RRB NTPC CBT-I Official Paper (Held On: 7 Jan 2021 Shift 1) (Previous Year Paper)

RRB NTPC • 2021 • 100 questions • 90 minutes • Answer key and solutions

Take this paper as a timed mock test

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

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

Q1. Who is known as the Father of India’s Space Programme?

(a) Vikram Seth
(b) Anuj Lall
(c) Vikram Sarabhai
(d) Aditya Sarabhai

Q2. During which five year plan did India opt for a mixed economy?

(a) Fourth Five Year Plan
(b) Second Five Year Plan
(c) Third Five Year Plan
(d) First Five Year Plan

Q3. Consider the given statement and decide which of the given assumptions is/are implicit in the statement.

Statement:

The electricity board has started going from home to home to collect bills.

Assumptions:

A. Electricity board considers going home to home an effective way to collect bills.

B. The electricity board has increased its focus on collecting bills.

(a) Both A and B are implicit
(b) Neither A nor B is implicit
(c) Only assumption A is implicit
(d) Only assumption B is implicit

Q4. Choose the conclusion(s) which logically follow from the given statements.

Statements:

MS Dhoni is a popular cricketer.

All cricketers are fit and healthy.

MS Dhoni earns a handsome amount every year through advertisements of various products.

Conclusions:

A. All popular cricketers earn a handsome amount through advertisement.

B. MS Dhoni is fit and healthy.

C. MS Dhoni, being famous, advertises only famous products.

(a) Only conclusion C follows
(b) Conclusions A and B follow
(c) Conclusions A and C follow
(d) Only conclusion B follows

Q5. From the top of a building, 60 m high, the angles of depression of the top and the bottom of a tower are 30° and 60° respectively. The height of the tower is:

(a) 18 m
(b) 42 m
(c) 40 m
(d) 30 m

Q6. If x : y = 3 : 4, (4x + 3y) : (4y - 4x) = ?

(a) 1 : 6
(b) 2 : 3
(c) 3 : 2
(d) 6 : 1

Q7. Who founded India's three stage Nuclear Power Programme ?

(a) K Kasturirangan
(b) Vikram Sarabhai
(c) Dr. Homi Bhabha
(d) APJ Abdul Kalam

Q8. When is National Panchayati Raj Day observed in India?

(a) 24^(th) April
(b) 3^(rd) May
(c) 10^(th) April
(d) 4^(th) June

Q9. Simplify the following.

2.2 × 0.2 ÷ (0.4 × 1/2) - 1/2 × 4 (1.04 - 0.2 × 0.2)

(a) 0.5
(b) 0.2
(c) 0.3
(d) 0.6

Q10. When is World Book and Copyright Day celebrated?

(a) 23^(rd) April
(b) 13^(th) May
(c) 19^(th) January
(d) 27^(th) April

Q11. Which number from among the given options will come in place of (*) in the given number series ?

1, 1, 2, 8, 3, 27, 4, (*), 5, 125....

(a) 64
(b) 32
(c) 36
(d) 96

Q12. When 5 men can build a wall in 12 days, to build a wall 50% more than the original wall in 10 days, the number of men required is:

(a) 7
(b) 4
(c) 9
(d) 8

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Q13. Where was the 11^(th) World Hindi Conference held in 2018?

(a) Mauritius
(b) Mumbai
(c) Chandigarh
(d) Kolkatta

Q14. What was the main reason for calling off the Non-Cooperation Movement by Gandhiji in 1922?

(a) A police station at Chauri Chaura in Uttar Pradesh was set on fire by a mob
(b) Gandhiji was seriously ill
(c) The movement was completed by achieving the target
(d) Gandhiji was arrested and compelled to stop the movement

Q15. Which city is NOT a part of The Golden Quadrilateral highway network?

(a) Hyderabad
(b) Kolkata
(c) Delhi
(d) Mumbai

Q16. Who was the first Muslim President of the Indian National Congress?

(a) Abul Kalam Azad
(b) Badruddin Tyabji
(c) Nawab Syed Muhammad Bahadur
(d) Dada Bhai Naoroji

Q17. As of August, 2019, how many Himalayan peaks are open for trekking for domestic and foreign mountaineers?

(a) 120
(b) 137
(c) 130
(d) 140

Q18. Given below is a paragraph. While S1 and S6 are the first and last sentences of this paragraph, the parts that are labelled

1, 2, 3 and 4 are jumbled up. Rearrange them to form a meaningful and coherent paragraph.

S1: Several metro lines have been planned in the NCR.

1. Red line is the first among them.

2. They are expected to alleviate the problem of transportation.

3. It starts from Shahdara and terminates at Tiz-Hazari in the initial phase.

4. It caters to over 1 lakh commuters at present.

S6: Hopefully, the public transportation problem will not be as acute after all the metro lines are completed.

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

Q19. The value of a car depreciates at the rate of 20% every year. After two years the value of the car will be Rs. 4,80,000/-. The original price of the car is:

(a) Rs. 6,20,000/-
(b) Rs. 6,00,000/-
(c) Rs. 5,50,300/-
(d) Rs. 7,50,000/-

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Q20. A positively charged ion is called a/an:

(a) molecule
(b) atom
(c) anion
(d) cation

Q21. When a number n is divided by 5, the remainder is 2. When n^2 is divided by 5, the remainder will be:

(a) 0
(b) 1
(c) 4
(d) 3

Q22. Which country ranked first in the world as per the human development index of 2020?

(a) Japan
(b) Australia
(c) Norway
(d) USA

Q23. India boycotted the first Belt and Road Forum in 2017 after protesting against Beijing over the controversial _____.

(a) China-Nepal Economic Corridor
(b) China-Pakistan Economic Corridor
(c) China-Afghanistan Economic Corridor
(d) China-Bhutan Economic Corridor

Q24. India is ____ _____ states and union territories as of 31 ^(st)October 2020.

(a) 26 and 6
(b) 29 and 9
(c) 24 and 7
(d) 28 and 8

Q25. Which of the following is an allotropic form of carbon?

(a) Diamond
(b) Gypsum
(c) Chalk
(d) Marble

Q26. Who are the famous Indian women lawyers who led the legal battle to strike Section 377 of the Indian Penal Code (IPC) ?

(a) Menaka Guruswamy and Pinky Anand
(b) Karuna Nandi and Vrinda Grover
(c) Menaka Guruswamy and Arundhati Katju
(d) Menaka Gandhi and Arundhati Roy

Q27. How many such consonants are there in the following arrangement, each of which is immediately followed by a vowel but not preceded by a number?

TRB50%U7C4#KFS2UE*1813V@9IX@LAB

(a) Two
(b) More than three
(c) Three
(d) One

Q28. If $\sqrt{3} \tan 2\theta - 3 = 0$, then θ is:

(a) 45°
(b) 30°
(c) 60°

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(d) 150°

Q29. In an examination, a student scored 65% marks but was 20 marks below the qualifying marks. Another student scored 80% marks and scored 10 marks more than the qualifying marks. Total marks of the examination are:

(a) 300
(b) 500
(c) 200
(d) 400

Q30. How many demands did Mahatma Gandhi make in his letter to Lord Irwin some of which were agreed to and came to be known as Gandhi-Irwin Pact?

(a) 10
(b) 13
(c) 12
(d) 11

Q31. In a school, the number of boys and girls were in the ratio 5 : 7. Eight more boys were admitted during the session. The new ratio of girls and boys is 1 : 1. In the beginning, the difference between the number of boys and that of girls was:

(a) 12
(b) 02
(c) 10
(d) 08

Q32. Which of the following is NOT a Government of India initiative to attract Foreign Direct Investments (FDI) in India?

(a) Proposals of FDI are mandated to be cleared within ten days of receiving the application
(b) States must focus on strengthening the single window clearance system.
(c) The Government of India announced 'Entrepreneurship Curriculum' to be taken up by the states.
(d) The Government of India has eased the approval mechanism for FDI proposals.

Q33. Identify the number that does NOT belong to the given series of numbers.

46, 31, 22, 17, 30, -32, -89, -179

(a) 30
(b) 22
(c) -32
(d) -89

Q34. If the difference between squares of two consecutive positive odd integers is 56, then the two consecutive odd integers are:

(a) 13, 15
(b) 11, 13
(c) 15, 17
(d) 17, 19

Q35. Which agency was created by the United Nations to provide emergency food and health care to children and mothers in the countries affected by World War II?

(a) UNESCO
(b) IMF
(c) UNICEF
(d) WHO

Q36. Which of the following rural housing schemes by the Government of India is re-structured into Pradhan Mantri Gramin Awas Yojana?

(a) Jawahar Gram Samridhi Yojana
(b) Indira Awas Yojana
(c) Deendayal Antyodaya Yojana

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(d) Rajiv Awas Yojana

Q37. Which sea route is the busiest in the world?

(a) The North Pacific sea route
(b) The South Pacific sea route
(c) The North Atlantic sea route.
(d) The Cape of Good Hope sea route

Q38. Simplify the following

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

(a) 11/2
(b) 4/3
(c) 11/8
(d) 11/3

Q39. When did India test its first atomic bomb?

(a) 1981
(b) 1969
(c) 1976
(d) 1974

Q40. Which country hosted the Asian Cup Football tournament in 2023 ?

(a) South Korea
(b) India
(c) Japan
(d) Qatar

Q41. Who led the non-cooperation movement in 1920-22?

(a) Mahatma Gandhi
(b) Jawahar Lal Nehru
(c) Subhash Chandra Bose
(d) Motilal Nehru

Q42. Devesh leaves his home every day at 7 a.m. and reaches office at 8:30 a.m. One day he left his home at 7 a.m. but travelled a fifth of the distance at 5/6 of the usual speed and the rest of the distance at 6/5 of the usual speed. Approximately at what time did Devesh reach office on that day?

(a) 8:36 a.m.
(b) 8:21a.m.
(c) 8:40 a.m.
(d) 8:25 a.m.

Q43. A circle touches the side BC of triangle ABC at P. Side AB and AC are produced to touch the circle at points Q and R respectively. The length of AQ is:

(a) 1/2 (BC + CA + AB)
(b) 1/3 (BC + CA + AB)
(c) 1/2 (2BC + 2CA + 2AB)
(d) 1/4 (BC + CA + AB)

Q44. If P = 2 + √3, Q = 2 - √3, then P/Q = ?

(a) 7 - 2√6
(b) (7 + 4√3)/1
(c) 4√3 - 5
(d) 4√6 + 5

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Q45. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

A. All papayas are fruits.

B. Some fruits are vegetables.

C. All vegetables are vegan.

Conclusions:

i Some vegetables are papayas.

ii. Some vegans are fruits.

iii. Some vegans are papayas.

iv. Some fruits are papayas.

(a) Only (ii) and (iv) follow
(b) Only (iv) follows
(c) Only (ii) and (iii) follow
(d) Only (i) follows

Q46. Which of the following is NOT a computer component?

(a) Memory
(b) CPU
(c) ALU
(d) Paper

Q47. A sum of Rs. 12,000.00 deposited at compound interest becomes double at the end of 5 years. At the end of 15 years the sum will be:

(a) Rs. 1,08,000.00
(b) Rs. 84,000.00
(c) Rs. 1,20,000.00
(d) Rs. 96,000.00

Q48. One root of the equation $2x^2 - 8x - m = 0$, is 5/2 The other root of the equation and the value of m are respectively:

(a) 3/2 and -15/2
(b) -3/2 and 15/2
(c) 5/2 and -15/2
(d) -5/2 and 15/2

Q49. What type of pollution causes various diseases related to the respiratory system?

(a) Noise pollution
(b) Land pollution
(c) Air pollution
(d) Water pollution

Q50. Given below is a paragraph. While S1 and S6 are the first and last sentences of this paragraph, the parts that are labelled 1, 2, 3 and 4 are jumbled up. Rearrange them to form a meaningful and coherent paragraph.

S1: Shruti has been trying to lose weight.

1. Regular exercising keeps our body fit and healthy.

2. The trainer has suggested her to start with regular exercising in the morning.

3. She has not yet started her exercising sessions.

4. She says that because of late night office hours, it is difficult for her to get up early in the morning.

S6: I think it is just a lame excuse for her laziness.

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

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(d) 1, 2, 4, 3

Q51. From the 3 sets of statements, A, B and C given below, choose the set/s in which the third statement is a logical conclusion of the first two statements.

A. Some cars are Suzuki. All Suzukis are MPVs. Some cars are MPVs.

B. All men are humans. No human is red. No man is red.

C. Every man loves his wife. All wives are beautiful. No beautiful has a husband.

(a) Only B
(b) A and B only
(c) Only A
(d) B and C only

Q52. Select the option that is related to the third term in the same way as the second term is related to the first term?

Gravity : Discovery :: Telephone : ?

(a) Explore
(b) Construct
(c) Experiment
(d) Invention

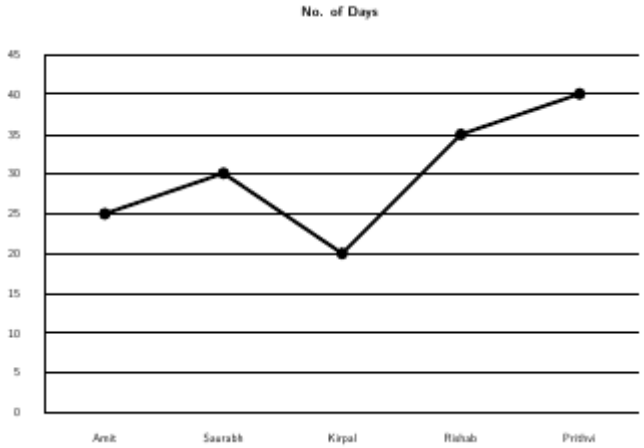
Q53. The ratio of two numbers is 2 : 3. When 4 is added to the numbers, the ratio becomes 7 : 10. The difference between the numbers is:

(a) 12
(b) 08
(c) 24
(d) 10

Q54. What facilitates remote login on a computer ?

(a) FTP
(b) RTP
(c) Telnet
(d) HTTP

Q55. The following graph represents the number of days taken by five boys individually to complete a piece of work. If Saurabh and Kirpal work together, find the number of days taken by them to complete the work.



(a) 18 days
(b) 6 days
(c) 12 days
(d) 20 days

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Q56. How many organisations are a part of the United Nations in India ?

(a) 28
(b) 22
(c) 12
(d) 26

Q57. For which Indian spice did the Indian government challenge the US patenting and force them to revoke it?

(a) Clove
(b) Mustard
(c) Cardamom
(d) Turmeric

Q58. Select the letter from among the given options that can replace the question mark (?) in the following series.

Y, V, Q, J, ?

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

Q59. The difference between the mean of first 5 composite numbers and the mean of the first five prime numbers is:

(a) 1.8
(b) 1.6
(c) 2.6
(d) 2.4

Q60. Two men start travelling from the same place in the same direction at the rate of 5 km/h and 5.5 km/h respectively. To be 8.5 km apart from each other, the time taken by them is:

(a) 8 h 30 min
(b) 16 h 15 min
(c) 4 h 15 min
(d) 17 h

Q61. What was India’s rank in terms of size of economy according to the GDP ranking of 2019 ?

(a) 9^(th)
(b) 11^(th)
(c) 7^(th)
(d) 5^(th)

Q62. In the parallelogram ABCD, AL and CM are perpendicular to CD and AD respectively. AL = 20 cm, CD = 18 cm and CM = 15 cm. The perimeter of the parallelogram is:

(a) 64 cm
(b) 76 cm
(c) 80 cm
(d) 84 cm

Q63. The difference between the compound interest compounded annually and the simple interest on a certain sum of money for 2 years at 4% per annum is Rs. 20.00. The sum is:

(a) Rs. 8,500.00
(b) Rs. 10,500.00
(c) Rs. 12,500.00
(d) Rs. 11,500.00

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Q64. What does WCCB stand for in the context of Environment and Forest?

(a) World Conservation Control Bureau
(b) World Crime Control Bureau
(c) Wildlife Crime Control Bureau
(d) Wildlife Conservation Control Bureau

Q65. The denominator of a fraction is 2 more than the numerator. When the numerator is multiplied by 3 and the denominator is multiplied by 2 the fraction becomes 1/2. The given fraction is:

(a) 2/5
(b) 1/4
(c) 2/3
(d) 1/3

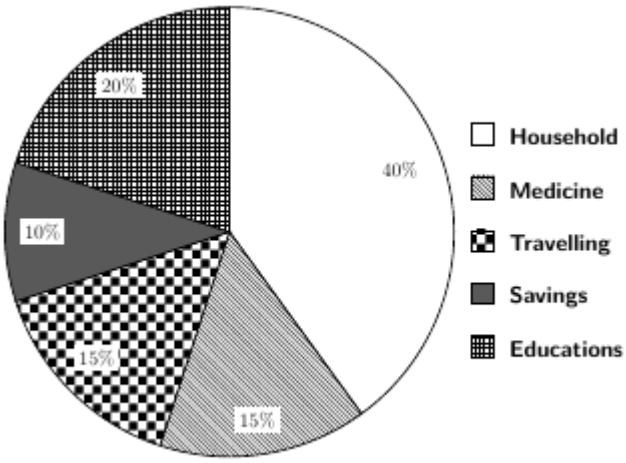
Q66. Name the element which has an electronic configuration of 2, 8, 7.

(a) Helium
(b) Chlorine
(c) Carbon
(d) Hydrogen

Q67. The least number that should be added to the largest three digit number to make it a perfect square, is:

(a) 24
(b) 25
(c) 01
(d) 12

Q68. The Pie Chart represents the share of savings and expenses under different heads, from the monthly salary of Manish.



If Manish's salary is Rs. 50,000 and he wishes to double his monthly savings and spend 50% of the balance amount on his Household expenses, by what amount would he need to reduce on the other expenses.

(a) Rs. 5,000
(b) Rs. 15,000
(c) Rs. 10,000
(d) Rs. 20,000

Q69. Two statements are given followed by two conclusions. Considering the two statements to be true irrespective of the commonly known facts, decide which of the two conclusions follow logically from these two statements.

Statements:

1: All hill stations have an echo-point.

2: P is a hill station.

Conclusions:

1: P has an echo-point.

2: Places other than hill stations do not have echo-points.

(a) Both conclusion 1 and conclusion 2 follow
(b) Only conclusion 1 follows
(c) Neither conclusion 1 nor conclusion 2 follows
(d) Only conclusion 2 follows

Q70. According to the Census of 2011 _____ is the most populated state of India.

(a) West Bengal
(b) Tamil Nadu
(c) Andhra Pradesh
(d) Uttar Pradesh

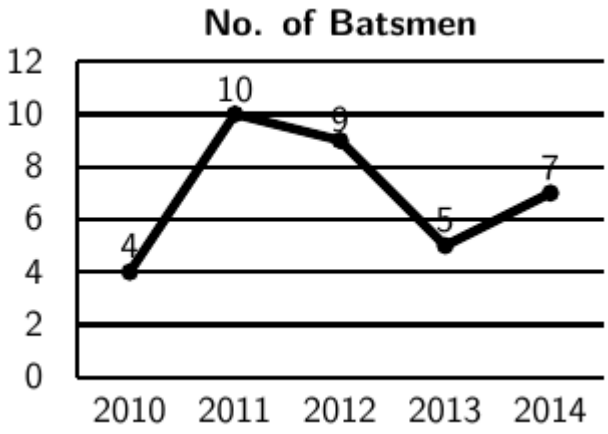
Q71. Three electronic bells are fixed in three adjoining temples. The priests of these temples decided to ring the bells at different times with the intervals of 2, 3 and 5 min. If the bells start tolling together for the first time at 8:00:00 in the morning. up to 9:00:00 in the morning they will toll together:

(a) 2 times after the starting time
(b) 4 times after the starting time
(c) 15 times after the starting time
(d) 5 times after the starting time

Q72. How many output ports are there in peripheral I/O ?

(a) 256
(b) 512
(c) 264
(d) 24

Q73. The following line graph shows the number of batsmen who scored 500+ runs in the Indian Cricket League from 2010 to 2014. In which year did maximum number of batsmen score 500+ runs ?



(a) 2012
(b) 2013
(c) 2011
(d) 2014

Q74. The least multiple of 23 when divided by 18, 21 and 24 leaves the remainder 7, 10 and 13 respectively. The number is:

(a) 3113
(b) 3131
(c) 3103
(d) 3013

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Q75. If $x\sqrt{12} = 4 + x\sqrt{3}$. the value of x is:

(a) $2\sqrt{3}$
(b) $\sqrt{3}$
(c) $-\sqrt{3}$
(d) $4/(\sqrt{3})$

Q76. When the side of an equilateral triangle is made three times the original side, the area of the new equilateral will become:

(a) 3 times of the original area
(b) 6 times of the original area
(c) 12 times of the original area
(d) 9 times of the original area

Q77. A sector is cut off from a circle of radius 21 cm. The angle of the sector is 40 degrees. Find the area of the sector in square cm?

(a) 144
(b) 154
(c) 145
(d) 156

Q78. The Rowlatt Act was passed in _____.

(a) 1920
(b) 1919
(c) 1921
(d) 1922

Q79. Which watershed development and management program is being implemented by the central and state governments?

(a) Arvary Pani Sansad
(b) Desh Sudhar
(c) Hariyali
(d) Neeru-Meeru

Q80. By reducing the selling price of an article by Rs. 50.00, a gain of 5% turns into a loss of 5%. Original selling price is:

(a) Rs. 500.00
(b) Rs. 525.00
(c) Rs. 550.00
(d) Rs. 600.00

Q81. How many times has India been elected as non-permanent member of the UN Security Council till Oct, 2020?

(a) 10
(b) 5
(c) 8
(d) 4

Q82. Which of the following is in the third trophic level of the food chain?

(a) Primary consumers
(b) Top consumers
(c) Secondary consumers
(d) Producers

Q83. The Khilafat Movement was led by:

(a) Shaukat Ali and Muhammad Ali
(b) Shaukat Ali and Armaan Ali
(c) Shaukat Ali and Musafir Ali

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(d) Armaan Ali and Muhammad Ali

Q84. when the shadow of a pole of 10 m height is 10√3 m, angular elevation of the Sun is:

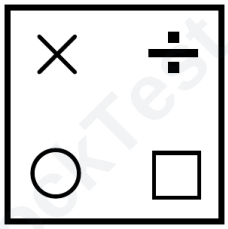
(a) 60°
(b) 90°
(c) 75°
(d) 30°

Q85. Which country was placed first in the Asian Games held in Jakarta in 2018?

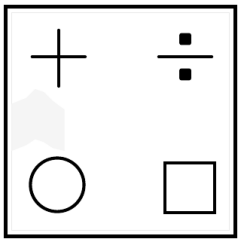
(a) India
(b) China
(c) Australia
(d) Japan

Q86. Choose the figure that is different from the others.

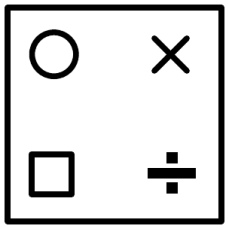
(a)



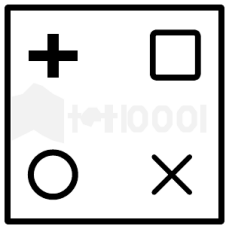
(b)



(c)



(d)



Q87. Given below is a 'main statement' followed by four subsidiary statements.

From the given options, choose the ordered pair of subsidiary statements, where the first statement implies the second and the two statements are logically consistent with the main statement.

Main Statement:

You can drive over 60 km/h only on the national highways.

Subsidiary Statements:

A. You are on the national highway.

B. You cannot drive over 60 km/h.

C. You can drive over 60 km/h.

D. You are not on the national highway.

(a) DB
(b) AB
(c) DA
(d) CD

Q88. Last year, there were three sections in a competitive exam. Out of them 33 students cleared the cut-off in Section A, 34 students cleared the cut-off in Section B and 32 students cleared the cut-off in Section C. 10 students cleared the cut-off in section A and section B, 9 cleared the cut-off in section B and section C and 8 cleared the cut-off in section A and section C. The number of students who cleared only one section was equal and was 21 for each section. How many students cleared all the three sections?

(a) 6
(b) 9
(c) 8
(d) 7

Q89. Five students Radha, Sujit, Mihir, Anshul and Vikas have a total of five books on the subjects of Accountancy, Business Studies, Mathematics, Economics and English, written by authors Jain, Kohli, Das, Sharma and Edwin. Each student has only one book on one of the five subjects.

• Jain is the author of the Accountancy book, which is not owned by Vikas or Radha.

• Anshul owns the book written by Edwin.

• Mihir owns the Mathematics book.

• Vikas has the English book, which is not written by Kohli.

• The Economics books is written by Sharma.

Identify the author of the Business Studies book.

(a) Sharma
(b) Jain
(c) Edwin
(d) Das

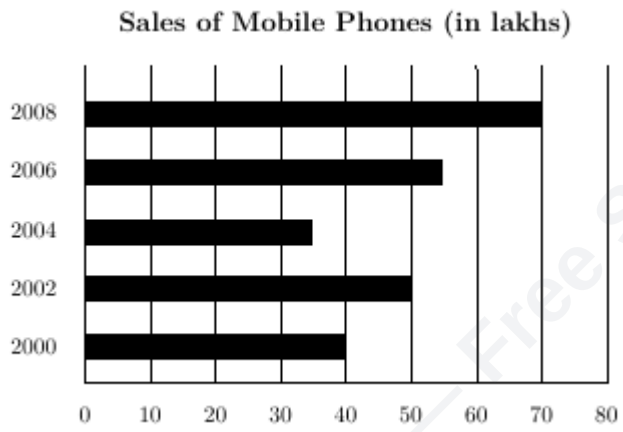
Q90. Select the number from among the given options that can replace the question mark (?) in the following series.

4, 14, 60, 248, ?

(a) 1020
(b) 1016
(c) 1008
(d) 1012

Q91. Based on the bar graph given, calculate the approximate percentage increase in sales of mobile phones from 2004 to 2008.

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(a) 150%
(b) 50%
(c) 100%
(d) 200%

Q92. Read the following information and answer the question that follows.

(i) Five ladies Simran, Vaishali, Namita, Preeti, and Bhawna meet in a hotel for a party. They all sit around a circular table facing the centre of the table.

(ii) Bhawna is sitting to the right of Vaishali.

(iii) Simran is sitting to the left of Preeti.

(iv) Preeti is sitting between Namita and Simran.

Who is sitting to the right of Namita?

(a) Simran
(b) Vaishali
(c) Bhawna
(d) Preeti

Q93. In a certain code language, PAINT is coded as 83527 and SCORE is coded as 49061. How would you code RECENT in the same language?

(a) 619127
(b) 921235
(c) 648497
(d) 190985

Q94. Four award have been listed, out of which three are alike in some manner and one is different. Select the odd one.

(a) Padma Shri
(b) Param Vir Chakra
(c) Padma Bhushan
(d) Padma Vibhushan

Q95. Select the option that is related to the third term in the same way as the second term is related to the first term?

Happiness : Sorrow :: Conflict : ?

(a) Competition
(b) War
(c) Harmony
(d) Anger

Q96. Choose the word that is different from the other three.

(a) Devoted
(b) Treacherous
(c) Faithful

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(d) Loyal

Q97. In a certain code, 'best way to win' is written as 'fa ka la ju', 'the way to hell' is written as 'Iu la hu fa', 'win of the day' is written as 'na lu fu ka' and 'to sell of night' is written as 'na li ya la'. Which of the following represents 'of the way'?

(a) ka lu na
(b) llu na ya
(c) na ka fa
(d) lu na fa

Q98. Four brothers Aman, Gaurav, Aakash and Lokesh are at their family function sitting across a circular table. Their occupations are Lawyer, Doctor, Professor and Engineer. Lokesh who is not the Professor, starts a conversation about the on-going IPL and after him the Engineer gives a long discourse about the teams that should reach the play-offs. Aman who is sitting across the Engineer and next to the Professor responds to the Engineer's predictions. Akash speaks only at the end. Who is the Professor?

(a) Cannot be determined
(b) Gaurav
(c) Akash
(d) Lokesh

Q99. In which of the given letter-clusters is the letters skipped between adjacent letters in the order 2^1, 2^2, 2^3

(a) AEJS
(b) BEJS
(c) CFIS
(d) EIRZ

Q100. Pointing to a photograph, Rohit said, "She is the daughter of the only son of my father." How is Rohit related to the girl in the photograph ?

(a) Cousin
(b) Uncle
(c) Father
(d) Brother

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) Vikram Sarabhai

The correct answer is Vikram Ambalal Sarabhai.

Key Points

• Vikram Ambalal Sarabhai
• He was considered the Father of the Indian space program.

• He was a great institution builder and established or helped to establish a large number of institutions in diverse fields.
• He was considered the Father of the Indian space program.
• He was a great institution builder and established or helped to establish a large number of institutions in diverse fields.
• He founded the Physical Research Laboratory (PRL) in Ahmedabad on November 11, 1947.
• Sarabhai was a creator and cultivator of institutions and PRL was the first step in that direction.
• Vikram Sarabhai served as PRL from 1966-1971.
• He was also chairman of the Atomic Energy Commission.
• He along with other Ahmedabad-based industrialists played a major role in the creation of the Indian Institute of Management, Ahmedabad.
• Dr. Sarabhai started a project for the fabrication and launch of an Indian Satellite.
• As a result, the first Indian satellite, Aryabhata, was put in orbit in 1975 from a Russian Cosmodrome.
• Dr. Sarabhai was very interested in science education and founded a Community Science Centre at Ahmedabad in 1966.
• Today, the Centre is called the Vikram A Sarabhai Community Science Centre.

Important Points

• ISRO:
• It is the space agency under the Department of Space of Government of India, headquartered in the city of Bengaluru, Karnataka.
• Its vision is to harness space technology for national development while pursuing space science research and planetary exploration.
• Antrix Corporation Limited (ACL) is a Marketing arm of ISRO for the promotion and commercial exploitation of space products, technical consultancy services, and transfer of technologies developed by ISRO.
• The first Indian spacecraft ‘Aryabhata’ was developed and was launched using a Soviet Launcher.
• Another major landmark was the development of the first launch vehicle SLV-3 with a capability to place 40 kg in Low Earth Orbit (LEO), which had its first successful flight in 1980.

Additional Information

• Vikram Seth:
• He is an Indian novelist and poet. He has written several novels and poetry books.
• He has received several awards such as Padma Shri, Sahitya Academy Award, Pravasi Bharatiya Samman, WH Smith Literary Award, and Crossword Book Award.
• Dr. Homi Jehangir Bhabha:
• He is considered the 'father of India's nuclear science program.'

Q2. Answer: (b) Second Five Year Plan

The correct answer is Second Five Year Plan.

Key Points

• Second Five-year plan (1956 to 1961)
• The second plan was conceived in an atmosphere of economic stability.
• It was felt agriculture could be accorded lower priority.
• Industries got more importance in the 2nd five-year plan. The focus was mainly on heavy industries.
• The Indian government boosted the manufacturing of industrial goods in the country.
• This was done primarily to develop the public sector.
• The Plan Focussed on rapid industrialization- heavy & basic industries.
• Advocated huge imports through foreign loans.
• Therefore, the Indian Government adopted a mixed economy during the second five-year plan. Hence, Option 2 is correct.
• The Industrial Policy 1956 was based on the establishment of a socialistic pattern of society as the goal of economic policy.
• Acute shortage of forex led to pruning of development targets, the price rise was also seen (about 30%) vis a vis decline in the earlier Plan & the 2nd FYP was only moderately successful.

Important Points

• The 2nd year five-year plan functioned based on the Mahalanobis model.
• The Mahalanobis model was propounded by the famous Prasanta Chandra Mahalanobis in the year 1953.
• As many as five steel plants including the ones in Durgapur, Rourkela ,Bhilai were set up as per the 2nd five-year plan.
• During the term of the 2nd five-year plan, Atomic Energy Commission came into being.
• The Commission was established in the year 1957.

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• During the same period, the Tata Institute of Fundamental Research was born.

Additional Information

• First Five Year Plan:

• It was launched from 1951 to 1956, under the leadership of Jawaharlal Nehru.

• It was based on the Harrod-Domar model with a few modifications.

• Its main focus was on the agricultural development of the country.

• This plan was successful and achieved a growth rate of 3.6% (more than its target of 2.1%).

• At the end of this plan, five IITs were set up in the country.

• Third Five Year Plan:

• It was made from 1961 to 1966.

• It is also called 'Gadgil Yojna', after the Deputy Chairman of Planning Commission D.R. Gadgil.

• The target of this plan was to make the economy independent.

• The stress was laid on agriculture and the improvement in the production of wheat.

• India was engaged in two wars: (1) the Sino-India war of 1962 and (2) the Indo-Pakistani war of 1965. These wars exposed the weakness in our economy and shifted the focus to the defense industry, the Indian Army, and the stabilization of the price (India witnessed inflation).

• The plan was a flop due to wars and drought. The target growth was 5.6% while the achieved growth was 2.4%.

• Fourth Five Year Plan:

• Its duration was from 1969 to 1974, under the leadership of Indira Gandhi.

• The two main objectives of this plan i.e. growth with stability and progressive achievement of self-reliance.

• Fourteen major Indian banks were nationalized.

• Indo-Pakistani War of 1971 and the Bangladesh Liberation War took place.

• Implementation of Family Planning Programmes was amongst major targets of the Plan

• It failed and could achieve a growth rate of 3.3% only against the target of 5.7%.

Q3. Answer: (a) Both A and B are implicit

The logic followed is:

As the statements talk about the electricity board has started going from home to home to collect bills.

Assumption I is implicit because electricity board has started going from home to home to collect bills since people have to face many problems.

B. The electricity board has increased its focus on collecting bills.

From the statement, we can assume that if non - renewable sources of energy go exhausted, the next generation will not be able to use them and will have to think of alternatives as non - renewable energy will extinct if we are not saving it.

Therefore, Assumption II is implicit.

Hence, Both A and B are implicit

Additional Information

1. Read the statement with an approach that the assumptions would be true about the statement.

2. Do not go too logical with the statements. Analyze the given information and the assumption must only be made based on the information in the statement. Do not over-complicate it.

3. Common assumptions can always be followed but other than that do not align the statement with General Knowledge or other facts

4. Use the elimination method if you are unable to apprehend the answer. Read the statement and then the assumptions given in the options, you shall notice that a few of them will most definitely not follow. Eliminate them and then choosing from lesser options may prove to be more convenient

5. One thing to note is that the assumption is something that the author believes to be true, so while choosing the correct option, keep this thought in mind. If any option contradicts the statement, then that assumption will not follow.

Q4. Answer: (d) Only conclusion B follows

A. All popular cricketers earn a handsome amount through advertisement.

Conclusion A does not follows. From the statement, we know that MS Dhoni is a popular cricketer who earns a handsome amount, but it does not gives information of all popular cricketers earn a handsome amount through advertisement.

B. MS Dhoni is fit and healthy.

Conclusion B follows. As, MS Dhoni is a popular cricketer and All cricketers are fit and healthy, which clearly implies MS Dhoni is a cricketer and being a cricketer, he is fit and healthy.

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C. MS Dhoni, being famous, advertises only famous products.

Conclusion C does not follows. The statements does not gives information if MS Dhoni advertises only famous products or not.

Hence, only conclusion B follows.

Additional Information

• If there are two or more sentences that are used to frame a statement, then, the sentences must be interrelated, and mutual contradiction should be there.

• Do not look for truthful notions. The information provided in the statement is the only requirement for a student to answer the question. No assumptions must be made.

• Read the statement carefully and look for keywords that are common between the statement and the conclusions.

• If there is more than one conclusion that is applicable to the statement, students must ensure that the conclusions they opt for have some relation with each other.

Q5. Answer: (c) 40 m

Given:

Height of the building = 60 m

Calculation:

Let the height of the tower be = h

BC = ED = a, AE = 60 - h

In triangle AED, AE/ED = tan 30°

=> (60 - h)/a = 1/√3

=> a = 60√3 - √3h (1)

In triangle ABC, AB/BC = tan 60°

=> 60/a = √3

=> 60/(60√3 - √3h) = √3 Because [a = 60√3 - √3h]

=> (60√3 - √3h) × √3 = 60

=> 60 × 3 - 3h = 60

=> 180 - 60 = 3h

=> 3h = 120

=> h = 40 m

Therefore The height of the tower = 40 m

Q6. Answer: (d) 6 : 1

Given:

x : y = 3 : 4

Calculation:

Let x/y = 3k/4k (where k is a constant)

=> x = 3k, y = 4k

(4x + 3y) : (4y - 4x) = (4 × 3k + 3 × 4k) : 4(4k - 3k)

=> 24k : 4k

=> 6 : 1

Therefore (4x + 3y) : (4y - 4x) = 6 : 1

Q7. Answer: (c) Dr. Homi Bhabha

The correct answer is Dr. Homi Bhabha.

Key Points

• India’s Three-Stage Nuclear Power Programme:

• India’s three-stage nuclear power program was formulated by Homi Bhabha in the 1950s to secure the country’s long-term energy independence, through the use of uranium and thorium reserves found in the monazite sands of coastal regions of South India. Hence, Option 3 is correct.

• The ultimate focus of the program is on enabling the thorium reserves of India to be utilized in meeting the country’s energy requirements.

• Thorium is particularly attractive for India, as it has only around 1–2% of the global uranium reserves, but one of the largest shares of global thorium reserves.

• However, at present thorium is not economically viable because global uranium prices are much lower.

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• The recent Indo-US Nuclear Deal and the NSG waiver, which ended more than three decades of international isolation of the Indian civil nuclear program, have created many hitherto unexplored alternatives for the success of the three-stage nuclear power program.

• Thorium itself is not a fissile material and thus cannot undergo fission to produce energy.

• Instead, it must be transmuted to uranium-233 in a reactor fueled by other fissile materials [plutonium-239 or uranium-235].

• The first two stages, natural uranium-fueled heavy water reactors, and plutonium-fueled fast breeder reactors are intended to generate sufficient fissile material from India's limited uranium resources so that all its vast thorium reserves can be fully utilized in the third stage of thermal breeder reactors.

Important Points

• Dr. Homi Bhabha

• He belonged to a wealthy Parsi family to Jehangir and Meheren Bhabha.

• He was educated at the Elphinstone College, Bombay, and Cambridge University, UK.

• He was a nuclear physicist who made vital contributions to quantum theory and cosmic radiation and was the first chairman of the Atomic Energy Commission of India set up in 1948.

Additional Information

• Vikram Ambalal Sarabhai was an astronomer and physicist from India.

• Vikram Sarabhai was considered the 'Father of the Indian space program'.

• He pioneered space exploration and aided India's nuclear power development.

• In 1969, he established the Indian Space Research Organisation.

• Krishnaswamy Kasturirangan is an Indian space scientist.

• From 1994 until 2003, Krishnaswamy Kasturirangan led the Indian Space Research Organisation.

• APJ Abdul Kalam

• He was an Indian aerospace scientist popularly known as the Missile Man of India.

• Born on 15^(th) October 1931 at Rameswaram in Tamil Nadu.

• His birth anniversary is celebrated as National Innovation Day.

• He was sworn in as India's 11^(th) President in 2002 and completed the full term in 2007.

• He was awarded the coveted civilian awards - Padma Bhushan (1981) and Padma Vibhushan (1990) and the highest civilian award Bharat Ratna (1997).

• Important Literary Works: "Wings of Fire", "India 2020 - A Vision for the New Millennium", "My journey" and "Ignited Minds - Unleashing the power within India", "Indomitable Spirit", "Guiding Souls", "Envisioning an Empowered Nation", "Inspiring Thoughts" etc.

Q8. Answer: (a) 24^(th) April

The correct answer is 24th April.

Key Points

• National Panchayati Raj Day

• The first National Panchayati Raj Day was celebrated in 2010.

• Since then, the National Panchayati Raj Day is celebrated on 24^(th) April every year in India. Hence, Option 1 is correct.

• The annual celebration is done to commemorate the day on which the 73rd Constitutional Amendment was passed in 1992.

• The act came into effect on April 24, 1993.

• Former Prime Minister Manmohan Singh had declared the first National Panchayati Raj Day on 24 April in the year 2010.

• National Panchayati Raj Day is celebrated to mark the inception of decentralized power.

• The Ministry of Panchayati Raj has been awarding the best performing Panchayats/States/UTs across the country in recognition of their good work.

• After the Constitution came into force, Article 40 made a mention of panchayats, and Article 246 empowered the state legislature to legislate concerning any subject relating to local self-government.

• Panchayati Raj Institution (PRI) was constitutionalized through the 73^(rd) Constitutional Amendment Act, 1992 to build democracy at the grassroots level and was entrusted with the task of rural development in the country.

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

• Local Self Government is the management of local affairs by such local bodies who have been elected by the local people.

• To strengthen e-Governance in Panchayati Raj Institutions (PRIs) across the country, the Ministry of Panchayati Raj (MoPR) has launched eGramSwaraj, a user-friendly web-based portal.

Important Points

• Salient Features of the 73^(rd) Constitutional Amendment

• The 73^(rd) Constitutional Amendment added Part IX titled “The Panchayats” to the Constitution.

• The basic unit of the democratic system-Gram Sabhas (villages) comprising all the adult members registered as voters.

• The three-tier system of panchayats at the village, intermediate block/taluk/Mandal, and district levels except in States with population is below 20 lakhs (Article 243B).

• Seats at all levels to be filled by direct elections (Article 243C (2)).

Additional Information

April 13	**Jallianwallah Bagh Massacre Day (1919)**
April 14	B.R.Ambedkar Jayanti ; Fire Extinguishing Day
May 3	International Energy Day
June 5	World Environment Day

Q9. Answer: (b) 0.2

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

Calculation:

2.2 × 0.2 ÷ (0.4 × 1/2) - 1/2 × 4 (1.04 - 0.2 × 0.2)

=> 2.2 × 0.2 ÷ (4/10 × 1/2) - 1/2 × 4(1.04 - 0.04)

=> 2.2 × 0.2 ÷ (4/10 × 1/2) - 1/2 × 4 × 1

=> 2.2 × 0.2 ÷ (4/10 × 1/2) - 2

=> 2.2 × 0.2 ÷ (1/5) - 2

=> 2.2 × 0.2 × 5 - 2

=> 2.2 × 1 - 2

=> 0.2

Therefore 2.2 × 0.2 ÷ (0.4 × 1/2) - 1/2 × 4 (1.04 - 0.2 × 0.2) = 0.2

Q10. Answer: (a) 23^(rd) April

The correct answer is 23rd April.

Key Points

• World Book and Copyright Day

• It is organized every year on April 23rd by the United Nations Educational, Scientific and Cultural Organization (UNESCO) to promote, highlight and expand the power of reading, books, and copyright. Hence, Option 1 is correct.

• On this day UNESCO aims to make a community so that readers across the world can connect with each other in turn combat isolation.

• The theme for 2021 is-In the wake of the pandemic, UNESCO has created a theme ‘Bookface Challenge’ to celebrate World Book Day 2021.

• This year, UNESCO argued everyone to challenge themselves, and explore new topics, books, formats, genres in one’s reading lists.

• Their goal is to engage people in reading and encourage them to enjoy while doing so.

Important Points

• UNESCO

• The United Nations Educational, Scientific, and Cultural Organization (UNESCO) is an international organization that aims to build peace through collaborative efforts in the field of Education, Science, and Culture.

• It was founded on November 16, 1945.

• It is based in Paris, France.

Additional Information

Jan 15	**Army Day**
Jan 23	Netaji Subhash Chandra Bose’s birth anniversary
Jan 25	National Tourism Day (India)
Jan 26	Republic Day
April 23	World Books Day
May 1	International Labour Day (May Day)

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May 3	World Press Freedom Day
May 8	International Red Cross Day (It is celebrated to commemorate the birth anniversary of the founder of the Red Cross Organisation Jean Henry Dunant)
May 11	National Technology Day
May 15	International Family Day
May 17	World Telecom Day
May 24	Commonwealth Day
May 31	World No Tobacco Day
June 5	World Environment Day

Q11. Answer: (a) 64

The logic is:

Hence, '64' is the correct answer.

Q12. Answer: (c) 9

Given:

Time taken by 5 men to build a wall = 12 days

Formula used:

(M1 × D1)/W1 = (M2 × D2)/ W2

Calculation:

Let the work size of the wall = 100

=> The size of the wall 50% more than the original wall = 100 × 150/100 = 150

Let the men required to build the 50% more than the original wall = a

(5 × 12)/100 = (a × 10)/150

=> 60/100 = 10a/150

=> 3/5 = a/15

=> 3/1 = a/3

=> a = 9

Therefore The required no of men = 9

Q13. Answer: (a) Mauritius

The correct answer is Mauritius.

Key Points

• The World Hindi Day:

• It is also known as the Vishwa Hindi Diwas is marked on January 10 every year.

• The day is celebrated with its primary focus on the history and promotion of the Hindi language worldwide.

• World Hindi Day is actually celebrated on the same day when the first World Hindi Conference took place in 1975.

• World Hindi Day marks the anniversary of the conference that was inaugurated by the then Prime Minister of India, Indira Gandhi, in Nagpur.

• The 11th World Hindi Conference, an event aimed at expanding the reach of the Hindi language at a global level, begin in Mauritius on 18 August 2018. Hence, Option 1 is correct.

• Mauritius Prime Minister Praveen Kumar Jagannath inaugurate the conference in Port Louis.

• Former External Affairs Minister Sushma Swaraj and other ministers are also reaching Port Louis to attend the event.

• This year the theme of the conference was "Hindi World and Indian Culture".

• The decision to organize the 11th edition of the Conference in Mauritius was taken at the 10th World Hindi Conference held in Bhopal, India in September 2015.

Additional Information

• Previous ten Conferences:

• First World Hindi Conference Nagpur, India 10-12 January 1975

• Second World Hindi Conference Port Louis, Mauritius 28-30 August 1976

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• Third World Hindi Conference New Delhi, India 28-30 October 1983
• Fourth World Hindi Conference Port Louis, Mauritius 02-04 December 1993
• Fifth World Hindi Conference Port of Spain, Trinidad and Tobago 04-08 April 1996
• Sixth World Hindi Conference London, UK 14-18 September 1999
• Seventh World Hindi Conference Paramaribo, Suriname 06-09 June 2003
• Eighth World Hindi Conference New York, America 13-15 July 2007
• Ninth World Hindi Conference Johannesburg, South Africa 22-24 September 2012
• Tenth World Hindi Conference Bhopal, India 10-12 September 2015

Q14. Answer: (a) A police station at Chauri Chaura in Uttar Pradesh was set on fire by a mob

The correct answer is A police station at Chauri Chaura in Uttar Pradesh was set on fire by a mob.

Key Points

• The Non-cooperation movement:
• It was launched on 5th September 1920 by the Indian National Congress (INC) under the leadership of Mahatma Gandhi.
• In September 1920, in a Congress session in Calcutta, the party introduced the Non-Cooperation program.
• Non-Cooperation Movement was a sequel to the Rowlatt Act, the Jallianwala Bagh massacre, and the Khilafat Movement.
• It was approved by the INC at the Nagpur session in December 1920.
• Khadi & Charkha became a symbol of NCM.
• The main aim of the Non- Cooperation movement was:
• Work for the eradication of untouchability from society.
• Adopt Swadeshi habits including hand spinning and weaving.
• Adopt Swadeshi principles.
• The whole movement was abruptly called off on 11^(th) February 1922 by Gandhi following the Chauri Chaura incident in the Gorakhpur district of UP (22 policemen burnt).
• Thus, we can conclude that the main reason for calling off the Non-Cooperation Movement by Gandhiji in 1922 was that a police station at Chauri Chaura in Uttar Pradesh was set on fire by a mob. Hence, Option 1 is correct.

Q15. Answer: (a) Hyderabad

The correct answer is Hyderabad.

Key Points

• The Golden quadrilateral Highway Network
• It is a plan to build four six-lane highways to connect India's four metro cities.
• The Golden Quadrilateral superhighways connect the cities of Delhi, Kolkata, Chennai, Mumbai, and Delhi. Therefore, Hyderabad city is NOT a part of The Golden Quadrilateral highway network. Hence, Option 1 is correct.
• The National Highways Authority of India is in charge of the Golden Quadrilateral superhighway project.
• The length of the Golden Quadrilateral is 5,846 kilometers (3,633 miles).
• The Golden Quadrilateral connects 12 Indian states and one Union territory.
• The project was inaugurated by A. B Vajpayee in 1999.
• The planning for the Golden Quadrilateral project was completed in the year 1999 but the construction work officially started in 2001.
• It was completed and dedicated to the nation in 2012.
• The benefits of the GQ are:
• Better movement of products and people
• More choice of locations for initiating industrial activity
• Reduced wastage for the agriculture sector
• A decrease in vehicle operating costs and time

Q16. Answer: (b) Badruddin Tyabji

The correct answer is Badruddin Tyabji.

Key Points

• Badruddin Tyabji:
• He was an Indian political activist during British Raj.
• He was one of the founding members of the Indian National Congress.

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• He was the first Muslim President of the Indian National Congress. Hence, Option 2 is correct.

• Badruddin Tyabji was the first Muslim President of the 3rd session of Indian National Congress (INC) that was held at Madras in 1887.

• He became a Barrister in April 1867.

• He was the first Indian to be admitted to the High Court of Bombay as a barrister.

• In 1902, he became the first Indian to serve as Chief Justice in Bombay.

• The first Muslim politician to build a secular political awareness was Badruddin Tyabji.

• The 'Triumvirate' ('The Three Stars') of Bombay's public life were Badruddin Tyabji, Pherozeshah Mehta, and Kashinath Telang.

Additional Information

• Abul Kalam Azad

• He was the Indian government's First Minister of Education.

• He served as the third President of the Indian National Congress twice between 1923 to 1924 and 1940 to 1946.

• He is the Indian National Congress's (INC) youngest President.

• Nawab Syed Muhammad Bahadur

• He was an Indian politician, presided over the Indian National Congress's Karachi Conference in 1913.

• After Badruddin Tyabji and Rahimtulla M. Sayani, he was the Muslim to hold the position.

• Dada Bhai Naoroji

• He was one of the founding members Indian National Congress.

• He served as 2nd, 9th, and 22nd President of the Indian National Congress from 1886 to 1887, 1893 to 1894 and 1906 to 1907.

Q17. Answer: (b) 137

The correct answer is 137.

Key Points

• As of August 2019, 137 Himalayan peaks are open for trekking for domestic and foreign mountaineers. Hence

• The government of India has allowed access to 137 mountain peaks to foreigners desirous of obtaining a Mountaineering Visa for mountaineering and trekking.

• These Himalayan peaks are located in the States of Jammu and Kashmir, Himachal Pradesh, Uttarakhand, and Sikkim.

• In the recently concluded National Tourism Conference, New Delhi, in which Tourism Ministers from States/UTs participated, the Tourism Minister emphasized utilizing the adventure tourism potential in the Indian economy and the need for ensuring the safety of those travelers going for adventure tourism.

• The highest number of 51 peaks in Uttarakhand and 15 peaks of Jammu and Kashmir have also been included in the list.

• Now foreigners can directly apply to Indian Mountaineering Foundation for permits.

• The home ministry has clarified that for carrying satellite phones the expedition teams have to take prior permissions from the department of telecommunication and all information gathered during the journey has to be shared with local formations.

• The Indian Adventure Tourism Guidelines 2018 cover land, air, and water-based activities including mountaineering, trekking, paragliding, bungee jumping, river rafting, kayaking, scuba diving, snorkeling, and many other sports.

Additional Information

• The Himalayas:

• It is the highest and the youngest fold mountain range of the world.

• Their geological structure is young, weak, and flexible since the Himalayan uplift is an ongoing process, making them one of the highest earthquake-prone regions of the world.

• The Himalayas are believed to have formed over 50 million years ago with the collision of the Indian Plate with the Eurasian plate.

• The Indian plate slid below the Eurasian plate, due to its density being higher, and in the process crumbling and buckling up the Eurasian plate into the various mountain ranges that are now a part of the Himalayas.

• The Himalayas are a series of parallel mountain ranges extending along the North-West to the South-East direction (known as the Strike of the Himalayas).

• These ranges are separated by longitudinal valleys.

• They include,

• Trans-Himalayas

• The Greater Himalayas or Himadri

• The Lesser Himalayas or Himachal

• Shivalik or the Outer Himalayas

• The Eastern Hills or Purvanchal

Q18. Answer: (b) 2, 1, 3, 4

The pattern followed here is:

The given sentences are arranged according to the meaningful order.

S1: Several metro lines have been planned in the NCR.

2. They are expected to alleviate the problem of transportation.

1. Red line is the first among them.

3. It starts from Shahdara and terminates at Tiz-Hazari in the initial phase.

4. It caters to over 1 lakh commuters at present.

S6: Hopefully, the public transportation problem will not be as acute after all the metro lines are completed.

Hence, the correct answer is "2, 1, 3, 4".

Q19. Answer: (d) Rs. 7,50,000/-

Shortcut Trick

Depreciation rate = 20% → Multiplier = (100% − 20%) = 80% = 4/5

For 2 years, the total depreciation factor = (4/5) × (4/5) = 16/25

Given final value (16 units) = Rs. 4,80,000

1 unit = 4,80,000 ÷ 16 = 30,000

Original price (25 units) = 25 × 30,000 = Rs. 7,50,000

Therefore The correct answer is Rs. 7,50,000.

Alternate Method

Given:

Depreciation rate (r) = 20% per annum

Time period (n) = 2 years

Value after 2 years (V) = Rs. 4,80,000

Formula Used:

$V = P \times (1 - r/100)^n$

Original (P)

2 Years @ −20%

Rs. 4,80,000

Value (V) = $P \times (0.8)^2$

Calculations:

=> $4,80,000 = P \times (1 - 20/100)^2$

=> $4,80,000 = P \times (80/100)^2$

=> $4,80,000 = P \times (4/5)^2$

=> $4,80,000 = P \times (16/25)$

=> $P = (4,80,000 \times 25) \div 16$

=> $P = 30,000 \times 25$

=> $P = 7,50,000$

Therefore The correct answer is Rs. 7,50,000.

Additional Information

Depreciation vs Appreciation

For depreciation use $V = P(1 - r/100)^n$. For appreciation or growth, use $V = P(1 + r/100)^n$.

Successive Percentage Change

If a value changes by x% and then y%, the net change is given by [x + y + (x × y)/100]%.

Effective Depreciation Rate

For two years at 20%, the effective reduction is 20 + 20 − (20 × 20)/100 = 36%.

Q20. Answer: (d) cation

The correct answer is Cation.

Key Points

• Cations

• It is positively charged ions. Hence, Option 4 is correct.

• It is formed when a metal loses its electrons.
• It loses one or more than one electron and does not lose any protons.
• Therefore, they possess a net positive charge.
• Examples of cations are Calcium (Ca^(2+)), Potassium (K^+), hydrogen (H^+).

Important Points

• Ions
• It is formed when the number of protons in an atom does not equal the number of electrons.
• If more protons are present, the ion is positive and is known as a cation; if more electrons are present, the ion is negative and referred to as an anion.
• Ions are highly reactive species.
• It is generally found in a gaseous state and does not occur in abundance on Earth.
• It is repelled by like electric charges and is attracted to opposite charges.
• The electron cloud of an atom determines the size of the atom; added electrons (anions) increase the electron repulsion, increasing the ion's size, while cations (with fewer electrons) are smaller than the atom because there are fewer electrons in the cloud to repel each other.

Additional Information

• Anions
• It is negatively charged ions.
• It is formed when non-metal gains the electrons.
• It gains one or more than one electron and does not lose any protons.
• Therefore, they possess a net negative charge.
• Examples of anions are Iodide (I^–), chlorine (Cl^–), hydroxide (OH^–).
• Atom
• It is the smallest particle of a chemical element that can exist.
• Molecules
• It is made up of one or more atoms.

Q21. Answer: (c) 4

Concept:

Dividend = Divisor × Quotient + Remainder

Calculation:

Let the quotient be = b

$n = 5 \times b + 2$

$n^2 = (5b + 2)^2$

$=>n2 = 25b^2 + 4 + 2 \times 5b \times 2$

=>n2 = 25b2 + 4 + 20b

=>n2 = 5(5b2 + 4b) + 4

Therefore When n2 is divided by 5, the remainder will be 4.

Alternate MethodBy Value Putting Method

n/5 → Remainder = 2

For n = 7, it satisfies the condition.

$=> n^2/5 = 7^2/5 = 49/5$

Therefore The remainder (5 × 9 + 4) = 4

Q22. Answer: (c) Norway

The correct answer is Norway.

Key Points

• Human Development Index:
• The 2020 Report has introduced the planetary pressures-adjusted Human Development Index, which adjusts the standard Human Development Index (HDI) by a country's per capita carbon dioxide emissions and material footprint.
• It was published by UNDP.
• HDI emphasizes that people and their capabilities should be the ultimate criteria for assessing the development of a country, not

economic growth alone.

• Based on three Basic Dimensions of Human Development:

• A long and healthy life,

• Access to knowledge, and

• A decent standard of living.

• Norway topped the index, followed by Ireland and Switzerland. Hong Kong and Iceland complete the top five. Hence, Option 3 is correct.

• Singapore was ranked 11, Saudi Arabia 40, and Malaysia was at 62 in the global index, representing the top bracket among the Asian countries with “very high human development".

• Sri Lanka (72), Thailand (79), China (85) and Indonesia and Philippines (both 107), and Vietnam (117), among others, were “high human development" countries.

• India, Bhutan, Bangladesh, Myanmar, Nepal, Cambodia, Kenya, and Pakistan were ranked among countries with “medium human development" with ranks between 120 and 156.

• India ranked at 131 out of 189 countries and territories.

• Norway, which tops the HDI, falls 15 places if this metric is used, leaving Ireland at the top of the table.

• The United States (HDI Rank -17) and Canada (HDI Rank -16) would fall 45 and 40 places respectively, reflecting their disproportionate impact on natural resources.

• The oil and the gas-rich Gulf States also fell steeply. China would drop 16 places from its current ranking of 85.

Additional Information

• The United Nations Development Programme (UNDP)

• It is the UN's global development network, advocating for change and connecting countries to knowledge, experience, and resources to help people build a better life.

• Its headquarter is in New York City but works primarily through its offices in about 170 countries and territories.

• United Nations Development Programme (UNDP), United Nations (UN) organization formed in 1965 to help countries eliminate poverty and achieve sustainable human development, an approach to economic growth that emphasizes improving the quality of life of all citizens while conserving the environment and natural resources for future generations.

Q23. Answer: (b) China-Pakistan Economic Corridor

The correct answer is China-Pakistan Economic Corridor.

Key Points

• India boycotted the first Belt and Road Forum (BRF) in 2017 after protesting to Beijing over the controversial China-Pakistan Economic Corridor (CPEC) which is being laid through the Pakistan-occupied Kashmir (PoK) overriding New Delhi's sovereignty concerns. Hence, Option 2 is correct.

• India’s main objection is on the principle that the B&RI includes projects in the China-Pakistan Economic Corridor (CPEC) that are located in the Pakistan-occupied Kashmir’s Gilgit Baltistan, including the Diamer Bhasha Dam, 180-MW hydel power projects, and more expressways and economic zones along the Karakoram Highway built in the 1970s.

Important Points

• The China-Pakistan Economic Corridor (CPEC)

• It is a part of China’s ambitious One Belt One Road (OBOR) Initiative to link China with Europe.

• It started in 2013, the CPEC is a developmental project between Pakistan and its all-weather friend China.

• China-Pakistan Economic Corridor is a whopping 46 billion dollar project which will connect Kashgar in Xinjiang province of China, with Gwadar port in Baluchistan which is the largest province in Pakistan.

• It is connected through a vast and complex network of roads as well as other infrastructure projects such as dams, hydropower projects, railways, and pipelines.

Additional Information

• One Belt One Road (OBOR)

• It is an ambitious project that focuses on connectivity and cooperation among multiple countries spread across the continents of Asia, Africa, and Europe.

• OBOR spans about 78 countries.

• Initially announced in the year 2013, the project involves building networks of roadways, railways, maritime ports, power grids, oil and gas pipelines, and associated infrastructure projects.

• The project covers two parts.

• Silk Road Economic Belt:

• It is land-based and is expected to connect China with Central Asia, Eastern Europe, and Western Europe.

• 21st Century Maritime Silk Road:

• It is sea-based and is expected to connect China's southern coast to the Mediterranean, Africa, South-East Asia, and Central Asia

Q24. Answer: (d) 28 and 8

The correct answer is 28 and 8.

key points

• As of 31 ^(st) October 2020, India comprises twenty-eight states and eight union territories. Hence option 4 is correct.

• The 8 union territories in India include Delhi, Jammu and Kashmir, Ladakh, Dadra and Nagar Haveli, and Daman and Diu, Puducherry, Chandigarh, Andaman, and the Nicobar Islands, and Lakshadweep.

• As per the Jammu and Kashmir Reorganization Act, 2019, two Union Territories of Jammu and Kashmir and Ladakh were appointed to the two Union Territories. He was appointed on 31 October.

• This is the first time in history that a state is being bifurcated into two union territories. Now, as of 26 January 2020, the total number of states in the country is 28, and India now has 8 union territories.

• The Union Territory of Daman and Diu, Dadra, and Nagar Haveli has become a Union Territory with effect from 26 January by a bill passed by the Parliament during the winter season. With the merger of Daman and Diu and Dadra and Nagar Haveli, the number of Union Territories in India has gone up to eight.

• The Union Territory is a special administrative region in the Republic of India.

• Unlike the states of India which have their own state governments, they have no government of their own and are controlled by the central government (central government).

• Of the eight union territories of India, Delhi and Puducherry (formerly Pondicherry) have their legislatures.

• Each union territory has its own capital or main area of administration.

Q25. Answer: (a) Diamond

The correct answer is Diamond.

Key Points

• Allotropes of Carbon

• Carbon is capable of forming many allotropes due to its valency.

• It is different forms of the same element in the same physical state.

• Well-known forms of carbon are Graphite and Diamond. Hence, Option 1 is correct.

• Of late, many more Allotropes have been discovered and researched including ball shapes and sheets.

• Larger scale structures of carbon include nanotubes, nanobuds, and nanoribbon.

• The phenomenon of the existence of an element in two or more forms has different physical properties, but identical chemical properties are called allotropy, and the different forms are called Allotropes.

Important Points

• Diamond

• It is formed inside the earth under the conditions of high temperature (about 1500°C) and high pressure (about 70,000 atmospheres).

• In a diamond crystal, each carbon atom is linked to four other carbon atoms by covalent bonds in a tetrahedral fashion. It results in a three-dimensional arrangement.

• The three-dimensional network of covalently bonded carbon atoms provides a rigid structure to diamonds. Its rigidity makes a diamond a very hard substance.

• It is the hardest natural substance known.

• Graphite

• In contrast to diamond, graphite is soft, black, and slippery solid.

• It has a metallic luster. It is also a good conductor of electricity and heat.

Additional Information

• Fullerenes

• It was discovered in 1985 by Robert F. Curl, Harold W. Kroto, and Richard E. Smalley.

• They were awarded the Nobel Prize in Chemistry in 1996 for this discovery.

• It has a closed structure like a football. A typical fullerene named buckminsterfullerene has 60 carbon atoms.

• Gypsum

• It is a soft sulfate mineral composed of calcium sulfate dihydrate, with the chemical formula CaSO 4·2H2O.

• It is widely mined and is used as a fertilizer and as the main constituent in many forms of plaster, blackboard/sidewalk chalk, and drywall.

• Chalk

• It is a soft, white, porous, sedimentary carbonate rock.

• It is a form of limestone composed of the mineral calcite and originally formed deep under the sea by the compression of microscopic plankton that had settled to the seafloor.

• Marble

• It is a metamorphic rock composed of recrystallized carbonate minerals, most commonly calcite or dolomite.

• Marble is typically not foliated, although there are exceptions.

• In geology, the term marble refers to metamorphosed limestone, but its use in stonemasonry more broadly encompasses un metamorphosed limestone.

Q26. Answer: (c) Menaka Guruswamy and Arundhati Katju

The correct answer is Menaka Guruswamy and Arundhati Katju.

Key Points

• Menaka Guruswamy and Arundhati Katju are famous Indian women lawyers who led the legal battle to strike Section 377 of the Indian Penal Code (IPC). Hence, Option 3 is correct.

• Katju and Guruswamy represented the petitioners against the ban on consensual gay sex in the country.

• The duo highlighted those who suffered under the law by enlisting more than two dozen gay, lesbian, bisexual, and transgender people as co-petitioners.

• They contested that people risked arrest for publicly identifying themselves as part of the LGBTQ (lesbian, gay, bisexual, transgender, queer) community.

• Katju is the niece of former Supreme Court judge Markandey Katju. She was also a junior under senior advocate Sidharth Luthra in the Supreme Court.

• Guruswamy is the daughter of Mohan Guruswamy, a well-known political-thinker, and adviser to former Prime Minister late Atal Bihari Vajpayee.

• In September 2018, a constitutional bench of the Supreme Court partly struck down Section 377 in a unanimous decision.

• The judgment was considered groundbreaking, as the country's top court finally overturned a colonial-era ban imposed on consensual gay sex.

• The judgment was regarded as a welcome step in affirmation of human dignity.

Important Points

• Section 377

• Section 377 of the Indian Penal Code 1860, a relic of British India, states that whoever voluntarily has carnal intercourse against the order of nature with any man, woman or animal shall be punished.

• This included private consensual sex between adults of same-sex.

• After the recent SC judgment, provisions of Section 377 remain applicable in cases of non-consensual carnal intercourse with adults, all acts of carnal intercourse with minors, and acts of bestiality.

Additional Information

• Pinky Anand

• She is an Indian lawyer and was designated as a senior advocate till May 2020.

• She served as an Additional Solicitor General of India at the Supreme Court of India.

• She is also a politician.

• Karuna Nundy

• She is an Indian lawyer at the Supreme Court of India and the focus of her work is on constitutional law, commercial litigation and arbitration, media law, and legal policy.

• Vrinda Grover

• She is a lawyer, researcher, and human rights and women's rights activist based in New Delhi, India.

• Maneka Sanjay Gandhi

• She is an Indian politician, animal rights activist, and environmentalist.

• She is a member of the Lok Sabha, the lower house of the Indian parliament, and a member of the Bharatiya Janata Party.

• Suzanna Arundhati Roy

• She is an Indian author best known for her novel The God of Small Things, which won the Man Booker Prize for Fiction in 1997 and became the best-selling book by a non-expatriate Indian author.

• She is also a political activist involved in human rights and environmental causes.

Q27. Answer: (d) One

The logic followed is:

Condition to be checked:

1) Consonants are there in the following arrangement, each of which is immediately followed by a vowel but not preceded by a number.

Number (symbol, vowel, consonant) → Consonants → Vowel

Given arrangement: TRB50%U7C4#KFS2UE*1813V@9IX@LAB

@LA is immediately followed by a vowel but not preceded by a number.

So, there is only one such consonant in the following arrangement, which is immediately followed by a vowel but not preceded by a number.

Hence, 'one' is the correct answer.

Mistake Points

Immediately preceded by means immediately before or to come just before.

Immediately followed by means immediately after or to come just after.

Q28. Answer: (b) 30°

Given:

$\sqrt{3} \tan 2\theta - 3 = 0$

Calculation:

$\sqrt{3} \tan 2\theta - 3 = 0$

$\Rightarrow \sqrt{3} \tan 2\theta = 3$

$\Rightarrow \tan 2\theta = 3/\sqrt{3}$

$\Rightarrow \tan 2\theta = \sqrt{3}$

$\Rightarrow \tan 2\theta = \tan 60°$

$\Rightarrow 2\theta = 60°$

Therefore $\theta = 30°$

Q29. Answer: (c) 200

Given:

Marks scored by one student = 65%

Marks scored by another student = 80%

Solution:

Let the total marks be = y

Qualifying marks of one student = 65% of y + 20

Qualifying marks of another student = 80% of y - 10

As per the question;

65% of y + 20 = 80% of y - 10

$\Rightarrow 65/100 \times y + 30 = 80/100 \times y$

$\Rightarrow 30 = 80y/100 - 65y/100$

$\Rightarrow 15y/100 = 30$

$\Rightarrow y = 200$

Therefore The total marks of the examination are 200.

Q30. Answer: (d) 11

The correct answer is 11.

Key Points

• The Gandhi-Irwin Pact

• It was linked to India's civil disobedience campaign.

• Mahatma Gandhi and Lord Irwin signed the pact.

• On March 5, 1931, the pact was signed.

• Before the second round table conference in London, this was arranged.

• As per Gandhi-Irwin Pact, Gandhiji discontinued the Civil Disobedience movement and agreed to attend the second round table conference.

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• The Lahore Congress of 1929 had given the mandate to launch the civil disobedience movement along with the non-payment of taxes.

• Mahatma Gandhi presented his 11 demands to the Viceroy Lord Irwin and gave him the ultimate of January 31, 1930, to accept these demands. Hence, Option 4 is correct.

Important Points

• Mahatma Gandhi 11 point demands were:

• Abolition of salt tax and Monopoly of the government to manufacture salt.

• To reduce the expenses on the civil administration and army by 30%.

• To reform the criminal investigation department CID.

• Total prohibition of intoxicants and alcohol.

• Amendments in the arms act to allow licenses of arms to citizens for self-protection.

• To release all the Political Prisoners.

• Exception of Postal reservation bill.

• To change the Rupee Sterling exchange ratio to 1s 4d.

• To impose a customs duty on the import of foreign clothes.

• The reservation of coastal shipping for Indians.

• Reduction of land revenue by 50 percent.

Additional Information

• Proposed conditions of the Gandhi-Irwin Pact are:

• The Indian National Congress took part in the Second Round Table Conference.

• Salt is no longer taxed.

• Withdrawal of all ordinances issued by the Indian government restricting the operations of the Indian National Congress.

• Discontinuation of Salt March.

Q31. Answer: (d) 08

Given:

Ratio of number of boys and girls = 5 : 7

New ratio of the number of boys and girls = 1 : 1

Calculation:

Let the number of boys and girls be 5a and 7a respectively.

After admission of 8 more boys;

(5a + 8)/7a = 1/1

=> 5a + 8 = 7a

=> 7a - 5a = 8

=> 2a = 8

=> a = 4

Therefore The difference between the number of boys and girls in the beginning = 7a - 5a = 2a

=> 2 × 4 = 8

Shortcut Trick When 8 more boys were admitted the ratio 5 : 7 became 1 : 1.

=> Number of girls remained unchanged, that is 7 in the beginning.

So, after admission of 8 boys the number of boys and girls became equal.

=> 7 - 5 = 2 = 8 boys

Also, the difference in the number of boys and girls is also (7 - 5) = 2

Therefore 2 = 8

Q32. Answer: (c) The Government of India announced ‘Entrepreneurship Curriculum’ to be taken up by the states.

The correct answer is the Government of India announced the ‘Entrepreneurship Curriculum’ to be taken up by the states.

Key Points

• The government of India initiative to attract Foreign Direct Investments (FDI) in India are:

• Proposals of FDI are mandated to be cleared within ten days of receiving the application. Hence, Statement 1 is correct.

• According to the standard operating procedure, which replaces the FIPB, the government will clear all FDI projects that require approval within a maximum of 10 weeks after receiving an application.

• A unified single-window clearance system was proposed for foreign direct investment (FDI).

• The National Single Window System (NSWS) is a one-stop digital platform that will allow investors to apply for various approvals and licenses for commencing a business in the country.

• States must focus on strengthening the single window clearance system. Hence, Statement 2 is correct.

• The Government of India has eased the approval mechanism for FDI proposals. Hence, Statement 4 is correct.

• Under the Government Route, before investment, approval from the Government of India is required.

• Proposals for foreign direct investment under the Government route, are considered by the respective Administrative Ministry/ Department.

• The Delhi government launches an entrepreneurship curriculum for school students. Hence, Statement 3 is not correct.

• The entrepreneurship curriculum will have no exams, books, or evaluations.

• The framework of the entrepreneurship curriculum was approved by the State Council of Educational Research and Training (SCERT) in its governing council meeting chaired by the Education Minister of Delhi Manish Sisodia.

Additional Information

• FDI:

• It is the process whereby residents of one country (the home country) acquire ownership of assets to control the production, distribution, and other activities of a firm in another country (the host country).

• It is different from Foreign Portfolio Investment where the foreign entity merely buys stocks and bonds of a company.

• FPI does not provide the investor with control over the business.

• Routes through which India gets FDI:

• Automatic Route:

• In this, the foreign entity does not require the prior approval of the government or the RBI.

• Government Route:

• In this, the foreign entity has to take the approval of the government.

• The Foreign Investment Facilitation Portal (FIFP) facilitates the single window clearance of applications that are through the approval route.

• It is administered by the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.

Q33. Answer: (a) 30

The logic followed here is:

Given series: 46, 31, 22, 17, 30, -32, -89, -179

The series is in decreasing order but 30 is exceptionally greater than 17.

Thus 30 is the wrong term.

Hence, the correct answer is "30".

Q34. Answer: (a) 13, 15

Given:

The difference between the squares of two consecutive positive odd integers = 56

Calculation:

Let the first odd number = b

=> Second odd number = b + 2

As per the question;

$(b + 2)^2 - b^2 = 56$

=>b2 + 4 + 4b - b2 = 56

=> 4b = 56 - 4

=> 4b = 52

=> b = 13, b + 2 = 15

Therefore The consecutive odd numbers are 13, 15 respectively.

Alternate MethodBy Elimination Method

Option 1: $15^2 - 13^2 = 56$

Option 2: 132 - 112 ≠ 56

Option 3: 172 - 152 ≠ 56

Option 4: 192 - 172 ≠ 56

Q35. Answer: (c) UNICEF

The correct answer is UNICEF.

Key Points

• UNICEF is a United Nations organisation that provides humanitarian and developmental assistance to children around the world.UNICEF is also known as the United Nations Children's Fund.

• UNICEF was established on 11 December 1946.

• UNICEF was created by the United Nations to provide emergency food and health care to children and mothers in the countries affected by World War II.

• UNICEF's mandate was expanded in 1950 to include the long-term needs of children and women in underdeveloped nations around the world.

• The phrases "international" and "emergency" were omitted from the organization's name in 1953 when it became a permanent member of the United Nations System, however, the abbreviation "UNICEF" was kept.

• It is the successor of the League of Nations International Children's Emergency Fund.

• The headquarters of UNICEF is located in New York City, USA.

• In 1965, UNICEF received the Nobel Peace Prize.

Additional Information

• The United Nations Educational, Scientific, and Cultural Organization (UNESCO) is an international organisation that promotes education, science, and culture.

• UNESCO was founded on November 16, 1945.

• The headquarters of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) is in Paris, France.

• The International Monetary Fund (IMF) was founded in 1944 in the aftermath of the Great Depression of the 1930s.

• IMF was established on 27 December 1945.

• The headquarters of IMF is located in Washington, D.C., U.S.

• The World Health Organization is a specialized agency of the United Nations responsible for international public health.

• WHO was established on 7 April 1948.

• The headquarters of WHO is located in Geneva, Switzerland.

Q36. Answer: (b) Indira Awas Yojana

The correct answer is Indira Awas Yojana.

Key Points

• Pradhan Mantri Awaas Yojana- Gramin (PMAY-G)

• To achieve the objective of Housing for All by 2022, the erstwhile rural housing scheme Indira Awaas Yojana (IAY) was restructured to Pradhan Mantri Awaas Yojana-Gramin (PMAY-G) w.e.f 1^(st) April 2016. Hence, Option 2 is correct.

• This scheme was launched by the Ministry of Rural Development.

• This scheme aims to provide a pucca house with basic amenities to all rural families, who are homeless or living in kutcha or dilapidated houses by the end of March 2022.

• To help rural people Below the Poverty Line (BPL) in the construction of dwelling units and the upgradation of existing unserviceable kutcha houses by assisting in the form of a full grant.

• Beneficiaries of this scheme are People belonging to SCs/STs, freed bonded laborers and non-SC/ST categories, widows or next-of-kin of defense personnel killed in action, ex-servicemen, and retired members of the paramilitary forces, disabled persons, and minorities.

• The Selection of Beneficiaries through a three stage validation - Socio-Economic Caste Census 2011, Gram Sabha, and geo-tagging.

• The cost of unit assistance is shared between Central and State Governments in the ratio 60:40 in plain areas and 90:10 for North Eastern and hilly states.

Important Points

• Pradhan Mantri Awas Yojana – Urban

• Launch: 25^(th) June 2015, intends to provide housing for all in urban areas by the year 2022.

• Implemented by: Ministry of Housing and Urban Affairs

• Indira Awas Yojana

• It is related to the construction of rural housing.

• It was launched in 1985.

• Indira Awas Yojana was launched by then prime minister Rajiv Gandhi.

• The scheme was implemented under the Ministry of Rural Development.

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• It was subsumed in Jawahar Rozgar Yojana (JRY) in 1989.

• Indira Awas Yojana was changed into an independent scheme on 1st January 1996.

• The government of India re-structured Indira Awas Yojana as Pradhan Mantri Gramin Awas Yojana in 2016.

• Pradhan Mantri Awas Yojana (Urban) Mission launched on 25th June 2015 which intends to provide housing for all in urban areas by the year 2022.

Additional Information

• Jawahar Gram Samridhi Yojana is the restructured version of erstwhile Jawahar Rozgar Yojana.

• It was launched on 1st April 1999.

• Deen Dayal Antyodaya Yojana (DAY) was a scheme launched for the uplift of urban poor folks by enhancing sustainable livelihood opportunities through skill development.

• It was launched under the Ministry of Housing and Urban Poverty Alleviation (HUPA).

• Rajiv Awas Yojana (RAY) is a scheme that focuses on slum dwellers and the urban poor.

• It was launched in June 2011 in two phases

Q37. Answer: (c) The North Atlantic sea route.

The correct answer is The North Atlantic sea route.

Key Points

• The North Atlantic sea route is the busiest sea route in the world.

• The North Atlantic sea route connects two industrially developed parts of the world.

• The North Atlantic sea route connects ports of the western coast of Europe with the ports on the east coast of North America.

• It carries the foreign trade greater than that of the rest of the world combined altogether.

• One-fourth of the world foreign trade moves through this route.

Additional Information

• The North Pacific sea route connects North America and East Asia as the main sea lane for vessel traffic.

• The Panama Canal connects western Europe and North America with Australia, New Zealand, and a smattering of Pacific islands via the South Pacific sea route.

• The Cape of Good Hope route connects Eastern Asia and Europe to southern parts of Africa

Q38. Answer: (d) 11/3

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

Calculation:

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

=> 1/2 ÷ (1/4) × 1/2 + 1/2 ÷ 3/16

=> 1/2 ÷ (1/4) × 1/2 + 1/2 × 16/3

=> 1/2 × 4 × 1/2 + 1/2 × 16/3

=> 1/4 × 4 + 8/3

=> 1 + 8/3

=> 11/3

Therefore 1/2 ÷ (1/2 × 1/2) × 1/2 + 1/2 ÷ (1/4 × 3/4) = 11/3

Q39. Answer: (d) 1974

The correct answer is 1974.

Key Points

• India test its first successful atomic bomb in 1974.

• The code name of the operation was Smiling Buddha.

• The Indian Army, under the supervision of several important Indian generals, detonated the bomb on the army facility Pokhran Test Range (PTR) in Rajasthan.

• It was India's first successful nuclear bomb test.

• It was also the first confirmed nuclear weapons test by a country not among the UN Security Council's five permanent members.

• The experiment took place at the army base Pokhran Test Range (PTR) in Rajasthan.

• It took place in May 1974, against the backdrop of the 1971 Indo-Pak war.

• Raja Ramanna was the scientist who was involved in Pokharan's first nuclear explosion.

• This test was described by the Indian Ministry of External Affairs (MEA) as a "peaceful nuclear explosion."

Q40. Answer: (d) Qatar

The correct answer is Qatar,

Key Points

• The 2023 AFC Asian Cup was the 18th edition of the tournament, organized by the Asian Football Confederation (AFC).

• The event featured 24 national teams, continuing the expanded format introduced in 2019.

• Qatar, the defending champions, replaced China as hosts on 17 October 2022.

• Due to Qatar's participation in the 2023 CONCACAF Gold Cup and extreme summer temperatures, the tournament was rescheduled to 12 January – 10 February 2024.

• This tournament was the second of three consecutive Asian Cups hosted in the Middle East, following UAE (2019) and preceding Saudi Arabia (2027).

• Qatar became the first FIFA World Cup host to also host the AFC Asian Cup and retained their title by defeating Jordan 3–1 in the final.

Q41. Answer: (a) Mahatma Gandhi

The solution is in Hindi. Read it online.

Q42. Answer: (b) 8:21a.m.

Given:

Devesh leaves his home 7 AM and reaches office at 8:30 AM

One day 1/5 of the distance covered at 5/6th of his usual speed

And rest of the distance covered at 6/5 of his usual speed.

Formula used:

Time = Distance/Speed

Calculation:

Let the distance covered by Devesh be = d

Let the time be = t

Let the speed be = s

From 7 AM to 8:30 Am = Time = 1.5 hours

As per the question;

(d/5)/(5s/6) + (4d/5)/(6s/5)

=> d/5 × 6/5s + 4d/5 × 5/6s

=> 6d/25s + 2d/3s

=> (6/25 + 2/3) × d/s

=> (18 + 50)/75 × t

=> 68/75 × 1.5 hours

=> 68/75 × 3/2

=> 34/25

=> 1 hour and 9/25 × 60 minutes

=> 1 hour and 21.6 minutes

Therefore Approximately, Devesh reach at office at 8:21 Am on that day.

Q43. Answer: (a) 1/2 (BC + CA + AB)

Concept:

Length of sides of a triangle drawn from an external point to a circle are equal

Two tangents are equal in length drawn from the same origin point.

Calculation:

AQ = AR, BQ = BP, CP = CR Because [Tangents from the same origin point]

Perimeter of triangle ABC = AB + BC + AC

=> AB + (BP + PC) + (AR - CR)

=> (AB + BQ) + PC + (AQ - PC)

=> AQ + AQ

=> 2 AQ

Therefore AQ = 1/2 × (AB + BC + AC)

Q44. Answer: (b) (7 + 4√3)/1

Given:

P = 2 + √3, Q = 2 - √3

Formula used:

(a - b)(a + b) = $a^2 - b^2$

Calculation:

By rationalization

P/Q = (2 + √3)/(2 - √3) × (2 + √3)/(2 + √3)

=> P/Q = $(2 + √3)^2/(2)^2 - (√3)^2$

=> P/Q = (4 + 3 + 4√3)/(4 - 3)

Therefore P/Q = (7 + 4√3)/1

Q45. Answer: (a) Only (ii) and (iv) follow

The least possible Venn diagram is:

Conclusions:

i Some vegetables are papayas. → False (As, there is no definite relation between vegetables and papayas. Hence, false)

ii. Some vegans are fruits. → True (As, Some fruits are vegetables and All vegetables are vegan → Some vegans are fruits)

iii. Some vegans are papayas. → False (As, there is no definite relation between vegans and papayas. Hence, false)

iv. Some fruits are papayas. → True (As, All papayas are fruits → Some fruits are papayas)

Hence, only (ii) and (iv) follow.

Q46. Answer: (d) Paper

The correct answer is Paper.

• Among the options, only Paper is NOT a computer component.

Key Points

• A computer is an electronic device that receives data, processes it and gives meaningful information.

• The processed data in a computer is called information.

• The word computer is originated from the Latin words 'Computus' and 'computare'.

• Functional units of a computer are:

• Input.

• Central Processing Unit.

• Output.

• The Central Processing Unit controls the overall functioning of the computer.

• All data processing is done inside the CPU.

Additional Information

• The three parts of the Central Processing Unit are:

• Arithmetic and Logic Unit.

• Control Unit.

• Memory Unit.

• Arithmetic and Logic Unit performs all arithmetic and logic operations.

• Memory unit is used for the storage of data.

Q47. Answer: (d) Rs. 96,000.00

Given:

Principal = Rs.12000

Time = 5 years

Formulas used:

Amount = Principal × $(1 + r/100)^n$

Calculation:

Amount = Principal × (1 + r/100)^5

=> 24000 = 12000 × (1 + r/100)5

=> 24000/12000 = (1 + r/100)5

=> 2 = (1 + r/100)5 (1)

=> At the end of 15 years,
=> Amount = 12000 × (1 + r/100)^(15)
=> Amount = 12000 × [(1 + r/100)^5]³ (From 1)
=>12000 × 2³
=>12000 × 8
=> 96000
Therefore The amount at the end of 15 years will be Rs.96000
Shortcut Trick
Therefore The amount at the end of 15 years will be 8 times of 12000 = Rs.96000

Q48. Answer: (a) 3/2 and -15/2

Concept:
The standard form of a quadratic equation is $ax^2 + bx + c = 0$
Given:
One root of the equation $2x^2 - 8x - m = 0$, is 5/2
Calculation:
By substituting 5/2 for x in the equation $2x^2 - 8x - m = 0$
=> $2 \times (5/2)^2 - 8 \times (5/2) - m = 0$
=> $2 \times 25/4 - 40/2 - m = 0$
=> $25/2 - 40/2 - m = 0$
=> $- 15/2 - m = 0$
Therefore m = -15/2
Now, by putting the value of m in the equation;
=> 2x2 - 8x - (-15/2) = 0
=> 2x2 - 8x + 15/2 = 0
=> 4x2 - 16x + 15 = 0
=> 4x2 - 10x - 6x + 15 = 0
=> 2x(2x - 5) - 3(2x - 5) = 0
=> (2x - 5)(2x - 3) = 0
=> x = 5/2, 3/2
Therefore The other root, x = 3/2 and m = - 15/2
Mistake Points
• One root x = 5/2 is already given in the question, we only need to find the root other than 5/2, so option 3 gets eliminated.

Q49. Answer: (c) Air pollution

The correct answer is Air pollution.
Key Points
• Air pollution has an impact on most of the organs and systems of the human body.
• Air pollution causes various diseases related to the respiratory system.
• Air pollution is the cause and aggravating factor of many respiratory diseases such as:
• Chronic obstructive pulmonary disease (COPD).
• Asthma.
• Lung cancer.
• Air pollutants have complex chemical and physical features dependent on the sources of pollutants.
• Pneumoconiosis is a respiratory disease commonly found in coal minors.
Additional Information
• Lungs is the respiratory organ in higher vertebrates.
• Lungs are organs without muscles.
• Alveoli is the functional unit of the lungs.
• Noise pollution can cause high blood pressure, heart disease, sleep disturbances, and stress.
• Water pollution can transmit diseases such as diarrhoea, cholera, dysentery, typhoid, and polio.

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Q50. Answer: (c) 2, 1, 3, 4

The pattern followed here is:

The given sentences are arranged according to the meaningful order.

S1: Shruti has been trying to lose weight.

2. The trainer has suggested her to start with regular exercising in the morning.

1. Regular exercising keeps our body fit and healthy.

3. She has not yet started her exercising sessions.

4. She says that because of late night office hours, it is difficult for her to get up early in the morning.

S6: I think it is just a lame excuse for her laziness.

Hence, the correct answer is "2, 1, 3, 4".

Q51. Answer: (b) A and B only

A. Some cars are Suzuki. All Suzukis are MPVs. Some cars are MPVs.

The least possible Venn diagram is:

Some cars are MPVs. → True

B. All men are humans. No human is red. No man is red.

The least possible Venn diagram is:

No man is red. → True

C. Every man loves his wife. All wives are beautiful. No beautiful has a husband.

No beautiful has a husband → False (As, there is no definite relation between beautiful and husband. Hence, false)

Hence, 'A and B only' is the correct answer.

Q52. Answer: (d) Invention

The logic is:

Gravity : Discovery → Gravity was discovered by Isaac Newton.

Similarly,

Telephone : ? → Telephone was invented by Alexander Graham Bell.

Hence, 'Invention' is the correct answer.

Q53. Answer: (a) 12

Given:

The old ratio of two numbers = 2 : 3

New ratio = 7 : 10

Calculation:

Let the numbers be 2b and 3b respectively.

(2b + 4)/(3b + 4) = 7/10

=> 20b + 40 = 21b + 28

=> b = 40 - 28

=> b = 12

Two numbers are:

=> 2b = 2 × 12 = 24, 3b = 3 × 12 = 36

Therefore The difference of the two numbers = 36 - 24 = 12

Shortcut Trick

Therefore The difference of the two numbers = 9 - 3 = 3 × 4 = 12

Q54. Answer: (c) Telnet

The correct answer is Telnet.

Key Points

• Any application that empowers users to remotely access another computer(no matter how far away) is called remote access.

• Telnet is an application protocol that uses a virtual terminal connection to offer bidirectional interactive text-oriented communication over the Internet.

• Telnet facilitates remote login on a computer.

• It also facilitates terminal emulation purposes.

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• Telnet was developed in 1969.

• Telnet allows users to execute various application programmes on a distant site and then transport the results back to their local computer.

Additional Information

• The Hypertext Transfer Protocol (HTTP) is the backbone of the internet's data transfer.

• It is a stateless protocol.

• Real-Time Protocol (RTP) is a protocol designed to handle real-time traffic (like audio and video) of the Internet.

• File Transfer Protocol is a set of rules that govern how computers transfer files from one system to another over the internet

Q55. Answer: (c) 12 days

Given:

No of days taken by Saurabh = 30

No of days taken by Kirpal = 20

Formula used:

No of days taken = Total work/One-day efficiency

Calculation:

Let the total work be = 1 unit

Work done by Saurabh in one day = 1/30

Work done by Kirpal in one day = 1/20

=> Combined work done by Saurabh and Kirpal in one day = 1/30 + 1/20 = 5/60

Therefore No of days taken by both of them working together = 1÷ 5/60 = 60/5

=> 12 days

Alternate MethodBy LCM Method

Calculation:

Let the total work done by Saurabh and Kirpal be the LCM of 30 and 20 respectively.

=> LCM (30, 20) = 60

Therefore No of days taken by Saurabh and Kirpal by working together = 60/(2 + 3) = 12

Q56. Answer: (d) 26

The correct answer is 26.

Key Points

• The United Nations is an intergovernmental organisation whose mission is to keep the world safe and secure.

• The United Nations Organization was formed on 24th October 1945, after World War II.

• The United Nations and the Government of India have a long history of close cooperation, and the United Nations system in India now includes 26 organisations having the honour of serving in the country.

• India is a member of the United Nations since its inception.

• On June 26, 1945, India and 50 other countries signed the United Nations Charter.

• India is the largest cumulative troop contributor to the United Nations, having provided troops for 50 of the 71 UN peacekeeping operations so far.

• In 1950, India was elected to serve its first two-year term on the Council.

• In January 2007, India sent the first-ever all-women police unit to serve in the UN peacekeeping mission in Liberia.

Additional Information

• The headquarters of the United Nations Organization is in New York City.

• The Charter of the UN was signed on 26th June 1945 by representatives of 50 nations.

• The United Nations now has 193 member countries.

• The United Nations' mission and work are driven by the goals and ideals outlined in its founding Charter.

• South Sudan is the newest member of the United Nations.

• The current Secretary-General of the United Nations Organization is Antonio Guterres.

Q57. Answer: (d) Turmeric

The correct answer is Turmeric.

Key Points

• Indian government challenges the US for patenting turmeric and forces them to revoke it.

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• American researchers of Indian origin, Suman K. Das and Hari Har P. Cohly of the University of Mississippi Medical Center put a claim to the US Patent and Trademark Office, maintaining that they had discovered haldi's healing properties.

• In March 1995, they received a patent for the Haldi medication.

• On March 6, 1997, the United States filed its first complaint with the World Trade Organization (WTO) against India's 'patent protection for pharmaceutical and agricultural chemical products.'

• The Council of Scientific and Industrial Research requested a reexamination from the US Patent Office.

• This came after Indian experts screamed from the rooftops about how we are losing our traditional knowledge to marauding foreign firms stealing our ancient medicinal practices.

• The US Patent Office said it made a mistake and revoked the turmeric patent.

• This is a significant victory because it rarely entirely revokes a patent that it has awarded.

• This victory will send a strong warning to all those bio-pirates of India's herbal wealth.

Q58. Answer: (c) A

The pattern followed here is:

According to the alphabetical positions of the letters,

Y - 3 = V;

V - 5 = Q;

Q - 7 = J;

J - 9 = A

Hence, ‘A’ is the correct answer.

Q59. Answer: (a) 1.8

Concept:

First five composite numbers = 4, 6, 8, 9, 10 (Which are obtained by multiplying two positive integers)

First five prime numbers = 2, 3, 5, 7, 11 (Which have only 2 factors, 1 and the number itself)

Formula used:

Mean = Sum of observations/No of observations

Calculation:

Mean of first 5 composite numbers = (4 + 6 + 8 + 9 + 10)/5 = 37/5

Mean of first 5 prime numbers = (2 + 3 + 5 + 7 + 11)/5 = 28/5

Therefore The required difference = 37/5 - 28/5 = 9/5

=> 1.8

Q60. Answer: (d) 17 h

Given:

Speed of the one man = 5 km/h

Speed of the other man = 5.5 km/h

Formulas used:

Relative Speed in the same direction = Speed A - Speed B

Time = Distance/Speed

Calculation:

Relative speed of both men = 5.5 - 5 = 0.5 km/h

Distance = 8.5 km

Time = 8.5 km/0.5 km/h

=> 17 hours

Therefore The required time = 17 hours

Q61. Answer: (d) 5^(th)

The correct answer is 5th.

• India ranked the world’s 5th largest economy in terms of size according to the GDP ranking of 2019.

• The ranking was prepared by the IMF’s October World Economic Outlook.

• India had overtaken the UK in 2019 to become the fifth-largest economy in the world.

• The United States ranked number one in the report.

• India regularly achieved annual growth of between 6-7%.

• India reached a total GDP size exceeding $3 trillion.
• India was in 9th place in 2010.
• Since 1995, India’s nominal GDP has jumped more than 700%.
• India is projected to surpass Japan to feature at the second position in the Asia-Pacific region by 2025.
• The gross domestic product (GDP) is a calculation of the total value of completed goods and services produced inside a country's borders during a given period of time, usually a year.

Q62. Answer: (d) 84 cm

Given:
In parallelogram ABCD, AL and CM are perpendicular to CD and AD respectively.
AL = 20 cm, CD = 18 cm and CM = 15 cm
Formula used:
Area of parallelogram = Base × Height
Perimeter of parallelogram = 2 × (Sum of parallel sides)
Calculation:
Area of ABCD with base DC = AL × DC = 20 × 18
=> 360 cm²
Again, Area of ABCD with base AD = CM × AD = 15 × AD
=> 360 cm2 = 15 × AD
=> AD = 24 cm
Therefore AD = BC = 24 cm, DC = AB = 18 cm
Perimeter of ABCD = 2 × (24 + 18)
=> 2 × 42
=> 84 cm
Therefore The required result = 84 cm

Q63. Answer: (c) Rs. 12,500.00

Given:
Difference between CI and SI for 2 years = Rs.20
Rate = 4%
Formulas used:
Difference = Principal × (R/100)²
Calculation:
Rs.20 = Principal × (4/100)²
=> 20 = Principal × 4/100 × 4/100
=> 20 × 100/4 × 100/4 = Principal
Therefore Principal = 12500

Q64. Answer: (c) Wildlife Crime Control Bureau

The correct answer is Wildlife Crime Control Bureau.
Key Points
• WCCB in the context of Environment and Forest stands for Wildlife Crime Control Bureau.
• Wildlife Crime Control Bureau is a statutory multi-disciplinary body.
• It was created to combat organized wildlife crime in the country.
• It was established by the Government of India under the Ministry of Environment and Forests.
• The Wildlife Crime Control Bureau has its headquarter in New Delhi.
• The provisions of the Wild Life (Protection) Amendment Act of 2006 came into effect on 4th September 2006.
Important Points
• It became operational in the year 2008.
• It has five regional offices at Delhi, Kolkata, Mumbai, Chennai, and Jabalpur and three sub-regional offices at Guwahati, Amritsar, and Cochin.
• It assists foreign governments and international organisations in facilitating coordination and universal action in the fight against wildlife crime.

Q65. Answer: (d) 1/3

Given:

Denominator = 2 + Numerator

Calculation:

Let the numerator be = a

=>The denominator be = 2 + a

As per the question;

a × 3 /(2 + a) × 2 = 1/2

=> 3a/(2 + a) = 1

=> 3a = 2 + a

=> 2a = 2

=> a = 1

Numerator = 1

Denominator = 1 + 2 = 3

Therefore The required fraction = 1/3

Alternate MethodBy Hit & Trial Method

By checking the condition, Denominator = 2 + Numerator

Option 1: 5 ≠ 2 + 2

Option 2: 4 ≠ 1 + 2

Option 3: 3 ≠ 2 + 1

Option 4: 3 = 2 + 1

Q66. Answer: (b) Chlorine

The correct answer is Chlorine.

Key Points

• The element having electronic configuration 2,8,7 is Chlorine.

• It is the member of group 17. It is a p - block element which means the valence shell containing the valence shell electrons in the p subshell.

• The systematic way of writing the configuration is 1s2, 2s2 2p6, 3s2 3p5. so the last 5 electrons are filled in p subshell.

• Chlorine is a chemical element with the symbol Cl and atomic number 17.

• The second-lightest of the halogens, it appears between fluorine and bromine in the periodic table and its properties are mostly intermediate between them.

• Chlorine is a yellow-green gas at room temperature.

Additional Information

• Chlorine has a variety of uses:

• It is used to disinfect water and is part of the sanitation process for sewage and industrial waste.

• During the production of paper and cloth, chlorine is used as a bleaching agent.

• It is also used in cleaning products, including household bleach which is chlorine dissolved in water.

Q67. Answer: (b) 25

Given:

The largest 3-digit number = 999

Concept:

Long division method

Calculation:

Let the number to be added in 999 is y.

Here, the remainder is 38

$31^2 < (999 + y) < 32^2$

=> $32^2 - 999 = 1024 - 999 = 25$

=> 999 + 25 = 1024 = 322

Therefore The number to be added in 999 to make it a perfect square is 25.

Alternate MethodBy Elimination Method

Option 1: 999 + 24 = 1023 ≠ Perfect square

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Option 2: 999 + 25 = 1024 = Perfect square

Option 3: 999 + 1 = 1000 ≠ Perfect square

Option 4: 999 + 12 = 1011 ≠ Perfect square

Q68. Answer: (a) Rs. 5,000

Given:

Monthly salary of Manish = Rs.50000

Old savings = 10% × 50000 = 5000

Calculation:

Old expenses on household = 40/100 × 50000 = Rs.20000

Old amount on other expenses = Salary - (Old savings + Old household expenses)

=> Rs.50000 - (Rs.20000 + Rs.5000) = Rs.25000

As per the question;

New savings = 2 × 10/100 × 50000 = Rs.10000

New balance of the salary = 50000 - 10000 = Rs.40000

Amount to be used on Household expenses = 50% of Rs.40000

=> 50/100 × 40000 = Rs.20000

New amount of other expenses = Salary - (New savings + New household expenses)

=> Rs.50000 - (Rs.10000 + Rs.20000) = Rs.20000

Therefore Reduction on the other expenses = Old - New

=> Rs.25000 - Rs.20000 = Rs.5000

Q69. Answer: (b) Only conclusion 1 follows

Conclusions:

1: P has an echo-point.

Conclusion 1 follows. All hill stations have an echo-point and P is a hill station, which clearly means P has an echo-point as P is a hill station and all hill stations have an echo-point.

2: Places other than hill stations do not have echo-points.

Conclusion 2 does not follows. The statements do no mentions whether places other than hill stations have an echo-point or not.

Hence, only conclusion 1 follows.

Additional Information

• If there are two or more sentences that are used to frame a statement, then, the sentences must be interrelated, and mutual contradiction should be there.

• Do not look for truthful notions. The information provided in the statement is the only requirement for a student to answer the question. No assumptions must be made.

• Read the statement carefully and look for keywords that are common between the statement and the conclusions.

• If there is more than one conclusion that is applicable to the statement, students must ensure that the conclusions they opt for have some relation with each other.

Q70. Answer: (d) Uttar Pradesh

The correct answer is Uttar Pradesh.

Key Points

• The Census of 2011 was the 7th census after Independence.

• A population Census is a process of collecting, compiling, analyzing, and disseminating demographic, social, cultural, and economic data relating to all persons in the country, at a particular time in ten years intervals.

• According to Census 2011:

• Uttar Pradesh is the most populated state of India.

• 16.16% of Uttar Pradesh's total population lives in Uttar Pradesh.

• Sikkim was the least populated State in India.

• Meghalaya has the highest population growth rate (27.95%) among the states.

• The population of Andaman and Nicobar is the lowest.

• Kerala was the most literate state in India.

• Bihar was the least Literate state in India.

• C. Chanderamouli was the Census Commissioner of India in 2011.

Additional Information

• During the British rule in India, the first census was conducted in 1872.

• The 1872 Census did not include all of the British territories they owned or controlled.

• W.C.Plowden conducted the 1881 Census on the 17th of February.

• In 1951, the first census of independent India was held.

Q71. Answer: (a) 2 times after the starting time

Given:

Priest of 1st temple ring the bells at an interval of 2 minutes

Priest of 2nd temple ring the bells at an interval of 3 minutes

Priest of 3rd temple ring the bells at an interval of 5 minutes

They start tolling for the first time at 8:00:00

Calculation:

LCM of 2, 3 and 5 is 30 min

Difference between 8:00 – 9:00 = 1 hour

Hence, Bell will ring in 60 min = 60/30

=> 2 times

Therefore Bell will ring 2 times after the starting time

Q72. Answer: (a) 256

The correct answer is 256.

Key Points

• The input/output ports are addressed using special instructions such as IN for input and OUT for output.

• An 8-bit port address should be followed by the IN or OUT instruction mnemonic.

• An 8-bit address is assigned to each I/O device to identify it.

• There will be 2^8=256 input ports and 256 output ports are possible in an 8085-based microcomputer.

• The port number usually followed from 0–255.

• The device that receives data for processing is called an input device.

• The keyboard is the most frequent input device.

• Any hardware device that sends data from a computer to another device is referred to as an output device.

• The monitor is the most frequent output device.

Q73. Answer: (c) 2011

Calculation:

Maximum number of batsman score 500+ runs in 2011 = 10

Therefore The required answer is 2011

Q74. Answer: (d) 3013

Calculation:

LCM of 18, 21 and 24 is 504

Let the number be 504k

According to the question

=> 504k – [(18 – 7) + (21 – 10) + (24 – 13)]/3

=> 504k – (33/3)

=> 504k – 11

Put the value of k so that it should be divisible by 23

Put k = 6

=> 504 × 6 – 11

=> 3024 – 11

=> 3013

Therefore The number is 3013

Q75. Answer: (d) 4/(√3)

Given:

x√12 = 4 + x√3

Calculation:

x√12 = 4 + x√3

=> 2x√3 = 4 + x√3

=> x(2√3 – √3) = 4

=> x = 4/√3

Therefore The value of x is 4/(√3)

Q76. Answer: (d) 9 times of the original area

Calculation:

Let the side of original triangle be a and area is A1 and the new area of the equilateral triangle be A2

Area of equilateral triangle (A1) = √3/4 × a^2

According to the question

On increasing sides by three times

New area of equilateral triangle (A2) = √3/4 × $(3a)^2$

=> √3/4 × $9a^2$

=> 9 × √3/4a^2

=> A2 = 9A1

Therefore The area of new equilateral will become 9 times of the original area

Q77. Answer: (b) 154

Given:

Radius = 21 cm

The angle of the sector = 40°

Formula used:

Area of the sector = $\pi r^2\theta/360°$

Calculation:

According to the question

=> (22 × 21 × 21 × 40°)/7 × 360°

=> 154 cm^2

Therefore The area of the sector is 154 cm^2

Q78. Answer: (b) 1919

The correct answer is 1919.

- The Rowlatt Satyagraha was a national protest against Rowlatt Act introduced in 1919.
- The Rowlatt Act was passed on 6th February 1919.
- Rowlatt Satyagraha was founded in 1919 by Mahatma Gandhi.
- Gandhiji became a true national leader as a result of the Rowlatt Satyagraha.
- The Rowlatt Act gave the British government the ability to arrest and imprison anyone for no cause.
- The Rowlatt Act was officially known as the "anarchical and revolutionary offenses act."
- Gandhiji referred to the Rowlatt Act as a "black act."
- On April 6, 1919, Mahatma Gandhi resolved to fight the Rowlatt Act and issued a call for satyagraha.
- The British viceroy who approved the Rowlatt Act was Lord Chelmsford.

Q79. Answer: (c) Hariyali

The correct answer is Hariyali.

Key Points

- Hariyali is a watershed development and management program implemented by the central and state governments.
- The project is being implemented at the Grama Panchayat level with peoples participation
- The main objectives of the Hariyali program are:
- Harvesting every drop of rainwater for purposes of irrigation, plantations to create sustainable sources of income for the village

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community as well as for drinking water supplies.

• Overall development of rural areas by creating regular sources of income for the Panchayat from rainwater harvesting and management.

• Employment generation and poverty alleviation in rural areas.

• All the district level, ZP/DRDA shall be the nodal authority for the implementation of all the area development programmes under the supervision and guidance of the State Government and the Government of India.

• A meeting of the Gram Sabha/ Ward Sabha shall be convened for the preparation of the Action Plan/Watershed Treatment Plan

Additional Information

• The Gram Panchayat shall maintain a separate account for the watershed project and all receipts from ZP/DRDA will be credited to this account.

• The Gram Panchayat shall constitute Self Help Groups (SHGs) in the watershed area.

• Neeru-Meeru is a programme in Andhra Pradesh was taken up constructions of various water harvesting structures dug out ponds, check dams through people participation

• Arvary Pani Sansad programme is associated with Rajasthan.

Q80. Answer: (b) Rs. 525.00

Given:

SP = Rs. 50

Gain = 5%

Loss = 5%

Calculation:

Let the original selling price be Rs. x

According to the question

=> (x × 100)/105 = (x – 50) × 100/95

=> 19x = 21x – 1050

=> 2x = 1050

=> x = Rs. 525

Therefore The original selling price is Rs. 525.00

Q81. Answer: (c) 8

The correct answer is 8.

Key Points

• The United Nations Security Council is one of the UN's most important bodies.

• It is in charge of maintaining international peace and security in the first place.

• India has been elected as a non-permanent member of the UN Security Council 8 times till Oct 2020.

• India has been elected as a non-permanent member of the Council for the years 1950-1951, 1967-1968, 1972-1973, 1977-1978, 1984-1985, 1991-1992, 2011-2012, and 2021-2022.

• India assumed the presidency of the United Nations Security Council (UNSC) for one month in August 2021.

• The next month of India's presidency of the Council will be December 2022.

Additional Information

• The United Nations Security Council met for the first time in church House in Westminster, London. January 17, 1946, in

• The Security Council has had a permanent home at the United Nations Headquarters in New York City since its first meeting.

• United Nations Security Council has 15 Members, and each Member has one vote.

• Among these 15 members, 5 are permanent members and 10 are non-permanent members.

• Permanent members:

• China.

• France.

• Russia.

• The United Kingdom.

• The United States.

• Non-permanent members:

• Estonia.

• India.

• Ireland.
• Kenya.
• Mexico.
• Niger.
• Norway.
• Saint Vincent and the Grenadines.
• Tunisia.
• Vietnam.

Q82. Answer: (c) Secondary consumers

Food chain:

• A food chain shows the feeding relationship between different organisms in a particular environment and/or habitat.

• A food chain shows how energy is passed from the sun to producers, from producers to consumers, and from consumers to decomposes such as fungi.

• They also show how animals depend on other organisms for food.

Key Points

Tropic level:

• Based on the source of their nutrition or food, organisms occupy a specific place in the food chain that is known as their trophic level.

• Producers belong to the first trophic level, herbivores (primary consumer) to the second and carnivores (secondary consumer) to the third.

• The important point to note is that the amount of energy decreases at successive trophic levels.

• Every food chain starts with producers at the base tropic level and tertiary consumers at the top of the tropic level.

Important Points

Tropic Level (from top to bottom)	Description	Example
Tertiary Consumers	• They feed on the secondary consumers.	Tiger, vulture etc.
Secondary consumers	• They can either be carnivores (feeding only on animals) or omnivores. - They feed on the primary consumers.	Small birds, wolves, snakes, mouse etc.
Primary Consumer	• They are also sometimes referred to as herbivores because they mainly feed on plants i.e. the producers. - They can also be omnivores (feeding on both plants and animals).	Cow, deer, grasshoppers, small insects etc.
Primary producers	• They produce food on their own with the help of photosynthesis.	Plants, grass, trees, algae, phytoplankton.

Thus, secondary consumers are in the third trophic level of the food chain.

Q83. Answer: (a) Shaukat Ali and Muhammad Ali

The correct answer is Shaukat Ali and Muhammad Ali.

Key Points

• The Khilafat movement is a pan-Islamic force in India that began in 1919 with the goal of resurrecting the Ottoman caliph as a symbol of unification among India's Muslim community during the British Raj.

• Shaukat Ali and Muhammad Ali led the Khilafat movement in India.

• The leaders joined Mahatma Gandhi's non-cooperation movement for Indian independence, vowing nonviolence in exchange for Gandhi's support for the Khilafat movement.

• Gandhi’s suspension of his movement and his arrest in March 1922 weakened the Khilafat movement still further.

• When Atatürk destroyed the caliphate in 1924, the movement came to an end.

• Khilafat movement started in India during the reign of Lord Chelmsford.

• The Urdu weekly Hamdard and the English weekly Comrade were published under the guidance of Shaukat Ali and Muhammad Ali.

• Mohammad Ali was elected to become the President of the Indian National Congress party in 1923

• In 1936, Shaukat Ali became a member of the All India Muslim League.

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Q84. Answer: (d) 30°

Given:

The shadow of a pole of 10 m height = 10√3 m

Calculation:

Let the angular elevation of sun = θ

tanθ = Perpendicular/Base

=> tanθ = 10/10√3

=> tanθ = 1/√3

=> tanθ = tan 30°

=> θ = 30°

Therefore The angular elevation of the sun is 30°

Q85. Answer: (b) China

The correct answer is China.

Key Points

• Indonesia hosted the 2018 Asian Games in Jakarta and Palembang.

• During the opening ceremony, India's flag-bearer was Neeraj Chopra.

• China came out on top with 132 gold medals.

• In the end, India came in eighth place.

• India won 70 medals in total, including 16 gold.

• During the closing ceremony, Rani Rampal carried the Indian flag.

• In men's freestyle 65 kg wrestling, Bajrang Punia earned India's first gold medal.

• Japan placed first in the Asian Games between 1951 and 1978.

• Hangzhou, China, will host the Asian Games in 2022.

Q86. Answer: (b) [figure]

The pattern follows here is:

All figures except option 2 have 4 symbols - multiplication, division, square and a circle.

Option 2 have symbols - addition, division, square and a circle.

Hence, ‘option 2’ is the odd one out.

Q87. Answer: (a) DB

The logic followed is:

A. You are on the national highway.

The first statement does not implies the above given statement.

You can drive over 60 km/h only on the national highways. Here the word only clearly indicates that you are not on the national highway.

B. You cannot drive over 60 km/h.

The first statement implies the above given statement.

You can drive over 60 km/h only on the national highways, which means you are not on the national highway, so you cannot drive over 60 km/h.

C. You can drive over 60 km/h.

The first statement does not implies the above given statement.

The statement clearly mentions that you can drive over 60 km/h only on the national highways, so you cannot drive over 60 km/h.

D. You are not on the national highway.

The first statement implies the above given statement.

You can drive over 60 km/h only on the national highways. Here the word only clearly indicates that you are not on the national highway.

Hence, ‘DB’ is the correct answer.

Additional Information

• If there are two or more sentences that are used to frame a statement, then, the sentences must be interrelated, and mutual contradiction should be there.

• Do not look for truthful notions. The information provided in the statement is the only requirement for a student to answer the question. No assumptions must be made.

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• Read the statement carefully and look for keywords that are common between the statement and the conclusions

• If there is more than one conclusion that is applicable to the statement, students must ensure that the conclusions they opt for have some relation with each other.

Q88. Answer: (a) 6

Last year, there were three sections in a competitive exam.

Out of them 33 students cleared the cut-off in Section A, 34 students cleared the cut-off in Section B and 32 students cleared the cut-off in Section C.

10 students cleared the cut-off in section A and section B, 9 cleared the cut-off in section B and section C and 8 cleared the cut-off in section A and section C.

The number of students who cleared only one section was equal and was 21 for each section.

Number of students who cleared all the three sections = Students who cleared the cut-off in section A and section B + Students who cleared the cut-off in section B and section C + Students who cleared the cut-off in section A and section C - The number of students who cleared only one section

= (10 + 8 + 9) - 21

= 27 - 21

= 6

Hence, '6' is the correct answer.

Alternate Method

Here is the Venn diagram representing the students who cleared the sections:

Only Section A: 21 students

Only Section B: 21 students

Only Section C: 21 students

A and B: 10 students

B and C: 9 students

A and C: 8 students

All three sections (A, B, and C): 6 students.

Hence, '6' is the correct answer.

Q89. Answer: (c) Edwin

Five students - Radha, Sujit, Mihir, Anshul and Vikas.

Five books - on the subjects of Accountancy, Business Studies, Mathematics, Economics and English

Authors - Jain, Kohli, Das, Sharma and Edwin.

• Jain is the author of the Accountancy book, which is not owned by Vikas or Radha.

• Anshul owns the book written by Edwin.

• Mihir owns the Mathematics book.

• Vikas has the English book, which is not written by Kohli.

• The Economics books is written by Sharma.

Students	Books	Authors
Radha, Vikas	Accountancy	Jain
	Economics	Sharma
Mihir	Mathematics	
Anshul		Edwin
Vikas	English	Kohli

From the above table, it is clear that Kohli is the author of Mathematics book and Anshul have Business Studies book, whose author is Edwin.

Students	Books	Authors
Radha, Vikas	Accountancy	Jain
	Economics	Sharma
Mihir	Mathematics	Kohli

Anshul	Business Studies	Edwin
Vikas	English	Kohli

So, Edwin is the author of the Business Studies book.

Hence, 'Edwin' is the correct answer.

Q90. Answer: (c) 1008

Given: 4, 14, 60, 248, ?

The logic follows here is:

$4 = 4^1 - 0$

$14 = 4^2 - 2 = 4^2 - 2^1$

$60 = 4^3 - 4 = 4^3 - 2^2$

$248 = 4^4 - 8 = 4^4 - 2^3$

So the series is of the form

$4^n - 2^{(n-1)}$ where n = 1, 2, 3, 4, ...

So the next term is obtained by putting n = 5

Similarly,

$= 4^5 - 2^4$

$= 1024 - 16$

$= 1008$

Hence, 1008 is the correct answer.

Q91. Answer: (c) 100%

Calculation:

Percentage increase in sales of mobile phones in 2004 = 35

Percentage increase in sales of mobile phones in 2008 = 70

Percentage increase in sales of mobile phones from 2004 to 2008 = (70 – 35)/35 × 100

=> 35/35 × 100

=> 100%

Therefore The required percentage is 100%

Q92. Answer: (b) Vaishali

Five ladies Simran, Vaishali, Namita, Preeti, and Bhawna meet in a hotel for a party. They all sit around a circular table facing the centre of the table.

(i) Simran is sitting to the left of Preeti.

(ii) Preeti is sitting between Namita and Simran.

(iii) Bhawna is sitting to the right of Vaishali.

Clearly, Vaishali is sitting to the right of Namita.

Hence, 'Vaishali' is the correct answer.

Q93. Answer: (a) 619127

The logic is:

As PAINT is coded as 83527 and SCORE is coded as 49061.

Drawing the code chart using the above information we get:

P	A	I	N	T
8	3	5	2	7

S	C	O	R	E
4	9	0	6	1

Similarly,

R	E	C	E	N	T

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6	1	9	1	2	7

Hence, '619127' is the correct answer.

Q94. Answer: (b) Param Vir Chakra

The description is as follows:

Option	Description	
1.	Padma Shri	Padma Shri, also spelled Padma Shree, is the fourth-highest civilian award of the Republic of India.
2.	Param Vir Chakra	The Param Vir Chakra is India's highest military decoration, awarded for displaying distinguished acts of valour during wartime.
3.	Padma Bhushan	The Padma Bhushan is the third-highest civilian award in the Republic of India.
4.	Padma Vibhushan	The Padma Vibhushan is the second-highest civilian award of the Republic of India.

Hence, 'Param Vir Chakra' is the odd one out.

Q95. Answer: (c) Harmony

The logic is:

Happiness : Sorrow → Happiness is antonym of Sorrow.

Similarly,

Conflict : ? → Conflict is antonym of Harmony.

Hence, 'Harmony' is the correct answer.

Q96. Answer: (b) Treacherous

The logic follows here is:

Except options 2, all are the synonyms of each other, whereas Treacherous is antonyms of Devoted, Faithful, Loyal.

The description is as follows:

Option	Description	
1.	Devoted	Loyal, Faithful
2.	Treacherous	Guilty of or involving betrayal or deception.
3.	Faithful	Loyal
4.	Loyal	Faithful

Hence, 'Treacherous' is the odd one out.

Q97. Answer: (d) lu na fa

The code of each word is shown below:

The code for of is na.

code for the is lu.

Code for way is fa.

Clearly, "of the way" is represented by "na lu fa".

Hence, 'lu na fa' is the correct answer.

Q98. Answer: (c) Akash

Four brothers: Aman, Gaurav, Aakash and Lokesh.

Occupations: Lawyer, Doctor, Professor and Engineer.

(1) Lokesh who is not the Professor, starts a conversation about the on-going IPL and after him the Engineer gives a long discourse about the teams that should reach the play-offs, implies Lokesh is not the Engineer.

(2) Aman who is sitting across the Engineer and next to the Professor responds to the Engineer's predictions. This gives two

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possible arrangements, as follows:

(3) Akash speaks only at the end, implies he is not the Engineer. Therefore, the final arrangement is as follows:

Now, we can answer that Akash is the professor.

Hence, Akash is the correct answer.

Q99. Answer: (b) BEJS

The pattern followed here is:

According to the alphabetical positions of the letters,

B (C, D) E (F, G, H, I) J (K, L, M, N, O, P, Q, R) S

Clearly, BEJS is the letter-cluster in which the letters skipped between adjacent letters is in the order 21, 22, 23

Hence, 'BEJS' is the correct answer.

Q100. Answer: (c) Father

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

Drawing the family tree as the given information:

Clearly, Rohit is father of the girl in the photograph.

Hence, 'Father' is the correct answer.

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