RRB NTPC Tier I Official Paper (Held On: 27 Apr 2016 Shift 3) (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. Introducing a man, Shamita said, “He is the only son of my mother’s mother.” How is Shamita related to the man?

A. Mother
B. Aunt
C. Sister
D. Niece

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

Q2. If 2x + 3 = 9 then find the value of 3x + 2.

A. 12
B. 16
C. 13
D. 11

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

Q3. Radish is an example of:

A. bulb
B. root
C. tuber
D. fruit

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

Q4. Pointing to a man in a photograph, Gunjan said, “His mother’s only daughter is my mother. Gunjan is a girl. “How is Gunjan related to that man?

A. Nephew
B. Sister
C. Wife
D. Niece

(a) A
(b) B

(c) D
(d) C

Q5. One should use porcelain and not metal containers in a microwave oven because _____
A. Charge may accumulate on the metal surface and there is danger of getting a shock.
B. Porcelain vessels are better conductors of heat and thus food gets cooked quickly.
C. Porcelain vessels have a high melting point.
D. Porcelain vessels are cheaper than the metal containers.
(a) A
(b) B
(c) C
(d) D

Q6. Thomas Cup is associated with which of the following sports?
A. Hockey
B. Badminton
C. Football
D. Cricket
(a) C
(b) B
(c) A
(d) D

Q7. When was the ASLV used in India for the first time?
A. 1980
B. 1987
C. 1994
D. 2000
(a) C
(b) B
(c) A
(d) D

Q8. Three clocks are designed to alarm in every hour, two hours and three hours respectively. If they all alarmed together three hours before, then after how many hours from now will they next alarm together?
A. 3 hours
B. 6 hours
C. 2 hours
D. 1 hours
(a) D
(b) A
(c) B
(d) C

Q9. Name the international independent agency whose key activities include scientific research, education, development & monitoring of anti-doping capacities and code in all sports and all countries.
A. International Body Against Doping
B. World Anti-Doping Agency
C. Play true, Play safe
D. International Body for Sports Ethics
(a) A
(b) C

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(c) B
(d) D

Q10. Winner of Mixed doubles category in Wimbledon, 2015 is _____

A. Sania Mirza & Leander Paes
B. Serena Williams & Roger Federer
C. Martina Hingis & Leander Paes
D. Serena Williams & Novak Djokovic

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

Q11. Insert the missing character depicted by '?'

18	**24**	**32**
12	14	16
3	?	4
72	112	128

A. 2
B. 3
C. 4
D. 5

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

Q12. India has designed and developed pilotless target aircrafts named _____, and made successful test flights of its unmanned air vehicle (UAV).

1. Nishant
2. Lakshya
3. Astra

A. Only 2
B. Only 1
C. Only 2 and 3
D. Only 1 and 2

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

Q13. Which of the following branches of medical science deals with the study and treatment of the liver?

A. Helcology
B. Hepatology
C. Heterology
D. Geriatrics

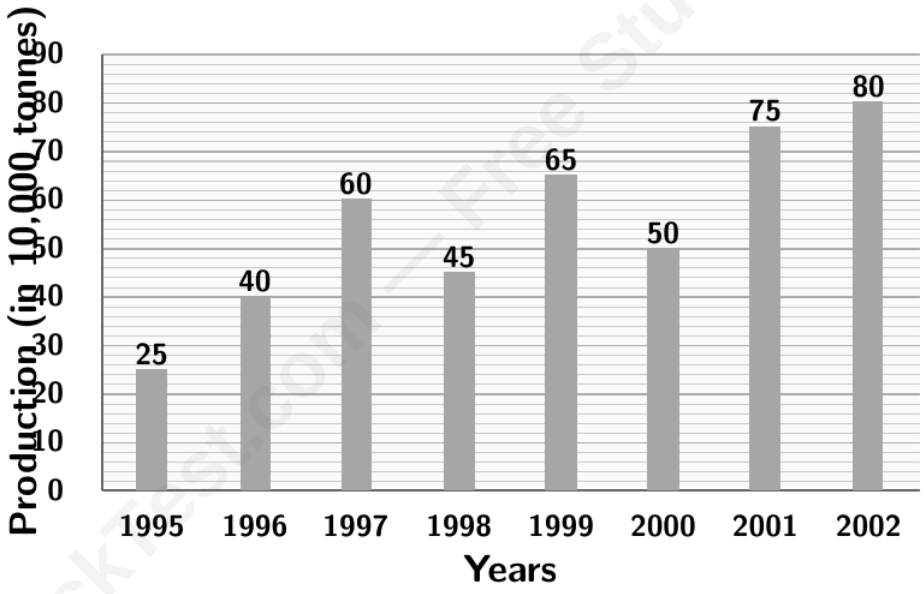
(a) D
(b) C
(c) B
(d) A

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Directions

Direction: Study the bar chart and answer the questions based on it.

Production of Pesticides by Coromandal International Ltd. Company (in 1000 tonnes)



Q14. The average production of 1996 and 1997 was exactly equal to the average production of which of the following pairs of years?

A. 2000 and 2001

B. 1999 and 2000

C. 1998 and 2000

D. 1995 and 2001

(a) B

(b) A

(c) C

(d) D

Q15. In which year was the percentage increase in production as compared to the previous year the maximum?

A. 2002

B. 2001

C. 1997

D. 1996

(a) C

(b) D

(c) A

(d) B

Q16. What was the percentage increase in production of Pesticides in 2002 compared to that in 1995?

A. 320%

B. 300%

C. 220%

D. 200%

(a) A

(b) C

(c) D

(d) B

Q17. The President of India, Pranab Mukharjee presented the 24^(th) Saraswati Samman for the year 2014 to:

A. Govind Mishra
B. Sugathakumari
C. M Veerappa Moily
D. Dilip Parulekar

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

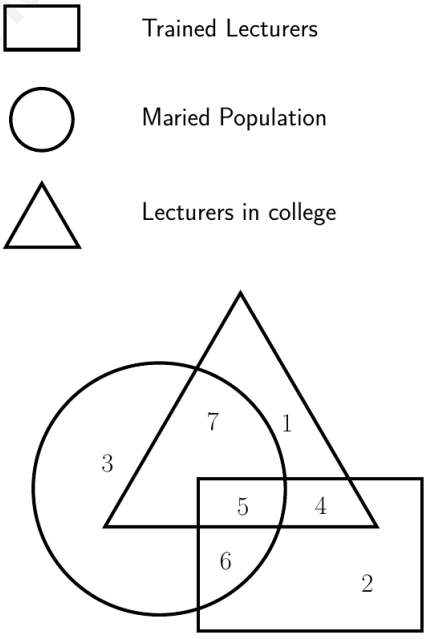
Q18. _____ is one of the states of matter obtained by cooling a gas of very low density to extremely low temperatures.

A. Gas
B. Plasma
C. Bose-Einstein Condensate (BEC)
D. Plasma Condensate

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

Directions

Direction: Study the following figure and answer the question given below:



Q19. By which number, the trained unmarried lecturers in the college are represented?

A. 6
B. 5
C. 7
D. 4

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

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Q20. What is represented by the number 7?

A. Married lecturers in the college

B. Trained lecturers

C. Unmarried trained lecturers

D. Married trained lecturers

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

Q21. By which number, the trained married lecturers in the college are represented?

A. 7

B. 6

C. 5

D. 4

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

Q22. Four pairs of words are given below out of which three are alike in some manner and one is different. Which is different from the rest?

A. Steel : Utensils

B. Bronze : Statue

C. Duralumin : Aircraft

D. Wood : Rails

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

Q23. Find the least number that must be subtracted from 98534, to get a number exactly divisible by 824.

A. 484

B. 478

C. 422

D. 375

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

Q24. 20 pens and 46 pencils were purchases for Rs. 235. If the average price of a pencil is Rs. 2.50 then calculate the average price (in Rs.) of a pen.

A. 6

B. 4

C. 8

D. 12

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

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Q25. Belur Math is located at:

A. West Bengal

B. Maharashtra

C. Uttar Pradesh

D. Tamil Nadu

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

Q26. Galvanization, a process to prevent rusting, involves use of _____ coating to steel or iron.

A. Nickel

B. Magnesium

C. Copper

D. Zinc

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

Q27. Direction: There are three statements which are followed by three conclusions. Choose the conclusions which logically follow from the given statements.

Statements:

All the doors are keys.

All the keys are bats.

Some clocks are bats.

Conclusions:

(1) Some bats are doors

(2) Some clocks are keys

(3) All the keys are doors

A.Only (1) and (2)

B.Only (1)

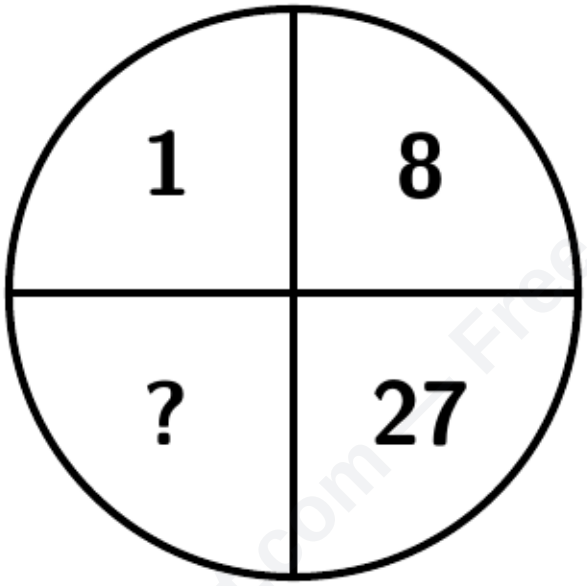
C.Only (2)

D.Only (1) and (3)

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

Q28. Insert the missing character depicted by '?'

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A. 41
B. 64
C. 35
D. 61

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

Q29. If √5 = 2.236; then √5/2 is

A. 1.851
B. 1.118
C. 2.236
D. 1.782

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

Q30. Which state of India produces the highest quantity of Jute?

A. Bihar
B. Odisha
C. West Bengal
D. Jharkhand

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

Q31. Which of the following languages was not included in the 8^(th) schedule of Indian Constitution through the 92^(nd) amendment act?

A. Maithili
B. Bodo
C. Santhali
D. Kannada

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

Q32. A table tennis player lost 12 games out of 18 games played. Calculate the games won in terms of the decimal.

A. 0.667
B. 0.067
C. 0.50
D. 0.333

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

Q33. Which secondary colour can we get by mixing the primary colours red and blue?

(a) White
(b) Yellow
(c) Magenta
(d) Cyan

Q34. If in a certain language, MANURE is coded as EMRNUA, how is LIVELY coded in that code?

A. YLLEVI
B. YLVLEI
C. YLLVEI
D. YLVLIE

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

Q35. The value of (0.00000729/0.00000027) is

A. 0.27
B. 0.027
C. 2.7
D. 27

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

Q36. If a/b = 1/4, b/c = 1/8 and a = 2 then the value of c is –

A. 8
B. 16
C. 32
D. 64

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

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Q37. The value of cos 0° is

A. 0

B. Infinite

C. not defined

D. 1

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

Q38. Read the statement and select a conclusion from the given alternatives:

Statement:

Company 'X' had asked its employees to declare income and assets but it has been strongly opposed by the employees' his/her union and no employee is going to declare his/her income.

Conclusions:

I. The employees of the company 'X' do not seem to have any additional income besides their salary.

II. The employees' union want all the senior officer to declare their income first.

A. only conclusion I follows.

B. only conclusion II follows.

C. either I or II follows.

D. neither I nor II follows

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

Q39. Prime Minister Narendra Modi has released two commemorative coins of denominations Rs. 125 & Rs. 10 as a mark of tribute to whom?

A. Abdul Kalam

B. Mahatma Gandhi

C. Dr. Rajendra Prasad

D. B.R. Ambedkar

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

Q40. If the hypotenuse of a right-angled triangle is longer than the bigger side by 4 cm and the bigger side is longer than the smaller side by 4 cm, find out the length of the bigger side of the triangle.

(a) 12 cm
(b) 16 cm
(c) 20 cm
(d) 8 cm

Q41. _____ Soil is red in color and not suitable for agriculture found along Tamil Nadu, Odisha, and small parts of Chotanagpur and Meghalaya.

A. Alluvial Soil

B. Red soil

C. Laterite Soil

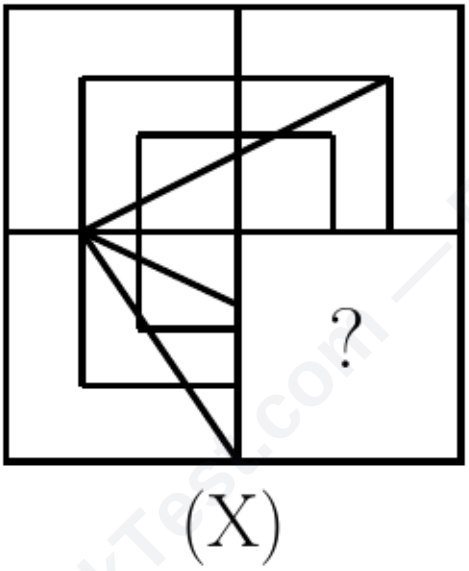
D. Regur Soil

(a) A
(b) B

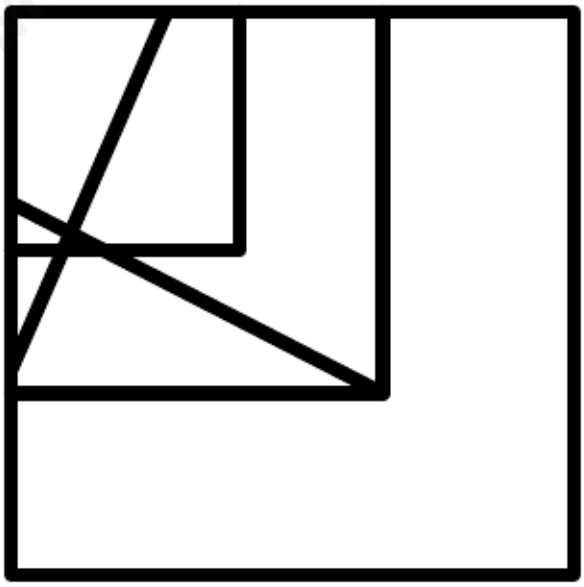
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(c) D
(d) C

Q42. Complete the Figure X from the given alternatives 1, 2, 3, 4

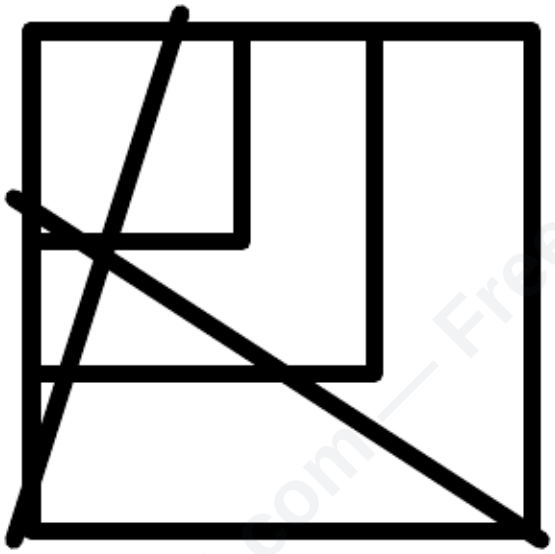


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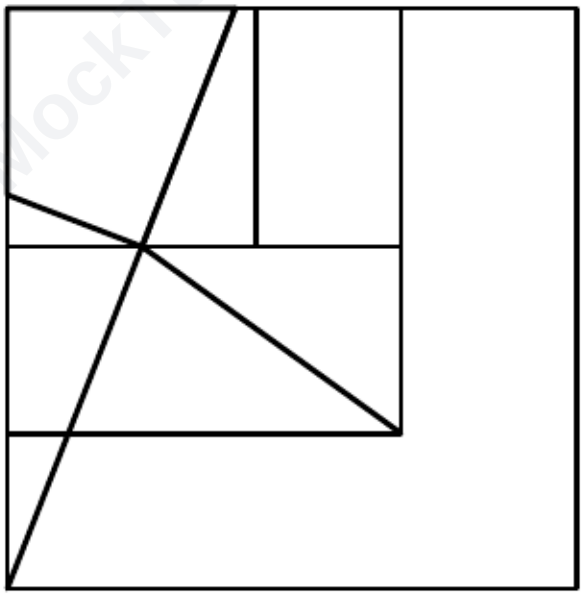


2.

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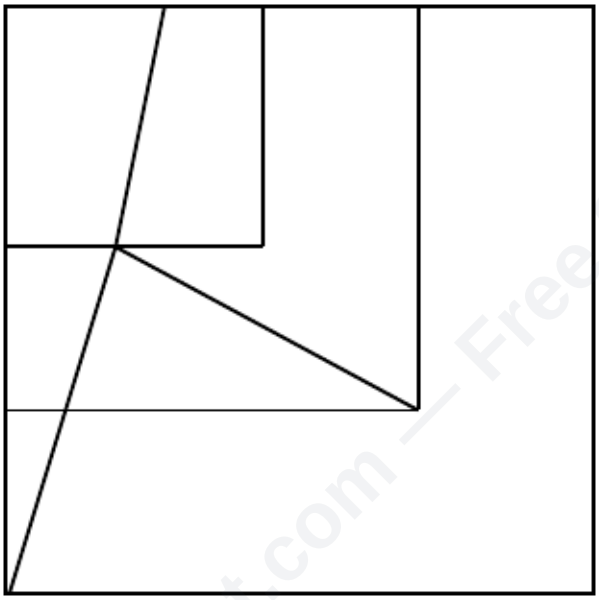


3.



4.

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A. 1

B. 2

C. 3

D. 4

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

Q43. Which of the following statements is not true?

A. The Constitution says that the Chief Minister shall be appointed by the Chief justice of the High Court.

B. The governor elects only those people as ministers, who have been nominated by the Chief Minister.

C. The Chief Minister is the chairman of a state's Planning Board

D. The governor of a state cannot dismiss a Chief Minister as long as the CM receives the support of the majority in Vidhan Sabha(state's Lower House)

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

Q44. Name the device used to connect computers for communication via telephone lines.

A. HUB

B. Switch

C. Repeater

D. MODEM

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

Q45. Factors of $x^2 + 7x + 10$ are

A. $(x - 5)(x - 2)$

B. $(x + 5)(x + 2)$

C. $(x - 5)(x + 2)$

D. $(x - 4)(x + 2)$

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

Q46. Who among the following is known as the Father of Civil Services in India?

A. Lord Cornwallis
B. Warren Hastings
C. Lord Wellesley
D. Lord William Bentinck

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

Q47. In terms of environmental studies, CER refers to:

A. Certified Emission Reductions
B. Capped Emission Repository
C. Certified Emission Repository
D. Capped Emission Reductions

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

Q48. World climate conference popularly known as COP-21 (2015) was held in _____

A. New York
B. London
C. Paris
D. Berlin

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

Q49. Gitesh took a loan for 4 years at 5% Compound Interest. If the total amount paid was Rs. 431.01, Calculate the principal.

A. Rs. 354.5
B. Rs. 345.5
C. Rs. 445.5
D. Rs. 545.5

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

Q50. A, B and C can complete the work in 4, 5 and 6 hours respectively. If they all work together and receive Rs. 777 as wages, then find the share of A.

A. Rs. 300
B. Rs. 315
C. Rs. 326
D. Rs. 175

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

Q51. A shopkeeper purchased a pen drive of marked price Rs. 1000 at successive discounts of 10% & 15% respectively. He spent Rs. 35 on the packaging and sold it on Rs. 1000. Calculate the Gain percent.

A. No Gain
B. 25%
C. 30%
D. 35%

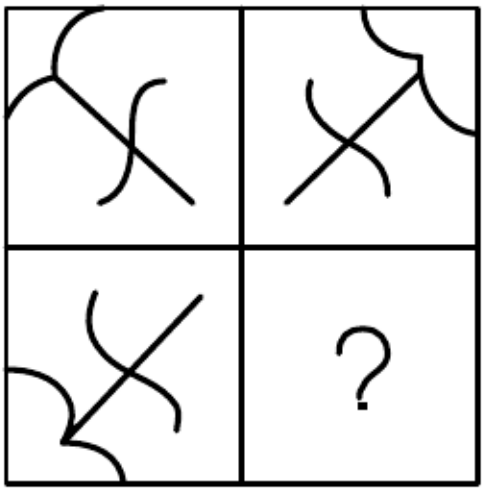
(a) D
(b) C
(c) A
(d) B

Q52. In a certain code language, if EXECUTE is coded as 5351695 and SCRIPT is coded as 714279, then EXIST will be coded as?

A. 23579
B. 97532
C. 23597
D. 53279

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

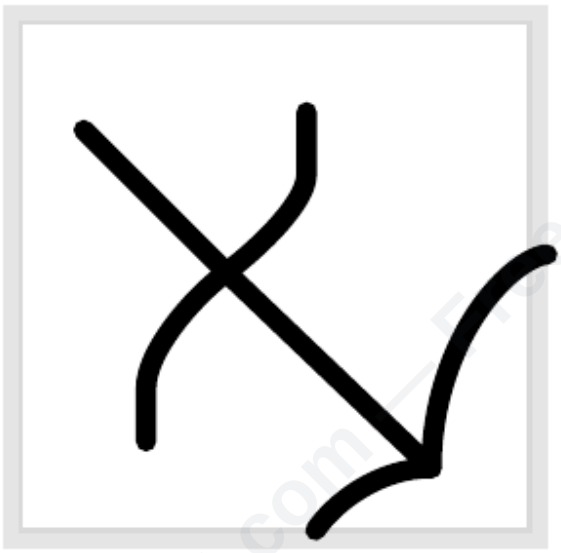
Q53. Complete the Figure X from the given alternatives 1, 2, 3, 4



(X)

1.

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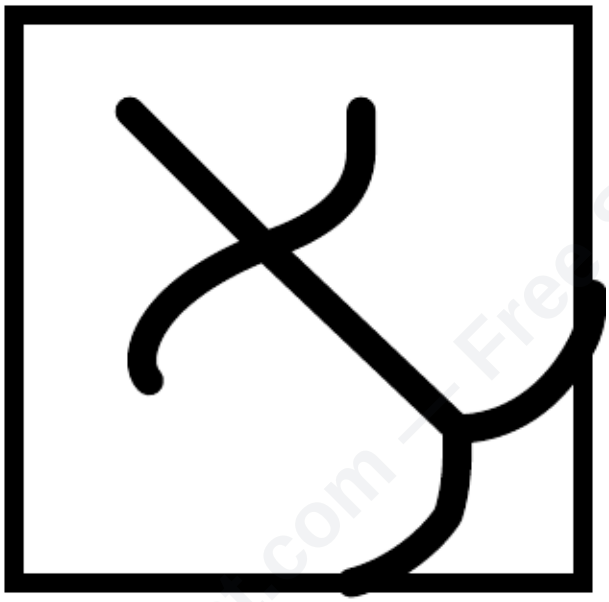


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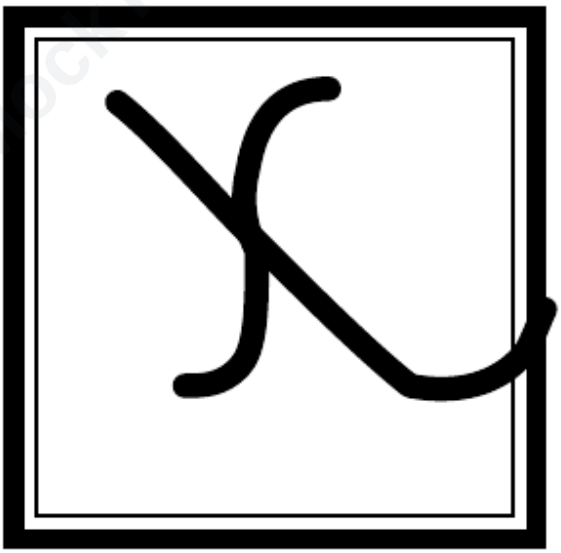


3.

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4.



A. 1

B. 2

C. 3

D. 4

(a) A

(b) C

(c) D

(d) B

Q54. Rampal told Arjun, “Yesterday I defeated the only brother of the daughter of my grandmother. ‘Whom did Rampal defeat?

A. Son

B. Father

C. Brother

D. Father-in-law

(a) D

(b) A

(c) C
(d) B

Q55. The Battle of Gulnabad was led by Mahmud Hotaki and fought in the year _____.

A. 1770
B. 1722
C. 1712
D. 1702

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

Q56. Apollo 11, the first artificial satellite that landed humans on the moon, was launched in which year?

A. 1975
B. 1968
C. 1969
D. 1958

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

Q57. The smallest number that is completely divisibly by 6, 8, 12 and 16 is –

A. 48
B. 24
C. 64
D. 80

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

Q58. Name the committee appointed by Rajiv Gandhi in 1986 on "Revitalization of Panchayati Raj Institutions for Democracy and Development".

A) Ashok Mehta Committee.
B) L.M. Singhvi Committee.
C) G.V.K. Rao Committee.
D) Balwant Rai Mehta Committee.

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

Q59. _____ are a mountain range that runs almost parallel to the western coast of the Indian peninsula, and is one of the eight “hottest hotspots” of biological diversity in the world sometimes called the “Great Escarpment of India”.

A. Eastern Ghats
B. Western Ghats
C. Himalayas
D. Satpura Range

(a) C
(b) D

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(c) A
(d) B

Q60. A man, rowing a boat, covers a distance of 16 km in two hours downstream. He covers half the distance in the same amount of time when rowing upstream. Calculate the speed of the stream.

A. 4 km/hr
B. 2 km/hr
C. 3 km/hr
D. 1 km/hr

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

Q61. Match the Correct Memory Units

a.	**4 bit**	**p.**	**1 MB**
b.	1024 KB	q.	1 byte
c.	1024 TB	r.	1 nibble
d.	8 bit	s.	1 PB

A. a – r, b – p, c – s, d - q
B. a – p, b – s, c – q, d – r
C. a – r, b – s, c – q, d – p
D. a – r, b – q, c – s, d - p

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

Q62. Read the statement the select a conclusion from the given alternatives:

Statement:

The official secret Act (OSA) enacted by the ‘ABC’ Government in the year 1930 seems to be one of the major sources of corruption in the country ‘X’.

Conclusions:

I. The Official Secret Act has to be abolished immediately to put an end to the corruption in the country ‘X’.

II. The ‘ABC’ Government had an intention of encouraging corruption in the Government offices.

A. only conclusion I follows.
B. only conclusion II follows
C. either I or II follows
D. neither I nor II follows.

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

Q63. After whose name the AMRUT yojana started?

A. Mahatma Gandhi
B. Atal Bihari Vajpayee
C. B.R. Ambedkar
D. Indira Gandhi

(a) A

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

Q64. Find the maximum area of a square field which is surrounded by a rope of 400 m.

A. 5000 m²
B. 6250 m²
C. 4000 m²
D. 10000 m²

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

Q65. Read the statements and select a conclusion from the given alternatives:

Statement:
The minimum qualification for this job is MTECH.
However, candidates who have appeared for the final year of MTECH can also apply.
Conclusions:
I. All candidates who have yet to post graduate will be there in the list of selected candidates
II. All candidates having MTECH as their minimum qualification will be there in the list of selected candidates.

A. only conclusion I follows
B. only conclusion II follows
C. either I or II follows
D. neither I nor II follows

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

Q66. If $19x^2 = 100^2 – 90^2$, then find the value of x.

A. 10
B. 9
C. 11
D. 12

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

Q67. _____ a professional Tennis player, became the new goodwill ambassador for the UN Fund for Children.

A. Sania Mirza
B. Serena Williams
C. Roger Federer
D. Novak Djokovic

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

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Q68. Rahul and Raghav are 110 km apart from each other and they started horse-riding towards each other at the same time at a speed of 20 km/hr and 24 km/hr. After how many hours of riding will they be a distance of 22 km?

A. 1 hour

B. 1 hour 30 min

C. 2 hour

D. 2 hours 30 min

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

Q69. The lady who played an important role in the awakening of Indian women to fight for independence and who is also known as Nightingale of India is –

A. Vijaya Lakshmi Pandit

B. Durga Bai Deshmukh

C. Sarojini Naidu

D. Madam Bhikaiji Cama

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

Q70. A man buys 10 oranges for Rs. 3 and sells 8 for Rs. 3. Calculate his gain percent.

(a) 25
(b) 20
(c) 27
(d) 30

Q71. A motorist knows four different routes from Jaipur to bhangarh. From Bhangarh to Alwar he knows three different routes and from Alwar to Carlisle he knows two different routes. How many routes does he know from Jaipur to Carlisle?

A. 12

B. 24

C. 48

D. 60

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

Q72. The expenditure of a person increases by Rs. 50000 every month in February and March. If his expenditure in January was Rs. 50000, calculate the average expenditure (in Rs.) from January to March.

A. 100000

B. 150000

C. 75000

D. 50000

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

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Q73. An example of Full Duplex communication channel.

A. Radio Broadcasting

B. Television Broadcasting

C. Walkie-Talkie

D. Telephone conversation

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

Q74. Ravi, Rohan and Rajesh alone can complete a work in 10, 12 and 15 days respectively. In how many days can the work be completed, if all three work together?

A. 4 days

B. 5 days

C. 3 days

D. 8 days

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

Q75. In an examination, a student gets on average 76 marks. The total marks for five subjects are 500. His marks in 4 subjects are mentioned; calculate the marks obtained by the student in Mathematics marked as “x” in the table below.

Subject	Maths	English	Sanskrit	Science	Social Science
Marks Obtained	x	87	83	78	57

A. 80

B. 83

C. 72

D. 75

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

Q76. If the selling price is Rs. 72 and gain percentage 20%, calculate the cost price.

A. Rs. 60

B. Rs. 58

C. Rs. 61

D. Rs. 59

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

Q77. Which of the following is not true regarding symbols used in chemistry?

A. These are short-hand notations used for naming chemical compounds.

B. A symbol is made up of a single letter or two letters.

C. This style of nomenclature was first used by James Chadwick and J.J. Thomson

D. The symbol for Chlorine is Cl.

(a) A

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

Q78. What fraction of 2 hours is 12 seconds?

A. 1/200
B. 1/300
C. 1/400
D. 1/600

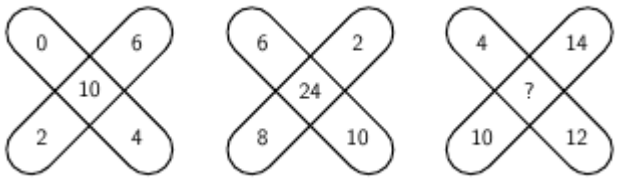
(a) B
(b) C
(c) A
(d) D

Q79. Who has been appointed as first-ever Ombudsman (Ethics officer) of BCCI?

A. Justice A.P. Shah
B. Justice Anil R. Dave
C. Justice Dipak Misra
D. Justice Jagdish Singh Khehar

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

Q80. Insert the missing character depicted by '?'



A. 36
B. 48
C. 38
D. 30

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

Q81. If the average age of 20 students in Class I is 10 years and the average age of 25 students in Class II is 12 years, find the average age (in years) of all students.

A. 11
B. 11.111
C. 10.50
D. 10.85

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

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Q82. Which part of the human brain is the centre for intelligence, memory and emotions?

A. Hypothalamus

B. Cerebrum

C. Corpus Callosum

D. Mid Brain

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

Q83. Two numbers are in ratio 3 : 4. When 3 is subtracted from the numbers, the ratio becomes 2 : 3. Find the sum of the numbers.

A. 16

B. 20

C. 21

D. 22

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

Q84. If the area of an equilateral triangle is $44\sqrt{3}$ sq. units, calculate the ratio of the radii of its incircle and the radii of its circumcircle.

A. 1/ 2

B. 1/ 4

C. 1/ 3

D. 2/ 3

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

Q85. Calculate the principal if an amount of Rs. 441 is received on compound interest at the rate of 5% per annum after 2 years.

A. Rs. 400

B. Rs. 390

C. Rs. 380

D. Rs. 350

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

Directions

Direction: Answer the question based on the following information:

Six colleagues are sitting in a circle and are facing the center of the circle. Diana is between Pushkar and Padma. Priyanka is between Mahesh and Lucky. Pushkar and Mahesh are opposite to each other.Pushkar is sitting right of Diana.

Q86. Who are the neighbours of Mahesh?

A. Pushkar and Diana

B. Diana and Priyanka

C. Priyanka and Padma

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D. Lucky and Priyanka

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

Q87. Who is just right to Padma?

A. Diana
B. Lucky
C. Pushkar
D. Priyanka

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

Q88. Who is sitting opposite to Priyanka?

A. Pushkar
B. Dianna
C. Padma
D. Lucky

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

Q89. Directions: There are three statements which are followed by four conclusions. Choose the conclusions which logically follow from the given statements:

Statements:

Some cups are pins.

Some pins are covers

All the covers are pens.

Conclusions:

(1) Some pens are pins

(2) Some covers are cups

(3) No cup is pin

(4) Some pins are cups

A. Only (1) and (2)
B. Only (2) and (4)
C. Only (2) and (3)
D. Only (1) and (4)

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

Q90. Four words are given below among which three are similar in some respects. Find out the odd one which is different from the rest.

A. Cap
B. Veil
C. Helmet

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D. Turban

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

Q91. If sinθ = 40/41, then cotθ is

A. 40/9
B. 9/40
C. 9/41
D. 41/9

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

Q92. _____ is one of India's largest palaces, which is also known as 'Amba Villa' and it was the residence of the Wodeyar monarch.

A. Mysore Palace
B. Leh Palace
C. Mattancherry Palace
D. Hampi

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

Q93. If in a certain language, SCARCE is coded as CSRAEC, how is STABLE coded in that code?

A. TBSAEL
B. BTSAEL
C. BTELSA
D. TSBAEL

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

Q94. Direction:

There are three statements which are followed by four conclusions. Choose the conclusions which logically follow from the given statements.

Statements:

Some images are answers.

Some answers are videos

All the videos are poems.

Conclusions:

(1) Some videos are answers

(2) Some poems are images

(3) All the images are poems

(4) Some poems are answers.

A. Only (1) and (2)
B. Only (1) and (4)

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C. Only (1) and (3)
D. Only (2) and (4)

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

Q95. In a certain code language, if CHECK is coded as 97294 and QUERY is coded as 51238, then CHERRY will be coded as?

A. 729833
B. 792338
C. 972338
D. 338972

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

Q96. Human blood platelets release _____ which helps in clotting of blood.

A. Prothrombin
B. Fibrin
C. Fructose
D. Sucrose

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

Q97. Light can travel _____ km in a year.

A. 5 billion
B. 10 billion
C. 5 trillion
D. 10 trillion

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

Q98. What was the major decision that took place in the 1987 Montreal Conference?

A. Developed countries will completely ban CFC production by 2000
B. Developed countries will completely ban CFC production by 2010
C. Developing countries will completely ban CFC production by 2000
D. Developing countries will completely ban CFC production by 2020

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

Q99. The major objective of INSAT series of satellites is to facilitate.

A. TV relay to remote areas
B. Mobile network in remote areas
C. Internet services

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D. Mapping locations through GPS

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

Q100. A good cricket fielder while catching a fast moving ball moves his hand along with the ball because _____

A. he decreases the time of contact therefore increasing the force of contact.

B. He increases the time of contact thereby reducing the force of contact.

C. He is afraid to take the ball and thus takes his hand out.

D. He decreases the time of contact therefore reducing the force of contact.

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

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (a) D

Introducing a man, Shamita said, “He is the only son of my mother’s mother.”

Mother’s mother is maternal grandmother and son of maternal grandmother is maternal uncle. So, the man is maternal uncle of Shamita or Shamita is the niece of the man.

Hence, ‘niece’ is the correct answer.

Q2. Answer: (a) D

Given: 2x + 3 = 9

Calculation:

=> 2x + 3 = 9

=> 2x = 6

=> x = 3

=> So, 3x + 2 = 3 × 3 + 2 = 11

Therefore Required Answer is 11

Q3. Answer: (d) B

Option 4 is correct, i.e. root.

• Radish is an example of tap root fusiform.

• Modified tap root is the edible component of radish.

• The taproot is the primary and dominant root on a plant with a taproot network.
• A taproot is usually straight, and very dense.
• This is tapering in shape and grows downward directly.
• There are different types of adapted tap roots, such as fusiform, napiform, conical and tuberous roots.

Q4. Answer: (c) D

Pointing to a man in a photograph, Gunjan said, “His mother’s only daughter is my mother.

Man’s mothers only daughter is sister of the man, and the man’s sister is mother of Gunjan. So, the man is maternal uncle of Gunjan or Gunjan is niece of the man.

Hence, Gunjan is niece of that man.

Note: Certain changes are done in the question as it was erroneous.

Q5. Answer: (a) A

Option 1 is correct, i.e. Charge may accumulate on the metal surface and there is danger of getting a shock.

One should use porcelain and not metal containers in a microwave oven because:

• Porcelain is fired at extremely high temperatures-to the point of water boiling up. That means porcelain won't have any water inside it.
• Porcelain vessels are better conductors of heat and thus food gets cooked quickly.
• Porcelain vessels are cheaper than the metal containers.

Q6. Answer: (b) B

Option 2 is correct, i.e. Badminton.

Badminton: Cup and Trophies
• Sudirman Cup
• Rahmatullah Cup (National Team Men)
• Chadda Cup (National Team Women)
• Thomas Cup (World Team, Men) starting from 1948
• Uber Cup (World Team women) starting from 1956–57
• Wills Cup
• Amrit Diwan Cup
• Konica Cup
• Yonex Cup
• Vikas Topiwala Challenge Cup (National Men)
• Olympian Challenge Cup (National Women)
• Narang Cup (National Junior Men) Shafi Kuraishi Cup (National Junior Team Women)
• Mayor's Cup
• 555 World Cup
• China Cup
• Federation Cup
• All India Badminton Association Cup (National Women Double Badminton)
• Kolkata Badminton Cup (National Men Double)

Q7. Answer: (b) B

Option 2 is correct, i.e. 1987.

• The Augmented Satellite Launch Vehicle, or Advanced Satellite Launch Vehicle, also known as ASLV, was a five-stage solid-fuel small-lift launch vehicle designed by the Indian Space Research Organization (ISRO) for placing 150 kg of satellites in LEO.

• The ASLV made four attempts, one of which was successful, two of which failed to enter orbit, and a third reached a lower than expected orbit that rapidly decayed. On 24 March 1987, the type made its maiden flight, and its final flight on 4 May 1994.

• All four ASLV launches occurred from the ASLV Launch Pad at the Sriharikota Range.

Q8. Answer: (b) A

LCM of 1 hour, 2 hours, and 3 hours = 6 hours

Therefore All the clock's alarm together at an interval of 6 hours.

They all alarmed together three hours before.

Therefore They will again alarm together after 3 hours

Detailed solution:

Given:

Three clocks are designed to alarm every hour, two hours, and three hours respectively.

They all alarmed together three hours before:

Calculation:

3 Clocks are designed to alarm every 1, 2 and, 3 hour

Such that clock A will alarm every hour, B will alarm once in 2 hours, C will alarm once in 3 hours.

Starting from 12 pm,

A alarm = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

B alarm = 2, 4, 6, 8, 10, 12

C alarm = 3, 6, 9, 12

Common alarm at 6, 12

They all alarmed together three hours before.

Therefore The common alarm will be 3 hours later.

Q9. Answer: (c) B

Option 3 is correct, i.e. World Anti-Doping Agency.

• World Anti-Doping Agency is the international independent agency whose key activities include scientific research, education, development & monitoring of anti-doping capacities and code in all sports and all countries.

• The World Anti-Doping Agency (WADA) is headquartered in Montreal, Canada.

• It is a foundation created through a collective initiative led by the International Olympic Committee (IOC).

• It was set up on November 10, 1999 in Lausanne, Switzerland, as a result of what was called the "Declaration of Lausanne", to promote, coordinate and monitor the fight against drugs in sports.

• Effective 1 January 2020, Witold Bańka commenced in his role as President of the World Anti-Doping Agency (WADA).

Q10. Answer: (d) C

Option 4 is correct, i.e. Martina Hingis & Leander Paes.

• The 2015 Wimbledon Championships was a tennis tournament that was played June 29 to July 12, 2015.

• The tournament was played at All England Lawn Tennis Club and Croquet Club in Wimbledon, London, UK.

• Men's Singles Title: Defending Serbian champion Novak Djokovic won the 2015 Wimbledon Men's Singles championship.

• Women's Singles Title: At the 2015 Women's Singles Wimbledon championship, Serena Williams of the United States prevailed.

• Women's Doubles Title: Sania Mirza (India) and the pair Martina Hingis (Switzerland) won the 2015 Doubles Wimbledon Championship for women.

• Men's Doubles Title: The 2015 men's Doubles Wimbledon Title was won by Jean-Julien Rojer (Netherlands) and Horia Tecău (Romania).

• Mixed Doubles Title: Leander Paes (India) and the pair Martina Hingis (Switzerland) captured the 2015 Wimbledon Mixed Doubles trophy.

Q11. Answer: (a) B

Column 1: 12 × (18 ÷ 3) = 72

Column 3: 16 × (32 ÷ 4) = 128

Similarly,

Column 2: 14 × (24 ÷ ?) = 112

On solving, we get ? = 3

Hence, ‘3’ is the correct answer.

Q12. Answer: (a) D

Option 1 is correct, i.e. Only 1 and 2.

• The UAV stands for Unmanned Aerial Vehicle.

• The DRDO Nishant was an Unmanned Aerial Vehicle (UAV) developed for the Indian Armed Forces by the Aeronautical Design Establishment of India (ADE), a branch of the Defense Research and Development Organization (DRDO).

• Lakshya is an Indian high speed target drone system remotely piloted, developed by DRDO's Aeronautical Development Establishment (ADE). A Lakshya-1 version is used to conduct discreet battlefield and target acquisition aerial reconnaissance.

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Extra facts:

• India' first private sector unit for manufacturing unmanned aerial vehicles (UAVs) opened at Adani Aerospace Park in Hyderabad.

• The Adani Aerospace Park facility has been built by the Adani Group and Israel-based Elbit Systems.

• The facility will develop 'Hermes 900' medium altitude long-endurance UAVs for the Indian and global markets.

Q13. Answer: (c) B

Option 3 is correct, i.e. Hepatology.

• Hepatology: It is branches of medical science deals with the study and treatment of the liver

• Helcology: The study, pathology, and treatment of ulcers.

• Heterology: A lack of correspondence of apparently similar bodily parts due to differences in fundamental makeup or origin heterology in nucleic-acid base pairs in phenotypically similar yeasts.

• Geriatrics: The branch of medicine or social science dealing with the health and care of old people.

• Podopediatrics is a speciality of podiatric medicine which focuses on the treatment of lower limb medical problems in children.

• Nephrology is the study of the kidney in the Human body.

• Pulmonology is the study of the lungs.

Q14. Answer: (d) D

Average = sum of observation/ no. of observation

From the table,

Average production of 1996 and 1997 = (4000000 + 6000000)/2 = 5000000 tonnes

Average production of 2000 and 2001 = (7500000 + 5000000)/2 = 6250000 tonnes

Average Production of 1999 and 2000 = (6500000 + 5000000)/2 = 5750000 tonnes

Average Production of 1998 and 2000 = (4500000 + 5000000)/2 = 4750000 tonnes

Average production of 1995 and 2001 = (2500000 + 7500000)/2 = 5000000 tonnes

Therefore Average production of 1996 and 1997 was exactly equal to the average production of 1995 and 2001.

Q15. Answer: (b) D

Percentage increase in 1996 = (40 – 25)/25 × 100% = 60%

Percentage increase in 1997 = (60 – 40)/40 × 100% = 50%

Percentage increase in 1999 = (65 – 45)/45 × 100% = 44.44%

Percentage increase in 2001 = (75 – 50)/50 × 100% = 50%

Percentage increase in 2002 = (80 – 75)/75 × 100% = 6.67%

Therefore In 1996 percentage increase in production as compared to the previous year was maximum

Q16. Answer: (b) C

Production of Pesticides in 1995 = 2500000 tonnes

Production of Pesticides in 2002 = 8000000 tonnes

Therefore Percentage increase = (8000000 – 2500000)/2500000 × 100% = 220%

Q17. Answer: (d) C

Option 4 is correct, i.e. M Veerappa Moily.

• On 10 August 2015, the President of India, Pranab Mukherjee, presented Dr M Veerappa Moily, Member of Parliament (Lok Sabha) in New Delhi, with the 24th Saraswati Samman for the year 2014. He has won the award for his Kannada-written epic Sri Ramayana Mahanveshanam.

• Govind Mishra is an Indian novelist, who wrote over 53 novels. He was also an Indian Revenue Service civil servant, and retired in 1997 as Chairperson, Central Board of Direct Taxes.

• Sugathakumari is an Indian poet and activist in Kerala, South India, who has been at the forefront of environmental and feminist movements.

• Dilip Parulekar is a Goa State Indian politician. He is a two-term Goa Legislative Assembly member representing the Saligao constituency. Parulekar was a minister in the Goa-led government headed by Laxmikant Parsekar. Its portfolios included the production of women and girls, tourism, ports and the Protocol.

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Q18. Answer: (a) C

Option 1 is correct, i.e. Bose-Einstein Condensate (BEC).

• Conventionally we are aware of three states of matter Solid, Liquid and Gas. But over the years scientists have been discussing two additional states of matter i.e. Plasma state and Bose-Einstein Condensate.

• Plasma is the state in which particles are in the Super energized and super excited state.

• Bose-Einstein condensate is formed when particles at low densities are cooled to super-low temperature like absolute zero (-273.5 degree Celsius).

• This concept was first put by S N Bose and later developed by Albert Einstein and thus came to be known as Bose-Einstein condensate.

• In 2001 Eric Cornell, Carl E. Weiman, and Wolfgang were awarded the Nobel for achieving this state.

Q19. Answer: (c) D

The trained unmarried lecturers in the college are represented by the number which lies in the intersection of triangle and rectangle, = 4.

Hence, '4' is the correct answer.

Q20. Answer: (c) A

7 lies in the intersection of triangle and circle, so it represents married population lecturers in college, i.e, 'A'.

Hence, option '3' is the correct answer.

Q21. Answer: (b) C

Trained married lecturers in the college lies in the intersection of triangle, circle and rectangle, i.e, number '5'.

Hence, option '2' is the correct answer.

Q22. Answer: (a) D

The relation is:

A. Steel : Utensils → Utensils are made up of steel.

B. Bronze : Statue → Statues are made of bronze.

C. Duralumin : Aircraft → Aircrafts are made of duralumin.

D. Wood : Rails → Rails are made of iron and steel and not wood.

Hence, 'Wood : Rails' is the odd one out.

Q23. Answer: (c) B

Concept used:

The least number must be subtracted from 98534 to get divisible by 824 will be the remainder when 98534 is divided by 824.

Calculation:

Dividing 98534 by 824, we get 119 as quotient and 478 as remainder

We can also say that, 98534 = 824 × 119 + 478

Therefore The least number must be subtracted from 98534 to get a number exactly divisible by 824 is 478

Q24. Answer: (c) A

Given:

Let the average price of a pen be Rs x

Average price of pencil = Rs. 2.5

Formula:

Average = sum of observation/ Number of observation

Calculation:

According to the question,

=> 20x + 46 × 2.5 = 235

=> 20x = 235 – 115

=> x = 120/20 = 6

Therefore Average price of a pen = Rs 6

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Q25. Answer: (b) A

The correct answer is West Bengal.

Key Points

• The headquarters of Ramakrishna Math and Ramakrishna Mission are situated in an area named Belur in the district of Howrah, West Bengal, India.

• The entire campus of the headquarters is popularly known as 'Belur Math'. Sprawling over forty acres of land on the western bank of the river Hooghly (Ganga), the place is an hour's drive from Kolkata.

• The organizations were brought into existence by Sri Ramakrishna (1836-1886), the great 19th-century saint from Bengal who is regarded as the Prophet of the Modern Age, and Sri Ramakrishna's chief disciple, Swami Vivekananda (1863-1902), one of the foremost thinkers and religious leaders of the present age, who is regarded as 'one of the main moulders of the modern world', in the words of an eminent Western scholar A.L. Basham.

Q26. Answer: (d) D

Option 4 is correct, i.e. Zinc.

• Galvanization is a process of applying a protective layer of zinc to iron or steel to prevent rusting.

• Rusting is defined as the process of slow eating away due to the attack of oxygen and moisture on its surface.

• Rusting can be avoided by Paint, Oiling, and Galvanization.

Extra facts:

• Iron plus oxygen plus water vapour gives iron oxide. In areas that have higher humidity, the rusting process takes place faster as the content of moisture in the air is higher.

• This process of rust formation in the presence of oxygen and water or water vapour is called rusting.

• Rusting of Iron takes place due to the redox reaction.

• Rust is an iron oxide, a red oxide formed by the redox reaction of iron and oxygen in the presence of water or air moisture.

• $Fe + O2 \rightarrow Fe2O3$ (Iron (III)oxide)

Q27. Answer: (b) B

The least possible venn diagram is:

(1) Some bats are doors → True (It is definite)

(2) Some clocks are keys → False (It is not definite)

(3) All the keys are doors → False (It is not definite)

Hence, only conclusion '1' follows.

Q28. Answer: (b) B

Moving in clockwise direction, starting from 1, cube series is followed.

$1^3 = 1$, $2^3 = 8$, $3^3 = 27$ and $4^3 = 64$.

Hence, '64' is the correct answer.

Q29. Answer: (c) B

$\sqrt{5} = 2.236$

Therefore $\sqrt{5}/2 = 2.236/2 = 1.118$

Q30. Answer: (c) C

Option 3 is correct, i.e. West Bengal.

Important Points

• The cultivatio n of jute in India is mainly confined to the eastern region of the country.

• The jute crop is grown in nearly 83 districts of seven states - West Bengal, Assam, Orissa, Bihar, Uttar Pradesh, Tripura and Meghalaya.

• West Bengal alone accounts for over 50 percent raw jute production.

• The leading world's jute producing countries are India, Bangladesh, China and Thailand.

• India is the world's largest producer of raw jute and jute goods, contributing to over 50 percent and 40 percent respectively of global production.

• Jute crop requires a humid climate with temperature fluctuating between 24 degree Celsius and 38 degree Celsius.

• Minimum rainfall required for jute cultivation is 1000 mm.

• New grey alluvial soil of good depth receiving silt from annual floods is most suitable for jute growth.

• How ever, jute is grown widely in sandy looms and clay loams.

Q31. Answer: (b) D

Option 2 is correct, i.e. Kannada.

• The 92nd Amendment of the Constitution of India is officially known as The Constitution (Ninety-second Amendment) Act, 2003.

• It amended the 8^(th) Schedule to the Constitution and included Bodo, Dogri, Maithili, and Santhali languages in it.

• Thus taking the count of languages listed in the schedule to 22.

Additional Information

• Sindhi language was added by the 21st Amendment Act of 1967.

• Nepali, Manipuri, and Konkani were added by the 71st Amendment Act of 1992.

Q32. Answer: (a) D

No. Of games won by the player = (18 – 12) = 6

Therefore required decimal = 6/18 = 0.333

Q33. Answer: (c) Magenta

Option 3 is correct, i.e. Magenta.

• Primary colours are those colours which when mixed in specific proportions can form any color.

• The spectral colours i.e. blue, red and green are the primary colours.

• Secondary colours such as yellow, cyan, magenta, etc. can be produced by mixing two primary colours in the right proportion.

• Any two colours which when added produce white light are known as complementary colours.

• We get Magenta as a secondary colour by mixing the primary colours red and blue.

Q34. Answer: (a) C

The logic is:

Similarly,

Hence, 'YLLVEI' is the correct answer.

Q35. Answer: (b) D

Calculation:

0.00000729/0.00000027

=> (729 × 10^(– 8))/(27 × 10^(– 8))

=> 729/27

Therefore 27

Q36. Answer: (c) D

a/b = ¼

=> a = 2

=> 2/b = ¼

=> b = 8

Now,

b/c = 1/8

=> 8/c = 1/8

=> C = 64

Q37. Answer: (c) D

As we know,

Value of cos 0° = 1

Q38. Answer: (d) D

Statement:

Company 'X' had asked its employees to declare income and assets but it has been strongly opposed by the employees' his/her union and no employee is going to declare his/her income.

Conclusions:

I. The employees of the company 'X' do not seem to have any additional income besides their salary. → False

The statement gives no details about the income or income benefits or any such parameter of the employees.

II. The employees' union want all the senior officer to declare their income first. → False

The statement gives no information why the employees are opposing. So, the conclusion cannot be concluded as true.

Hence, neither I nor II follows.

Q39. Answer: (b) D

Option 2 is correct, i.e. B.R. Ambedkar.

• Prime Minister Narendra Modi today released two commemorative coins, as part of the 125th birth anniversary year celebrations of Dr B.R. Ambedkar.

• The coins, which are of '10-rupee' and '125-rupee' denomination, were issued by PM on the Mahaparinirvan Divas of Babasaheb Ambedkar.

• The Prime Minister said Dr Babasaheb Ambedkar and the Constitution of India should always be discussed and talked about in this country, and the observance of Constitution Day on November 26th, was a step in this direction.

• PM Modi also appreciated Dr Ambedkar's vision on subjects such as women empowerment, India's federal structure, finance and education.

Q40. Answer: (b) 16 cm

Diagram

In the figure, AB = x cm, BC = (x + 4) cm and AC = (x + 8) cm

According to the question,

AC is hypotenuse, AB = x cm is smaller side and BC = (x + 4) cm is bigger side

In right angle triangle,

=> (hypotnuese)^2 = (Base)^2 + (perpendicular)^2

=> $(x + 8)^2 = x^2 + (x + 4)^2$

=> $x^2 + 16x + 64 = x^2 + x^2 + 8x + 16$

=> $x^2 – 8x – 48 = 0$

=> $x^2 – 12x + 4x – 48 = 0$

=> $x(x – 12) + 4(x – 12) = 0$

=> $(x – 12)(x + 4) = 0$

=> x = 12 or – 4

Therefore Length of the bigger side = x + 4 = 12 + 4 = 16 cm

According to the question:

AC is hypotenuse, AB = x cm is smaller side and BC = (x + 4) cm is bigger side

So, though the AC bigger among 3 but here according to the question we are only comparing among other 2 side i.e. base and perpendicular

Q41. Answer: (d) C

Option 4 is correct, i.e. Laterite Soil.

Key Points

Laterite soil

• It is found along the edge of the plateau in the east covering small parts of Tamil Nadu, Odisha, a small part of Chotanagpur in the north, and Meghalaya in the north-east.

• It is Reddish to yellow in colour.

• It is unsuitable for agriculture but crops such as coffee, rubber, cinchona, cashew, coconut, etc. are grown on this soil.

• This soil is formed due to the weathering of laterite rocks caused by high temperatures and heavy rainfall with alternate dry and wet spells.

Extra facts:

Additional Information

Alluvial Soil:

• These soils are widespread in the Northern Plains and valleys.

• They are depositional soils, formed mainly due to silt deposited by Indo-Gangetic-Brahmaputra Rivers.

• In the Upper and Middle Ganga Plain, two types of alluvial soils have developed, namely, Khadar (New alluvium) and Bhangar (Old alluvium).

Red Soil:

• The red soil is red in color because of the high iron oxide content in it.

• It is formed by weathering the crystalline and metamorphic mixture of clay and sand.

• It is found in the eastern part of the peninsular region covering Chotanagpur Plateau, Odisha, eastern Chhattisgarh, etc.

• It is suitable for the production of crops such as wheat, rice, millets, pulses, etc.

Regur Soil:

• The Black soil is also known as regur soil.

• It covers a major part of the Deccan plateau including the states of Andhra Pradesh, Gujarat, Madhya Pradesh, Maharashtra, and Tamil Nadu.

• It is also known as black cotton soil.

• These are impermeable, deep, and clayey are rich in alumina, magnesia, iron, and lime.

• Some of the crops grown on it include cotton, jowar, wheat, and linseed, etc.

Q42. Answer: (d) D

The option figure that will complete the pattern is shown below:

Hence, option 4 is the correct answer.

Q43. Answer: (c) A

Option 3 is the correct, i.e. The Constitution says that the Chief Minister shall be appointed by the Chief justice of the High Court. (Which is not true)

Power/function of Chief Minister:

• The governor elects only those people as ministers, who have been nominated by the Chief Minister.

• The Chief Minister is the chairman of a state's Planning Board.

• The governor of a state cannot dismiss a Chief Minister as long as the CM receives the support of the majority in Vidhan Sabha(state's Lower House).

Q44. Answer: (a) D

Option 1 is correct, i.e. MODEM.

• A modem is a hardware device that allows a computer to send and receive data over a telephone line or a cable or satellite connection.

• MODEM stands for modulator-demodulator.

• A modem is used for transmitting and receiving data over a communication channel, such as twisted-pair telephone lines, coaxial cables, and optical fibers.

• At the source, the modulation technique is used to convert the analog signal to digital.

• At the receiver, demodulation is used to convert the digital signal back to analog.

Q45. Answer: (a) B

$\Rightarrow x^2 + 7x + 10$

$\Rightarrow x^2 + 5x + 2x + 10$

$\Rightarrow x(x + 5) + 2(x + 5)$

$\Rightarrow (x + 5)(x + 2)$

Q46. Answer: (b) A

Option 2 is correct, i.e. Lord Cornwallis.

• Lord Cornwallis (1786-1793) was considered as a father of Modern-day Civil Services for reforming and modernizing colonial administration.

• He also introduced Permanent Settlement of revenue which was also called a Zamindari System.

• Lord Cornwallis surrendered at Yorktown in the USA during the American Revolutionary War.

• American Revolutionary war was also called as American War of Independence.

• Hyder Ali died in 1782 due to Cancer during the Second Anglo-Mysore War(1780-1783).

Extra facts:

• Warren Hastings was the first Governor-General of India (bengal) from 1773 to 1785.

• During the reign of Warren Hastings, important acts like the Regulating act of 1773 and the Pitts India Act of 1784 were passed.

• Lord Wellesley introduced Subsidiary Alliance by virtue of which the Indian kingdoms lost their sovereignty to the English during 1798.

• The first Governor General of India was a British statesman and soldier, Lord William Bentinck.

• The office with the title of Governor-General of India came into existence after the Saint Helena Act 1833 (or Government of India Act 1833).

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Q47. Answer: (b) A

Option 2 is correct, i.e. Certified Emission Reductions.

• Certified emission reductions or CERs are electronic certificates issued for greenhouse gas emission reductions from clean development mechanism (CDM) project activities or programmes of activities (PoAs) in accordance with the CDM rules and requirements.

• Each CER is equivalent to one metric tonne of carbon dioxide (CO2) avoided or removed from the atmosphere.

• The environmental benefit of CERs can be claimed to offset or compensate your own greenhouse gas emissions, among other uses.

• The environmental benefit of mitigation activities is represented in offset certificates. The offset certificates issued by the clean development mechanism (CDM) are the certified emission reductions (CERs).

Q48. Answer: (c) C

Option 3 is correct, i.e. Paris.

• The 2015 United Nations Climate Change Conference, COP 21 was held in Paris from November 30 to December 11.

• It was the 21st yearly session of the Conference of the Parties to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 11th session of the Meeting of the Parties to the 1997 Kyoto Protocol.

• The conference objective is to achieve a legally binding and universal agreement on climate, from all the nations of the world.

Q49. Answer: (d) A

Let, the principal be x

=> x × (1 + 5/100)^4 = 431.01 => x × (1.05)^4 = 431.01 => x = 431.01/(1.05)^4

=> x = 354.5, The principal = Rs 354.5

Q50. Answer: (b) B

Ratio of time of A, B and C

=> 4 : 5 : 6

Ratio of time is inversely proportional to efficiency (when work is same)

Ratio of work efficiency of A,B and C,

=> 1/4 : 1/5 : 1/6

=> 60/4 : 60/5 : 60/6

=> 15 : 12 : 10

Ratio of efficiency is directly proportional to Wages

So, Ratio of share of wages of A, B and C = 15 : 12 : 10

let the ratio be x

=> Total share = 777

=> 15x + 12x + 10x = 777

=> 37x = 777

=> x = 21

=> share of A = 15x = 15 × 21 = 315

Therefore Required answer is 315

Q51. Answer: (d) B

Short Trick:

Cost price of the pendrive = Rs. 1000 × 90/100 × 85/100 = Rs. 765

Therefore Total cost = Rs. (765 + 35) = Rs 800

Therefore Gain percent = [(1000 – 800)/800] × 100% = 25%

Detailed Solution:

Marked price of the pen drive = Rs. 1000

Therefore Price after discount of 10% = Rs. 1000 – (1000 × 10/100) = Rs. 900

Therefore Price after another discount of 15% = Rs. 900 – (900 × 15/100) = Rs. 765

Therefore Total cost = Rs. (765 + 35) = Rs. 800

Selling price of pendrive = Rs. 1000

Therefore Gain percent = [(1000 – 800)/800] × 100% = 25%

Q52. Answer: (d) D

The logic is:

E	X	E	C	U	T	E
5	3	5	1	6	9	5

S	C	R	I	P	T
7	1	4	2	7	9

Similarly,

E	X	I	S	T
5	3	2	7	9

Hence, '53279' is the correct answer.

Q53. Answer: (c) D

The option figure that will complete the pattern is shown below:

Hence, option 3 is the correct answer.

Q54. Answer: (d) B

Rampal told Arjun, "Yesterday I defeated the only brother of the daughter of my grandmother.

Rampal defeated his grandmother's son who is either his uncle or father.

In option, father is given, which confirms that Rampal defeated his father.

Hence, 'father' is the correct answer.

Q55. Answer: (b) B

Option 2 is correct, i.e. 1722.

• The Battle of Gulnabad was fought between the military forces from Afghanistan of the Hotaki Dynasty and the army of the Safavid Empire.

• It was fought on 8 March 1722 in Isfahan, Iran.

• The Afghans won the war and began their conquest of the Safavid Empire.

• Numbers and casualty figures of the Gulnabad battle are believed to be between 5, 000 and 15, 000 dead Safavid soldiers.

Q56. Answer: (c) C

Option 3 is correct, i.e. 1969.

• Since Apollo 11 was the first spaceflight to land humans on the Moon, Neil Armstrong was the first man on the Moon. On 20 July 1969, at 20:18 UTC, Americans Neil Armstrong and Buzz Aldrin landed.

• Six hours later, on 21 July, Armstrong walked onto the lunar surface, and Aldrin followed him next.

• Mission Objectives: Apollo 11 Moon Landing's primary objective was to fulfill a national target set by President John F. Kennedy on May 25, 1961: to perform a crewed lunar landing and return to Earth.

Q57. Answer: (d) A

Short Trick:

LCM of 6, 8, 12 and 16 = 48

Therefore 48 is the smallest number that is completely divisibly by 6, 8, 12 and 16.

Detailed Solution:

=> 6 = 2 × 3

=> 8 = 2 × 2 × 2

=> 12 = 2 × 2 × 3

=> 16 = 2 × 2 × 2 × 2

Therefore LCM of 6, 8, 12 and 16 = 2 × 2 × 2 × 2 × 3 = 48

Therefore 48 is the smallest number that is completely divisibly by 6, 8, 12 and 16.

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Q58. Answer: (c) B

Option 3 is correct, i.e. L.M. Singhvi Committee.

Key Points

● Panchayati Raj -

• It is a system of local self-government in India.

• It was put in force in 1992 through the 73rd amendment to the Indian Constitution.

• The system has three levels:

• Gram Panchayat (village level),

• Mandal Parishad or Block Samiti or Panchayat Samiti (block level),

• Zila Parishad (district level)

• The Panchayat Raj system was first adopted by the state of Rajasthan in Nagaur district on 2 Oct 1959.

• List of committees constituted for recommendations regarding Panchayati Raj in India: -

• Balwant Rai Mehta, 1957

• V.T. Krishnamachari, 1960

• Takhatmal Jain Study Group, 1966

• Ashok Mehta Committee, 1978

• G.V.K. Rao Committee, 1985

• Dr. L.M. Singhvi Committee, 1986

• P.K. Thungon Committee, 1989

• S. Mohinder Singh, 2013

Committee	Year	Recommendation
G.V.K Rao Committee	1985	The Zila Parishad should be the principal body in the Panchayati Raj System of India.
L.M Singhvi Committee	1986	Constitutional recognition of local self-government. committee appointed in 1986 by Rajiv Gandhi on “Revitalisation of Panchayati Raj Institution for Democracy & development”
Ashok Mehta Committee	1978	Two-tier system of Panchayati Raj Institutions (Mandal Panchayat and Zila Parishad).
Balwant Rai Mehta Committee	1957	The three-tier system of Panchayati Raj Institutions (Gram Panchayat, Panchayat Samiti and Zila Parishad).

Q59. Answer: (d) B

Option 4 is correct, i.e. Western Ghats.

• Western Ghats is also known as Sahyadri range which is a mountain range runs parallel to the western coast of the Indian peninsula.

• Sometimes it is also called the Great Escarpment of India.

• Western Ghats is a UNESCO World Heritage Site and is one of the 8 “hottest hot-spots” of biological diversity in the world.

• Anamudi (2, 695 m) is the highest peak of the Western Ghats which is located in Kerala.

Q60. Answer: (d) B

Short Trick:

Downstream speed = 16/2 = 8 km/h

Upstream speed = 8/2 = 4 km/h

Speed of stream = (speed of downstream - speed of upstream)/2

=> Speed of the stream = (8 – 4)/2 = 2 km/h

Therefore Required Answer is 2 km/hr

Detailed Solution:

In 2 hours the boat covers 16 km in downstream

Therefore In 1 hour the boat covers (16/2) = 8 km in downstream

In 2 hours the boat covers (16/2) = 8 km in upstream

Therefore In 1 hour the boat covers (8/2) = 4 km in upstream

=> Speed of stream = (speed of downstream - speed of upstream)/2

=> Speed of the stream = (8 – 4)/2 = 2 km/h

Therefore Required Answer is 2 km/h

Q61. Answer: (a) A

The correct answer is option 1, i.e. A (a – r, b – p, c – s, d - q).

Key Points

Binary values are grouped together in the length of 1's and 0's which is called the length of a number.

• Some of the common lengths are bit, byte, nibble etc.

• Each of the 1 and 0 in a binary number is called a bit.

Additional Information

• Consider the following table for other relations between units.

Unit	Description in other units
4 bit	Group of 4 bit is called a nibble.
8 bit	Group of 8 bit is called byte.
1024 byte	1 Kilobyte
1024 Kilobyte (KB)	1 Megabyte (MB)
1024 Megabyte (MB)	1 Gigabyte (GB)
1024 Gigabyte (GB)	1 Terabyte (TB)
1024 Terabyte (TB)	1 Petabyte (PB)
1024 Petabyte (PB)	1 Exabyte (EB)
1024 Exabyte (EB)	1 Zettabyte (ZB)
1024 Zettabyte (ZB)	1 Yottabyte (YB)

Q62. Answer: (a) A

The official secret Act (OSA) enacted by the ‘ABC’ Government in the year 1930 seems to be one of the major sources of corruption in the country ‘X’.

Conclusions:

I. The Official Secret Act has to be abolished immediately to put an end to the corruption in the country ‘X’. → True

As in the statement it is clearly stated that it is ‘one of the major sources of corruption in the country ‘X’.

II. The ‘ABC’ Government had an intention of encouraging corruption in the Government offices. → False

No such hint or clue can be deduced from the statement.

Hence, only conclusion I follows.

Q63. Answer: (b) B

Option 2 is correct, i.e. Atal Bihari Vajpayee.

• AMRUT stands for Atal Mission for Rejuvenation and Urban Transformation.

• It is named after late shri Atal Bihari Vajpayee, who was Prime Minister of India, first for a term of 13 days in 1996, then for a period of 13 months from 1998 to 1999, followed by a full term from 1999 to 2004.

The purpose of Atal Mission for Rejuvenation and Urban Transformation (AMRUT) is to:

• Ensure that every household has access to a tap with the assured supply of water and a sewerage connection.

• Increase the amenity value of cities by developing greenery and well maintained open spaces (e.g. parks) and

• Reduce pollution by switching to public transport or constructing facilities for non-motorized transport (e.g. walking and cycling).
All these outcomes are valued by citizens, particularly women, and indicators and standards have been prescribed by the Ministry of Housing and Urban Affairs (MoHUA) in the form of Service Level Benchmarks (SLBs).

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Q64. Answer: (b) D

Short Trick:

Area will be maximum when the field is square

Side of the square = 400/4 = 100 m

Therefore Area of the field = $(100)^2 = 10000\ m^2$

Detailed Solution:

Area will be maximum when the field is square

The length will be the perimeter of the square field.

Let, side of the square = x m

According to the question,

=> Perimeter of square = 4 × side

=> 4x = 400

=> x = 100

=> Side of the square = 100 m

=> Area of the field = $(side)^2$

=>$(100)^2 = 10000\ m^2$

Therefore Required answer is $10000\ m^2$

Q65. Answer: (c) D

The minimum qualification for this job is MTECH.

However, candidates who have appeared for the final year of MTECH can also apply.

Conclusions:

I. All candidates who have yet to post graduate will be there in the list of selected candidates → False

Only MTECH candidates or students in the final year of MTECH can apply.

II. All candidates having MTECH as their minimum qualification will be there in the list of selected candidates. → False

Only MTECH candidates or students in the final year of MTECH can apply, but there is no surety that all the candidates who applied will have their name in the list.

Hence, neither I nor II follows.

Q66. Answer: (b) A

=> $19x^2 = 100^2 – 90^2$

=> $19x^2 = (10000 – 8100)$

=> $19x^2 = 1900$

=> $x^2 = 100$

=> x = 10

Q67. Answer: (a) D

Optional 1 is correct, i.e. Novak Djokovic.

• Novak Djokovic, a professional Tennis player, became the new goodwill ambassador for the UN Fund for Children.

• Reigning world tennis champion Novak Djokovic became a new goodwill ambassador for the UN Fund for Children, joining a roster of athletes and celebrities to hold the post.

• Serbian tennis player Novak Djokovic during a news conference at the UNICEF headquarters in New York.

• The 28-year-old Serbian, who grew up during the Balkans war, has already worked to help vulnerable children through his role as UNICEF Serbia ambassador and his Novak Djokovic Foundation.

Q68. Answer: (b) C

Short Trick:

Required Time = (110 – 22)/(20 + 24) = 2 h

Detailed Solution:

Speed of Rahul = 20 km/h

Speed of Raghav = 24 km/h

They are coming towards each other

=> Relative speed = (s1 + s2)

=> Relative Speed = (20 + 24) = 44 km/h

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Let, required time = x hours

According to the question

=> Relative Speed × Time = Distance

=> 44x = (110 – 22)

=> 44x = 88

=> x = 2

Therefore After 2 hours of horse-riding they will be at a distance of 22 km

Q69. Answer: (c) C

Option 3 is correct, i.e. Sarojini Naidu.

• Sarojini Naidu played an important role in the awakening of Indian women to fight for independence and who is also known as Nightingale of India.

• Sarojini Naidu was a poet and politician.

• Naidu served as the first governor of the United Provinces of Agra and Oudh from 1947 to 1949. She was the first woman to become the governor of an Indian state.

• Sarojini Naidu was the first Indian woman to become the president of INC in 1925.

Q70. Answer: (a) 25

Short Trick:

Gain percent = [(Purchase Article - Selling Article)/Selling Article] × 100

=> Gain percentage = (10 – 8)/8 × 100% = 25%

Therefore Required answer is 25%

Detailed Solution:

According to the question,

Cost price of 10 oranges = Rs 3

=> Cost price of 1 orange = Rs 3/10 = Rs 0.3

Selling price of 8 oranges = Rs 3

=> Selling price of 1 orange = Rs 3/8 = Rs 0.375

=> Gain percent = [(selling price - cost price)/cost price] × 100

=> Gain percent = (0.375 – 0.3)/0.3 × 100% = 25%

Therefore Required answer is 25%

Q71. Answer: (a) B

A motorist knows four different routes from Jaipur to bhangarh.

From Bhangarh to Alwarhe knows three different routes.

From Alwar to Carlisle he knows two different routes.

So, number of routes does he know from Jaipur to Carlisle = (4 × 3 × 2) = 24

Hence, ‘24’ is the correct answer.

Q72. Answer: (c) A

Calculation:

Expenditure in January = Rs 50000

According to the question,

=> Expenditure in February = 50000 + 50000 = Rs 100000

=> Expenditure in March = 100000 + 50000 = Rs 150000

Average = Sum of Observation/Number of Observation

=> Average Expenditure = (50000 + 100000 + 150000)/3 = Rs 100000

Therefore The average expenditure from January to March is Rs 100000.

Q73. Answer: (a) D

Option 1 is correct, i.e. Telephone conversation.

• The two parties will communicate with each other simultaneously in a full-duplex device.

• A telephone is an example of a complete duplex device; the parties at both ends of a call will communicate and be heard simultaneously by the other party.

• Communication in those devices is in one direction only.

• For example, a telephone is a full-duplex device because both parties can talk at once. In contrast, a walkie-talkie is a half-duplex device because only one party can transmit at a time.

Q74. Answer: (d) A

Ravi can complete a work in = 10 days

Therefore In 1 day Ravi can do = 1/10

Rohan alone can complete a work in = 12 days

Therefore In 1 day Rohan can do = 1/12

Rajesh alone can complete a work in = 15 days

Therefore In 1 day Rajesh can do = 1/15

Therefore In 1 day they together can do = 1/10 + 1/12 + 1/15 = (6 + 5 + 4)/60 = 1/4

Therefore They together can complete the work in = 4 days

Q75. Answer: (b) D

According to the question,

=> x + 87 + 83 + 78 + 57 = 76 × 5

=> x = 380 – 305 = 75

Q76. Answer: (b) A

Short Trick:

Cost price = [selling price/(100 + profit%)] × 100

Cost price = Rs 72 × 100/120 = Rs. 60

Detailed Solution:

Let, cost price = Rs. 100x

According to the question,

=> 100x + (100x × 20/100) = 72

=> 120x = 72

=> x = 72/120 = 0.6

Therefore Cost price = 100 × 0.6 = Rs. 60

Q77. Answer: (c) C

Option 3 is correct, i.e. This style of nomenclature was used by James Chadwick and J.J. Thomson.

• Dalton was the first scientist to use the symbols in a very common context for components. He also meant a definite quantity of that element by using a symbol for an element, that is, one atom of that element.

• Berzilius proposed that the element symbols be constructed from one or two letters of the element name.

• These are short-hand notations used for naming chemical compounds.

• In English, several of the symbols are the first one or two letters of the name of the product. A symbol's first letter is often written as a capital letter (uppercase), and the second letter is written as a small letter (lowercase).

• Elements are represented by specific symbols for convenience. For example: 'H' stands for hydrogen. The 'O' stands for oxygen. The 'N' stands for nitrogen. 'Cl' stands for chlorine.

Q78. Answer: (d) D

2 hours = 2 × 60 min = 120 min = 120 × 60 = 7200 sec

Therefore Required fraction = 12/7200 = 1/600

Q79. Answer: (b) A

Option 2 is correct, i.e. Justice A.P. Shah.

• Justice A.P. Shah has been appointed as first-ever Ombudsman (Ethics officer) of BCCI.

• BCCI has named its first-ever Ethics Officer (Ombudsman) with a one-year term as retired justice AP Shah. Justice AP shah was former Delhi high court chief judge.

• The BCCI also dropped N Srinivasan, former president and chairman of the ICC, as its representative on the world body.

• Former captain Sourav Ganguly has also been named Chairman of the Technical Committee by BCCI.

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Q80. Answer: (c) C

The logic is:

1^(st) figure: 0 + 6 + 4 + 2 = 12 and 12 – 2 = 10 → number at the centre of the figure.

2^(nd) figure: 6 + 2 + 10 + 8 = 26 and 26 – 2 = 24 → number at the centre of the figure.

Similarly,

3^(rd) figure: 4 + 14 + 12 + 10 = 40 and 40 – 2 = 38 → number at the centre of the figure.

Hence, '38' is the correct answer.

Q81. Answer: (b) B

Short Trick:

Average = Sum of observation/Number of observation

Average age = (20 × 10 + 25 × 12)/(20 + 25) = 11.111

Detailed Solution:

Let, average age of all students = x

According to the question,

=> (20 + 25)x = 20 × 10 + 25 × 12

=> 45x = 500

=> x = 500/45 = 11.111

Average age of all students = 11.111

Q82. Answer: (c) B

Option 3 is correct, i.e. Cerebrum.

• The cerebrum is a part of the forebrain.

• It has two parts called cerebral hemispheres.

• It forms the front, superior, and lateral side of the brain.

• Cerebrum in the human brain is the center for intelligence, memory, and emotions.

• It is the largest part constituting 80% of the brain.

• It coordinates voluntary muscle movements and helps in maintaining posture and balance.

The brain is divided into three major parts: (i) forebrain, (ii) midbrain and (iii) hindbrain

Forebrain	**It consists of the cerebrum, hypothalamus, and thalamus**
Midbrain	It is located between the hypothalamus/thalamus of the forebrain and pons of the hindbrain
Hindbrain	It comprises pons, cerebellum and medulla (also called the medulla oblongata)

Q83. Answer: (a) C

Given:

Two numbers are in ratio 3 : 4.

When 3 is subtracted from the numbers, the ratio becomes 2 : 3.

Concept Used:

Properties of ratio.

Calculation:

Let, the numbers are = 3x and 4x

According to the question,

=> (3x – 3)/(4x – 3) = 2/3

=> 9x – 9 = 8x – 6

=> x = 3

Sum of the numbers = 3x + 4x

=> 7x

=> 7 × 3

=> 21

Therefore The sum of the numbers is 21.

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Q84. Answer: (b) A

Given:

Area of triangle = 44 √3 sq. units

Formula:

In-radius of equilateral triangle = a/2√3 (a = side of triangle)

Circum-radius of equilateral triangle = a/√3

Calculation:

Required ratio = In-radius : Circumradius = a/2√3 : a/√3 = 1 : 2

(There is no need to calculate the side length as the ratio is asked)

Q85. Answer: (c) A

Short Trick:

Principal = Rs. 441 × (100/105) × (100/105) = Rs. 400

Detailed Solution:

Let, principal = Rs. x

No. Of years = 2

Rate of interest = 5%

According to the question,

=> $x \times (1 + 5/100)^2 = 441$

=> $x \times (1.05)^2 = 441$

=> $1.1025x = 441$

=> $x = 441/1.1025 = 400$

Therefore The principal = Rs. 400

Q86. Answer: (a) C

Six colleagues are sitting in a circle and are facing the center of the circle. Diana is between Pushkar and Padma. Priyanka is between Mahesh and Lucky. Pushkar and Mahesh are opposite to each other.Pushkar is sitting right of Diana.

Hence, ‘Priyanka and Padma’ are the neighbours of Mahesh.

Q87. Answer: (c) A

Six colleagues are sitting in a circle and are facing the center of the circle. Diana is between Pushkar and Padma. Priyanka is between Mahesh and Lucky. Pushkar and Mahesh are opposite to each other.Pushkar is sitting right of Diana.

Hence, ‘Diana’ is just right to Padma.

Q88. Answer: (c) B

Six colleagues are sitting in a circle and are facing the center of the circle. Diana is between Pushkar and Padma. Priyanka is between Mahesh and Lucky. Pushkar and Mahesh are opposite to each other.Pushkar is sitting right of Diana.

Hence, ‘Diana’ is sitting opposite to Priyanka.

Q89. Answer: (a) D

The least possible venn diagram is:

(1) Some pens are pins → True (It is definite)

(2) Some covers are cups → False (It is not definite)

(3) No cup is pin → False (It is not definite)

(4) Some pins are cups → True (It is definite)

Hence, only (1) and (4) follows.

Q90. Answer: (b) B

All words except ‘veil’ are wore on head while ‘veil’ is an article of clothing or hanging cloth that is intended to cover some part of the head or face, or an object of some significance.

Hence, ‘Veil’ is the odd one out.

Q91. Answer: (c) B

=> $\cos\theta = \sqrt{1 - \sin^2\theta}$

=> $\cos\theta = \sqrt{(1 - (40/41)^2)}$

=> cosθ = √((1681 - 1600)/1681)

=> cosθ = 9/41

Therefore cotθ = cosθ/sinθ = (9/41)/(40/41) = 9/40

Q92. Answer: (a) A

Option 1 is correct, i.e. Mysore Palace.

• Mysore Palace is a historic palace and a royal residence in Mysore, in Karnataka Indian State. It is the Wadiyar dynasty's official residence, and the Mysore Kingdom capital.

• The palace is in Mysore's center facing eastward the Chamundi Hills.

• Originally known as puragiri (literally, citadel) was the land where the palace now stands, and is now known as the old fort. In the 14th century Yaduraya built the first palace inside the Old Fort, which was demolished and restored several times. The present building was built between 1897 and 1912, after the burning of the Old Palace.

Q93. Answer: (c) D

The logic is:

Similarly,

Hence, 'TSBAEL' is the correct answer.

Q94. Answer: (c) B

The least possible venn diagram is:

(1) Some videos are answers → True (It is definite)

(2) Some poems are images → False (It is not definite)

(3) All the images are poems → False (It is not definite)

(4) Some poems are answers. → True (It is definite)

Hence, Only (1) and (4) follows.

Q95. Answer: (b) C

The logic is:

C	H	E	C	K
9	7	2	9	4

Q	U	E	R	Y
5	1	2	3	8

Similarly,

C	H	E	R	R	Y
9	7	2	3	3	8

Hence, '972338' is the correct answer.

Q96. Answer: (a) A

Option 1 is correct, i.e. Prothrombin.

• Human blood platelets release prothrombin which helps in clotting of blood.

• Prothrombin is transformed into thrombin by a clotting factor known as factor X or prothrombinase thrombin then acts to transform fibrinogen, also present in plasma, into fibrin, which, in combination with platelets from the blood, forms a clot (a process called coagulation).

Extra facts:

• Sucrose is crystallised white sugar produced by the sugar cane plant and can be found in households and foods worldwide.

• The formula for sucrose is C12H22O11.

• It is a disaccharide so when we hydrolyse it we will get one molecule of glucose and another molecule of fructose.

• It is also known as table sugar.

• Galactose- It is a monosaccharide and hexose(6C) sugar.

• Ribulose- It is a monosaccharide of Glucose and Galactose.

• Fructose is the sweetest sugar.

• aride and pentose(5C) sugar.

• Lactose- It is a disaccharide.

Q97. Answer: (c) D

Option 3 is correct, i.e. 10 trillion.

Light:

• Light waves are transverse waves.

• The speed of light is 3 × 10^8 m/s.

• Light can travel 10 trillion km in a year.

• Light waves are electromagnetic waves.

• Electromagnetic waves are created when charged particles oscillate. So whenever these waves encounter particles in its way, it makes them oscillate.

• Light waves are electromagnetic waves because light has an oscillating magnetic and electric field.

Q98. Answer: (d) A

Option 4 is correct, i.e. Developed countries will completely ban CFC production by 2000.

• Protection of the Ozone layer was the main aim of the Montreal Protocol.

• Developed countries will completely ban CFC production by 2000 was the major decision that took place in the 1987 Montreal Conference.

• The Montreal Protocol is an international treaty, which was adopted on September 16, 1987.

• It aimed to regulate the production and use of chemicals contributing to the depletion of the ozone layer of the Earth.

• Initially, it was signed by 46 countries but now has nearly 200 signatories.

Q99. Answer: (b) A

Option 2 is correct, i.e. TV relay to remote areas.

• The major objective of INSAT series of satellites is to facilitate TV relay to remote areas.

• INSAT or Indian National Satellite System refers to a series of geo-stationary satellites launched by ISRO.

• These were designed to take care of telecommunications, meteorology, broadcasting, and search and rescue operations.

Extra facts:

• INSAT-3D, an Advanced Weather Satellite completes two successful years in orbit on July 26, 2015. It was launched by Ariane VA214 flight from French Guiana on July 26, 2013.

• INSAT-3D is an exclusive mission designed for enhanced meteorological observations and monitoring of land and ocean surfaces for weather forecasting and disaster warning.

• INSAT-3D is the first Indian geostationary satellite, equipped with a sounder instrument that provides frequent good quality atmospheric profiles (temperature, humidity) over Indian landmass and adjoining areas.

Q100. Answer: (d) B

Option 4 is correct, He increases the time of contact thereby reducing the force of contact.

• A good cricket fielder while catching a fast moving ball moves his hand along with the ball because he increases the time of contact thereby reducing the force of contact.

• It is based on Newton's Second law.

Newton’s Second Law:

• The rate of change of linear momentum of a body is directly proportional to the external force applied on the body and this change takes place always in the direction of the applied force.

• f = maTherefore F =ma Therefore F =ma Therefore F =ma Therefore F =ma Therefore F =ma Therefore F =ma [Math Processing Error]

Where F = Force, m = mass and a = acceleration

Extra facts:

According to Newton's third law of motion, every action has an equal and opposite reaction. This applies to all of the following which is, therefore, examples of Newton's third law of Motion:

• Swimming- as we swim, we push the water with our hands and feet in the backward direction and the water, in turn, pushes us in the forward direction.

• Rowing- as we paddle, we push the water backward and as an equal and opposing force, the water pushes us forward.

• Walking- similarly as we walk, we push the ground backward with our feet which in turn pushes us forward.

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