BCE.
• He moved towards the Indus valley river region in the Indian subcontinent in 327 BCE, his armies building several towns in this region over the intervening two years.
• The subcontinent and valleys of the Hindu Kush remained unconquered by the Islamic armies until the 9th century, even though they had conquered the southern regions of the Indus River valley such as Sind.

Additional Information

• Nanda Devi: It is the second-highest mountain peak in India, located in the Garhwal Himalayas. It is known for its challenging terrain and stunning beauty.
• Udren Zom: This mountain peak is situated in Sikkim, India. It is a popular trekking destination offering breathtaking views of the Himalayan ranges.
• Karakoram: This mountain range extends across parts of Pakistan, India, China, and Afghanistan. It is home to several of the world's highest peaks, including K2.

Q80. Answer: (b) DCPCPC

The logic followed here is:

APPLE is written as CRRNG

Similarly,

BANANA is written as

Hence, "Option 2" is the correct answer.

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Q81. Answer: (d) Rs. 1,920

Given:

Mohan's salary = Rs. 1,600

Ravi's salary is 20% more than Mohan's salary

Formula Used:

Ravi's salary = Mohan's salary + 20% of Mohan's salary

Calculation:

Mohan's salary = Rs. 1,600

20% of Mohan's salary = 20% × 1600

20% of Mohan's salary = (20/100) × 1600

20% of Mohan's salary = 0.2 × 1600

20% of Mohan's salary = 320

Ravi's salary = Mohan's salary + 320

Ravi's salary = 1600 + 320

Ravi's salary = 1920

The correct answer is option 4.

Q82. Answer: (c) Barbarika

The correct answer is Barbarika.

Key Points

• The Mahabharata was originally known as the Jaya Samhita.

• It was a shorter epic version, consisting of only 8,800 verses.

• It was written by the sage Vyasa and focused on the events leading up to and including the Kurukshetra War.

• The Jaya Samhita was later expanded by Vyasa's disciple Vaisampayana, who added 15,200 verses.

• This expanded version of the epic was called the Bharata, and it was the first time that the story of the Mahabharata was told in its entirety.

• The Bharata was further expanded by other authors over the centuries, and it eventually grew to its current size of over 100,000 verses.

• This final version of the epic is known as the Mahabharata.

• The name "Jaya Samhita" means "Collection of Victories".

• It is thought that this name was chosen because the epic focuses on the victory of the Pandavas over the Kauravas in the Kurukshetra War.

• The Mahabharata is one of the longest epics in the world, and it is a major part of Hindu culture.

• It is a complex and fascinating story that has been told and retold for centuries.

Q83. Answer: (d) 723

Given:

The number leaves a remainder of 3 when divided by 9, 16, 20, or 24.

Formula Used:

To find the least number which leaves a specific remainder when divided by several numbers, find the LCM (Least Common Multiple) of the divisors and then add the remainder.

Calculation:

Divisors: 9, 16, 20, 24

First, find the LCM of 9, 16, 20, and 24.

Prime factorization:

$9 = 3^2$

16 = 2^4

$20 = 2^2 \times 5$

$24 = 2^3 \times 3$

LCM = $2^4 \times 3^2 \times 5$

LCM = $16 \times 9 \times 5$

LCM = 144×5

LCM = 720

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The least number that leaves a remainder of 3 is:
720 + 3
=> 723
The least number which leaves a remainder of 3 when divided by 9, 16, 20, or 24 is 723.

Q84. Answer: (d) 2, -3/2, -3

Given:
The plane equation is 3x - 4y - 2z = 6.
Formula Used:
Intercepts with axes are found by setting the other variables to 0.
Calculation:
Intercept with x-axis:
Set y = 0 and z = 0 in the plane equation:
3x - 4(0) - 2(0) = 6
=> 3x = 6
=> x = 6 / 3
=> x = 2
Intercept with y-axis:
Set x = 0 and z = 0 in the plane equation:
3(0) - 4y - 2(0) = 6
=> -4y = 6
=> y = 6 / -4
=> y = -3/2
Intercept with z-axis:
Set x = 0 and y = 0 in the plane equation:
3(0) - 4(0) - 2z = 6
=> -2z = 6
=> z = 6 / -2
=> z = -3
The intercepts made by the plane with the coordinate axes are: 2, -3/2, -3
The correct answer is option 4.

Q85. Answer: (b) 0

Given:
The equation: 3(5x + 2) - 4 = 2(1 - 4x)
Formula Used:
We need to solve for x.
Calculation:
Start by expanding both sides:
3(5x + 2) - 4 = 2(1 - 4x)
=> 15x + 6 - 4 = 2 - 8x
Simplify the equation:
=> 15x + 2 = 2 - 8x
Combine like terms:
=> 15x + 8x = 2 - 2
=> 23x = 0
Divide both sides by 23:
=> x = 0
The value of the variable x is 0.

Q86. Answer: (a) 2016 was the only year in which Boys of Board X outperformed the Girls of Board X.

Solution:
Let's analyze the given statements based on the table:

Statement 1: "2016 was the only year in which Boys of Board X outperformed the Girls of Board X."

In 2016, the Boys of Board X scored 81.00% while the Girls of Board X scored 77.80%. Therefore, this statement is true since Boys outperformed Girls in Board X only in 2016.

Statement 2: "2016 is the year in which the difference in performance between Boys and Girls of Board Y was the least."

In 2016:

Boys of Board Y scored: 68.50%

Girls of Board Y scored: 70.45%

Difference: 70.45 - 68.50 = 1.95

Comparing with other years:

2014: 76.65 - 74.56 = 2.09

2015: 71.45 - 69.68 = 1.77

2017: 80.67 - 77.56 = 3.11

2018: 76.78 - 70.50 = 6.28

2019: 81.65 - 73.55 = 8.10

The least difference occurred in 2015, not in 2016. Therefore, this statement is false.

Statement 3: "2014 is the year in which the difference in performance between Boys and Girls of Board X was the least."

In 2014:

Boys of Board X scored: 75.85%

Girls of Board X scored: 77.57%

Difference: 77.57 - 75.85 = 1.72

Comparing with other years:

2015: 73.80 - 72.58 = 1.22 (least difference)

2016: 81.00 - 77.80 = 3.20

2017: 82.00 - 74.45 = 7.55

2018: 78.55 - 70.56 = 7.99

2019: 81.48 - 79.18 = 2.30

The least difference was in 2015, not in 2014. Therefore, this statement is false.

Statement 4: "2018 is the year in which the difference in performance between Boys and Girls of Board Y was the highest."

In 2018:

Boys of Board Y scored: 70.50%

Girls of Board Y scored: 76.78%

Difference: 76.78 - 70.50 = 6.28

Comparing with other years:

2014: 76.65 - 74.56 = 2.09

2015: 71.45 - 69.68 = 1.77

2016: 70.45 - 68.50 = 1.95

2017: 80.67 - 77.56 = 3.11

2019: 81.65 - 73.55 = 8.10 (highest difference)

The highest difference occurred in 2019, not 2018. Therefore, this statement is false.

Final Answer: Option 1.

The only correct statement is: "2016 was the only year in which Boys of Board X outperformed the Girls of Board X."

Q87. Answer: (c) Girls from Board X

Solution:

Let's calculate the average scores for each group over the given period (2014-2019) and determine which group has the highest average score.

Group 1: Board X - Boys

2014: 75.85%

2015: 72.58%

2016: 81.00%

2017: 74.45%

2018: 70.56%

2019: 79.18%

Average for Board X - Boys:

Average = (75.85 + 72.58 + 81.00 + 74.45 + 70.56 + 79.18)/6 = 453.62/6 = 75.60%

Group 2: Board X - Girls

2014: 77.57%

2015: 73.80%

2016: 77.80%

2017: 82.00%

2018: 78.55%

2019: 81.48%

Average for Board X - Girls:

Average = (77.57 + 73.80 + 77.80 + 82.00 + 78.55 + 81.48)/6 = 471.20/6 = 78.53%

Group 3: Board Y - Boys

2014: 74.56%

2015: 69.68%

2016: 68.50%

2017: 77.56%

2018: 70.50%

2019: 73.55%

Average for Board Y - Boys:

Average = (74.56 + 69.68 + 68.50 + 77.56 + 70.50 + 73.55)/6 = 434.35/6 = 72.39%

Group 4: Board Y - Girls

2014: 76.65%

2015: 71.45%

2016: 70.45%

2017: 80.67%

2018: 76.78%

2019: 81.65%

Average for Board Y - Girls:

Average = (76.65 + 71.45 + 70.45 + 80.67 + 76.78 + 81.65)/6 = 457.65/6 = 76.27%

Conclusion:

The group with the highest average score is Girls from Board X with an average of 78.53%.

Therefore The correct answer is option 3.

Q88. Answer: (a) 2017

Solution:

To find the year in which the absolute increase in the percentage score was the maximum for Girls of Board X, we need to calculate the increase in score from the previous year for each year from 2014 to 2019.

Board X - Girls Scores:

2014: 77.57%

2015: 73.80%

2016: 77.80%

2017: 82.00%

2018: 78.55%

2019: 81.48%

Absolute Increase from the Previous Year:

2015: 73.80% - 77.57% = -3.77%

2016: 77.80% - 73.80% = +4.00%

2017: 82.00% - 77.80% = +4.20%

2018: 78.55% - 82.00% = -3.45%

2019: 81.48% - 78.55% = +2.93%

The year with the maximum absolute increase in the percentage score for Girls of Board X is 2017.

Therefore The correct answer is option 1.

Q89. Answer: (c) 3 : 7

Given:

Undergraduate Students: B.B.A and B.C.A

B.B.A: 182

B.C.A: 91

Postgraduate Students: M.B.A and M.C.A

M.B.A: 455

M.C.A: 182

Formula used:

Ratio of Undergraduate to Postgraduate Students = (B.B.A + B.C.A) : (M.B.A + M.C.A)

Calculation:

=> (182 + 91) : (455 + 182)

=> 273 : 637 = (3 × 91)/(7 × 91)

=> The ratio is 3 : 7

Therefore The ratio of the number of undergraduate students to postgraduate students is 3:7

Q90. Answer: (b) Only conclusion I follows.

The least possible Venn diagram for the given statements is as shown below :

Conclusions:

I. All teachers are students → Follow (As all teachers are doctors and all doctors are students. As whole teachers comes in doctors which whole comes in students, therefore it is true.)

II. All students are doctors → Does not follow (As all doctors are students. So it is possible but not definite.)

Therefore Here, Only conclusion I follows.

Hence, "Option 2" is the correct answer.

Q91. Answer: (b) Abhinav Bindra : Shooting

The logic followed here is:

Mary Kom : Wrestling – Incorrect → Mary Kom is a famous Indian boxer.

Abhinav Bindra : Shooting – Correct → Abhinav Bindra is an Olympic gold medalist in shooting.

Mithali Raj : Badminton – Incorrect → Mithali Raj is known for her achievements in cricket.

Saina Nehwal : Boxing – Incorrect → Saina Nehwal is a well-known badminton player.

Hence, the correct answer is "Abhinav Bindra : Shooting".

Q92. Answer: (b) Earth

The logic followed here is:

Day : Night → Day and night are Antonymous to each other.

Similarly,

Sky : ? → Sky and Earth are Antonymous to each other.

Earth – This could be considered a contrasting counterpart to the Sky, as they are often seen as opposites (Sky above and Earth below).

Universe – The Universe includes the sky but is not a direct contrast to it.

Clouds – Clouds are part of the sky, not a contrast to it.

Sea – While the Sea contrasts with land, it doesn't directly contrast with the Sky in the same way as Earth does.

Hence, the correct answer is "Earth".

Q93. Answer: (a) 6

According to the given Venn diagram:

The shaded region represents the total number of stones are neither Dog nor Cat.

So, the total number of stones are neither Dog nor Cat = 6

Hence, the correct answer is "Option 1".

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Q94. Answer: (d) 107

The logic followed here is:
Let Q be '×'
Let R be '-'
So,
29 Q 8 R 56 = 176
29 × 8 - 56= 176
232 - 56= 176
176 = 176 (LHS = RHS)
And,
84 R 5 Q 13 = 19
84 - 5 × 13 = 19
84 - 65 = 19
19 = 19 (LHS = RHS)
Similarly,
51 Q 3 R 46 = ?
51 × 3 - 46 = ?
153 - 46 = ?
107 = ?
Hence, "Option 3" is the correct answer.

Q95. Answer: (c) 60

The logic followed here is:
Hence, "Option 3" is the correct answer.

Q96. Answer: (c) 1

The logic followed here is:
Here, number series can be formed by the logic of common difference of (1):
7, 8, 9, 10
So, getting the number series by the logic of alternately adding and multiplying the rows:
Row 1: 7 → 7
Row 2: 4 × 2 → 8
Row 3: 2 + 5 + 2 → 9
Row 4: 1 × 5 × ? × 2 → 10 => ? = 10 ÷ 10 => ? = 1
Hence, "Option 3" is the correct answer.

Q97. Answer: (c) E

The logic followed here is:
Hence, "Option 3" is the correct answer.

Q98. Answer: (b) ODM

The logic followed here is:
MILK : LHKJ
Similarly,
PEN : ?
Hence, "Option 2" is the correct answer.

Q99. Answer: (d) Eagle

The logic followed here is:
Logic: Except Eagle all others are mammal.
1. Dog – A mammal that lives on land.
2. Cat – A mammal that lives on land.
3. Monkey – A mammal that lives on land.

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4. Eagle – A bird that primarily lives in the air and can fly.
Dog, Cat, Monkey are all mammals, whereas the Eagle is a bird.
Hence, the correct answer is "Eagle".

Q100. Answer: (d) 160

The logic followed here is:
Hence, "Option 4" is the correct answer.

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