RRB NTPC Tier I Official Paper (Held On: 11 Apr 2016 Shift 1) (Previous Year Paper)

RRB NTPC • 2016 • 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. Read the statements and select a conclusion from the given alternatives:

Statements:

All apples are leaves. Some leaves are lemons. No lemon is house.

Conclusions:

I. Some houses are apples.

II. Some lemons are apples.

III. No house is apple.

(a) Only I follows
(b) Only II follows
(c) Only III follows
(d) Either I or III follows

Q2. In a certain code, TRIPPLE is written as SQHOOKD. How is EXOTIC coded in that code?

(a) DWNHSB
(b) DNWHSB
(c) DWNSHB
(d) DNWSHB

Q3. X-Rays, which are now used on a day to day basis for diagnosis in medicine, was discovered by?

(a) Wilhelm Rontgen
(b) Niels Bohr
(c) Ernest Rutherford
(d) Max Bon

Q4. Which company has been associated with the development of Post-It and Scotch Tape?

(a) Johnson and Johnson
(b) 3M
(c) Unilever
(d) Amazon

Q5. Simplify $5x(x + 2) + 4x$

A.$5x^2 + 10$

B.$9x + 10$

C.$5x^2 - 14x$

D.$5x^2 + 14x$

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

Q6. In a computer, what is the name of the high speed memory used:

(a) Cache
(b) RAM
(c) BIOS
(d) Hard Disk

Q7. A shopkeeper cheats to the extent of 11% while buying and selling fruits, by using tampered weights. His total gain in percentage is.

A. 23.25
B. 23.21
C. 24.71
C. 23.5

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

Q8. The cash difference between the selling price of an article at a profit 2% and 18% is Rs. 3. The ratio of two selling prices is.

A. 51 : 59
B. 51 : 53
C. 51 : 60
D. 55 : 59

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

Q9. The value of 0.592 ÷ 0.8 = ?

A. 7.4
B. 0.74
C. 740
D. 0.074

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

Q10. Laura was going with a boy and is asked by a woman about the relationship between them. Laura replied, “My maternal uncle and the paternal uncle of his maternal uncle is the same”. How is Laura related with that boy?

(a) Mother and Son
(b) Aunt and Nephew
(c) Grandmother and Grandson
(d) Cannot be determined

Q11. Compute the value of 69696 × 9999 =?

A. 696980304
B. 666890304
C. 696809304
D. 696890304

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

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(d) C

Q12. In a certain code, RIPPLE is written as 613382, PREACH is coded as 362457. How is PILLER written in that code?

(a) 318826
(b) 318286
(c) 618826
(d) 338816

Q13. A flask has two holes. The 1^(st) hole alone makes the flask empty in 9 minutes and 2^(nd) hole alone makes the flask empty in 16 minutes. If water leaks out at constant rate, how long in minutes does it take if both the holes together empty the flask?

A. 19/25
B. 419/25
C. 520/25
D. 519/25

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

Q14. Who was appointed as the head of jury of the international film festival of India in November 2015?

A. Anil Kapoor
B. Shekhar Kapoor
C. Anupam Kher
D. Naseeruddin Shah

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

Q15. Which of the following is a tsunami warning sign?

(a) Stormy weather
(b) Hailstorm
(c) Water falling back quickly from the beach.
(d) Pets acting strangely

Q16. Answer the question based on the below information. If '+' is '×', '-' is '+', '×' is '÷' and '÷' is '-' then 6 + 7 × 3 – 8 ÷ 20 = ?

(a) -3
(b) 7
(c) 2
(d) 1

Q17. The most abundant of the rare gases in the atmosphere is _____.

(a) Helium
(b) Argon
(c) Neon
(d) Nitrogen

Q18. Read the statements and select a conclusion from the given alternatives:

Statement:

Sukhvinder emphasized the need to replace the present training programme by other methods which will bring out the real merit of the candidates.

Conclusions:

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I. It is not important to bring out the real merit of the candidates.

II. The present training programme does not bring out the real merit of the candidates.

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

Q19. The variance of a set of data is 196. Then the standard deviation of the data is.

A. ± 14
B. 14
C. 96
D. 98

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

Q20. The Indian National Army reclaimed the Andaman and Nicobar Island from British rule and named them?

(a) Swaraj Islands
(b) Shaheed and Swaraj Island
(c) Free Islands
(d) Swatantra and Swaraj Island

Q21. Compute 4923 ÷ 547 - 10

A. 1
B. -1
C. 1641/176
D. 1614/179

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

Q22. A protruding part of the throat that is responsible for growing voice box in boys is called?

(a) Larynx
(b) Testosterone
(c) Pharynx
(d) Adam's Apple

Q23. Which country organized the FIFA U-17 World cup in the year 2017?

(a) Chile
(b) Nigeria
(c) UAE
(d) India

Q24. The mean of the data 1,1/2,1/2,3/4,1/4,2,1/2,1/4,3/4 is.

A. 15/18
B. 13/18
C. 7/9
D. 8/9

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

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(d) C

Q25. Variance of data 2, 4, 5, 6, 8, 17 is 23.33. Then the variance of 4, 8, 10, 12, 16, 34 will be:

A. 11.66
B. 46.66
C. 93.33
D. 4.93

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

Q26. Mr. Mahesh sold a bus for Rs. 22,100 with a loss 15% At what price should the bus be sold to get a profit of 15%?

A. 29,700
B. 30,000
C. 29,800
D. 29,900

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

Q27. Read the statements and select a conclusion from the given :

Statements:

All pens are pencils. Some pencils are erasers. Some erasers are ropes. All ropes are tents.

Conclusions:

I. Some tents are trams.
II. Some ropes are pens.
III. Some erasers are pens.
IV. Some pencils are pens.

(a) Only I and II follow
(b) Only I, II and III follow
(c) Only I and III follow
(d) Only IV follows

Q28. Which is the correct ascending order of the given numbers?

A. 2/3,5/6,3/4
B. 3/4,2/3,5/6
C. 2/3,3/4,5/6
D. 5/6,3/4,2/3

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

Q29. If tan A = 15/8 and tan B = 7/24, then cos(A + B) = ?

A. 87/425
B. 304/425
C. 297/425
D. 416/425

(a) A
(b) C

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(c) B
(d) D

Q30. Which country among the following voted in 2015 to be the first country to allow three parent in-vitro fertilization?
(a) Britain
(b) USA
(c) France
(d) Italy

Q31. The basic concept of Montessori education is:
(a) Discovery by travelling
(b) Dreaming
(c) Communicating
(d) Self-discovery through experiment

Q32. The term polyarchy was used by Robert Dahl to describe a form of government in which?
(a) It reduces the multitudinous differences of opinion to relatively simple alternatives
(b) It takes individual as the basic unit of democratic model
(c) People can participate through their representations
(d) People act both through the electoral system and the group process

Q33. (8)^(2/3)= ?
A. √4
B. 2
C. 4
D. 64
(a) B
(b) C
(c) A
(d) D

Q34. Ms. Kavitha borrowed Rs. 950 at 6% per annum simple interest. What amount will she pay, to clear her debt after 4 years?
A. 282
B. 1187
C. 1178
D. 228
(a) A
(b) C
(c) B
(d) D

Q35. Divide Rs. 368 in the ratio 1:5:8:9. The rupees in the respective rations are give by.
A. 16, 80, 127 & 145
B. 16, 80, 129 & 143
C. 16, 80, 128 & 144
D. 16, 80, 128 & 143
(a) A
(b) B
(c) C
(d) D

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Q36. Which of the following is a probe to the Kuiper belt bodies?

(a) Voyager 1
(b) Van Allen Probe
(c) New Horizon
(d) Pioneer 11

Q37. Dried fruit like raisins when soaked in water, bulge and get filled with water. What is the scientific reason that explains this daily life event?

(a) Osmosis
(b) Active Transport
(c) Diffusion
(d) Passive Transport

Q38. India participated in the 2014 Commonwealth Games at _____.

(a) Gold Coast, Australia
(b) New Delhi, India
(c) Samoa, Pacific Island
(d) Glasgow, United Kingdom

Q39. The order of rotational symmetry of rectangle is.

A. 1
B. 4
C. 2
D. 0

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

Q40. If the product of two numbers is 2400 and their LCM is 120 then their HCF is.

A. 35
B. 240
C. 24
D. 20

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

Q41. Josna takes 4 hrs 30 minutes in walking a distance and riding back to same place where she started. She could walk both ways in 5hr. 40 minutes. The time taken by her to ride back both ways is.

A. 3 hr 20 min
B. 3 hr 35 min
C. 3 hr 45 min
D. 3 hr 15 min

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

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Q42. Birth control pills contain

(a) Progesterone only
(b) Estrogen only
(c) Mixture of progesterone and estrogen derivative
(d) Neither progesterone nor estrogen

Q43. Two cycles start from a house with a speed of 24 km/hr. at interval of 15 minutes. With how much more sped (km./hr) the woman coming from the opposite direction towards the house has to travel to meet the cycles at an interval of 10 minutes?

A. 13
B. 12
C. 1
D. 2

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

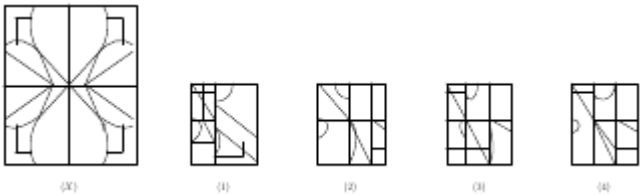
Q44. Harappan people did not worship one of the following God –

(a) Shiva
(b) Vishnu
(c) Birds
(d) Swastika

Q45. The theory behind stars twinkling is that

(a) The refractive index of the different layers of earth's atmosphere changes continuously; consequently the position of the star's image changes with time.
(b) The intensity of light emitted by them changes with time
(c) The light from the star is scattered by the dust particles and air molecules in the earth's atmosphere
(d) The distance of the stars from the earth changes with time

Q46. Complete the Figure X from the given alternatives 1, 2, 3, 4



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

Q47. Who was awarded the Harvard Humanitarian Award for 2015?

(a) Malala Yousafzai
(b) Kailash Satyarthi
(c) Tommy Hilfiger
(d) Lionel Richie

Directions

Directions: Read the data given and answer the following questions:

In a class of 60 students:

42 like Maths,

32 like English,

12 like neither Maths nor English.

Q48. Students who like only Maths forms what percentage of the total number of students in the class?

(a) 26.67%
(b) 24.22%
(c) 28.80%
(d) 32.82%

Q49. How many students like both Maths and English?

(a) 28
(b) 26
(c) 16
(d) 12

Q50. How many students like exactly one subject?

(a) 16
(b) 12
(c) 6
(d) 22

Q51. The famous Golconda Fort is situated in the state of:

(a) Madhya Pradesh
(b) Telangana
(c) Karnataka
(d) Bihar

Q52. If $\sin x = 4/5$ then $\sec^2 x - 1 = ?$

A. 16/25
B. 25/9
C. 9/16
D. 16/9

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

Q53. If the letters in PRABA are coded as 27595, and HITAL are coded as 68354, how can BHARATHI be coded?

(a) 37536689
(b) 57686535
(c) 96575368
(d) 96855368

Q54. Find the HCF of 1757, 2259

A. 231
B. 241
C. 251
D. 261

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

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Q55. Which country in the month of November 2015 was ranked No. 1 men's team for the first time in FIFA rankings?

(a) Nigeria
(b) Belgium
(c) Russia
(d) Portugal

Q56. Given w = -2, x = 3, y = 0 & z = - 1/2, find the value of $w^2\sqrt{((z^2 + y^2))}$

A. -4
B. 8
C. 2
D. 4

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

Q57. Ram said, "The girl is the wife of the grandson of my mother". Who is Ram to the girl?

(a) Husband
(b) Father
(c) Father-in-law
(d) Grandfather

Q58. Which is the oldest High Court in India?

(a) Bombay High Court
(b) Madras High Court
(c) Allahabad High Court
(d) Calcutta High Court

Q59. _____ is the transition of a substance directly from the solid to the gas phase without passing through the intermediate liquid phase.

(a) Sublimation
(b) Evaporation
(c) Condensation
(d) Liquidation

Q60. Solve: x - 3 = 3x + 7.

A. 5
B. - 5
C. 1
D. 10/4

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

Q61. Who was the first Muslim female judge to higher judiciary?

(a) Justice M. Fathima Beevi
(b) Justice V. Khalida
(c) Justice Benazir Islam
(d) Justice M Farooq

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Q62. Vernal Equinox occurs on _____.

(a) June 22
(b) March 20
(c) May 20
(d) June 20

Q63. Compute (33800/520)/5

A. 31
B. 325
C. 13
D. 352

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

Q64. In which direction does the tail of a comet point toward?

(a) Away from the sun
(b) Towards the sun
(c) Away from earth
(d) Towards the earth

Q65. What title did the British confer Gandhi with, which was relinquished by him?

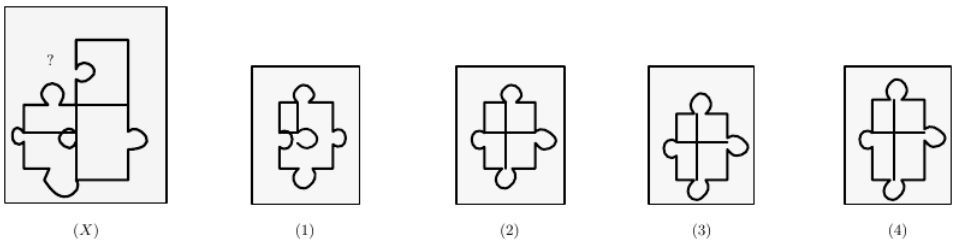
(a) Rai Bahadur
(b) Rai Sahib
(c) Hind Kesari
(d) Kaiser-e-Hind

Q66. Read the statements given below and derive the conclusion.

Statements:
No window is monkey.
All the monkeys are cats.
Conclusions:
1. No window is cat.
2. No cat is window
3. Some cats are monkeys.
4. All cats are monkeys.

(a) Only (2) and (4)
(b) Only (1) and (3)
(c) Only (3) and (4)
(d) Only (3)

Q67. Complete the Figure X from the given alternatives 1, 2, 3, 4



(a) 1
(b) 2

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(c) 3
(d) 4

Q68. Answer the questions based on the below information.

If '+' is '×', '-' is '+', '×' is '÷' and '÷' is '-', then 6 – 9 + 8 × 3 ÷ 20 = ?

(a) -2
(b) 6
(c) 10
(d) 12

Q69. One of the best preserved Buddhist caves, Karla, is in which of the following states?

(a) Bihar
(b) Uttar Pradesh
(c) Maharashtra
(d) Uttarakhand

Q70. While watching 3D movies at the theatre, we have to wear special glasses because?

(a) The glasses allow our left and right eyes to see different images
(b) 3-D movies use special colors which cannot be sensed by the human eye
(c) 3-D movies are brighter than ordinary movies and can hurt our eyes if seen directly
(d) The glasses allow both the eyes to see similar images

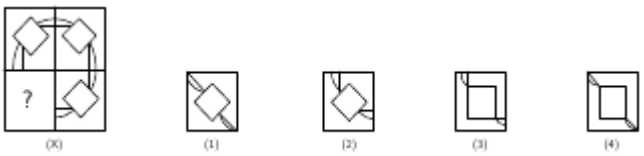
Q71. Which river originates from Amarkantak?

(a) Betwa
(b) Chambal
(c) Mahanadi
(d) Narmada

Q72. Who has the distinction of serving as the Chief Justice of India, President and the Vice president?

(a) Justice M Hidayatullah
(b) Justice Bhagwati
(c) Justice H.J.Kania
(d) Justice Mehr Chand Mahajan

Q73. Complete the Figure X from the given alternatives 1, 2, 3, 4



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

Directions

Study the following table and answer the questions based on it.

Following table gives the expenditure of a company (in lakh rupees) per annum over the given years.

Year	Item of Expenditure				
Salary	Fuel and Transport	Bonus	Interest On loans	Taxes	
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108

2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

Q74. The ratio between the total expenditure on taxes for all the years to the total Bonus for all the years respectively is?

A. 9 : 40
B. 25 : 13
C. 451 : 17
D. 1 : 25

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

Q75. Expenditure on Fuel and Transport forms what percentage of expenditure on Salary for the year 2001?

A. 34.54%
B. 39.225%
C. 33.37%
D. 39.58%

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

Q76. The total expenditure of the company over the items during the year 2001 is -

A. Rs. 590 lakhs
B. Rs. 598 lakhs
C. Rs. 597 lakhs
D. Rs. 597.08 lakhs

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

Q77. Pointing to a boy in a photograph Rani said. “His mother’s only daughter is my mother”. How is Rani related to that boy?

(a) Wife
(b) Sister
(c) Niece/Nephew
(d) Aunt

Q78. The first gasoline-run car engine was developed by –

(a) Henry Ford
(b) Karl Benz
(c) Hugh Chalmers
(d) Horace Elgin Dodge

Q79. The first democratically elected female President of Africa is from

(a) Nigeria
(b) Liberia
(c) Tanzania
(d) Kenya

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Q80. Answer the question based on the below information.

If '+' is '×', '-' is '+', '×' is '÷' and '÷' is '-', then 9 ÷ 5 + 4 – 3 × 2 = ?

(a) 2
(b) -9
(c) -3
(d) -9.5

Q81. The length of a diagonal in cms of a rectangle of length 5 cm and width 3 cm is:

A. √34
B. ± √34
C. 4
D. ± 4

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

Q82. The number of sides of a regular polygon whose extenrior angles are each 72° is?

A. 7
B. 6
C. 5
D. 8

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

Q83. Which among the following is not an environment friendly mode of producing electricity?

(a) Thermal Power
(b) Solar Power
(c) Wind Energy
(d) Bio-waste

Q84. The G-20 Summit in November 2015 was organized in which Country?

(a) Germany
(b) France
(c) Turkey
(d) Spain

Q85. Read the statements and select a conclusion from the given alternatives:

Statements:

The healthcare system has expanded in terms of the number of hospitals. But the fact is that most of them are not well equipped and unable to make significant progress in the field of patient care.

Conclusions:

I. We should provide good doctors and equipment to existing hospitals from now onwards.

II. Now, it is not necessary to open any new hospitals.

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

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Q86. Mr. Ibrahim borrowed Rs. 7500 at 5% per annum compound interest. the compound interest compounded annually for 2 years is.

A. 768.75

B. 8268.75

C. 8286.75

D. 786.75

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

Q87. _____ was the first female Prime Minister of Sri Lanka.

(a) Ranasinghe Premadasa
(b) Dingiri Banda Wijetunga
(c) Sirimavo Bandaranaike
(d) Chandrika Kumaratunga

Directions

Directions: Five boys are sitting on a bench to be photographed. Sachin is to the left of Ram and to the right of Bin. Monty is to the right of Ram. Rony is between Ram and Monty.

Q88. Who is in the middle of the photograph?

(a) Bin
(b) Ram
(c) Rony
(d) Sachin

Q89. Who is second from the right in the photograph?

(a) Monty
(b) Ram
(c) Rony
(d) Bin

Q90. Who is second from the left in the photograph?

(a) Rony
(b) Monty
(c) Bin
(d) Sachin

Q91. Answer the questions based on the below information.

If '+' is '×'. '-' is '+', '×' is '÷' and '÷' is '-', then 3 × 2 + 4 – 2 ÷ 9 = ?

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

Q92. What is the meaning of an ECOTONE?

(a) The place where two biomes meet
(b) It's an area with low survival for species
(c) An area with limited Flora and Fauna
(d) An area with high biomass production

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Q93. Rakshanth is twice as good a tradesman as Verma and together they finish a piece of work in 19 days. In how many days will Verma alone finish the work?

A. 38

B. 57

C. 76

D. 50

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

Q94. Read the statements and select a conclusion from the given alternatives:

Statement:

To cultivate interest in the debate the school has made it compulsory for each student to attend two debate classes per week and submit a weekly report on the debates discussed.

Conclusions:

I. Interest in debating can be created by force.

II. Some students eventually will develop an interest in debating.

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

Q95. Bill Gates co-founded 'Microsoft Corporation' in 1975 with?

(a) Chris Hughes
(b) Tim Berners-Lee
(c) Steve Paul Jobs
(d) Paul G. Allen

Q96. Two numbers are in ration 2:5 and their HCF is 18. Their LCM is.

A. 180

B. 36

C. 90

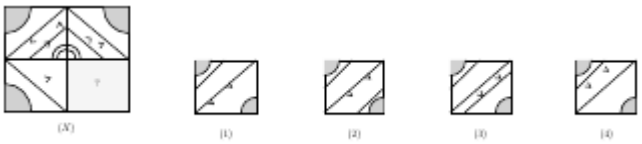
D. 188

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

Q97. How many constellations have been named?

(a) 88
(b) 99
(c) 90
(d) 87

Q98. Complete the Figure X from the given alternatives 1, 2, 3, 4.



(a) 1
(b) 2

(c) 3
(d) 4

Q99. _____ jointly launched International Solar Alliance (ISA) at Conference of Parties (CoP21) Climate Conference held in Paris, France on 1^(st) December 2015.
(a) India and China
(b) India and France
(c) India and USA
(d) India and Russia

Q100. If in a certain language KINDLE is coded as ELDNIK, how is IMPOSING coded in that code?
(a) GNIOSPMI
(b) GNSIOPMI
(c) GNISPOMI
(d) GNISOPMI

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (d) Either I or III follows

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

Conclusions:

I. Some houses are apples → it's possible but not definite, hence false.

II. Some lemons are apples → it's possible but not definite, hence false.

III. No house is apple → it's possible but not definite, hence false.

Conclusion I and III form a complementary pair.

Thus either conclusion I or III follows.

Q2. Answer: (c) DWNSHB

The code is written as follows,

Similarly,

Thus the code for EXOTIC is DWNSHB.

Q3. Answer: (a) Wilhelm Rontgen

Wilhelm Conrad Röntgen 27 March 1845 – 10 February 1923) was a German/Dutch mechanical engineer and physicist, who, on 8 November 1895, produced and detected electromagnetic radiation in a wavelength range known as X-rays or Röntgen rays, an achievement that earned him the first Nobel Prize in Physics in 1901. In honour of his accomplishments, in 2004 the International Union of Pure and Applied Chemistry (IUPAC) named element 111, roentgenium, a radioactive element with multiple unstable isotopes, after him.

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Q4. Answer: (b) 3M

The 3M Company, formerly known as the Minnesota Mining and Manufacturing Company, is an American multinational conglomerate corporation based in Maplewood, Minnesota, a suburb of St. Paul. 3M has been associated with the development of Post-It and Scotch Tape.

Q5. Answer: (d) D

=> 5x(x + 2) + 4x

=> $5x^2 + 10x + 4x$

=> $5x^2 + 14x$

Q6. Answer: (a) Cache

Cache memory, also called CPU memory, is random access memory (RAM) that a computer microprocessor can access more quickly than it can access regular RAM. This memory is typically integrated directly with the CPU chip or placed on a separate chip that has a separate bus interconnect with the CPU. The basic purpose of cache memory is to store program instructions that are frequently re-referenced by software during operation. Fast access to these instructions increases the overall speed of the software program.

Q7. Answer: (b) C

Given:

A shopkeeper cheats to the extent of 11% while buying and selling fruits

Formula used:

Profit% = (Profit/CP)× 100

Where, CP = Cost Price, SP = Selling Price

Profit = SP - CP

Calculation:

Let's assume the CP is Rs. 100

The shopkeeper cheats 11% at the time of buying

Purchasing price = 100 × (100 - 11)/100

=> New CP = Rs. 89

New selling price, Shopkeeper sells an article cheats at 11%

=> 100 × (100 + 11)/100

=> Rs. 111

Profit% = ((111 - 89)/89)× 100

=> 24.71%

Therefore His total gain in percentage is 24.71%

Q8. Answer: (d) A

Let the cost price of the article be Rs. x

Required ratio = (x × 102%)/(x × 118%) = 51/59

Q9. Answer: (b) B

=> 0.592 ÷ 0.8

=> 0.74

Q10. Answer: (d) Cannot be determined

The relation cannot be determined as the gender of Laura is not known.

Hence, Cannot be determined is the correct answer.

Q11. Answer: (b) D

=> 69696 × 9999

=> 69696 × (10000 - 1)

=> 696960000 - 69696

=> 696890304

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Q12. Answer: (a) 318826

Letter	Code	Letter	Code
R	6	P	3
I	1	R	6
P	3	E	2
P	3	A	4
L	8	C	5
E	2	H	7

Thus code for PILLER will be,

Letter	Code
P	3
I	1
L	8
L	8
E	2
R	6

Thus the code for PILLER is 318826.

Q13. Answer: (d) D

Given:

Time taken by the first hole alone to empty the flask = 9 minutes

Time taken by the second hole alone to empty the flask = 16 minutes

Concept Used:

If the hole takes "a" minutes to empty a completely filled flask, then the part of the flask emptied by the hole in one minute = 1/a

Calculation:

Part of the flask emptied in one minute by first hole alone = 1/9

Part of the flask emptied in one minute by second hole alone = 1/16

Part of the flask they both empty in one minute, when working together is obtained as:

(1/9) + (1/16) = 25/144

Therefore The time taken by both the holes to empty the flask working together = 144/25 = 519/25 minutes

Total work = 144

Both pipe empty the tank in = 144/25 = 519/25 minutes

Q14. Answer: (a) B

The correct answer is option 1 i.e Shekhar Kapoor.

• The 46th International Film Festival of India was held on 20 to 30 November 2015 in Goa.

• The International Jury was headed by the chairperson, Shekhar Kapur along with UK based director, Micheal Radford, Palestinian based Israel director, Ms. Suha Arraf, German Actress, Julia Jentsch and South Korean filmmaker Jeon Kyu-Hwan.

• On 20 November 2015 festival was inaugurated by chief guest Anil Kapoor and internationally acclaimed Music composer Illayaraja by the lightening of lamp.

Q15. Answer: (c) Water falling back quickly from the beach.

As the coastal ocean waters recede from the shore, it often leaves large portions of the sea floor exposed. Individuals who do not recognize this as a common precursor to tsunami waves often find themselves gravitating toward the exposed shore. Unfortunately, they often perished as they rush to gather fish left high and dry on the exposed beach or to view never before seen rock and reef formations — only to be hit moments later by the incoming wall of water. Experts believe that a receding ocean may give individuals more familiar with “nature’s tsunami warning signal” as much as a five minute warning to evacuate the area. This cycle may be repeated several times as successive wave crests arrive five minutes to an hour apart.

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Q16. Answer: (c) 2

Symbol in question	Meaning
•	×
•	•
×	÷
÷	•

Given, 6 + 7 × 3 – 8 ÷ 20

Changing the operators the given equation becomes,

6 × 7 ÷ 3 + 8 – 20 = 6 × (7/3) + 8 – 20 = 2 × 7 + 8 - 20

= 14 + 8 – 20 = 2

Hence, 2 is the correct answer.

Q17. Answer: (b) Argon

• Argon is a chemical element with symbol Ar and atomic number 18.

• It is in group 18 of the periodic table and is a noble gas.

• Argon is the third-most abundant gas in the Earth's atmosphere, at 0.934% (9340 ppmv).

• It is more than twice as abundant as water vapor (which averages about 4000 ppmv, but varies greatly), 23 times as abundant as carbon dioxide (400 ppmv), and more than 500 times as abundant as neon (18 ppmv). Argon is the most abundant noble gas in Earth's crust, comprising 0.00015% of the crust.

Q18. Answer: (b) Only conclusion II follows.

Anything regarding the importance of merit is not mention in given statement so conclusion I does not follow but as Sukhvinder emphasizes on the need to replace the present training programme by other methods, we can infer that the present training programme does not bring out the real merit of the candidates. Thus conclusion II follows.

Q19. Answer: (d) B

The variance of a set of data is 196.

The standard deviation of the data is = √196 = 14

Q20. Answer: (b) Shaheed and Swaraj Island

• On December 29, 1943, political control of the islands was passed to the Azad Hind government of Subhas Chandra Bose. Bose visited Port Blair to raise the tricolour flag of the Indian National Army.

• The islands themselves were renamed "Shaheed" and "Swaraj", meaning "martyr" and "self-rule" respectively. Bose appointed General A. D. Loganathan as the governor of the islands, and had limited involvement with the administration of the territory.

Q21. Answer: (d) B

=> 4923 ÷ 547 - 10

=> 9 - 10

=> (-1)

Q22. Answer: (d) Adam’s Apple

The Adam's apple, or laryngeal prominence, is a feature of the human neck, and is the lump or protrusion that is formed by the angle of the thyroid cartilage surrounding the larynx. The Adam's apple, in conjunction with the thyroid cartilage which forms it, helps to protect the walls and the frontal part of the larynx, including the vocal cords (which are located directly behind it).

Q23. Answer: (d) India

The 2017 FIFA U-17 World Cup will be the 17th edition of the FIFA U-17 World Cup, the biennial international men's youth football championship contested by the U17 national teams of the member associations of FIFA. The tournament will be hosted by India between 6 and 28 October 2017. This will be the first FIFA tournament hosted by the country. The final will be held the Salt Lake Stadium in Kolkata on 28 October 2017.

Q24. Answer: (b) B

1,1/2,1/2,3/4,1/4,2,1/2,1/4,3/4

=> Sum of all fractions = 1 + 1/2 + 1/2 + 3/4 + 1/4 + 2 + 1/2 + 1/4 + 3/4 = ((4 + 2 + 2 + 3 + 1 + 8 + 2 + 1 + 3))/4 = 26/4 => 13/2

Mean of all fractions = 13/(2 × 9) = 13/18

Arranging the terms and adding:

1 + (1/2 + 1/2) + (1/4 + 1/4 + 1/2) + 2 + (3/4 + 3/4)

=> 1 + 1 + 1 + 2 + 3/2 = 13/2

Therefore Mean = (13/2)/9 = 13/18

Q25. Answer: (c) C

Concept

If each data is multiplied by a, then the variance is multiplied by a^2.

Calculation

The variance of data 2, 4, 5, 6, 8, 17 is 23.33.

The variance of 4, 8, 10, 12, 16, 34 = 2 × (2, 4, 5, 6, 8, 17)w will be :

The variance of 4, 8, 10, 12, 16, 34 = 2^2 × 23.33 = 93.33

We must multiply the variance with 2^2 when we are multiplying the numbers with 2.

Many a time the variance is multiplied by 2 instead of 2^2 which is wrong as the concept is - variance is multiplied by a2 when each data is multiplied by a.

Q26. Answer: (d) D

Given:

Selling price of the a bus = Rs. 22100

Loss = 15%

Formulae Used:

For an item sold at some profit on the CP, the selling price becomes:

SP = [(100 + %Profit)/100] × CP ----(i)

For an item sold at some loss on the CP, the selling price becomes:

SP = [(100 – %Loss)/100] × CP ----(ii)

Calculation:

Using the equation (ii), we get the CP of the bus as:

CP of the bus = 22100 × (100/85) ----(iii)

Using the value of CP from equation (iii), and equation (i), we get:

New selling price of the bus = 22100 × 100/85 × 115/100 = 29900

Therefore The new selling price of the bus will be Rs.29,900

Q27. Answer: (d) Only IV follows

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

Conclusions:

I. Some tents are trams → Trams is not available here.

II. Some ropes are pens → It's possible but not definite, hence false.

III. Some erasers are pens → It's possible but not definite, hence false.

IV. Some pencils are pens → It's true.

Please click on the below link for the video solution

Thus only conclusion IV follows.

Q28. Answer: (d) C

Concept:

When we have to find the ascending or descending order of a fraction, we can take the LCM of the denominator and multiply all the terms to get a whole number.

Calculation:

Given:

The denominator terms are 3, 4, and 6. The LMC will of 3, 4, and 6 will be 12.

Now Multiply all the terms with 12 (LCM).

A) 2/3×12,5/6× 12,3/4×12 =>8,10,9

B) 3/4× 12,2/3× 12,5/6× 12 =>9, 8, 10

C) 2/3 × 12,3/4× 12,5/6× 12 => 8, 9, 10

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D) 5/6 × 12,3/4× 12,2/3× 12 => 10, 9, 8

Correct ascending order will be C (8, 9, 10) i.e 2/3,3/4,5/6.

Q29. Answer: (a) A

Shortcut Trick

Using standard Pythagorean triplets: (8, 15, 17) for angle A and (7, 24, 25) for angle B.

From tan A = 15/8, we directly get sin A = 15/17 and cos A = 8/17.

From tan B = 7/24, we directly get sin B = 7/25 and cos B = 24/25.

Applying the identity: cos(A + B) = cos A × cos B − sin A × sin B

cos(A + B) = (8/17 × 24/25) − (15/17 × 7/25) = 192/425 − 105/425 = 87/425.

Therefore The correct answer is 87/425.

Alternate Method

Given:

tan A = 15/8 (Opposite / Adjacent)

tan B = 7/24 (Opposite / Adjacent)

Formula Used:

Hypotenuse² = Opposite² + Adjacent²

cos(A + B) = cos A × cos B − sin A × sin B

Calculations:

=> For Triangle A: Hypotenuse = √(15² + 8²) = √(225 + 64) = √289 = 17

=> sin A = Opposite / Hypotenuse = 15/17

=> cos A = Adjacent / Hypotenuse = 8/17

=> For Triangle B: Hypotenuse = √(7² + 24²) = √(49 + 576) = √625 = 25

=> sin B = Opposite / Hypotenuse = 7/25

=> cos B = Adjacent / Hypotenuse = 24/25

=> cos(A + B) = (8/17 × 24/25) − (15/17 × 7/25)

=> cos(A + B) = 192/425 − 105/425

=> cos(A + B) = 87/425

Therefore The correct answer is 87/425.

Additional Information

Compound Angle Formulas

Formulas for the sum and difference of angles: sin(A + B) = sin A × cos B + cos A × sin B, and cos(A + B) = cos A × cos B − sin A × sin B.

Pythagorean Triplets

Sets of three positive integers a, b, and c that satisfy $a^2 + b^2 = c^2$. Common examples are (3, 4, 5), (5, 12, 13), (7, 24, 25), and (8, 15, 17).

Trigonometric Ratios in a Right Triangle

sin θ = Opposite ÷ Hypotenuse, cos θ = Adjacent ÷ Hypotenuse, and tan θ = Opposite ÷ Adjacent.

Q30. Answer: (a) Britain

An independent panel of British scientists and experts has formally given nod to introduce so-called three-parent baby fertility treatments or mitochondrial gene therapy (MGT) procedures. The panel tasked with reviewing the safety of MGT held that this practice should be cautiously adopted to prevent certain genetic diseases from being passed on to future generations. Thus, it paves the way for the country to officially introduce the procedures. Earlier in February 2016, British Parliament voted to legalise three-parent baby fertility treatments or MGT procedures. It was first country in the world to legalise creation of In-Vitro Fertilisation babies with DNA from three people. The world's first three-parent baby boy was born in Mexico in April 2016 to a Jordanian couple with help of this new fertility technique which incorporates DNA from three people in embryo.

Q31. Answer: (d) Self-discovery through experiment

The Montessori Method of education, developed by Dr. Maria Montessori, is a child-centered educational approach based on scientific observations of children from birth to adulthood. Dr. Montessori's Method has been time tested, with over 100 years of success in diverse cultures throughout the world. It is a view of the child as one who is naturally eager for knowledge and capable of initiating learning in a supportive, thoughtfully prepared learning environment. It is an approach that values the human spirit and the development of the whole child—physical, social, emotional, cognitive.

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Q32. Answer: (d) People act both through the electoral system and the group process

In Western European political science, the term polyarchy was used by Robert Dahl to describe a form of government in which power is invested in multiple people. It takes the form of neither a dictatorship nor a democracy. This form of government was first implemented in the United States and France and was gradually adopted by many other countries (Dahl, p. 234, 1989) Including Canada after the signing of the NAFTA agreement by Canadian Prime Minister Brian Mulroney in 1994. According to Dahl, the fundamental democratic principle is “the continuing responsiveness of the government to the preferences of its citizens, considered as political equals” with unimpaired opportunities (Dahl, 1971). A polyarchy is a state that has certain procedures that are necessary conditions for following the democratic principle. In semblance, the word polycracy describes the same form of government, although from a slightly different premise: a polycracy is a state ruled by more than one person, as opposed to a monocracy. The word is derived from Greek poly which means "many" and kratos which means "rule" or "strength."

Q33. Answer: (b) C

=> (8)^(2/3)

=> (2)^(3(2/3))

=> 2^2

=> 4

Q34. Answer: (b) C

=> P = Rs. 950, r = 6% and time = 4 years

=> SI = (Prt/100)

=> SI = (950 × 6 × 4)/100

=> SI = 228

Amount = 950 + 228 = 1178

Q35. Answer: (c) C

The amount divide in = 1 : 5 : 8 : 9

=> 1 + 5 + 8 + 9 = 23 unit

=> 23 unit = 368

=> 1 unit = 368/23

=> 1 unit = 16

=> 5 unit = 16 × 5 = 80

=> 8 unit = 16 × 8 = 128

=> 9 unit = 16 × 9 = 144

The rupees in the ratio are = 16, 80, 128, 144

Q36. Answer: (c) New Horizon

New Horizons is an interplanetary space probe that was launched as a part of NASA's New Frontiers program. Engineered by the Johns Hopkins University Applied Physics Laboratory (APL) and the Southwest Research Institute (SwRI), with a team led by S. Alan Stern, the spacecraft was launched in 2006 with the primary mission to perform a flyby study of the Pluto system in 2015, and a secondary mission to fly by and study one or more other Kuiper belt objects (KBOs) in the decade to follow.

Q37. Answer: (a) Osmosis

Osmosis is the spontaneous net movement of solvent molecules through a semi-permeable membrane into a region of higher solute concentration, in the direction that tends to equalize the solute concentrations on the two sides. It may also be used to describe a physical process in which any solvent moves across a semipermeable membrane (permeable to the solvent, but not the solute) separating two solutions of different concentrations. Osmosis can be made to do work.

Q38. Answer: (d) Glasgow, United Kingdom

The 2014 Commonwealth Games (officially known as the XX Commonwealth Games), was a multi-sport event held in Glasgow, Scotland from 23 July to 3 August 2014.

Q39. Answer: (c) C

There are two symmetry lines in rectangle 1 is respect to length and 1 is respect to breadth.

Q40. Answer: (b) D

As we know,

Product of two numbers = HCF × LCM

=> 2400 = HCF × 120

=> HCF = 2400/120

=> HCF = 20

Q41. Answer: (c) A

Total time to cover and back the same place by walking = 5 hr 40 min

Total time to cover only one way by walking = (5 hr 40 min)/2 = 2 hr 50 min

Total time to cover only one way by riding = 4 hr 30 min - 2 hr 50 min = 1 hr 40 min

Total time to cover and back same place by riding = (1 hr 40 min) × 2 = 3 hr 20 min.

Q42. Answer: (c) Mixture of progesterone and estrogen derivative

Birth control pills are a synthetic form of the hormones progesterone and estrogen. They prevent ovulation by maintaining more consistent hormone levels. Without a peak in estrogen, the ovary doesn't get the signal to release an egg. Remember that no egg means no possibility for fertilization and pregnancy.

Q43. Answer: (d) B

Let the speed of women be x km/hr

=> Speed of cycle is 24 km/hr.

As we know, distance is same, then

=> 24 × 15/60 = (24 + x) × 10/60

=> 24 × 3 = (24 + x) 2

=> 72 = 48 + 2x

=> 2x = 72 - 48

=> x = 24/2

=> x = 12

=> Speed, of women is 12 km/hr.

Q44. Answer: (b) Vishnu

Key Points

• The Indus people probably worshipped Mother Goddess, in addition to male and female deities.

• They worshipped a father God who might be a progenitor of the race and probably was a prototype of Siva as the Lord of the Animals.

• They were familiar with some form of yoga and meditation.

Q45. Answer: (a) The refractive index of the different layers of earth’s atmosphere changes continuously; consequently the p...

The theory behind stars twinkling the refractive index of the different layers of earth’s atmosphere changes continuously; consequently the position of the star’s image changes with time.

CONCEPT:

• Refractive Index: The Refractive index measures the bending of a ray of light when passing from one medium into another medium.

• Every medium has a different refractive index value.

• The refractive index of a medium is given by n = c / v

where c is the speed of light and v is the speed of light in the medium.

• Our earth consists of mainly 6 layers.

1. Troposphere 2. Stratosphere 3. Mesosphere 4. Thermosphere 5. Ionosphere 6. Exosphere

EXPLANATION:

• A star appears to twinkle due to the atmospheric refraction of starlight.

• Our earth consists of many layers.

• The starlight when enters the earth’s atmosphere, undergoes refraction through different layers of atmosphere before it reaches the earth.

• The atmospheric refraction occurs in a medium due to gradually changing the refractive index of the different mediums.

• This makes a star to twinkle for our eyes.

• So the correct answer will be option 1.

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Q46. Answer: (b) 2

Hence alternative 2 completes the pattern.

Q47. Answer: (b) Kailash Satyarthi

Nobel Peace Prize winner Kailash Satyarthi was conferred with the Harvard University's prestigious humanitarian award for the year 2015, in recognition of his continuing contribution to the cause of child rights. The annual award by the prestigious university is given to an individual whose works and deeds have served to improve the quality of lives and have inspired people to greater heights. Mr. Satyarthi is the first Indian to have been given this award.

Q48. Answer: (a) 26.67%

Given :

Total Students = 60

Students who like neither Maths nor English = 12.(Remaining students 60 - 12 = 48).

Students who like Maths = 42.

Students who like English = 32.

Number of Students who likes both English and Maths = 74 (42 + 32) - 48 = 26.

Number of Students who like Only English = 32 - 26 = 6.

Number of Students who like Only Maths = 42 - 26 = 16.

From the given data we get the following Venn diagram,

Students who like only Maths are 16 and total number of students in a class are 60.

(16/60)100 = 26.67%

Thus students who like only Maths forms 26.67 percentage of the total number of students in the class.

Q49. Answer: (b) 26

Given :

Total Students = 60

Students who like neither Maths nor English = 12.(Remaining students 60 - 12 = 48).

Students who like Maths = 42.

Students who like English = 32.

Number of Students who likes both English and Maths = 74 (42 + 32) - 48 = 26.

Number of Students who like Only English = 32 - 26 = 6.

Number of Students who like Only Maths = 42 - 26 = 16.

From the given data we get the following Venn diagram,

Thus 26 students like both Maths and English.

Q50. Answer: (d) 22

Given :

Total Students = 60

Students who like neither Maths nor English = 12.(Remaining students 60 - 12 = 48).

Students who like Maths = 42.

Students who like English = 32.

Number of Students who likes both English and Maths = 74 (42 + 32) - 48 = 26.

Number of Students who like Only English = 32 - 26 = 6.

Number of Students who like Only Maths = 42 - 26 = 16.

From the given data we get the following Venn diagram,

Thus students who like exactly one subject are 16 + 6 = 22.

Q51. Answer: (b) Telangana

Key Points

• Golconda Fort is located in the western part of Hyderabad city and is about 9 km from Hussain Sagar Lake.

• The outer fort occupies an area of three square kilometers, which is 4.8 kilometers in length.

• It was originally known as Mankal and built on a hilltop in the year 1143. It was originally a mud fort under the reign of Rajah of Warangal.

• Later it was fortified between 14th and 17th centuries by the Bahmani Sultans and then the ruling Qutub Shahi dynasty.

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• Golconda was the principal capital of the Qutub Shahi kings. The inner fort contains ruins of palaces, mosques, and a hilltop pavilion, which rises about 130 meters high and gives a bird's eye view of other buildings.

Q52. Answer: (b) D

=> sin x = 4/5

Perpendicular = P, Hypotenuse = H and Base = B.

=> sin x = P/H = 4/5

=> P = 4 and H = 5

As we know,

=> $H^2 = P^2 + B^2$

=> $5^2 = 4^2 + B^2$

=> $B^2 = 25 - 16 = 9$

=> $B = \sqrt{9}$

=> B = 3

sec x = H/B

=> sec x = 5/3

Now,

=> $sec^2 x - 1$

=> $(5/3)^2 - 1$

=> 25/9 - 1

=> 16/9

sec2 x – 1 = tan^2x = $(\sin x / \cos x)^2$ = (4/5 / 3/5)2 = (4/3)2 = 16/9

Q53. Answer: (c) 96575368

Letter	Code		Letter	Code
P	2		H	6
R	7		I	8
A	5		T	3
B	9		A	5
A	5		L	4

Thus code for BHARATHI will be,

Letter	Code
B	9
H	6
A	5
R	7
A	5
T	3
H	6
I	8

Thus the code for BHARATHI is 96575368.

Q54. Answer: (d) C

=> HCF of 1757 and 2259 is 251.

Q55. Answer: (b) Belgium

Belgium in the month of November 2015 was ranked No. 1 men's team for the first time in FIFA rankings.

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Q56. Answer: (c) C

=> w = (-2), x = 3, y = 0 and z = (-1/2)

Now,

=> $w^2 (\sqrt{z^2 + y^2})$

=> $(-2)^2 \times \sqrt{(-1/2)^2}$

=> 4 × 1/2

=> 2

Q57. Answer: (c) Father-in-law

Hence Ram is the Father-in-law of girl.

Q58. Answer: (d) Calcutta High Court

The correct answer is Calcutta High Court.

Court	Established date
Bombay High court	14^(th) August 1862
Madras High Court	15^(th) Aug 1862
Allahabad High Court	17^(th) March 1866
Calcutta High Court	1^(st)July 1862

Q59. Answer: (a) Sublimation

Sublimation is the phase transition of a substance directly from the solid to the gas phase without passing through the intermediate liquid phase. Sublimation is an endothermic process that occurs at temperatures and pressures below a substance's triple point in its phase diagram.

Q60. Answer: (c) B

=> x - 3 = 3x + 7

=> 3x - x = - 3 - 7

=> 2x = (-10)

=> x = (-5)

Q61. Answer: (a) Justice M. Fathima Beevi

M. Fathima Beevi was the first female judge to be appointed to the Supreme Court of India (1989) and the first Muslim woman to be appointed to any higher judiciary. On her retirement from the court, she served as a member of the National Human Rights Commission and as Governor in Tamil Nadu (1997–2001).

Q62. Answer: (b) March 20

• An equinox is a moment in which the plane of Earth's equator passes through the center of the Sun, which occurs twice each year, around 20 March or 21 March and 23 September.

• On an equinox, day and night are of approximately equal duration all over the planet. They are not exactly equal, however, due to the angular size of the sun and atmospheric refraction.

• To avoid this ambiguity, the word equilux is sometimes used to mean a day in which the duration of light and darkness are equal.

Q63. Answer: (d) C

=> (33800/520)/5 => 33800/(5 × 520) => 13

Q64. Answer: (a) Away from the sun

The streams of dust and gas thus released form a huge, extremely tenuous atmosphere around the comet called the coma, and the force exerted on the coma by the Sun's radiation pressure and solar wind cause an enormous tail to form, which points away from the Sun.

Q65. Answer: (d) Kaiser-e-Hind

• The Kaisar-e-Hind Medal for Public Service in India was a medal awarded by the British monarch to civilians of any nationality who rendered distinguished service in the advancement of the interests of the British Raj.

• Mahatma Gandhi was awarded the Kaisar-e-Hind in 1915 by Lord Hardinge of Penshurst Gandhi returned the medal in 1920 as part of the national campaign protesting the Jallianwala Bagh massacre.

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Q66. Answer: (d) Only (3)

Conclusions:

1. No window is cat → False (it is possible but not definite)
2. No cat is window → False (it is possible but not definite)
3. Some cats are monkeys → True (as all monkeys are cats)
4. All cats are monkeys → False (it is possible but not definite)

Hence, only conclusion 3 is True.

Q68. Answer: (c) 10

Symbol in question	Meaning
•	×
•	•
×	÷
÷	•

Changing the operators the given equation becomes,

6 + 9 × 8 ÷ 3 – 20

= 6 + 24 – 20 = 10

Q69. Answer: (c) Maharashtra

The Karla Caves or Karle Caves or Karla Cells are a complex of ancient Indian Buddhist rock-cut cave shrines located in Karli near Lonavala, Maharashtra. The shrines were developed over the period – from the 2nd century BC to the 5th century AD. The oldest of the cave shrines is believed to date back to 160 BC, having arisen near a major ancient trade route, running eastward from the Arabian Sea into the Deccan. Many traders and Satvahana rulers made grants for construction of these caves. Karli's location in Maharashtra places it in a region that marks the division between North India and South India.

Q70. Answer: (a) The glasses allow our left and right eyes to see different images

The correct answer is The glasses allow our left and right eyes to see different images.

• In a 3D movie, two slightly different images are shown on the screen — one meant for the left eye and one for the right eye.

• The 3D glasses filter these images so that each eye sees only its intended image.

• The brain then combines both images to create a sense of depth, making the picture appear three-dimensional.

Q71. Answer: (d) Narmada

The correct answer is option 3) i.e. Narmada.

• Amarkantak is the place from where the Narmada river originates.

• It rises from the Maikal ranges at the height of 1057 meter above the sea level.

• Amarkantak is located in the Shahdol district of Madhya Pradesh in India.

• Narmada river mainly flows in the central India. The total length of the Narmada river lies approximately 1,289 kms.

• The river flows from the eastward direction to the westward into the Arabian sea.

• It merges into the ocean at the point called 'Bharonch'.

• It is the largest west flowing river in India.

River	Origin
Nubra	Siachin Glacier
Narmada	Amarkantak(Madhya Pradesh)
Kaveri	Tala Kaveri
Ganga	Gangotri Glacier

Q72. Answer: (a) Justice M Hidayatullah

• Mohammad Hidayatullah (17 December 1905 – 18 September 1992) was the eleventh Chief Justice of India serving from 25 February 1968 to 16 December 1970, and the sixth Vice-President of India, serving from 31 August 1979 to 30 August 1984.

• He had also served as the Acting President of India from 20 July 1969 to 24 August 1969 and from 6 October 1982 to 31 October 1982.

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• He is regarded as an eminent jurist, scholar, educationist, author and linguist.

Q73. Answer: (b) 2

Hence alternative 2 completes the pattern.

Q74. Answer: (a) C

Total expenditure of tax over the years = 83 + 108 + 74 + 88 + 98 = 451

Total bonus of all years = 3.00 + 2.52 + 3.84 + 3.68 + 3.96 = 17

Required ratio = 451/17

Q75. Answer: (a) D

Total expenditure on Fuel and transport in 2001 = 133

Salary in 2001 = 336

Required percentage = 133/336 × 100 = 39.58%

Q76. Answer: (d) D

Total expenditure of the company over the items during the year 2001 is = 336 + 133 + 3.68 + 36.4 + 88 = 597.08 lakhs

Q77. Answer: (c) Niece/Nephew

Hence the Rani is nephew/niece of boy.

Q78. Answer: (b) Karl Benz

Karl Friedrich Benz (25 November 1844 – 4 April 1929) was a German engine designer and automobile engineer. His Benz Patent Motorcar from 1885 is considered the first practical motorcar. He received a patent for the Motorcar on 29 January 1886.

Q79. Answer: (b) Liberia

Ellen Johnson Sirleaf (born 29 October 1938) is a Liberian politician who has served as the 24th and current President of Liberia since 2006. Sirleaf is the first elected female head of state in Africa.

Q80. Answer: (d) -9.5

Symbol in question	Meaning
•	×
•	•
×	÷
÷	•

Changing the operators the given equation becomes,

9 – 5 × 4 + 3 ÷ 2

9 – 20 + 1.5 = -9.5

Q81. Answer: (c) A

As we know,

Diagonal of rectangle = $\sqrt{(l^2 + b^2)} = \sqrt{(5^2 + 3^2)} = \sqrt{(25 + 9)} = \sqrt{34}$

Q82. Answer: (c) C

As we know,

Number of sides any polygon = 360/each exterior angle

Required number of sides of polygon having each exterior angle 72 is = 360/72 = 5

Q83. Answer: (a) Thermal Power

Except Thermal power all the other source of power generation are eco friendly.

Q84. Answer: (c) Turkey

The 2015 G20 Antalya summit was the tenth annual meeting of the G20 heads of government/heads of state. It was held in Antalya, Turkey, a southwestern city, which was the most visited destination in Turkey and the tenth in the world in 2014, on 15–16 November 2015. The venue for the Leaders Summit was Regnum Carya Hotel Convention Centre. Turkey officially took

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over the presidency of the G20 from Australia on 1 December 2014, and China will preside over the summit in 2016.

Q85. Answer: (a) Only conclusion I follows.

The statement says that the healthcare system has expanded in terms of the number of hospitals, but that does not mean, now it is not necessary to open any new hospitals as the population is increasing and the need of good hospitals will always be there. The fact stated in the statement is that most of the hospitals are not well equipped and unable to make significant progress in the field of patient care. So that implies the need for well-equipped hospitals and well-trained doctors is there at present situation.

Thus the only conclusion I follow.

Q86. Answer: (c) A

=> P = 7500, r = 5% and time = 2 years

As we know,

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

=> A = 7500 × (1 + 5/100)²

=> A = 7500 × 21/20 × 21/20

=> A = 8268.75

=> CI = 8268.75 - 7500 = 768.75

Q87. Answer: (c) Sirimavo Bandaranaike

• Sirimavo Bandaranaike was the first woman Prime Minister of any country of the world she became the Prime Minister of Sri Lanka in 1960.

• She served three terms: 1960–1965, 1970–1977 and 1994–2000.

• Golda Meir became Prime Minister of Israel on March 17, 1969, after serving as Minister of Labour and Foreign Minister.

• Margaret Thatcher was the first female Prime Minister of the United Kingdom. She was prime minister from 1979 to 1990.

• Indira Gandhi was the first and, to date, the only female Prime Minister of India.

Q88. Answer: (b) Ram

In this we have to assume that all boys are facing the north direction.

1) Sachin is to the left of Ram and to the right of Bin.

2) Monty is to the right of Ram.

3) Rony is between Ram and Monty.

Hence Ram is in the middle of the photograph.

Q89. Answer: (c) Rony

In this we have to assume that all boys are facing the north direction.

1) Sachin is to the left of Ram and to the right of Bin.

2) Monty is to the right of Ram.

3) Rony is between Ram and Monty.

Hence Rony is second from the right in the photograph.

Q90. Answer: (d) Sachin

In this we have to assume that all boys are facing the north direction.

1) Sachin is to the left of Ram and to the right of Bin.

2) Monty is to the right of Ram.

3) Rony is between Ram and Monty.

Hence Sachin is second from the left in the photograph.

Q91. Answer: (a) -1

Symbol in question	Meaning
•	×
•	•
×	÷
÷	•

Changing the operators the given equation becomes,

3 ÷ 2 × 4 + 2 – 9

= 6 + 2 – 9 = -1

Q92. Answer: (a) The place where two biomes meet

Key Points

Ecotone -

• An ecotone is a transition area between two biomes.

• It is where two communities meet and integrate.

• It may be narrow or wide, and it may be local (the zone between a field and forest) or regional (the transition between forest and grassland ecosystems).

• Grasslands represent an ecotone and are found between forests on one side and deserts on the other.

• They are subjected to the greater variation of temperature, moisture, wind and light intensity of the sun.

Q93. Answer: (b) B

Let efficiency of Verma be 1 unit

Efficiency of Rakshanth = 2 × 1 = 2

=> Total work = (1 + 2) × 19 = 57

Verma alone can complete the work in = 57/1 = 57 days

Q94. Answer: (b) Only conclusion II follows.

We all know that no interest can be created by force but regular exercise of particular activity may help to develop interest atleast in some students. So by making debate compulsory and telling students to submit weekly report, school authority can ensure that all the students are actively participating and thus some students eventually will develop interest in debating.

Thus only conclusion II follows.

Q95. Answer: (d) Paul G. Allen

Microsoft was founded by Paul Allen and Bill Gates on April 4, 1975, to develop and sell BASIC interpreters for the Altair 8800. It rose to dominate the personal computer operating system market with MS-DOS in the mid-1980s, followed by Microsoft Windows.

Q96. Answer: (c) A

=> The ratio of two number is = 2 : 5

=> Let the two number is 2x and 5x

=> HCF of two number is x

=> LCM of two number is 2 × 5 × x = 10 × 18 = 180

Q97. Answer: (a) 88

Key Points

• Currently, 14 men and women, 9 birds, two insects, 19 land animals, 10 water creatures, two centaurs, one head of hair, a serpent, a dragon, a flying horse, a river, and 29 inanimate objects are represented in the night sky (the total comes to more than 88 because some constellations include more than one creature.

Q98. Answer: (d) 4

Note: option 1 and 4 are not same as there is the difference in the direction of the arrows.

Thus image 4 completes the given pattern.

Q99. Answer: (b) India and France

The International Solar Alliance (ISA) is an alliance of more than 120 countries, most of them being sunshine countries, which come either completely or partly between the Tropic of Cancer and the Tropic of Capricorn. The alliance's primary objective is work for efficient exploitation of solar energy to reduce dependence on fossil fuels. ISA was jointly launched by India and France at Conference of Parties (CoP21) Climate Conference held in Paris, France on 1st December 2015.

Q100. Answer: (d) GNISOPMI

The codes for KINDLE is as follows,

Similarly,

Thus code for IMPOSING is GNISOPMI.

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