RRB NTPC Tier I Official Paper (Held On: 28 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

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Scan the QR code or click the link to open it.

Q1. If '+' means '×', '-' means '÷', '×' means '+' and '÷' means '-' then what will be the value of 512 - 8 + 5 ÷ 73 × 92?

A. 339

B. 395

C. 401

D. 490

(a) B

(b) D

(c) C

(d) A

Q2. It takes 15 minutes to fill an oil tank. However the oil tank is being emptied through an exhaust pipe, which can empty it in 30 minutes. If this exhaust pipe remains open, how long will it take to fill this tank completely?

A. 20 minutes

B. 25 minutes

C. 30 minutes

D. 40 minutes

(a) B

(b) D

(c) A

(d) C

Q3. What is the name given to the peak conquered by Indian climbers in the Spiti Valley of Himachal Pradesh in 2015?

A. Mount Gandhi

B. Mount Kalam

C. Mount Modi

D. Mount Indira

(a) B

(b) C

(c) A

(d) D

Q4. Rahul invested X rupees for 3 years at a rate of y% interest. Shyam invested the same amount at the same rate for 12 years. Find the ratio of simple interest earned by Rahul to simple interest earned by Shyam.

A. 1 : 3

B. 1 : 4

C. 2 : 3

D. 4 : 1

(a) A

(b) B

(c) D

(d) C

Q5. In which of the following countries, the Indus River does not flow?

A. India

B. Pakistan

C. China

D. Afghanistan

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

Q6. What is the mean of the following distribution?

21, 23, 43, 65, 76, 23, 98, 34, 62, 89

A. 51.4

B. 53.4

C. 58.7

D. 55.3

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

Q7. In the following question two statements and some of their conclusions are given as alternatives. You have to consider the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions basically follows the given two statements irrespective of the commonly known facts.

Statement:

1. Some pens are cats

2. All cats are buses

Conclusions:

A. All buses are cats

B. Some buses are cats

C. No bus is pen

D. All buses are pens

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

Q8. How many valence electrons does an oxygen atom have?

A. 2

B. 6

C. 8

D. 16

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

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Q9. What is the process of creating a better adapted environment for organisms to live and grow more?

A. Natural Selection

B. Mutation

C. Recombination

D. Non-Random Mating

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

Q10. A train running at a speed of 126 km/h crosses a car running at a speed of 72 km/h in 40 seconds when both are running in the same direction. What will be the length of the train in meters?

A. 500 meters

B. 600 meters

C. 900 meters

D. 450 meters

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

Q11. Where is Urea Produced?

A. Pancreas

B. Liver

C. Small Intestine

D. Kidney

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

Q12. Which of the following places has been approved by the Ministry of Civil Aviation in November 2015 to establish a second airport in the National Capital Region?

A. Jewar

B. Bhiwadi

C. Loni

D. Rohtak

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

Q13. What is the value of the following expression:

$(\cot 1^{o} \cot 2^{o} \cot 3^{o} \cot 4^{o} \cot 5^{o} .... \cot 90^{o})$

A. 0

B. 1

C. 2

D. 1/2

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

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Q14. Charminar was built to commemorate the eradication of which of the following widely spread disease?

A. Yellow Fever
B. Plague
C. Leprosy
D. Cancer

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

Directions

Directions: Read the following passage and answer the questions given below:
Out of a group of 50 persons, 18 go to work by train and 26 go to work by bus. Eight people go neither by train nor by bus.

Q15. How many people use either train or bus to go to work?

A. 41
B. 44
C. 42
D. 40

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

Q16. How many people use both train and bus to go to work?

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

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

Q17. The number of people going by train only is what percent of the total number of persons?

A. 31%
B. 33%
C. 32%
D. 36%

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

Q18. What is one of these social theories that tries to understand why society works by focusing on the relations between different social institutions that society should be built?

A. Structural Functionalism
B. Symbolic Interaction
C. Conflicts
D. Positivism

(a) C

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

Q19. Find the HCF of 72, 108 and 180.

A. 72
B.24
C.12
D. 36

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

Q20. There is also a global heritage site.

A. Kanha National Park
B. Vedathangal Bird Sanctuary
C. Keoladeo National Park
D. Ranganathittu Bird Sanctuary

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

Q21. The minimum reactive elements of the periodic table are:

A. Transition Metals
B. Alkaline Earth Metal
C. Noble Gases
D. Alkaline Metal

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

Q22. A shopkeeper sells sugar at the rate of Rs. 19 per kg and loses 5%. How many rupees per kg should he sell sugar to earn a profit of 10%?

A. Rs. 20
B. Rs. 21
C. Rs. 22
D. Rs. 23

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

Q23. If SHELF is coded as 20 - 7 - 6 - 11 - 7, what will be the code for LEAVES?

A. 13 - 4 - 2 - 21 - 6 - 18
B. 13 - 6 - 2 - 21 - 6 - 20
C. 11 - 6 - 1 - 21 - 6 - 20
D. 11 - 6 - 1 - 23 - 4 - 18

(a) B
(b) D

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(c) C
(d) A

Q24. If POLICE is coded with QLMRDV, what will be the code for HOSPITAL?

A. IPTQJUBM
B. SLHKRGZO
C. INTOJSBK
D. ILTKJGBO

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

Q25. Which Article of the Indian Constitution describes the provisions related to financial emergency?

A. Article 148
B. Article 143
C. Article 360
D. Article 72

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

Q26. Find the missing word based on the relation between the first two words.

CAT : KITTEN :: DONKEY : _____

A. FOAL
B. FAWN
C. CUB
D. KID

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

Q27. The ratio of two positive integers is 3 : 4. Their sum is 70. How much should be added to each integer so that their ratio becomes 5 : 6?

A. 10
B. 20
C. 30
D. 40

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

Q28. When a stone thrown directly upwards reaches the top, its:

A. Velocity and acceleration are zero.
B. The velocity is zero and the acceleration is about 10 m/s^2.
C. Velocity is about 10 m/s and acceleration is zero.
D. The velocity is about 10 m/s and the acceleration remains the same.

(a) C
(b) D

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(c) B
(d) A

Q29. In which year did the Indian men's water polo team win the gold medal at the Asian Games?

A. 1970
B. 2010
C. 1951
D. 1982

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

Q30. A team wins 45 games, which was 60% of the games played. How many games did the team play?

A. 50 games
B. 75 games
C. 60 games
D. 65 games

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

Q31. If sin A = 1/(√2) and Cos B = (√3)/2, then, find the value of (A + B)º.

A. 60º
B. 75º
C. 105º
D. 90º

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

Q32. Who among the following has been appointed as Ethics Officer of BCCI?

A. Judge AP Shah
B. Judge NC Verma
C. Judge AP Sharma
D. Judge NC Pandove

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

Q33. Which of the following is an acute viral disease of animals, which is spread in humans by the bite of an infected animal?

A. Hemophilia
B. Cancer
C. Rabies
D. Mumps

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

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(d) A

Q34. Find the LCM of 60, 120 and 225.

A. 360
B. 1800
C. 600
D. 900

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

Directions

Instructions: Read the information given below and answer the questions given below:
Nutrition information of three products of a company is given below.

Nutrition information			
	Product almonds (Per 100 grams)	Product nut (Per 100 grams)	Product raisins (Per 100 grams)
Protein (Gram)	12.2	5.7	6.1
Carbohydrate (Gram)	46.6	64.7	65.1
Fat (Gram)	37.5	26.4	21.7
Fiber (Gram)	5.4	1.4	2.9
Sodium (gram)	96	111	110

Q35. What is the percentage of sodium, fiber in the product almonds ?

A. 1.78%
B. 1777.7%
C. 1.5%
D. 1532.7%

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

Q36. Protein in the product nut is what percentage of the fat of the product raisins?

A. 26.26%
B. 32.36%
C. 23.32%
D. 62.27%

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

Q37. What is the average carbohydrate content (in grams) in all the products?

A. 55.8 gm
B. 58.8 gm
C. 57.2 gm
D. 56.3 gm

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

Q38. Which process is used in water purification?

A. Osmosis
B. Reverse Osmosis
C. Cytolysis
D. Turgor pressure

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

Q39. Below are the excerpts of a sentence. Choose the correct order of these passages to make a meaningful sentence.

P: Strategic interventions on building
Q: India must accelerate
R: human talent, quality, and technology
S: its productivity attainments through

A. PWRS
B. SRQP
C. PRQS
D. QSPR

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

Q40. What is the industrial standard name of the first computer virus for MS-DOS?

A. Heart
B. Brain
C. Nerve
D. Vein

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

Q41. The metal detectors through which people pass through airports are operated by

A. Civil laws
B. Newton's law
C. Faraday's law
D. Coulomb's law

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

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Q42. Which of the following were part of the team that invented the atomic bomb?

A. Alfred Nobel

B. Julius Openheimer

C. John Dalton

D. Robert Bacon

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

Q43. A woman deposited Rs. 100 at an annual interest rate of 10%. The woman received Rs. 121 at the end of the period at the rate of compound interest. How long did he keep the money in the bank?

A. 1 year

B. 2 years

C. 2.5 years

D. 3 years

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

Q44. Which two symbols need to be interchanged to correct the following equation?

5 × 36 - 9 + 31 ÷ 41 = 10

A. ÷ and -

B. × and +

C. ÷ and ×

D. × and -

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

Q45. Anil is twice as capable as Binay. If Anil can complete a work 20 days earlier than Binay, how many days will the two work together?

A. 11.11 days

B. 13.33 days

C. 13.83 days

D. 14 days

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

Q46. The International Solar Alliance was launched by

A. Narendra Modi

B. Nawaz Sharif

C. Barack Obama

D. James Cameron

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

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Q47. What is METSAT, the first exclusive weather satellite created by ISRO?

A. Geosynchronous Satellite

B. The Earth's lower orbit satellite

C. Polar Orbit Satellite

D. Deep Space Probe Satellite

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

Q48. Mother distributed some amount to her children Arvind, Binu and Chitra in the ratio 2 : 3 : 4. If Binu received Rs. 51, then how much was the amount received by Chitra and Arvind, respectively?

A. 34, 102

B. 85, 34

C. 68, 34

D. 68, 136

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

Q49. If CLOUD is coded with XOLFW then, how would you code SUNSET?

A. TVOTFU

B. HFMHVG

C. HVMTVU

D. TTMRVS

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

Q50. Where is the Space Application Center, SAC located in India?

A. Mumbai

B. Ahmedabad

C. Trivandrum

D. Bangalore

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

Q51. Find which fractions in the correct ascending order?

A. 3/7, 15/41, 19/35, 7/11

B. 15/41, 3/7, 19/35, 7/11

C. 3/7, 15/41, 7/11, 19/35

D. 19/35, 7/11, 15/41, 3/7

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

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Q52. The Prime Minister, Shri Narendra Modi, during his visit to Britain in November 2015, unveiled the statue of which Indian philosopher and reformer?

A. Dayanand Saraswati

B. Vinoba Bhave

C. Basaveshwar

D. Swami Vivekananda

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

Q53. What is the median of the distribution?

87, 21, 53, 12, 86, 98, 23, 64, 87, 23, 23, 87, 56, 12, 53

A. 55

B. 56

C. 53

D. 64

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

Q54. Who was the last ruler of the Chola dynasty?

(a) Rajaraja Chola 3
(b) Rajendra Chola 3
(c) Vijayalaya Chola
(d) Koluthunga Chola 3

Q55. The midpoints of the side of a triangle PQR are marked as D, E, and F. If the perimeter of the triangle is 480 m, what will be the perimeter of the triangle DEF?

A. 480 m

B. 720 m

C. 960 m

D. 240 m

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

Q56. Based on the statement(s) given below, select the most frequently followed conclusion(s):

Statements:

1. Most people are enrolling their children in private schools because the standards of education there are much better than in public schools.

Conclusion:

1. Public schools should make serious efforts to improve their standard of education.

2. All public schools should be closed immediately.

A. Only conclusion 1 follows

B. Only conclusion 2 follows

C. Both conclusions 1 and 2 follow

D. Neither conclusion 1 nor conclusion 2 follows

(a) D
(b) C

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(c) B
(d) A

Q57. A car covers the distance from Chennai to Coimbatore in 8 hours. The first half of the journey has been covered at a speed of 73 km/h and the second half at 81 km/h. What is the distance from Chennai to Coimbatore?

A. 614.34 km
B. 600 km
C. 592 km
D. 632.65 km

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

Q58. Polio vaccine was discovered by

A. Issac Newton
B. Marie Curie
C. Jonas Salk
D. Albert Einstein

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

Q59. Ritu points to the portrait of a person saying, "He is the grandfather of the only nephew of my son's wife's only unmarried brother". How is the person related to Ritu?

A. Husband
B. Father
C. Father in law
D. Grandfather

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

Q60. Based on the statement(s) given below, select the most frequently followed conclusion(s):

Statements:

1. XYZ company promotes the product and says, 'Go ahead and buy it if its price and quality are good for you to think'.

Conclusion:

1. Product quality should be good.
2. XYZ Company is the best promotional products.

A. Only conclusion 1 follows
B. Only conclusion 2 follows
C. Both conclusions 1 and 2 follow
D. Neither 1 nor 2 follows

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

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Q61. If '+' means '×', '-' means '÷', '×' means '+', and '÷' means '-', then what is the value of 216 ÷ 3 + 48 - 6 × 21?

A. 206
B. 213
C. 236
D. 263

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

Q62. Who is the only woman to win the Nobel Prize in Science and Chemistry twice?

A. Dorothy Hodgkin
B. Marie Curie
C. Maria Mayer
D. Ada Yonath

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

Q63. Find the missing word based on the relation between the first two words.

TEMPERATURE : THERMOMETER :: SOLAR RADIATION : _____

A. ANEMOMETER
B. HYGROMETER
C. THERMOPILE PYRANOMETER
D. SPHYGMOMANAMETER

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

Q64. The world's first artificial satellite, the size of a beach ball of 83.6 kg, was launched by whom?

A. America
B. China
C. Soviet Union
D. France

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

Q65. Find the missing word based on the relation between the first two words.

India : Rupees :: South Africa : _____

A. RIEL
B. RAND
C. SOUTH AFRICAN DOLLAR
D. RUBLE

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

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Q66. In the question below, two statements and some of their conclusions are given as alternatives. You have to follow both the given statements correctly, even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions basically follows the given statements, regardless of the commonly known facts.

Statements:

1. All stars are planets
2. All planets are moons

Conclusion:

1. All moons are planets
2. Some planets are stars
3. Some moons are stars
4. All planets are stars

A. Conclusions 1, 3 and 4 follow

B. Conclusions 2 and 3 follow

C. Conclusions 1, 2 and 3 follow

D. All conclusions follow

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

Q67. The sum of the digits of a two digits number is 5. When the digits are reversed, the number is reduced by 9, what will be the changed number?

A. 32

B. 23

C. 41

D. 14

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

Q68. If the standard deviation of a distribution is 4, what is the value of variance?

A. 8

B. 9

C. 16

D. 12

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

Q69. What is the storage capacity of a double density 3.5-inch floppy disk?

A. 1.44 MB

B. 1.44 GB

C. 1.40 KB

D. 1.40 GB

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

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Q70. Who is the first Indian woman to swim across the English Channel?

A. Rashmi Sharma

B. Rupali Rapale

C. Aarti Saha

D. Shikha Tandon

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

Q71. If there is an increase in current in a circuit with 5 ohms resistance, the voltage:

A. will decrease

B. will increase

C. will remain the same

D. will be zero

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

Q72. Ajay says, "That woman is the grandmother of my mother's only sister-in-law's son". If Ajay's father has only one brother and Ajay's mother has no brother, how is the woman related to Ajay?

A. Grandma

B. wife

C. Granny

D. Mother

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

Q73. Which of the following options is the solution of the given equation:-

$2x - 4y = 16$

A. (8, -1)

B. (5, -5)

C. (6, -1)

D. (9, 2)

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

Q74. There are 18 girls in a class of 42 students. In the class, what is the percentage of boys out of total students? (Nearest integer value)

A. 43%

B. 53%

C. 57%

D. 59%

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

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Q75. After leaving the Indian National Congress (INC) in 1939, which of Subhash Chandra Bose formed?

A. Forward Bloc
B. Swaraj Party
C. Socialist Party
D. Ghadar Party

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

Q76. When did the first Anglo-Burmese War take place?

A. 1892 - 1893
B. 1885 - 1886
C. 1824 - 1826
D. 1852 - 1853

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

Q77. The Tropic of Cancer does not pass through which of the following states?

A. Rajasthan
B. Mizoram
C. Tripura
D. Manipur

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

Q78. A square with a side of 120π cm is formed from a piece of wire. If a circle is made by turning the same wire, what will be the radius of the circle?

(a) 30 cm
(b) 120 cm
(c) 60 cm
(d) 240 cm

Q79. Which of the following transactions is the best in terms of percentage profit?

A. Cost price = 60 rupees, profit = 29 rupees
B. Cost price = Rs. 40, Profit = Rs. 17
C. Cost price = Rs 50, profit = Rs 21
D. Cost Price = Rs. 30, Profit = Rs. 14

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

Q80. Bihu dance is the folk dance of which Indian state?

(a) Arunachal Pradesh
(b) Assam
(c) Orissa
(d) Haryana

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Q81. If A = 26 and STOP = 38, then POSTMAN =?

A. 99

B. 97

C. 91

D. 93

(a) B

(b) D

(c) A

(d) C

Q82. Which two symbols must be mutated to correct the following equation?

63 ÷ 7 + 5 × 3 - 46 = 2

A. ÷ and -

B. × and +

C. ÷ and ×

D. × and -

(a) C

(b) A

(c) D

(d) B

Directions

Directions: Read the following passage and answer the questions given below:

Nine fans of music are sitting in a row facing north and watching classical concerts. His names are Jacob, Kinjal, Lipika, Manoj, Nita, Omkar, Padraja, Karim and Rameez.

Lipika is immediately to the right of Manoj and third to the right of Nita.

Kinjal is at the end of the line.

Karim is seated next to both Omkar and Padruja.

Omkar is immediately to the right of Jacob and third to the left of Kinjal.

Q83. Which of the following statements is correct?

A. Nita is two seats away from Jacob

B. Rameez is immediately to the left of Jacob

C. Manoj and Padraja are neighbors

D. There is only one person between Lipika and Omkar.

(a) A

(b) D

(c) B

(d) C

Q84. If Kinjal is at one end of the line then who is at the other end?

A. Manoj

B. Padraja

C. Nita

D. Rameez

(a) A

(b) D

(c) B

(d) C

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Q85. Who sits in the middle of the line?

A. Lipika

B. Jacob

C. Onkar

D. Karim

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

Q86. A person sells a cooker for 2568 rupees. If he bought it for Rs. 2400, what is his profit percentage?

A. 4%

B. 6%

C. 7%

D. 8%

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

Q87. Calculate:

5/7 + 21/31 + 52/33

(a) 21350/7161
(b) 21250/7161
(c) 23250/7161
(d) 21240/7161

Q88. Simplify:

237.43 + 7453.32 + 54.12 - 987.23

A. 6757.64

B. 6666.64

C. 7676.64

D. 6587.64

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

Q89. In which year was badminton officially introduced in the Olympics?

A. 1992

B. 1972

C. 1896

D. 1968

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

Q90. Chandu, pointing to a person, says, "He is the father of my daughter-in-law's brother's grandfather's only daughter-in-law". How is the person's son in law is related to Chandu's son?

A. Father He is the father of my daughter-in-law's brother's grandfather's only daughter-in-law

B. father in law

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C. Dada

D. uncle

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

Q91. Evalute:

76567 × 99999

(a) 7656624333
(b) 7656623433
(c) 7857624333
(d) 7656624423

Q92. Who was the last Governor General of India?

A. Chakravarti Rajagopalachari

B. Warren Hastings

C. Louis Mountbatten

D. Edward Law

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

Q93. If P416 is divisible by 11, find the lowest natural value of P.

A. 5

B. 6

C. 7

D. 9

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

Q94. Three of the following four words are somehow the same and one is different. Which is different from the other three?

A. Polaris

B. Rigel

C. Vega

D. Europa

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

Q95. The area of a square ground is 313600 square meters.. How long will it take for a woman to cross the field diagonally (diagonally) at the rate of 4√2 m/s?

A. 3 minutes

B. 2 minutes 20 seconds

C. 2 minutes 40 seconds

D. 3 minutes 10 seconds

(a) B

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

Q96. Based on the statement (s) given below, select the most frequently followed conclusion (s):

Statements:

1. An advertisement says "triple your money in 6 months".

Conclusion:

1. Assurance is not genuine.
2. People want to see their wealth growing.

A. Only conclusion 1 follows
B. Only conclusion 2 follows
C. Both conclusions 1 and 2 follow
D. Neither conclusion 1 nor conclusion 2 follows

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

Q97. Which of the following temples was also called Black Pagoda by the Germanic Navinco?

A. Konark Temple
B. Jagannath Temple
C. Brahmeshwar Temple
D. Mukteshwar Temple

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

Q98. Which of the following states does not follow the Sixth Schedule of the Constitution which deals with the administration and control of tribal areas?

A. Assam
B. Nagaland
C. Meghalaya
D. Tripura

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

Q99. Under which branch of soil science is the study of the effect of soil on living things done?

A. Andrology
B. Edaphology
C. Agrobiology
D. Desmology

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

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Q100. Which of the following statements about Bidya Devi Bhandari is true?

A. He was nominated for the Nobel Peace Prize

B. She is the first President of Mauritius

C. She is the first female President of Nepal

D. She is the oldest woman in Asia

(a) D

(b) A

(c) B

(d) C

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (d) A

Symbol	•	•	×	÷
Meaning	×	÷	•	•

Given equation: 512 - 8 + 5 ÷ 73 × 92?

After replacing the symbols by their meaning, we get:

512 ÷ 8 × 5 - 73 + 92

= 64 × 5 – 73 + 92

= 320 – 73 + 92

= 412 – 73

= 339

Hence, ‘339’ is the correct answer.

Q2. Answer: (d) C

Given :

Inlet pipe takes time to fill the tank = 15 minutes

Outlet pipe takes to empty the tank = 30 minutes

Formula Used:

Work = Time × Efficiency

Calculation:

LCM of (15, 30) = 30

Let be total work is 30

Efficiency of Inlet pipe,

=> 30/15 = 2

Efficiency of outlet pipe,

=> 30/30 = -1 (-ve indicate leakage)

Work done by both pipe are opened,

=> 30/(2 - 1) = 30 minutes

Therefore Both pipe together can fill the tank in 30 minutes

Q3. Answer: (a) B

The correct answer is B.

• Mount Kalam was the name given to the peak conquered by Indian climbers in the Spiti Valley of Himachal Pradesh in 2015.

• Arjun Vajpai and Bhupesh Kumar created history after scaling an unexplored peak 6,180 meters high in Himachal's Spiti valley. They named it Mount Kalam in memory of the late President of India APJ Abdul Kalam.

• They are the first to leave a mark in the six thousand peaks that overlook the Spiti Valley, Himachal.

Key Points

• The mountain that they have scaled is 6,180 meters tall. The peak which is at an altitude of 19,000 feet gives a breathtaking view of the Himalayan landscape.

• The main idea behind climbing an uncharted peak was to inspire the youngsters in India to take up mountaineering and encourage them to follow their dreams.

• Arjun Vajpai hailing from Noida climbed Mount Everest in May 2010.

Additional Information

• Top Indian Mountaineers:

• Mountaineer Krushnaa Patil.

• Mountaineer Malavath Purna.

• Mountaineer Asim Mukhopadhyay.

• Mountaineer Mohan Singh Kohli.

• Mountaineer Narendra Dhar Jayal.

• Mountaineer Mandip Singh Soin.

• Mountaineer Gurdial Singh.

• Mountaineer Narendra Kumar.

Q4. Answer: (b) B

Given

Rahul invest certain amount for is 3 years

Shyam invest same amount for is 12 years

Formula Used

Simple Interest = (Principal × time × Rate)/100

Calculation

According to question,

=> Principal and rate is same

Simple interest depend on time period,

Ratio of time = Ratio of Simple interest

Ratio of time (Rahul : Shyam)

=> 3 : 12 = 1 : 4

Ratio of Simple interest (Rahul : Shyam)

=> 1 : 4

Therefore The Ratio of Simple interest for Rahul : Shyam is 1 : 4

Q5. Answer: (a) D

The correct answer is D.

• The Indus river does not flow in Afghanistan.

• The Helmand River is the longest river in Afghanistan and the primary watershed for the endorheic Sistan Basin.

• Naghlu dam is connected to the national grid of Afghanistan and is currently the largest power plant in the country.

• Naghlu dam provides electricity to about 100,000 households in the Kabul region.

Key Points

• The Indus is a transboundary river of Asia and a trans-Himalayan river of South and East Asia.

• The 3,180 km river length, and rises in Western Tibet, flows northwest through the Ladakh and Gilgit-Baltistan regions.

• Indus river tributaries are Sutlej River, Jhelum River, Chenab River, Ravi River, etc.

• The Indus river sources Tibetan Plateau, Senge Zangbu, Gar River and drains at the Arabian Sea, Rann of Kutch, Nalsarovar bird sanctuary.

Additional Information

Country	Longest river	Length in (Km)
India	Ganga	2510 Km
Pakistan	Indus River	3180 Km
China	Yangtze River	6300 Km
Afghanistan	Helmand river	1150 Km

Q6. Answer: (c) B

Given:

21, 23, 43, 65, 76, 23, 98, 34, 62, 89

Formula Used:

Mean = (sum of observation/No. of observation)

Calculation:

Mean = (21 + 23 + 43 + 65 + 76 + 23 + 98 + 34 + 62 + 89)/10 = 53.4

Therefore The mean of above data is 53.4

Q7. Answer: (d) B

The least possible Venn diagram is:

Conclusions:

A. All buses are cats → False (As all cats are buses, all buses being cats is just a possibility and not definite. Thus, it is false)

B. Some buses are cats → True (As all cats are buses, some buses are cats. Thus, it is true)

C. No bus is pen → False (Those cats which are pens are definitely bus as all cats are buses. Thus, it is false)

D. All buses are pens → False (As, Some pens are cats and All cats are buses → Some buses are pen)

Hence, 'Some buses are cats' is the correct answer.

Q8. Answer: (d) B

The correct answer is B.

• Oxygen atoms have 6 valence electrons.

• Oxygen has six valence electrons, two in the 2s subshell and four in the 2p subshell.

• Oxygen (O) is a nonmetallic chemical element of Group 16 (VIa, or the oxygen group) of the periodic table.

• Oxygen is a colourless, odourless, tasteless gas essential to living organisms, being taken up by animals, which convert it to carbon dioxide plants, in turn, utilize carbon dioxide as a source of carbon and return the oxygen to the atmosphere.

Key Points

• Oxygen was discovered about 1772 by a Swedish chemist, Carl Wilhelm Scheele, who obtained it by heating potassium nitrate, mercuric oxide, and many other substances.

• At 46 per cent of the mass, oxygen is the most plentiful element in Earth’s crust.

• The proportion of oxygen by volume in the atmosphere is 21 per cent and by weight in seawater is 89 per cent.

Additional Information

Q9. Answer: (b) C

The correct answer is Recombination.

• Recombination is the process of creating a better-adapted environment for organisms to live and grow more.

• DNA recombination involves the exchange of genetic material either between multiple chromosomes or between different regions of the same chromosome.

• This process is generally mediated by homology that is, homologous regions of chromosomes line up in preparation for exchange, and some degree of sequence identity is required.

Key Points

• Recombination is a process by which pieces of DNA are broken and recombined to produce new combinations of alleles.

• This recombination process creates genetic diversity at the level of genes that reflects differences in the DNA sequences of different organisms.

• In eukaryotic cells, which are cells with a nucleus and organelles, recombination typically occurs during meiosis. Meiosis is a form of cell division that produces gametes, or egg and sperm cells.

Additional Information

Process	Details
Natural Selection	Natural selection is the process through which populations of living organisms adapt and change. Individuals in a population are naturally variable, meaning that they are all different in some ways.
Mutation	A mutation is a change that occurs in our DNA sequence, either due to mistakes when the DNA is copied or as the result of environmental factors such as UV light and cigarette smoke.
Non-Random Mating	Nonrandom mating can occur when individuals prefer mates with particular superior physical characteristics or by the preference of individuals to mate with individuals similar to themselves.

Q10. Answer: (b) B

Given:

Speed of train = 126 km/hr

Speed of car = 72 km/hr

Formula Used:

Distance = speed × time

Calculation:

Length of train,

=> (speed of train - Speed of car) × 5/18 × time

=> Length of train = 54 × 5/18 × 40 = 600 meters

Therefore The length of train is 600 mtrs.

Q11. Answer: (b) B

The correct answer is B.

• In the Liver, urea is produced.

• Urea is produced in the liver and is a metabolite (breakdown product) of amino acids.

• Ammonium ions are formed in the breakdown of amino acids. Some are used in the biosynthesis of nitrogen compounds. Excess ammonium ions are converted to urea.

Key Points

• The liver is an organ only found in vertebrates which detoxifies various metabolites, synthesizes proteins, and produces biochemicals necessary for digestion and growth.

• In humans, it is located in the right upper quadrant of the abdomen, below the diaphragm.

Additional Information

Body Part	Details
Pancreas	The pancreas is an organ located in the abdomen. It plays an essential role in converting the food we eat into fuel for the body's cells.
Small Intestine	The small intestine or small bowel is an organ in the gastrointestinal tract where most of the absorption of nutrients and minerals from food takes place.
Kidney	The kidneys are a pair of bean-shaped organs on either side of your spine, below your ribs, and behind your belly. Each kidney is about 4 or 5 inches long, roughly the size of a large fist.

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Q12. Answer: (d) B

The correct answer is B.

• Bhiwadi is set to house the second airport in the NCR of Delhi, following the civil aviation ministry's approval of the project.

• Bhiwadi is a town in Rajasthan near New Delhi, is the spot for the country's first cargo airport, and makes Jewar in Greater Noida the second passenger airport in the National Capital Region.

Key Points

• The aspirational project is also believed to have a lateral effect on nearby real estate markets especially Bhiwadi.

• The project will boost economic activities in the region, generating enormous employment opportunities.

• Bhiwadi, which is often termed as the gateway to the royal state of Rajasthan has a bright future.

• The completion of NPR, SPR, CPR will provide smoother and easier connectivity to Bhiwadi. The shifting of the Kherki Daula toll plaza will also provide a traffic-free destination to Bhiwadi.

Additional Information

• Top Airports in India are:

• Indira Gandhi International Airport New Delhi.

• Chhatrapati Shivaji International Airport, Mumbai.

• Rajiv Gandhi International Airport, Hyderabad.

• Kempegowda International Airport, Bengaluru.

Q13. Answer: (d) A

Given:

expression

$(Cot1^o\ Cot2^o\ Cot3^o\ Cot4^o\ Cot5^o.... Cot90^o)$

Calculation:

Given expression is series of multiplication of $Cot1^o$ to $Cot90^o$.

We know that $Cot90^o = 0$

$Cot1^o\ Cot2^o\ Cot3^o\ Cot4^o\ Cot5^o.... Cot89^o \times 0 = 0$

Therefore value of $Cot1^o\ Cot2^o\ Cot3^o\ Cot4^o\ Cot5^o.... Cot90^o$ is 0.

Q14. Answer: (b) B

The correct answer is Plague.

• Charminar was built to commemorate the eradication of the Plague. It is located in Hyderabad in the Telangana state of India.

• The Charminar was constructed in 1591 to ward off the recurring plague and it was built by the fifth ruler of the Qutb Shahi dynasty, Muhammad Quli Qutb Shah.

Key Points

• Plague is an infectious disease caused by Yersinia pestis bacteria, usually found in small mammals and their fleas.

• The disease is transmitted between animals via their fleas and, as it is a zoonotic bacterium, it can also transmit from animals to humans.

• Type of Plagues are:

• Septicemic plague: When the bacteria enter the bloodstream directly and multiply there, it's known as septicemic plague.

• Pneumonic plague: When the bacteria spread to or first infect the lungs, it's known as pneumonic plague the most lethal form of the disease.

Additional Information

Disease	Details
Yellow Fever	Yellow fever is a serious, potentially deadly flu-like disease spread by Aedes aegypti mosquitoes, which also transmit dengue and Zika viruses. It's characterized by a high fever and jaundice.
Leprosy	Leprosy is an infectious disease that causes severe, disfiguring skin sores and nerve damage in the arms, legs, and skin areas around your body. Leprosy has been around since ancient times. Outbreaks have affected people on every continent.

Cancer	Cancer is the name given to a collection of related diseases. In all types of cancer, some of the body's cells begin to divide without stopping and spread into surrounding tissues. Cancer can start almost anywhere in the human body, which is made up of trillions of cells.

Q15. Answer: (c) C

Given:

Total number of persons = 50

Number of persons who go to work by train = 18

Number of persons who go to work by bus = 26

The number of persons who go neither by train nor by bus = 8

Calculation:

Number of people who use either train or bus to go to work = (total person) - (The number of persons who go neither by train nor by bus)

=> Number of people who use either train or bus to go to work = 50 - 8 = 42

Therefore The number of people who use either train or bus to go to work is 42.

Q16. Answer: (c) B

Given:

Total number of persons = 50

Number of persons who go to work by train = 18

Number of persons who go to work by train = 26

The number of persons who go neither by train nor by bus = 8

Calculation:

Number of people who use both train and bus to go to work = (Number of persons who go to work by train) + (Number of persons who go to work by train) - (Number of people who use either train or bus to go to work)

=> Number of people who use either train or bus to go to work = (total person) - (The number of persons who go neither by train nor by bus)

=> Number of people who use either train or bus to go to work = 50 - 8 = 42

=> Number of people who use both train and bus to go to work = 26 + 18 - 42 = 2

Therefore The number of people who use both train and bus to go to work is 2.

Q17. Answer: (c) C

Given:

The total number of persons is 50.

The number of persons goes to work by train is 18.

The number of persons goes to work by bus is 26.

The number of persons goes to work neither by train nor by bus is 8.

Formulas:

For two sets A and B,

n(A ? B) = n(A) + n(B) – n(A ∩ B)

where n(A) = number of elements in set A.

n(B) = number of elements in set B.

n(A ∩ B) = number of elements present in both sets A and B.

n(A ? B) = the number of elements present in either of the sets A or B.

Calculation:

According to the question,

The total number of persons is 50.

The number of persons goes to work neither by train nor by bus is 8.

The total number of persons who go to work either by train or by bus

=> 50 – 8 = 42.

Let n(A) be the number of persons who go to work by train,

n(B) be the number of persons who go to work by bus,

n(A ∩ B) be the number of persons who go to work by train as well as by bus.

n(A ? B) be the number of persons go to work either by train or by bus.

According to the formula,

n(A ? B) = n(A) + n(B) – n(A ∩ B)

42 = 18 + 26 - n(A ∩ B)

=> 42 = 44 - n(A ∩ B)

=> n(A ∩ B) = 44 – 42 = 2.

The total number of persons go to work by train as well as by bus is 2.

The total number of persons who go to work by train only = 18 – 2 = 16.

The percentage of the total number of people going by train only to the total number of persons:

=> (16/50) × 100

=> 32%

Therefore The percentage of the total number of people going by train only to the total number of persons is 32.

Q18. Answer: (d) A

The correct answer is A.

• Structural Functionalism is one of these social theories that try to understand why society works by focusing on the relations between different social institutions that society should be built.

• Functionalism emphasizes how various social institutions work together to meet the needs of society.

• Structural-functional theory, also called functionalism, sees society as a structure with interrelated parts designed to meet the biological and social needs of the individuals in that society.

Key Points

• Structural-functionalism's core concepts are, in harness, structure, and system.

• Under the auspices of Radcliffe-Brown (1881–1955), it emerged as a clear-cut alternative to hybrid Boasian functionalism and successor to Malinowski's particular brand of economism and radical individualism.

• It derived not from German and British precursors but mainly from Durkheimian French sociology with supplementary insights from the Russian geographer and anarchist, Peter Kropotkin (1842–1921).

Additional Information

Description	Details
Symbolic Interaction	Symbolic interaction is one of the several theories in the social sciences. According to this theory, people live both in the natural and the symbolic environment. Symbolic interaction is a process that is enlivened the reciprocal meaning and values by the aid of the symbols in the mind.
Conflicts	A conflict is a clash of interests. The basis of conflict may vary but it is always a part of society. Basis of conflict may be personal, racial, class, caste, political and international. Conflict in groups often follows a specific course.
Positivism	Positivism is a philosophical theory that states that "genuine" knowledge is exclusively derived from the experience of natural phenomena and their properties and relations. Thus, information derived from sensory experience, as interpreted through reason and logic, forms the exclusive source of all certain knowledge.

Q19. Answer: (a) D

Given:

Numbers given are 72, 108 and 180.

Calculation:

We have to find out the HCF of 72, 108 and 180.

72 can be expressed as 2 × 2 × 2 × 3 × 3

108 can be expressed as 2 × 2 × 3 × 3 × 3

180 can be expressed as 2 × 2 × 5 × 3 × 3

As we can see, all numbers have the combination of (2 × 2 × 3 × 3) a factor.

Which means that (2 × 2 × 3 × 3) which is equal to 36 is HCF of 72, 108 and 180.

Therefore The value of HCF of 72, 108 and 180 is 36.

Q20. Answer: (d) C

The correct answer is C.

• Keoladeo National Park is also a global heritage site.

• The Keoladeo National Park in Bharatpur is located within the Indus-Ganges Monsoon Forest Biogeographical Province. It extends over an area of 2,783 hectares (6,880 acres).

• It was declared a national park in 1982. In 1900 it was a duck-hunting reserve of the Maharajas of Bharatpur, then became a bird sanctuary in 1956, with the Maharajas exercising shooting rights until 1972.

Key Points

• It was recorded as a Ramsar Wetland site in 1981. It was inscribed in the UNESCO World Heritage List in 1985 under category (x), as a natural property.

• It is famous for 364 species of wintering birds that flock in large numbers, arriving from distant countries of Afghanistan, Turkmenistan, China, and Siberia. It is surrounded by 17 villages and Bharatpur city.

Additional Information

National Park	Details
Kanha National Park.	Kanha National Park, also known as Kanha Tiger Reserve, is a vast expanse of grassland and forest in the central Indian state of Madhya Pradesh. Tigers, jackals, and wild pigs can be spotted in Kanha Meadows.
Vedathangal Bird Sanctuary.	Vedanthangal Bird Sanctuary is a 30-hectare protected area located in the Chengalpattu District and Madurantakam taluk of the state of Tamil Nadu, India.
Ranganathittu Bird Sanctuary.	Ranganathittu Bird Sanctuary is a bird sanctuary in the Mandya District of the state of Karnataka in India. It is the largest bird sanctuary in the state, 40 acres in area, and comprises six islets on the banks of the Kaveri river.

Q21. Answer: (b) C

The correct answer is C

• The minimum reactive elements of the periodic table are the Noble Gases.

• The periodic table, also known as the periodic table of elements, is a tabular display of the chemical elements, which are arranged by atomic number, electron configuration, and recurring chemical properties.

• The periodic table is the organized array of all the chemical elements in order of increasing atomic number the total number of protons in the atomic nucleus.

Key Points

• Noble gases are the least reactive of all known elements. That's because, with eight valence electrons, their outer energy levels are full. The only exception is helium, which has just two electrons.

• Noble gas, any of the seven chemical elements that make up Group 18 (VIIIA) of the periodic table. The elements are helium (He), neon (Ne), argon (Ar), krypton (Kr), xenon (Xe), radon (Rn), and oganesson (Og).

Additional Information

Description	Details
Transition Metals	Transition metals are elements in the ten middle groups of the fourth, fifth, sixth, and seventh periods of the periodic table. Transition metals and their compounds can exhibit colour due to internal d-d electron transfers.
Alkaline Earth Metal	The alkaline earth metals are six chemical elements in group 2 of the periodic table. They are beryllium (Be), magnesium (Mg), calcium (Ca), strontium (Sr), barium (Ba), and radium (Ra).

Q22. Answer: (b) C

Given:

A shopkeeper sells sugar at the rate of Rs.19 per kg.

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In the selling price of 19 per kg, he suffers a loss of 5%.

Calculation:

Let the cost price of sugar per kg be 100.

According to the question,

A shopkeeper sells sugar at the rate of Rs.19 per kg ----(1)

The shopkeeper suffers a loss of 5%.

We can say,

The selling price of sugar per kg will be (100 – 5) = 95 ----(2)

Now, we have to find out the selling price of the sugar in rupees per kg to earn a profit of 10%.

Required Selling price = 110.

From equation (1) and (2),

95 → Rs. 19

=> 100 → (100 × 19)/95 = 20.

=> 110 → (20 × 110)/100 = 22.

Therefore The selling price of sugar per kg to earn a profit of 10% is Rs. 22.

Q23. Answer: (d) A

The pattern followed here is:

According to the alphabetical positions of the letters,

Similarly,

Hence, '13 - 4 - 2 - 21 - 6 - 18' is the correct answer.

Q24. Answer: (d) D

The pattern followed here is:

According to the alphabetical positions of the letters,

Note: Letters at odd position are moved one step forward and letters at even position are replaced by their opposite letters.

Similarly,

Hence, 'ILTKJGBO' is the correct answer.

Q25. Answer: (a) C

The correct answer is C.

• Article 360 of the Indian Constitution describes the provisions related to financial emergencies.

• According to Article 360- "If the President is satisfied that a situation has arisen whereby the financial stability or credit of India or of any part of the territory thereof is threatened, he may by a Proclamation make a declaration to that effect".

Key Points

• The Constitution of India is the supreme law of India.

• The document lays down the framework that demarcates the fundamental political code, structure, procedures, powers, and duties of government institutions and sets out fundamental rights, directive principles, and the duties of citizens.

• The Constitution of India was last amended on 25 January 2020 (104th).

Additional Information

Article	Details
Article 148	Article 148 - Comptroller and Auditor-General of India There shall be a Comptroller and Auditor-General of India who shall be appointed by the President by warrant under his hand and seal and shall only be removed from office in like manner and on like grounds as a Judge of the Supreme Court.
Article 143	Article 143 of the Constitution of India confers upon the Supreme Court advisory jurisdiction. Article 143 Power of President to consult Supreme Court. Firstly, the President may obtain the opinion of the Supreme Court on any question of law or fact that has arisen or likely to arise.
Article 72	Article 72 Constitution of India: Power of President to grant pardons, etc., and to suspend, remit or commute sentences in certain cases.

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Q26. Answer: (c) A

The logic is:

CAT : KITTEN → The young one of a CAT is called KITTEN.

Similarly,

DONKEY : _____ → The young one of a DONKEY is called FOAL.

Hence, 'FOAL' is the correct answer.

Q27. Answer: (b) B

Given:

The ratio of two positive integers is 3 : 4.

The sum of two positive integers is 70.

Calculation:

Let the first positive integer be 3x and second positive integer be 4x.

We can say that the sum of two positive integer will be (3x + 4x) = 7x.

According to the question,

The sum of two positive integers is 70.

7x = 70

=> x = 70/7 = 10

=> 3x = 3 × 10 = 30

=> 4x = 4 × 10 = 40

The first positive integer is 30 and the second positive integer is 40.

Let "y" be added in each integer so that the ratio of both positive integers becomes 5 : 6.

We can write:

(30 + y)/(40 + y) = 5/6

=> (30 + y) × 6 = (40 + y) × 5

=> 6y – 5y = 200 – 180

=> y = 20.

Therefore The value of integer that should be added to each positive integer so that their ratio becomes 5 : 6 is 20.

Q28. Answer: (c) B

The correct answer is B.

• When a stone thrown directly upwards reaches the top, its: Velocity is zero and the acceleration is about 10 m/s2.

• This is true even when an object is thrown upward or has zero velocity.

• The direction of velocity and acceleration for a ball thrown up in the air. At the highest point in its trajectory, the ball has zero velocity, and the magnitude of velocity increases again as the ball falls. The rock reaches the ground 10s after it is thrown.

Key Points

• Speed is a scalar quantity. Velocity is a vector quantity and therefore can be negative, depending upon the coordinate system you use.

• If in your coordinate system, Z is positive Upwards, then the speed of the stone (assuming that there is no air-induced drag) is 30 m/sec. However, the velocity of the stone would be 0, 0, -30 m/sec (X, Y, and Z portions of the velocity).

Q29. Answer: (c) C

The correct answer is C.

• In 1951, the Indian men's water polo team won the gold medal at the Asian Games.

• Water polo in India is administered by the Swimming Federation of India.

• The Indian men's national water polo team also won a silver medal at the 1970 Asian Games.

Key Points

• In 1951, the first Asian Games were held in New Delhi and the swimming events were conducted at the then National Stadium Swimming Pool near the Delhi High Court.

• In 1951, Sachin Nag stood first and won the gold medal for India in the 100 meters freestyle (Swimming) event.

Important Points

• Last Men's Asian Games was held in 2018 Jakarta Palembang.

• In the 2018 Asian Games Kazakistan won the Gold Medal in the water polo game.

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• Teams consist of 13 players in total, with 7 players in play at any time, 6 field players and 1 goal keeper.

• Players are only permitted to use one hand to hold the ball apart from the goal who can use two hands when within 5m of their own goal.

Additional Information

Indian water polo team has participated 5 times at the Asian Games:

Q30. Answer: (c) B

Given:

A team wins 45 games.

The number of games won by the team is 60% of the number of games played.

Calculation:

Let the total number of games played be 100 units.

We can say that the number of games won by the team will be 60 units.

According to the question,

60 units = 45

=> 100 units = (45 × 100)/60 = 75

Therefore The total number of games played by the team is 75.

Q31. Answer: (d) B

Given:

Sin A = 1/√2

Cos B = √3/2

Concept Used:

Calculation:

According to the concept used,

If Sin A = 1/√2

=> A = 45°

Again, Cos B = √3/2

=> B = 30°

The sum of (A + B)° = 45° + 30° = 75°

Therefore The value of (A + B)° is 75°.

Q32. Answer: (b) A

The answer is Judge AP Shah.

Key Points

• Justice Ajit Prakash Shah, a former Chief Justice of the Delhi High Court, was named as the ethics officer (ombudsman) at the Board of Control for Cricket in India (BCCI) on November 9, 2015.

• On all conflict of interest problems plaguing Indian cricket, he will preside as the sole decision-maker.

Additional Information

• Board of Control for Cricket in India (BCCI):

• The BCCI is the governing body for cricket in India, and it is under the jurisdiction of the Ministry of Youth Affairs and Sports of the Indian government.

• President: Sourav Ganguly

• Headquarters: Mumbai

• Founded: December 1928

Q33. Answer: (b) C

The correct answer is Rabies.

• Rabies is an acute viral disease of animals, which is spread in humans by the bite of an infected animal.

• Rabies is a viral disease that causes inflammation of the brain in humans and other mammals. Early symptoms can include fever and tingling at the site of exposure.

• Rabies, also called hydrophobia or lyssa, acute, ordinarily fatal, viral disease of the central nervous system that is usually spread among domestic dogs and wild carnivorous animals by a bite.

• The virus, a rhabdovirus, is often present in the salivary glands of rabid animals and is excreted in the saliva; thus, the bite of the

infected animal introduces the

Key Points

• Causes for Rabies spread are bellow:

• People usually get rabies from the bite of a rabid animal. It is also possible, but rare, for people to get rabies from non-bite exposures, which can include scratches, abrasions, or open wounds that are exposed to saliva or other potentially infectious material from a rabid animal.

• Other types of contact, such as petting a rabid animal or contact with the blood, urine, or feces of a rabid animal, are not associated with risk for infection and are not considered to be exposures of concern for rabies.

Additional Information

Disease	Details
Haemophilia	Haemophilia is a rare disorder in which your blood doesn't clot normally because it lacks sufficient blood-clotting proteins (clotting factors). If you have hemophilia, you may bleed for a longer time after an injury than you would if your blood clotted normally.
Cancer	Cancer is the name given to a collection of related diseases. In all types of cancer, some of the body's cells begin to divide without stopping and spread into surrounding tissues. Cancer can start almost anywhere in the human body, which is made up of trillions of cells.
Mumps	Mumps is a viral infection that primarily affects (salivary) glands that are located near your ears. Mumps can cause swelling in one or both of these glands.

Q34. Answer: (d) B

Given:

Numbers = 60, 120 and 225

Concept used:

LCM of two or more numbers is the smallest number which is a common multiple of the given number

Calculation:

LCM of 60, 120, and 225 = 2 × 2 × 2 × 3 × 3 × 5 × 5

=> 1800

Therefore The LCM of 60, 120, and 225 is 1800.

Q35. Answer: (a) B

Given:

The Sodium in product almonds = 96 gm

The fiber in product almonds = 5.4 gm

Formula used:

Percentage = [(Value obtained)/(Comparison value)] × 100%

Calculation:

According to the question

Percentage = (Weight of fiber/Weight of Sodium)× 100%

=> (96/5.4)× 100

=> 1777.7%

Therefore The percentage of sodium, fiber in the product almonds is 1777.7%.

Q36. Answer: (d) A

Given:

Protein in product nut = 5.7 gm

Fat in product raisins = 21.7 gm

Calculation:

According to the question

Percentage = [(Protein in product nut)/(Fat in product raisins] × 100%

=> [(5.7)/(21.7)] × 100

=> 570/21.7

=> 26.26%

Therefore The required percentage is 26.26%.

Q37. Answer: (c) B

Formula used:

Average = Sum of all observations/Number of all observations

Calculation:

According to the question

Average = Sum of carbohydrate content in all product/Number of products

=> (46.6 + 64.7 + 65.1)/3

=> 176.4/3

=> 58.8 gm

Therefore The average of carbohydrate content in all products is 58.8 gm.

Q38. Answer: (b) B

The correct answer is B.

• The reverse Osmosis process is used in water purification.

• Water purification is the process by which undesired chemical compounds, organic and inorganic materials, and biological contaminants are removed from the water.

• The purification procedure reduces the concentration of contaminants such as suspended particles, parasites, bacteria, algae, viruses, and fungi.

Key Points

• Reverse Osmosis is a technology that is used to remove a large majority of contaminants from water by pushing the water under pressure through a semi-permeable membrane.

• Reverse Osmosis is the process of Osmosis in reverse. Whereas Osmosis occurs naturally without the energy required, to reverse the process of osmosis you need to apply energy to the more saline solution.

Additional Information

Process	Details
Osmosis	Osmosis is a naturally occurring phenomenon and one of the most important processes in nature. It is a process where a weaker saline solution will tend to migrate to a strong saline solution.
Cytolysis	Cytolysis, or osmotic lysis, occurs when a cell bursts due to an osmotic imbalance that has caused excess water to diffuse into the cell. Water can enter the cell by diffusion through the cell membrane or through selective membrane channels called aquaporins, which greatly facilitate the flow of water
Turgor pressure	Turgor pressure is the force within the cell that pushes the plasma membrane against the cell wall. It is also called hydrostatic pressure and defined as the pressure measured by a fluid, measured at a certain point within itself when at equilibrium.

Q39. Answer: (c) D

The correct order of the passages to make a meaningful sentence is shown below:

Q: India must accelerate

S: its productivity attainments through

P: Strategic interventions on building

R: human talent, quality, and technology

‘India’ is a proper noun and a passage starts with a subject or a noun.

‘its’ clearly implies here ‘India’ and it is the continuing the first passage.

Among ‘P’ and ‘R’ it is clear that ‘R’ makes the last line of the passage and P is continued by R.

Hence, ‘QSPR’ is the correct answer.

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Q40. Answer: (d) B

The correct answer is B.

• The brain is the industrial standard name of the first computer virus for MS-DOS and was released in 1986.

• It would overwrite the boot sector on the floppy disk and prevent the computer from booting.

• It was written by two brothers from Pakistan and was originally designed as copy protection.

• The Morris was the first Computer virus that spread extensively in the wild in 1988. It was written by Robert Morris.

Key Points

• In 1991, the Michelangelo virus was first discovered in Australia. It would lay dormant until 6th March every year and then overwrite the first one hundred sectors on the storage devices with zeros, preventing the computer from booting.

• In 1998, CIH was released. It infected around 60 million computers and caused significant damages by overwriting important system files. It was written by a Taiwanese student.

• In 1999, Melissa was released. This one was the first widespread Word Macro Virus.

Important Points

• A computer virus is a type of computer program that, when executed, replicates itself by modifying other computer programs and inserting its own code.

• If this replication succeeds, the affected areas are then said to be infected with a computer virus.

Q41. Answer: (b) C

The correct answer is C.

• The metal detectors through which people pass through airports are operated by Faraday's law.

• A metal detector is an instrument that detects the presence of metal nearby. Metal detectors are useful for finding metal inclusions hidden within objects, or metal objects buried underground.

• In 1881, Alexander Graham Bell invented the first metal detector.

Important Points

Key Points

• Faradays Law:

• The Law states that when the magnetic flux linking a circuit changes, an electromotive force is induced in the circuit proportional to the rate of change of the flux linkage.

• The Law states that the amount of any substance deposited or liberated during electrolysis is proportional to the quantity of electric charge passed and to the equivalent weight of the substance.

Additional Information

Laws	Details
Newton's law	Newton’s laws of motion, relations between the forces acting on a body and the motion of the body, first formulated by English physicist and mathematician Sir Isaac Newton.
Coulomb's law	Coulomb's law, or Coulomb's inverse-square law, is an experimental law of physics that quantifies the amount of force between two stationary, electrically charged particles. ... The force is along the straight line joining the two charges.
Civil Law	Civil law is a major branch of the law. In common law legal systems such as England and Wales and the United States, the term refers to non-criminal law. The law relating to civil wrongs and quasi-contracts is part of the civil law, as is the law of property (other than property-related crimes, such as theft or vandalism).

Q42. Answer: (a) B

The correct answer is B.

• Julius Oppenheimer was part of the team that invented the atomic bomb.

• The atom bomb is a weapon with great explosive power that results from the sudden release of energy upon the splitting, or fission, of the nuclei of a heavy element such as plutonium or uranium.

• Atomic bombs are made up of a fissile element, such as uranium, that is enriched in the isotope that can sustain a fission nuclear chain reaction.

Key Points

Person	Details	Books

Julius Oppenheimer	Julius Robert Oppenheimer, born April 22, 1904, New York, was an American theoretical physicist, and science administrator.	Science and the common understanding. Atom and Void: Essays on Science and Community. Uncommon Sense.
Alfred Nobel	Alfred Bernhard Nobel was a Swedish chemist, engineer, inventor, businessman, and philanthropist. He held 355 different patents, invented dynamite and other more powerful explosives, and who also founded the Nobel Prizes.	No books.
John Dalton	John Dalton FRS was an English chemist, physicist, and meteorologist. He is best known for introducing the atomic theory into chemistry, and for his research into color blindness.	A New System of Chemical Philosophy. Meteorological Observations and Essays. Extraordinary Facts Relating to the Vision of Colours.
Robert Bacon	Robert Bacon was an American statesman and diplomat. A leading banker and businessman, who worked closely with Secretary of State Elihu Root, 1905-1909, and served as United States Secretary of State from January to March 1909.	For Better Relations with Our Latin American Neighbors: A Journey to South America

Q43. Answer: (d) B

Given:

Principal = Rs. 100

Amount = Rs. 121

Rate = 10%

Formula used:

$A = P[1 + (R/100)]^n$

Where, A = Amount, P = Principal, Rate = R, n = Number of years

Calculation:

As we know that

$A = P[1 + (R/100)]^n$

$\Rightarrow 121 = 100[1 + (10/100)]^n$

$\Rightarrow 121/100 = [1 + (1/10)]^n$

$\Rightarrow 121/100 = (11/10)^n$

$\Rightarrow (11/10)^2 = (11/10)^n$

$\Rightarrow 2 = n$

Therefore The money is kept in bank for 2 years.

Amount = Principal + Compound interest

Compound Interest (CI) = $P[\{1 + (R/100)^n - 1\}]$

Q44. Answer: (c) A

A. ÷ and –

Given equation: $5 \times 36 - 9 + 31 \div 41 = 10$

After replacing the signs, we get:

L.H.S = $5 \times 36 \div 9 + 31 - 41$

$= 5 \times 4 + 31 – 41$

$= 20 + 31 – 41$

$= 51 – 41$

= 10 = R.H.S

B. × and +

Given equation: $5 \times 36 - 9 + 31 \div 41 = 10$

After replacing the signs, we get:

L.H.S = $5 + 36 - 9 \times 31 \div 41$

= 5 + 36 – 6.80
= 41 – 6.80
= 34.2 ≠ R.H.S
C. ÷ and ×
Given equation: 5 × 36 - 9 + 31 ÷ 41 = 10
After replacing the signs, we get:
L.H.S = 5 ÷ 36 - 9 + 31 × 41
= 0.13 – 9 + 1271
= 1271.13 – 9
= 1262.13 ≠ R.H.S
D. × and -
Given equation: 5 × 36 - 9 + 31 ÷ 41 = 10
After replacing the signs, we get:
L.H.S = 5 - 36 × 9 + 31 ÷ 41
= 5 – 324 + 0.75
= 5.75 – 324
= -318.25 ≠ R.H.S
Hence, '÷ and –' is the correct answer.

Q45. Answer: (d) B

Given:
Efficiency of Anil = 2 × Efficiency of Binay
Time difference between Anil and Binay to finish a work = 20 days
Concept used:
Efficiency = Total Work/Time
Calculation:
According to the question
Efficiency ratio of Anil and Binay = 2 : 1
The ratio of time taken by Anil and Binay = 1 : 2
Time difference between Anil and Binay = 1 unit
=> 20 days = 1 unit
So,
Time taken by Anil = 20 × 1 = 20 days
Time taken by Binay = 20 × 2 = 40 days
Now,
Total work = LCM of 20 and 40
=> 40 units
Time taken by Anil and Binay working together = Total Work/Efficiency
=> 40/(1 + 2)
=> 40/3
=> 13.33 days
Therefore Time taken by Anil and Binay to finish work together is 13.33 days.

Q46. Answer: (c) A

The correct answer is Narendra Modi.
• The international solar alliance was launched by Narendra Modi.
• The International Solar Alliance is an alliance of 121 countries initiated by India and it was founded on 30 November 2015.
• Its headquarters is located in Gurugram and its current director-general is Ajay Mathur.
Key Points
• Narendra Damodardas Modi is an Indian politician serving as the 14th and current Prime Minister of India since 2014.
• He was the Chief Minister of Gujarat from 2001 to 2014 and is the Member of Parliament for Varanasi.
• Modi is a member of the Bharatiya Janata Party and its National Democratic Alliance.

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Additional Information

Person	Details
Nawaz Sharif	Mian Muhammad Nawaz Sharif is a Pakistani businessman and politician who served as the prime minister of Pakistan for three non-consecutive terms. Sharif is the longest-serving prime minister of Pakistan has served a total of more than 9 years.
Barack Obama	Barack Obama is an American politician and attorney who served as the 44th president of the United States from 2009 to 2017. A member of the Democratic Party, Obama was the first African-American president of the United States.
James Cameron	James Francis Cameron CC is a Canadian-born film director, producer, screenwriter, editor, artist, and environmentalist who currently lives in New Zealand. He is best known for making science fiction and epic films. Cameron first gained recognition for directing The Terminator.

Q47. Answer: (a) A

The correct answer is A.

• METSAT is a Geosynchronous Satellite which is the first exclusive weather satellite created by ISRO.

• METSAT (Meteorological Satellite), launched by PSLV, is the first exclusive meteorological satellite built by ISRO.

• METSAT's solar array was automatically deployed immediately after its injection into Geosynchronous Transfer Orbit (GTO) by PSLV-C4.

Key Points

• Indian meteorological instruments had been combined with telecommunication and television payloads in the INSAT series.

• METSAT was a precursor for a future INSAT system that was to have separate satellites for meteorology and telecommunications.

Additional Information

Satelite	Details
The Earth's lower orbit satellite.	Satellites in this orbit travel at a speed of around 7.8 km per second; at this speed, a satellite takes approximately 90 minutes to circle Earth, meaning the ISS travels around Earth about 16 times a day.
Polar Orbit Satellite.	A Polar Orbit (PO) is an orbit in which a satellite passes above or nearly above Earth's North and South poles on each revolution. It has an inclination of (or very close to) 90 degrees to the equator.
Deep Space Probe Satellite.	A space probe or a space probe is a robotic spacecraft that doesn't orbit the Earth but instead explores further into outer space. A space probe may approach the Moon; travel through interplanetary space flyby, orbit, or land or fly on other planetary bodies; or enter interstellar space.

Q48. Answer: (b) C

Given:

The ratio of money distributed among Arvind, Binu and Chitra is 2 : 3 : 4

Money received by Binu is Rs. 51

Calculations:

Let the money distributed among Arvind, Binu and Chitra be 2y, 3y, 4y

According to the question, we have

Money received by Binu is Rs. 51

=> 3y = 51

=> y = 51/3

=> y =17

Money received by Chitra is 4y

=> 4 × 17

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=> Rs. 68

Money received by Arvind is 2y

=> 2 × 17

=> Rs. 34

Therefore The money received by Chitra and Arvind is Rs. 68 and Rs. 34.

Shortcut Trick

Therefore The money received by Chitra and Arvind is Rs. 68 and Rs. 34.

Q49. Answer: (a) B

The pattern followed here is:

Letters of the word are coded according to the equivalent opposite letter of a particular letter of the word.

C	L	O	U	D
X	O	L	F	W

Similarly,

S	U	N	S	E	T
H	F	M	H	V	G

Hence, 'HFMHVG' is the correct answer.

Q50. Answer: (c) B

The correct answer is B.

• Space Application Center, SAC located in Ahmedabad, Gujarat, India.

• The Space Applications Centre is an institution of research in Ahmedabad under the aegis of the Indian Space Research Organisation.

• Indian Space Research Organization is founded by Dr.Vikram Sarabhai.

• Indians Space Research Organization's current chairman is Dr.K Sivan.

Key Points

• Space Applications Centre (SAC) is one of the major centers of the Indian Space Research Organisation (ISRO).

• SAC focuses on the design of space-borne instruments for ISRO missions and the development and operationalization of applications of space technology for societal benefits.

Additional Information

• The Indian Space Research Organisation or is the national space agency of the Republic of India, headquartered in Bengaluru.

• It operates under Department of Space which is directly overseen by the prime minister of India while chairman of ISRO acts as executive of DOS as well.

Important Points

• Top 5 Spacer agencies in the world are:

• National Aeronautics and Space Administration (NASA).

• China National Space Administration (CNSA).

• European Space Agency (ESA).

• Russian Federal Space Agency (Roscosmos).

• Indian Space Research Organisation (ISRO).

Q51. Answer: (d) B

Calculation:

A. 3/7, 15/41, 19/35, 7/11

First we compare 3/7, 15/41

By cross multiplication, we get:

=> 3 × 41 = 123 and 15 × 7 = 105

=> 123 > 105

=> (3/7) > (15/41)

The fraction 3/7, 15/41, 19/35, 7/11 dose not follow the ascending order.

B. 15/41, 3/7, 19/35, 7/11

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First we compare 15/41, 3/7

By cross multiplication, we get

=> 15 × 7 = 105 and 41 × 3 = 123

=> 105 < 123

=> (15/41) < (3/7)

Now, we compare 3/7, 19/35

By cross multiplication, we get

=> 3 × 35 = 105 and 7 × 19 = 133

=> 105 < 133

=> (15/41) < (3/7) < (19/35)

Now, we compare 19/35, 7/11

By cross multiplication, we get

=> 19 × 11 = 209 and 35 × 7 = 245

=> 209 < 245

=> (15/41) < (3/7) < (19/35) < (7/11)

Therefore Option: 4) follow the ascending order (15/41) < (3/7) < (19/35) < (7/11).

Alternate Method

In this method we convert all the given fraction into decimal form, then we arrange in ascending orders.

3/7, 15/41, 19/35, 7/11

=> 3/7 = 0.428 = 0.43

=> 15/41 = 0.365 = 0.37

=> 19/35 = 0.542 = 0.54

=> 7/11 = 0.636 = 0.64

=> 0.37 < 0.43 < 0.54 < 0.64

(15/41) < (3/7) < (19/35) < (7/11)

Therefore Option number 4) follow the ascending order (15/41), (3/7), (19/35), (7/11).

Q52. Answer: (c) C

The correct answer is C.

• During his visit to Britain in November 2015, Prime Minister Narendra Modi unveiled the statue of Basaveshwar, a 12th-century Kannada social reformer, and philosopher.

Key Points

• Saint Basaveshwar is known for struggling against the caste system and other evils in Hinduism.

• He is also known as Vishva Guru, Bhakti Bhandari, and Basava.

• Saint Basaveshwar was born in 1131 AD in Baghewadi (Karnataka).

• Basaveshwara believed in a karma-based system rather than a birth-based system.

Important Points

Social/Religious Movement in India	
Name of the organization	Founder
Arya Samaj	Dayanand Saraswati
Ramakrishna Mission	Swami Vivekananda
Prarthana Samaj	Atmaram Pandurang
Brahmo Samaj	Raja Rammohan Roy

Q53. Answer: (b) C

Given:

87, 21, 53, 12, 86, 98, 23, 64, 87, 23, 23, 87, 56, 12, 53

Concept used:

When total terms are odd,

Median = {(n+1)/2)}th term

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When total terms are even

Median = [(n/2)th term + {(n/2)^(th) + 1}]/2

Calculation:

87, 21, 53, 12, 86, 98, 23, 64, 87, 23, 23, 87, 56, 12, 53

Arrange all terms in ascending order

=> 12, 12, 21, 23, 23, 23, 53, 53, 56, 64, 86, 87, 87, 87, 98

The total terms are 15, so

Median = {(n+1)/2)}th term

=> Median = (15 +1)/2 term

=> Median = 8^(th) term

=> Median = 53

Therefore The median is 53.

Important Points

For finding the Median remember the following steps,

1) Firstly arrange all terms in ascending order

2) When all terms odd,

Median = {(n+1)/2)}th term

3) When all terms given even

Median = [(n/2)th term + {(n/2)th + 1}]/2

Q54. Answer: (b) Rajendra Chola 3

The correct answer is Rajendra Chola 3.

• Rajendra Chola 3 was the last ruler of the Chola dynasty.

Key Points

• The Chola dynasty was the greatest of all South Indian dynasties.

• Chola ruled maritime islands such as the Maldives and Sri Lanka, indicating that he had a highly skilled and vast naval power.

• Vijayalaya Chola is considered the founder of the Chola dynasty.

• Koluthunga Chola 3 commissioned the Kampameshwara temple at Tribhuvanam near Kumbakonam, which is considered a great specimen of Dravidian architecture.

• During the reign of Rajaraja Chola 3, the Cholas lost control of the southern territories of the Cauvery river and their power was also diminishing over the Vengi regions in the north.

• Rajendra Chola 3 was the last ruler of the Chola dynasty.

Additional Information

Sangam Dynasties		
Dynasty	Capital	Emblem
Chola	Uraiyur	Tiger
Pandya	Madurai	Fish
Chera	Vanjji	Bow

Q55. Answer: (a) D

Given:

The midpoint of triangle PQR is D, E, and F.

The perimeter of the triangle is 480 m.

Concept used:

The perimeter of the newly formed triangle = 1/2 × Perimeter of the large triangle

Calculation:

The perimeter of the triangle is 480 m

=> The perimeter of the newly formed triangle DEF = 1/2 × Perimeter of the triangle PQR

=> The perimeter of the newly formed triangle DEF = 1/2 × 480

=> The perimeter of the newly formed triangle DEF = 240 m

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Therefore The perimeter of the triangle DEF is 240 m.

Q56. Answer: (d) A

Conclusion 1 follows.

Most people are enrolling their children in private schools because the standards of education there are much better than in public schools clearly implies that the standard of education in public schools needs improvement.

Conclusion 2 does not follows.

The standards of education are much better in private schools compared to public schools does not means that all public schools should be closed immediately. Instead, public schools must make serious efforts to improve their quality and standard.

Hence, only conclusion 1 follows.

Q57. Answer: (a) A

Given:

Total time = 8 hour

Speed for first half distance = 73 km/h

Speed for second half distance = 81 km/h

Concept used:

S = D/T

Where,

S = Speed

D = Distance

T = Time

Calculation:

Let the distance between Chennai to Coimbatore be 2D.

Speed for first half distance = S1

Speed for second half distance = S2

Initial time = T1

Final time = T2

=> S1= 73 km/h

=> S2= 81 km/h

=> T = 8 hour

S1 = D/T1

=> 73 = D/T1

=> T1 = D/73 ----(1)

S2= D/T2

=> 81 = D/T2

=> T2= D/81 ----(2)

Total time,

T = T1 + T2

=> 8 = D/73 + D/81

=> 8 = (81D + 73D)/5913

=> 8 × 5913 = 154D

=> 4 × 5913 = 77D

=> 23652 = 77D

=> 307.17 = D

Now, total distance

=> 2D = 2 × 307.17

=> 614.34 km

Therefore The distance between Chennai and Coimbatore is 614.34 km.

Alternate Method

Average speed (S) = (2S1S2)/(S1 + S2)

S1 = 73 km/h

S2 = 81 km/h

T = 8 hour

=> S = (2 × 73 × 81)/(73 + 81)

=> S = (2 × 73 × 81)/154

=> S = (73 × 81)/77

=> S = 5913/77

=> S = 76.79 km/h

We know that,

S = D/T

=> 76.79 = D/8

=> D = 614.34 km

Therefore The distance between Chennai and Coimbatore is 614.34 km.

Important Points

When the equal distance travelled by two different or same speed source, the average speed,

S = (2S1S2)/(S1 + S2)

Q58. Answer: (a) C

The correct answer is C.

• The Polio vaccine was discovered by Jonas Salk.

Key Points

• Polio is an infectious disease caused mainly by the poliovirus in young children.

• On April 12 in 1955, Doctor Jonas Salk had declared polio prevention medicine safe and presented it to the world.

Important Points

Famous Scientist and Their Contribution	
Scientist	Contribution
Issac Newton	Law of universal gravitation, Laws of motion, The law of binomial theorem.
Albert Einstein	Special and general theories of relativity, Explanation of the photoelectric effect.
Marie Curie	Radioactivity, Purification of radium, and the discovery of polonium.

Q59. Answer: (d) A

By using the symbols in the table given below, we can draw the following family tree:

The only nephew of my son's wife's only unmarried brother → Imply that nephew is the son of Ritu's son and grandson of Ritu.

He is the grandfather of the only nephew → Grandfather of that nephew is definitely husband of Ritu.

The family tree diagram is as follows:

Clearly, the person is husband of Ritu.

Hence, ‘Husband’ is the correct answer.

Q60. Answer: (c) A

Conclusion 1 follows.

‘Go ahead and buy it if its price and quality are good for you to think’ clearly implies that the product quality should be good and so the company is confident to promote and say so.

Conclusion 2 does not follows.

The statement does not states that only XYZ Company has the best promotional products.

Hence, only conclusion 1 follows.

Q61. Answer: (b) B

Symbol	•	•	×	÷
Meaning	×	÷	•	•

Given equation: 216 ÷ 3 + 48 - 6 × 21?

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After replacing the symbols by their meaning, we get:

216 - 3 × 48 ÷ 6 + 21

= 216 – 3 × 8 + 21

= 216 – 24 + 21

= 237 – 24

= 213

Hence, '213' is the correct answer.

Q62. Answer: (d) B

The correct answer is B.

• Marie Curie is the only woman to have received the Nobel Prize in Science and Chemistry twice.

Key Points

• In 1903, Pierre Curie and Marie Curie were awarded the Nobel Prize in Physics for discovering radioactivity.

• Madame Curie was awarded the second Nobel Prize in Chemistry in 1911 for the purification of radium and the discovery of polonium.

Important Points

• Dorothy Hodgkin, an English chemist whose determination of the composition of penicillin and vitamin B12 earned her the 1964 Nobel Prize for Chemistry.

• Maria Mayer American physicist who shared one-half of the 1963 Nobel Prize for Physics with J. Hans D. Jensen for their proposal of the shell nuclear model.

• Ada Yonath Israeli protein crystallographer who was awarded the 2009 Nobel Prize for Chemistry.

Additional Information

• About Nobel Prize:

• The award is given by the Nobel Foundation in memory of Sweden's scientist Alfred Bernad Nobel.

• The award was instituted in 1901 by the Noble Foundation.

• This award is the world's highest award in the fields of peace, literature, physics, chemistry, medical science, and economics.

Q63. Answer: (b) C

The logic is:

TEMPERATURE : THERMOMETER → THERMOMETER is a device used to measure TEMPERATURE.

Similarly,

SOLAR RADIATION : _____ → THERMOPILE PYRANOMETER is a device used to measure SOLAR RADIATION.

Hence, 'THERMOPILE PYRANOMETER' is the correct answer.

Q64. Answer: (b) C

The correct answer is C.

Key Points

• On October 4, 1957, the Soviet Union sent the first artificial satellite 'Sputnik-1' into space.

• The satellite was able to complete the orbiter of the Earth in 96.2 minutes at a speed of 29000 kilometers per hour.

• At the time of launch, it weighed around 83.6 kg. Its diameter was 58 cm.

• Sputnik made like a metal ball, had four antennas.

• Sputnik-1 was giving signals of 20.005 and 40.002 MHz.

• Sputnik-1, which signals to radio operators around the world, stopped working in just 21 days.

• On 26 October 1957, it stopped working due to its battery running out.

Additional Information

List of Important Space Agency in the World		
Name	Acronym	Country
Indian Space Research Organisation	ISRO	India
National Aeronautics and Space Administration	NASA	United States of America
National Centre for Space Studies	CNES	France

Japan Aerospace Exploration Agency	JAXA	Japan

Q65. Answer: (d) B

The logic is:
India : Rupees → The currency of India is Rupees.
Similarly,
South Africa : _____ → The currency of South Africa is Rand.
Hence, 'RAND' is the correct answer.

Q66. Answer: (b) B

The least possible Venn diagram is:
Conclusions:
1. All moons are planets → False (As, All planets are moons → Some moons are planets)
2. Some planets are stars → True (As, All stars are planets → Some planets are stars)
3. Some moons are stars → True (As, All stars are planets and All planets are moons → Some moons are stars)
4. All planets are stars → False (As, All stars are planets → Some planets are stars)
Hence, conclusions 2 and 3 follow.

Q67. Answer: (d) B

Given:
The sum of the digits of a two digit number is 5.
Calculation:
Let the unit place digit be x and tenth place digit be y
=> Number = 10y + x
According to question,
=> x + y = 5
=> x = 5 - y ----(1)
=> 10y + x - 9 = 10x + y
=> 10y - y + x - 10x = 9
=> 9y - 9x = 9
=> y - x = 1 ----(2)
Putting the value of x in equation (2)
=> y - (5 - y) = 1
=> y - 5 + y = 1
=> 2y = 6
=> y = 3
Putting the value of y in equation (1)
=> x = 5 - y
=> x = 5 - 3
=> x = 2
So, the changed number is 10y + x - 9
Now putting the value of x and y in changed number
=> 10 × 3 + 2 - 9
=> 30 + 2 - 9
=> 23
Therefore The changed number is 23.

Q68. Answer: (b) C

Given:
Standard deviation(σ)= 4
Formula used:
Variance = σ^2

Calculation:

Variance = $(4)^2$

=> Variance = 16

Therefore The value of variance is 16.

Q69. Answer: (b) A

The correct answer is A.

• A double-density 3.5-inch floppy disk has a storage capacity of 1.44 MB.

Key Points

• The floppy disk is a thin, flexible magnetic disk sealed in a carrier made of square plastic.

• The floppy disk drive (FDD) was invented at IBM in 1967 by Alan Shugart.

• Types of Floppy disk:

• 8-inch floppy

• 5.25-inch floppy (mini floppy)

• 3.5-inch floppy

• Data is read/write at a fast speed with a 3.5-inch floppy disk. It is small in size but has a lot of storage capacity.

• The 3.5-inch floppy disk spins at a speed of 300 rotations per minute.

Q70. Answer: (c) C

The correct answer is C.

• Arati Saha was the first Indian female swimmer to cross the English Channel.

Key Points

• Aarti Saha was a famous female swimmer of India.

• She was the first female swimmer from India and Asia to swim across the English Channel.

• Aarti Saha did this on 29 September 1959 and was awarded the Padma Shri in 1960.

• Aarti Saha was the first Indian woman player to receive 'Padmashree'. They are called "Hindustani Jalpari".

Additional Information

• Shikha Tandon:

• Shikha Tandon is one of the swimming champions of Bengaluru.

• She has won 146 medals at the national level and 36 medals in international competitions. Which includes five gold medals.

Q71. Answer: (c) B

The correct answer is B.

Key Points

• From the equation of Ohm's Law, we have V= IR.

• Here, V= voltage, I = Current, and R= Resistance.

• From the question, it is evident that the resistance of the circuit is fixed at 5 ohms.

• From the equation, V = IR, we can say V is directly proportional to I

• This implies that voltage and current will have a direct mathematical relation when the resistance of the circuit is kept constant.

• So, if there is an increase in current in a circuit with 5 ohms resistance (or any resistance of fixed value), the voltage will increase proportionally.

Additional Information

• The SI unit of resistance is ohms and is denoted by Ω.

• The SI unit of voltage is volts and is denoted by V.

• The SI unit of current is ampere and is denoted by A.

• If an element of an electrical circuit follows the ohm’s law, then the element is known as a linear element. Example- Resistor

• Limitations of ohms law:

• Ohm’s law is not applicable to unilateral networks. Unilateral networks allow the current to flow in one direction. Such types of networks consist of elements like a diode, transistor, etc.

• Ohm’s law is also not applicable to non – linear elements. Non-linear elements are those which do not have current exactly proportional to the applied voltage that means the resistance value of those elements changes for different values of voltage and current. An example of a non-linear element is a thyristor.

• Ohm’s law is also not applicable to vacuum tubes.

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Q72. Answer: (b) A

By using the symbols in the table given below, we can draw the following family tree:

Given condition: If Ajay's father has only one brother and Ajay's mother has no brother.

Statements:

1) "That woman is the grandmother of my mother's only sister-in-law's son". → My mother's only sister-in-law's son means that son is cousin of Ajay and the woman is the grandmother of Ajay's cousin. Therefore, the woman is grandma of Ajay.

Clearly, the woman is grandma of Ajay.

Hence, ‘Grandma' is the correct answer.

Q73. Answer: (c) C

Given:

2x - 4y = 16

Calculation:

2(x - 2y) = 16 ----(A)

=> x - 2y = 8

Note: For this type questions always refer the options first.

Putting the value of option (1) (8,-1) in equation (A)

Where x = 8 and y = -1

=> x - 2y = 8

=> 8 - 2(-1) = 8

=> 8 + 2 = 8

=> 10 ≠ 8

Now put the values from the given option simultaneously option (2) (5,-5)

Where x = 5 and y = -5

=> x - 2y = 8

=> 5 - 2(-5) = 8

=> 5 + 10 = 8

=> 15 ≠ 8

Now put the values from the given option simultaneously option (3) (6, -1)

Where x = 6 and y = -1

=> x - 2y = 8

=> 6 - 2(-1) = 8

=> 6 + 2 = 8

=> 8 = 8

Therefore (6, -1) satisfies the given question 2x - 4y = 16.

Q74. Answer: (a) C

Given:

Total students in the class is 42

Total number girls in the class is 18

Formula used:

Percentage= (Given value/Total value) × 100

Calculations:

According to the question, we have

The number of boys is

Number of boys = Total number of students - Total number of girls

=> Number of boys = 42 - 18

=> Number of boys = 24

The percentage of boys in the class is

Percentage of boys = (Number of boys/Total number of students) × 100

=> Percentage of boys = (24/42) × 100

=> Percentage of boys = 57.14% = 57%

Therefore The percentage of boys out of total students in the class is 57%.

Q75. Answer: (a) A

The correct answer is Forward Bloc.

Key Points

• The forward bloc was formed on May 3, 1939, by Netaji Subhash Chandra Bose.

• The formation of the Forward bloc was announced to the public at the rally in Calcutta.

Additional Information

Party	Detailed description
Swaraj Party	It was formed on 1 January 1923. Chittaranjan Das, Narasimha Chintaman Kelkar and Motilal Nehru formed the Congress-Khilafat Swarajaya Party with Das as the president and Nehru as one of the secretaries.
Socialist Party	Jayprakash Narayan, Basawon Singh (Sinha), Acharya Narendra Dev led the congress socialist party out of Congress. It was founded in the year 1934. Narayan became general secretary of the party and Acharya Narendra Deva became president.
Ghadar Party	It was formed in 1913 in the United States under the leadership of Lala Hardayal and Baba Sohan Singh Bhakna as its President. Its headquarter is in Yugantar Ashram in San Francisco. The Gadar Movement was a secular democratic movement whose tradition was later upheld by Bhagat Singh with social ideology. It was an Indian revolutionary organisation with the aim to liberate India from British rule.

Q76. Answer: (b) C

The correct answer is C.

Key Points

• The first war with Burma was fought when the Burmese expansion westwards and occupation of Arakan and Manipur, and the threat to Assam and the Brahmaputra valley led to continuous friction along the ill-defined border between Bengal and Burma.

• In the opening decades of the 19th Century, The British expeditionary forces occupied Rangoon in May 1824 and reached within 72 km of the Capital at AVA.

• Peace was established in 1826 with the 'Treaty of Yandabo'.

'

Additional Information

War	Time duration
First Anglo- Burmese war	1824-1826
Second Anglo- Burmese war	1852
Third Anglo- Burmese war	1885

Q77. Answer: (a) D

The correct answer is D.

Key Points

• The Tropic of Cancer is pass through Eight Indian States of India.

• It includes Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, West Bengal, Tripura, and Mizoram.

• It is an imaginary line that is at an angle of 23 1/2 degrees.

• It is North of the equator.

• it almost passes through the middle of India.

• Tropic of Cancer passes through the 17 countries and India is one of them.

• It crosses two times of Mahi River.

Additional Information

• Rajasthan:

• It is the largest state of India in terms of area which is 342,239 km².

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• Rajasthan has a tropical desert climate.
• It is extremely cold from October to February which the Scorching Sun tortures the land from March to September.
• The capital of Rajasthan is Jaipur.
• Member of Lok Sabha: 25
• The legislature of Rajasthan is Unicameral.
• The Thar desert is the one and only Desert which is located in Rajasthan.
• The Thar desert covers 70% of the total area of Rajasthan.
• Therefore, Rajasthan State is also called the Desert State of India.
• Rajasthan is famous for its lakes such as Rajsamand Lake, Sambhar Lake, Udai Sagar Lake, Nakki Lake, Fateh Sagar Lake, etc.
• Mizoram:
• Mizoram means the 'Land of Highlanders'.
• Capital: Aizawl
• At present, CM of Mizoram: Lalduhawma
• At Present, Governer of Mizoram: Dr. Kambhampati Haribabu
• Tripura:
• Currently, Governor of Tripura: N. Indrasen Reddy
• Currently, Chief Minister of Tripura: Dr. Manik Saha
• Manipur:
• Capital: Imphal
• Currently, Governor of Manipur: Anusuyia Uikey
• Currently, Chief Minister of Manipur: N. Biren Singh.
• The famous Loktak Lake is located in Manipur.
• Keibul Lamjao Park is Also located in Manipur.

Q78. Answer: (d) 240 cm

Given:
a = 120π
where a = side of the square
Concept used:
Circumference of a circle = Perimeter of the square
Formula used:
Perimeter of square = 4a
Circumference of circle = 2πr
where r = radius of circle
Calculation:
According to the question
2πr = 4a
=> 2πr = 4 × 120π
=> r = (4 × 120π)/ 2π
=> r = 240
Therefore The radius of circle is 240 cm

Q79. Answer: (b) A

Given:
A. Cost price = Rs. 60, Profit = Rs. 29
B. Cost price = Rs. 40, Profit = Rs. 17
C. Cost price = Rs 50, profit = Rs 21
D. Cost Price = Rs. 30, Profit = Rs. 14
Formula used:
Profit percentage = (P/CP) × 100
where,

P is Profit
CP is Cost price
Calculations:
(1) When Cost Price is Rs. 60 and Profit is Rs. 29
Profit percentage = (P/CP) × 100
=> Profit percentage = (29/60) × 100
=> Profit percentage = 48.33%
(2) When Cost Price is Rs. 40 and Profit is Rs. 17
Profit percentage = (P/CP) × 100
=> Profit percentage = (17/40) × 100
=> Profit percentage = 42.5%
(3) When Cost Price is Rs. 50 and Profit is Rs. 21
Profit percentage = (P/CP) × 100
=> Profit percentage = (21/50) × 100
=> Profit percentage = 42%
(4) When Cost Price is Rs. 30 and Profit is Rs. 14
Profit percentage = (P/CP) × 100
=> Profit percentage = (14/30) × 100
=> Profit percentage = 46.66%
Therefore The maximum profit percentage is 48.33%.

Q80. Answer: (b) Assam

The correct answer is Assam.
Key Points
• Bihu dance is an Indigenous folk dance of the Indian state of Assam.
• This dance is usually performed by young men and women.
• The dancing style is characterized by brisk steps and rapid hard movements.
• In this folk dance, the traditional costumes of dancers are colourful and centred around the red colour theme.
• The origin of this folk dance is unknown.
• The earliest depiction of Bihu dance is found in the 9th Century Sculptures.
• This dance is mainly found in the Tezpur and Darrang districts of Assam.
• It is mentioned in the inscriptions of the 14th Century, Chutia and Laxminarayan as well.
• Bihu dance is performed outdoors, in fields, groves, etc.
• This folk dance takes its name from the Bohag Bihu festival.
• Bohag Bihu festival is celebrated as New year in Assam.
Additional Information

State	Folk dance
Arunachal Pradesh	Aji Lamu, Chalo, Hiirii Khaniing, Lion and Peacock dance, Pasi Kongki, Ponung, Popir Buiya, Wancho, Bardo Chham.
Orissa	Laudi Khela, Bagha Nacha, Ghumra, Keisabadi, Karma dance, Jhumair
Haryana	Dhamal dance, Ghoomar, Jhoomar, Khoria dance, Loor dance, Gogaji and Gugga, Phaag, Raslila, Ragini

Q81. Answer: (d) C

The pattern followed here is:
Take Z = 1, Y = 2, X = 3 ..... A = 26.
According to the given alphabetical positions of the letters,
For STOP :
S → 8
T → 7

O → 12
P → 11
STOP = 8 + 7 + 12 + 11 = 38
Similarly,
POSTMAN :
P → 11
O → 12
S → 8
T → 7
M → 14
A → 26
N → 13
POSTMAN = 11 + 12 + 8 + 7 + 14 + 26 + 13 = 91
Hence, '91' is the correct answer.

Q82. Answer: (d) B

A. ÷ and –
Given equation: 63 ÷ 7 + 5 × 3 - 46 = 2
After replacing the signs, we get:
L.H.S = 63 - 7 + 5 × 3 ÷ 46
= 63 – 7 + 0.32
= 63 – 7.32
= 55.68 ≠ R.H.S
B. × and +
Given equation: 63 ÷ 7 + 5 × 3 - 46 = 2
After replacing the signs, we get:
L.H.S = 63 ÷ 7 × 5 + 3 - 46
= 9 × 5 + 3 – 46
= 45 + 3 – 46
= 48 – 46
= 2 = R.H.S
C. ÷ and ×
Given equation: 63 ÷ 7 + 5 × 3 - 46 = 2
After replacing the signs, we get:
L.H.S = 63 × 7 + 5 ÷ 3 - 46
= 441 + 1.67 – 46
= 442.67 – 46
= 396.67 ≠ R.H.S
D. × and -
Given equation: 63 ÷ 7 + 5 × 3 - 46 = 2
After replacing the signs, we get:
L.H.S = 63 ÷ 7 + 5 - 3 × 46
= 9 + 5 – 138
= 14 – 138
= -124 ≠ R.H.S
Hence, '× and +' is the correct answer.

Q83. Answer: (b) D

Nine fans - Jacob, Kinjal, Lipika, Manoj, Nita, Omkar, Padraja, Karim and Rameez.
1. Kinjal is at the end of the line.
2. Omkar is immediately to the right of Jacob and third to the left of Kinjal.
3. Lipika is immediately to the right of Manoj and third to the right of Nita.

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4. Karim is seated next to both Omkar and Padruja.
Only one person Rameez is left and only one position is vacant. So, the vacant position will be occupied by Rameez.
So, the final arrangement is shown below:
A. Nita is two seats away from Jacob → False
B. Rameez is immediately to the left of Jacob → False
C. Manoj and Padraja are neighbors → False
D. There is only one person between Lipika and Omkar. → True
Hence, 'option 2' is the correct answer.

Q84. Answer: (d) C

Nine fans - Jacob, Kinjal, Lipika, Manoj, Nita, Omkar, Padraja, Karim and Rameez.
1. Kinjal is at the end of the line.
2. Omkar is immediately to the right of Jacob and third to the left of Kinjal.
3. Lipika is immediately to the right of Manoj and third to the right of Nita.
4. Karim is seated next to both Omkar and Padruja.
Only one person Rameez is left and only one position is vacant. So, the vacant position will be occupied by Rameez.
So, the final arrangement is shown below:
If Kinjal is at one end of the line then Nita is at the other end.
Hence, 'Nita' is the correct answer.

Q85. Answer: (d) B

Nine fans - Jacob, Kinjal, Lipika, Manoj, Nita, Omkar, Padraja, Karim and Rameez.
1. Kinjal is at the end of the line.
2. Omkar is immediately to the right of Jacob and third to the left of Kinjal.
3. Lipika is immediately to the right of Manoj and third to the right of Nita.
4. Karim is seated next to both Omkar and Padruja.
Only one person Rameez is left and only one position is vacant. So, the vacant position will be occupied by Rameez.
So, the final arrangement is shown below:
Clearly, Jacob sits in the middle of the line.
Hence, 'Jacob' is the correct answer.

Q86. Answer: (d) C

Given:
A person sells a cooker for Rs. 2,568
He bought cooker for Rs. 2,400
Formula used:
P = SP - CP
Profit percent = (P/CP) × 100
where,
P is Profit
SP is Selling price
CP is Cost price
Calculations:
According to the question, we have
Profit gained by the shopkeeper is
P = SP - CP
=> P = Rs. 2,568 - Rs. 2,400
=> P = Rs. 168
Now, Profit percentage is
Profit percent = (P/CP) × 100
=> Profit percent = (168/2400) × 100
=> Profit percent = 168/24
=> Profit percent = 7%

Therefore The profit percentage gained by the shopkeeper is 7%.

Q87. Answer: (b) 21250/7161

Calculation

5/7 + 21/31 + 52/33

LCM of 7, 31 and 33 is 7161

=> ((5 × 31 × 33) + (21 × 7 × 33) + (52 × 7 × 31))/7161

=> (5115 + 4851 + 11284)/7161

=> 21250/7161

Therefore 5/7 + 21/31 + 52/33 is 21250/7161

Q88. Answer: (a) A

Given:

We have to simplify 237.43 + 7453.32 + 54.12 - 987.23

Concept Used:

Follow BODMAS rule to solve this question, as per the order given below,

Calculation:

237.43 + 7453.32 + 54.12 - 987.23

=> (237 + 7453 + 54 - 987) + (0.43 + 0.32 + 0.12 - 0.23)

=> 6757 + 0.64

=> 6757.64

Therefore The required simplified value is 6757.64

Q89. Answer: (c) A

The correct answer is A.

Key Points

• Badminton was included in Olympics as an official sport at the Barcelona Olympic games in 1992.

• Badminton was first appeared in the Olympic Games as a demonstration sport in 1972 and as an exhibition sport in 1988.

• In 1992, Badminton became the full-medal Olympic sport with a Competition for Men's and Women's Single and doubles.

• Mixed doubles were introduced at the 1996 Games.

• It is governed by the badminton world federation.

Important Points

• History of Olympics:

• The first Olympic Games took place in the 8th century B.C. in Olympia, Greece.

• The first ancient Olympic Games were held in 776 B.C in honour of Zeus, king of Greek Gods.

• The Game took place every four years from 776 B.C to 393 AD.

• Baron Pierre de Coubertin founded the International Olympic Committee(IOC) in 1894.

• The first modern Olympic Games were held in Athens, Greece in 1896.

• The Headquarters of International Olympic Committee in Lausanne, Switzerland.

Q90. Answer: (a) B

By using the symbols in the table given below, we can draw the following family tree:

Given:

"He is the father of my daughter-in-law's brother's grandfather's only daughter-in-law". → Chandu's daughter-in-law's brother's grandfather's only daughter-in-law is Chandu's sister in law and sister in law's husband is Chandu's brother. Therefore person's son in law is father in law of Chandu's son.

Hence, ‘father in law’ is the correct answer.

Q91. Answer: (b) 7656623433

Calculation

76567 × 99999

=> 76567 × (100000 - 1)

=> 7656700000 – 76567

=> 7656623433

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Therefore 76567 × 99999 = 7656623433

Shortcut Trick

Q92. Answer: (b) A

The answer is Chakravarti Rajagopalachari.

• After independence, Chakravarti Rajagopalachari (1878-1972) became the only Indian and last governor-general of India.

• Rajagopalachari was appointed Governor-General of India's Interim Government in June 1948 and served until January 1950.

Important Points

• Chakravarti Rajagopalachari:

• He was a member of the Indian National Congress's Working Committee for 20 years (1922–42).

• From 1937 to 1939, he served as Chief Minister of Madras, his home state.

• In 1954, he was awarded the Bharat Ratna for meritorious service to India.

• In 1959, he founded and led the Swatantra (Independent) Party.

Additional Information

• Warren Hastings:

• He was the first Governor of Fort William in 1772.

• From 1774 until 1785, he was the first Governor-General of Bengal.

• During his presidency, the Regulating Act of 1773 was passed.

• Louis Mountbatten:

• From 12 February 1947 to 15 August 1947, Louis Mountbatten was the last Viceroy of India.

• From 15 August 1947 to 21 June 1948, he served as the first Governor-General of free India.

• Edward Law:

• He was the British governor-general of India from 1842–44.

Q93. Answer: (d) D

Given:

A number P416 is given which is divisible by 11

Concept used:

A number is divisible by 11 if the difference between the sum of its odd digit and sum of its even digit is zero or divisible by 11.

Calculations:

According to the question, we have

P416 is divisible by 11, then the sum of its odd digit is

=> Sum of odd digits = P + 1

And, Sum of its even digits is

=> Sum of even digits = 6 + 4

=> Sum of even digits = 10

Now, Comparing them

=> P + 1 = 10

=> P = 10 - 1

=> P = 9

P = 9 is the smallest number which divides P416 by 11

Therefore The value of P is 9.

Q94. Answer: (c) D

The description is as follows:

Option	Description	
A.	Polaris	It is a star.
B.	Rigel	It is a star.
C.	Vega	It is a star.
D.	Europa	It is the moon of Jupiter.

Hence, ‘Europa’ is the odd one out.

Q95. Answer: (a) B

Given:

The area of a square plot is 3,13,600 m²

Speed is 4√2 m/s

Formula used:

Area of square = (side)²

Speed = Distance/Time

Calculations:

According to the question, we have

Area of square = (side)2

=> 3,13,600 = (side)2

=> Side = √3,13,600

=> Side = 560 m

The diagonal of the square is

Diagonal = Side × √2

=> Diagonal = 560√2 m

Now, Time taken by woman to cross-field diagonally

Time = Distance/Speed

=> Time = (560√2)/(4√2)

=> Time = 140 seconds

=> Time (in minutes) = 2 minutes 20 seconds

Therefore The time taken by woman to cross the field diagonally is 2 minutes 20 seconds.

Q96. Answer: (a) B

Conclusion 1 does not follows from the statement.

The statement only states what is written in the advertisement but does not guarantees whether it is genuine or not.

Conclusion 2 follows.

As, the advertisement states ‘triple your money in 6 months’, it can be concluded that people want to see their wealth growing.

Hence, only conclusion 2 follows.

Q97. Answer: (d) A

The answer is Konark Temple.

Key Points

• Konark Temple was called the "Black Pagoda" in European sailor accounts because it looked like a great tiered tower that appeared black.

• It is located in Konark, Puri district, Odisha.

• The temple was built around 1250 CE by King Narasimhadeva I of the Eastern Ganga Dynasty.

Additional Information

• Jagannath Temple:

• Jagannath Temple in Puri was called the "White Pagoda".

• The famous annual Ratha Yatra or chariot festival held at Jagannath Temple.

• It was built in the 12th century by Ananta Varman Chodaganga Deva, a well-known Ganga dynasty king.

• Brahmeshwar Temple:

• It is a Hindu temple in Bhubaneswar, Odisha, dedicated to Shiva.

• Mukteshwar Temple:

• It is a Hindu temple dedicated to Shiva built in the 10th century in Bhubaneswar, Odisha.

Q98. Answer: (b) B

The answer is Nagaland.

Key Points

• Sixth Schedule of the Constitution:

• Provisions relating to the administration of tribal areas in the states of Assam, Meghalaya, Tripura and Mizoram.

• Articles: 244 and 275

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Important Points

• Fifth Schedule of the Constitution:

• Provisions relating to the administration and control of scheduled areas and scheduled tribes.

• Articles: 244

Additional Information

• Special provisions:

Article	Special provisions
371A	Nagaland
371B	Assam
371C	Manipur

Q99. Answer: (a) B

The answer is Edaphology.

Key Points

• Edaphology:

• It is a branch of soil science that studies the influences of soils on organisms, especially plants.

• It includes agrology, the study of human uses of soils for agriculture, as well as how the features of soils affect human land-use decisions.

Additional Information

• Andrology:

• It is the medical speciality that deals with male health, particularly relating to the problems of the male reproductive system and urological problems that are unique to men.

• Agrobiology:

• Agrobiology is the study of plant nutrition and development in relation to soil conditions, with the aim of improving crop yields.

• Desmology:

• The branch of anatomy concerned with the ligaments.

Q100. Answer: (d) C

The answer is She is the first female President of Nepal.

Important Points

• Bidya Devi Bhandari:

• She is a Nepalese politician, serving as the 2nd President of Nepal, in office since 28 October 2015.

• She is the first woman to hold office in the country.

Additional Information

• Nepal:

• Capital: Kathmandu

• Currency: Nepalese rupee

• Prime minister: K. P. Sharma Oli (Jan 2021)

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