

# CUET 2023

## General Test (22 May 2023) Previous Year Paper With Solutions

1. Alka is older than Mala, Gopal is older than Mala, but Younger than Alka. Kapil is younger than Ram and Mala. Mala is older than Ram. Whose age is exactly in the middle of all the five?

- (a) Alka (b) Mala  
(c) Gopal (d) Ram

2. If ROAST is coded as PQYUR in a certain language, then how will SLOPPY be coded in that language?

- (a) RANMQ (b) QNMRNA  
(c) NRMNQA (d) MRNAQN

3. Out of the given options, find out the odd one that does not belongs to the group.

- (a) Square (b) Circle  
(c) Rectangle (d) Triangle

4. 8 men or 12 women can do a work in 10 days. In how many days can 4 men and 4 women do the same work?

- (a) 10 (b) 12  
(c) 16 (d) 20

5. Who discovered electron?

- (a) J.J. Thomson (b) Louis Pasteur  
(c) J.D. Watson (d) Edward Jennet

6. Match List - I with List - II.

**List - I**  
Scientist

**List - II**  
Research Area/  
Discoveries

- |                         |                                 |
|-------------------------|---------------------------------|
| A. Homi Jehangir Bhabha | I. Number theory                |
| B. Srinivasa Ramanujan  | II. Aerospace                   |
| C. Jagdish Chander Bose | III. Nuclear physics            |
| D. Vikram Sarabhai      | IV. Measurement of plant growth |

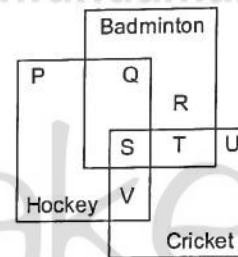
Choose the **most appropriate** answer from the options given below:

- (a) A-III, B-I, C-II, D-IV  
(b) A-I, B-III, C-IV, D-II  
(c) A-III, B-I, C-IV, D-II  
(d) A-IV, B-I, C-III, D-II

7. If a, b, c are in G.P. and  $a^{\frac{1}{x}} = b^{\frac{1}{y}} = c^{\frac{1}{z}}$ , then which one of the following is correct?

- (a)  $2x = y + z$  (b)  $x^2 = yz$   
(c)  $\frac{1}{x} + \frac{1}{z} = \frac{2}{y}$  (d)  $2y = x + z$

8. The given diagram represent people who play Hockey, Cricket and Badminton. See the diagram and find out those people who play all the three games?



- (a) T + U (b) P + Q + R  
(c) Q + R (d) S

9. The base radius of a cylinder is 5 m more than its height. If the curved surface area of the cylinder is  $792 \text{ m}^2$ , then what is the volume of the cylinder

(in  $\text{m}^3$ )? (Use  $\pi = \frac{22}{7}$ )

- (a) 5306 (b) 5244  
(c) 5544 (d) 5462

10. What is the median of the following data?

1, 0, 2, 4, 1, 2, 1, 1, 2, 5, 5, 0, 1, 2, 3

- (a) 0 (b) 1  
(c) 2 (d) 3

11. A die is thrown twice. What is the probability that the number in the second throw is higher than the number in the first throw?

- (a)  $\frac{5}{36}$  (b)  $\frac{2}{9}$   
(c)  $\frac{5}{12}$  (d)  $\frac{7}{12}$

12. Which is not an example of epithelial tissue?  
(a) Cartilage (b) Gland  
(c) Skin (d) Intestine
13. Host country of G-20 Summit in 2023 is \_\_\_\_\_.  
(a) Indonesia (b) India  
(c) Italy (d) Japan
14. Out of the following which is the largest exporter of cotton textile in the world?  
(a) U.S.A. (b) China  
(c) Japan (d) India
15. Boric acid is used as an \_\_\_\_\_.  
(a) Antipyretic (b) Analgesic  
(c) Antiseptic (d) Catalytic agent
16. A shirt bought for Rs. 270 is marked at 8% higher than the cost price and sold at 10% discount. What is the selling price (in Rs.) of the shirt?  
(a) 260 (b) 262.44  
(c) 267.44 (d) 270
17. Which state or Union territories has higher life expectancy?  
(a) Punjab (b) Uttar Pradesh  
(c) Madhya Pradesh (d) Uttarakhand

18. Match List - I with List - II.

List - I	List - II
Name of Battle	B/W
A. Battle of Buxar	I. Ashoka and Kings of Kalinga
B. Battle of Samugarh	II. Sirajuddaula and English Forces
C. Battle of Plassey	III. Aurangzeb and Imperial Forces
D. Kalinga War of Muslim	IV. Joint Forces of _____ and English Forces

Choose the **most appropriate** answer from the options given below:

- (a) A-IV, B-III, C-I, D-II (b) A-IV, B-III, C-II, D-I  
(c) A-I, B-III, C-II, D-IV (d) A-III, B-IV, C-II, D-I

19. The last day of a century cannot be either

- A. Tuesday B. Thursday  
C. Saturday D. Sunday

Choose the **most appropriate** answer from the options given below:

- (a) A and B only (b) A and D only  
(c) A, B and C only (d) A, C, and D only

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20. Rajesh is the brother of Ankit. Sushma is the sister of Shubham. Ankit is the son of Sushma. How is Rajesh related to Sushma?  
(a) Father (b) Brother  
(c) Son (d) Nephew
21. If 1<sup>st</sup> January 2007 was Monday then what day of the week lies on 1<sup>st</sup> January 2008?  
(a) Tuesday (b) Monday  
(c) Wednesday (d) Sunday
22. How many numbers from 1 to 100 are there each of which is not only exactly divisible by 4 but also has 4 as a digit?  
(a) 21 (b) 20  
(c) 7 (d) 10
23. In the morning a man is standing facing North. In which direction will his shadow be formed?  
(a) East (b) West  
(c) North (d) South
24. Match List - I with List - II.

List - I	List - II
Nicknames	Cities
A. Silver City	I. Udaipur
B. Lake City	II. Jamshedpur
C. Steel City	III. Jodhpur
D. Blue City	IV. Cuttack

Choose the **most appropriate** answer from the options given below:

- (a) A-II, B-III, C-I, D-IV (b) A-I, B-IV, C-II, D-III  
(c) A-IV, B-I, C-II, D-III (d) A-IV, B-I, C-III, D-II

25. A ladder leaning against a wall makes an angle of 60° with the ground. If the length of the ladder is 19 m, then what is the distance of the foot of the ladder from the wall?

- (a) 7.5 m (b) 8 m  
(c) 8.5 m (d) 9.5 m

26. Match List - I with List - II.

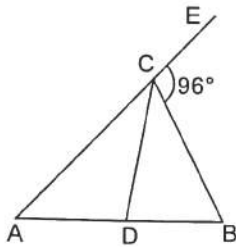
List - I	List - II
A. Archery	I. P.V. Sindhu
B. Hockey	II. Geeta Phogat
C. Wrestling	III. Pargat Singh
D. Badminton	IV. Deepika Kumari

Choose the **most appropriate** answer from the options given below:

- (a) A-III, B-II, C-IV, D-I (b) A-IV, B-IV, C-I, D-III  
(c) A-IV, B-III, C-I, D-II (d) A-IV, B-III, C-II, D-I

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27. In the given figure, if  $AD = CD = BC$ , then the  $\angle CDB$  is:



- (a)  $64^\circ$
- (b)  $84^\circ$
- (c)  $32^\circ$
- (d)  $16^\circ$

28. **Statement** : Most jeans in that shop are expensive.

Choose the correct option which logically follow the above statement.

- (a) There are no cheap jeans available in that shop
- (b) Handloom jeans in that shop are cheap
- (c) There are cheap jeans also in that shop
- (d) Some jeans in that shop are expensive

29. MGNREGA stands for:

- (a) Mahatma Gandhi National Regular Employment Generating Act
- (b) Mahatma Gandhi National Regional Employment Guarantee Act
- (c) Mahatma Gandhi National Rural Employment Guarantee Act
- (d) Mahatma Gandhi National Rural Regular Employee Guarantee Act

30. Choose the **most appropriate** alternative word

Influenza : Virus :: Typhoid : \_\_\_\_\_ ?

- (a) Parasite
- (b) Protozoa
- (c) Bacteria
- (d) Bacillus

31. If the points  $A(6, 1)$ ,  $B(8, 2)$ ,  $C(9, 4)$  and  $D(7, k)$  are the vertices of a parallelogram taken in order, then find the value of  $k$ .

- (a) 3
- (b) 5
- (c) 7
- (d) 9

32. If L stand for +, M stand for -, N stand for  $\times$ , P stand for  $\div$ , Then  $14 N 10 L 42 P 2 M 8 = ?$

- (a) 248
- (b) 25
- (c) 153
- (d) 216

33. What will replace '?' in the given figure?

+	-	-	$\times$
+	$\times$	+	+
?		$\times$	+
		-	+

(a) 

$\div$	+
$\times$	-

(b) 

+	-
$\div$	$\times$

(c) 

$\div$	+
+	-

(d) 

-	$\times$
$\div$	+

34. Find the missing term?

1, 6, 15, \_\_\_\_\_, 45, 66, 91

- (a) 28
- (b) 27
- (c) 26
- (d) 27

35. On dividing 15968 by a certain number, the quotient is 89 and the remainder is 37. Find the sum of the digits of the divisor.

- (a) 12
- (b) 19
- (c) 17
- (d) 21

36. In certain code, 253 means 'books are old', 546 means 'man is old' and 378 means 'Buy good books' what stand for 'are' in the code?

- (a) 2
- (b) 5
- (c) 6
- (d) 4

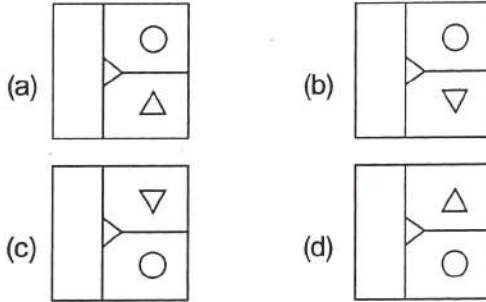
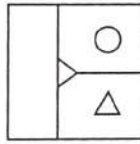
37. In an examination, the average marks of the entire class was 70. If average marks scored by 10% of the students was 95 and average marks scored by other 20% of the students was 20, then what was the average marks of the remaining students of the class? (correct to one decimal place)

- (a) 78.7%
- (b) 80.2%
- (c) 80.7%
- (d) 82.5%

38. Nearest planet to the earth \_\_\_\_\_.

- (a) Venus
- (b) Mercury
- (c) Jupiter
- (d) Saturn

39. In the following question, choose the **most appropriate** water image from alternatives (1), (2), (3) and (4) of the figure (A)



40. A fraction becomes  $\frac{6}{5}$  when 5 is added to its numerator and becomes  $\frac{1}{2}$  when 4 is added to its denominator. The fraction is:

- (a)  $\frac{8}{9}$  (b)  $\frac{7}{10}$   
(c)  $\frac{7}{8}$  (d)  $\frac{6}{11}$

41. 260 kg rice is divided in three parts such that the first part is 5 kg more than the second part and its ratio with the third part is 1 : 3. The three parts (in kg) respectively are:

- (a) 53, 108, 99 (b) 53, 149, 58  
(c) 53, 49, 158 (d) 53, 48, 159

42. The average of two numbers is 56. If 4 is added to the smaller number, then the ratio of the new number to the other number is 1:3. What is the smaller numbers?

- (a) 27 (b) 25  
(c) 35 (d) 87

43. How much simple interest will a sum of Rs. 4800 earn at  $10\frac{1}{2}\%$  per annum in 2 years 3 months?

- (a) Rs. 918 (b) Rs. 1134  
(c) Rs. 1234 (d) Rs. 1256

44. Who was the founder of "Indian National Congress"?

- (a) Lala Lajpat Rai  
(b) Pt. Jawahar Lal Nehru  
(c) Mahatma Gandhi  
(d) A.O. Hume

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45.  $\frac{256 \times 256 \times 256 - 144 \times 144 \times 144}{256 \times 256 + 256 \times 144 + 144 \times 144}$  is equal to :  
(a) 122 (b) 112  
(c) 400 (d) 312

46. Jamshedpur is situated at the bank of \_\_\_\_\_ river.  
(a) Godavri (b) Damodar  
(c) Subarnarekha (d) Soan

47. In how many years will a sum of Rs. 800 become Rs. 926.10 at 10% per annum compounded semi-annually?

- (a)  $2\frac{1}{2}$  (b)  $1\frac{1}{2}$   
(c) 1 (d) 3

48. The area of a right angled triangle is numerically 30 times its height. How long is its base?

- (a) 80 unit (b) 85 unit  
(c) 60 unit (d) 75 unit

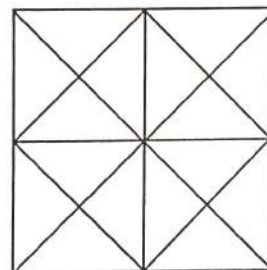
49. Six students, A, B, C, D, E and F are sitting on the ground. A and B belong to Rachna house, while the rest belong to Amar house. D & F are tall, while other are short. C & D are wearing glasses, while others are not wearing. Which girl of Amar house is tall and wearing glasses?

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

50. In an examination, 96% of the students passed and 500 students failed. How many students appeared in the examination?

- (a) 14000 (b) 12500  
(c) 12000 (d) 13500

51. Find the number of triangles and squares in the given figure.



- (a) 40 triangles, 12 squares  
(b) 36 triangles, 12 squares  
(c) 44 triangles, 10 squares  
(d) 14 triangles, 16 squares

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52. Arrange the following Revolutionary Organisation in Chronological order:

- A. Hindustan Socialist Republican Association
- B. Abhinav Bharat
- C. Hindustan Republican Association
- D. Indian Independence League
- E. Ghadar Party

Choose the **most appropriate** answer from the options given below:

- (a) B, E, D, C, A
- (b) C, B, D, A, E
- (c) E, B, A, D, C
- (d) B, C, D, A, E

53. Match List - I with List - II.

List - I	List - II
Books	Authors
A. Death of a City	I. Maulana Abdul Kalam Azad
B. Arthshastra	II. Lala Lajpat Rai
C. Unhappy India	III. Amrita Pritam
D. India Wins Freedom	IV. Kavntilaya

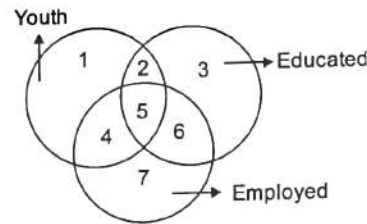
Choose the **most appropriate** answer from the options given below:

- (a) A-IV, B-III, C-II, D-I
- (b) A-III, B-IV, C-II, D-I
- (c) A-IV, B-III, C-I, D-II
- (d) A-III, B-IV, C-I, D-II

54. How many times the hands of a clock are at right angle in a day?

- (a) 24
- (b) 48
- (c) 44
- (d) 22

55. Study the below diagram and identify the Region representing youth who are employed but not educated?



- (a) 4 only
- (b) 5 and 6
- (c) 7 only
- (d) 3 only

56. Heavy water,  $D_2O$  have molecular mass of \_\_\_\_\_.

- (a) 20
- (b) 18
- (c) 22
- (d) 24

57. India is the \_\_\_\_\_ largest country (in term of Area) in the world.

- (a) Fifth
- (b) Eight
- (c) Seventh
- (d) Second

58. Bharatpur Bird Sanctuary located in Rajasthan is also known as \_\_\_\_\_ ?

- (a) Kakadev National Park
- (b) Keoladeo National Park
- (c) Jaldapara National Park
- (d) Kanha National Park

59. Two boys A and B start at the same time to ride from Delhi to Meerut, 60 km away. A rides 4 km/h slower than B. B reaches Meerut and at once turns back meeting A at a place 12 km from Meerut. Find the speed of A.

- (a) 6 km/h
- (b) 8 km/h
- (c) 12 km/h
- (d) 4 km/h

60. Who is the Author of 'India- The mother of Democracy' ?

- (a) Sadhi Tharoer
- (b) Vikram Seth
- (c) Dr. Bajrang Lal Gupta
- (d) Dharmendra Pradhan

## Answer Keys

- |         |         |         |         |         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. (b)  | 2. (b)  | 3. (b)  | 4. (b)  | 5. (a)  | 6. (c)  | 7. (d)  | 8. (d)  | 9. (c)  | 10. (c) |
| 11. (c) | 12. (a) | 13. (b) | 14. (b) | 15. (c) | 16. (b) | 17. (a) | 18. (b) | 19. (c) | 20. (c) |
| 21. (a) | 22. (c) | 23. (b) | 24. (c) | 25. (d) | 26. (d) | 27. (a) | 28. (c) | 29. (c) | 30. (c) |
| 31. (a) | 32. (c) | 33. (a) | 34. (a) | 35. (c) | 36. (b) | 37. (c) | 38. (a) | 39. (c) | 40. (b) |
| 41. (d) | 42. (b) | 43. (b) | 44. (d) | 45. (b) | 46. (c) | 47. (b) | 48. (c) | 49. (c) | 50. (b) |
| 51. (c) | 52. (a) | 53. (b) | 54. (c) | 55. (a) | 56. (a) | 57. (c) | 58. (b) | 59. (b) | 60. (d) |

## Explanations

- b From statement 1, Alka > Mala and Alka > Gopal > Mala.  
From statement 2, Kapil < Ram and Mala  
From statement 3, Mala > Ram  
We get, Alka > Gopal > Mala > Ram > Kapil  
Mala's Age is exactly in the middle of all the five.
- b Alternate -2 and +2 in alphabet position is taking place. By this rule, SLOPPY will be coded as QNMRNA.
- b The odd one out is circle. A triangle, square and a rectangle all have vertices as well as edges. On the other hand, a circle does not have vertices or edges.
- b  $8 \text{ men} = 12 \text{ women} \Rightarrow 4 \text{ men} = 6 \text{ women}$   
 $4 \text{ men} + 4 \text{ women} = 6 \text{ women} + 4 \text{ women}$   
 $= 10 \text{ women}$   
Given, 12 women can do a piece of work in 10 days  
 $\Rightarrow 1 \text{ woman can do the same work in } (12 \times 10) \text{ days}$   
 $\Rightarrow 10 \text{ women can do the same work in } 12 \times 10/10 \text{ days} = 12 \text{ days.}$
- a In 1897, J. J. Thomson discovered the electron while researching cathode rays, which he discovered were made up of negatively charged particles much smaller than atoms.
- c Homi Jehangir Bhabha was an Indian nuclear physicist who is widely credited as the "father of the Indian nuclear programme". Srinivasa Ramanujan FRS was an Indian mathematician. Though he had almost no formal training in pure mathematics, he made substantial contributions to mathematical analysis, number theory, infinite series, and continued fractions, including solutions to mathematical problems then considered unsolvable. Jagadish Chandra Bose was a Plant Physiologist and physicist who invented the crescograph, a device for measuring the growth of plants. Vikram Sarabhai was an Indian physicist and astronomer who initiated space research and helped to develop nuclear power in India.
- d  $a^{1/x} = b^{1/y} = c^{1/z} = k$   
 $\Rightarrow a = k^x, b = k^y, \text{ and } c = k^z$   
Now, a, b and c are in GP.  
 $b^2 = ac$   
 $\Rightarrow k^{2y} = k^x \times k^z$   
 $\Rightarrow k^{2y} = k^{x+z}$   
 $\Rightarrow 2y = x + z$
- d The people who play all the three games = S
- c Let height be 'x' m, then radius will be (x + 5)m.  
Curved surface area of cylinder =  $2 \pi r h$ .  
 $792 = 2 \times (22/7) \times (x + 5) \times x$   
 $\Rightarrow x^2 + 5x = 126$   
 $\Rightarrow (x - 9)(x + 14) = 0$   
Since height is positive, therefore,  $x = 9 \text{ m}$ , which gives radius as 14 m.  
Hence, required volume is  $5544 \text{ m}^3$ .
- c Arrange the ascending order.  
0, 0, 1, 1, 1, 1, 1, 2, 2, 2, 2, 3, 4, 5, 5  
Since, therefore are 15 terms, median is the middle most term which is  $(15 + 1)/2 = 8$ , which is 2.
- c Sample space is 36.  
Number of cases where number in second throw is higher than the number in the first throw:  
(1, 2), (1, 3), (1, 4), (1, 5), (1, 6), (2, 3), (2, 4), (2, 5), (2, 6), (3, 4), (3, 5), (3, 6), (4, 5), (4, 6), (5, 6), which is total 15 cases.  
Required probability =  $15/36 = 5/12$

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12. a Epithelial tissue consists of a thin layer of cells which make up the lining of an organ or body structure. Epithelial cells adhere to a structure called the basement membrane, and can form barriers around organs or parts of the body. The connective tissue connects various parts of the body. Tendon, ligament, bone and cartilage are examples of different connective tissues.
13. b The 2023 G20 New Delhi summit is the upcoming eighteenth meeting of G20, a summit scheduled to take place in Bharat Mandapam International Exhibition-Convention Centre, Pragati Maidan, New Delhi in 2023. It will be the first G20 summit to be held in India as well as in South Asia.
14. b In 2021, China exported approximately 12.54 billion U.S. dollars worth of woven cotton fabric to the rest of the world. India ranked second with an export value of about 2.26 billion U.S. dollars.
15. c Boric acid is used as a fireproofing agent for wood, as a preservative, and as an antiseptic. It is used in the manufacture of glass, pottery, enamels, glazes, cosmetics, cements, porcelain, leather, carpets, hats, soaps, artificial gems, and in tanning, printing, dyeing, painting, and photography.
16. b Cost price is Rs. 270.  
Marked price is  $1.08 \times 270 = 291.6$   
Selling price is  $291.6 \times 0.9 = 262.44$ .
17. a Among the given options, Punjab has the highest life expectancy.
18. b The Battle of Buxar was fought between 22 and 23 October 1764, between the forces under the command of the British East India Company, led by Hector Munro, and the combined armies of Mir Qasim, Nawab of Bengal till 1764; the Nawab of Awadh, Shuja-ud-Daula; and the Mughal Emperor, Shah Alam II. The Battle of Plassey was fought in north-eastern India on 23 June 1757. Troops of the British East India Company, led by Robert Clive, came up against the forces of Siraj-ud-Daulah, the last Nawab of Bengal, and his French allies. Battle of Samugarh was a decisive battle in the struggle for the throne during the Mughal war of succession (1658–1659) between the sons of Mughal Emperor Shah Jahan after the emperor's serious illness in September 1657. The battle of Samugarh was fought between Dara Shikoh (the eldest son and heir apparent) and his three younger brothers Aurangzeb, Shah Shuja and Murad Baksh (third and fourth sons of Shah Jahan) to decide who would be the heir of the throne after their father. The Kalinga war was fought between Ashoka and Kalinga King Raja Anantha Padmanabha in the year 261 BCE.
19. c 100 years contains 5 odd days.  
So, last day of 1st century is 'Friday'  
200 years contain  $(5 \times 2) = 10$  odd days  
 $= 3$  odd days.  
So, last day of 2nd century is 'Wednesday'.  
300 years contain  $(5 \times 3) = 15$  odd days  
 $= 1$  odd day.  
 $\therefore$  Last day of 3rd century is 'Monday'.  
400 years contain 0 odd days.  
 $\therefore$  Last day of 4th century is 'Sunday'.  
Since the order is continually kept in successive cycles, we see that the last day of a century cannot be Tuesday, Thursday or Saturday.
20. c Since Rajesh and Ankit are brothers and Ankit is the son of Sushma, therefore, Rajesh is also the son of Sushma.
21. a Since 2007 was not a leap year there will be only one extra day.  
Given that 1st January 2007 was Monday, next year the same day will be Tuesday.
22. c The numbers are 4, 24, 40, 44, 48, 64, and 84.  
Hence, the required number is 7.
23. b The morning sun rises from the east, so his shadow will fall towards the west.
24. c Cuttack is known as the Silver City of India. Udaipur known as the "City of Lakes". Jodhpur, also known as the "Blue City" is an eye candy in the middle of the Thar Desert. Jamshedpur (Named after Jamshedji Tata) is the city called as steel City of India which is located in Jharkhand state.
25. d We know that  $\cos 60^\circ = 1/2$   
 $\Rightarrow$  Distance from the wall  $= 19/2 = 9.5$  m.
26. d Pusarla Venkata Sindhu is an Indian badminton player. Geeta Phogat is a freestyle wrestler who won India's first ever gold medal in wrestling at the Commonwealth Games in 2010. Pargat Singh is a hockey player turned politician in India and belongs to the Indian National Congress in Punjab. Deepika Kumari is an Indian professional archer.

27. a In triangle CDB,  $\angle CDB = \angle CBD = x$  (say)  
In triangle ACD,  $\angle CDA = 180 - x$  and  $\angle DAC = \angle DCA = x/2$   
At point C,  $180 - (180 - 2x) - x/2 = 96$   
 $\Rightarrow x = 64^\circ$ .
28. c Most jeans are expensive, which means that cheap jeans are also available.
29. c Mahatma Gandhi National Rural Employment Guarantee Act 2005 or MGNREGA, earlier known as the National Rural Employment Guarantee Act or NREGA, is an Indian social welfare measure that aims to guarantee the 'right to work'.
30. c Influenza is caused by a virus whereas Typhoid is caused by bacteria.
31. a Given A(6, 1), B(8, 2), C(9, 4), D(7, k) are vertices of a parallelogram in that order.  
In the parallelogram AB = CD and BC = AD  
 $\Rightarrow$  Using distance formula we get,  
 $(8 - 6)^2 + (2 - 1)^2 = (9 - 7)^2 + (4 - k)^2 \Rightarrow k = 3, 5$   
Only  $k = 3$  satisfies the other equation.
32. c  $14N10L42P2M8 = 14 \times 10 + 42 \div 2 - 8 = 153$ .
33. a The symbols are moving diagonally. So option (1) is correct.
34. a 1, (1 + 5), (1 + 5 + 1 × 4), (1 + 5 + 2 × 4), (1 + 5 + 3 × 4), and so on.  
So the missing term is 28.
35. c  $89x + 37 = 15968$   
 $\Rightarrow x = 179$   
Hence, the sum of digits = 17.
36. b From the given codes, books = 3; old = 5.  
Hence, code of 'are' = 2.
37. c Let there be 100 students. Total marks = 7000  
Let the average marks of the remaining students be A.  
 $\Rightarrow 95 \times 10 + 20 \times 20 + 70 \times A = 7000$   
 $\Rightarrow A = 5650/70 = 80.71\%$ .
38. a Venus is the second planet in distance from the Sun. This planet is nearest to the earth and is also the brightest planet.
39. c Most appropriate water image is option (3).
40. b Let the fraction be  $x/y$ .  
Given,  $(x + 5)/y = 6/5$  ... (i) and  
 $x/(y + 4) = 1/2$  ... (ii)  
 $\Rightarrow 5x - 6y = -25$  ... (i) and

- $2x - y = 4$  ... (ii)  
 $\Rightarrow$  Put  $y = 2x - 4$  in (i)  
 $\Rightarrow 5x - 12x + 24 = -25$   
 $\Rightarrow 7x = 49 \Rightarrow x = 7 \Rightarrow y = 10$   
Hence, the required fraction is  $7/10$ .
41. d Let the second part be  $x$ .  
Then, first part =  $x + 5$  and third part =  $3(x + 5)$   
So  $x + 5 + x + 3(x + 5) = 260$   
 $\Rightarrow 5x = 240$   
 $\Rightarrow x = 48$   
Hence, the three parts are 53 kg, 48 kg, and 159 kg.
42. b Sum of two numbers =  $56 \times 2 = 112$   
Let the smaller number be  $x$ .  
Then, other number =  $112 - x$   
So  $(x + 4)/(112 - x) = 1/3$   
 $\Rightarrow 3x + 12 = 112 - x$   
 $\Rightarrow 4x = 100$   
 $\Rightarrow x = 25$   
Hence, the two numbers are 25 and 87.
43. b  $10(1/2)\% = 21/2\%$ ; 2 years 3 months =  $9/4$  years  
Required simple interest  
 $= 4800 \times 21/2 \times 9/4/100 = \text{Rs. } 1,134$ .
44. d Formation and early days (1885–1905) Retired British Indian Civil Service (ICS) officer Allan Octavian Hume founded the Indian National Congress in order to form a platform for civil and political dialogue among educated Indians.
45. b  $a^3 - b^3 = (a - b)(a^2 + b^2 + ab)$   
Here  $a = 256$  and  $b = 144$   
Hence, the given expression =  $a - b = 256 - 144 = 112$ .
46. c Jamshedpur, a city in Jharkhand, is situated on the banks of the river Subarnarekha. The city is known to have founded by Jamshedji Tata, the founder of the Tata Group. Subarnarekha River flows through Odisha, West Bengal, and Jharkhand.
47. b Semiannual interest =  $10/2 = 5\%$ .  
 $926.10 = 800 \left(1 + \frac{5}{100}\right)^n$   
 $\Rightarrow (1.05)^n = 1.157625$   
 $\Rightarrow (1.05)^n = (1.05)^3$   
So  $n = 3$   
Hence, required time =  $1(1/2)$  years.



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48. c Let  $b$  and  $h$  be base and height of the right angled triangle.

Then, area of triangle =  $30h$

$$\text{So } \frac{1}{2} \times b \times h = 30h$$

$$\Rightarrow b = 60 \text{ units.}$$

49. c Rachna house: A, B

Amar house: C, D, E, F

Tall: D, F

Wearing glasses: C, D

Hence, D is tall and wearing glasses and belonged to Amar house.

50. b  $(100 - 96)\% = 500$

$$\Rightarrow 4\% = 500$$

$$\Rightarrow 100\% = 500 \times \frac{100}{4} = 12500.$$

Hence, the number of students appeared in the examination = 12500.

51. c Number of triangles and squares in the figure are 44 and 10 respectively.

52. a Abhinav Bharat Society was an Indian Independence secret society founded by Vinayak Damodar Savarkar and his brother Ganesh Damodar Savarkar in 1904. The Ghadar Party, initially named the Pacific Coast Hindustan Association was formed in was formed on 15 July 1913 in the United States under the leadership of Lala Har Dayal, Sant Baba Wasakha Singh Dadehar, Baba Jawala Singh, Santokh Singh and Sohan Singh Bhakna as its president. The Indian Independence League (also known as IIL) was a political organisation operated from the 1920s to the 1940s to organise those living outside India into seeking the removal of British colonial rule over India. Hindustan Republican Association was a revolutionary organization formed in 1924. It was formed by Ram Prasad Bismil and Sachindra Nath Sanyal. The Hindustan Socialist Republican Association was established in 1928. Revolutionaries like Chandrashekhar Azad, Bhagat Singh, Rajguru and Sukhdev were present at the meeting, held at the Feroz Shah Kotla ground in Delhi, during the establishment of the organisation.

53. b *Death of a city* is a book written by Amrita Pritam. Kautilya is the author of the "Arthashastra". Popularly known as Chanakya, he authored "Arthashastra" in the Mauryan period. The book "*Unhappy India*" was written by Lala Lajpat Rai. Lala Lajpat Rai is also

known as Punjab Kesri. The book 'India Wins Freedom' is written by Maulana Abul Kalam Azad.

54. c In 24 hours (i.e., in a day), the hands of a clock are at right angles 44 times.

55. a From the diagram, required number of youth is 4 only.

56. a Heavy water with the chemical formula,  $D_2O$  is formed when replaced with  $H^1$  isotope, which is generally present in most of the water molecules, with deuterium as  $H^2$  isotope. In heavy water, there is a presence of deuterium instead of Hydrogen, and while regular hydrogen has a proton in its nucleus, deuterium has both a proton and a neutron. So heavy water, which has molecular formula  $D_2O$ , has molecular mass =  $16(\text{for oxygen}) + (2 \times 2)(\text{for two deuteriums}) = 20$ .

57. c India is the seventh largest country in the world by land area, with a total area of approximately 3.2 million square kilometers. It is the second most populous country in the world, with a population of over 1.4 billion people.

58. b Keoladeo National Park or Keoladeo Ghana National Park (formerly known as the Bharatpur Bird Sanctuary) is a famous avifauna sanctuary in Bharatpur, Rajasthan, India, that hosts thousands of birds, especially during the winter season.

59. b Let the speed of B be  $x$  km/h.

Then, speed of A =  $(x - 4)$  km/h

Distance travelled by A =  $60 + 12 = 72$  km and distance travelled by B =  $60 - 12 = 48$  km

$$\text{So } \frac{72}{x} = \frac{48}{(x - 4)}$$

$$\Rightarrow 72x - 288 = 48x$$

$$\Rightarrow 24x = 288$$

$$\Rightarrow x = 12$$

Hence, the speed of A =  $12 - 4 = 8$  km/h.

60. d Union Education & Skill Development Minister Shri Dharmendra Pradhan released the book 'India: The Mother of Democracy' prepared and published by Indian Council of Historical Research (ICHR) in New Delhi. Prof. Raghuvendra Tanwar, Chairperson, ICHR, and Prof. Umesh Ashok Kadam, Member Secretary, ICHR were also present on the occasion. The book is an attempt to showcase the democratic ethos ingrained in India since the dawn of civilisation.