RRB NTPC Tier I Official Paper (Held On: 6 Apr 2016 Shift 2) (Previous Year Paper)

RRB NTPC • 2016 • 100 questions • 90 minutes • Answer key and solutions

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Q1. A recently discovered bird species named ‘Himalayan Forest Thrush’ was found in_____.

(a) Dehradun
(b) Northeast India
(c) Uttarakhand
(d) Ladakh Region

Q2. Leprosy is also known as

(a) Angina
(b) Hansen’s disease
(c) Gaucher disease
(d) Hodgkin disease

Q3. Find the odd one out in relation world heritage sites.

(a) Rashtrapati Bhavan
(b) ChatrapatiShivaji Terminus
(c) Taj Mahal
(d) Sun Temple

Q4. One side of a rectangle is 12 m and its diagonal is 13 m. Find its area ?

(a) 60 sq.m
(b) 55 sq.m
(c) 50 sq.m
(d) 45 sq.m

Q5. Who was the coach for U - 19 World Cup (2016) held in Bangladesh?

A. Rahul Dravid
B. Virendra Sehwag
C. Sourav Ganguly
D. Anil Kumble

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

Q6. Directions: GIven below are two statements, out of which one is the cause and which one is the effect, or if both of them are effects of independent causes or both of them are independent of each other.

Statement:

I. The domestic price of petrol has gone down.

II. The international price of crude oil has decreased.

(a) I is the cause and II is the effect.
(b) II is the cause and I is the effect.

(c) I and II are independent of each other.
(d) I and II are effects of independent causes.

Q7. In a map drawn to a scale of 1 cm = 18.5 km, the distance between places A and B = 22.25 cm. Find the actual distance in kilometer?
(a) 411.625
(b) 425.615
(c) 412.625
(d) 405.615

Q8. Find the odd one out.
(a) Silent valley
(b) Santa Clara Valley
(c) Indus valley
(d) Damodar valley

Q9. Who has conferred the Arjuna award for badminton in 2015?
A. Kidambi Srikanth
B. Saina Nehwal
C. Chetan Anand
D. Rohit Sharma
(a) B
(b) D
(c) C
(d) A

Q10. If 'you are john' is written as 'net let fat', 'who are you' is 'let wet net' and 'john is good' is 'get set fat', which represents 'is'?
(a) set
(b) get
(c) fat
(d) cannot be determined

Q11. Till the end of 2015, India has established_____research station in Antarctica.
(a) 2
(b) 3
(c) 4
(d) 5

Q12. A train running at 60 kmph crosses a pole in 30 seconds. What is the length of the train?
(a) 250 m
(b) 750 m
(c) 500 m
(d) 450 m

Q13. Jantar Mantar in Delhi was built by Maharaja_____.
(a) Jai Singh I of Jaipur
(b) Jai Singh II of Jaipur
(c) Ram Singh I
(d) Bishan Singh

Q14. Direction: In the given question a statement is followed by two conclusions numbered I and II. You have to assume everything in the statement to be true, then consider the two conclusions together and decide which of them logically follows beyond a reasonable doubt from the information given in the statement.
Statement:

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Customer service cannot be enforced. It has to come from within.

Conclusions:

I. Customer service should be voluntary.

II. Employees do not serve customers.

Find which of the given conclusions logically follow from the given statement.

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

Q15. As per India State Forest Report 2015, _____ has the largest forest cover in terms of its area.

(a) Assam
(b) Jammu and Kashmir
(c) Madhya Pradesh
(d) Arunachal Pradesh

Q16. 9876 + 34.567 - ? = 9908.221

(a) 23.45
(b) 234.6
(c) 2.368
(d) 2.346

Q17. A's share is 2 times that of B whose share is 3 times that of C. Rs. 1800/ - is to be given to them in that ratio. Find the B's share.

(a) Rs. 1080
(b) Rs. 540
(c) Rs. 180
(d) Rs. 900

Q18. Cell phone : Communication ? Cycle : ?

(a) Walking
(b) Gym
(c) Mechanization
(d) Transportation

Q19. Name the security force which does not fall under Union Home ministry.

(a) Sashastra Seema Bal
(b) Border Security Force
(c) Railway Protection Force
(d) Indo-Tibetan Border Police Force

Q20. The greenhouse gas which is called laughing gas is

(a) Methane
(b) Carbon dioxide
(c) Nitrous oxide
(d) Sulphur dioxide

Q21. If $(a + b + c) = 6$ and $a^2 + b^2 + c^2 = 14$, then $(ab + bc + ca) = ?$

(a) 22
(b) 11
(c) 33
(d) 44

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Q22. Which one is called the dwarf planet?

(a) Venus
(b) Mercury
(c) Moon
(d) Pluto

Q23. Major part of biogas is_____.

(a) Hydrogen
(b) Nitrogen
(c) Methane
(d) Carbon dioxide

Q24. Mac OS was introduced by

(a) IBM
(b) Microsoft
(c) Apple
(d) Micromax

Q25. Find the missing (?) in the series:
BDACE, GIFHJ,?, QSPRT ……

(a) LMKNO
(b) NLKOM
(c) LNKMO
(d) KLNOM

Q26. Find the least number required to be added to 3105 so that it is exactly divisible by 3, 4, 5 and 6.

(a) 15
(b) 12
(c) 25
(d) 10

Q27. Two vessels of equal volume contain milk and water in the ratio 1 : 3 and 2 : 1. If they are mixed together, what is the new ratio?

(a) 11 : 13
(b) 13 : 11
(c) 9 : 11
(d) 11 : 9

Q28. _____extinguishes fire.

(a) O2
(b) CO2
(c) SO2
(d) NO2

Q29. Four pairs of words are given. Find the odd one out.

(a) Saturn : Planet
(b) Sun : Star
(c) Milky Way : Constellation
(d) Titan : Satellite

Q30. After entering Bangladesh, the main branch of the Ganges is known as _____.

(a) Hooghly river
(b) Jamuna river
(c) Meghna river
(d) Padma river

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Q31. The efficiency of work of P and Q are in the ratio 5 : 7. What will be the ratio of number of days taken by them to finish the work?

(a) 7 : 5
(b) 3 : 4
(c) 4 : 3
(d) 5 : 7

Directions

Consider the following information and answer questions based on it.

Among 60 students, 12 like only algebra, 13 like only geometry, 10 like only trigonometry, 5 like both algebra and trigonometry, 8 like only physics, 5 like both physics and geometry and the remaining like both algebra and physics.

Q32. The number of students who like physics but not geometry is

(a) 8
(b) 13
(c) 15
(d) 17

Q33. How many students like more than one subject?

(a) 5
(b) 10
(c) 12
(d) 17

Q34. The ratio of students who like algebra to those who like geometry is

(a) 13 : 13
(b) 4 : 3
(c) 17 : 18
(d) 17 : 13

Q35. Sagar has two daughters, Lata and Asha. Asha's only paternal aunt's grandfather is Aniket. How is Sagar(a boy) related to Aniket's wife?

(a) Father
(b) Son
(c) Grandson
(d) Grandfather

Q36. If OWL = 50 and N = 14, then TIME is

(a) 45
(b) 47
(c) 43
(d) 49

Q37. In a certain code, 'ride' = 3218, 'talk' = 7564, 'dirt' = 4213 and 'like' = 8562. Which digit represents 'a'?

(a) 9
(b) 3
(c) 5
(d) 7

Q38. Which of the following is not true in relation to the Global Positioning System?

(a) It is a space-based navigation system.
(b) It can not predict cyclones.
(c) It can be used to map vehicular traffic.
(d) It can be used for in-car navigation

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Q39. If the posts of the President and Vice-president fall vacant, who will act as the President of India?

(a) Speaker of LokSabha
(b) Prime Minister of India
(c) Chief Justice of India
(d) Union Council of ministers

Q40. The average of first three out of four numbers is 18. The average of the last three numbers is 14. The sum of the first and last number is 16. The last number is

(a) 17
(b) 13
(c) 9
(d) 2

Q41. The difference between the ages of two sisters is 2 years when father's age is 52. Father is elder by 2 years to mother. Elder sister's age is half of mother's age. Find the age of younger sister?

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

Q42. The maturity value after three years, of a certain sum at 15% p.a. simple interest, is Rs. 8,700/ -. Find the principal amount?

(a) Rs. 5,000
(b) Rs. 6,000
(c) Rs. 5,500
(d) Rs. 6,500

Q43. If PIXIE is OHXHD then ELEANOR is

(a) DKDAMNQ
(b) DDKAMNR
(c) DKDANMR
(d) DJDAMNQ

Q44. The marked prices of small and big note books are Rs. 10 and Rs. 15 respectively. A student bought 5 dozen small and 10 dozen big note books at a total discount of 5%. Find the total discount amount?

(a) Rs. 100
(b) Rs. 90
(c) Rs. 120
(d) Rs. 130

Q45. An event happening once in 4 years is described as

(a) Biennial
(b) Quadrennial
(c) Triennial
(d) Perennial

Q46. Read the following data carefully and answer the question based on it.

i) 'A + G' means 'A is mother of G'
ii) 'A ÷ G' means 'A is daughter of G'
iii) 'A – G' means 'A is husband of G'
iv) 'A × G' means 'A is maternal aunt of G'
If L + M × N then how is L related to N?

(a) Aunt
(b) Mother
(c) Daughter

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(d) Maternal Grandmother

Q47. Find the value of $[(525 + 252)^2 – (525 – 252)^2]/(525 × 252)$.

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

Q48. If $2\cos\theta = \sqrt{3}$, $\cos\theta \times \tan\theta$ = ?

(a) 1
(b) √3/3
(c) √3/2
(d) 1/2

Q49. A generator converts _____.

(a) Mechanical energy into electrical energy.
(b) Electrical energy into chemical energy.
(c) Thermal energy into electrical energy.
(d) Electrical energy into light energy.

Q50. A man has equal number of five, ten and twenty rupee notes amounting to Rs. 385. Find the total number of notes?

(a) 13
(b) 33
(c) 15
(d) 31

Q51. Which key combination is used for pasting text in MS Word?

A. Ctrl + V
B. Ctrl + Z
C. Alt + R
D. Alt + F4

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

Q52. Find the median of the data set: 1.9, 8.4, 3.6, 5.8?

(a) 5.1
(b) 4.7
(c) 5.2
(d) 6.0

Q53. In the following equation, if the mathematical operators '-' and '×' are interchanged then the value of 4 – 6 + 1 × 15 ÷ 3 will be

(a) 24
(b) 20
(c) 5
(d) -4

Q54. Which one is not a network protocol?

(a) SSH
(b) HTML
(c) PPP
(d) POP

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Q55. The mean of first 11 natural numbers is

(a) 5.5
(b) 6
(c) 6.6
(d) 5

Q56. National Air Quality Index is determined on the basis of concentration of _____ pollutants.

(a) 5
(b) 6
(c) 7
(d) 8

Q57. Starting from her house a woman walks 15 km towards South. She turns right and walks 35 km. Again she turns right and walks 15 km. Then she turns left and walks 5 km. How far is her house now?

(a) 35
(b) 40
(c) 50
(d) 15

Q58. Motion of spinning 'top' is an example of

(a) Centripetal Force
(b) Centrifugal Force
(c) Gravitational Force
(d) Frictional Force

Q59. Read the given statements carefully and answer the question.

Statements:

1. All teachers get angry.
2. Some teachers are sad.
3. Sad people may cry.

Which of the following conclusion is true?

(a) All sad people cry.
(b) Some teachers may cry.
(c) All angry people are teachers.
(d) All sad people get angry.

Q60. If the mathematical operator '×' means A, '+' means R, '÷' means E and '-' means B, then the value of

24 B 6 E 2 A 9 R 17 is

(a) 14
(b) -3
(c) 17
(d) -10

Q61. Which one is anti-virus?

(a) CodeRed
(b) Melissa
(c) CryptoLocker
(d) Dr. Web

Q62. PM inaugurated the XII South Asian Games on 5^(th)February 2016 at

A. Lucknow
B. Guwahati
C. Kolkata
D. Ahmadabad

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

Q63. Name the chess champion against whom Viswanathan Anand lost in 2014 World Chess Championship

A. Vladimir Kramnik
B. Veselin Topalov
C. Boris Gelfand
D. Magnus Carlsen

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

Q64. Which one is different from the other three?

(a) Spinach
(b) Lentil
(c) Coriander
(d) Lettuce

Q65. Expand $(a - 4)^3$?

(a) $a^3 – 12a^2 + 48a + 64$
(b) $a^3 – 48a^2 + 12a – 64$
(c) $a^3 + 12a^2 – 48a – 64$
(d) $a^3 – 12a^2 + 48a – 64$

Q66. B does 50% of a work in 20 days. C joins B and together they finish the remaining work in 4 days. C alone can do the whole work in how many days?

(a) 10
(b) 8
(c) 12
(d) 9

Q67. Losoong festival is popular in

(a) Himachal Pradesh
(b) Sikkim
(c) Arunachal Pradesh
(d) Tripura

Q68. The most popular folk dance of Tamil Nadu

(a) Karagam
(b) Koodiyattam
(c) Yakshagana
(d) Kathakali

Q69. The loss in selling an article for Rs. 1235 was 5%. At what price should it be sold to get a profit of 10%?

(a) Rs. 1,335
(b) Rs. 1,380
(c) Rs. 1,430
(d) Rs. 1,300

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Q70. If 22x – 40 = 207 + 3x, then x = ?

(a) 14
(b) 13
(c) 12
(d) 11

Q71. The ratio of two numbers is 4 : 3 and their HCF is 8. Find their LCM?

(a) 48
(b) 96
(c) 64
(d) 84

Q72. The technique used for printing 'RESERVE BANK OF INDIA' appearing on the face of the Indian currency notes is

(a) Intaglio printing
(b) Micro lettering
(c) Latent printing
(d) Screen printing

Q73. The aim of the Civil Disobedience Movement of 1929 was

(a) Complete disobedience of the orders of the British Government.
(b) To protest the ChauriChaura incident.
(c) Partial disobedience of the orders of the British Government.
(d) To ensure all civil rights of the citizens are granted by the Government.

Q74. The British Government agreed to grant independence to India in

A. 1944
B. 1645
C. 1946
D. 1947

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

Q75. Y is R's mother's mother-in-law's only daughter and Q's wife. How is Q related to R?

(a) Paternal Uncle
(b) Nephew
(c) Husband
(d) Father

Q76. Find the similarity in the following:

Beetroot, Turnip, Carrot, Radish

(a) All are red in colour.
(b) All are round in shape.
(c) All of them grow above the soil.
(d) All are roots.

Q77. Rearrange the jumbled letters to make a meaningful word and then select the one which is different.

(a) SUVNE
(b) APTLE
(c) ARMS
(d) RUJTIPE

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Q78. The surface-to-air, Akash missile, was test fired from

(a) Sriharikota
(b) Abdul Kalam Island
(c) Thumba
(d) Pokhran

Q79. An article was sold at Rs. 920 at a profit of 15%. Find the selling price to get a profit of 20%.

(a) Rs. 1,000
(b) Rs. 980
(c) Rs. 960
(d) Rs. 940

Q80. Yeast used in making bread _____.

(a) Acts as a catalyst for fermentation.
(b) Does not help the process of fermentation.
(c) Makes it tasty.
(d) Acts as a preservative.

Q81. The area of a triangle is 456 sq.cm and its height is 24 cm. The length of its base is

(a) 32
(b) 36
(c) 34
(d) 38

Q82. Louis Pasteur was known for discovery of

(a) Polio vaccine
(b) Chicken pox vaccine
(c) Small pox vaccine
(d) Rabies vaccine

Q83. Find the missing (?) in the series.

1, 1, 8, 4, 27, 9, ?, 16 ….

(a) 32
(b) 48
(c) 64
(d) 72

Directions

Consider the following information and answer questions based on it.

Seven students J, K, L, M, N, O and P are standing in a row, in random order, from left to right, such that–

1. P, O, K and N do not stand on any of the extreme ends.
2. J is to the immediate left of P and immediate right of O.
3. M is not at the center.
4. K is to the immediate right of N and immediate left of L.

Q84. The student standing to the immediate left of O is

(a) L
(b) J
(c) M
(d) P

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Q85. Who is at the center of the row?

(a) N
(b) J
(c) P
(d) K

Q86. Who stands fifth from the left of the row?

(a) K
(b) P
(c) N
(d) J

Q87. What is the difference between the maturity value of two deposits of Rs. 5,000 each invested for 2 years first at 5% simple interest and second at the same interest compounded annually?

(a) Rs. 11.00
(b) Rs. 11.50
(c) Rs. 12.00
(d) Rs. 12.50

Q88. The area of a trapezium is 18 sq.cm. Its height and base are 3 cm and 5 cm respectively. Find the length of the side parallel to the base.

(a) 4 cm
(b) 6 cm
(c) 8 cm
(d) 7 cm

Q89. There are ____ zones in Indian Railways.

A. 8
B. 18
C. 16
D. 12

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

Directions

The following table represents the category wise count of books in your local libraries.

Category	ABL	GHL	MNL	PQL
Self-Help	150	170	200	200
Non-Fiction	500	600	550	600
Fiction	750	610	700	600
Management	100	130	100	110
Comics	175	100	100	75
Technical	115	100	150	200

Q90. The Self-Help books in library GHL is how much less than its Fictional books?

(a) 340
(b) 430
(c) 440
(d) 330

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Q91. Which library has the highest total count of books?

(a) ABL
(b) GHL
(c) MNL
(d) PQL

Q92. The difference between the total number of Non-Fiction and Management books of all four libraries is:

(a) 1850
(b) 1810
(c) 2250
(d) 1800

Q93. Evaluate: (sinθ/cosθ) × (cotθ/cosecθ)

(a) cosθ
(b) sinθ
(c) tanθ
(d) secθ

Q94. A statement followed by some conclusions is given below.

Statement: Unlike Aryabhata, moon is a natural satellite of the Earth.

Conclusions:

I. Aryabhata is not a satellite.

II. Moon is star and Aryabhata is a satellite.

Find which of the given conclusions logically follow from the given statement.

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

Q95. The approved, LIGO-India project, is related to _____.

(a) Research on use of solar energy
(b) Research on laser technologies
(c) Research on gravitational waves
(d) Research on relocation of lions

Q96. Statements followed by some conclusions are given below.

Statements:

1. Medical profession has become the most unethical.

2. People are afraid of falling sick

Conclusions:

I. Medical is the only unethical profession.

II. Unethical people fall sick.

Find which of the given conclusions logically follow from the given statements.

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

Q97. Name of the 8^(th) UN Secretary General is

(a) B. Ghali
(b) Kofi A. Annan
(c) Ban Ki-moon
(d) Dr. Jim Yong Kim

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Q98. K walked at 3 kmph for a certain distance with l and thereafter at 6 kmph with M to cover a total distance of 27 km in 7 hours. Find the distance travelled with M?

(a) 15 km
(b) 12 km
(c) 10 km
(d) 9 km

Q99. Who is considered to be the 'father of modern genetics'?

(a) Charles Darwin
(b) Gregor Mendel
(c) Alexander Fleming
(d) Otto Hahn

Q100. Name the country whose currency is not called 'Rupee'.

(a) Nepal
(b) Pakistan
(c) Sri Lanka
(d) Myanmar

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (b) Northeast India

The Himalayan thrush or Himalayan forest thrush is a species of bird described in 2016 and separated out from the alpine thrush Zoothera. The species breeds from Sikkim and Darjeeling in India and extends into northwest Yunnan in China. The species differs in its song from that of the alpine thrush.

Q2. Answer: (b) Hansen's disease

The correct answer is Hansen's disease.

Key Points

• Leprosy is also known as Hansen's disease (HD).
• It is a long-term infection caused by the bacteria Mycobacterium leprae or Mycobacterium lepromatosis.
• It is not clear how the leprosy germ is spread, but household and prolonged close contact with the infected person leads to its cause.
• The germs probably enters the body through the nose and possibly through broken skin.
• Symptoms may occur within 1 year but can also take as long as 20 years or even more.

Additional Information

• Leprosy mainly affects the skin, the peripheral nerves, mucosa of the upper respiratory tract, and the eyes.
• However, it is curable with multidrug therapy (MDT).

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• In 1981, WHO recommended MDT.
• The currently recommended MDT regimen consists of dapsone, rifampicin and clofazimine as the medicines.

Q3. Answer: (a) Rashtrapati Bhavan

All the option except Rashtrapati Bhavan is a world heritage site. A World Heritage Site is a place that is listed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as of special cultural or physical significance.

Q4. Answer: (a) 60 sq.m

We know that from the rectangle, we get

=> Diagonal² = length² + breadth²

=> 13² - 12² = breadth²

=> 25 = breadth²

Therefore Breadth = 5 cm

=> Area of the rectangle = length × breadth = 12 × 5 = 60 sq.cm

Q5. Answer: (a) A

The correct answer is option 1 i.e., Rahul Dravid.
• Rahul Dravid was the coach for the U-19 World Cup (2016) held in Bangladesh.
• Rahul Dravid is the former captain of the Indian cricket team.
• Ishan Kishan was the captain of the Indian U-19 cricket team.
• West Indies was the winner of the U-19 World Cup U-19, and India was the runners up.
• Most runs were scored by Jack Burnham of England.
• Most wickets were taken by Namibia's Fritz Coetzee.

Q6. Answer: (b) II is the cause and I is the effect.

If the international price of petrol decreases, then the domestic price of crude oil decreases. Therefore, statement II is the cause and statement I is the effect.

Q7. Answer: (a) 411.625

Actual distance in kilometer = 22.25 × 18.5 = 411.625 km

Q8. Answer: (b) Santa Clara Valley

The "valley" in its name refers to the Santa Clara Valley in Santa Clara County, which includes the city of San Jose and surrounding cities and towns, where the region has been traditionally centered.

Silicon Valley is a nickname for the southern portion of the San Francisco Bay Area, in the northern part of the U.S. state of California. All the other valley are found in India.

Q9. Answer: (d) A

The correct answer is option 4 i.e., A (Kidambi Srikant).
• Kidambi Srikanth was conferred with the prestigious Arjuna award in 2015 for Badminton.
• Srikanth won four Super Series titles in 2017, making him the only Indian to do so in a calendar year.
• Also, he won two titles back-to-back twice in the year, en route his four titles, the first Indian to do so.
• He was the first Indian male badminton player to win gold at the 2015 Swiss Open Grand Prix Gold
• His current World ranking is 14(2020).
• He trains at the Gopichand Badminton Academy, Hyderabad.

Link: https://bit.ly/2RrmF9D

Q10. Answer: (d) cannot be determined

You are John → net let fat

Who are you → let wet net

John is good → get set fat

As code for ‘is’ can be ‘get’ or ‘set’.

Hence, code for ‘is’ cannot be determined.

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Q11. Answer: (b) 3

The Indian Antarctic Program is a multi-disciplinary, multi-institutional program under the control of vedant National minister for Antarctic and Ocean Research, Ministry of Earth Sciences, Government of India. It was initiated in 1981 with the first Indian expedition to Antarctica.The program gained global acceptance with India's signing of the Antarctic Treaty and subsequent construction of the Dakshin Gangotri Antarctic research base in 1983, superseded by the Maitri base from 1990. The newest base commissioned in 2015 is Bharati, constructed out of 134 shipping containers

Q12. Answer: (c) 500 m

Given:

A train running at 60 kmph crosses a pole in 30 seconds.

Formula used:

Speed = Distance/Time

Calculation:

As compared with length of the train, length of the pole is negligible

We know that speed = distance/time

Speed = 60 kmph = 60 × (5/18)m/s

=> Length of train = 60 × (5/18) × 30 = 500 m

Therefore Length of the train is 500 m

Q13. Answer: (b) Jai Singh II of Jaipur

• The Jantar Mantar monument in Jaipur, Rajasthan is a collection of nineteen architectural astronomical instruments, built by the Rajput king Sawai Jai Singh II, and completed in 1734 CE.

• He constructed five Jantar Mantars in total, in New Delhi, Jaipur, Ujjain, Mathura and Varanasi

Q14. Answer: (a) Only conclusion I follow.

When anything is not enforceable then it becomes voluntary.

As per first statement, customer service is not enforceable, and then it becomes voluntary.

So, The conclusion I follows with the statement.

There is no information about the service done by employees.

So, the second conclusion does not follow.

Hence, only conclusion I follows.

Q15. Answer: (c) Madhya Pradesh

State of Forests Report is published by the Forest Survey of India (FSI) on a biennial basis since 1987. Forest cover of the country is mapped through indigenous RESOURCESAT - 2 satellite data with a LISS III sensor. State with largest total forest cover: Madhya Pradesh having 77, 462 sq km

Q16. Answer: (d) 2.346

=> 9876 + 34.567 - ? = 9908.221

=> 9910.567 - ? = 9908.221

=> ? = 9910.567 - 9908.221 = 2.346

Q17. Answer: (b) Rs. 540

From the given data,

Let the share of C be x, then the share of B is 3x and share of A is 2 (3x) = 6x

Given that total = Rs. 1800

=> 6x + 3x + x = 1800

=> 10x = 1800

=> x = 180

Therefore Share of B = 3x = 3 × 180 = Rs. 540

Q18. Answer: (d) Transportation

Cell phone is used for communication.In similar manner Cycle is used for Transportation.The other given option does not stand valid as per the relationship of cellphone and communication

Q19. Answer: (c) Railway Protection Force

The Railway Protection Force (RPF) is a security force of India entrusted with protecting railway passengers, passenger area and railway property of the Indian Railways .This is the only central armed police force (CAPF, commonly known as para military force) which has the power to arrest, investigate and prosecute criminals. The force is under the authority of Ministry of Railways (India).

Q20. Answer: (c) Nitrous oxide

Nitrous oxide, commonly known as laughing gas or nitrous, is a chemical compound, an oxide of nitrogen with the formula N 2O. At room temperature, it is a colorless, odorless non-flammable gas, with a slightly sweet taste.

Q21. Answer: (b) 11

We know that $(a + b + c)^2 = a^2 + b^2 + c^2 + 2 (ab + bc + ca)$

$\Rightarrow 6^2 = 14 + 2 (ab + bc + ca)$

$\Rightarrow (36 - 14)/2 = (ab + bc + ca)$

$\Rightarrow ab + bc + ca = 11$

Q22. Answer: (d) Pluto

The right answer is Pluto

Key Points

Pluto is a dwarf planet in the Kuiper belt, a ring of bodies beyond Neptune. It was the first Kuiper belt object to be discovered. Pluto was discovered by Clyde Tombaugh in 1930 and was originally considered to be the ninth planet from the Sun

Additional Information

According to IAU-International Astronomical Union, Pluto lot its eligibility to be a Planet.

So, the three criteria of the IAU for a full-sized planet are:

1. It is in orbit around the Sun.

2. It has sufficient mass to assume hydrostatic equilibrium (a nearly round shape).

3. It has “cleared the neighbourhood” around its orbit.

Pluto meets only two of these criteria, losing out on the third. So it is a Dwarf Planet

Q23. Answer: (c) Methane

Biogas is a mixture of different gases, major portion in biogas being methane (CH4) and carbon dioxide (CO2). It also contains traces of other gases like hydrogen (H2), Moisture (H2O), hydrogen sulphide (H2S)etc. Improved digesters used for anaerobic digestion can produce biogas with 65% - 75% methane content.

Q24. Answer: (c) Apple

The family of Macintosh operating systems developed by Apple Inc. includes the graphical user interface-based operating systems it has designed for use with its Macintosh series of personal computers since 1984, as well as the related system software it once created for compatible third-party systems.

Q25. Answer: (c) LNKMO

The relation between terms is as follows,

Hence, the missing term in the series is LNKMO.

Q26. Answer: (a) 15

LCM of 3, 4, 5 and 6 = 2 × 3 × 2 × 5 × 1 × 1 = 60

On dividing 60 with 3105, we get remainder 45

Therefore Number to be added = 60 - 45 = 15

15 is the least number required to be added to 3105 so that it is exactly divisible by 3, 4, 5 and 6.

Q27. Answer: (a) 11 : 13

Given

Ratio of milk and water are in the ratio 1 : 3 and 2 : 1.

Calculation

Let volume of each container is 12 lt.

Hence,

In container 1

Volume of milk = 12 × (1/4) = 3 lt

Volume of water = 12 × (3/4) = 9 lt

In container 2

Volume of milk = 12 × (2/3) = 8 lt

Volume of water = 12 × (1/3) = 4 lt

Now,

Total milk = 3 + 8 = 11 lt

Total water = 4 + 9 = 13 lt

Therefore Required ratio = 11/13 = 11 : 13

Q28. Answer: (b) CO2

Carbon dioxide extinguishers work because carbon dioxide molecules are heavier than oxygen molecules. When the liquid carbon dioxide inside theextinguisher expands into a gas, the carbon dioxide pushes out any oxygen surrounding the fire.

Q29. Answer: (c) Milky Way : Constellation

Saturn is a planet,Sun is a star and Titan is a satellite of Saturn but milkyway is not a constellation.

It is a galaxy in which solar system is found.

Q30. Answer: (d) Padma river

The correct answer is Padma river.

Key Points

• The Padma is a major river in Bangladesh.

• It is the main distributary of the Ganges, flowing generally southeast for 120 kilometers to its confluence with the Meghna River near the Bay of Bengal.

Additional Information

• Hooghly river: The Hooghly River or Bhagirathi-Hooghly, originally and locally known as 'Ganga', and also known as Kati-Ganga, has a distribution of about 260 kilometers of the Ganges River in West Bengal, India. The Ganges is divided into Giriya, Murshidabad, near Padma, and Hooghly.

• Jamuna river: The Jamuna River is one of the three main rivers of Bangladesh. It is the lower stream of the Brahmaputra River, which flows into Tibet as the Yarlung Tsangpo before flowing into India and then southwest into Bangladesh.

• Meghna river: The Meghna River is one of the major and sacred rivers of Bangladesh, one of three in the form of the Ganges Delta, the largest delta on Earth, which juts out to the Bay of Bengal.

Q31. Answer: (a) 7 : 5

We know that efficiency prop. to 1/(no of working days)

Given that efficiency of work P and Q are in the ratio of 5 : 7

Therefore Ratio of number of days taken by them to finish the work = 7 : 5

Q32. Answer: (c) 15

Students who like Physics = (Physics) + (Physics + Geometry) + (Physics + Algebra)

= 8 + 5 + 7 = 20

Student who like physics but not Geometry = students who like physics – (physics + geometry)

= 20 – 5 = 15

Q33. Answer: (d) 17

Students who like more than one subject,

Algebra + trigonometry = 5

Physics + geometry = 5

Algebra + physics = 7

Total students = 5 + 5 + 7 = 17

Q34. Answer: (b) 4 : 3

Students who like algebra = 12 + 5 + 7 = 24

Students who like geometry = 13 + 5 = 18

Ratio,

Algebra : Geometry

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= 24 : 18

= 4 : 3

Q35. Answer: (c) Grandson

According to the question, we can summarise the information in a family tree,

From the above blood relation diagram,

Aniket is grandfather of Sagar.

Hence, Sagar is grandson of Aniket's wife.

Q36. Answer: (b) 47

According to the position of letters in English alphabetical series,

OWL = O + W + L = 15 + 23 + 12 = 50

& N = 14

Hence,

TIME = T + I + M + E = 20 + 9 + 13 + 5 = 47

Q37. Answer: (d) 7

Hence, digit '7' represents 'A'.

Q38. Answer: (b) It can not predict cyclones.

The incorrect statement is It can not predict cyclones.

GPS or Global Positioning System is a network of orbiting satellites that send precise details of their position in space back to earth. The signals are obtained by GPS receivers, such as navigation devices and are used to calculate the exact position, speed and time at the vehicle's location.

Q39. Answer: (c) Chief Justice of India

The correct answer is Chief Justice of India

Key Points

• The President (Discharge of Functions) Act, 1969 of India provides that the Chief Justice of India (CJI) shall act as the President of India in the event of the offices of both the President and the Vice President being vacant.

• When President Zakir Hussain died in office, Vice President V. V. Giri, acted as the President.

• Later, Mr Giri resigned as the Vice President.

• The CJI, Justice Mohammad Hidayatullah then became the acting President of India.

Q40. Answer: (d) 2

Shortcut Trick

Difference between first and last number = 3 × (Average of first three − Average of last three)

=> First − Last = 3 × (18 − 14) = 12

Given: First + Last = 16

Subtracting both: 2 × Last = 16 − 12 = 4 => Last = 2

Therefore The correct answer is 2.

Alternate Method

Let the four numbers be A, B, C, and D.

Given:

Average of first three numbers (A, B, C) = 18

Average of last three numbers (B, C, D) = 14

Sum of first and last number (A + D) = 16

Formula Used:

Average = Sum of observations ÷ Number of observations

=> Sum of observations = Average × Number of observations

Calculations:

=> Sum of first three numbers: A + B + C = 18 × 3 = 54 --- (Equation 1)

=> Sum of last three numbers: B + C + D = 14 × 3 = 42 --- (Equation 2)

Subtracting Equation 2 from Equation 1:

=> (A + B + C) − (B + C + D) = 54 − 42

=> A − D = 12 --- (Equation 3)

Given that the sum of the first and last number is 16:

=> A + D = 16 --- (Equation 4)

Subtracting Equation 3 from Equation 4:

=> (A + D) − (A − D) = 16 − 12

=> 2D = 4

=> D = 2

Therefore The correct answer is 2.

Additional Information

Average of Arithmetic Progression (AP)

For any sequence in AP, the average is the middle term (if the number of terms is odd) or the average of the two middle terms (if even). It is also calculated as (First term + Last term) ÷ 2.

Weighted Average Formula

When two groups of sizes n1 and n2 having averages A1 and A2 are combined, the weighted average is given by: (n1 × A1 + n2 × A2) ÷ (n1 + n2).

Average Change on New Entry

If a new value is added to a group and the average increases by x, the new value = Old Average + (New Number of Members × x).

Q41. Answer: (d) 23

Let the elder sister's age be x and younger sister's age be y

Given that difference between two the ages of to sisters is 2 years

=> x - y = 2

Given that father's age is 52, then mother's age = 50

Also given that elder sister's age x = half of the mother's age = 50/2 = 25

Substitute x = 25 in x - y = 2

=> 25 - y = 2

=> y = 25 - 2 = 23

Q42. Answer: (b) Rs. 6,000

Given:

Amount after 3 years = Rs. 8700

Time = 3 years

Rate of interest = 15%

Formula used:

S.I = PRT/100

Principal = Amount – S.I

Calculation:

P + [(P × 3 × 15)/100] = Rs. 8700

=> P + (9P/20) = Rs. 8700

=> 29P/20 = Rs. 8700

=> P/20 = Rs. 300

=> P = Rs. 6000

Therefore The principal amount is Rs. 6000

Q43. Answer: (a) DKDAMNQ

From the given word,

Similarly, for the word ELEANOR,

Hence, the word ELEANOR is DKDAMNQ.

Q44. Answer: (c) Rs. 120

Total amount for 5 dozen small and 10 dozen big note books = (12 × 5 × 10) + (10 × 12 × 15) = Rs. 2400

Given that total discount is 5%

Therefore Total discount amount = 5/100 × 2400 = Rs. 120

Q45. Answer: (b) Quadrennial

An event occurring every four years, as an anniversary or its celebration.When it happen every two year it is referred to as biennial and for three year it is referred as Triennial.If it occur every year it is reffered to as perennial

Q46. Answer: (d) Maternal Grandmother

According to the given data, we make a family tree,

L + M → L is mother of M

M × N → M is maternal aunt of N

Hence, according to the family tree, L is the maternal grandmother of N.

Q47. Answer: (b) 4

The given equation is of the form:

$[(a + b)^2 – (a – b)^2] /ab$

Where, a = 525, and b = 252

So, we have:

[(a + b)2 – (a – b)2] /ab = 4ab/ab = 4

Hence, we can write the solution as follows:

Therefore $[(525 + 252)^2 – (525 – 252)^2] / (525 × 252)$

$= (4 × 525 × 252) / (525 × 252) = 4$

Q48. Answer: (d) 1/2

From given data,

$\Rightarrow \cos\theta = \sqrt{3}/2$

Therefore $\theta = 30°$

Given that to find $\cos\theta \times \tan\theta = \cos30° \times \tan30° = \sqrt{3}/2 \times 1/\sqrt{3} = 1/2$

Q49. Answer: (a) Mechanical energy into electrical energy.

• A generator is a device that converts mechanical energy to electrical energy for use in an external circuit.

• Sources of mechanical energy include steam turbines, gas turbines, water turbines, internal combustion engines and even hand cranks.

Q50. Answer: (b) 33

GIVEN:

Number of Five rupee note = Number of Ten rupee note = Number of Twenty rupee note

CALCULATION:

Let the equal number of five, ten and twenty rupee notes be x

$\Rightarrow 5x + 10x + 20x = 385$

$\Rightarrow 35x = 385$

$\Rightarrow x = 385/35 = 11$

Total number of notes = 11 notes of Rs 5 + 11 notes of Rs 10 + 11 Rs of 20 = 33 notes

11 notes of Rs 5 + 11 notes of Rs 10 + 11 Rs of 20 = 11 × 5 + 11 × 10 + 11 × 20 = 55 + 110 + 220 = Rs. 385

Total number of notes = 11 × 3 = 33

Therefore the correct answer is 33.

Alternate Method

Since the number of Rs 5, Rs 10, and Rs 20 notes are equal, the ratio of the number of notes is = 1 : 1 : 1

Or, we can say, the total number of notes must be multiple of 3.

Only two options are multiple of 3, others can be eliminated.

option 2: 33. That means the number of notes of each dimension is 33/3 = 11.

5 × 11 + 11 × 10 + 11 × 20 = 385

Therefore The total number of notes is 33.

Q51. Answer: (a) A

The correct answer is option 1 i.e, A (Ctrl+V).

• Ctrl + V is used for pasting text in MS Word.

Other important shortcuts are:-

Shortcuts	Functions
Ctrl+N	Create a new document
Ctrl+O	Open an existing document
Ctrl+S	Save a document
F12	Open the Save As dialog box
Ctrl+W	Close a document
Ctrl+Z	Undo an action
Ctrl+Y	Redo an action
Alt+Ctrl+S	Split a window or remove the split view
Ctrl+F	Search a document

Q52. Answer: (b) 4.7

By arranging the given in the ascending order, we get

1.9, 3.6, 5.8, 8.4

=> Median = (3.6 + 5.8)/2 = 9.4/2 = 4.7

Q53. Answer: (b) 20

The given equation is,

4 – 6 + 1 × 15 ÷ 3

After interchanging the mathematical operators '-'and '×', the equation is,

4 × 6 + 1 – 15 ÷ 3

= 24 + 1 – 5 = 25 – 5 = 20

Q54. Answer: (b) HTML

Hypertext Markup Language (HTML) is not the network protocol, it is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web.

Q55. Answer: (b) 6

Given:

We have to find the mean of the first 11 natural number.

Concept Used:

Mean = Sum of all observations / Number of observations

The sum of the first n natural number = n(n + 1)/2

Calculation:

We know that sum of the first n natural numbers = n(n + 1) /2

=> Sum of first 11 natural numbers = 11 × (11 + 1)/2 = 66

Mean of the first 11 natural numbers = 66/11

=> 6

Therefore The mean offirst 11 natural number is 6.

Q56. Answer: (d) 8

The National AQI is published for every month by CPCB along with a numerical value and a colour code which helps in comparing air pollution levels in cities. It is determined on the basis of concentration of 8 pollutants, including Particulate Matter (PM 2.5, PM 10), sulphur dioxide (SO2), nitrogen dioxide (NO2), carbon monoxide (CO), ozone (O3), ammonia (NH3) and lead (Pb).

Q57. Answer: (b) 40

According to the question,

A is her house.

She is walking from her house A and reaches to point B.

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The distance between A and B,

AB = 35 + 5 = 40 km

Note: here right turn means going in clockwise direction and left turn means going in anticlockwise direction.

Q58. Answer: (a) Centripetal Force

A centripetal force is a force that makes a body follow a curved path. Its direction is always orthogonal to the motion of the body and towards the fixed point of the instantaneous center of curvature of the path.

Q59. Answer: (b) Some teachers may cry.

The least possible Venn diagram for given statements is as follows,

Conclusions:

1. All sad people cry → It's possible, but not definite. Hence, false.

2. Some teachers may cry → Some teachers are sad. So, some teachers may cry. Hence, true.

3. All angry people are teachers → it's not possible. Hence, false.

4. All sad people get angry → it's possible but not definite. Hence, false.

Hence, only conclusion B follows.

Q60. Answer: (a) 14

The given equation is,

24 B 6 E 2 A 9 R 17

After putting the mathematical operators replacing letters,

The equation becomes,

24 – 6 ÷ 2 × 9 + 17

= 24 – 3 × 9 + 17

= 24 – 27 + 17

= 41 – 27 = 14

Q61. Answer: (d) Dr. Web

Dr.Web Anti Virus for Android offers basic malware protection that includes a real-time scanner for downloaded files.

CryptoLocker ransomware is a file-encrypting ransomware, which encrypts the personal documents found on victim's computer using RSA-2048 key (AES CBC 256-bit encryption algorithm), then displays a message which offers to decrypt the data if a payment of about 2.05 Bitcoins, or approximately $1300 is made

Q62. Answer: (d) B

The correct answer is option 4 i.e., Guwahati.

• PM inaugurated the XII South Asian Games on 5th February 2016 at Guwahati.

• The mascot of the game was 'Tikhor'.

• Tikhor, a one-horned rhino that represents endangered fauna of Assam found in Kaziranga National Park, was the official mascot of the event. Tikhor carries the message of Peace, Progress, and Prosperity in the South Asian region

• India has won the total 308 medals.

• The event was joined by eight south Asian countries namely Afganistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Srilanka.

• The anthem of the games was chosen to be a famous Assamese song, "Ei Prithibi Ek Krirangan" (The world is a playground) by Bhupen Hazarika, an Indian lyricist, musician, singer, poet and film-maker from Assam.

• The official motto of the game was "Play for Peace, Progress and Prosperity".

Q63. Answer: (b) D

The correct answer is option 2 i.e., D(Magnus Carlsen.)

• The chess champion against whom Viswanathan Anand lost in 2014 World Chess Championship was Magnus Carlsen.

• Magnus Carlsen who is the current World Chess Champion is from Norway.

• Viswanathan Anand is an Indian chess grandmaster and former world chess champion.

• He was also FIDE World Champion from 2000-2002.

• Viswanathan Anand was born in 1969 in a small town in the southern Indian state of Tamil Nadu.

• Vladimir Kramnik is a Russian chess grandmaster.

• Veselin Topalov is a Bulgarian chess grandmaster and he is also a former FIDE World Chess Champion.

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Q64. Answer: (b) Lentil

The lentil (Lens culinaris) is an edible pulse. It is a bushy annual plant of the legume family, known for its lens-shaped seeds. It is about 40 cm (16 in) tall, and the seeds grow in pods, usually with two seeds in each. In South Asian cuisine, split lentils (often with their hulls removed) are known as lentils.

Here, except lentil, the other three are the leafy vegetables.

Q65. Answer: (d) $a^3 – 12a^2 + 48a – 64$

We know that $(a - b)^3 = a^3 - b^3 - 3a^2b + 3b^2a$

$\Rightarrow (a - 4)^3 = a^3 - 4^3 - 3a^2 \times 4 + 3 \times 4^2 \times a$

$= a^3 - 12a^2 + 48a - 64$

Alternate Method

This type of questions can be solved by putting value of a = constant

Let a = 1, so (1 - 4)3 = -27

By option 4, we have a3 - 12a2 + 48a - 64

=> 13 - 43 - 3(1)2 × 4 + 3 × 42 × 1

=> -27

Q66. Answer: (a) 10

Work done by B in 20 days = 50/100 = 1/2

Work done by B in one day = [1/2]/20 = 1/40

Work done by B and C in 4 days = 50/100 = 1/2

Work done by B and C in one day = 1/8

=> Work done by C in one day = 1/8 - 1/40 = 4/40 = 1/10

Therefore C alone take 10 days to complete the whole work

Q67. Answer: (b) Sikkim

Key Points

• The Lasoong festival is the most popular festival of Sikkim.

• It is usually celebrated at the end of the tenth Tibetan lunar month (usually December).

• It is the most important festival among the Bhutias in India and is marked by the traditional Chaan dancing and merry-making

Q68. Answer: (a) Karagam

Karagam dance is a folk dance performed in the Tamil Nadu state of India. It is believed that Karagam is originated in Thanjavur, a village in Tamil Nadu. The villagers perform this dance in praise of the rain goddess "Mari Amman" and the river goddess "Gangai Amman" as a part of their custom. The idol of Mariamman is carried in procession.

Q69. Answer: (c) Rs. 1,430

From the given data,

CP = cost price

SP = selling price = Rs. 1235

We know that Loss % = (CP - SP)/CP × 100

=> 5 = (CP - 1235)/CP × 100

=> 100CP - 5CP = 123500

=> 95CP = 123500

=> CP = 123500/95 = Rs. 1300

Therefore Cost price of the article is Rs. 1300

Also given that to find the selling price to get the profit of 10%

We know that profit % = (SP - CP)/CP × 100

=> 10 = (SP - 1300)/1300 × 100

=> 13000 = 100SP - 130000

=> 143000 = 100SP

=> SP = 143000/100 = 1430

=> Selling price to get a profit of 10% = Rs. 1430

Alternate Method

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Let the C.P be 100

S.P of the article at 5% loss = 100 × 95/100 = 95

S.P of the article at 10% profit = 100 × 110/100 = 110

Accoding to the question S.P of the article at 5% loss

So, required S.P = (1235/95) × 110 = 1430

Therefore The required S.P is 1430

Q70. Answer: (b) 13

Given: 22x – 40 = 207 + 3x

=> 22x - 40 = 207 + 3x

=> 19x = 247

=> x = 247/19 = 13

Q71. Answer: (b) 96

Let the numbers be 4x and 3x, then their HCF = x

Given that HCF = 8

=> x = 8

Therefore The numbers are 32 and 24

=> LCM of 32 and 24 = 2 × 2 × 2 × 4 × 3 = 96

Q72. Answer: (a) Intaglio printing

Intaglio printing is the opposite of relief printing, in that the printing is done from ink that is below the surface of the plate. The design is cut, scratched, or etched into theprinting surface or plate, which can be copper, zinc, aluminum, magnesium, plastics, or even coated paper.

Q73. Answer: (a) Complete disobedience of the orders of the British Government.

On March 12, 1930, Indian independence leader Mohandas Gandhi begins a defiant march to the sea in protest of the British monopoly on salt, his boldest act ofcivil disobedience yet against British rule in India.

Q74. Answer: (d) D

The correct answer is option 4 i.e., 1947.

• The British Government decided to grant independence to India in 1947.

• By the beginning of 1947, General Elections have announced in Britain and the Labour Party in its manifesto declare that it will liberate colonies of Asia and Africa.

• Due to such stand, a large number of Indian leaders went to Britain and convinced voters in favour of the Labour Party.

• After elections, Clement Attlee became the British PM and on 20^(th) Feb 1947, he made an announcement in parliament that latest by 30th June 1948 British will vacate India.

• Lord Mountbatten was appointed as the Governor-General of India.

• Based on Mountbatten's plan and boundary commission, British parliamentarians introduced the Indian Independence Bill on 4^(th) July 1947.

• Leaders of India implemented this act on 15^(th) Aug 1947 when India became a sovereign state.

Link: https://bit.ly/36DEBGQ

Q75. Answer: (a) Paternal Uncle

We can summarise the information in a family tree,

It is clear from the above diagram that R is the niece/nephew of Y and Y is the wife of Q.

Hence, Q is the paternal uncle of R.

Q76. Answer: (d) All are roots.

In the given question, Beetroot, Turnip, Carrot, and Radish are similar in one category among the given options. They all are roots.

Hence, they all are roots is the similarity.

Q77. Answer: (b) APTLE

After rearranging the jumbled letters,

SUVNE = VENUS

APTLE = PLATE

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ARMS = MARS

RUJTIPE = JUPITER

Among these, except one, three words have same category. They all are planets.

Only PLATE is different.

Hence, (APTLE) is true.

Q78. Answer: (b) Abdul Kalam Island

Dr. Abdul Kalam Island, formerly known as Wheeler Island, is an island off the coast of Odisha, India, approximately 150 kilometres from the state capital Bhubaneshwar. The Integrated Test Range missile testing facility is located on the island

Q79. Answer: (c) Rs. 960

Given:

Selling price (SP) of the article = Rs. 920

CP = cost price

Profit = 15%

Formula used:

We know that profit% = (SP - CP)/CP × 100

Calculation:

15 = (920 - CP)/CP × 100

=> 15CP = 92000 - 100CP

=> 115CP = 92000

=> Cost price = 92000/115 = Rs. 800

Also given that to find selling price to get a profit of 20%

=> 20 = (SP - 800)/800 × 100

=> 16000 = 100SP - 80000

=> 96000 = 100SP

=> SP = 96000/100 = Rs. 960

=> Selling price of the article to get a profit of 20% is Rs. 960

Shortcut Trick

CP = 920×100/115 = 800

At profit 20%

=> New SP = 800×120/100

=> 960

Therefore The selling price is Rs. 960.

Q80. Answer: (a) Acts as a catalyst for fermentation.

- Yeast used in making bread acts as a catalyst for fermentation.
- Yeasts are eukaryotic, single-celled microorganisms classified as members of the fungus kingdom.
- The yeast lineage originated hundreds of millions of years ago, and 1,500 species are currently identified

Q81. Answer: (d) 38

Given:

The area of a triangle is 456 sq.cm

Height = 24 cm

Concept used:

area of triangle = 1/2 × base × height

Calculation:

456 = 1/2 × base × 24

=> Base = 912/24 = 38 cm

Therefore The base of the triangle is 38 cm.

Q82. Answer: (d) Rabies vaccine

Louis Pasteur was a French biologist, microbiologist and chemist renowned for his discoveries of the principles of vaccination, microbial fermentation and pasteurization.

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Inventors	Discovered what?
Edward Jenner	Vaccination for small pox
Louis Pasteur	Pasteurization
Sir Alexander Fleming	Penicillin
Frederick Banting	Insulin

Q83. Answer: (c) 64

The series has following pattern,

$1^3, 1^2, 2^3, 2^2, 3^3, 3^2, 4^3, 4^2$….

1, 1, 8, 4, 27, 9, 64, 16….

Hence, 64 is the missing term of this given series.

Q84. Answer: (c) M

Seven people– J, K, L, M, N, O and P.

Sitting from left to right in a standing row.

1) P, O, K and N do not stand on any of the extreme ends → Hence, either J, L or M stand on any of the extreme ends.

2) J is to the immediate left of P and immediate right of O → Hence, J is between O and P. It does not stand on any of the extreme ends. Either L or M stands on any of the extreme ends.

3) K is to the immediate right of N and immediate left of L → Hence, L stands on right extreme end. K is between N and L. M stands on extreme left end.

4) J is to the immediate left of P and immediate right of O → hence, J is between P and O. P is the immediate left of N and O is immediate left of J.

From the above sitting arrangement, Student M is standing immediate left to O.

Q85. Answer: (c) P

Seven people– J, K, L, M, N, O and P.

Sitting from left to right in a standing row.

1) P, O, K and N do not stand on any of the extreme ends → Hence, either J, L or M stand on any of the extreme ends.

2) J is to the immediate left of P and immediate right of O → Hence, J is between O and P. It does not stand on any of the extreme ends. Either L or M stands on any of the extreme ends.

3) K is to the immediate right of N and immediate left of L → Hence, L stands on right extreme end. K is between N and L. M stands on extreme left end.

4) J is to the immediate left of P and immediate right of O → hence, J is between P and O. P is the immediate left of N and O is immediate left of J.

From the above sitting arrangement diagram,

P is sitting on 4^(th) position from both left end and right end.

Hence, P is at the center of the row.

Q86. Answer: (c) N

Seven people– J, K, L, M, N, O and P.

Sitting from left to right in a standing row.

1) P, O, K and N do not stand on any of the extreme ends → Hence, either J, L or M stand on any of the extreme ends.

2) J is to the immediate left of P and immediate right of O → Hence, J is between O and P. It does not stand on any of the extreme ends. Either L or M stands on any of the extreme ends.

3) K is to the immediate right of N and immediate left of L → Hence, L stands on right extreme end. K is between N and L. M stands on extreme left end.

4) J is to the immediate left of P and immediate right of O → hence, J is between P and O. P is the immediate left of N and O is immediate left of J.

According to the above sitting arrangement diagram, from the left end of the row, N stands fifth.

Q87. Answer: (d) Rs. 12.50

We know that,

Amount = SI + P

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SI = Simple interest
P = principal
R = rate
T = time
=> Amount for SI = P × T × R/100 + P
= (5000 × 2 × 5)/100 + 5000 = Rs. 5500
We also amount for compound interest (CI) = $P (1 + R/100)^n$
Where, n = time
=> Amount for CI = $5000 (1 + 5/100)^2$ = Rs. 5512.50
Therefore Their difference = 5512.50 - 5500 = Rs. 12.50

Q88. Answer: (d) 7 cm

We know that area of trapezium = 1/2 × height × (a + b)
Where, a = length of the side parallel to the base
b = base
=> 18 sq.cm = 1/2 × 3 × (a + 5)
=> 36 = 3a + 15
=> 21 = 3a
=> a = 21/3 = 7 cm
Therefore Length of the side parallel to the base is 7 cm

Q89. Answer: (a) B

The correct answer is option 1 i.e., B (18 Zones).
• Indian Railways is divided into 18 zones and 73 divisions.
• A Divisional Railway Manager (DRM) heads the division and he/she reports to the General Manager (GM).
• A Railway Division is the smallest administrative unit of Railways.
• North Zone is the largest zone.
Given below is the list of all railway zones and their headquarters:

Railway Zone	Headquarters
Central Railway	Mumbai
Northern Railway	Delhi
North Eastern Railway	Gorakhpur
Northeast Frontier Railway	Guwahati
Eastern Railway	Kolkata
South Eastern Railway	Kolkata
South Central Railway	Secunderabad
Southern Railway	Chennai
Western Railway	Mumbai
South Western Railway	Hubballi
North Western Railway	Jaipur
West Central Railway	Jabalpur
North Central Railway	Allahabad
South East Central Railway	Bilaspur
East Coast Railway	Bhubaneswar
East Central Railway	Hajipur
Metro Railway	Kolkata

South Coast Railway	Visakhapatnam

Q90. Answer: (c) 440

From the given data,

=> Fiction books in library GHL - Self-Help books in library GHL = 610 - 170 = 440

Q91. Answer: (c) MNL

Total count of books in ABL = 150 + 500 + 750 + 100 + 175 + 115 = 1790

Total count of books in GHL = 170 + 600 + 610 + 130 + 100 + 100 = 1710

Total count of books in MNL = 200 + 550 + 700 + 100 + 100 + 150 = 1800

Total count of books in PQL = 200 + 600 + 600 + 110 + 75 + 200 = 1785

Therefore Total count of books is highest in MNL

	ABL	GHL	MNL	PQL
Total books	1790	1710	1800	1785

Q92. Answer: (b) 1810

From the given data,

Difference between the total number of Non-fiction books and the total number of management books of all four libraries = (500 + 600 + 550 + 600) - (100 + 130 + 100 + 110) = 2250 - 440 = 1810

Category	ABL	GHL	MNL	PQL	
Management	100	130	100	110	440
Non-Fiction	500	600	550	600	2250

Q93. Answer: (b) sinθ

=> (sinθ/cosθ) × (cotθ/cosecθ)

= (sinθ/cosθ) × [(cosθ/sinθ)/(1/sinθ)]

= (sinθ/cosθ) × ((sinθ × cosθ)/sinθ)

= sinθ

Q94. Answer: (d) Neither I nor II follows.

According to the statement,

Both Aryabhata and moon are satellites of the earth but the moon is a natural satellite and Aryabhata is an artificial satellite.

Hence, both conclusions do not follow from the statement.

Q95. Answer: (c) Research on gravitational waves

InDIGO or IndIGO or LIGO is a consortium of Indian gravitational-wave physicists. This is an initiative to set up advanced experimental facilities for a multi-institutional observatory project in gravitational-wave astronomy.

Q96. Answer: (d) Neither I nor II follows.

First Statement does not say that all other professions are ethical so we cannot conclude that only medical profession is unethical.

Second statement says all (ethical and unethical) people are afraid of falling sick. So, it does not follow that only unethical person fall sick.

Hence, neither first nor second conclusion follows the statements.

Q97. Answer: (c) Ban Ki-moon

Ban Ki-moon is a South Korean diplomat who was the eighth Secretary-General of the United Nations from January 2007 to December 2016.

Q98. Answer: (b) 12 km

Let the time taken by K with l = x hrs and time taken by K with M = y hrs

We know that, speed × time = distance

Given that total distance = 27 km

=> 3x + 6y = 27 ----- equation (1)

Also given that total time taken = 7 hrs

=> x + y = 7 ---- equation (2)

Subtract equation (1) from 6 × equation (2), we get

=> 3x = 15

=> x = 15/3 = 5 hrs

Substitute x = 5 in x + y = 7

=> y = 2 hrs

Therefore K travelled with M = 6y = 6 (2) = 12 km

Q99. Answer: (b) Gregor Mendel

Key Points

• Gregor Mendel is usually considered to be the founder of modern genetics. Though farmers had known for centuries that crossbreeding of animals and plants could favor certain desirable traits, Mendel's pea plant experiments conducted between 1856 and 1863 established many of the rules of heredity.

Additional Information

• Charles Darwin: Charles Darwin's theory of evolution and natural selection is not an idea with holes. It is one of the most solid principles of science.

• Alexander Fleming: Alexander Fleming was a Scottish physician-scientist who was recognized for discovering penicillin.

• Otto Hahn: Otto Hahn was a German chemist and a pioneer in the field of radioactivity and radiochemistry.

Q100. Answer: (d) Myanmar

• The currency of Myanmar is Kyat.

Sri Lanka	Rupee
Nepal	Rupee
Pakistan	Rupee

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