

CUET General Test Solved Paper-2023

Held on 24 May 2023 (Shift-III)

1. By knowing to pH value of a liquid we can find the:

- (a) density of the liquid
- (b) viscosity of the liquid
- (c) acidity of the liquid
- (d) pressure of the liquid

2. If the average weight of 10 students is 25 kg and that of other 10 students is 35 kg, then the average weight of these 20 students is:

- (a) 30 kg
- (b) 35 kg
- (c) 25 kg
- (d) 20 kg

3. In $\triangle ABC$ with $AB = 5\text{cm}$, $BC = 12\text{cm}$, $AC = 13\text{cm}$ and $\angle B = 90^\circ$, which of the following is/are not correct?

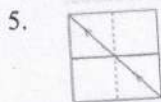
- (A) $\tan C = \frac{12}{13}$
- (B) $\operatorname{cosec} A = \frac{13}{12}$
- (C) $\sin B = \frac{5}{13}$
- (D) $\tan A = \frac{12}{15}$
- (E) $\cos C = \frac{12}{13}$

Choose the **correct** answer from the options given below:

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

4. For a certain period, simple interest on ₹1000 at 10% per annum is ₹100 more than that on ₹ 800. Find the period (in years).

- (a) 4
- (b) 10
- (c) 5
- (d) 2



After folding the above figure along the dotted line, which figure will be obtained:

- (a)
- (b)
- (c)
- (d)

6. The value of $\sqrt[4]{(625)^3}$ is:

- (a) 110
- (b) 25
- (c) 125
- (d) 115

7. Here are some words translated from an artificial language
 hirpa nig means bat ball
 kirpa nig means foot ball
 kirpa nad means foot mark

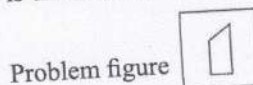
Which word would mean "mark sheet"?

- (a) hirpa kirpa
- (b) nad tyan
- (c) hirpa nad
- (d) kirpa nad

8. Pratap starts from school and walk 7 km towards East. He takes left and walks 4 km then takes a right and walk 2 km. Again takes a right and walks 3 km. Which direction is he facing now?

- (a) West
- (b) East
- (c) North
- (d) South

9. Choose the alternative figure in which the problem figure is embedded?



- (a)
- (b)
- (c)
- (d)

10. Find the missing term?

20160	4
?	4
480	96
	24

- (a) 1140
- (b) 2880
- (c) 3240
- (d) 860

11. The age of a tree can be calculated by _____.

- (a) Measuring its height
- (b) Measuring the thickness of the trunk
- (c) Measuring the width of the tree
- (d) Measuring the number of annual rings

12. Who is known as the Father of "Indian Space Program"?

- (a) Dr. C.V. Raman
- (b) Vikram Sara Bhai
- (c) Subramanyan Chandrasekhar
- (d) Dr. A.P.J. Abdul Kalam

13. Given below are two statements:

Statement I: All natural numbers are rational numbers.

Statement II: 1 is the smallest prime number.

In the light of the above statements, choose the **most appropriate** answer from the option given below:

- (a) Both Statement I and Statement II are correct.
- (b) Both Statement I and Statement II are incorrect.
- (c) Statement I is correct but Statement II is incorrect.
- (d) Statement I is incorrect but Statement II is correct.

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14. One of the Harappan site known as Kalibangan is located in which state of India?

(a) Rajasthan (b) Gujarat
(c) Madhya Pradesh (d) Punjab

15. P, Q, R, S, T are sitting around a circular table and all are facing the centre of table, R is to the right of P and second of the left of S. T is not between P and S. Who is second to the left of R?

(a) P (b) Q (c) S (d) T

16. Match List I with List II

List I
(Vitamin)

List II
(Deficiency Disease)

(A) Vitamin - A (I) Scurvy
(B) Vitamin - C (II) Rickets
(C) Vitamin - D (III) Non-clotting of blood
(D) Vitamin - K (IV) Colour blindness

Choose the most appropriate answer from the options given below:

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

17. According to Indian literatures who is known as father of Plastic Surgery?

(a) Charka (b) Sushruta
(c) Panini (d) Patanjali

18. A and B working together can do a work in 10 days. If A can do the work in 15 days, then how many days will B take to do the same work?

(a) 40 (b) 30 (c) 20 (d) 25

19. An interior angle of a regular polygon is 135° . The polygon is a/an:

(a) hexagon (b) square
(c) pentagon (d) octagon

20. Find the coordinates of centroid of $\triangle ABC$ if the mid point of BC is D (2,4) and vertex A is (2,-3)

(a) (1,0) (b) $(0, -\frac{2}{5})$

(c) (2,5) (d) $(2, \frac{5}{3})$

21. Match List I with List II

List I
(Alloys)

List II
(Composition)

(A) Amalgam (I) Cu + Zn
(B) Brass (II) Pb + Sn
(C) Bronze (III) Cu + Sn
(D) Solder (IV) Metal + Hg

Choose the most appropriate answer from the options given below:

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

22. Match List I with List II

List I
(Sobriquets)

List II
(Names)

(A) Sorrow of Bengal (I) Udaipur
(B) Vennice of East (II) River Kosi
(C) Sorrow of Bihar (III) Ahmedabad
(D) Bostan of India (IV) River Damodar

Choose the most appropriate answer from the options given below:

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

23. The sides of a triangle are in the ratio $\frac{1}{3} : \frac{1}{4} : \frac{1}{5}$. If the semi-perimeter of the triangle is 47 cm, then what is the length of the longest side?

(a) 20 cm (b) 40 cm
(c) 44 cm (d) 30 cm

24. Match List I with List II

List I
(Quantities)

List II
(Units)

(A) Force (I) Coulomb
(B) Charge (II) Hertz
(C) Heat (III) Newton
(D) Frequency (IV) Joule

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

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

25. Who amongst the following was shocked by Chauri-Chaura incident which took place in Gorakhpur and withdrew Non-Cooperation movement on 5th Feb. 1922?

(a) Mohandas Karamchand Gandhi
(b) Sardar Vallabhbhai Patel
(c) Motilal Nehru
(d) Lala Lajpat Rai

26. If arithmetic mean and geometric mean of roots of a quadratic equation are 8 and 5 respectively, then the quadratic equation is:

(a) $x^2 + 8x + 5 = 0$
(b) $x^2 - 8x + 25 = 0$
(c) $x^2 - 16x + 25 = 0$
(d) $2x^2 - 8x + 25 = 0$

27. In the following question, select the related number pair from the given alternatives.

$$15 : 256 :: 18 : ?$$

- (a) 360 (b) 361 (c) 261 (d) 461

28. Match List I with List II.

List I

- (A) Bharatnatyam (I) Sonal Mansingh
(B) Kathak (II) Lakshmi Narayan Shastri
(C) Odissi (III) Krishna Iyer
(D) Kuchipudi (IV) Sitara Devi

List II

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

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

29. Match List I with List II.

List I

(A) $14 - \frac{x-1}{10} = \frac{x+5}{6} - 3$

(B) $(x-5)^2 - (x+3)^2 = 48$

(C) $6(x-4) = 4(x-3) - (3x-8)$

(D) $(2x-1)(2x+3) = (2x-7)(2x+7)$

List II

(I) 4

(II) $-\frac{23}{2}$

(III) 61

(IV) -2

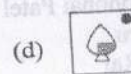
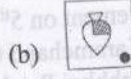
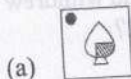
Choose the **correct** answer from the options given below:

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

30. The area of four walls of a rectangular hall having length 18 m and height 8 m is 448 m². What is the breadth of the hall (in m)?

- (a) 10 (b) 9 (c) 8 (d) 7

31. Choose the **most appropriate** Mirror-Image of the figure:



32. Consider the following pairs:

- (A) International Women's Day - 08 March
(B) World Earth Day - 22 March
(C) International Labour Day - 01 May
(D) International Yoga Day - 21 May
(E) World Health Day - 07 April

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

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

33. Match List I with List II

List I

(Name of Sanctuaries)

- (A) Achanaknar
(B) Dachigam
(C) Chandraprabha
(D) Bhadra

List II

(Locations)

- (I) Jammu and Kashmir
(II) Karnataka
(III) Uttar Pradesh
(IV) Chattisgarh

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

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

34. A shop and a car were sold for ₹ 2,70,000 each. Due to increased scope of business, shop was sold at a profit of 20% but due to depreciation, car could be sold at a loss of 10%. How much profit or loss resulted in the entire transaction?

- (a) Loss ₹ 5,000 (b) Loss ₹ 10,000
(c) Profit ₹ 15,000 (d) Profit ₹ 15,480

35. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).

Assertion (A) : Leakages in house hold gas cylinders can be detected.

Reason (R) : LPG has a strong smell.

In the light of the above statements, choose the **most appropriate** answer from the options given below:

- (a) Both (A) and (R) are correct and (R) is the correct explanation of (A)
(b) Both (A) and (R) are correct and (R) is not the correct explanation of (A)
(c) (A) is correct but (R) is not correct
(d) (A) is not correct but (R) is correct

36. If 1st January 2001 was Monday. Then which day of week was it on 31 December 2001?

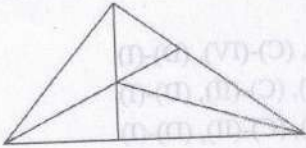
- (a) Monday (b) Wednesday
(c) Friday (d) Saturday

37. A cuboidal slab of copper having dimensions 22 cm × 10 cm × 5 cm is melted and recasted in the form of a wire of 1 mm diameter. The wire is rubber coated at the rate of ₹ 1.50 per meter. Find the cost of rubber coating (in ₹)

(Use $\pi = \frac{22}{7}$)

- (a) 525 (b) 650
(c) 2100 (d) 2600

38. Lift was invented by _____
 (a) Richard Gatling (b) E.G. Otis
 (c) K.G. Jhonson (d) J.C. Perier
39. Find how many triangle are there in the given figure?



- (a) 12 (b) 11 (c) 16 (d) 10
40. The central rice research station is situated in _____
 (a) Raipur (b) Chennai
 (c) Bangalore (d) Cuttak
41. Given below are two statements:

Statement:

- (I) All Forces are energies
 (II) All energies are powers
 (III) No power is heat

Conclusions:

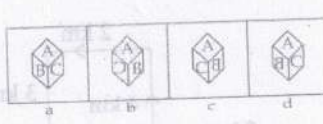
- (I) Some forces are definitely not powers
 (II) No heat is force
 Which of the following conclusions can be definitely drawn from the statements given in the question.

- (a) If only (I) follows
 (b) If only (II) follows
 (c) If both (I) and (II) follows
 (d) If neither (I) nor (II) follows
42. Who has been awarded the Booker Prize 2022?
 (a) Annie Ernaux (b) Mallika Sarabhai
 (c) Arundhati Roy (d) Shehan Karunatilaka
43. The difference between two numbers P and Q ($P > Q$) is 40% of their sum. The ratio P : Q is:
 (a) 6 : 4 (b) 7 : 3
 (c) 8 : 5 (d) 5 : 4
44. How many languages are presently scheduled in the Indian Constitution?
 (a) 14 (b) 21 (c) 22 (d) 18
45. In the following question, if a mirror is placed on the line AB, then which of the answer figures is the right image of the given figure?

Problem Figure

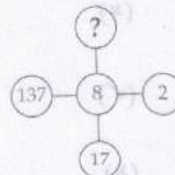


Answers Figures



- (a) a (b) b (c) c (d) d
46. The mean of scores obtained by 50 students is found to be 79.5. Later on, it was found that the score of one student was read as 94 in place of 49 and the score of another student was read as 69 in place of 89. Find the correct mean.
 (a) 85.52 (b) 79.35
 (c) 79 (d) 78

47. The largest Salt Water Lake in India is _____
 (a) Wular Lake (b) Chilka Lake
 (c) Loktak Lake (d) Dal Lake
48. Which of the following fundamental right has been removed from our Constitution?
 (a) Right against exploitation
 (b) Right to Constitutional remedies
 (c) Right to Property
 (d) Right to freedom of religion
49. A pair of dice is thrown. What is the probability of getting the sum of numbers on the two faces an odd-prime number?
 (a) $\frac{7}{18}$ (b) $\frac{1}{6}$ (c) $\frac{1}{2}$ (d) $\frac{5}{12}$
50. Correct the following equation by Interchanging the two signs:
 $4 \times 2 + 6 \div 2 - 12 = 2$
 (a) $\div$ and $\times$ (b) $+$ and $-$
 (c) $\times$ and $-$ (d) $\div$ and $-$
51. Rahul told Anand "yesterday I defeated the only brother of the daughter of my grandmother".
 Whom did Rahul defeated?
 (a) Son (b) Brother
 (c) Father-in-Law (d) Father
52. 44% of a number is 2288. What will be 87% of the number?
 (a) 3614 (b) 4524
 (c) 4815 (d) 3928
53. Find the wrong number in given series:
 89, 78, 86, 80, 85, 82, 83
 (a) 78 (b) 86
 (c) 82 (d) 83
54. Among A, B, C, D and E having a different amount of money, C has more money than only E, B and A. Who among them has the highest amount of money?
 (a) C (b) D
 (c) E (d) A
55. 64 solid iron spheres of radius r are melted to form a sphere of radius R, Find R : r.
 (a) 2:1 (b) 3:1
 (c) 8:1 (d) 4:1
56. Find missing term:



- (a) 9107 (b) 907
 (c) 1097 (d) 97
57. A 110 m long train takes 3 seconds to pass a pole. How long is the platform if the train passes it in 15 seconds?
 (a) 440 m (b) 400 m
 (c) 550 m (d) 450 m

58. The digits and numbers from 1 to 12 represented by the dial of a clock are replaced by the letter of English alphabet. The replacement is started with the letter C. Find the letter which is represented by 9 O'clock. Consider hour hand only.

- (a) N (b) H
(c) J (d) K

59. Match List I with List II

List I

(Boundary Lines)

- (A) 38th Parallel Line (I) Between U.S.A and Canada
(B) Durand Line (II) Between India and China

List II

(Countries Sharing borders)

- (C) MacMohan Line (III) Between North and South Korea
(D) 49th Parallel Line (IV) Between India and Afghanistan

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

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

60. Find the missing term in given series:

1, 9, 25, 49, 81 ?, 169

- (a) 91 (b) 144
(c) 121 (d) 64

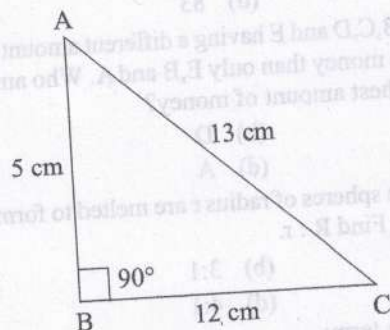
Hints & Explanations

1. (c) pH is the indicator of the acidic or basic characteristic of an element. It is a scale of 14 points, where 7 is neutral and 1-7 represent the element to be acidic and 7 and above represent the basic characteristics. pH of an element can be tested by using litmus paper.

2. (a) Average weight of 20 students = $\frac{10 \times 25 + 10 \times 35}{20}$

$$= \frac{600}{20} = 30 \text{ kg}$$

3. (c)



(A) $\tan C = \frac{AB}{AC} = \frac{5}{12} \neq \frac{12}{13}$ (✗)

(B) $\operatorname{cosec} A = \frac{AC}{BC} = \frac{13}{12}$ (✓)

(C) $\sin B \neq \frac{5}{13} \because \angle B \text{ is } 90^\circ$ (✗)

(D) $\tan A = \frac{BC}{AB} = \frac{12}{5} \neq \frac{12}{15}$ (✗)

(E) $\cos C = \frac{BC}{AC} = \frac{12}{13}$ (✓)

Hence, (A), (C) and (D) are not correct.

4. (c) According to question,

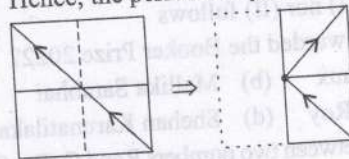
$$\frac{1000 \times t \times 10}{100} - \frac{800 \times t \times 10}{100} = 100$$

$$\Rightarrow 100t - 80t = 100$$

$$\Rightarrow 20t = 100 \Rightarrow t = 5 \text{ years}$$

Hence, the period is 5 years.

5. (a)



6. (c) $\sqrt[4]{(625)^3} = \sqrt[4]{(5^4)^3} = 4\sqrt{5^{12}}$

$$\Rightarrow 5^{\frac{12}{4}} = 5^3 = 125$$

7. (b) ball → nig

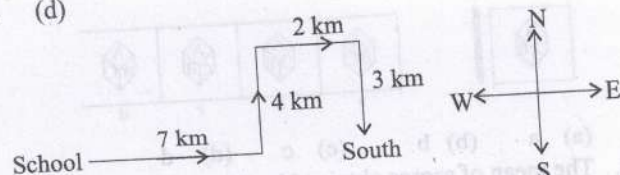
bat → hirpa

foot → kirpa

mark → nad

Hence, mean of 'mark sheet' is 'nad tyan'.

8. (d)



Hence, Pratap is facing south direction.

9. (b)



10. (b) Pattern is that-

$$\begin{aligned} 4 \times 1 &= 4 \\ 4 \times 2 &= 8 \\ 8 \times 3 &= 24 \\ 24 \times 4 &= 96 \\ 96 \times 5 &= 480 \\ 480 \times 6 &= 2880 \\ 2880 \times 7 &= 20160 \end{aligned}$$

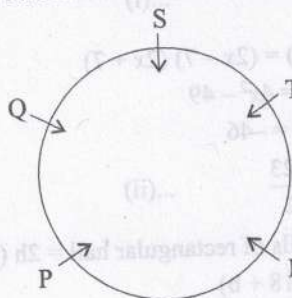
11. (d) The age of a tree can be calculated by measuring the number of annual rings. The two kinds of wood (spring and autumn wood) appear as alternate concentric rings of light and dark colour, respectively. Thus, one annual ring comprises one circle of springwood (lighter in colour) and autumn wood (dark in colour) both. One annual ring corresponds to one year. The science of counting and analysis of annual growth rings of trees is called dendrochronology.

12. (b) Indian astronomer and physicist Vikram Sarabhai was one of India's most endearing and dynamic visionaries. He is known as the "father of the Indian space program." He placed India on the international map for contributing to space research. He died in 1971.

13. (c) I. All natural numbers, whole numbers and integers are rational numbers.
II. 2 is the smallest prime number.
Hence, statement I is correct but statement II is incorrect.

14. (a) Kalibangan is located in Rajasthan. The site is famous for pottery and black bangles. The river Ghaggar is associated with the IVC site.

15. (b)



Hence, Q is second to the left of R.

16. (b) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

Vitamin	Deficiency Disease
Vitamin A	Colour Blindness
Vitamin B1	Beri Beri
Vitamin B2	Retarded growth, bad skin
Vitamin C	Scurvy
Vitamin D	Rickets
Vitamin K	Non Clotting of blood

17. (b) According to Ancient Indian tests, the father of Plastic surgery is Sushruta. The Sushrutaa Samhita is among the most important ancient medical treatises and is one of the fundamental texts of the medical tradition in India along with the Charak Samhita.

18. (b) $A \rightarrow 15$ 2
 $A + B \rightarrow 10$ 3
 $\therefore B$'s efficiency $= 3 - 2 = 1$
Hence, B alone can do the same work in

$$= \frac{30}{1} = 30 \text{ days}$$

19. (d) As we know that,

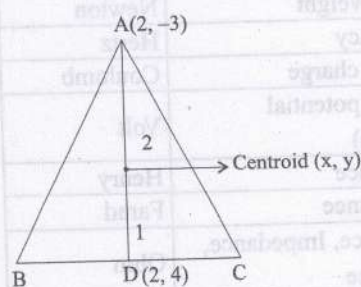
$$I^\circ + E^\circ = 180^\circ$$

$$\therefore E^\circ = 180^\circ - 135^\circ = 45^\circ$$

$$\text{So, number of sides of polygon} = \frac{360}{45} = 8$$

Hence, polygon is an octagon.

20. (d)



$$\therefore x = \frac{m_1 x_2 + m_2 x_1}{m_1 + m_2} \quad (\text{Section Formula})$$

$$\Rightarrow x = \frac{2 \times 2 + 1 \times 2}{1 + 2} \Rightarrow x = \frac{6}{3}$$

$$\Rightarrow x = 2$$

$$y = \frac{m_1 y_2 + m_2 y_1}{m_1 + m_2}$$

$$\Rightarrow y = \frac{2 \times 4 + 1 \times -3}{1 + 2}$$

$$\Rightarrow y = \frac{5}{3}$$

Hence, coordinates of centroid is $\left(2, \frac{5}{3}\right)$

21. (a) (A)-(IV), (B)-(I), (C)-(III), (D)-(II)

Alloys	Composition
Amalgam	Metal + Hg
Brass	Cu + Zn
Bronze	Cu + Sn
Solder	Pb + Sn

22. (c) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

Sobriquets	Names
Sorrow of Bengal	River Damodar
Venice of East	Udaipur
Sorrow of Bihar	Kosi River
Boston of India	Ahmedabad

23. (b) Ratio of sides of triangle =
- $\left(\frac{1}{3} : \frac{1}{4} : \frac{1}{5}\right) \times 60$
-
- = 20 : 15 : 12

According to question,

$$\frac{20x + 15x + 11x}{2} = 47 \Rightarrow 47x = 47 \times 2$$

$$\Rightarrow x = 2$$

Hence, length of longest side = $20 \times 2 = 40$ cm.

24. (c) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

SI Unit	SI Unit Symbol
Force, Weight	Newton
Frequency	Hertz
Electric charge	Coulomb
Electric potential (Voltage)	Volt
Inductance	Henry
Capacitance	Farad
Resistance, Impedance, Reactance	Ohm
Electrical conductance	Siemens
Magnetic flux	Weber
Magnetic flux density	Tesla
Energy, Work, Heat	Joule
Power, Radiant flux	Watt
Angle	Radian
Radioactivity	Becquerel

25. (a) M.K. Gandhi who called the Non Cooperation Movement was shocked by the Chaura Chauri incident as it was supposed to be a non violent movement.

26. (c) Let roots are
- a
- and
- b
-
- Arithmetic mean = 8

$$\Rightarrow \frac{a+b}{2} = 8$$

$$\Rightarrow a+b = 16 \quad \dots(i)$$

Geometric mean = 5

$$\sqrt{ab} = 5$$

$$\Rightarrow ab = 25 \quad \dots(ii)$$

Hence, the quadratic equation is

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

$$= x^2 - 16x + 25$$

27. (b) Pattern is that-

$$15 \rightarrow (15+1)^2 = 256$$

Similarly,

$$18 \rightarrow (18+1)^2 = 361$$

28. (d) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)

List I	List II
Bharatnatyam	Krishna Iyer
Kathak	Sitara Devi
Odissi	Sonal Mansingh
Kuchipudi	Lakshmi Narayan Shastri

29. (c) (A)
- $14 - \frac{x-1}{10} = \frac{x+5}{6} - 3$

$$\Rightarrow \frac{x-1}{10} + \frac{x+5}{6} = 14+3$$

$$\Rightarrow \frac{3x-3+5x+25}{30} = 17$$

$$\Rightarrow 8x+22 = 17 \times 30 = 510$$

$$\Rightarrow 8x = 510 - 22 = 488$$

$$\Rightarrow x = 61 \quad \dots(iii)$$

- (B)
- $(x-5)^2 - (x+3)^2 = 48$

$$\Rightarrow x^2 + 25 - 10x - x^2 - 9 - 6x = 48$$

$$\Rightarrow -16x = 48 - 16$$

$$\Rightarrow x = -\frac{32}{16} = -2 \quad \dots(iv)$$

- (C)
- $6(x-4) = 4(x-3) - (3x-8)$

$$\Rightarrow 6x - 24 = 4x - 12 - 3x + 8$$

$$\Rightarrow 5x = 24 - 4 = 20$$

$$\Rightarrow x = \frac{20}{5} = 4 \quad \dots(i)$$

- (D)
- $(2x-1)(2x+3) = (2x-7)(2x+7)$

$$\Rightarrow 4x^2 + 4x - 3 = 4x^2 - 49$$

$$\Rightarrow 4x = -49 + 3 = -46$$

$$\Rightarrow x = \frac{-46}{4} = \frac{-23}{2} \quad \dots(ii)$$

30. (a) Area of four walls of rectangular hall =
- $2h(1+b)$

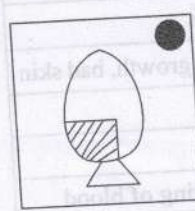
$$\Rightarrow 448 = 2 \times 8(1+b)$$

$$\Rightarrow 18+b = \frac{448}{16} = 28$$

$$\Rightarrow b = 28 - 18 = 10 \text{ m}$$

Hence, breadth of the hall is 10 m.

31. (a)



32. (c) (A), (C) and (E) only

Events	Date
International Women's Day	8 th March
World Earth Day	22 nd April
International Labour day	1 st May
International Yoga Day	21 st June
World Health Day	7 th April

33. (a) (A) - (IV), (B) - (I), (C) - (III), (D) - (II)

Name of Sanctuaries	Locations
Achanakar	Chhattisgarh
Dachigam	Jammu and Kashmir
Chandraprabha	Uttar Pradesh
Bhadra	Karnataka

34. (c) Cost price of shop = $270000 \times \frac{100}{120} = ₹ 2,25,000$

Cost price of car = $270000 \times \frac{100}{90} = ₹ 3,00,000$

∴ Total sales price = $2 \times 270000 = ₹ 5,40,000$

Total cost price = $225000 + 300000 = ₹ 5,25,000$

Hence, profit on entire transaction = $540000 - 525000 = ₹ 15,000$

35. (c) Leakages in house hold gas cylinders can be detected because of the strong smell of ethyl mercaptan mixed with LPG.

Hence, (A) is correct but (R) is not correct.

36. (a) 1st Jan 2001 = Monday

1st Jan 2002 = Tuesday

Hence, on 31st December 2001 day was Monday.

37. (c) Volume of wire = volume of cuboidal slab

$$\Rightarrow \pi r^2 h = 22 \times 10 \times 5 \text{ cm}^3$$

$$\Rightarrow \frac{22}{7} \times \frac{1}{20} \times \frac{1}{20} \times h = 22 \times 10 \times 5$$

$$\Rightarrow h = 10 \times 5 \times 7 \times 400 = 140000 \text{ cm}$$

$$\Rightarrow h = 1400 \text{ m}$$

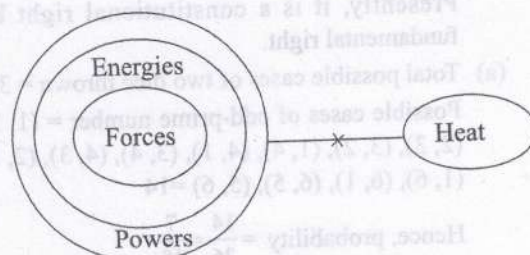
Hence, cost of rubber coating = $1400 \times 1.5 = ₹ 2100$

38. (b) Elisha Graves Otis designed and built the first hoisting device that proved safe enough to carry people. A self-trained mechanic and constant tinker, he founded the company that still bears his name in 1853. His invention of the elevator has been called one of the most important breakthroughs of the nineteenth century, for it made possible the development of the skyscraper.

39. (a) Total number of triangles = $1 + 8 + 3 = 12$

40. (d) The central rice research station is situated in Cuttack, Odisha.

41. (b)



Hence, only conclusion (II) follows.

42. (d) Shehan karunatilaka, a srilankan writer has been awarded the Booker prize 2022 for his work "The Seven Moons of Maali Almeida", a satirical "afterlife noir" set during the brutal civil war in Srilanka.

43. (b) $P - Q = \frac{40}{100} \times (P + Q)$

$$\Rightarrow P - Q = \frac{2}{5} \times (P + Q)$$

$$\Rightarrow 5P - 5Q = 2P + 2Q$$

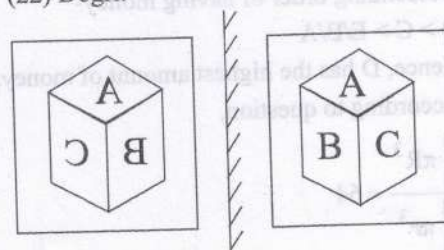
$$\Rightarrow 3P = 7Q$$

$$\Rightarrow \frac{P}{Q} = \frac{7}{3}$$

Hence, $P : Q = 7 : 3$

44. (c) There is no national language in the Republic of India. However, article 343(1) of the Indian constitution specifically mentions that "The official language of the Union shall be Hindi in Devanagari script. Presently there are 22 official languages in India. 1) Assamese, (2) Bengali, (3) Gujarati, (4) Hindi, (5) Kannada, (6) Kashmiri, (7) Konkani, (8) Malayalam, (9) Manipuri, (10) Marathi, (11) Nepali, (12) Oriya, (13) Punjabi, (14) Sanskrit, (15) Sindhi, (16) Tamil, (17) Telugu, (18) Urdu (19) Bodo, (20) Santhali, (21) Maithili and (22) Dogri.

45. (a)



46. (c) Original total of scores
 $= 50 \times 79.5 - 94 + 49 - 69 + 89$
 $= 3975 - 163 + 138$
 $= 3975 - 25 = 3950$

Hence, correct mean = $\frac{3950}{50} = 79$

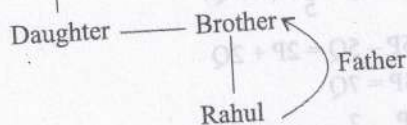
47. (b) The largest salt water lake in India is Chilika lake. It is located in Odisha and is a famous Ramsar Site.
48. (c) Right to property was removed from the Fundamental rights by the very first Constitutional amendment.

Presently, it is a constitutional right but not a fundamental right.

49. (a) Total possible cases of two dice thrown = 36
Possible cases of odd-prime number = (1, 2), (2, 1), (2, 3), (3, 2), (1, 4), (4, 1), (3, 4), (4, 3), (2, 5), (5, 2), (1, 6), (6, 1), (6, 5), (5, 6) = 14
Hence, probability = $\frac{14}{36} = \frac{7}{18}$

50. (a) $4 \times 2 + 6 \div 2 - 12 = 2$
By interchanging $\div$ and $\times$
 $4 \div 2 + 6 \times 2 - 12$
 $\Rightarrow 2 + 12 - 12$
 $\Rightarrow 2 = 2$

51. (d) Grandmother



Hence, Rahul defeated his father.

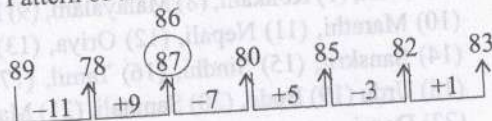
52. (b) Let the number is x
According to question,

$$x \times \frac{44}{100} = 2288$$

$$\Rightarrow x = 104 \times 50 = 5200$$

$$\text{Hence, } 87\% \text{ of } 5200 = 5200 \times \frac{87}{100} = 4524$$

53. (b) Pattern of the series.



54. (b) Descending order of having money-

$$D > C > E/B/A$$

Hence, D has the highest amount of money.

55. (d) According to question,

$$\frac{4}{3} \pi R^3 = 64$$

$$\Rightarrow \left(\frac{R}{r}\right)^3 = 64$$

$$\Rightarrow \frac{R}{r} = \sqrt[3]{64} = \frac{4}{1}$$

$$\text{Hence, } R : r = 4 : 1$$

56. (c) Pattern is that-

$$2 \times 8 \Rightarrow 16 + 1 = 17$$

$$17 \times 8 \Rightarrow 136 + 1 = 137$$

$$137 \times 8 \Rightarrow 1096 + 1 = 1097$$

57. (a) Speed of train = $\frac{110}{3}$ m/s

Let the length of platform is x .

$$\therefore \frac{110+x}{\frac{110}{3}} = 15$$

$$\Rightarrow 110+x = 15 \times \frac{110}{3} = 550$$

$$\Rightarrow x = 550 - 110 = 440 \text{ m}$$

58. (d) 1 - C, 2 - D, 3 - E, 4 - F, 5 - G, 6 - H, 7 - I, 8 - J, 9 - K
Hence, 9 O' clock is represented by 'K'.

59. (b) (A)- (III), (B)- (IV), (C)- (II), (D)- (I)

Boundary Lines	Countries Sharing Borders
38 th Parallel Line	Between North and South Korea
Durand Line	Between India and Afghanistan
MacMohan Line	Between India and China
49 th Parallel Line	Between USA and Canada

60. (c) Pattern of the series -

$$1 \rightarrow (1)^2 = 1$$

$$3 \rightarrow (3)^2 = 9$$

$$5 \rightarrow (5)^2 = 25$$

$$7 \rightarrow (7)^2 = 49$$

$$9 \rightarrow (9)^2 = 81$$

$$11 \rightarrow (11)^2 = 121$$

$$13 \rightarrow (13)^2 = 169$$