RRB NTPC Tier I Official Paper (Held On: 11 Apr 2016 Shift 3) (Previous Year Paper)

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

Take this paper as a timed mock test

Practise under exam conditions, then review your answers after you submit.

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

Q1. Why are aluminum items such as pressure cookers, saucepans, etc. anodized?

A. To increase their conductivity.

B. To increase their tensile strength.

C. To prevent them from rusting.

D. To make them lighter and shinier.

(a) A

(b) B

(c) C

(d) D

Q2. Calculate 19170 ÷ 54 ÷ 5.

A. 17

B. 1775

C. 71

D. 1757

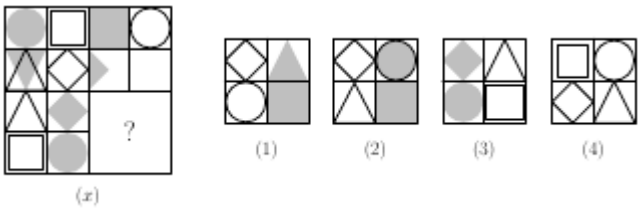
(a) D

(b) A

(c) B

(d) C

Q3. Complete the figure X from the given options 1, 2, 3, 4.



A. 1

B. 2

C. 3

D. 4

(a) B

(b) D

(c) C

(d) A

Q4. Given k = - 3, find the value of $k^3 + 3k$:

A. - 36

B. 36

C. 37

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D. - 37

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

Q5. _____ is a written document that draws from research depicting an anthropological culture.

A. Ethnography
B. Cultural Relativism
C. Ethnocentrism
D. Ethnobotany

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

Q6. If a shopkeeper cheats up to 25% in buying and selling fruit by using less weight, then his total profit percentage is:

A. 55.25
B. 66.66
C. 56.75
D. 56.5

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

Q7. In a certain language, if CHILLY is coded HCLIYL, how will MANURE be coded in this code?

A. AMREUN
B. AMUNER
C. ARMUEN
D. ENARMU

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

Q8. Which phase of vehicle emission standards is currently implemented in India?

A. India
B. India II
C. India III
D. India IV

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

Q9. Four pairs of words are given below, three of which are similar in some ways and one pair is different.
Which pair is different from the other pairs?

A. Principal: School
B. Warrior: Army
C. Artist: Troupe
D. Singer: Chorus

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

Q10. Who is credited with inventing the World Wide Web?

A. Tim Berners-Lee
B. John Napier
C. Allen B Dumont
D. J. J. P. Eckert

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

Q11. Read the statement and select one of the conclusions from the given alternatives.

Statement:

In order to improve the teacher-student ratio in rural and urban areas, the state government has agreed in principle to approve more number of posts of secondary school teachers.

Conclusion:

I. The student-teacher ratio in urban areas is higher than in rural areas.
II. The student-teacher ratio in rural areas is higher than in urban areas.

A. Only conclusion I follows.
B. Only conclusion II follows.
C. Either I or II follows.
D. Neither I nor II follows.

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

Q12. Sri Lanka got independence in _____ year.

A. 1947
B. 1948
C. 1949
D. 1950

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

Q13. If cot x = 5/12, then sin x - sec x =?

A. -229/65
B. 229/65
C. 109/65
D. -109/65

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

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Q14. India has developed the first hinges for bluetongue disease which is mainly found in which of the following?

A. Hen
B. Dogs
C. Sheep and Goats
D. Monkey

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

Q15. The variance of a set of data is 81, find the standard deviation of the data.

A. ± 9
B. 9
C. 81
D. 40.5

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

Q16. What does the control rod (cadmium rod) do in a nuclear reactor?

A. The fission absorbs excessive heat generated during the reaction and thus prevents excess temperature rise.
B. Absorbs extra neutrons to control the chain reaction.
C. Reduces the energy of neutrons so that they can be further used for the fission reaction.
D. The chain produces the neutrons required for the fission reaction.

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

Q17. Match the following and select the correct code.

A) Quick lime	**P) $Co(NH_2)_2$**
B) Slaked lime	Q) Na_2CO_3
C) Urea	R) CaO
D) Washing soda	S) $Ca(OH)_2$

A. A - S, B - R, C - P, D - Q
B. A - R, B - S, C - Q, D - P
C. A - R, B - S, C - P, D - Q
D. A - S, B - R, C - Q, D - P

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

Q18. _____ was the world's first artificial satellite.

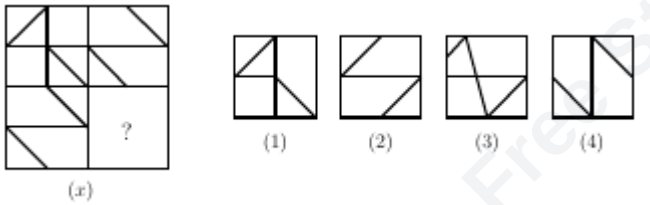
A. Apollo 11
B. Sputnik 1
C. Sputnik 0
D. GSAT

(a) A

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

Q19. Complete the figure X out of 4 options 1, 2, 3, 4.



A. 1
B. 2
C. 3
D. 4

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

Q20. Four pairs of words are given below, three of which are similar in some ways and one pair is different. Which pair is different from the other pairs?

A. Bottle : Wine
B. Cup : Tea
C. Matka : Water
D. Ball : Bat

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

Q21. If sin A = 4/5 and sin B = 5/13, then Sin (A + B) = ?

A. 63/65
B. 16/65
C. 33/65
D. 56/65

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

Q22. Convert 29 into binary.

A. 10101
B. 11110
C. 11101
D. 11001

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

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Q23. In a certain code language, if RABBIT is coded 927763 and DRAFTER is coded 8920349, how will BETTER be coded?

A. 743394
B. 743349
C. 744349
D. 373449

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

Q24. Who directed India's first publicly released film, Raja Harishchandra?

A. V G Dhamale
B. V Shantaram
C. Bimal Roy
D. Dada Saheb Phalke

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

Q25. _____ is done to check the cancer tissue.

A. Biopsy
B. Bioscopy
C. Choledology
D. Radiography

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

Q26. If 198 rupees is divided into 2 : 3 : 5 : 8, then the rupees will be in their respective proportions:

A. 22, 33, 54 and 89
B. 22, 33, 56 and 87
C. 22, 33, 55 and 88
D. 22, 34, 54 and 88

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

Q27. When was PSLV first used in India?

A. 1980
B. 1987
C. 1994
D. 2000

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

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Q28. Which Sarangi specialist died on 1 December 2015?

A. Ustad Sabri Khan

B. Pandit Ram Narayan

C. Ustad Sultan Khan

D. Dhruba Ghosh

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

Q29. Introducing Nitin to her husband, a woman said, "Her brother's father is the only child of my grandfather." How is this woman related to Nitin?

A. Mother

B. Aunt

C. Sister

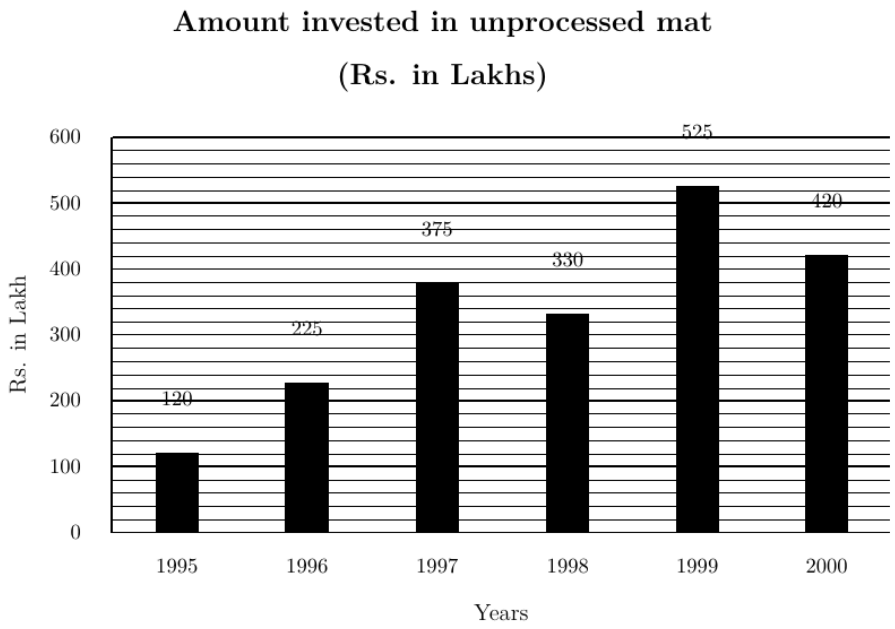
D. Daughter

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

Directions

Study the graph given below and answer the following questions.

One of the graphs below shows the amount invested by the company to purchase unprocessed material in a few years (in lakhs of rupees) and the other shows the values (in lakhs) of processed goods sold by the company in a few years.



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Q30. The value of the sale of processed goods in 1999 was approximately what percent of the total amount invested in unprocessed material in the years 1997, 1998 and 1999?

A. 33%

B. 37%

C. 45%

D. 49%

(a) D

(b) B

(c) A

(d) C

Q31. What was the difference between the average amount invested in unprocessed material during the given period and the average price of sale of processed goods during this period?

A. 62.5 lakh rupees

B. 68.5 lakh rupees

C. 71.5 lakh rupees

D. 77.5 lakh rupees

(a) D

(b) B

(c) A

(d) C

Q32. In which year, the percentage change in value invested on unprocessed material (as compared to the previous year) is the same as the value of change in sale of processed goods?

A. 1996

B. 1997

C. 1998

D. 1999

(a) C

(b) A

(c) D

(d) B

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Q33. Ritul sells a bus at a loss of 15% for 1870 rupees, at what price should he sell the bus to get 15% profit?

A. 2560 rupees

B. 2550 rupees

C. 2540 rupees

D. 2530 rupees

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

Q34. Read the statement and select one of the conclusions from the given alternatives:

Statement:

The use of renewable sources of energy will end the energy crisis in the world.

Conclusions:

I. Modern technology is gradually replacing the non-renewable mode of energy.

II. Excessive exploitation of the environment is responsible for creating a shortage of non-renewable sources of energy.

A. Only conclusion I follows.

B. Only conclusion II follows.

C. Either I or II follows.

D. Neither I nor II follows.

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

Q35. A disorder in which a person cannot see a distant object clearly is called what?

A. Hypermetropia

B. Night Blindness

C. Myopia

D. Strabismus

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

Q36. The angle formed by the circle arc at the center of the circle is _____ of the angle made at its circumference.

A. Equal

B. Thrice

C. Twice

D. Half

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

Q37. Direction: Read the statement and select the conclusion from the given alternatives:

Statement:

All the radishes are white.

Some white are pink.

Some pinks are yellow.

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No yellow is cabbage.

Conclusion:

I. No cabbage is pink.

II. Some pink are radishes.

III. Some cabbage is radish.

IV. Some cabbage is pink.

A. Only I and II follow.

B. Either I or IV follows.

C. Only I and either III or IV follow.

D. Only I, II and either III or IV follow.

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

Q38. Consider the following information:

P means 'multiply by', T means 'subtract from', M means 'added to' and B means 'divided by', then find the value of the following

28 B 7 P 8 T 6 M 4 = ?

A. 30

B. 32

C. 34

D. None of the above

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

Q39. Name the monument which includes a temple of Virupaksha, a Jain shrine with a masterpiece with an impressive range of nine Hindu temples and is located in Bagalkot, Karnataka?

A. Group of Monuments at Mahabalipuram

B. Group of Monuments at Hampi

C. Group of Monuments at Pattadakal

D. Group of Monuments at Khajuraho

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

Q40. Which of the given numbers is the ascending order correct?

A. 5/8, 19/24, 11/16

B. 11/16, 5/8, 19/24

C. 5/8, 11/16, 19/24

D. 19/24, 11/16, 5/8

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

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Q41. Match the following:

a) Input Device	p) RAM
b) Processing device	q) Touch screen
c) Storage Device	r) Printer
d) Output Device	s) CPU

A. a-q, b-s, c-r, d-p

B. a-q, b-s, c-p, d-r

C. a-r, b-p, c-s, d-q

D. a-p, b-q, c-r, d-s

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

Directions

Answer the questions based on the following information:

Six friends Prem, Kazi, Ritvik, Sunny, Tinu and Utkarsh are sitting around a hexagonal table. The person is seated at each corner, all facing the center. Prem is second to the left of Utkarsh. Kazi is a neighbor of Ritvik and Sunny. Tinu is second to the left of Sunny.

Q42. Who is the fourth person to the left of Kazi?

A. Prem
B. Utkarsh
C. Ritwik
D. Sunny

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

Q43. Who is sitting in front of Tinu?

A. Ritwik
B. Kazi
C. Prem
D. Sunny

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

Q44. Which of the following are neighbors of prem?

A. Utkarsh and Sunny
B. Tinu and Ritvik
C. Utkarsh and Ritvik
D. Tinu and Utkarsh

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

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Q45. The length of the diagonal of a square is 26 cm, find the side of the square in cm.

A. 13 √2

B. ± 13√2

C. 13

D. 26√2

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

Q46. Consider the following information:

'<' Means 'subtract', '>' means 'add', '=' means 'multiply' and '$' means 'divide by' - then find the value of the following
27 > 81 $ 9 < 6 = 1

A. 6

B. 30

C. 36

D. 54

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

Q47. Sepoy Mutiny started in _____ in 1857.

A. Agra

B. Meerut

C. Lucknow

D. Aligarh

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

Q48. Shivangi takes 6 hours and 15 minutes to walk from one place and return from the vehicle at the same place. She can cover the distance on both sides in 7 hours 45 minutes while walking. The time she takes to return from the vehicle on both sides is:

A. 4 hours 45 minutes

B. 4 hours 15 minutes

C. 4 hours 25 minutes

D. 4 hours 35 minutes

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

Q49. Only those metals can displace hydrogen from water, which is _____ in the reactivity chain of metals.

A. Below hydrogen

B. Above hydrogen

C. Above or Below

D. Metals cannot displace hydrogen from water.

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

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(d) A

Q50. What is the purpose of the "Samanvay" portal launched by the Ministry of Rural Development?

A. Providing a nomination facility under a social security scheme.

B. Promoting bank finance to start a new business (an entrepreneurial venture).

C. Monitoring the progress and implementation of the Parliament Model Village Scheme.

D. Monitoring the progress and implementation of "Pradhan Mantri Jan Dhan Yojana".

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

Q51. Ullas's working capacity is twice that of Tejas. Together they can finish the work in 18 days, so in how many days Tejas will complete the same work alone?

A. 36

B. 54

C. 20

D. 72

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

Q52. 2 minutes 30 seconds of internet download bill is 18 rupees, then how much will be the bill of 3 minutes 20 seconds? (Up to one decimal place)

A. 24

B. 24.1

C. 24.2

D. 23.9

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

Q53. What is the risk coverage under "Pradhan Mantri Suraksha Bima Yojana"?

A. 2 lakh rupees

B. 1 lakh rupees

C. 1.5 lakh rupees

D. 2.25 lakh rupees

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

Q54. The sum of the exterior angles of a polygon is _____.

A. 180

B. 450

C. 360

D. (n - 2)180

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

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(d) B

Q55. Which one of the following is not an input device?

A. Web Camera

B. BCR

C. Digitizer

D. Processor

(a) A

(b) C

(c) B

(d) D

Directions

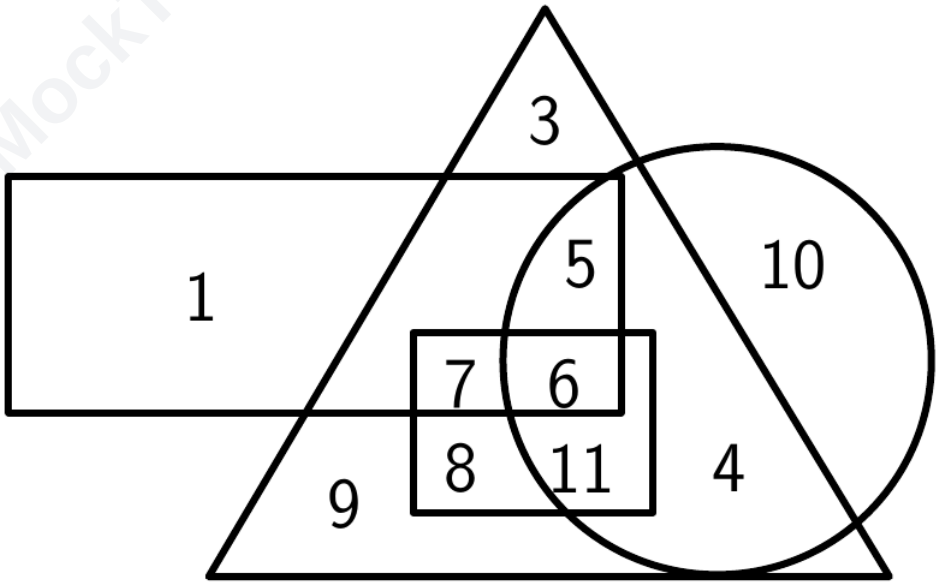
Study the figure and answer the following questions:

(1) Rectangle shows software employees.

(2) The triangle represents the rural people.

(3) The circle shows the post graduates.

(4) The square denotes PO.



Q56. Choose the correct statement:

A. Some POs are software employees.

B. No PO is rural person.

C. All post graduates are rural person.

D. All post graduates are software employees.

(a) A

(b) C

(c) B

(d) D

Q57. Which of the following statements is true?

A. All software employees are POs.

B. Some software workers are POs with post graduates.

C. All software employees are post graduates.

D. All POs are software employees but not post graduates.

(a) A

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

Q58. Which of the following statements is true?
A. All rural people are post graduates.
B. Some POs are software workers but not rural people.
C. All software employees are POs.
D. Some rural people are not post graduates.
(a) B
(b) D
(c) C
(d) A

Q59. (0.55 × 0.81)/4.5= ?
A. 0.99
B. 0.099
C. 9.9
D. 0.0099
(a) C
(b) A
(c) D
(d) B

Q60. Who was the first Asian woman of Indian origin to be elected as mayor in the United Kingdom (UK) on 12 May 2015?
A. Ranjit Kaur Dheer
B. Inderjeet Singh
C. Sukhwinder Kaur
D. Harbhajan Kaur Dheer
(a) B
(b) C
(c) A
(d) D

Q61. The Election Commission of India is not responsible for the administration of which of the following election process?
A. Lok Sabha
B. State assemblies
C. President and Vice President's Offices
D. Panchayat Election
(a) A
(b) D
(c) C
(d) B

Q62. The term AAU refers to the Assigned Amount Unites which sets the limit of _____.
A. Carbon emissions
B. Green House Gases Emissions
C. Carbon credit sales
D. Savings in the form of carbon footprint
(a) B
(b) D
(c) C

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(d) A

Q63. Which district of India has become the first district in the country to have a high-speed rural broadband network under NOFN?

A. Bhopal

B. Chennai

C. Idukki

D. Mysore

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

Q64. Find the HCF of 27, 18, 45, 81.

A. 9

B. 6

C. 3

D. 18

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

Q65. Read the statement and choose one conclusion from the given alternatives:

Statement:

Recently, while presenting a stage show, the famous actress declared that she is in the habit of either taking full payment for the stage show or not taking it at all.

Conclusions:

I. The actress has recently taken full payment for the stage show.

II. The actress did not take any money for the stage show recently.

A. Only conclusion I follows.

B. Only conclusion II follows.

C. Either I or II follows.

D. Neither I nor II follow.

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

Q66. Read the statement and choose one conclusion from the given alternatives:

Statements:

Some dark are black.

Some black are grey.

All gray are red.

All red are babies.

Conclusions:

I. Some red are black.

|II. Some babies are black.

III. Some babies are grey.

IV. Some red are dark.

A. Only I and II follow.

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B. III or IV follows.

C. I, II and III follow.

D. Only I, II and III or IV follow.

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

Q67. _____ was the last Governor General of India before the Indian Constitution came into existence.

A. Chakravarti Rajagopalachari

B. The Viscount Mountbatten

C. Dr. Rajendra Prasad

D. The Viscount Wavell

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

Q68. Ritvik said to a woman, "Your mother's husband's sister is my aunt." How does this woman relate to Ritvik? Select from the following options.

A. Daughter

B. Grand Daughter

C. Mother

D. Sister

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

Q69. Which country won the most gold medals at the 2015 AIBA World Boxing Championships?

A. Cuba

B. Russia

C. France

D. Morocco

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

Q70. In 2009, TerreStar-1 was launched for better communication to North America. From which country was it launched?

A. France

B. America

C. China

D. Russia

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

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Q71. Susruta is known as _____?

A. Father of Indian medicine

B. Father of Indian surgery

C. Father of Indian Ecology

D. Father of Indian Paleobotany

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

Q72. Find the LCM of 1/15, 1/2, 2/25, 2/15.

A. 40/300

B. 2/10

C. 1/4

D. 2

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

Q73. Tungabhadra multipurpose project has been established on the banks of the tributary of which of the following rivers?

A. Godavari

B. Krishna

C. Mahanadi

D. Indus

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

Q74. Solve:

• x - 4 = -3

A. 7

B. -1

C. -7

D. 1

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

Q75. Find the mean of the first 10 natural numbers.

A. 6.5

B. 5.5

C. 7.5

D. 8.5

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

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Q76. Name the Indian music expert who has been named as a cultural ambassador for Seychelles?

A. Sonu Nigam
B. AR Rahman
C. Ilaiyaraaja
D. Ravishankar

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

Q77. Calculate: 33333 × 9999

A. 332396667
B. 333297667
C. 33329667
D. 333296667

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

Q78. Find the median of 12, 1, 10, 1, 9, 3, 4, 9, 7, 9.

A. 7
B. 8
C. 9
D. 7.5

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

Q79. Calculate: 5886 ÷ 654 - 3.

A. - 6
B. 6
C. 1962/217
D. 1926/217

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

Q80. Who won the gold medal at the 7th World Bodybuilding and Physique Championships WBPF held in Bangkok?

A. John Michael Conlan
B. Yunfei Li
C. Thakur Anoop Singh
D. Shiva Thapa

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

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Q81. The religion of India - Zoroastrian is mainly found in which state?

A. Maharashtra

B. Haryana

C. Bihar

D. Kerala

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

Q82. There is a difference of 3 rupees between the two selling prices on selling an item with a profit of 8% and 18%. The ratio between the two selling prices is:

A. 54 : 59

B. 54 : 61

C. 59 : 61

D. 55 : 59

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

Q83. Ranjan borrows Rs 7500 at an annual compound interest rate of 4%. What will be the compound interest for 2 years while the interest is compounded annually?

A. 612 rupees

B. 8112 rupees

C. 8121 rupees

D. 621 rupees

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

Q84. Match the following monuments/places with their exact location.

Monuments	Place
P) Golconda Fort	a. Hyderabad
Q) Buland Darwaza	b. Fatehpur Sikri
R) Humayun's Tomb	c. New Delhi
S) Rani ki Vav	d. Patan

A. P-a, Q-b, R-c, S-d

B. P-a, Q-c, R-b, S-d

C. P-d, Q-b, R-c, S-a

D P-d, Q-c, R-b, S-a

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

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Q85. Read the statement and choose one conclusion from the given alternatives:

Statement:

All buttons are pink.

Some pinks are black.

Some black are bells.

All bells are white.

Conclusions:

I. Some blacks are white.

II. Some bells are pink.

III. Some pinks are buttons.

IV. None of the buttons are white.

A. Only I and III follow.

B. III or IV follows.

C. Only I and either III or IV follow.

D. Only I, II and either III or IV follow.

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

Q86. Match the following correctly:

Product	Usage
P) Petroleum ether	a. Fuel
Q) Paraffin wax	b. Solvent in perfumes for dry cleaning
R) Asphalt and coke	c. Roofing, Road Construction, Electrode
S) Gasoline	d. Ointments & Cosmetics

A. P-a, Q-b, R-c, S-d

B. P-b, Q-d, R-c, S-a

C. P-d, Q-b, R-c, S-a

D. P-d, Q-c, R-b, S-a

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

Q87. A tube has two punctures. First puncture empties the tank in 29 mins and second puncture empties the tank in 6 minutes. If the leakage is at certain rate, then find the time taken by both punctures to empty the tank.

A. 34/35

B. 3 34/35

C. 433/35

D. 434/35

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

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Q88. Consider the following information:

If + means ×, - means ÷, × means - and ÷ means +, then find the value of 26 + 76 - 4 × 5 ÷ 2.

A. 220

B. 974

C. 491

D. 488

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

Q89. In a certain code language, if TEMPLE is coded as 187658 and CHURCH is coded as 439243, then how will PURE be coded?

A. 6928

B. 3982

C. 6982

D. 9682

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

Q90. The Rajdhani train starts from Delhi city. The number of women in the train is half the number of men. In Faridabad city, 10 men get off the train and five women enter the train. Now the number of men and women is equal. In the beginning, how many passengers entered the train?

A. 25

B. 35

C. 45

D. 55

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

Q91. Simplify: 3(x - 2) - (x - 2).

A. 2x + 8

B. - 2x + 4

C. 2x + 4

D. 2x - 4

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

Q92. The Ryder Cup is associated with which of the following sports?

A. Cycling

B. Horse race

C. Golf

D. Snooker

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

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(d) D

Q93. Since the commencement of the constitution, which act has provisions relating to citizenship and loss of citizenship?

A. Citizenship Act, 1950

B. Citizenship Act, 1952

C. Citizenship Act, 1955

D. Citizenship Act, 1954

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

Q94. Mr. Vagish invested money in FD. How much amount will he get at maturity, if Rs. 4500 are invested for 6 months at a rate of 20% compound interest annually and the interest is compounded quarterly?

A. 4961.5 rupees

B. 4961.25 rupees

C. 4961.35 rupees

D. 4961 rupees

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

Q95. Pointing to a woman, Urmi said, "She is the daughter-in-law of my father's only son's grandmother." How is this woman related to Urmi? Choose from the following options.

A. Sister-in Law

B. Mother

C. Sister

D. Mother-in-Law

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

Q96. _____ is the largest tiger reserve in India.

(a) Jim Corbett Tiger Reserve
(b) Nagarjuna Sagar-Srisailam Tiger Reserve
(c) Satpura Tiger Reserve
(d) Sunderbans Tiger Reserve

Q97. In a certain code language, if STABLE is coded as TSBAEL, then in that code how will SCARCE be coded?

A. CSRAEC

B. ACSRAC

C. CASARC

D. ARCCAS

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

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Q98. Which is the only event to prove that light is a transverse wave?

A. Scattering of light

B. Interference

C. Diffraction

D. Polarisation

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

Q99. Two jeeps run from a house at a speed of 20 km/h at an interval of 10 minutes. How much speed (km/h) will a woman coming from the opposite direction of the house have to run so that she can meet the second jeep at an interval of 6 minutes?

A. 13

B. 132/3

C. 13 1/3

D. 13.5

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

Q100. Which is the first airport in the world to be fully powered by solar energy?

A. Cochin International Airport

B. Chhatrapati Shivaji International Airport

C. Dubai International Airport

D. Kansai International Airport

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

ANSWER KEY

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

SOLUTIONS

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Q1. Answer: (c) C

The correct answer is To prevent them from rusting.

• Anodized aluminium is sealed so that the metal cannot leach into food or react with acidic foods.

• Unlike ordinary, lightweight aluminium pots and pans, which are highly reactive with acidic foods (like tomatoes), anodized aluminium cookware is safe.

• It can be present in the food we eat and the water we drink.

Additional Information

• Aluminium conducts heat well and is a less expensive metal.

• This layer of oxide hardens the aluminium and makes it resistant to corrosion.

• Hard anodized is an extension of the process using higher voltage and lower temperature, which results in an even harder and more durable cookware coating.

• Anodized aluminium is still very conductive, but the surface is much harder than regular aluminium.

• It is much more durable than, say, a nonstick pan.

• On the other hand, like a nonstick pan, you should never wash it in the dishwasher, as it will ruin the surfaces in both cases.

Q2. Answer: (d) C

Calculation:

19170 ÷ 54 ÷ 5

=> 19170 × 1/54 × 1/5

=> 19170 × 1/270

=> 71

Therefore The value is 71.

Q3. Answer: (d) A

We have to choose the part of the image, which when inserted into the figure will complete the given pattern.

Thus,

Hence, Option 4 is correct.

Q4. Answer: (d) A

Given:

k = - 3

Caculation:

k3 + 3k

=> $(-3)^3 + 3 \times (-3)$

=> -27 – 9

=> -36

Therefore The value is -36.

Q5. Answer: (d) A

The correct answer is Ethnography.

• Anthropology is the study of humanity, including prehistoric origins and contemporary human diversity.

• Compared with other disciplines that study humanity (such as history, psychology, economics, political science, and sociology), anthropology is broader in scope.

• Anthropology covers a much greater span of time than these disciplines, and it encompasses a broader range of topics.

Additional Information

• Cultural relativism refers to not judging a culture to our own standards of what is right or wrong, strange or normal. Instead, we should try to understand the cultural practices of other groups in their own cultural context.

• Ethnobotany is the study of interrelations between humans and plants; however, the current use of the term implies the study of indigenous or traditional knowledge of plants.

• It involves the indigenous knowledge of plant classification, cultivation, and use as food, medicine and shelter.

Q6. Answer: (d) B

Given:

Cheats buying and selling fruit by using less weight = 25%

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Concept used:
Using the concept of successive profit.
Calculation:
Let the CP per kg of the fruits be Rs. 100.
According to the question,
The shopkeeper cheats to the extent of 25% while buying and selling fruits, by using tampered weights.
When the shopkeeper sells the tampered weights shows 25% more weight than the normal weight and 25% less weight than the normal weight while the shopkeeper buys the fruits.
Buying 1 kg of tampered weight = (1 + 1 × 25/100) kg
=> Buying 1 kg of tampered weight = 1.25 kg
S.P. of the fruits bought by the shopkeeper = 1.25 × 100
=> S.P. of the fruits bought by the shopkeeper = Rs. 125
C.P. of 0.75 kg of fruits for which the shopkeeper sold = Rs.75
Profit = S.P. – C.P.
=> Profit = 125 – 75
=> Profit = 50
Profit% = Gain/C.P. × 100
=> Profit% = 50/75 × 100
=> Profit% = 66.66%
Therefore His total profit% is 66.66%.
Overall profit percentage = [x + y + (xy/100)]
Where, x = Profit percentage while buying
y = profit percentage while selling
So, Overall profit percentage = [25 + 100/3 + (25 × 100/3)/100]
=> 66.66%
Therefore His total profit% is 66.66%.

Q7. Answer: (b) B

Given:
CHILLY → HCLIYL
Pattern: The paired letters have been reversed to obtain the code of the given word.
Similarly,
Hence, AMUNER is correct.

Q8. Answer: (a) D

The correct answer is India IV.

• In 13 major cities, Bharat Stage IV emission norms have been in place since April 2010 and it has been enforced for the entire country since April 2017.

• In 2016, the Indian government announced that the country would skip the BS V norms altogether and adopt BS-VI norms by 2020.

Additional Information

• Vehicle emission norms were introduced in India in 1991 for petrol and in 1992 for diesel vehicles.

• Since 2000, Euro norms are followed in India under the name Bharat Stage Emission Standards for four-wheeled vehicles. Bharat stage III norms have been enforced across India since October 2010.

• The National Auto Fuel Policy 2003 introduced certain emission requirements for interstate buses with routes originating or terminating in Delhi or the other mentioned cities.

• For 2-and 3-wheelers, Bharat Stage II applied from April 1, 2005, and Stage III standards came into force on April 1, 2010.

Q9. Answer: (a) A

A. Principal: School → The group of Principals is not called School.
B. Warrior: Army → The group of warriors is called Army.

C. Artist: Troupe → The group of Artists is called Troupe.

D. Singer: Chorus → The group of Singers is called Chorus.

Hence, Principal : School is correct.

Q10. Answer: (a) A

The correct answer is Tim Berners-Lee.

• Tim Berners-Lee, a British scientist, invented the World Wide Web (WWW) in 1989 while working at CERN.

• The Web was originally conceived and developed to meet the demand for automated information-sharing between scientists in universities and institutes around the world.

Additional Information

• John William Mauchly and J. Presper Eckert are the scientists credited with the invention of the Electronic Numerical Integrator and Computer (ENIAC), the first general-purpose electronic digital computer completed in 1946. Mauchly was born on August 30, 1907, in Cincinnati, Ohio.

• Allen Balcom DuMont, also spelt Du Mont, was an American electronics engineer, scientist, and inventor best known for improvements to the cathode ray tube in 1931 for use in television receivers.

• Seven years later he manufactured and sold the first commercially practical television set to the public.

• In June 1938, his Model 180 television receiver was the first all-electronic television set ever sold to the public, a few months prior to RCA's first set in April 1939.

Q11. Answer: (d) D

For Conclusions:

I. The student-teacher ratio in urban areas is higher than in rural areas → False

(The statements doesn't indicate that student-teacher ratio in urban areas is higher than in rural areas)

II. The student-teacher ratio in rural areas is higher than in urban areas → (The statements doesn't indicate that student-teacher ratio in rural areas is higher than in urban areas)

Hence, Neither I nor II follows is correct.

Q12. Answer: (a) B

The correct answer is 1948.

• It succeeded when, on 4 February 1948, Ceylon was granted independence as the Dominion of Ceylon.

• Dominion status within the British Commonwealth was retained for the next 24 years until 22 May 1972 when it became a republic and was renamed the Republic of Sri Lanka.

Additional Information

• The British Ceylon period is the history of Sri Lanka between 1815 and 1948.

• It follows the fall of the Kandyan Kingdom into the hands of the British Empire.

• It ended over 2300 years of Sinhalese monarchy rule on the island.

• The British rule on the island lasted until 1948 when the country regained independence.

• Having liberated the whole of Sri Lanka from Chola rule, Vijayabahu crowned himself king of Polonnaruwa in 1076-77.

Q13. Answer: (b) D

Given:

Cotx = 5/12

Concept used:

Using the concept of trigonometric ratios

Calculation:

Cotx = 5/12

In ΔABC,

By using Pythagoras theorem,

$AC^2 = AB^2 + BC^2$

$\Rightarrow AC^2 = 12^2 + 5^2$

$\Rightarrow AC^2 = 144 + 25$

$\Rightarrow AC = \sqrt{169}$

$\Rightarrow AC = 13$

Sinx = 12/13

Secx = 13/5

Sinx – Secx

=> 12/13 – 13/5

=> (60 – 169)/65

=> -109/65

Therefore The value of Sinx – Secx is -109/65.

Q14. Answer: (c) C

The correct answer is Sheep and Goats.

• Bluetongue (BT) is an insect-borne (Culicoides) a viral disease of small ruminants in India.

• While seroprevalence for BT is observed mostly in domestic and wild ruminant animals, the clinical form of the disease and severe mortality is observed in sheep.

• Bluetongue is a viral disease affecting sheep, cattle, deer, goats, and camelids (camels, llamas, alpacas, guanaco, and vicuña).

• Although sheep are most severely affected, cattle are the main mammalian reservoir of the virus and are very important in the epidemiology of the disease.

• Bluetongue is a notifiable disease in the UK and suspected cases must be reported immediately to the Divisional Veterinary Manager at the local Animal Health Office.

Q15. Answer: (c) B

Given:

Variance = 81

Concept used:

The positive square root of the variance is called Standard deviation

S.D = √Variance

Calculation:

S.D = √Variance

=> S.D = √81

=> S.D = 9

Therefore The standard deviation of the data is 9.

Q16. Answer: (b) B

The correct answer is to absorb extra neutrons to control the chain reaction.

CONCEPT:

• Control rods are used in nuclear reactors to control the fission rate of uranium or plutonium.

• Their compositions include chemical elements, such as boron, cadmium, silver, or indium, that are capable of absorbing many neutrons without themselves fissioning.

Additional Information

• As cadmium or boron easily absorbs slow-moving neutrons. So, they are used in a nuclear reactor to control the fission rate.

• When the cadmium rod is pushed into the reactor, the fission rate decreases, and when it is pulled out the fission rate increases.

• Control rods are an important technology for maintaining the desired state of fission reactions within a nuclear reactor.

• They constitute a real-time control of the fission process, which is crucial for both keeping the fission chain reaction active and preventing it from accelerating beyond control.

Q17. Answer: (a) C

The correct answer is A - R, B - S, C - P, D - Q.

• Urea is used to treat dry/rough skin conditions (e.g., eczema, psoriasis, corns, callus) and some nail problems (e.g., ingrown nails).

• It may also be used to help remove dead tissue in some wounds to help wound healing.

Additional Information

• Quicklime has a wide range of uses, including in the production of iron and steel, paper and pulp production, treatment of water and flue gases, and in the mining industry.

• For the iron and steel industry, we also supply different fractions of both reactive shaft furnace-burnt and hard-burnt rotary kiln lime.

• Slaked lime is used in manufacturing sugar from sugar cane.

• It makes sugarcane juice alkaline and precipitates its impurities.

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• It is used in sewage treatment. It is used as a flocculant in water.

Q18. Answer: (c) B

The correct answer is Sputnik 1.

• History changed on October 4, 1957, when the Soviet Union successfully launched Sputnik I.

• The world's first artificial satellite was about the size of a beach ball (58 cm. or 22.8 inches in diameter), weighed only 83.6 kg. or 183.9 pounds, and took about 98 minutes to orbit Earth on its elliptical path.

Additional Information

• The Sputnik 1 spacecraft was the first artificial satellite successfully placed in orbit around the Earth and was launched from Baikonur Cosmodrome at Tyuratam (370 km southwest of the small town of Baikonur) in Kazakhstan, then part of the former Soviet Union.

• The first artificial satellite was Sputnik 1, launched by the Soviet Union on 4 October 1957 under the Sputnik program, with Sergei Korolev as chief designer.

Q19. Answer: (c) A

We have to choose the image, which when inserted into the figure will complete the given pattern.

Hence, Option 3 is correct.

Q20. Answer: (d) D

A. Bottle : Wine → Wine is contained in Bottle.

B. Cup : Tea → Tea is contained in Cup.

C. Matka : Water → Water is contained in Matka.

D. Ball : Bat → Bat is not contained in Ball.

Thus, Ball : Bat is completely unrelated to the other options.

Hence, Ball : Bat is correct.

Q21. Answer: (a) A

Given:

$\sin A = 4/5$

$\sin B = 5/13$

Formula used:

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

$\sin(A + B) = \sin A \times \cos B + \sin B \times \cos A$

Calculation used:

$\sin A = 4/5$

$\cos A = \sqrt{(1 - \sin^2 A)}$

$\Rightarrow \cos A = \sqrt{9/25}$

$\Rightarrow \cos A = 3/5$

$\sin B = 5/13$

$\cos\theta = \sqrt{(1 - \sin 2\theta)}$

$\Rightarrow \cos B = \sqrt{(1 - \sin^2 B)}$

$\Rightarrow \cos B = \sqrt{144/169}$

$\Rightarrow \cos B = 12/13$

$\sin(A + B) = \sin A \times \cos B + \sin B \times \cos A$

$\Rightarrow \sin(A + B) = 4/5 \times 12/13 + 5/13 \times 3/5$

$\Rightarrow \sin(A + B) = 48/65 + 15/65$

$\Rightarrow \sin(A + B) = 63/65$

Therefore The value of $\sin(A + B)$ is 63/65.

Q22. Answer: (d) C

The correct answer is 11101.

Key Points

• The binary equivalent of decimal 29= 11101.

• Step 1: Perform the successive modulo operation by 2 for the given decimal number 29 and note down the remainder (either 0 or

1) for each operation.

• 29 / 2 = 14: Remainder = 1 → LSB

• 14/ 2 = 7: Remainder = 0

• 7 / 2 = 3: Remainder = 1

• 3 / 2 = 1: Remainder = 1

• 1 / 2 = 0: Remainder = 1 → MSB.

• LSB(least significant bit): The last remainder.

• MSB(most significant bit): The first remainder.

• Step 2: Write the remainders from MSB to LSB to provide the equivalent binary number.

• 2910= 111012

Q23. Answer: (d) B

Pattern: Each of the letter of the words corresponds to each digit of the coded number.

RABBIT → 927763

Letter	R	A	B	B	I	T
Digit Code	9	2	7	7	6	3

DRAFTER → 8920349

Letter	D	R	A	F	T	E	R
Digit Code	8	9	2	0	3	4	9

Thus, code for the word 'BETTER' will be: 743349

Hence, 743349 is correct.

Q24. Answer: (d) D

The correct answer is Dada Saheb Phalke.

• Phalke completed filming in six months and 27 days producing a film of 3,700 feet (1,100 m), about four reels.

Additional Information

• The Dadasaheb Phalke Awards is India's highest award in cinema.

• This award is given annually at the National Films Awards.

• The very first recipient of this award was Devika Rani who received it in 1969 on the occasion of the 17th National Films Awards.

• Dadasaheb Phalke is known as the 'Father of Indian Cinema'.

• The first recipient of this award was Devika Rani.

• The award comprises of a Swarna Kamal, a Cash Prize of Rs. 10,00,000/- (Rupees Ten Lakhs)certificate, silk scroll and a shawl.

Q25. Answer: (a) A

The correct answer is Biopsy.

• A biopsy is the removal of tissue from any part of the body to examine it for the disease.

• Some may remove a small tissue sample with a needle while others may surgically remove a suspicious nodule or lump.

• Most needle biopsies are performed on an outpatient basis with minimal preparation.

Additional Information

• During a needle biopsy, a long, thin needle is inserted through the skin and into the suspicious area.

• Cells are removed and analyzed to see if they are cancerous.

• During a needle biopsy, the doctor uses a special needle to extract cells from a suspicious area.

• A minimally invasive biopsy (for example, most skin biopsies) may be done in the doctor's office during the same visit the lesion is discovered.

• A small injection of numbing medicine can make the procedure almost painless.

Q26. Answer: (a) C

Given:

Total money = Rs. 198

Money is divided in different proportion in the ratio = 2 : 3 : 5 : 8

Calculation:

Let the different parts be 2x, 3x, 5x, and 8x

Total = 2x + 3x + 5x + 8x = 18x

=> 198 = 18x

=> x = 198/18 = 11

The different parts are 2 × 11, 3 × 11, 5 × 11, and 8 × 11

Therefore The different parts are 22, 33, 55, and 88

Q27. Answer: (c) C

The correct answer is 1994.

• It is the first Indian launch vehicle to be equipped with liquid stages.

• After its first successful launch in October 1994, PSLV emerged as the reliable and versatile workhorse launch vehicle of India with 39 consecutively successful missions by June 2017.

Additional Information

• PSLV C37 was launched from Satish Dhawan Space Centre, Sriharikota (SHAR) carrying a payload of 104 satellites from 6 countries around the world (Israel, Kazakhstan, Netherlands, Switzerland, United Arab Emirates, and the United States).

• Polar Satellite Launch Vehicle (PSLV) is the third generation launch vehicle of India.

• PSLV is designed mainly to deliver earth observation or remote sensing satellites, whereas, GSLV has been designed for launching communication satellites.

• GSLV delivers satellites into a higher elliptical orbit, Geosynchronous Transfer Orbit (GTO) and Geosynchronous Earth Orbit (GEO).

Q28. Answer: (a) A

The correct answer is Ustad Sabri Khan.

• Ustad Sabri Khan (21 May 1927 – 1 December 2015) was an Indian sarangi player, who was descended on both sides of his family from a line of distinguished musicians.

Additional Information

• Pandit Ram Narayan is a Hindustani classical musician who plays the bowed instrument, the sarangi.

• He is credited with popularizing the sarangi as a solo classical instrument. He was born in 1927 in Amber village in Rajasthan.

• His family came from a long line of court musicians at Udaipur. He received his early training from his father. He learned dhrupad at a very young age and was taught the khayal by Madhav Prasad, a singer from Lucknow.

• He later received training on ragas from the khayal singer Abdul Wahid Khan in Lahore.

• Although his style is considered to be orthodox, his choice of the solo instrument and music training has been unconventional.

• He brought the background instrument, sarangi to the forefront of Hindustani classical music.

Q29. Answer: (c) C

Given statement: Introducing Nitin to her husband, a woman said, "Her brother's father is the only child of my grandfather."

Inference: Woman said woman's brother's (Nitin's) father (woman's father) is the only child of my (woman's) grandfather. This means, woman's father and Nitin's father is a same person. Thus, the woman is the sister of Nitin.

Below given diagram shows the relationship between woman and Nitin:

Hence, Sister is correct.

Q30. Answer: (a) D

Given:

Years	Amount invested in unprocessed material (in Lakhs)	Amount invested in Processed material (in Lakhs)
1995	120	200
1996	225	300
1997	375	500
1998	330	400
1999	525	600
2000	420	460

Calculation:

Amount invested in the processed material in 1999 = 600

Amount invested in the unprocessed material in 1997, 1998, and 1999 = 375 + 330 + 525

Amount invested in the unprocessed mat in 1997, 1998, and 1999 = 1230

Required percentage = (600/1230) × 100

=> Required percentage = 48.75% ≈ 49%

Therefore The sale of processed goods in 1999 was approximately 49% percent of the total amount invested in unprocessed material in the years 1997, 1998 and 1999

Q31. Answer: (a) D

Given:

Years	Amount invested in unprocessed material (in Lakhs)	Amount invested in Processed material (in Lakhs)
1995	120	200
1996	225	300
1997	375	500
1998	330	400
1999	525	600
2000	420	460
Total	1995	2460

Formula used:

Average = Sum of all observations/Total number of observations

Calculation:

Average amount invested in unprocessed material (in Lakhs) = 1995/6

=> Average amount invested in unprocessed material (in Lakhs) = 332.5

Average amount invested in processed material (in Lakhs) = 2460/6

=> Average amount invested in processed material (in Lakhs) = 410

Difference = 410 – 332.5 = 77.5 lakh rupees

Therefore The difference between the average amount invested in unprocessed material during the given period and the average amount invested in processed goods during this period is 77.5 lakh rupees

Q32. Answer: (d) B

Given:

Years	Amount invested in unprocessed mat (in Lakhs)	Amount invested in Processed goods (in Lakhs)
1995	120	200
1996	225	300
1997	375	500
1998	330	400
1999	525	600
2000	420	460

Formula used:

Percentage change = (Change/Initial Quantity) × 100

Calculation:

Percentage changes in value invested on unprocessed material (as compared to the previous year)

1995-1996 = [(225 – 120)/120] × 100 = 87.5%

1996-1997 = [(375 – 225)/225] × 100 = 66.67%

1997-1998 = [(330 – 375)/375] × 100 = –12% or 12% decrease

1998-1999 = [(525 – 330)/330] × 100 = 59.09%

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1999-2000 = [(420 – 525)/525] × 100 = –20%

Percentage changes in value invested on processed material (as compared to the previous year)

1995-1996 = [(300 – 200)/200] × 100 = 50%

1996-1997 = [(500 – 300)/300] × 100 = 66.67%

1997-1998 = [(400 – 500)/500] × 100 = –20% or 20% decrease

1998-1999 = [(600 – 400)/400] × 100 = 50%

1999-2000 = [(460 – 600)/600] × 100 = –140% or 140% decrease

There is same percentage change in 1996-1997 in both investments.

Therefore In 1997, the percentage change in value invested in unprocessed material (as compared to the previous year) is the same as the percentage change in value of change in sale of processed goods,

Q33. Answer: (b) D

Given:

SP of bus = Rs. 1870

Loss% on selling bus at Rs. 1870 = 15%

Expected profit% = 15%

Formula used:

CP = (SP × 100)/(100 – L%)

SP = CP × (100 + P%)/100

Calculation:

CP = (SP × 100)/(100 – L%)

=> CP = (1870 × 100)/(100 – 15) = 187000/85

=> CP = 2200

New SP = CP × (100 + P%)/100

=> New SP = 2200 × (100 + 15)/100

=> New SP = 2200 × 115/100

=> New SP = 2530

Therefore He should sell the bus at Rs. 2530 to get 15% profit.

Q34. Answer: (b) D

For conclusions:

I. Modern technology is gradually replacing the non-renewable mode of energy → False (The statement nowhere indicates that non-renewable mode of energy is getting replaced by modern technology)

II. Excessive exploitation of the environment is responsible for creating a shortage of non-renewable sources of energy → This statement is completely out of the context as the statement doesn't says that excessive exploitation of the environment is responsible for shortage of non-renewable sources of energy)

Hence, Neither I nor II follows is correct.

Q35. Answer: (d) C

The correct answer is Myopia.

• Nearsightedness (myopia) is a common vision condition in which you can see objects near to you clearly, but objects farther away are blurry.

• It occurs when the shape of your eye causes light rays to bend (refract) incorrectly, focusing images in front of your retina instead of on your retina.

Additional Information

• Far-sightedness, also known as long-sightedness, hypermetropia, or hyperopia, is a condition of the eye where distant objects are seen clearly but near objects appear blurred.

• This blurred effect is due to incoming light being focused behind, instead of on, the retina wall due to insufficient accommodation by the lens.

• Night blindness is a type of vision impairment also known as nyctalopia.

• People with night blindness experience poor vision at night or in dimly lit environments.

• Although the term “night blindness” implies that you can't see at night, this isn't the case.

• Strabismus, also called squint, misalignment of the eyes.

• The deviant eye may be directed inward toward the other eye (cross-eye, or esotropia), outward, away from the other eye

(exotropia), upward (hypertropia), or downward (hypotropia).

Q36. Answer: (a) C

Concept used:

The angle formed by the circle arc at the center of the circle is twice the angle made at its circumference.

Example:-

Q37. Answer: (c) B

The possible venn diagram is as follows:

For conclusions:

I. No cabbage is pink → False (No cabbage is pink is a possibility but not definite)

II. Some pink are radish → False (Some pink are radish is a possibility but not definite)

III. Some cabbage is radish → False (Some cabbage is radish is a possibility but not definite)

IV. Some cabbage is pink → False (Some cabbage is pink is a possibility but not definite)

Both conclusions I and IV are false and form a complementary pair.

Hence, Either I or IV is correct.

Q38. Answer: (b) A

Given codes:

Letter	P	T	M	B
Sign	×	•	•	÷

Coded equation: 28 B 7 P 8 T 6 M 4 = ?

Decoded equation: 28 ÷ 7 × 8 - 6 + 4

4 × 8 - 6 + 4

32 - 6 + 4

26 + 4

30

Hence, 30 is correct.

Q39. Answer: (a) C

The correct answer is Group of Monuments at Pattadakal.

• Pattadakal, in Karnataka, represents the high point of an eclectic art which, in the 7th and 8th centuries under the Chalukya dynasty, achieved a harmonious blend of architectural forms from northern and southern India.

• An impressive series of nine Hindu temples, as well as a Jain sanctuary, can be seen there. One masterpiece from the group stands out – the Temple of Virupaksha, built c. 740 by Queen Lokamahadevi to commemorate her husband's victory over the kings from the South.

Additional Information

• A Jain temple or Derasar is the place of worship for Jains, the followers of Jainism.

• Jain architecture is essentially restricted to temples and monasteries, and secular Jain buildings generally reflect the prevailing style of the place and time they were built.

• Vimal Shah, minister of the then Solanki ruler of Gujarat, built Jian Temple in the year 1031 A.D.

• The special feature of this temple is its ceiling which is circular in eleven richly carved concentric rings.

Q40. Answer: (a) C

Shortcut Trick

Convert fractions into decimals for rapid comparison:

5/8 = 0.625

11/16 = 0.6875

19/24 ≈ 0.7916

Arranging in ascending order: 0.625 < 0.6875 < 0.7916 => 5/8 < 11/16 < 19/24.

Therefore The correct answer is 5/8, 11/16, 19/24.

Alternate Method

Given: Fractions 5/8, 19/24, and 11/16.

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Method: Equating denominators using LCM (Lowest Common Multiple).

=> LCM of denominators (8, 16, 24) = 48

=> 5/8 = (5 × 6) / (8 × 6) = 30/48

=> 11/16 = (11 × 3) / (16 × 3) = 33/48

=> 19/24 = (19 × 2) / (24 × 2) = 38/48

=> Comparing numerators: 30 < 33 < 38

=> Therefore, 30/48 < 33/48 < 38/48

Therefore The correct answer is 5/8, 11/16, 19/24.

Additional Information

Comparing Fractions (Cross-Multiplication)

To compare two fractions a/b and c/d, check if a × d > b × c. If yes, then a c/d.

Ascending vs Descending Order

Ascending order means small to large, while descending order means large to small.

Proper Fractions Rule

For proper fractions (numerator < denominator) where the difference between numerator and denominator is constant, the fraction with the larger numerator is greater.

Q41. Answer: (d) B

The correct answer is : a-q, b-s, c-p, d-r

• Computer hardware includes the physical parts of a computer, such as a case, central processing unit (CPU), monitor, mouse, keyboard, computer data storage, graphics card, sound card, speakers, and motherboard.

• By contrast, the software is the set of instructions that can be stored and run by hardware.

Additional Information

• An input device is any hardware device that sends data to a computer, allowing you to interact with and control it.

• A Logitech trackball mouse, which is an example of an input device.

• The most commonly used or primary input devices on a computer are the keyboard and mouse. However, there are other devices that input data into a computer.

Q42. Answer: (c) A

From the given statements:

Kazi is a neighbor of Ritvik and Sunny.

Tinu is second to the left of Sunny.

(We have to place Sunny to the immediate left of Kazi, only then it is possible to place Tinu second to the left of Sunny)

Prem is second to the left of Utkarsh.

(Utkarsh will sit to the immediate left of Sunny)

The seating arrangement of six friends is as follows:

Prem is the fourth person to the left of Kazi.

Hence, Prem is correct.

Q43. Answer: (b) B

From the given statements:

Kazi is a neighbor of Ritvik and Sunny.

Tinu is second to the left of Sunny.

(We have to place Sunny to the immediate left of Kazi, only then it is possible to place Tinu second to the left of Sunny)

Prem is second to the left of Utkarsh.

(Utkarsh will sit to the immediate left of Sunny)

The seating arrangement of six friends is as follows:

Kazi is sitting in front of Tinu.

Hence, Kazi is correct.

Q44. Answer: (c) B

From the given statements:

Kazi is a neighbor of Ritvik and Sunny.

Tinu is second to the left of Sunny.

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(We have to place Sunny to the immediate left of Kazi, only then it is possible to place Tinu second to the left of Sunny)

Prem is second to the left of Utkarsh.

(Utkarsh will sit to the immediate left of Sunny)

The seating arrangement of six friends is as follows:

Ritvik and Tinu are the neighbors of Prem.

Hence, Ritvik and Tinu is correct.

Q45. Answer: (c) A

Given:

Length of diagonal = 26 cm

Calculation:

Let the side of the square be x cm.

In ΔABC, angle ABC = 90°

$AC^2 = AB^2 + BC^2$

$=> 26^2 = x^2 + x^2$

$=> 676 = 2x^2$

$=> x = \pm 13\sqrt{2}$

$=> x = 13\sqrt{2}$ cm (Rejecting the negative value, as side cannot be negative)

Therefore Side of the square is $13\sqrt{2}$ cm

Alternate Method

Side of square = Diagonal/√2

Side of square = 26/√2

Therefore Side of the square is $13\sqrt{2}$ cm

Q46. Answer: (c) B

Given codes:

Letter	<		=	$
Sign	•	•	×	÷

Coded equation: 27 > 81 $ 9 < 6 = 1

Decoded equation: 27 + 81 ÷ 9 - 6 × 1

27 + 9 - 6 × 1

27 + 9 - 6

36 - 6

30

Hence, 30 is correct.

Q47. Answer: (c) B

The correct answer is Meerut.

Key Points

The Revolt of 1857 AD:

• It occurred during the reign of Governor-General Lord Canning.

• Causes of the Revolt:

• The Beginning and Spread of the Revolt:

• On March 29, 1857, AD, an Indian sepoy of 34 Native Infantry, Mangal Pandey, killed two British officers–Hugeson and Baugh on parade at Barrackpore (near Calcutta). He was arrested and hanged.

• Political: Nana Sahib was refused pension, as he was the adopted son of Peshwa Baji Rao II. Avadh was annexed in 1856. On charges of mal-administration, Satara, Jhansi, Nagpur, and Sambalpur were annexed owing to the Doctrine of Lapse.

• Economic: Heavy taxation, forcibly evictions, discriminatory tariff policy against Indian products.

• Socio-religious: Abolition of sati in 1829 AD; legalization of widow remarriage in 1856 AD, etc.

• Military: Discrimination with Indian soldiers. Indian soldiers were paid low salaries.

• Immediate cause: The introduction of Enfield rifles, whose cartridges were said to have a greased cover made of beef and pork, sparked off the revolt.

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Additional Information

• The revolt of 1857 also known as India's First War of Independence, Sepoy Mutiny, etc.

• The revolt began on May 10, 1857, at Meerut as a sepoy mutiny. It was initiated by sepoys in the Bengal Presidency against the British officers.

• This war of Independence marked the end of rule by the British East India company.

• Post this, India was directly ruled by the British government through representatives known as Governor-General.

• India now came under the direct rule of the British Crown.

• It was promised and due attention was paid to the customs and traditions of India.

• The Governor General's office was replaced by that of the Viceroy.

Q48. Answer: (c) A

Given:

Time taken by Shivangi to walk from one place and return from the vehicle at the same place = 6 hours 15 minutes = 25/4 hours

Time taken by Shivangi to cover the distance on both sides by walking = 7 hours 45 minutes = 31/4 hours

Calculations:

Let time taken by walk and vehicle be t_w and t_v respectively.

t_w+ t_w = 31/4

=> 2t_w = 31/4

=> t_w = 31/8 hours

t_w+ t_v = 25/4

=> (31/8) + t_v = 25/4

=> t_v = (25/4) - (31/8)

=> t_v = (50 - 31)/8

=> t_v = 19/8 hours

Time taken by vehicle on both sides = 2 × 19/8

=> 19/4 hours

=> 4 hours 45 minutes

Therefore She takes 4 hours 45 minutes to travel by vehicle on both sides.

Q49. Answer: (a) B

The correct answer is Above hydrogen

• The alkali metals (Li, Na, K, Rb, Cs, and Fr) are the most reactive metals in the periodic table - they all react vigorously or even explosively with cold water, resulting in the displacement of hydrogen.

Additional Information

• Elements are generally classified as metals or nonmetals (although some elements have characteristics of both; these are called metalloids).

• Luster: Metals are shiny when cut, scratched, or polished.

• Malleability: Metals are strong but malleable, which means that they can be easily bent or shaped. For centuries, smiths have been able to shape metal objects by heating metal and pounding it with a hammer. If they tried this with nonmetals, the material would shatter! Most metals are also ductile, which means they can be drawn out to make wire.

• Conductivity: Metals are excellent conductors of electricity and heat. Because they are also ductile, they are ideal for electrical wiring.

• Other metals don't react at all with other metals. This means they can be found in a pure form (examples are gold and platinum). Because copper is relatively inexpensive and has low reactivity, it's useful for making pipes and wiring.

Q50. Answer: (a) C

The correct answer is Monitoring the progress and implementation of the Parliament Model Village Scheme.

• Union Ministry of Rural Development has launched the 'SAMANVAY' web portal to monitor the progress and implementation of the Sansad Adarsh Gram Yojana (SAGY) for the development of Gram Panchayats.

• It was launched by Union Rural Development Minister Chaudhary Birender Singh.

• SAMANVAY web portal consists a compilation of all Government schemes of both Centra and State governments for Gram Panchayats.

• The purpose of this portal is to help Member of Parliament (MPs) to utilise relevant schemes in the planning and implementation of SAGY.

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• It will act as a database for compiled and mapped information on various gram panchayat related activities through various schemes undertaken by the Centre and State Governments.

• In SAMANVAY, around 1800 state schemes from across all states have been documented.

Q51. Answer: (d) B

Given:

Ratio of efficiency of Ullas to Tejas = 2 : 1

Time to complete the whole work together = 18 days

Formula used:

Efficiency = (Total work)/(Time Taken)

Calculations:

Let the efficiency of Ullas and Tejas be 2 units/day and 1 unit/day respectively.

Combined efficiency of Ullas and Tejas together = 2 + 1 = 3 units/day

Efficiency = (Total work)/(Time Taken)

=> 3 = (Total work)/18

=> Total work = 54 units

Time to complete the whole work by Tejas alone = 54/1 = 54 days

Therefore Tejas will complete the same work alone in 54 days.

Q52. Answer: (c) A

Given:

Bill for 2 minutes 30 seconds = Rs. 18

Calculations:

2 minutes = 2 × 60

=> 120 seconds

2 minutes 30 seconds = 120 + 30

=> 150 seconds

Cost of 150 seconds = Rs. 18

=> Cost of 1 second = 18/150

3 minutes = 3 × 60

=> 180 seconds

3 minutes 20 seconds = 180 + 20

=> 200 seconds

Cost of 200 seconds = (18/150) × 200

=> 3600/150

=> Rs. 24

Therefore The bill of 3 minutes 20 seconds is Rs. 24.

Q53. Answer: (d) A

The correct answer is 2 Lakh rupees.

Key Points

• It was formally launched by Prime Minister Narendra Modi on 8 May in Kolkata, West Bengal.

• This is a government-backed accident insurance scheme in India. It was originally mentioned in the 2015 Budget speech by Finance Minister Late Arun Jaitley in February 2015.

• Pradhan Mantri Suraksha Bima Yojana is available to people (Indian Resident or NRI) between 18 and 70 years of age with bank accounts.

• It has an annual premium of Rs. 12 exclusives of taxes. The GST is exempted on this Yojana.

• Under this scheme, in case of an unexpected death or full disability, the payment to the nominee will be Rs. 2 lakh and in case of partial permanent disability Rs. 1 lakh has been covered.

Q54. Answer: (a) C

Concept used:

(i) Sum of interior angles of a polygon = 180(n - 2)

where, n is the number of sides of polygon.

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(ii) Sum of two supplementary angles on a straight line is 180°.

Calculations:

From above figure,

angle a, angle b, angle c, angle d, angle e are the exterior angles of the polygon.

angle 1, angle 2, angle 3, angle 4, angle 5 are the interior angles of the polygon.

We know that,

Sum of interior angles of a polygon = 180(n - 2)

angle 1 + angle 2 + angle 3 + angle 4 + angle 5 = 180(5 - 2)

=> angle 1 + angle 2 + angle 3 + angle 4 + angle 5 = 540°

Sum of two supplementary angles on a straight line is 180°.

a + angle 5 = 180°

a = 180° - angle 5

Similarly,

b = 180° - angle 1

c = 180° - angle 2

d = 180° - angle 3

e = 180° - angle 4

Sum of exterior angles = angle a + angle b + angle c + angle d + angle e

=> 180° - angle 5 + 180° - angle 1 + 180° - angle 2 + 180° - angle 3 + 180° - angle 4

=> 900° - (angle 1 + angle 2 + angle 3 + angle 4 + angle 5)

=> 900° - 540°

=> 360°

Therefore The sum of the exterior angles of a polygon is 360°

Note:-

Sum of exterior angles of any polygon is equal to 360°.

Q55. Answer: (d) D

The correct answer is Processor.

Key Points

• The processor, also known as the Central Processing Unit(CPU), provides the instructions and processing power the computer needs to do its work.

• A "processor", or "microprocessor," is a small chip that resides in computers and other electronic devices.

• Its basic job is to receive input and provide the appropriate output. While this may seem like a simple task, modern processors can handle trillions of calculations per second.

• The more powerful and updated your processor, the faster your computer can complete its tasks.

• There are five types of general-purpose processors they are,

• Microcontroller.

• Microprocessor.

• Embedded Processor.

• DSP.

• Media Processor.

Q56. Answer: (a) A

Below given diagram shows different kinds of persons:

Now, let us check through options:

A. Some POs are software employees → True (Number 7 and 6 represents persons, who are PO as well as software employees)

B. No PO is rural person → False (Number 7 and 6 represents the POs, who are rural employees)

C. All post graduates are rural person → False (Only number 5 and 6 represents persons, who are post graduates as well as rural persons)

D. All post graduates are software employees → False (Number 11, 4, 10 represents post graduate persons, who are not software employees)

Hence, Option 1 is correct.

Q57. Answer: (d) B

Below given diagram shows different kinds of persons:

Now, let us check through options:

A. All software employees are POs → False (Number 1, 2, 5 and 7 represent software employees, who are not POs)

B. Some software workers are POs with post graduates → True (Number 6 represents, some software workers are POs with post graduates)

C. All software employees are post graduates → False (Number 1, 2 and 7 represent software employees, who are not post graduates)

D. All POs, who are software employees but not post graduates → False (Number 6 represents, all POs, who are software employees as well as post graduates)

Hence, Option 4 is correct.

Q58. Answer: (b) D

Below given diagram shows different kinds of persons:

Now, let us check through options:

A. All rural people are post graduates → False (Number 2, 3, 7, 8 and 9 represent rural people, who are not post graduates)

B. Some POs are software workers but not rural people → False (Number 7 and 6 represent some POs, who are software workers are also rural people)

C. All software employees are POs → False (Number 1, 2 and 5 represent software employees, who are not POs)

D. Some rural people are not post graduates → True (Number 2, 3, 7, 8 and 9 represent some rural people, who are not post graduates)

Hence, Option 2 is correct.

Q59. Answer: (d) B

Given:

$(0.55 \times 0.81)/4.5 = ?$

Calculations:

$(0.55 \times 0.81)/4.5 = ?$

$\Rightarrow (0.11 \times 0.81)/0.9 = ?$

$\Rightarrow 0.11 \times 0.9 = ?$

$\Rightarrow ? = 0.099$

Therefore The value of ? is 0.099

Q60. Answer: (d) D

The correct answer is Harbhajan Kaur Dheer.

Key Points

• An Indian-origin councilor woman Harbhajan Kaur Dheer has become the first Asian woman elected mayor of Ealing Council in London.

• Harbhajan Kaur Dheer, 62, at a ceremony at the Victoria Hall at Ealing Council became the Mayor of Ealing Council after succeeding councilor Tej Ram Bagha.

Additional Information

• Indian-Origin Harbhajan Kaur Dheer on 12 May 2015 became the first Asian woman to be elected as mayor in the United Kingdom (UK).

• The 62-year-old councilor of the Labour Party assumed the charge as the Mayor of Ealing Council in London in which she was the Deputy Mayor before assuming the present position.

• She was a mental health professional and is a rights activist advocating for the rights of children and the elderly.

• She is a Punjabi by origin and migrated to Britain in 1975 for pursuing higher education.

• Ealing Council serves the residents and businesses of London's third largest borough, which is located in the heart of west London.

Q61. Answer: (b) D

The correct answer is Panchayat Election.

Key Points

• The Election Commission of India is an autonomous constitutional authority responsible for administering Union and State election processes in India.

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• The body administers elections to the Lok Sabha, Rajya Sabha, State Legislative Assemblies in India, and the offices of the President and Vice President in the country.

Additional Information

• The Election Commission of India (ECI) is a self-governing constitutional body that oversees the election process in India as per the Constitution of India.

• The ECI was set up on January 25, 1950, with the aim of defining and controlling the multi-tiered election process in our country.

• The Election Commission of India administers the election process from the President of India to the State Legislative Assembly.

• As per Article 324 of the Indian ConstItution, ECI has the supervisory and directional control of the complete process election to Parliament and Legislature of every State and to the office of the President and the Vice-President of India.

Q62. Answer: (a) B

The correct answer is Green House Gases Emissions.

Key Points

• Countries with commitments under the Kyoto Protocol to limit or reduce greenhouse gas emissions must meet their targets primarily through national measures.

• As an additional means of meeting these targets, the Kyoto Protocol introduced three market-based mechanisms, thereby creating what is now known as the carbon market.

• The Kyoto mechanisms:

• Stimulate sustainable development through technology transfer and investment.

• Help countries with Kyoto commitments to meet their targets by reducing emissions or removing carbon from the atmosphere in other countries in a cost-effective way.

• Encourage the private sector and developing countries to contribute to emission reduction efforts.

• CDM and JI are the two project-based mechanisms that feed the carbon market.

• CDM and JI are the two project-based mechanisms that feed the carbon market. The CDM involves investment in emission reduction or removal enhancement projects in developing countries that contribute to their sustainable development, while JI enables developed countries to carry out emission reduction or removal enhancement projects in other developed countries.

Q63. Answer: (a) C

The correct answer is Idukki.

• India's first high-speed rural broadband network, the National Optic Fibre Network (NOFN), was commissioned in Kerala's Idukki district.

Additional Information

• NOFN is set to link 600 million rural citizens of India across 2.5 lakh gram panchayats of India spread over 6,600 blocks and 631 districts through a broadband optical fiber network.

• This tribal gram panchayat in Kerala is 34km away from the nearest town and has no road connectivity, electricity or piped water.

• Communications and IT Minister Ravi Shankar Prasad commissioned India's first hi-speed rural broadband network in Kerala's Idukki district, an official statement said.

• The establishment of NOFN would open up new avenues for access service providers like mobile and cable TV operators to launch next-generation services.

Q64. Answer: (a) A

Given:

We have to find HCF of 27,18, 45, 81

Formula:

HCF by Prime Factorization

1. Find the prime factors of each of the given number.

2. Next, we identify the common prime factors of the given numbers.

3. We then multiply the common factors. The product of these common factors is the HCF of the given numbers.

Calculation:

3	**27**
3	9
	3

=> 27 = 3^3

2	**18**
3	9
	3

=> 18 = 2 × 3²

3	**45**
3	15
	5

=> 45 = 3² × 5

3	**81**
3	27
3	9
	3

=> 81 = 3^4

HCF = Common factor in all number

=> HCF(27, 18, 45, 81) = 3²

=> 9

Therefore The HCF is 9.

Q65. Answer: (a) C

For conclusions:

I. The actress has recently taken full payment for the stage show → Can be true

(As actress is presenting a show, it could be that she has taken the full payment as per her declaration)

II. The actress did not take any money for the stage show recently → can be true

(As actress is presenting a show, it could be that she has not taken the full payment yet that is why she is declaring that she either takes full payment or not take it at all)

Both conclusions can not be true at the same time, thus, either conclusion I or II is true.

Hence, Either I or II follows is correct.

Q66. Answer: (b) C

The possible Venn diagram is as follows:

I. Some red are black → True (as some black are grey and all grey are red.)

II. Some babies are black → True (as some black are grey, all grey are red and all are red babies)

III. Some babies are grey. → True (as all grey are red and all are red babies)

IV. Some red are dark → False (It is possible but not definite)

Hence, I, II and III follow.

Q67. Answer: (a) A

The correct answer is Chakravarti Rajagopalachari.

Key Points

• He was the first free and last Governor-General of India after Independence. Chakravarti Rajagopalachari was popularly known as Rajaji.

• Rajaji was a member of the Indian National Congress during the pre-independence era and a loyal supporter of Mahatma Gandhi.

• He was born on 10th December 1878 in Madras state of Tamil Nadu.

• Rajaji was an active participant in the Non-Cooperation Movement in 1920. He became the editor of Gandhi's newspaper name "Young India".

• He incumbent the Governor-General position till 26th January 1950. He also holds the Chief Minister position during his political career he became the Chief Minister of Madras in April 1952.

Additional Information

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• Lord Mountbatten was the last British Governor-General of India.

• Dr. Rajendra Prasad was the first President of India.

Q68. Answer: (c) D

Given statement: Ritvik said to a woman, "Your mother's husband's sister is my aunt."

Inference: The woman's mother's husband's (woman's father's) sister (woman's aunt) is my (Ritvik's) aunt. Thus, woman must be Ritvik's sister.

Below given diagram shows the relationship:

Hence, Sister is correct.

Q69. Answer: (c) A

The correct answer is Cuba.

Key Points

• The 2015 AIBA World Boxing Championships in Doha will be the 18th edition of the major global event.

• Held every four years up until 1986, the competition has taken place every two years since Moscow played host in 1989.

• Cuba top the overall medal standings with a haul of 128, including 71 golds, 32 silvers and 25 bronzes.

• The country won four of the gold medals on offer at the 2015 World Championships in Qatar's capital Doha, coming out on top in the light flyweight, lightweight, middleweight and light heavyweight divisions.

• Additional Information

• The very first edition was held in Havana, Cuba in 1974, when the home fans cheered their hero Teofilo Stevenson to his first gold medal.

• Since then, many of the biggest names in world boxing have won titles including the most successful fighter of all time, Cuba's Felix Savon, who won an unprecedented six titles between 1986 and 1997 and remained unbeaten in international competition during the period.

• Triple Olympic Champion Stevenson was also a three-time AIBA World Champion during the era when the event was held in four-yearly cycles.

• Crowned at the historic first event in 1974, he defended his title in 1978 and repeated the achievement in 1986, having lost his quarter-final bout to the Italian legend Francesco Damiani in 1982.

Q70. Answer: (a) A

The correct answer is America.

Key Points

• On July 1, 2009, TerreStar-1, the largest commercial telecommunication satellite ever built, is successfully launched.

• This satellite will be operated by TerreStar Corporation and carries transponders which will be used to provide mobile communications to North America.

• With a launch mass of 6,910 kilograms, it is the most massive single satellite launched into a geosynchronous transfer orbit, and the largest commercial communications satellite ever built.

Important Points

• TerreStar-1 launched was the third of seven Ariane 5 ECA launches planned for 2009 by the European launch firm Arianespace.

• Weighing in at 15,233 pounds (6,910 kg), TerreStar-1 lifted off atop an Ariane 5 ECA rocket at 1:52 p.m. EDT (1752 GMT) from the Guiana Space Center in French Guiana.

Q71. Answer: (c) B

The solution is in Hindi. Read it online.

Q72. Answer: (d) D

Given:

We have to find the LCM of 1/15, 1/2, 2/25, 2/15

Concept Used:

Concept of LCM

LCM of a fraction = (LCM of numerator / HCF of denominator)

Calculation:

LCM of all numerators {1, 1, 2, 2} is 2

HCF of all denominators {15, 2, 25, 15} is 1

Required LCM of the given fractions is (2/1) = 2

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Therefore The LCM of 1/15, 1/2, 2/25, 2/15 is 2.

Q73. Answer: (b) B

The correct answer is Krishna.

• The Tungabhadra Dam is also known as Pampa Sagar is constructed across the Tungabhadra River, a tributary of the Krishna River.

• Additional Information

• Krishna River originates at Mahabaleshwar in Maharashtra.

• It is believed that Krishna Bai Temple in the Old Mahabaleshwar is the birthplace of the river Krishna. Krishna Bai Temple is an ancient Shiva shrine where a stream comes out of the mouth of a cow.

• This stream further cascades to become the Krishna River.

• The Godavari basin extends over states of Maharashtra, Andhra Pradesh, Chhattisgarh, and Odisha.

• The basin is bounded by Satmala hills, the Ajanta range, and the Mahadeo hills on the north, by the Eastern Ghats on the south and the east, and by the Western Ghats on the west.

• The Godavari River rises from Trimbakeshwar in the Nashik district of Maharashtra about 80 km from the Arabian Sea at an elevation of 1,067 m.

• The total length of Godavari from its origin to outfall into the Bay of Bengal is 1,465 km.

Q74. Answer: (a) B

Given:

• x - 4 = -3. We have to find the value of x

Concept Used:

concept of the linear equation of one variable.

Calculation:

• x - 4 = -3

=> - x = - 3 + 4

=> - x = 1

=> x = - 1

Therefore The required value of x is - 1.

Q75. Answer: (a) B

Given:

We have to find the mean of the first 10 natural number.

Concept Used:

Mean = (Sum of all numbers)/(Total number of numbers)

Calculation:

Sum of first 10 natural number = (1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 10) = 55

Mean of first 10 natural number = 55/10

=> 5.5

Therefore Mean of first 10 natural number is 5.5

Alternate Method

Sum of first n natural number is n × (n + 1) over 2

Here, n = 10

Sum of n natural number is 10 × (10 + 1) over 2 = 55

Mean of first 10 natural number = 55/10

=> 5.5

Therefore Mean of first 10 natural number is 5.5

Q76. Answer: (d) B

The correct answer is AR Rahman.

Key Points

• AR Rahman has been named as the cultural ambassador of Seychelles for his contribution to enhancing the country's art and culture development.

• MUMBAI: Oscar-winning composer AR Rahman has been named as the cultural ambassador of Seychelles for his contribution to enhancing the country's art and culture development.

Additional Information

• Rahman plays many instruments including guitar, percussion, drums, keyboard, piano, accordion, and harp.

• His most widely known score, for the 2008 film Slumdog Millionaire, earned him BAFTA, Golden Globe, Academy, and Grammy awards.

Q77. Answer: (a) D

Concept Used:

Normal multiplication

Calculation:

33333 × 9999

=> 33333 × (10000 - 1)

=> 333330000 - 33333

=> 333296667

Therefore The required simplification is 333296667

Q78. Answer: (a) B

Given:

The given numbers are 12, 1, 10, 1, 9, 3, 4, 9, 7, 9

We have to find the median of the given numbers.

Concept Used:

First, we have to arrange the given data as ascending order then we have to see how many numbers of data (n) is given

If n is odd then, Median = {(n/2) + 1}th term

If n is even then, Median = [(n/2)th term + {(n/2) + 1}th term]/2

Calculation:

Arranging the given data in ascending order get, 1, 1, 3, 4, 7, 9, 9, 9, 10, 12

Here the total number of data (n) = 10, which is an even number

(n/2)th term = 5th term = 7

{(n/2) + 1}th term = 6th term = 9

Required median = (7 + 9)/2

=> 16/2

=> 8

Therefore The median of the given numbers is 8.

Q79. Answer: (b) B

Given:

We have to calculate the value of 5886 ÷ 654 - 3.

Concept Used:

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

Calculation:

5886 ÷ 654 - 3

=> 9 - 3

=> 6

Therefore The required value of 5886 ÷ 654 - 3 is 6.

Q80. Answer: (b) C

The correct answer is Thakur Anoop Singh.

Key Points

• Thakur Anoop Singh won the gold medal at the seventh WBPF World Bodybuilding and Physique Championships in Bangkok.

• India’s Thakur Anoop Singh on 28 November 2015 won the gold medal in the 7th WBPF World Bodybuilding and Physique Championships.

• He won the medal in the fitness physique category.

• Overall, India won 11 medals in the championships that saw participation from 47 nations. The championships were held in

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Bangkok, Thailand.

Additional Information

• Arambam Boby (Manipur) also won gold in the championship. For him, it was the 4th world title in his career.

• Thingbaijam Sarita who had won a silver medal in Asian Bodybuilding Championships 2015 also bagged a bronze medal in the event.

Q81. Answer: (c) A

The correct answer is Maharashtra.

• The Parsis, whose name means “Persians,” are descended from Persian Zoroastrians who emigrated to India to avoid religious persecution by Muslims.

• They live chiefly in Mumbai and in a few towns and villages mostly to the north of Mumbai, but also at Karachi (Pakistan) and Bengaluru (Karnataka, India).

Additional Information

• Zoroastrianism, ancient pre-Islamic religion of Iran that survives there in isolated areas and, more prosperously, in India, where the descendants of Zoroastrian Iranian (Persian) immigrants are known as Parsis, or Parsees.

• Prayers are primarily invocational, calling upon and celebrating Ahura Mazda and his good essence that runs through all things. Prayers are said facing the sun, fire, or another source of light representing Ahura Mazda's divine light and energy.

• Purification is strongly emphasized in Zoroastrian rituals.

Q82. Answer: (b) A

Given:

There is a difference of 3 rupees between the two selling prices on selling an item with a profit of 8% and 18%

Concept Used:

Selling price = cost price + profit

Calculation:

Let, the cost price of the items is x

8% profit on x = 8x/100

The selling price is (x + 8x/100) = 108x/100

18% profit on x = 18x/100

The selling price is (x + 18x/100)

=> 118x/100

The ratio between the two selling price is 108x/100 : 118x/100

=> 108x : 118x

=> 54 : 59

Therefore The ratio between the two selling price is 54 : 59

The ratio of two selling price = [CP × (100 + 8)/100] : [CP × (100 + 18)/100]

=> Required ratio = 108 : 118 = 54 : 59

Therefore The ratio between the two selling price is 54 : 59

Q83. Answer: (c) A

Given:

Ranjan borrows Rs 7500 at an annual compound interest rate of 4%. Time is 2 years.

Concept Used:

If p be the principal, r be the rate of interest and t be the time then compound interest after t year is {p(1 + r/100)^t - p}

Calculation:

p = 7500

t = 2 year

r = 4%

Interest = $7500 \times (1 + 4/100)^2 - 7500$

=> $7500 \times \{(26/25)^2 - 1\}$

=> 7500 × (51/625)

=> 612

Therefore The compound interest will be Rs. 612.

Total interest% for 2 years = 4 + (4 + 4% of 4) = 8.16%

CI = 8.16% of 7500

=> CI = 612

Therefore The compound interest will be Rs. 612.

Q84. Answer: (b) A

The correct answer is A.

Key Points

• Rani-ki-Vav is located on the banks of the Saraswati River in Patan.

• It is an exceptional example of a distinctive form of subterranean water architecture of the Indian subcontinent, the stepwell.

• Buland Darwaza, or the "Door of victory", was built in 1575 A.D. by Mughal emperor Akbar to commemorate his victory over Gujarat.

• It is the main entrance to the Jama Masjid at Fatehpur Sikri, which is 43 km from Agra, India.

• Buland Darwaza is the highest gateway in the world and is an example of Mughal architecture.

• This Humayun tomb, built-in 1570, is of particular cultural significance as it was the first garden-tomb on the Indian subcontinent.

• It inspired several major architectural innovations, culminating in the construction of the Taj Mahal.

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

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

Q85. Answer: (a) A

I. Some blacks are white → True (Some blacks are Bells, which are white. Thus, some blacks are white). III. Some pinks are buttons → True (All buttons are pink. Thus, some pinks are definitely buttons). Hence, Only I and III follow is correct.

Q86. Answer: (a) B

The correct answer is B.

Key Points

• Paraffin wax is a white or colorless soft, solid wax. It's made from saturated hydrocarbons.

• It is used in skin-softening salon and spa treatments on the hands, cuticles, and feet because it's colorless, tasteless, and odorless.

• It can also be used to provide pain relief to sore joints and muscles.

• Petroleum provides fuel for heat and lighting, lubricants for machinery, and raw materials for a number of manufacturing industries.

• Petroleum refineries act as a nodal industry for synthetic textile, fertilizer, and numerous chemical industries.

• Gasoline, also spelled gasolene, also called gas or petrol, a mixture of volatile, flammable liquid hydrocarbons derived from petroleum and used as fuel for internal-combustion engines.

• It is also used as a solvent for oils and fats.

• Asphalt and coke are used in Roofing, Road Construction, Electrode.

Q87. Answer: (a) D

Given:

The first puncture takes 29 minutes to empty the tank and the second puncture takes 6 minutes to empty the tank.

Concept Used:

If a puncture takes x minutes to empty a tank then in 1 minute it will empty 1/x part of the tank

Calculation:

The first puncture takes 29 minutes to empty the tank

=> In 1 minute it can empty 1/29 part of the tank

The second puncture takes 6 minutes to empty the tank

=> In 1 minute it can empty 1/6 part of the tank

In 1 minute together two puncture can empty (1/29 + 1/6) part of the tank

=> 35/174 part

To empty the tank together two punctures take time 174/35 minutes

=> 4 34/35 minutes

Therefore The time taken by both punctures to empty the tank is 4 34/35 minutes.

Shortcut Trick

If x and y be the individual time to empty the tank then time taken by both punctures to empty the tank is xy over x + y

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Here, x = 29 minutes and y = 6 minutes

Together time taken to empty the tank is (29 × 6)/(29 + 6)

=> 174/35

=> 4 34/35 minutes

Therefore The time taken by both punctures to empty the tank is 4 34/35 minutes.

Q88. Answer: (c) C

Given sign codes:

• → ×

• → ÷

× → -

÷ → +

Coded Equation: 26 + 76 - 4 × 5 ÷ 2

Decoded Equation: 26 × 76 ÷ 4 - 5 + 2

26 × 19 - 5 + 2

494 - 5 + 2

489 + 2

491

Hence, 491 is correct.

Q89. Answer: (b) A

Pattern: Each of the letter of the words corresponds to each digit of the coded number.

TEMPLE → 187658

Letter	T	E	M	P	L	E
Digit Code	1	8	7	6	5	8

CHURCH → 439243

Letter	C	H	U	R	C	H
Digit Code	4	3	9	2	4	3

Thus, code for the word 'PURE will be: 6928

Hence, 6928 is correct.

Q90. Answer: (c) C

Given:

The number of women on the train is half the number of men. In Faridabad city, 10 men get off the train and five women enter the train.

Concept Used:

Concept of the linear equation of one variable

Calculation:

Let, the number of men in the train is 2x

Accordingly, the number of women on the train is x

In Faridabad city, 10 men get off the train and five women enter the train.

Now, the number of men in the train is (2x - 10) and the number of women in the train is (x + 5)

Accordingly,

(2x - 10) = (x + 5)

=> 2x - x = 5 + 10

=> x = 15

In the beginning, the number of women on the train was 15 and the number of men on the train was 15 × 2 = 30

At the beginning number of passengers in the train was (30 + 15) = 45

Therefore In the beginning, 45 passengers entered the train.

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Q91. Answer: (b) D

Given:

3(x - 2) - (x - 2)

Calculations:

3 (x - 2) - (x - 2)

=> 3x - 6 - x + 2

=> 2x - 4

Therefore The answer is 2x - 4.

Alternate Method

3(x - 2) - (x - 2)

=> (x - 2)(3 - 1)

=> 2(x - 2)

=> 2x - 4

Therefore The answer is 2x - 4.

Q92. Answer: (a) C

The correct answer is Golf.

Key Points

• The Ryder Cup is a biennial men's golf competition between teams from Europe and the United States.

• The competition is contested every two years with the venue alternating between courses in the United States and Europe.

• The Ryder Cup is named after the English businessman Samuel Ryder who donated the trophy.

Additional Information

• Golf is a game that is played with the Ball and Club. It is a sports game in which the players use various golf clubs to hit the balls into a series of holes on a Course.

• Golf usually played on the course is known as Golf Course.

• The game is played by some of the pieces of equipment are required are Balls, Golf Clubs, Ball Markers, Tees, etc.

• Steve Stricker(USA) won the Ryder cup in 2020.

Q93. Answer: (b) C

The correct answer is the Citizenship act 1955.

Key Points

• The Citizenship Act 1955 lays down rules for the acquisition and determination of Indian citizenship. Enacted in 1955, this act also enables people who were once citizens of India.

• But are now citizens of another country, among others, to apply for an Overseas Citizen of India Card.

• The Citizenship Act 1955 was amended six times to date — in the year 1986, 1992, 2003, 2005, 2015, and 2019.

Additional Information

• Granting of Citizenship:

• Citizenship by birth.

• Citizenship by descent.

• Citizenship by Naturalisation.

• Citizenship by registration.

Q94. Answer: (a) B

Given:

Rate = 20%

Principal = Rs. 4500

Time = 6 months

Formula used:

For Compound Interest,

A = P{1 + (R/100)}n

where,

P = Principal

CI = Compound interest

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R = Rate

n = Time(years)

Calculations:

When compounded quarterly,

R → R/4 and n → 4n

R = 20/4 = 5

n = 4 × (6/12) = 2

Calculating CI for 2 year,

A = P{1 + (R/100)}n

=> A = 4500{1 + (5/100)}2

=> A = 4500(21/20)2

=> A = 4500(441/400)

=> A = Rs. 4961.25

Therefore He will get Rs. 4961.25 at maturity.

Total interest% = Interest of first year + Interest of second year

Total interest in percentage = 5 + (5 + 5% of 5) = 10.25%

Amount = P × (100 + Total interest%)/100 = 4500 × (110.25)/100

=> Amount = Rs. 4961.25

Therefore He will get Rs. 4961.25 at maturity.

Q95. Answer: (c) B

Given statement: Pointing to a woman, Urmi said, "She is the daughter-in-law of my father's only son's grandmother."

Inference: The woman is Urmi's brother's grandmother's only son's (Urmi's father's wife) wife. The is the daughter-in-law of Urmi and her brother's grandmother. Thus, she is Urmi's mother.

Below given diagram shows the relationship between the woman and Urmi:

Hence, Mother is correct.

Q96. Answer: (b) Nagarjuna Sagar-Srisailam Tiger Reserve

The correct answer is Nagarjuna Sagar-Srisailam Tiger Reserve.

• Nagarjunasagar - Srisailam Tiger Reserve is the largest tiger reserve in India.

• It is present in Andhra Pradesh.

• The core area of this reserve is 1200 km².

Name	State
Jim Corbett Tiger Reserve	Uttrakhand
Satpura Tiger Reserve	Madhya Pradesh
Sunderbans Tiger Reserve	West Bengal
Nagarjuna Sagar-Srisailam Tiger Reserve	Andhra Pradesh

Key Points

• Tiger was launched by the Government of India in the year 1973 to save the endangered species of tiger in the country.]

• Starting from nine (9) reserves in 1973-2016 the number is grown up to fifty (50).

• A total area of 71027.10 km2 is covered by these project tiger areas.

Additional Information

• A Tiger Reserve consists of a 'Core' or 'Critical Tiger Habitat'.

• It is to be managed as an inviolate area, and a 'Buffer' or Peripheral area immediately abutting a Core area, which may be accorded a lesser degree of habitat protection. This is the typical zonation of a Tiger Reserve.

• Bor Tiger Reserve (Maharashtra) is the smallest Tiger Reserve in India.

• The Corbett Tiger Reserve in Uttarakhand has the highest number of 231 big cats in the country while three reserves in Mizoram, West Bengal, and Jharkhand have none, says a new report released on Tuesday which is based on tiger estimation done last year.

• India is now home to 2,967 tigers, up from 1,411 in 2006 when it conducted its first national survey.

• The last census in 2014 had counted 2,226 tigers. The uptick in the tiger population is good news for India, which has grappled

with human-wildlife conflict amid rapid urbanization.

Q97. Answer: (a) A

Pattern: Each of the paired letters have been reversed in the given words.

STABLE → TSBAEL

Similarly,

Code for the word 'SCARCE' will be:

Hence, CSRAEC is correct.

Q98. Answer: (c) D

The correct answer is Polarisation.

Key Points

• Polarization is a property applying to transverse waves that specify the geometrical orientation of the oscillations.

• In a transverse wave, the direction of the oscillation is perpendicular to the direction of motion of the wave.

• Some Common Examples of Polarisation are surfaces that reflect polarized light are undisturbed glass, sheet plastics, water, and highways.

• In these instances, light waves that have the electric field vectors parallel to the surface are reflected a greater degree than those with different orientations.

Additional Information

• Interference:

• As light falls on a soap bubble it reflects part of the light. Any light goes into the bubble and is mirrored from the other side of the surface of the bubble.

• Any of the beams of light are refracted. When we look at a bubble, we see all these beams of light.

• Scattering of Light: Scattering of light is the phenomenon in which light rays get deviated from their straight path on striking an obstacle like dust or gas molecules, water vapors, etc.

• The scattering of light gives rise to many spectacular phenomena such as the Tyndall effect.

• Diffraction: It occurs when a light wave passes by a corner or through an opening or slit that is physically the approximate size of, or even smaller than that light's wavelength.

• The parallel lines are actually diffraction patterns.

Q99. Answer: (d) C

Given:

Speed of jeep = 20 km/h

Meeting time of women to 2^(nd) jeep = 6 min

The interval between jeeps = 10 min

Concept used:

Relative time = (Relative distance)/(Relative speed)

Calculation:

Let the distance covered by a woman be x km.

Distance covered by jeep in 10 min. = Speed of jeep × Time interval

=> Required distance = 20 × 10/60

=> Required distance = 10/3 km

Relative time between woman and jeep = 6 min

=> Required time = 6/60 hr

=> Required time = 1/10 hr

Relative speed between woman and jeep = Speed of jeep + Speed of woman

=> Required speed = (20 + x) km/h

Relative time = (Relative distance)/(Relative speed)

=> 1/10 = (10/3)/(20 + x)

=> 20 + x = 10/3 × 10

=> 20 + x = 100/3

=> 60 + 3x = 100

=> 3x = 40

=> x = 40/3 km/h

Therefore The speed of woman is 13 1/3 km/h.

Q100. Answer: (d) A

The correct answer is A.

• Cochin International Airport, India's first airport built under a public-private-partnership (PPP) model.

• It has scripted another chapter in aviation history by becoming the first airport in the world that operates completely on solar power.

• In the next 25 years, this project would have avoided

300,000 tons of CO_2, which is equivalent to planting 3

million trees.

• In November 2015, the CIAL board of directors decided to double the airport's solar capacity to accommodate the needs of the new international terminal.

• The airport has a 12-megawatt solar plant that has more than 46,000 solar panels.

Additional Information

• India has a total of 34 operational Airports.

• Kushok Bakula Rimpochee Airport is India's Highest Airport in Leh.

• The Biggest\Busiest Airport in India is Indira Gandhi International Airport.

• World's highest Airport - Dachoying Yading (4400m) in Tibet.

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