NTPC CBT-II 2016 Official Paper (Held On: 17 Jan, 2017 Shift 3) (Previous Year Paper)

RRB NTPC • 2016 • 120 questions • 90 minutes • Answer key and solutions

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FULL TEST

Q1. The UNESCO World Heritage Site, Rani-ki-Vav is located at _____.

(a) Shimla, Himachal Pradesh
(b) Patan, Gujarat
(c) Konark, Odhisha
(d) Jodhpur, Rajasthan

Q2. Complete the following series.

C - 3, E - 5, G - 7, I - 9, _____

(a) K - 11, M - 13
(b) J - 10, K - 11
(c) J - 11, L - 13
(d) K - 11, N - 13

Q3. The Nobel Prize in Physiology or Medicine 2016 was awarded to _____.

(a) David J. Thouless
(b) Sir.J.JFraser Stoddart
(c) Yoshinori Ohsumi
(d) Bernard L. Feringa

Q4. A question and two statements labeled (I) and (II) are given. You have to decide which statement(s) is/are sufficient to answer the question.

Question:

Among four friends - Arjun, Pavan, Neeraj and Sunil, who is the heaviest?

Statements:

I. Arjun and Pavan are of the same weight.

II. Pavan weighs more than Neeraj, but less than Sunil.

Select the right option from the following.

(a) Statement I alone is sufficient.
(b) Both the statements together are needed.
(c) Statement II alone is sufficient.
(d) Either I or II alone are sufficient.

Q5. VLSI stands for

(a) Very Large Scale Integration
(b) Village Level Systems Integration
(c) Virtual Light System Information
(d) Verified Large System Integration

Q6. If '+' means '÷', '-' means '×', '÷' means '+' and '×' means '-' then 36 × 12 + 4 ÷ 6 + 2 - 3 = ?

(a) 1
(b) 39
(c) 40
(d) 42

Q7. National Tourism Award 2014-15 for the Best Tourist Friendly Railway Station was given to the _____ Railway station.

(a) Sawai Madhopur
(b) Madhubani
(c) Rajkot
(d) Pune

Q8. The median of the data 7, 12, 2, 17, 3, 13, 7, 4, 9, 7, 9 is

(a) 4
(b) 17
(c) 7
(d) 9

Q9. A shopkeeper cheats to the extent of 22% while buying and selling fruits, by using tampered weights. His total gain, in percentage is:

(a) 48.5
(b) 56.41
(c) 48.25
(d) 48.75

Q10. What set of alphabets come next?

QPO, SRQ, UTS, WVU, _____

(a) YXW
(b) XYW
(c) VWX
(d) ZXW

Q11. Below is a statement followed by some conclusions. Find which of the given conclusions logically follow(s) from the given statement.

Statement : P > Q ≤ C ≤ B = M > D

Conclusions:

I. M > Q

II. D ≤ Q

III. M = Q

IV. C < D

(a) Only either I or III is true.
(b) Only I is true.
(c) None is true.
(d) Only either II or IV is true.

Q12. Indus valley Civilization is a:

(a) Copper Age Civilization
(b) Iron Age Civilization
(c) Axial Age Civilization
(d) Bronze Age Civilization

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Q13. The Indus Valley Civilization belonged to the _____.

(a) Bronze Age
(b) Stone Age
(c) Gold Age
(d) None of the above

Directions

Study the following information carefully and answer the question given below it:
In a class of 100 students, 63 like apples and 76 like oranges.

Q14. How many students like apple only?

(a) 24
(b) 37
(c) 76
(d) 39

Q15. How many of them like both apple and orange?

(a) 5
(b) 39
(c) 40
(d) 50

Q16. The _____ is the constitutional head of Executive of the Indian Union.

(a) President
(b) Prime minister
(c) Chief Election Commissioner
(d) Chief Justice

Q17. Which among the following is the lowest computer storage size?

(a) Gigabyte
(b) Petabyte
(c) 1 Terabyte
(d) 1 Megabyte

Q18. Which is India's slowest train currently? (As of 2016)

(a) Mettupalayam-Ooty Nilgiri passenger train
(b) New Delhi-Bhopal Shatabdi Express
(c) Dibrugarh-Kanyakumari Vivek Express
(d) Pratapnagar-Jambusar passenger train

Q19. The host for Olympics games 2020 is:

(a) Istanbul
(b) Doha
(c) Madrid
(d) Tokyo

Q20. What is the retirement age of the Chief Justice of the Supreme Court of India?

(a) 65
(b) 62
(c) 60
(d) 68

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Q21. The _____ key on the keyboard is used to erase anything typed on the left of the cursor.

(a) Caps Lock
(b) Backspace
(c) Delete
(d) Cursor Control

Q22. Mr. Vishal buys a toy Rs. 50 and sells it for Rs. 75. Find the gain percentage.

(a) 50%
(b) 55%
(c) 45%
(d) 60%

Q23. A woman invests Rs. 200 at the start of each year at 5% compound interest per annum. How much will her investment be at the end of the 2^(nd) year?

(a) 431
(b) 430.5
(c) 435
(d) 430

Q24. Which of the following is the capital of the Union Territory Daman and Diu?

(a) Daman
(b) Diu
(c) Dabhel
(d) Bhimpore

Q25. Simplify: $3x(x + 4) - x(x - 2)$

(a) $2x^2 + 14x$
(b) $4x^2 - 14x$
(c) $4x^2 + 14x$
(d) $2x^2 - 14x$

Q26. The surface area (in sq. cm.) of a sphere with radius 3.5 cm is: (Take $\pi = 22/7$)

(a) 154/7
(b) 154
(c) 54
(d) 54/7

Q27. Mr Sathya invested money in FD. How much will he get on maturity. if Rs. 14,500 is invested at 20% per annum compound interest for 6 months, compounded quarterly?

(a) Rs. 15,986.25
(b) Rs. 15,986.5
(c) Rs. 15,986.35
(d) Rs. 15,986

Q28. _____ assumed the office of the Chairman of ISRO on January 14, 2015.

(a) Dr. K. Radhakrishnan
(b) Dr. Krishnaswamy Kasturirangan
(c) Shri. G Madhvan Nair
(d) Shri. A. S. Kiran Kumar

Q29. Find out the two signs to be interchanged for making the following equation correct:

$5 + 3 \times 8 - 12 \div 4 = 3$

(a) • and -
(b) • and ÷
(c) • and ÷

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(d) • and ×

Q30. Simplify : (2.25)¹/2

(a) 1.5
(b) 15
(c) 1.6
(d) 2/3

Q31. In a class test, a student scored 9 marks out of 25 marks. The student's marks expressed as a percentage is:

(a) 30
(b) 36
(c) 35
(d) 25

Q32. Select the combination of numbers so that letters arranged accordingly will form a meaningful English word.



(a) 231645
(b) 452316
(c) 425316
(d) 213654

Q33. 'Manikarnika' was the original name of which one of the following freedom fighters?

(a) Madam Cama
(b) Kittur Chennamma
(c) Sarojini Naidu
(d) Rani Lakshmibai

Directions

Read the statements given below and answer the questions that follow:
(i) There are five friends.
(ii) They are standing in a row facing North.
(iii) Jai is to the immediate right of Ashok.
(iv) Pranesh is the only one between Bala and Subhash.
(v) Subhash is between Jai and Pranesh.

Q34. Who is in the middle?

(a) Pranesh
(b) Subhash
(c) Jai
(d) Ashok

Q35. Who is standing to the right of Pranesh?

(a) Jai
(b) Bala
(c) Subhash
(d) Ashok

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Q36. Who are standing next to each other?

(a) Subhash and Bala
(b) Jai and Subhash
(c) Ashok and Subhash
(d) Ashok and Pranesh

Q37. Which of the following sportspersons is NOT correctly matched with their respective discipline?

(a) Jitu Rai : Shooting
(b) Deepa Karmakar : Gymnastics
(c) P.V. Sindhu : Badminton
(d) Sakshi Malik : Boxing

Q38. Blood Pressure : Cholesterol : : _____ : _____

(a) Chlorophyll : plant
(b) Hemoglobin : Blood
(c) Diabetic : Carbohydrates
(d) Blood Sugar : Blood Urea

Q39. If Cot x = 5/12, then Sin x + 1/(Cot x) + sec x = ?

(a) 173 / 13
(b) 77 / 13
(c) 75 / 13
(d) 17 / 13

Q40. The slogan of World Environment Day 2016 was:

(a) Raise Your Voice, Not The Sea Level
(b) Go Wild for Life
(c) One Earth, One Family
(d) A Tree for Peace

Q41. Below is a statement followed by some conclusions. You have to take the given statement to be true even if it seems to be at variance with the commonly known facts and then decide which of the given conclusions logically follow(s) from the given statement.

Statement:

Adversity makes a man wise.

Conclusions:

I. The poor are wise.

II. Men learn from bitter experiences

(a) Only Conclusion I follows.
(b) Either Conclusion I or II follows.
(c) Only Conclusion II follows.
(d) Neither Conclusion I nor II follow

Q42. Heat : Cold : : _____ : _____

(a) Large : Big
(b) Thin : Thick
(c) Tall : High
(d) Male : Child

Q43. _____ is a new programme, launched in 2016 by the Ministry of Science and Technology.

(a) National Crop Insurance Scheme
(b) Biotech -KISAN
(c) KISAN Technology
(d) Rashtriya Krishi Vikas Yojana

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Q44. Find the fourth proportional to 2, 4 and 8

(a) 15
(b) 14
(c) 16
(d) 18

Q45. Which of the following book was written by Dr. Abdul Kalam?

(a) Rebooting India
(b) Imagining India
(c) Untouchable
(d) The Life Tree

Q46. Compute: 4992 ÷ 624 - 10

(a) 2469/307
(b) -2
(c) 2
(d) 2496/307

Q47. Which one of the following Indian States does NOT contain a portion of the Thar desert?

(a) Gujarat
(b) Haryana
(c) Himachal Pradesh
(d) Punjab

Q48. The presence of free _____ in a substance makes it a conductor of electricity.

(a) Positrons
(b) Protons
(c) Electrons
(d) Neutrons

Q49. Mr. Vinod borrowed Rs. 9000 at 5% per annum compound interest. The compound interest compounded annually for 2 years is:

(a) Rs. 922.5
(b) Rs. 9921.5
(c) Rs. 921.5
(d) Rs. 9922.5

Q50. Mr. Dev sold a bus for Rs. 2210 with a loss of 15%. At what price should the bus be sold to get a profit of 15%?

(a) Rs. 2980
(b) Rs. 3000
(c) Rs. 2970
(d) Rs. 2990

Q51. The Marine Gondwana Fossil Park is located in:

(a) Chattisgarh
(b) Rajasthan
(c) Tamil Nadu
(d) Gujarat

Q52. Nita Ambani became the first Indian woman to join the _____ as an Individual Member.

(a) International Olympic Committee
(b) International Paralympic Committee
(c) International Federation of Association of Football (FIFA)
(d) Indian Olympic Association

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Q53. Bending of light at the boundary between two media is the effect of _____.

(a) Scattering
(b) Reflection
(c) Refraction
(d) Diffusion

Q54. Fill in the blank.

11, 10, _____, 100, 1001, 1000, 10001....

(a) 110
(b) 101
(c) 100
(d) 111

Q55. Freedom fighters Bhagat Singh, Rajguru and Sukhdev were hanged for the murder of:

(a) J.P. Saunders
(b) Reginald Dyer
(c) John Simon
(d) James A. Scott

Q56. Below are given statements followed by some conclusions. You have to take the given statements to be true even if they seem to be at variance with the commonly known facts and then decide which of the given conclusions logically follow(s) from the given statements.

Statements:

Some Editors are Actors. All the Actors are writers.

Conclusions:

I. Some Editors are Writers.

II. No Actor is Editor.

(a) Neither Conclusions I nor II follow.
(b) Only Conclusion II follows.
(c) Only Conclusion I follows.
(d) Either Conclusion I or II follows.

Q57. Seismologists DO NOT predict where major earthquakes are likely to occur based on _____.

(a) the movement of the plates in the Earth
(b) the location of fault zones
(c) the position of planets
(d) the history of earthquakes in the region

Q58. Kishlay travelled equal distances at speeds of 10 km/hr, 30 km/hr and 2 km/hr and took total time of 38 minutes. Find the total distance in Km.

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

Q59. _____ assumed office of the Lieutenant Governor of Puducherry on 29^(th) May 2016.

(a) Prof. Jagdish Mukhi
(b) Shri. Najeeb Jung
(c) Shri. Farooq Khan
(d) Dr. Kiran Bedi

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Q60. In February 2016, _____ was added as India's 49th Tiger Reserve.

(a) Pakke Tiger Reserve, Arunachal Pradesh
(b) Rajaji Tiger Reserve, Uttarakhand
(c) Bor Tiger Reserve, Maharashtra
(d) Orang Tiger Reserve, Assam

Q61. If White is called Black, Black is called Red, Red is called Yellow, Yellow is called Green, Green is called Blue, Blue is called Violet and Violet is called Orange, what would be the colour of human blood?

(a) Green
(b) Black
(c) Red
(d) Yellow

Q62. If A is the brother of the son of B's son, how is A related to B?

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

Q63. Who among the following has served as the Finance Minister of India?

(a) Pranab Mukherjee
(b) K. R. Narayan
(c) Shankar Dayal Sharma
(d) Neelam Sanjiva Reddy

Q64. Find the incorrect statement in regard to food.

(a) It is an inorganic substance
(b) It undergoes chemical reactions
(c) It is an organic substance
(d) It provides energy

Q65. If in a certain code TEACHER is written as VGCEJGT, how would STUDENT be written in the same code?

(a) UWVFGPV
(b) UWVGFPV
(c) UVWFGPV
(d) UVWFPGV

Q66. There are a total of 200 students in a school, of which 7/10 are boys, Find the number of girls in the school.

(a) 80
(b) 60
(c) 40
(d) 120

Q67. If the product of two numbers is 4941 and their LCM is 81, then their HCF is:

(a) 60
(b) 59
(c) 35
(d) 61

Q68. The value of $(0.3)^2 \div 100 = ?$

(a) 0.09
(b) 0.0009
(c) 0.009
(d) 0.9

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Q69. Find the HCF of 865 and 2595

(a) 25
(b) 2595
(c) 865
(d) 5

Q70. The National Song of India, 'Vande Mataram' was composed in _____ language.

(a) Pali
(b) Urdu
(c) Hindi
(d) Sanskrit

Q71. The mean of first 50 natural numbers is:

(a) 26.5
(b) 25.5
(c) 26
(d) 25

Q72. State Bank of India recently launched 'SBI Exclusif'. It is a _____ product

(a) Wealth Management
(b) Loan
(c) Mutual Fund
(d) Insurance

Q73. Correct expression of 1.41313.... (the bar indicates repeating decimal)

(a) 1427/1000
(b) 1399/990
(c) 1427/10000
(d) 157/111

Q74. Cadaver refers to _____.

(a) a clinically alive human being
(b) a dead human body used for anatomy
(c) a live human being used for trail
(d) resurrected human body

Q75. According to the survey conducted by IRCTC in 2016, which of the following stations was NOT in the list of top 10 rankings for the cleanest stations in India.

(a) GANDHIDHAM - Western Railway
(b) BEAS - Northern Railway
(c) PRATAPGARH - Northern Railway
(d) NASIK ROAD - Central Railway

Q76. If A stands for 'add', B stands for 'subtract' C stands for 'divide' and D stands for 'multiply', then what is the value of (7 D 3) B 6 A 5 (20 C 20)?

(a) 0
(b) 10
(c) 22
(d) 20

Q77. A container has two holes. The 1^(st) hole alone empties the container in 15 minutes and 2^(nd) hole alone empties the container in 10 minutes. If water leaks out at a constant rate, how long (in minutes) does it take if both the holes together empty the container?

(a) 6
(b) 1/6

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(c) 1/7
(d) 7

Q78. A question and two statements labeled (I) and (II) are given. You have to decide which statement(s) is/are sufficient to answer the question.

Question:

On which day of the week will Vimal celebrate his birthday?

Statements:

I. It is in February and 21^(st) of February is a Tuesday.

II. It is on the last day of the month.

Select the right option from the following.

(a) Both the statements together are sufficient.
(b) Statement II alone is sufficient.
(c) Data insufficient.
(d) Statement I alone is sufficient.

Q79. What is 15% of 82?

(a) 12
(b) 12.3
(c) 12.75
(d) 12.5

Q80. Two school vans start from a house at an interval of 8 minutes and travel with a speed of 25 km/hr. With how much speed (km/hr) should a woman coming from the opposite direction towards the house travel, to meet the vans at an interval of 4 minutes?

(a) 25
(b) 27
(c) 26
(d) 24

Q81. A family consists of a grandmother, father, mother, and their four sons with their respective wives. Further, each son has a daughter and two sons. How many females are there in all?

(a) 12
(b) 14
(c) 9
(d) 10

Q82. If ROSE is coded as 6821, CHAIR is coded as 73456, what will be the code for SEARCH?

(a) 216473
(b) 217463
(c) 214763
(d) 214673

Q83. The commercial and marketing arm of ISRO is:

(a) Antrix Corporation Limited
(b) ISRO Satellite Corporation
(c) ISRO Marketing Corporation Limited
(d) Space Applications Centre

Q84. The cash difference between the selling price of an article at a profit of 8% and 12% is Rs. 3. The ratio of two selling prices is:

(a) 27 : 28
(b) 27 : 29
(c) 29 : 31
(d) 27 : 31

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Q85. Amrit is twice as good a painter as Kushal and together they finish a piece of work in 6 days. In how many days will Kushal alone finish the work?

(a) 10
(b) 12
(c) 24
(d) 18

Q86. 16 men built a model in 35 days. How many days would it take for 25 men?

(a) 22.2
(b) 22.1
(c) 22
(d) 22.4

Q87. Who among the following was awarded the Ashok Chakra (posthumous) by President Pranab Mukherjee on the eve of Independence Day 2016?

(a) Lt. Col. Niranjan Ek
(b) Neeraj Kumar Singh
(c) Lt. Navdeep Singh
(d) Havildar Hangpan Dada

Q88. _____ lake is suspected to have developed due to impact of a large meteorite on Deccan Basaltic rocks of Cretaceous age.

(a) Lonar
(b) Venna
(c) Rankala
(d) Ambazari

Q89. Which of the following is NOT true in regard to Goods and Services Tax (GST)?

(a) It will replace luxury tax
(b) It is a direct tax
(c) It will replace multiple taxes on a product or service
(d) It is an indirect tax

Q90. _____ was a cargo vessel flagged off by the Minister of Shipping in Ganga at Varanasi on 12th August 2016.

(a) MV Joy Basudev
(b) MV Vishva Uday
(c) MV Jindal Kamakshi
(d) MSC India

Q91. Eyes : Tears : : _____ : _____

(a) Sea : Water
(b) Volcano : Lava
(c) Hear : Artery
(d) Hunger : Bread

Q92. Below are given statements followed by some conclusions. You have to take the given statements to be true even if they seem to be at variance with the commonly known facts and then decide which of the given conclusions logically follow(s) from the given statements.

Statements:

Some pearls are green. Some gems are ornaments.

Conclusions:

I. Some gems are pearls

II. Some ornaments are gems.

(a) Only Conclusion I follows.
(b) Either Conclusion I or II follows.

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(c) Neither Conclusion I nor II follows.
(d) Only Conclusion II follows.

Q93. Which one of the following is a fairly good conductor of electrictiy?

(a) Mica
(b) Bakelite
(c) Graphite
(d) Dry air

Q94. Fill in the blank.

U, O, I, ____, A

(a) S
(b) G
(c) B
(d) E

Q95. The Arjuna Award for 2016 in the discipline of football was:

(a) Subrata Paul
(b) Deepak Kumar Mondal
(c) Soumyajit Ghosh
(d) Sunil Chhetri

Directions

Read the following information carefully and answer the questions given below it:

Raw Cotton Procurement prices of a Spinning Mill.

YEAR	Price (Rs. per Quintal)
1999-2000	105
2000-2001	110
2001-2002	112
2002-2003	115
2003-2004	117
2004-2005	130
2005-2006	141
2006-2007	151

Q96. The prices in 2006-2007 is approximately what percent of prices in 1999-2000?

(a) 132
(b) 158
(c) 144
(d) 150

Q97. What is the average yearly increase in raw cotton procurement prices for the spinning Mill from 1999 to 2007?

(a) 7.32
(b) 7.05
(c) 5.75
(d) 6.57

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Q98. What is the maximum increase in procurement prices in any two consecutive years (in percentage)?

(a) 12 1/9 % %
(b) 11 1/9 %
(c) 12%
(d) 11%

Q99. The price increase of which two years is the same?

(a) 2003-2004 and 2004-2005
(b) 2000-2001 and 2002-2003
(c) 2001-2002 and 2003-2004
(d) 2000-2001 and 2001-2002

Q100. Which is the correct ascending order of the given numbers?

{3/10}, {4/15}, {1/3}

(a) 3/10, 4/15, 1/3
(b) 4/15, 1/3, 3/10
(c) 1/3, 3/10, 4/15
(d) 4/15, 3/10, 1/3

Q101. The number of sides of a regular polygon whose interior angles are each 150° is:

(a) 15
(b) 13
(c) 12
(d) 14

Q102. Ms. Deksha borrowed Rs. 575 at 5% per annum simple interest. What amount (in rupees) will she pay to clear her debt after 4 years?

(a) 690
(b) 151
(c) 960
(d) 115

Q103. Divide Rs. 130 in the ratio 3 : 6 : 8 : 9. The rupees in the respective ratios are given by:

(a) 15, 30, 41 & 44
(b) 15, 30, 40 & 45
(c) 15, 30, 39 & 46
(d) 15, 31, 39 & 45

Q104. The ratio of the height of image to the height of object is known as:

(a) Lateral inversion
(b) Mirror formula
(c) First law of reflection
(d) Linear magnification

Q105. "EL Nino" refers to a temperature anomaly in the _____ ocean.

(a) Indian
(b) Pacific
(c) Southern
(d) Atlantic

Q106. A telephone bill costs Rs. 11 for 2 minutes 30 seconds. What is the cost (in rupees) for 3 minutes 20 seconds? (Round up to one decimal)

(a) 14.6
(b) 14.5
(c) 14.7

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(d) 14.8

Q107. India's first Auto Bio-CNG plant was inaugurated at Pune in August 2016 by the Union Ministers,

(a) Arun Jaitely and Nitin Gadkari
(b) Nitin Gadkari and Manohar Parrikar
(c) Suresh Prabhu and Nitin Gadkari
(d) Manohar Parrikar and Venkaiah Naidu

Q108. What number comes next in the series?

1, 2, 3, 5, 8, _____

(a) 11
(b) 13
(c) 10
(d) 15

Q109. The Appointments Committee of the Cabinet extended the tenure of _____, as Chairman Railway Board, by two years with effect from 1^(st) August 2016.

(a) S.K. Roy
(b) Arunendra kumar
(c) Deepak Gupta
(d) A.K. Mittal

Q110. Sparrow : Seed : : Silkworm : ?

(a) Maple
(b) Pine
(c) Mulberry
(d) Silk

Q111. Which of the following forts was called the 'Troy of the East' by the British?

(a) Golconda Fort
(b) Gingee Fort
(c) Agra Fort
(d) Amer Fort

Q112. Two numbers are in ratio 8 : 9 and their HCF is 6. Their LCM is:

(a) 432
(b) 54
(c) 48
(d) 423

Q113. Bhanu takes a total of 6 hours 50 minutes in walking a distance and running back to the same place where she started. She could walk both ways in 8 hours 30 minutes. The time taken by her to run both ways is :

(a) 5 hours 25 min
(b) 5 hours 15 min
(c) 5 hours 10 min
(d) 5 hours 45 min

Q114. Python is:

(a) a programming language
(b) an operating system
(c) an application program
(d) a compiler

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Q115. _____ won the best actress award at the Indian Film Festival of Melbourne 2016.

(a) Deepika Padukone
(b) Sonam Kapoor
(c) Rituparna Sengupta
(d) Radhika Apte

Q116. Water : Ocean : : Snow : ?

(a) Mountain
(b) Glacier
(c) Hail
(d) Peaks

Q117. Raja's mother is the only daughter of nandhini's father. How is Nandhini's husband related to Raja?

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

Q118. The Harappan Civilization flourished around 2500 BC in what we call today _____.

(a) Pakistan and Afghanistan
(b) Western India and Pakistan
(c) Afghanistan and Western India
(d) India and China

Q119. With reference to computing, an 'Applet' is _____.

(a) A Java application
(b) Computer virus
(c) A firewall
(d) A cookie

Q120. The president of the Indian Olympic Association, N Ramachandran, was awarded the Olympic Order for his outstanding service to _____.

(a) Athletics
(b) The Olympic movement
(c) Hockey
(d) Football

ANSWER KEY

1	b	2	a	3	c	4	b	5	a	6	d	7	a	8	c	9	b	10	a
11	a	12	d	13	a	14	a	15	b	16	a	17	d	18	a	19	d	20	a
21	b	22	a	23	b	24	a	25	a	26	b	27	a	28	d	29	c	30	a
31	b	32	b	33	d	34	b	35	b	36	b	37	d	38	c	39	b	40	b
41	c	42	b	43	b	44	c	45	d	46	b	47	c	48	c	49	a	50	d
51	a	52	a	53	c	54	b	55	a	56	c	57	c	58	b	59	d	60	d
61	d	62	a	63	a	64	a	65	c	66	b	67	d	68	b	69	c	70	d
71	b	72	a	73	b	74	b	75	c	76	d	77	a	78	c	79	b	80	a
81	d	82	d	83	a	84	a	85	d	86	d	87	d	88	a	89	b	90	a
91	b	92	d	93	c	94	d	95	a	96	c	97	d	98	b	99	c	100	d
101	c	102	a	103	b	104	d	105	b	106	c	107	b	108	b	109	d	110	c
111	b	112	a	113	c	114	a	115	b	116	b	117	a	118	b	119	a	120	b

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SOLUTIONS

Q1. Answer: (b) Patan, Gujarat

The Correct Answer is Patan, Gujarat.

• Rani-ki-Vav was originally built on the banks of the Saraswati River as a memorial to the King in the 11th century AD.

• Over time, they evolved from what was essentially a sandy soil pit to multi-storey works of art and architecture.

• Rani-ki-Vav was designed at the height of craftsmanship in the construction of steppes and the architectural style of Maru-Gurjara, reflecting the mastery of this intricate technique and the great elegance of detail and proportions.

• The construction is attributed to Udayamati(daughter of Khengara of Saurashtra) queen of the 11th-century Solanki dynasty and spouse of Bhima I.

• It was rediscovered in the 1940s and restored in the 1980s by the Indian Archeological Survey. It has been listed as a UNESCO World Heritage Site since 2014.

• The Reserve Bank of India has issued a Rs 100 note in lavender color having a motif of 'Rani Ki Vav' on the reverse.

Q2. Answer: (a) K - 11, M - 13

The logic follows here is:-

Thus, the correct answer is option 1.

Q3. Answer: (c) Yoshinori Ohsumi

The Correct Answer is Yoshinori Ohsumi.

• The Nobel Prize in Physiology or Medicine 2016 was awarded to Yoshinori Ohsumi.

• Yoshinori Ohsumi is a Japanese cell biologist specialising in autophagy, a process used by cells to degrade and recycle cellular components. Ohsumi is a professor at Tokyo Academy of Technology at the Institute of Creative Science.

• In 2012, he received the Kyoto Prize for Fundamental Sciences, the 2016 Nobel Prize in Physiology or Medicine, and the 2017 Breakthrough Prize in Life Sciences for his discovery of pathways for autophagy.

• In 2016, he was awarded the Nobel Prize in Physiology or Medicine "for his discovery of pathways for autophagy."

• He is the 25th Japanese man to be awarded the Nobel Prize. Ohsumi 's wife, Mariko, Professor at the Teikyo University of Technology, has worked on his studies.

Important Points

Name	Known for	Country
David J. Thouless	2016 Nobel Prize in Physics	Scotland
Sir.J.J Fraser Stoddart	2016 Nobel Prize in Chemistry	Scotland
Bernard L. Feringa	2016 Nobel Prize in Chemistry	Netherland

Q4. Answer: (b) Both the statements together are needed.

From statement 1 → Arjun = Pavan

From statement 2 → Sunil > Pavan > Neeraj

From combining both statements,

Sunil > Arjun = Pavan > Neeraj

From both the statements Sunil is heaviest.

So, Both statements are needed for the answer.

Thus, the correct answer is Both the statements together are needed.

Q5. Answer: (a) Very Large Scale Integration

The Correct Answer is Very Large Scale Integration.

• VLSI Technology, Inc. was a company that built and produced custom and semi-customized integrated circuits (ICs).

• The company was based in Silicon Valley, with headquarters at 1109 McKay Drive, San Jose.

• Together with LSI Logic, VLSI Technology defined the leading edge of the application-specific integrated circuit (ASIC) business, which accelerated the push of powerful embedded systems to affordable products.

• VLSI was acquired by Philips Electronics for about $1 billion in June 1999, and is now part of the Philips spin-off NXP Semiconductors.

Important Points

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• The company was founded in 1979 by a trio of Fairchild Semiconductor, Synertek – Dan Floyd, Jack Balletto and Gunnar Wetlesen – and Doug Fairbairn of Xerox PARC and Lambda (later VLSI Design) magazines.

• VLSI has maintained operations throughout the United States and in the United Kingdom, France, Germany, Italy, Japan, Singapore and Taiwan.

• One of its key sites was in Tempe, Arizona, where the IBM PC family of highly successful chipsets was developed.

Q6. Answer: (d) 42

The equation given is:- 36 × 12 + 4 ÷ 6 + 2 - 3 = ?

After interchanging signs according to given question then the equation is :

36 - 12 ÷ 4 + 6 ÷ 2 × 3 = ?

By using BODMAS Rule.

36 - 12 ÷ 4 + 6 ÷ 2 × 3 = ?

36 - 3 + 3 × 3 = ?

36 - 3 + 9 = ?

45 - 3 = 42.

Thus, the correct answer is 42.

Q7. Answer: (a) Sawai Madhopur

The Correct Answer is Sawai Madhopur.

Key Points

• The station was awarded the Best Tourist Friendly Railway Station by Lok Sabha Speaker Sumitra Mahajan at a glittering ceremony at Vigyan Bhawan in New Delhi on the occasion of the National Tourism Awards 2014-2015 of the Union Tourism Ministry.

• Earlier, Sawai Madhopur Railway Station was also awarded the 'First Heritage Railway Station.'

• Sawai Madhopur Junction Railway Station (Code: SWM) is a major railway station in New Delhi – Mumbai main line of the West Central Railway Zone network.

• This station falling within the Kota railway division of the West Central Railway Zone has been graded in the category 'A.'

Additional Information

• Madhya Pradesh, followed by Gujarat and Karnataka, was presented with the Best State / Union Territory for the Comprehensive Development of Tourism.

• On the other hand, American journalist Stephanie Pearson has won the Indian Best Foreign Journalist Award. She won the honor for her Kerala 'Great Heaven' feature.

Q8. Answer: (c) 7

Given:

data: 7, 12, 2, 17, 3, 13, 7, 4, 9, 7, 9

Formula Used:

to calculate median, first step is to arrange the data in ascending order.

case1: when number of terms in data is odd

median = middle term value

case2: when number of terms in data is even

median = (1^(st)middle term value + 2^(nd) middle term value)/2

Calculation:

Arranging data in ascending order

2, 3, 4, 7, 7, 7, 9, 9, 12, 13, 17

=> median = 7

Therefore required median of data = 7

Q9. Answer: (b) 56.41

Given:

Cheat % while buying = 22%

Cheat% % while selling = 22%

Formula used:

Profit = SP – CP

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Profit % = (Profit/CP) × 100

Calculation:

At the time of buying,

The shopkeeper bought 1220 grams instead of 1000 grams

In other words, He pays for 1000 grams and buys 1220 grams

At the time of selling,

The shopkeeper sells 780 grams instead of 1000 grams

In other words, the Buyer pays for 1000 grams but received only 780 grams

In the above scenario,

The CP of the shopkeeper = 1000 × 780 = 780000

The SP of the shopkeeper = 1220 × 1000 = 1220000

Profit = 1220000 – 780000 = 440000

Profit % = (440000/780000) × 100 = 56.41%

Therefore The total gain is 56.41%

Q10. Answer: (a) YXW

The logic used here is:-

Thus, the correct answer is option 1.

Q11. Answer: (a) Only either I or III is true.

1) M > Q → False (as Q ≤ C ≤ B = M → M gives either M = Q or M > Q).

2) D ≤ Q → False (as Q ≤ C ≤ B = M > D)

3) M = Q → False (as Q ≤ C ≤ B = M → M gives either M = Q or M > Q).

4) C < D → False (as C ≤ B = M > D).

P > Q ≤ C ≤ B = M > D is given in statement. Therefore but Conclusion I and III forms a complementary pair for either.

Thus, the correct answer is option 1.

Q12. Answer: (d) Bronze Age Civilization

The correct answer is Bronze Age Civilization.

Key Points

• John Marshall was the first researcher to use the term, ‘Indus Valley Civilization’.

• Indus Valley Civilization spread from the year 2500 – 1750 BC according to radio-carbon dating.

• Indus Valley Civilization is Bronze Age Civilization.

• The most distinctive feature of the Harappan Civilization was its urbanization.

• Moreover, sheep and goats, dogs, humped cattle buffalo, and elephants were domesticated in the Indus Valley Civilization.

• The capital cities are Mohenjodaro and Harappa.

Additional Information

Some important features of architectures in the Indus Valley Civilization :

• Urban Cities - Remarkable town planning, and an excellent system of drainage and sanitation.

• Large cities divided into two parts-The ‘Citadel’ mound built on the high podium of mud-brick to the west. The town to the east was the main hub of the residential area, which was also surrounded by a massive brick wall.

• Streets-Fine drainage system, Well-arranged water supply system, The street lights system, Watch and ward arrangement during the night to oust the lawbreakers, Particular places to throw thrash and waste material, Public wells in every street, Well in every house, Main streets varying for 9 feet to as wide as 30-34 feet and were divided into networks of narrow lanes with great skills of dividing the cities.

• Building Materials-No stone-built house in the Indus cities and the staircases of big buildings were solid; the roofs were flat and were made of wood.

• Material used-Burnt bricks and Sun-dried bricks

• Drainage System-Advanced drainage and sanitation system. Each house had horizontal and vertical drains and the house drains were connected with road drains. There were underground drains for the streets and there drains were shielded by stone slabs. Bricks were used to make the soak pits.

• Great Granary-Great granary at Harappa measuring 169 fit x 135 fits. Attached to the granary were two-roomed tenements with a common courtyard.

• Great Bath-The overall dimension of the Great Public Bath is 180 feet by 108 feet. The bathing pool measured about 39 feet by

23 feet with 8 feet depth. There is a device to fill and empty the water of the bathing pool and the bathing pools were encircled with galleries and rooms.

• The urban planning of the Harappan has become a landmark for contemporary civilization and we can get a hint of the modern-day swimming pools and storehouses from their concept of bathing pools and granaries.

• Overall the Harappa town planning was very scientific and clearly indicates that the Harappan were chiefly urban people.

Important Points

Name of the major cities are given below:

• Mohenjodaro (Sind)-It is located on the right bank of the Indus.

• Kalibangan (Rajasthan)-It was on the banks of the river Ghaggar river.

• Chanhudaro - It lies on the left bank of the Indus in the south of Mohenjodaro.

• Lothal(Gujarat) - It is located at the head of the Gulf of Cambay.

• Surkotada (Gujarat) - It is at the head of the Rann of Kutch.

• Banawali (Haryana) - It was situated on the banks of the now-extinct Sarasvati.

• Dholavira (Gujarat) - It excavated is in the Kutch district.

Social features-

• Indus valley civilization is the first urbanization in India.

• It has a well-planned drainage system, grid pattern, and town planning.

• They have possessed equality in society.

Religious Facts-

• Matridevi or Shakti is the Mother goddess.

• Yoni worship and Nature worship existed.

• They worshipped trees like Peepal.

• People also worshipped Fire worship called Havan Kund.

• Pashupati Mahadeva is known as the lord of Animals.

• The people of Indus Valley Civilization worshipped Animal worship like Unicorn and ox.

Economic facts-

• Indus valley civilization is based on agriculture.

• Trade and commerce flourished in this period.

• A dockyard has been found at Lothal.

• There were export and import.

• Production of cotton was there.

• There was also the unit of measurement.

• Weights and measures of truth existed in Harappan culture was seen at Lothal.

• The weights were made of limestone, steatite, etc. and were usually cubical in shape.

Q13. Answer: (a) Bronze Age

• The Bronze Age is characterized by the use of tools made from bronze, an alloy of copper and tin.

• The Indus Valley Civilisation was a Bronze Age civilization that existed in the northwestern part of South Asia from 2500–1700 BCE.

• The civilization is known for its development of techniques in metallurgy and the use of bronze, copper, lead and tin for utensils, sculptures, vessels, and jewellery.

Additional Information

• The Indus Valley Civilization was spread from present-day North-East Afghanistan to Pakistan and North-West India. This civilization flourished in the river basins of the Ghaggar-Hakra river and the Indus. Indus valley civilization is one of the four oldest civilizations in the world. It is also known as Harappan Civilization and is well-known for its organized planning based on the grid system. Important facts to be remembered

• John Marshall was the first researcher to use the term, ‘Indus Valley Civilization’.

• Indus Valley Civilization spread from the year 2500 – 1750 BC according to radio-carbon dating.

• The most distinctive feature of the Harappan Civilization was its urbanization.

• Moreover, sheep and goats, dogs, humped cattle buffalo, and elephants were domesticated in the Indus Valley Civilization.

• The capital cities are Mohenjodaro and Harappa.

• The port cities are Sutkagendor, Balakot, Lothal, Allahdino, and Kuntasi.

• The Indus valley people were well-acquainted with the use of both cotton and wool.

• Name of the major cities are given below:
• Mohenjodaro (Sind)-It is located on the right bank of the Indus.
• Kalibangan (Rajasthan)-It was on the banks of the river Ghaggar river
• Chanhudaro-It lies on the left bank of the Indus in the south of Mohenjodaro.
• Lothal- It is located at the head of the Gulf of Cambay.
• Surkotada (Gujarat)-It is at the head of the Rann of Kutch.
• Banawali (Haryana)-It was situated on the banks of the now-extinct Sarasvati
• Dholavira (Gujarat)-It excavated is in the Kutch district

Q14. Answer: (a) 24

n(A U B) = n(A) + n(B) - n(A ∩ B)
n(A U B) = 100
n(A) = Students who likes apple = 63
n(B) = Students who like oranges = 76
n(A ∩ B) = 63 + 76 - 100 = 39
Therefore Students who like apple only = 63 - 39 = 24
Thus, the correct answer is 24.

Q15. Answer: (b) 39

No. of Students like only apples, Only oranges is 63 + 76 = 139.
The total no. of students in a class is 100.
No. of Students like both apple and orange is = (No. of Students like only apples, Only oranges) - (Total no. of students in a class).
No. of Students like both apple and orange is = 139 - 100.
No. of Students like both apple and orange is = 39.
Thus, the correct answer is 39.

Q16. Answer: (a) President

The correct answer is President.
• The President is the constitutional head of the Union. President is the head of the State while Prime Minister is the head of the government.
Key Points
• Pursuant to Article 79 of the Constitution of India, the Assembly of the Parliament of the Union shall be composed of the President and two Houses known as the Council of States (Rajya Sabha) and the House of People (Lok Sabha).
• Article 74 (1) of the Constitution specifies that a Council of Ministers shall be constituted with the Prime Minister as its head of assistance and shall advise the President, who shall exercise his or her duties in accordance with the advice of the Prime Minister.
• The true executive power is conferred on the Council of Ministers, chaired by the Prime Minister.
Important Points
• The President of India, formally the President of the Republic of India is the ceremonial head of state of India and commander-in-chief of the Indian Armed Forces.
• The Republic is ruled by the Constitution of India adopted by the Constituent Assembly on 26 November 1949 and entered into effect on 26 January 1950.
• The Constitution provides for a legislative system of government that is territorial in nature with some unitary elements.

Q17. Answer: (d) 1 Megabyte

The correct answer is 1 Megabyte.
• The megabyte is a multiple unit byte for digital content. Its recommended symbol for the unit is MB.
• The unit prefix mega is a multiplier of 1000000 (10^6) in the International System of Units (SI).
• One megabyte is then one million bytes of information. This description has been adopted in the International System of Quantities.
• The human genome consists of 800 MB DNA of details.
• The pieces that separate one human from another can be compressed to 4 MB.
Additional Information
• The gigabyte is a multiple unit byte for digital content. The Giga prefix is 10^9 in the International System of Units (SI). As a consequence, one gigabyte is one billion bytes. The gigabyte unit symbol is GB.

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• The petabyte is a 10^(15) byte digital content. The unit name of the petabyte is PB. The name is composed of the SI Peta prefix-composed by a non-SI byte unit.

• A terabyte is a multiple unit byte for digital content. The prefix tera reflects the fourth power of 1000, which is 10^{12} in the International System of Units (SI), and thus one terabyte is one trillion (short scale) bytes. The unit sign of the terabyte is TB.

Q18. Answer: (a) Mettupalayam-Ooty Nilgiri passenger train

The correct answer is Mettupalayam-Ooty Nilgiri passenger train.

• Mettupalayam-Ooty Nilgiri passenger train is India's slowest train.

Key Points

• The Nilgiri Mountain Railway goes from Mettupalayam to Udagamandalam (Ooty), via Coonoor, in the Nilgiri Hills of Tamil Nadu.

• It's the only metre rail gauge in India. Often known as a cog rail, it has a middle rail fitted with a rack that carries a pinion on the locomotive.

• This allows the training momentum to travel up steep inclines.

• The Nilgiri Mountain Railway toy train is the highlight of a visit to the famous hill station of Ooty, in the Tamil Nadu state of southern India.

• Established in the early 19th century by the British as the summer headquarters of the Chennai government, Ooty is now attracting visitors who want to avoid the stifling summer weather.

• The railway was opened in 1899 and completed in 1908. It was declared a UNESCO World Heritage Site in 2005.

Important Points

• New Delhi Bhopal Habibganj Shatabdi Express is a train run by the Northern Railway, which runs between New Delhi, the main railway station in the capital of India, New Delhi, and Habibganj, the suburban railway station of Bhopal District, the central Indian state capital of Madhya Pradesh.

• It is one of the fastest trains in India with a top allowable speed of 150 km/h.

Q19. Answer: (d) Tokyo

The correct answer is Tokyo.

• The 2020 Summer Olympics, formally the XXXII Olympic Games and generally known as Tokyo 2020, is an international multi-sport festival set to take place from 23 July to 8 August 2021 in Tokyo, Japan.

Key Points

• Originally scheduled to take place from 24 July to 9 August 2020, the event was delayed as a result of the COVID-19 pandemic in March 2020.

• Despite being rescheduled for 2021, the Games kept the name "Tokyo 2020" for publicity and naming purposes.

• Tokyo was chosen as the host city at the 125th IOC Session in Buenos Aires, Argentina, on 7 September 2013.

• 2020 Games will be the second time that Japan and Tokyo, in particular, has hosted the Summer Olympic Games, the first being in 1964, making it the first city in Asia to host the Summer Olympics twice.

Additional Information

• Tokyo, Istanbul, and Madrid were the three applicant cities. The claimant cities of Baku and Doha have not been elevated to nominee status. The Rome bid was withdrawn.

• The Tokyo Organizing Committee is led by former Japanese Prime Minister Yoshirō Mori. Seiko Hashimoto, Minister for the Tokyo Olympic and Paralympic Games, oversees the preparations on behalf of the Government of Japan.

Q20. Answer: (a) 65

• The retirement age of the Chief Justice of the Supreme Court of India is 65 years.

• Current Chief justice is Dhananjaya Yeshwant Chandrachud.

Q21. Answer: (b) Backspace

The correct answer is Backspace.

• The Backspace key is a keyboard key that deletes any character before the cursor's current position or the left.

• The backspace key is sometimes referred to as the rubout key, which is a reference to a "rubout" key found on the early termination and computer keyboards.

• It is located in the top-right portion of the keyboard. It is also used to erase anything typed on the left of the cursor.

Keyboard Key	Use
Caps Lock	The Caps lock key is a toggle key that allows you to switch the letters on your keyboard from lower case to upper case and vice-versa.

Delete	The keyboard key used to delete the text character at, or to the right of, the screen cursor. It also deletes the currently highlighted text.
Cursor Control	The keyboard keys that move the pointer (cursor) on the screen. They include Up, Down, Left, and Right arrow, Home, End, PageUp,

Q22. Answer: (a) 50%

Given:

Vishal buys a toy Rs.50

Sells toy Rs.75

Calculation:

Cost Price of the toy = Rs.50

Selling Price of the toy = Rs.75

Profit = Rs.75 -50 = Rs.25

Profit% = (25/50) × 100 = 50%

Therefore Required Profit% = 50%

Q23. Answer: (b) 430.5

Given:

Women invest Rs.200 each year

Rate = 5% p.a.

At compound interest

Concept:

In case of compound interest there is successive increase in percentage.

Calculation:

Effective increase in percentage at the at end of 2 years.

{5 + 5 + (5×5)/100}

=> {10+.25} = 10.25%

10.25% of 200

=> {10.25/100}× 200 = 20.50

Total amount she earn at the end of 2 years, which she has invested in the starting of the 1st year = 200 + 20.50 = Rs.220.50

At the starting of 1st year the principal she invested = Rs.200

Interest she earned on this principal = 5% of 200 = 10

total amount at the end = 200 + 10 = Rs.210

Total amount she get at the end of the two years = 220.50 + 210 = 430.50

Therefore Required amount = Rs.430.50

Q24. Answer: (a) Daman

The correct answer is Daman.

• Daman and Diu had become a union territory in western India.

• With an area of 112 km², it was India's smallest federal division on the mainland.

• The territories consisted of two distinct regions - Daman and Diu - which are physically divided by the Gulf of Khambhat.

• The state of Gujarat and the Arab Sea bordered the territory.

• The territory of the Portuguese colony after the 1500s was occupied by India in 1961.

• Daman and Diu were administered as part of the union territory of Goa, Daman and Diu from 1961 to 1987 when they became a separate union territory.

Important Points

• In December 2019, the Parliament of India passed legislation to combine Daman and Diu with the neighbouring union territory of Dadra and Nagar Haveli to create a separate union territory named as Dadra and Nagar Haveli and Daman and Diu.

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Q25. Answer: (a) $2x^2 + 14x$

Given:

expression:- $3x(x + 4) - x(x - 2)$

Calculation:

considering the given expression

$3x(x + 4) - x(x - 2)$

$\Rightarrow 3x^2 + 12x - x^2 + 2x$

$\Rightarrow 3x^2 - x^2 + 12x + 2x$

$\Rightarrow 2x^2 + 14x$

Therefore required value = 2x2 + 14x

Q26. Answer: (b) 154

Given:

Surface area of sphere = $4\pi \times (\text{radius})^2$

Radius of the sphere = 3.5cm

Calculation:

Surface area of sphere = $4\pi \times (\text{radius})^2$

$\Rightarrow 4 \times (22/7) \times (3.5) \times (3.5)$

$\Rightarrow 154$

Therefore Required surface area of $154cm^2$

Q27. Answer: (a) Rs. 15,986.25

Given:

Principal = Rs.14500

Rate = 20% p.a.

Time = 6 months

Compounded quarterly.

Calculation:

Rate % = 20pa

Rate% of 1 month = 20/12

Rate% for 3month = $(20/12) \times 3 = 5\%$

Effective rate% = $\{5 + 5 + (5 \times 5)/100\} = \{10 + .25\} = 10.25\%$

10.25% of 14500

$\Rightarrow \{10.25/100\} \times 14500 = 1486.25$

Therefore Amount = 14500 + 1486.25 = Rs.15986.25

Q28. Answer: (d) Shri. A. S. Kiran Kumar

The correct answer is Shri. A. S. Kiran Kumar.

• A.S. Kiran Kumar, Distinguished Scientist (Apex) and Director, Space Applications Centre, Ahmedabad, became Secretary of the Department of Space, Member of the Space Commission and Chairman of the Indian Space Research Organization (ISRO) on 14 January 2015.

• He is a highly accomplished space scientist and engineer with a distinguished career spanning over four decades at ISRO in the area of satellite payload and applications.

• He started his career at ISRO by entering the Space Applications Center (SAC) in 1975.

• Later, he became Associate Director and took over as Director of SAC in March 2012.

• He has led ISRO in international fora such as the World Meteorological Organisation (WMO), the Earth Observation Satellites Committee (CEOS) and the Indo-US Joint Working Group on Civil Space Cooperation.

• Kailasavadivoo Sivan is an Indian space scientist who is the current Secretary (Space) and ex-officio Chairman of the Indian Space Research Organization and the Space Commission.

Important Points

• S Somnath is the 10th chairman of the Indian Space Research Organisation. Before his appointment as the ISRO chief, he was serving as the director of Vikram Sarabhai Space Centre.

• S Somnath who is a rocket scientist was the director of Vikram Sarabhai Space Centre.

• Previously, he served as the Associate Director (Projects) of Vikram Sarabhai Space Centre and also as the Project Director of

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GSLV Mk-III launch vehicle.

Additional Information

• Koppillil Radhakrishnan is an Indian space scientist who led the Indian Space Research Organization (ISRO) between November 2009 and December 2014 as Member of the Space Committee, Secretary of the Space Department and Chairman of ISRO.

• Dr Krishnaswamy Kasturirangan is now a member of the Planning Commission. Dr Kasturirangan has headed the Indian Space Program in a splendid fashion for over nine years as Chairman of the Indian Space Research Organisation, of the Indian Space Commission and Secretary of the Government of India at the Department of Space, before setting up his office on 27 August 2003.

• G. Madhavan Nair is an Indian space scientist and former Chairman of the Indian Space Research Organization and Secretary to the Department of Space, Government of India.

Q29. Answer: (c) • and ÷

We have to interchange signs according to options and equate the equation-:

1) + and -

5 - 3 × 8 + 12 ÷ 4

= 5 - 24 + 3

= 8 - 24

= -16 ≠ 3(This is not equating after interchanging signs, hence incorrect.)

2) + and ÷

5 ÷ 3 × 8 - 12 + 4

= 1.67 × 8 - 12 + 4

= 13.36 - 8

= 5.36 ≠ 3 (This is not equating after interchanging signs, hence incorrect.)

3) - and ÷

5 + 3 × 8 ÷ 12 - 4

= 5 + 3 × 8/12 - 4

= 5 + 2 - 4

= 7 - 4

= 3 (This is equating after interchanging signs, hence it is correct.)

So, option 3 is correct, then no need to check the remaining option.

Thus, the correct answer is option 3.

Q30. Answer: (a) 1.5

(2.25)^((1/2))

=> √(2.25)

=> 1.5

Therefore Required value 1.5

Q31. Answer: (b) 36

Given:

A Student scored 9marks out of 25marks

Calculation:

=> (9/25)× 100 = 36

Therefore The required number = 36

Q32. Answer: (b) 452316

Here letters are written and below that sequence is mentioned. We have to check by options one by one to make meaningful English word.

1) 231645- ARVEST(This is not making any meaningful English word.)

2) 452316- STARVE(This is making a meaningful word which means die from hunger.)

3) 425316- SATRVE(This is not making any meaningful English word.)

4) 213654- AVRETS(This is not making any meaningful English word.)

Hence, correct option for this question is 2.

Q33. Answer: (d) Rani Lakshmibai

The correct answer is Rani Lakshmibai.

• Rani Lakshmibai was born on 19 November 1828 to the Marathi Karhad Brahmin family in the town of Varanasi.

• She was also known by Manikarnika Tambe.

• Lakshmibai, the Rani of Jhansi, was the Indian queen of the Maratha princely state of Jhansi in northern India, present in the Jhansi district of Uttar Pradesh, India.

• She was one of the leading leaders of the Indian Revolt of 1857 and became a symbol of opposition to the British Raj by Indian nationalists.

• Manikarnika was married to Gangadhar Rao Newalkar (Maharaja of Jhansi), in May 1842, and was later named Lakshmibai (or Laxmibai) in honour of the Hindu goddess Lakshmi.

Additional Information

• Bhikaiji Rustom Cama was one of the leading figures of the Indian independence movement.

• Kitturu Chennamma was a rani (queen) of the Nayakas of the kingdom of Kittur ruled Mallarudra sarja, who were vassals of the Maharaja of Mysore.

• Sarojini Chattopadhyay Naidu was a proponent of human rights, anti-imperialist ideas and women's emancipation, an important figure in India's fight for freedom from colonial rule.

Q34. Answer: (b) Subhash

Solving puzzle by applying conditions one by one-:

1) There are five friends.

2) They are standing in a row facing North.

3) Jai is to the immediate right of Ashok.

4) Pranesh is the only one between Bala and Subhash.

5)Subhash is between Jai and Pranesh. So Only Case 2 is correct.

Subhash sits in the middle.

Hence, correct answer is Subhash.

Q35. Answer: (b) Bala

Solving puzzle by applying conditions one by one-:

1) There are five friends.

2) They are standing in a row facing North.

3) Jai is to the immediate right of Ashok.

4) Pranesh is the only one between Bala and Subhash.

5)Subhash is between Jai and Pranesh. So Only Case 2 is correct.

So Bala is sitting to the right of Pranesh.

Hence, correct answer is Bala.

Q36. Answer: (b) Jai and Subhash

Solving puzzle by applying conditions one by one-:

1) There are five friends.

2) They are standing in a row facing North.

3) Jai is to the immediate right of Ashok.

4) Pranesh is the only one between Bala and Subhash.

5)Subhash is between Jai and Pranesh. So Only Case 2 is correct.

So from options Jai, Subhash are next to each other.

Hence, correct answer is Jai and Subhash.

Q37. Answer: (d) Sakshi Malik : Boxing

Sakshi Malik: Boxing is NOT correct.

• Sakshi Malik is a freestyle Indian wrestler.

• At the 2016 Summer Olympics, she won the bronze medal in the 58 kg division, becoming the first Indian wrestler to earn the Olympic medal.

• She had previously won a silver medal at the 2014 Commonwealth Games in Glasgow and a bronze medal at the 2015 Asian Wrestling Championship in Doha.

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• In the second edition of the Pro Wrestling League held in January 2017, Sakshi Malik represented 'Colors Delhi Sultans.'

• She was also included in the Women's Day Campaign called # EveryWomanStrong for her sponsor JSW Party.

Important Points

• Dipa Karmakar is an Indian Art Gymnast. In 2016, she represented India at the Rio de Janeiro Summer Olympics and becoming the first Indian female gymnast ever to compete in the Olympics, and the first Indian gymnast to do so in 52 years.

• Subedar Major Jitu Rai is an Indian shooter competing in a 10-metre air gun and a 50-metre gun event.

• Pusarla Venkata Sindhu(P.V. Sindhu) is a professional Indian badminton player. Padma Bhushan, India's third-highest civil award, was also honoured in January 2020.

Q38. Answer: (c) Diabetic : Carbohydrates

Blood Pressure increase or decrease caused by Cholesterol.

Similarly,

Diabetic is caused by Carbohydrates.

Hence, the correct answer is option 3.

Q39. Answer: (b) 77 / 13

Cot x = (5/12)

Concept:

Cot x = (base/perpendicular)

According to question:

Base = 5

Perpendicular = 12

Hypotenuse² = base² + perpendicular²

=> Hypotenuse² = 5² + 12²

=> Hypotenuse² = 25 + 144

=> Hypotenuse = √169

=> Hypotenuse = 13

Sin x = 12/13

Cot x = 5/12

sec x = 13/5

According to question:

(12/13) + {1/(5/12)} + 13/5

=> 12/13 + 12/5 + 13/5

=> (60 + 156 + 169)/65

=> 385/65

=> 77/13

Therefore Required value = 77/13

Q40. Answer: (b) Go Wild for Life

The correct answer is Go Wild for Life.

• The slogan of World Environment Day (WED) 2016 was Go Wild for Life.

Key Points

• This edition of the WED goal to reduce and prevent illegal trade in wildlife.

• Angola was chosen as the host country of 2016, next WED during the COP21 (Conference of Parties 2021) in Paris.

• The World Environment Day (WED) is celebrated every year on 5 June and is the main platform of the United Nations for promoting understanding and action to protect the environment.

• First held in 1974, it was a flagship movement to raise awareness of environmental issues resulting from marine pollution, human overpopulation and global warming, sustainable consumption and wildlife crime.

• Every year, WED has created a new theme that major companies, NGOs, cultures, governments and celebrities around the world are embracing to campaign for environmental causes.

Additional Information

• "Raise Your Voice, Not The Sea Level" was the slogan of the World Environment Day (WED) 2014.

• The theme for 2020 was "Time for Nature," which was held in Colombia in collaboration with Germany.

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Q41. Answer: (c) Only Conclusion II follows.

As per the given statement Adversity makes a man wise.

Conclusion:

I. The poor are wise is false as there is no relation with the given statement.

II. Men learn from bitter experiences is true as Adversity means difficult/unpleasant situation which makes a person wise.

Thus, Only conclusion II follows.

Q42. Answer: (b) Thin : Thick

The logic is:

Heat is the antonym of Cold.

Similarly,

Large is the synonym of Big.

Thin is the antonym of Thick.

Tall is the synonym of High.

There is no such relation between Male and Child.

Thus, the correct answer is Thin : Thick.

Q43. Answer: (b) Biotech -KISAN

The correct answer is Biotech-KISAN.

• Biotech-KISAN is a new programme, launched in 2016 by the Ministry of Science and Technology.

Key Points

• Biotech-Krishi Innovation Science Application Network (Biotech-KISAN) is a Biotechnology Agency, a Ministry of Science and Technology initiative that empowers farmers, particularly woman farmers.

• It seeks to explain and offer easy solutions to the challenges of water, soil, seed and the demand faced by farmers.

• The scheme is built for farmers, developed by and for farmers, empowers women, impacts locally, connects globally, is Pan-India, has a role model and encourages entrepreneurship and creativity in farmers.

• Biotech-Krishi Innovation Science Development Network (Biotech-KISAN) is being rolled out in 15 agro-climatic zones of India.

• Biotech-KISAN is a farmer-centric scheme initiated by the Biotechnology Department, where scientists can work in sync with farmers to understand issues and find solutions.

Additional Information

• The National Crop Insurance Program (NCIP) is a central sector scheme formulated through the integration of the National Agricultural Insurance Scheme (NAIS), the Pilot Adjusted National Agricultural Insurance Scheme (MNAIS), the Pilot Weather Related Crop Insurance Scheme (WBCIS) and the Pilot Coconut Palm Insurance Scheme (CPIS): The scheme comes into effect from Rabi in 2013-14 which encompasses all districts.

• Kissan Technology is a corporation specialised in digital products and agricultural services.

• In accordance with the aforementioned resolution and in collaboration with the Planning Commission, the Department of Agriculture has prepared recommendations for the RKVY scheme, known as the National Agricultural Development Program (RKVY).

Q44. Answer: (c) 16

Given:

The fourth proportional to 2, 4 and 8

Calculation:

Let the fourth number be x

=> (2/4) = (8/x)

=> x = (8×4)/2 = 16

Therefore Required number be 16.

Q45. Answer: (d) The Life Tree

The correct answer is the Life Tree.

• The Life Tree book was written by Dr A.P.J (Avul Pakir Jainulabdeen), Abdul Kalam.

Key Points

• Dr Abdul Kalam was an Indian aerospace scientist physicist and politician who served as India's 11th President from 2002 to 2007.

• He was born and raised in Rameswaram, Tamil Nadu, he studied physics and aerospace engineering.

• He spent the next four decades as a physicist and science administrator, mostly with the Defence Research and Development Organization (DRDO) and the Indian Space Research Organization (ISRO), and was closely active with India's civilian space programme and military missile development activities.

• He thus came to be recognised as the Missile Man of India for his work on the production of ballistic missiles and launch vehicle technologies.

• He also played a crucial bureaucratic, scientific and political role in India's Pokhran-II nuclear tests in 1998, the first since India's original nuclear test in 1974.

• He was elected 11th President of India in 2002 with the support of both the ruling Bharatiya Janata Party and the then-opposition Indian National Congress.

• He has won many prestigious honours, including Bharat Ratna, India's highest civil distinction.

• During a lecture at the Shillong Indian Institute of Management, Kalam collapsed and died of apparent cardiac arrest on 27 July 2015 at the age of 83.

Important Points

Books	Author
Rebooting India	Nandan Nilekani and Viral Shah
Untouchable	Mulk Raj Anand
Imagining India	Nandan Nilekani

Q46. Answer: (b) -2

Given:

4992 ÷ 624 - 10

Calculation:

=> (4992/624) - 10 = 8 - 10

=> 8 - 10 = -2

Therefore Required value = -2

Q47. Answer: (c) Himachal Pradesh

The correct answer is Himachal Pradesh.

• The Thar Desert is situated in the Indian state of Rajasthan and stretches to the states of Gujarat, Punjab and Haryana, and the Pakistani province of Sindh.

• The Thar Desert, also known as the Great Indian Desert, is a large arid region in the northwestern part of the Indian subcontinent which forms a natural boundary between India and Pakistan.

• It is the 17th largest desert in the world and the 9th largest hot subtropical desert in the world.

• 85% of the Thar Desert is in India, with the remaining 15% in Pakistan.

Additional Information

• The Desert National Park spans 3,162 km² and serves the Thar Desert ecosystem. It contains 44 villages.

• The Nara Desert Wildlife Sanctuary spans 6,300 km² and is situated in Mirpurkhas District, Pakistan.

Q48. Answer: (c) Electrons

The correct answer is Electrons.

• The presence of free electrons in a substance makes it a conductor of electricity.

Key Points

• An electron is free in the conductor if it can perform a continuous motion within the conductor if we create a potential difference between two points on the surface of the conductor.

• In a given conductor, the property of a free electron is defined by its mobility, and the motion is called drift.

• They require free electrons to move on to the next atom, which implies an incomplete number in the outer shell.

• Only when the electrons are moving into the conduction band as if they were in a metal or doped semiconductor, the electrical field applied will allow the electrons to drift or flow as a current.

• Both 'substances' carry equivalent concentrations of +/- ve electricity Insulators, these charge carriers are closely bound to their parent atoms and thus can not partake in conduction.

Additional Information

• Positron or antielectron is the antiparticle or antimatter of the electron.

• Proton is a sub-atomic particle with a positive charge. It's contained in the atomic nucleus.

• Neutrons are the largest subatomic particles in the universe.

Q49. Answer: (a) Rs. 922.5

Given:

Principal = Rs.9000

Rate = 5%

Time = 2years

Concept used:

Successive percentage: When there is an increase or decrease in percentage by x% and then followed by y% increase or decrease, then, the net increase or decrease in percentage can be found out by the following formula:

Net increase or decrease = ± x ± y ± xy/100

• → for profit

• → for loss

Calculation:

In the case of compound interest there is successive percentage increase.

Successive percentage = {5 + 5 + (5×5)/100}

=> {10 + 0.25} = 10.25%

According to question:

10.25% of 9000

=> {10.25/100} × 9000 = 922.5

Therefore Required interest = Rs.922.5

Q50. Answer: (d) Rs. 2990

Given:

Mr. Dev sold a bus for a Rs.2210

loss% = 15%

Calculation:

According to question:

Loss % = 15%

100 - 15 = 85%

85% = Rs.2210

=> 1% = 2210/85 = Rs.26

=> 100% = Rs.26 × 100 = Rs.2600

Cost Price of the Bus = Rs.2600

Profit value is 15%

15% of 2600 = (15/100) × 2600 = 390

=> Selling price of bus after 15% profit = 2600 + 390 = Rs.2990

Therefore Required value is Rs.2990

Q51. Answer: (a) Chattisgarh

The correct answer is Chattisgarh.

• The Marine Gondwana Fossil Park is located in Chattisgarh.

Key Points

• Marine Gondwana Fossil Park in Manendragarh, Sarguja District, Chattisgarh is a rare exposure to the fossiliferous Permian marine rocks of the Talchir Formation belonging to the Gondwana Supergroup.

• It is exposed to the confluence of Hasdeo River and Hasia Nala for a length of around one km upstream.

• Marine fauna is represented by the predominance of pelecypods/lamellibranchs such as Eurydesma and Aviculopecten within the shale, as well as Bryozoans, Crinoids and foraminifers.

Additional Information

• The area can be reached by road from Nagpur to Jabalpur (NH-7), Katni, Shahdol, Burhar, Anupur and Kotma (SH-14).

• The area is located on the right side of the Hasdeo River, near the railway bridge between milestones 937 and 938 of the Anuppur Chirmiri branch of the Southeastern Railway and about 2.5 km southeast of the Manendragarh railway station near the village of Ammakherwa.

• The fossil park can be viewed all year round, except the rainy season, when the fossil horizon is flooded by the Hasdeo River.

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Q52. Answer: (a) International Olympic Committee

The correct answer is the International Olympic Committee.

• Nita Ambani, Chairperson of the Reliance Foundation, was elected as an individual member of the International Olympic Committee (IOC).

• She is the first Indian to join the international body and is still the only individual member of India.

• Her election to the body of the universe is before she hits the age of 70.

• She was nominated by the IOC Executive Board in June 2016 and voted by the IOC Delegates at the 129th Session in Rio de Janeiro.

• The autonomous screening process follows a revised protocol for the appointment of IOC members based on the recommendations of the Olympic Agenda 2020.

• Individuals are selected on merit and elected by current IOC members.

Additional Information

• Nita Mukesh Ambani is chairperson and founder of the Reliance Foundation, Dhirubhai Ambani International School and non-executive director of Reliance Industries.

Q53. Answer: (c) Refraction

The correct answer is Refraction.

• Refraction is a bending of light (also occurs with sound, water and other waves) as it travels from one transparent surface to another.

• This refractive bending makes it possible for us to get lenses, magnifying glasses, prisms and rainbows.

• Our eyes, too, rely on this bending of light. Without refraction, we wouldn't be able to concentrate the light on our retina.

• Light refracts as it passes at an angle to a surface with a different refractive index (optical density).

• This change of course is triggered by a change of altitude.

• For example, as light travels from air to water, it slows down, allowing it to begin to travel in a different angle or direction.

• The higher refractive index indicates that the light slows down and changes direction further when it reaches the material.

Additional Information

• Scattering is a concept used in physics to describe a wide variety of physical processes through which travelling particles or radiation of some sort, such as light or sound, is caused to deviate from a straight path by distributed non-uniformities in the medium through which they travel.

• Reflection is a transition in the path of the wavefront at the interface between two separate media such that the wavefront returns to the medium from which it originated.

• Diffusion is the net flow of something from a higher concentration to a lower concentration area.

Q54. Answer: (b) 101

The pattern is -1, × 10 + 1, -1, × 10 +1, -1, × 10 + 1 and so on.

Therefore,

11 - 1 = 10

10 × 10 + 1 = 101

101 - 1 = 100

100 × 10 + 1 = 1001

1001 - 1 = 1000

1000 × 10 + 1 = 10001

Hence, the correct answer is 101.

Q55. Answer: (a) J.P. Saunders

The correct answer is J.P. Saunders.

• Freedom fighters Bhagat Singh, Rajguru and Sukhdev were hanged for the murder of J.P. Saunders.

Key Points

• On December 17, 1927, revolutionaries Bhagat Singh and Shivaram Rajgur shot and killed Police Assistant Superintendent John Saunders.

• Their compatriots Sukhdev Thapar and Chandrashekhar Azad helped them in this act.

• However, their initial target was not Saunders, but police superintendent James Scott, who directed his men to lathi the demonstrators leading to the death of nationalist leader Lala Lajpat Rai.

• Bhagat Singh, Sukhdev and Rajguru were later hanged to death.

• Singh, Rajguru and Sukhdev were sentenced to death in the Lahore conspiracy case and were ordered to be hanged on 24 March 1931.

• The timetable was pushed ahead by 11 hours and the three were hanged at 7:30 p.m. in Lahore prison on 23 March 1931.

Additional Information

• Bhagat Singh was an Indian communist revolutionary whose two acts of spectacular brutality against the British in India and execution at the age of 23 made him a famous hero of the Indian independence movement.

• Shivaram Hari Rajguru was an Indian nationalist from Maharashtra, mainly known for his role in the assassination of a British Raj police officer.

• Sukhdev Thapar was a visionary in India. A senior member of the Hindu Socialist Republican Association, he engaged in a variety of acts alongside Bhagat Singh and Shivaram Rajguru.

Q56. Answer: (c) Only Conclusion I follows.

The least possible diagram is given below:-

Conclusions:

I. Some Editors are Writers - True (as some editors are actors and all actors are writers).

II. No Actor is Editor - False (as some editors are actors).

Thus, the correct answer is "Only conclusion I follows".

Q57. Answer: (c) the position of planets

The position of planets is NOT correct.

• Seismologists are Earth scientists, specialising in geophysics, who research the genesis and distribution of seismic waves in geological materials.

• This geological material can vary from a laboratory specimen to the Earth as a whole, from its surface to its heart.

• Their research is aimed at interpreting the geological composition and mechanisms of the Earth.

• In the case of earthquakes, seismologists assess possible risks and aim to mitigate their effects by improving building quality.

• The produced seismic waves make it possible to locate the geological structures in detail.

Additional Information

• Seismology is a scientific study of earthquakes and the spread of elastic waves across the Earth or other planet-like bodies.

• The area also involves analyses of earthquake environmental impacts such as tsunamis and multiple geological causes such as volcanic, tectonic, glacial, river, oceanic, atmospheric and artificial mechanisms such as explosions.

Q58. Answer: (b) 3

Given:

Kishlay travelled equal distances at speeds of 10 km/hr, 30 km/hr and 2 km/hr and took total time of 38 minutes.

Concept Used:

speed = distance/time

Calculation:

Let the total distance travelled by Kishlay be '3d' km

=> d/10 + d/30 + d/2 = 38/60

=> (3d + d + 15d)/30 = 38/60

=> 19d = 19

=> d = 1 km

Therefore required total distance = 3d = 3 × 1 = 3 km

Q59. Answer: (d) Dr. Kiran Bedi

The correct answer is Dr Kiran Bedi.

• Dr Kiran Bedi assumed the office of the Lieutenant Governor of Puducherry on 29th May 2016.

Key Points

• Kiran Bedi is a retired Indian police officer, a social worker, a former tennis player and a politician who is now Lieutenant Governor of Puducherry.

• She was the first female officer of the Indian Police Force and began her service in 1972.

• She initiated a series of changes to the Tihar Prison, which received worldwide recognition and won the Ramon Magsaysay Award in 1994.

• In 2003, Bedi became the first Indian women to be named head of the United Nations Police and Policy Adviser to the United Nations Department of Peace Operations. In 2007, she resigned to concentrate on social justice and fiction.

Additional Information

• The governor of Assam is Jagdish Mukhi. Former responsibilities included Lieutenant Governor Andaman and the Nicobar Islands, Minister of Revenue, Planning, Excise and Taxes and Higher Education in the Delhi Administration.

• Najeeb Jung is a retired Indian administrative officer, serving as the 20th Lieutenant Governor of Delhi from July 2013 to December 2016.

• Farooq Khan was an adviser to Governor Satya Pal Malik, after which he was an adviser to the first Lieutenant Governor of Jammu and Kashmir and currently holds the seat.

Q60. Answer: (d) Orang Tiger Reserve, Assam

The correct answer is Orang Tiger Reserve, Assam.

• In February 2016, Orang Tiger Reserve was added as India's 49thTiger Reserve.

Key Points

• Orang National Park is a national park in India situated on the north side of the Brahmaputra River in the Udalguri and Sonitpur districts of Assam.

• It was established as a sanctuary in 1985 and on 13 April 1999, it was designated a national park.

• It has a rich flora and fauna, including huge Indian rhinoceros, pygmy hog, Asian elephant, wild buffalo and Bengal tiger.

• It is the only refuge of the Rhinoceros on the north bank of the river Brahmaputra.

Additional Information

• The Pakke Tiger Reserve is a Tiger Project Reserve situated in the Pakke Kessang district of Arunachal Pradesh in northeastern India.

• Rajaji National Park is an Indian National Park and Tiger Reserve, which includes the Shivaliks, near the foothills of the Himalayas. It occupies three districts of Uttarakhand: Haridwar, Dehradun and Pauri Garhwal.

• Bor Tiger Reserve is a wildlife sanctuary that was designated a Tiger Reserve in July 2014.

Q61. Answer: (d) Yellow

White --> Black

Black --> Red

Red --> Yellow

Yellow --> Green

Green --> Blue

Blue --> Violet

Violet --> Orange

Color of human blood is Red, but it is given that Red is called Yellow (Red --> Yellow)

Thus, "Yellow" is the correct answer.

Q62. Answer: (a) Grandson

Family Chart:-

Family Tree according to the statement:-

A is the brother of the son of B's son.

A is the grandson of B.

Thus, the correct answer is "grandson".

Q63. Answer: (a) Pranab Mukherjee

The correct answer is Pranab Mukherjee.

• Pranab Kumar Mukherjee was an Indian politician who served as the 13th President of India from 2012 to 2017.

Key Points

• In a political career spanning five decades, Mukherjee was a senior representative in the Indian National Congress and held a variety of ministerial portfolios in the Government of India.

• Prior to his election as President, Mukherjee served as Union Finance Minister from 2009 to 2012.

• He was awarded India's highest civil distinction, Bharat Ratna, by the President of India, Ram Nath Kovind, in 2019.

• Mukherjee was the first minister of finance in India during the Indira Gandhi administration in 1982. In 1982–83, he introduced his first annual budget.

• Mukherjee again became Minister of Finance for India in 2009. In 2009, 2010, and 2011, the annual budgets were presented. The 2010–11 budget contained the country's first clear target to slash public debt as a share of GDP, and Mukherjee planned to reduce the budget deficit by 4.1% of GDP in the 2012–13 fiscal year from 6.5% in 2008–09.

Additional Information

• Kocheril Raman Narayana was an Indian diplomat, scholar and politician who served as the 10th President of India (1997–2002) and 9th Vice-President of India (1992–1997).

• Shankar Dayal Sharma was India's ninth president from 1992 to 1997.

• Neelam Sanjiva Reddy was the sixth president of India to serve from 1977 to 1982.

Q64. Answer: (a) It is an inorganic substance

It is an inorganic substance is NOT correct.

Key Points

• Food is any substance used to supply the body with dietary help.

• Food is typical of plant, animal or fungal origin and contains essential nutrients such as sugars, fats, proteins, vitamins or minerals. Food is an organic substance.

• Hence option 1 is incorrect.

• The material is absorbed by the organism and assimilated by the cells of the organism to provide nutrition, sustain life, or promote growth.

• Omnivorous humans are particularly adaptable and have evolved to eat in several diverse environments.

• The food system has major impacts on a wide variety of other social and political problems, including biodiversity, ecological diversity, economics, population development, water availability and access to food. Most of the food has its roots in seeds.

• Some food is derived directly from plants, but even animals that are used as food sources are raised by feeding them with food extracted from plants.

Important Points

• Cereal grain is a staple food that contains more food resources than any other crop in the world.

• Corn (maize), wheat and rice in all varieties – account for 87% of all grain supply worldwide.

• Most of the grain produced worldwide is fed to livestock.

Q65. Answer: (c) UVWFGPV

The logic follows here is :-

Thus, the correct answer is "UVWFGPV".

Q66. Answer: (b) 60

Given:

There are total number of students in a school = 200

There are (7/10) are boys

Calculation:

According to question:

(7/10) × 200 = 7 × 20 = 140

Total Number of boys = 140

Total Number of girls = 200 - 140 = 60

Therefore Total number of girls = 60

Q67. Answer: (d) 61

Given:

Product of two numbers is 4941

LCM of these two number = 81

Concept:

Product of two numbers = LCM × HCF

Calculation:

Let the HCF be x

=> 4941 = x × 81

=> x = 4941/81 = 61

Therefore HCF = 61

Q68. Answer: (b) 0.0009

Given:

$(0.3)^2 \div 100$

Calculation:

$(0.3)^2 = 0.09$

$\Rightarrow 0.09 \div 100 = 0.0009$

Therefore Required value = 0.0009

Q69. Answer: (c) 865

Factors of 865 = 5 × 173

Factors of 2595 = 5 × 3 × 173

Common factors of 865, 2595 = 5 × 173

Therefore HCF of two factors = 5 × 173 = 865

Q70. Answer: (d) Sanskrit

The correct answer is Sanskrit.

• Vande Mataram is a Sanskrit poem written by Bankim Chandra Chatterjee in the 1870s, which he included in his Bengali novel Anandamath in 1882.

• The poem was first sung in 1896 by Rabindranath Tagore.

Key Points

• The first two verses of the song were adopted by the Congress Working Committee as the National Song of India in October 1937 before the end of colonial rule in August 1947.

• It played a vital role in the Indian independence movement, first sung in the political sense by Rabindranath Tagore at the National Congress of India in 1896.

• It was a popular marching song for political agitation and the Indian Independence Movement in 1905.

Important Points

• On 24 January 1950, the Indian Constituent Assembly adopted "Vande Mataram" as a national song.

Q71. Answer: (b) 25.5

Mean of first 50 natural number

1st natural number = 1

50th natural number = 50

Mean = (First number + Last number)/2 = (1 + 50)/2 = 51/2 = 25.5

Therefore Required value = 25.5

Q72. Answer: (a) Wealth Management

The correct answer is Wealth Management.

• SBI Exclusif, a wealth management product, was introduced by State Bank of India in New Delhi.

• The purpose of the product is to provide wealthy consumers with a detailed and best-in-class banking experience.

• SBI Exclusive customers will have access to a dedicated relationship manager backed by a team of investment specialists who will take care of all their banking and investing needs via a range of platforms, including the first of its kind 'e-Wealth' networks (remotely through call or video conversation) or via future ready-to-use wireless (internet banking/mobile) networks.

Additional Information

• The bank launched the bid in Bengaluru on a pilot basis.

• The product was unveiled by Arun Jaitley, former Finance Minister.

• SBI Exclusif proposes to offer consumers a totally different way of engaging with the bank when customers would have access to a dedicated RM to satisfy both their banking and investment needs.

• The Bank is the first PSU bank in the world to have extensive wealth management services.

Q73. Answer: (b) 1399/990

1.41313...

X = 1.4131313...

10X = 14.131313... (i)

1000x = 1413.1313...(ii)

using (i) and (ii)

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990X = 1399

X = 1399/990

Therefore Required fraction = 1399/990

Q74. Answer: (b) a dead human body used for anatomy

The correct answer is a dead human body used for anatomy.

• A Cadavers is a dead human being used by medical students, doctors and other scientists to research anatomy, locate disease locations, determine the causes of death, and supply tissue to restore a defect in a live human being.

Key Points

• Medical school students research and analyse cadavers as part of their education.

• The word cadaver is used in the courts to refer to a deceased body, as well as in rescue teams looking for remains in the event of natural disasters.

• Cadavers can be studied for their level of decomposition, helping to assess how long a person has been dead.

• Cadavers are used in sculpture to represent the human body more specifically in sculptures and sketches.

Important Points

• Cadavers not only provide medical students and physicians with knowledge of the various processes of the human body, but they also provide several sources of dysfunction within the human body.

• Galen (250 AD), a Greek physician, was one of the first to link incidents that happened in human life with internal consequences subsequently identified after death.

• Simple cadaver autopsy may help identify the origins of lethal diseases or disorders.

Q75. Answer: (c) PRATAPGARH - Northern Railway

PRATAPGARH - Northern Railway is NOT correct.

• According to the survey conducted by IRCTC in 2016, PRATAPGARH - Northern Railway was NOT in the list of top 10 rankings for the cleanest stations in India.

Key Points

• The list of the top 10 cleanest railway stations in India has been published every year for the past 2 years.

• Jodhpur and Marwar railway stations in Rajasthan were the cleanest on the Indian Railways network in 2018.

• These stations have received this distinction in the A1 and A categories of train stations, respectively. Both Jodhpur and Marwar of the North-West Railway Region were not among the top 10 cleanest stations in the 2017 survey, While Jodhpur scored 977.97, Marwar scored 972.71.

Additional Information

• Though 10 zones have seen 10-20% development, more than 20 per cent change has been achieved in 4 zones.

• The North-Western Railways have completed the list of cleanest regions, with the South-Central Railways coming second and the East Coast Railways coming third.

Q76. Answer: (d) 20

Given

Tabulating the information given in the question,

Alphabet	Meaning
A	•
B	•
C	÷
D	×

(7 D 3) B 6 A 5 (20 C 20) =

Insert the given Arithmetic operators from given information.

(7 × 3) - 6 + 5 (20 ÷ 20)

Using BODMAS Rule:

(7 × 3) - 6 + 5 (20 ÷ 20) =

(21) - 6 + 5 (1) =

21 - 6 + 5 =

26 - 6 = 20.

Thus, the correct answer is 20.

Q77. Answer: (a) 6

Given:

A container has two holes.

Calculation:

1st hole alone empty the tank in 15min

2nd hole alone empty the tank in 10min

LCM of 15, 10 = 30

Let the total capacity of the tank is 30units

Efficiency of hole1 = 30/15 = 2units/min

Efficiency of hole2 = 30/10 = 3units/min

According to question:

When these both hole work together, time taken to empty the tank

=> total efficiency when they both work together = 3+2 = 5units/min

Time taken to empty the tank = 30/5 = 6min

Therefore Required time = 6min

Q78. Answer: (c) Data insufficient.

From statement 1 → It is mentioned that Vimal birthday is in February month, But there is no information about day of the week of Vimal birthday.

From statement 2 → It is last day of the month but didn't mentions about the year (leap year consists 29 day in February and normal year have 28 days)

Form combining both statements - Last day of the month of February but not mentioned about the year.

So Data given in statement 1 and statement 2 is insufficient.

Thus, then correct answer is Data insufficient i.e. option is 3.

Q79. Answer: (b) 12.3

15% of 82

=> (15/100) × 82

=> (15× 82)/100

=> 1230/100

=> 12.3

Therefore Required value = 12.3

Q80. Answer: (a) 25

Given:

Two school vans start from a house at an interval of 8 minutes and travel with a speed of 25 km/hr

Formula Used:

speed = distance/time

Calculation:

Let the speed of the woman be 'x' km/hr

the relative speed of woman = (25 + x) km/hr

=> distance travelled by van in 8 minutes = distance travelled by woman (at relative speed) in 4 minutes

=> 25 × 8/60 = (25 + x) × 4/60

=> 200 = 100 + 4x

=> x = 25 km/hr

Therefore required speed of woman = 25 km/hr

Important Points

speed varies inversely with time when the distance is constant.

Q81. Answer: (d) 10

From the given information,

From the blood relation diagram there are 10 Female.

Thus, the correct answer is 10.

Q82. Answer: (d) 214673

Given

ROSE is coded as 6821

R	O	S	E
6	8	2	1

CHAIR is coded as 73456

C	H	A	I	R
7	3	4	5	6

Therefore From the above codes SEARCH is coded as 214673

S	E	A	R	C	H
2	1	4	6	7	3

Thus, the correct answer is 214673.

Q83. Answer: (a) Antrix Corporation Limited

The correct answer is Antrix Corporation Limited.

• The commercial and marketing arm of ISRO is Antrix Corporation Limited.

Key Points

• Antrix Corporation Limited (ACL), Bengaluru is a wholly-owned Government Company of India under the administrative jurisdiction of the Department of Space.

• Antrix Corporation Limited was founded as a private limited company owned by the Government of India in September 1992 as a marketing arm of ISRO for the promotion and commercialization of space goods, technological consulting services, and technology transfer established by ISRO.

• Another big goal is to promote the growth of space-related industrial technologies in India.

• As the industrial and marketing arm of ISRO, Antrix is dedicated to delivering space goods and services to foreign customers worldwide.

Additional Information

• The Indian Space Exploration Corporation is the national space agency of the Republic of India, headquartered in Bengaluru.

• It functions under the Department of Space (DoS) and is directly overseen by the Prime Minister of India, while the President of ISRO also serves as Executive Officer of DoS.

• ISRO is the main agency in India to carry out activities relating to space-based applications, space exploration, and the development of related technologies.

• It is one of the six government space agencies in the world that possess complete launch capability, deploy cryogenic engines, launch extraterrestrial missions, and run large fleets of artificial satellites.

Q84. Answer: (a) 27 : 28

Given:

Profit1% = 8%

Profit2% = 12%

According to question

Difference of profit = Rs.3

Calculation:

Let the Cost Price be 100

SP1 = 108

SP2 = 112

According to question:

112 - 108 = 4

=> 4 = Rs.3

=> 1 = Rs.3/4

Cost Price = 100 × (3/4) = Rs.75

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SP1 = 108 × (3/4) = 81

SP2 = 112× (3/4) = 84

Ratio of SP1 : SP2= 81 : 84 = 27 : 28

Therefore Required ratio = 27 : 28

Q85. Answer: (d) 18

Given:

Amrit is twice as good a painter as kaushal.

Both amrit and kaushal work together and finish the work in 6days

Calculation:

According to question:

Amrit = 2 × Kaushal

Efficiency of Amrit/Kaushal = 2/1

Let the constant be x

Efficiency of amrit = 2x

Efficiency of kaushal = x

Total work = Total time × Total people(efficiency) doing work

Total work = 6 × (2x + x)

=> Total work = 18x

Kaushal alone can do the work = 18x/x = 18days

Therefore the required value = 18days

Q86. Answer: (d) 22.4

16 men built a model in 35days

Concept:

Total Work = number of time taken × number of person doing work

Calculation:

Total work = (16 × 35)

Time taken to complete the work = (16 × 35)/25 = (16× 7)/5 = 22.4

Therefore Required time = 22.4days

Q87. Answer: (d) Havildar Hangpan Dada

The correct answer is Havildar Hangpan Dada.

• Havildar Hangpan Dada was awarded the Ashok Chakra, India's highest award for gallantry during peacetime, on the eve of the 70th Independence Day 2016 by President Pranab Mukherjee.

• He was a member of the Assam Regiment/35th Division of the Rashtriya Rifles.

• During a meeting with a militant group in Jammu and Kashmir, Dada displayed exceptional bravery, commitment and gallantry above the call of duty and died in Kupwara on May 27, 2016, after killing three terrorists.

• This year, 82 Gallery Distinctions were awarded to officers of the armed forces and members of the paramilitary forces.

• These include one Ashok Chakra, 14 Shaurya Chakras, 63 Sena Medals (Gallantry), two Nao Sena Medals (Gallantry) and two Vayu Sena Medals (Gallantry).

Additional Information

• Lieutenant Navdeep Singh, AC was the Ghatak Platoon Commander of the 15 Maratha Light Infantry Regiment of the Indian Army. Posthumously, on the 63rd Republic Day, India's President Ashoka Chakra was given the highest Peacetime Gallantry Award.

• Neeraj Kumar Singh was a non-commissioned officer (NCO) in the Indian Army. He was awarded the Ashok Chakra, the country's highest peacetime military decoration on 26 January 2015.

• Lt Col Niranjan worked in different units based in Udhampur, Vairangty Gate(Mizoram), Ranchi and Srinagar, J&K. He was awarded the Shaurya Chakra Posthumously on 15 August 2016.

Q88. Answer: (a) Lonar

The correct answer is Lonar.

• Lonar lake is suspected to have developed due to impact of a large meteorite on Deccan Basaltic rocks of Cretaceous age.

• It is a National Geo-Heritage Monument in Lonar, Buldhana district, Maharashtra.

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• It was caused by an asteroid collision with earth impact during the Pleistocene Period. It is one of the four known, hyper-velocity, basaltic rock impact craters anywhere on Earth.

Key Points

• The other three basaltic impact systems are found in southern Brazil. Lonar Lake has a mean depth of 1,2 kilometres (3,900 ft) and is roughly 137 metres (449 ft) below the crater floor. The rim of the meteor crater is approximately 1,8 kilometres (5,900 ft) in diameter.

• Lonar Crater lies within the Deccan Plateau – a vast basalt rock volcanic plain formed by eruptions some 65 million years ago.

• Its location in the basalt region indicated to some geologists that it was a volcanic crater.

• The water in the lake is both salty and alkaline.

Additional Information

• Venna Lake is one of Mahabaleshwar's tourist attractions in Maharashtra. The lake was founded by Shri Appasaheb Maharaj, who was the Raja of Satara in 1942.

• Rankala Lake is a picturesque lake in the Kolhapur district in the state of Maharashtra in western India.

• Ambazari Lake is located along the southwest boundary of Nagpur, in the state of Maharashtra.

• It is one of the 11 lakes in Nagpur and the largest lake in the region.

• The Nag River of Nagpur originates from the lake.

Q89. Answer: (b) It is a direct tax

It is a direct tax is NOT correct.

• Goods and Services Tax (GST) is an indirect tax applicable to the supply of goods and services in India.

• It is a comprehensive, multi-stage, destination-based tax: comprehensive since it has incorporated nearly all indirect taxation, with the exception of a few state taxes.

Key Points

• Multi-stage as it is, the GST is levied at any level of the manufacturing process but is supposed to be refunded to all parties at all points of production, rather than the final customer, because as a destination-based levy, it is collected from the point of consumption and not from the point of origin, as in the case of previous taxes.

• Goods and services are split into five separate tax collection slabs – 0%, 5%, 12%, 18% and 28%.

• However, petroleum goods, alcoholic beverages and energy are not levied on the basis of GST and are now taxed individually by individual state governments, as per the previous tax system. There is a special rate of 0.25% on rough and semi-precious stones and 3% on gold.

• In comparison, a cessation average of 22 per cent or more than 28 per cent of GST refers to a few goods such as aerated beverages, luxury vehicles and cigarette products.

Important Points

• The tax entered into force on 1 July 2017 by the adoption by the Government of India of the One Hundred and First Amendment of the Constitution.

• The GST has abolished the current various taxes imposed by central and state governments.

• Tax rates, laws and regulations shall be regulated by the GST Council, which shall be consisting of the finance ministers of the central government and all States.

Q90. Answer: (a) MV Joy Basudev

The Correct Answer is MV Joy Basudev.

• MV Joy Basudev was a container vessel flagged off by the Minister of Shipping in Ganga, Varanasi, on 12 August 2016.

• Two vessels were flagged by the Minister of Transportation, Road Transport and Highways, Shri Nitin Gadkari.

• MV Joy Basudev (capacity 1400 tonnes) and MV V.V Giri (capacity 300 tonnes) containing newly assembled Maruti Suzuki cars and building materials in Varanasi on 12 August 2016.

• These two boats were on their way to Haldia. The transport system facilitated the jobs of lakhs of people in Uttar Pradesh and enabled 11 state power stations to obtain timely supplies of coal.

Additional Information

• MV Jindal Kamakshi is a container ship, i.e. a feeder ship, which mostly moves containers to another port.

• MSC India is a container ship that was built in 2002 (18 years old) and currently sails under the flag of Madeira.

• MV Vishva Uday is a Bulk Carrier established in 2013 (7 years old) and currently sailing under the Indian flag.

Q91. Answer: (b) Volcano : Lava

Given

Eyes : Tears → Tears come from Eyes.

Similarly,

Volcano : Lava → Lava come from Volcano.

Thus, the correct answer is Volcano : Lava.

Q92. Answer: (d) Only Conclusion II follows.

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

Conclusion:-

i) Some gems are pearls - False (From the given statements there is no direct relation between gems and pearls; so, this conclusion can be a possibility but it is not definitely true).

ii) Some ornaments are gems - True (Some gems are ornamented is given in the statement, so, some ornaments must be gems, so this conclusion is definitely true.

Hence, Only Conclusion II follows.

Q93. Answer: (c) Graphite

The correct answer is Graphite.

• Graphite is soft and slick since the intermolecular forces between its layers are small.

• It is a good conductor for heat and electricity.

• It can conduct electricity because of the delocalized (free) electrons in its composition.

• This occurs when each carbon atom is bonded to the three other carbon atoms. But, in diamonds, the four outer electrons on each carbon atom are included in covalent bonding, so there are no delocalized electrons.

• These electrons are free to pass through the structure of graphite.

Additional Information

• Silver is the best conductor of electricity.

• Bakelite is a thermoset plastic and is one of the first plastics manufactured from synthetic components. Bakelite was used for its electrical non-conductivity and heat-resistant properties in electrical insulators, radio and telephone housings.

• Mica is unique in that it is a good electrical insulator at the same time as it is a good thermal conductor. The leading use of block mica is an electrical insulator in electronic equipment.

• Dry air is the small thermal conductivity.

Q94. Answer: (d) E

Here in the question all of the vowels in English Alphabet have been written in reverse order. So, E will be the correct answer for the missing term

U, O, I, E, A

Thus, the correct answer is "E".

Q95. Answer: (a) Subrata Paul

The correct answer is Subrata Paul.

• Subrata Pal is an Indian professional footballer who is currently playing for Hyderabad FC in the Indian Super League and India.

• He received Arjuna Award for 2016 in the discipline of football.

• In 2007, he replaced Sandip Nandy as the No.1 Indian Senior Team for the 2007 Nehru Cup.

• On 11 March 2015, he was named captain of the Indian national football team by coach Stephen Constantine. Under his guidance, the team reached the second round after beating Nepal by a total of 2-0 in the first round of qualifying.

• He is the first Indian footballer to represent the 1st Tier of the Team of Europe.

• He was part of the 1st Division team FC Vestejaelland of Denmark.

Additional Information

• Deepak Kumar Mondal is an Indian footballer who won Arjuna Award in 2010.

• Soumyajit Ghosh is an Indian Table Tennis player who won Arjuna Award in 2016.

• Sunil Chhetri is an Indian footballer who won Arjuna Award in 2010 and Padma Shri in 2019.

• The Arjuna Award is the sporting distinction of the Republic of India. It is awarded annually by the Ministry of Youth and Sports.

Q96. Answer: (c) 144

Price in 1999-2000 = Rs. 105 Increase in price = 110-105 = 5

Price in 2000-2001 = Rs. 110 Increase in price = 112-110 = 2

Price in 2001-2002 = Rs. 112 Increase in price = 115-112 = 3

Price in 2002-2003 = Rs. 115 Increase in price = 117-112 = 5

Price in 2003-2004 = Rs. 117 Increase in price = 130-117 = 13
Price in 2004-2005 = Rs. 130 Increase in price = 141-130 = 11
Price in 2005-2006 = Rs. 141 Increase in price = 151-141=10
Price in 2006-2007 = Rs. 151
Price in 2006-2007 = 151
Price in 1999-2000 = 105
According to question
=> {151/105} × 100
=> 144
Therefore Required value = 144

Q97. Answer: (d) 6.57

Price in 1999-2000 = Rs. 105
Price in 2000-2001 = Rs. 110
Price in 2001-2002 = Rs. 112
Price in 2002-2003 = Rs.115
Price in 2003-2004 = Rs. 117
Price in 2004-2005 = Rs. 130
Price in 2005-2006 = Rs. 141
Price in 2006-2007 = Rs. 151
Procurement Price in 1999 = 105
Procurement Price in 2007 = 151
Increased in procurement in these years = 151 – 105 = 46
=> Average increase in procurement = 46/7 = 6.57
Confusion Points
In this question 7 times increase the price, staring year is fixed, that year is not changed. That's why we have taken the 7, and divided it by 7.

Q98. Answer: (b) 11 1/9 %

Price in 1999-2000 = Rs. 105 Increase in price = 110-105 = 5
Price in 2000-2001 = Rs. 110 Increase in price = 112-110 = 2
Price in 2001-2002 = Rs. 112 Increase in price = 115-112 = 3
Price in 2002-2003 = Rs. 115 Increase in price = 117-112 = 5
Price in 2003-2004 = Rs. 117 Increase in price = 130-117 = 13
Price in 2004-2005 = Rs. 130 Increase in price = 141-130 = 11
Price in 2005-2006 = Rs. 141 Increase in price = 151-141 = 10
Price in 2006-2007 = Rs. 151
130 - 117 = 13
=> (13/117) × 100 = 11 1/9 %

Q99. Answer: (c) 2001-2002 and 2003-2004

Price in 1999-2000 = Rs. 105
Price in 2000-2001 = Rs. 110 Increase in price = 110 - 105 = 5
Price in 2001-2002 = Rs. 112 Increase in price = 112 - 110 = 2
Price in 2002-2003 = Rs. 115 Increase in price = 115 - 112 = 3
Price in 2003-2004 = Rs. 117 Increase in price = 117 - 115 = 2
Price in 2004-2005 = Rs. 130 Increase in price = 130 - 117 = 13
Price in 2005-2006 = Rs. 141 Increase in price = 141 - 130 = 11
Price in 2006-2007 = Rs. 151 Increase in price = 151 - 141 = 10
Therefore Maximum increase is in Price is same for the years of 2001-2002 and price of 2003-2004.

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Q100. Answer: (d) 4/15, 3/10, 1/3

{3/10}, {4/15}, {1/3}
LCM of denominators 10, 15 and 3 = 30
Multiply each fraction with LCM,
{3/10} × 30 = 9,
{4/15} × 30 = 8 and
{1/3} × 30 = 10
=> 8 < 9 < 10
Therefore In ascending order: 4/15, 3/10, 1/3

Q101. Answer: (c) 12

Shortcut Trick
For any regular polygon, the sum of an interior angle and its corresponding exterior angle is always 180°.
Exterior angle = 180° − Interior angle = 180° − 150° = 30°.
The sum of all exterior angles of any polygon is always 360°.
Number of sides (n) = 360° ÷ Exterior angle = 360° ÷ 30° = 12.
Therefore The correct answer is 12.
Alternate Method
Given: Each interior angle of the regular polygon = 150°.
Formula Used: Interior angle of a regular polygon with n sides = [(n − 2) × 180°] ÷ n
Calculations:
=> 150° = [(n − 2) × 180°] ÷ n
=> 150n = (n − 2) × 180
=> 150n = 180n − 360
=> 180n − 150n = 360
=> 30n = 360
=> n = 360 ÷ 30
=> n = 12
Therefore, the correct option is 3.
Therefore The correct answer is 12.
Additional Information
Sum of Interior Angles
The sum of all interior angles of a polygon with n sides is given by the formula (n − 2) × 180°.
Exterior Angle Property
For any convex polygon, the sum of the exterior angles (one at each vertex) is always 360°.
Regular Polygon Properties
In a regular polygon, all sides are equal and all interior angles are equal. Each exterior angle = 360° ÷ n.
Supplementary Angles
The interior angle and the exterior angle at any vertex of a polygon are supplementary, meaning their sum is 180°.

Q102. Answer: (a) 690

Given:
Ms. Deksha borrowed Rs.575
Rate% = 5% p.a
Time = 4years
Formula Used:
Simple Interest = (Principal × time × rate)/100
Calculation:
=> (575 × 5 × 4)/100
=> 11500/100
=> 115
Therefore Amount = Principal + Interest = 575 + 115 = 690

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Q103. Answer: (b) 15, 30, 40 & 45

Total amount = Rs.130

Amount divide among four are = 3:6:8:9

Let the constant number be x

Total number be = 3x+6x+8x+9x = 26x

According to question:

26x = 130

=> x = 130/26 = 5

3× 5 = 15

6× 5 = 30

8× 5 = 40

9× 5 = 45

Therefore Required value = 15, 30, 40, 45

Q104. Answer: (d) Linear magnification

The correct answer is Linear magnification.

• Magnification, in optics, of the size of the signal, compared to the size of the object that produces it.

• Linear magnification refers to the ratio of the length of the image to the length of the target measured in planes perpendicular to the optical axis.

• The negative value of the linear magnification is the reversed version.

• Longitudinal magnification is the factor by which the image size increases, as measured along the optical axis.

Key Points

• Angular magnification is equal to the ratio of the tangents of the angles undercut by the target and its reflection, determined from a given point in the instrument, as with the magnifiers and binoculars.

Important Points

• Lateral inversion is the effect of a plane mirror in reversing images from left to right.

• Mirror Equation is an equation that refers to the distance of an object and the distance of an image with a focal length, defined as a mirror equation. It's also known as a mirror formula.

• The First Law of Reflection states that the angle of the incident light ray with the normal to the surface at the point of incidence is equal to the normal angle of the reflected light ray.

Q105. Answer: (b) Pacific

The correct answer is the Pacific.

• El Nino is a temperature trend that explains the irregular warmth of surface waters in the Eastern Pacific Ocean.

• It is the "warm period" of the broader phenomena known as the El Nino-Southern Oscillation (ENSO).

Key Points

• La Nina, the "cold period" of ENSO, is a pattern that explains the irregular cooling of the surface waters of the area.

• El Niño and La Niña are known to be an ocean component of ENSO, although the Southern Oscillation is distinguished by its atmospheric shifts.

• It has an effect on ocean temperatures, the intensity and power of ocean tides, the health of coastal fishermen, and local weather from Australia to South America and beyond.

• El Nino occurrences occur irregularly at two to seven-year periods.

Important Points

• Led by the work of Sir Gilbert Walker in the 1930s, climatologists have determined that El Niño occurs concurrently with the Southern Oscillation. Southern Oscillation is a rise of air pressure in the Pacific Ocean.

• As marine waters in the Eastern Tropical Pacific (El Nino) get colder, the air pressure over the ocean reduces.

Q106. Answer: (c) 14.7

Given:

A telephone bill cost Rs.11 for 2 min 30 sec

Concept used:

1 min = 60 sec

Calculation:

3 minutes 20 seconds = 3 × 60 + 20 = 200 seconds

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2 minutes 30 second = 2 × 60 + 30 = 150 seconds

Telephone bill cost for 150 sec = Rs 11

=> Telephone bill cost for 1 sec = 11/150

=> Telephone bill cost for 200 sec = (11/150) × 200

=> 14.667

Therefore The required cost is Rs 14.7

Q107. Answer: (b) Nitin Gadkari and Manohar Parrikar

The correct answer is Nitin Gadkari and Manohar Parrikar.

• India's first BIO-CNG fuel plant was inaugurated in Pune, Maharashtra, by Union Minister of Surface Transport Nitin Gadkari and former Union Defence Minister Manohar Parrikar.

Key Points

• The plant was contracted by the city-based company Primove Engineering Private Limited and used farm residues to produce CNG that can be used as fuel in automobiles.

• It was commissioned by the town-based company Primove Engineering Private Limited.

• The technology includes the treatment of waste with a special bacterial solution, in which the resulting gas is cleaned and compressed for use in cars.

Important Points

• Bio-CNG is a refined source of biogas from which all unwanted gases are separated to create more than 93% of pure methane gas.

• It has been used as an automotive fuel in Europe for the first time the technology has been used in India.

• During the trial run, the company successfully tested at least seven different models of vehicles, ranging from auto-rickshaws to buses for fuel testing.

Q108. Answer: (b) 13

The above series is knowns as Fibonacci series, in which current number is added to the previous number in the series

1 + 0 = 1

2 + 1 = 3

3 + 2 = 5

5 + 3 = 8

8 + 5 = 13

Q109. Answer: (d) A.K. Mittal

The Correct Answer is A.K. Mittal.

• The Cabinet Appointments Committee has authorised the re-appointment of A.K. Mital as Chairman of the Railway Board for a term of two years until he reaches the age of 62 years, with effect from 1 August 2016, according to an order issued by the Department of Personnel and Training.

• He was promoted to the top post of the Ministry of Railways in place of Arunendra Kumar, who had been superannuated on 31 December 2014.

Additional Information

• A.K. Mital was the 1976 Batch Officer of the Indian Railway Store Service, served as a member of workers, the Railway Board and ex-officio Secretary to the Government of India.

• He also served as General Manager of the South Western Railway Headquarters, Hubli.

• He was Director (Stores), Executive Director (Vigilance) and Executive Director (Stores) of the Railway Board.

• He has also served as Chief Materials Officer for Northern Railways.

Important Points

• Currently, as in 2020, The Appointments Committee of the Cabinet has approved the appointment of the current chairman of the Railway Board VK Yadav as the CEO, making him the first to hold such a post in the railway's history.

Q110. Answer: (c) Mulberry

The logic used here is:-

”Sparrow” eats “Seed”,

Similarly,

“Silkworm” eats “Mulberry”,

Hence, the correct answer is "Mulberry".

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Q111. Answer: (b) Gingee Fort

The correct answer is Gingee Fort.

• Gingee Fort was called the 'Troy of the East' by the British.

• It is India's is one of the remaining forts in Tamil Nadu, India.

• It is situated in the district of Villupuram, Tamil Nadu.

• Originally designed by Ananta kon of the Konar Dynasty around 1190 AD and later fortified by Krishna Konar, it was later changed in the 13th century to make it an unbreakable citadel to defend the small town of saenji.

Important Points

• The fort went through the Marathas under Chhatrapati Shivaji Maharaj in 1677 AD, the Sultans of Bijapur, the Mughals, the Carnatic Nawabs, the British and the French in 1761.

• The fort is closely related to Raja Tej Singh, who unsuccessfully revolted against the Nawab of Arcot and finally lost his life in battle.

Q112. Answer: (a) 432

Given:

Two numbers are in ratio 8 : 9

Let the constant be x

According to question:

Constant of the two number is the HCF of the two number

Therefore x = 6

Concept:

Product of two numbers = HCF × LCM

Calculation:

According to question:

(8x) × (9x) = HCF × LCM

=> $72x^2 = 6 \times LCM$

=> 72 × 36 = 6 × LCM

=> LCM = 72 × 6 = 432

Therefore Required LCM = 432

Q113. Answer: (c) 5 hours 10 min

Given:

Bhanu takes a total of 6 hours 50 minutes in walking a distance and running back to same place where she started. She could walk both ways in 8 hours 30 minutes.

Formula Used:

speed = distance/time

Calculation:

time taken by her to walk both ways = 8 hours 30 minutes

=> time taken by her to walk one way = 8 hours 30 minutes/2 = 4 hours 15 minutes

also time taken by her to walk one way and run back the same way = 6 hours 50 minutes

=> time taken by her to run one way = 6 hours 50 minutes - 4 hours 15 minutes = 2 hours 35 minutes

=> time taken by her to run both ways = (2 hours 35 minutes) × 2 = 5 hours 10 min

Therefore required time = 5 hours 10 min

Q114. Answer: (a) a programming language

The correct answer is a programming language.

• Python is an interpretable, high-level and general-purpose programming language.

• It created by Guido van Rossum and first published in 1991, Python's design philosophy stresses the readability of code with its impressive use of substantial white space.

• The goal of its language constructs and object-oriented approach is to help programmers write simple, logical code for small and large projects. Python is dynamically typed and dust-collected.

• It supports multiple programming paradigms, including structured (especially procedural), object-oriented, and functional programming.

• Due to its extensive standard library, Python is also defined as a "batteries included" language.

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Important Points

• Python 2.0, launched in 2000, added features like list comprehensions and a waste management system with comparison numbering.

• Python 3.0, released in 2008, was a big language upgrade that wasn't entirely backwards-compatible, and a lot of Python 2 code didn't run unmodified on Python 3.

• The Python 2 language was formally retired in 2020 (first set for 2015) and Python 2.7.18 is the final Python 2.7 version and hence the last Python 2 release.

Q115. Answer: (b) Sonam Kapoor

The correct answer is Sonam Kapoor.

• Sonam Kapoor won the best actress award at the Indian Film Festival of Melbourne 2016.

Key Points

• Sonam Kapoor was won the Best Actress Award for her performance in Neerja Bhanot's biopic "Neerja".

• Nawazuddin Siddiqui's Best Actor Award for her role as a psycho serial killer in "Raman Raghav 2.0".

• ShakunBatra and Thithi won the award for Best Director and Best Indie Film.

• Aside from this, Rishi Kapoor was awarded a lifetime achievement award for excellence in film.

Important Points

• The theme of the 2016 Indian Film Festival of Melbourne (IFFM) was "woman empowerment".

• The Indian Film Festival of Melbourne (IFFM) was established in 2012.

• It is the annual festival sponsored by the State Government of Victoria located in Melbourne. It is submitted by Film Victoria and the provider is selected through a tendering process.

• Mind-Blowing Films, run by Mitu Bhowmick Lange, is the new tenderer. The festival is officially sponsored by the Government of the State until 2018.

Q116. Answer: (b) Glacier

The logic follows here is:- "Water" is related to "Ocean",

Similar,

“Snow” is related to “Glacier”.

Hence, the correct answer is "Glacier".

Q117. Answer: (a) Father

Below table represents symbols used to draw a family tree,

We can draw the following Family Tree from the information given above:

Nandhini's husband is father of Raja.

Q118. Answer: (b) Western India and Pakistan

The correct answer is Western India and Pakistan.

• The history of India begins with the birth of the Indus Valley Civilization, known more specifically as the Harappan Civilization.

• It flourished around 2,500 BC, in the western part of South Asia, that is Pakistan and Western India.

• The Indus Valley was home to the majority of the four ancient urban civilizations in Egypt, Mesopotamia, India and China.

• Nothing had been known about this civilization until the 1920s, when the Indian Archeological Department carried out excavations in the Indus Valley, in the ruins of the two old cities, viz. Mohenjodaro and Harappa were discovered.

• The ruins of buildings and other items, such as household goods, weapons of war, gold and silver ornaments, seals, toys, pottery, etc., show that some four to five thousand years ago a highly developed civilization flourished in this area.

Additional Information

• The Indus Valley Civilization was primarily an urban civilization, and people lived in well-planned and well-built cities, which were also centres of commerce.

• The highly civilised Harappans learned the art of grain production, and their staple food was wheat and barley.

• They also consumed vegetables and fruit and ate mutton, pork and eggs. Proof also indicates that they wore cotton and woollen clothing.

• By 1500 BC, the Harappan culture had come to an end. Recurrent floods and other natural causes, such as earthquakes, etc., are among the numerous causes due to the decay of Indus Valley Civilization.

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Q119. Answer: (a) A Java application

The correct answer is A Java application.

• The applet is being used as a search engine.

• An applet is a small internet-based programme written in Java, a web-based programming language that can be downloaded from any device.

• The applet can also run in HTML.

• Usually, Java applets are used to add small, interactive components or enhancements to a web page.

• They can consist of buttons, text scrolling, or stock tickers, but they can also be used to view larger programmes such as word processors or games.

Important Points

• The Java applet is a Java application that is launched from HTML and is running in a web browser.

• When a Java technology-enabled web browser processes a page containing an applet, the applet's code is passed to the client system and executed by the Java Virtual Machine (JVM) browser.

Q120. Answer: (b) The Olympic movement

The correct answer is The Olympic movement.

• The Olympic Order is the highest decoration of the Olympic Movement and is awarded for its exceptionally distinguished contributions to the Olympic Movement, that is to say, recognition of efforts worthy of merit in the cause of sport.

• President of the Indian Olympic Committee N Ramachandran was awarded the Olympic Order for his outstanding services to the Olympic movement.

Key Points

• The President of the IOC (Indian Olympic Committee), Thomas Bach, formally presented the award to Ramachandran and thanked the President of the IOA for his contribution to the Indian Olympic Movement.

Important Points

• Narayana Ramachandran was President of the Indian Triathlon Federation and later Secretary-General of the Indian Squash Rackets Federation.

• He made Chennai the "City of Squash" of India.

• He has served as 12th President of the Indian Olympic Association (IOA) from 9 February 2014 to 14 December 2017.

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