

CUET General Test Solved Paper-2023

Held on 21 May 2023 (Shift-II)

1. Match List I with List II

List I

- (A) LCM of $2^2 \times 3^3 \times 5^4 \times 7$ and $2^3 \times 3 \times 5 \times 7^4$
 (B) HCF of $2^3 \times 3^2 \times 5$ and $3^2 \times 2^4 \times 5^3$
 (C) LCM of $5^7 \times 7^5 \times 2^{12}$ and $3^5 \times 7^{14} \times 2^6$
 (D) HCF of $5^7 \times 7^5 \times 2^{12}$ and $3^5 \times 7^4 \times 2^6 \times 11$

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

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

List II

- (I) $2^6 \times 7^4$
 (II) $2^{12} \times 3^5 \times 5^7 \times 7^{14}$
 (III) $2^3 \times 3^3 \times 5^4 \times 7^4$
 (IV) $2^3 \times 3^2 \times 5$

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

2. If the circumference of a circle is increased by 20% then the area of the circle will be increased by:
 (a) 40% (b) 44% (c) 48% (d) 46%

3. Indian Grain storage Management and Research Institute (IGMRI) is situated at:

- (a) Hapur (b) Bagpat
 (c) Amroha (d) Varanasi

4. Which of the following Texts deal with philosophical matters of Buddha?

- (a) Vinaya Pitaka (b) Sutta Pitak
 (c) Abhidhamma Pitaka (d) Dipa Vamsa

5. Read the following arrangement carefully and answer the question given below:

A B 3 D 4 C 9 O & Q Y X * N M K 8 Q R G

Which of the above is exactly in the middle of 9 and 8.

- (a) X, * (b) X (c) Y (d) *

6. Abhijit Vinayak Banerjee won the Nobel Prize in economic science in 2019 for his experimental approach to _____

- (a) Alleviating Global Poverty
 (b) Struggle against suppression of children
 (c) Making a transition from physics to Biology
 (d) Breakthrough in field of medicine

7. A and B are two stations 455 km apart. A train starts from station A at 9 am and runs towards station B with a speed of 55 kmph. Another train starts from station B at 10 am and runs towards station A with a speed of 45 kmph. At what time do the trains meet?

- (a) 2 pm (b) 2:15 pm
 (c) 2:30 pm (d) 2:45 pm

8. The chemical name of washing soda is _____

- (a) Sodium Carbonate decahydrate
 (b) Sodium Carbonate octa hydrate
 (c) Sodium Carbonate Penta hydrate
 (d) Sodium Carbonate tetra hydrate

9. In which year the organisation named 'Lalit Kala Akademi' was established?

- (a) 1951 (b) 1952 (c) 1953 (d) 1954

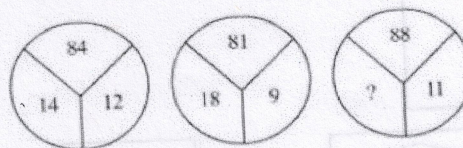
10. Who has written the book 'Panchatantara'?

- (a) Kalidas (b) Pt. Vishnu Sharma
 (c) Mahadeve Verma (d) Ashwa Ghosh

11. Out of given options, which name will come in the last in a telephone directory?

- (a) Mahender (b) Mohendra
 (c) Mohinder (d) Mahinder

12. Which number can be filled at a place of '?'



- (a) 16 (b) 14 (c) 12 (d) 10

13. Match List I with List II

List-I (Event)

- (A) Partition of Bengal
 (B) Foundation of Indian National Congress
 (C) Champaran Satyagrah
 (D) Civil Disobedience Movement

List-II (Year)

- (I) 1885
 (II) 1917

- (III) 1930
 (IV) 1905

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

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

14. Which one of the following is not an A.P.?

- (a) 11, 7, 3, -1, -5 (b) 0, -3, -6, -9
 (c) 3, 9, 19, 33, 51 (d) 9, 13, 17, 21, 25

15. Complete the following series.
9, 12, 18, 30, 54?

(a) 78 (b) 84 (c) 72 (d) 102

16. In a Physics test, the average marks of girls in a class is 40. If the average marks of first 20 girls is 50 and that of the remaining girls is 20, then the total number of girls in the class is:

(a) 30 (b) 40 (c) 25 (d) 45

17. Who amongst the following is associated with law of Inheritance?

(a) Gregor Johann Mendel
(b) Charles Robert Darwin
(c) Leeuwenhoek
(d) Isaac Newton

18. A capsule of medicine is in the shape of a sphere of diameter 2.8 mm. How much medicine is needed to fill this capsule.

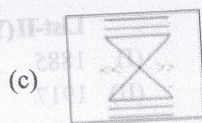
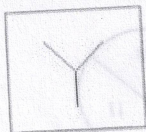
(correct to one decimal place)? $\left(\pi = \frac{22}{7}\right)$

(a) 11.5 mm³ (b) 12.2 mm³
(c) 22.4 mm³ (d) 15.4 mm³

19. Rakesh, Amit and Suresh started a business. Rakesh invested $\frac{1}{2}$ part, Amit $\frac{1}{3}$ part and rest of the capital was invested by Suresh. The ratio of their profits will be.

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

20. Find the answer figure in which problem figure is embedded:
Problem Figure



21. Given below are two statements:

Statement I: Only one Rhombus ABCD can be drawn with AB = 4 cm and diagonal BD = 5 cm

Statement II: Only one parallelogram ABCD can be drawn with AB = 6 cm and diagonal BD = 8 cm

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

(a) Both statement I and statement II are true
(b) Both statement I and statement II are false
(c) Statement I is true but statement II is false
(d) Statement I is false but statement II is true

22. 'Kanha National Park' is situated in _____.

(a) Rajasthan (b) Uttar Pradesh
(c) Madhya Pradesh (d) Gujrat

23. A tower, stands vertically on the ground. From a point on the ground which is 18 m away from the foot of the tower, the angle of elevation of the top of the tower is found to be 30°. Find the height of the tower.

(a) $15\sqrt{3}$ m (b) $6\sqrt{3}$ m
(c) $5\sqrt{3}$ m (d) $10\sqrt{3}$ m

24. Match List I with List II

List I
(liquid)

List II
(pH Value)

(A) Milk (I) 3
(B) Pure water (II) 6.5
(C) Blood (III) 7
(D) Apple Juice (IV) 7.4

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

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

25. 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. Who is the youngest?

(a) Kapil (b) Alka (c) Ram (d) Mala

26. Match List I with List II

List I
(Constellations)

List II
(India Names)

(A) Taurus (I) Mithun
(B) Sagittarius (II) Kumbh
(C) Aquarius (III) Dhanu
(D) Gemini (IV) Vrish

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

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

27. Sunderban National Park is situated in _____

(a) Odisha (b) Assam
(c) West Bengal (d) Bihar

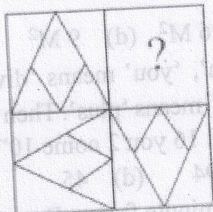
28. Arrange the given events in ascending order of their probabilities

A = target is hit 2 times in 20 shots
B = target is hit 175 times in 200 shots
C = target is hit 92 times in 100 shots
D = target is hit 2 times in 5 shots
E = target is hit 5 times in 13 shots

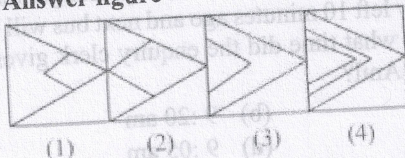
Choose the **correct** answer from the options given below:

- (a) E, A, D, B, C (b) E, B, A, D, C
(c) A, E, D, B, C (d) E, A, B, C, D
29. Which city is known as Lake city of India?
(a) Jaipur (b) Udaipur
(c) Bikaner (d) Bhiwadi
30. In the following question, find out which of the answer figures (1), (2), (3) and (4) complete the figure matrix.

Problem figure



Answer figure

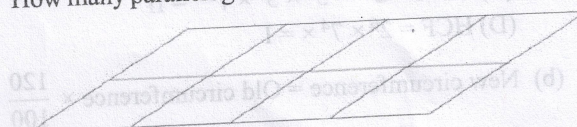


- (a) 1 (b) 2 (c) 3 (d) 4
31. If January 1 is a Friday, then what is the last day of the month March in a leap year?
(a) Monday (b) Tuesday
(c) Wednesday (d) Thursday
32. There are 5 students A, B, C, D and E and they are good in various subjects like B and E are good in Dramatics and computer science. A and B are good in computer science and physics. A, D and C are good in Physics and History. C and A are good in Physics and Mathematics. D and E are good in History and Dramatics. Who is good in Computer Science, History and Dramatics.
(a) A (b) C (c) B (d) E
33. Who is the founder of 'ISRO'?
(a) Vikram Sarabhai
(b) APJ Abdul Kalam
(c) Shrinivasa Ramanujan
(d) Homi Jehangir Bhabha
34. A cube painted Green on all faces is cut into 27 small cubes of equal size. How many small cubes are painted on one face only?
(a) 12 (b) 8
(c) 6 (d) 1
35. What is the shape of our Milky way Galaxy?
(a) Circular (b) Spiral
(c) Elliptical (d) Diamond
36. Which of the following is the cause of the revolt of 1857?
(A) Indian soldiers were paid low salaries
(B) Jhansi was annexed owing to the doctrine of lapse.

- (C) Partition of Bengal
(D) Jallianawala Bagh Massacre
(E) Heavy taxation

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

- (a) (B) and (E) only (b) (A), (B) and (E) only
(c) (A) and (B) only (d) (C), (D) and (E) only
37. Sarvy invested $\frac{1}{3}$ rd of her capital at 10% gain, $\frac{1}{4}$ th at 20% gain and the remaining at 30% gain. If her income from gain is ₹50,000, then value of capital is:
(a) ₹ 2,20,000 (b) ₹ 2,40,000
(c) ₹ 2,60,000 (d) ₹ 2,80,000
38. Necklace is related to jewellery in the same way as Shirt is related to _____.
(a) Cloth (b) Apparel
(c) Cotton (d) Thread
39. The given reaction is called _____.
 $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$
(a) Dissociation Reaction
(b) Substitution Reaction
(c) Combination Reaction
(d) Addition Reaction
40. If the vertices of a ΔABC are A (1,3), B(3,5) and C(x,y) and centroid is $\left(\frac{11}{3}, \frac{16}{3}\right)$ then (x,y) is:
(a) (8,7) (b) (7,8) (c) (4,8) (d) (7,7)
41. 'According to Big Bang theory of origin of universe, which basic unit is termed as 'Gods Particle'?
(a) Proton (b) Higgs Boson
(c) Nebula (d) Electron
42. The ratio of the base radii of a cylinder and a cone is 3:4 and their heights are in the ratio 2:3. Then the ratio of their volume:
(a) 8:9 (b) 9:8 (c) 7:13 (d) 12:15
43. **Statement:** XYZ company has marked its product, "Go ahead and purchase it, if price and quality are your consideration."
Conclusions:
I. The Product must be good in quality
II. The price of the product must be reasonable.
(a) If only conclusion I follows
(b) If only conclusion II follows
(c) If either conclusion I or II follows
(d) If both conclusion I and II follows
44. How many parallelograms are there in the following figure?



- (a) 22 (b) 30 (c) 28 (d) 24

45. Five years ago, Nuri was thrice as old as Sonu. After ten years from now, Nuri will be twice as old as Sonu. Present age of Nuri and Sonu respectively are
 (a) 40 years, 20 years
 (b) 30 years, 20 years
 (c) 20 years, 50 years
 (d) 50 years, 20 years
46. If in a code language 'WORD' is written as '1234', 'GOD' as '524' and 'PUT' as '678' then 'GOOD' can be written as
 (a) 7224 (b) 6224 (c) 5224 (d) 4223
47. Find the next one in the following series.
 ZAY, XBW, VCU, TDS, _____
 (a) REQ (b) QER (c) RES (d) OEP
48. A, B, C and D are playing cards. A and B are partners. D faces towards North. If A faces towards West, then who faces towards South?
 (a) A (b) B (c) C (d) D
49. Which of the following is not the member of 'SAARC'?
 (a) Nepal (b) Sri Lanka
 (c) China (d) Bangladesh
50. Asha is twice as old as Anita. Three year ago, she was three times as old as Anita. How old Asha is now?
 (a) 12 years (b) 8 year
 (c) 7 year (d) 6 year
51. Match List I with List II of Player and Nick Names:

List I (Players)	List II (Nick Names)
(A) Flying Fish	(I) Harbajan Singh
(B) Black Pearl	(II) K. D. Jadhav
(C) The Turbanator	(III) Pele
(D) Pocket Dynamo	(IV) Michael Phelps

 Choose the correct answer from the options given below:
 (a) (A)-(IV), (B)-(II), (C)-(I), (D)-(III)
 (b) (A)-(I), (B)-(II), (C)-(IV), (D)-(III)
 (c) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)
 (d) (A)-(II), (B)-(III), (C)-(I), (D)-(IV)
52. A and B can do a work in 45 days and 40 days respectively. They started working together but A left after some days and B alone completed the remaining work in 23 days. After how many days did A leave?
 (a) 8 (b) 6 (c) 11 (d) 9
53. A sum was invested on simple interest at a certain rate for 3 years. Had it been invested at 2% higher rate, it would have fetched ₹360 more interest. The value of invested sum is:
 (a) ₹6500 (b) ₹5000
 (c) ₹6000 (d) ₹4020
54. If the mean of p, q, r is M and $pq + qr + rp = 0$, then the mean of p^2, q^2, r^2 is
 (a) M^2 (b) $3M^2$ (c) $6M^2$ (d) $9M^2$
55. If 'when' means 'multiplication', 'you' means 'divide', 'come' means 'subtract' and 'will' means 'plus'. Then what will be the value "8 when 12 will 16 you 2 come 10"?
 (a) 112 (b) 96 (c) 94 (d) 45
56. A Bus for Delhi leaves every 30 minute from a Bus stand. An enquiry clerk, Ramesh told Anil, a passenger that the bus has already left 10 minutes ago and next bus will leave at 9:35 am. At what time did the enquiry clerk gives this information to Anil?
 (a) 9:10 am (b) 9:20 am
 (c) 9:15 am (d) 9:05 am
57. Five students are standing in a circle and they are facing the centre of circle. Ajay is between Amar and Aman. Alok is on the left of Amit. Amar is on the immediate left of Alok. Who is sitting immediate right of Ajay.
 (a) Amar (b) Aman
 (c) Alok (d) Amit
58. If a 10-digit number M30348462N is divisible by both 8 and 11, then what is the value of $M^2 + N^2 - 18$?
 (a) 5 (b) 6 (c) 7 (d) 8
59. If $\frac{2}{3}$ of A = 75% of B = 0.6 of C, then A:C: B is:
 (a) 9:8:10 (b) 9:10:8
 (c) 8:9:10 (d) 10:9:8
60. The incomes of A and B are in the ratio 5:3. The expenditure of A, B and C are in the ratio 8:5:2. If C spends ₹2000 and B Saves ₹700, then what amount does A save?
 (a) ₹1500 (b) ₹1000
 (c) ₹2000 (d) ₹500

Hints & Explanations

1. (c) (A) $\text{LCM} = 2^3 \times 3^3 \times 5^4 \times 7^4 = \text{III}$
 (B) $\text{HCF} = 2^3 \times 3^2 \times 5 = \text{IV}$
 (C) $\text{LCM} = 2^{12} \times 3^5 \times 5^7 \times 7^{14} = \text{II}$
 (D) $\text{HCF} = 2^6 \times 7^4 = \text{I}$

2. (b) New circumference = Old circumference $\times \frac{120}{100}$

Let r_n and r_o are the radius of new and old circle respectively.

$$\Rightarrow 2\pi r_n = 2\pi r_o \times \frac{6}{5} \Rightarrow r_n = r_o \frac{6}{5} \Rightarrow \frac{r_n}{r_o} = \frac{6}{5}$$

$$\therefore \text{Old area} = \pi r_o^2 = \pi(5)^2 = 25\pi$$

$$\text{New area} = \pi r_n^2 = \pi(6)^2 = 36\pi$$

$$\text{Hence, area will be increased by} = \frac{36\pi - 25\pi}{25\pi} \times 100$$

$$= \frac{11}{25} \times 100 = 44\%$$

3. (a) Indian Grain Storage Management and Research Institute (IGMRI) Formally, Grain Storage Research and Training Centre which is located at Hapur, established in 1958 and later renamed as Indian Grain Storage Institute.
4. (c) The Abhidhamma Piaka is a detailed scholastic analysis and summary of the Buddha's teachings in the Suttas. The text deals with the philosophical matters of Buddha.
5. (b) $9 \text{ O } \& \text{ Q Y } (\text{X}) * \text{ N M K } 8$

Hence, X is exactly in the middle of 9 and 8.

6. (a) Abhijit Vinayak Banerjee won the Nobel Prize in 2019 for his unique approach to alleviate global poverty. Banerjee and his co-writers in their study focused on relatively small and specific problems that contributed to poverty and identified the best solutions through carefully designed field experiments, which they conducted in several low- and middle-income countries over the course of more than two decades.
7. (a) Distance travel in one hour from station A = 55 km
 $\therefore$ Remaining distance = $455 - 55 = 400$ km
 Time taken to meet both trains

$$= \frac{400}{55 + 45} = \frac{400}{100} = 4 \text{ hrs}$$
 Hence, time when both trains meet
 $= 10 \text{ am} + 4 \text{ hrs} = 2 \text{ pm}$
8. (a) Washing soda is sodium carbonate decahydrate. Its chemical formula is Na_2CO_3 .
9. (d) Lalit Kala Akademi (National Academy of Art), New Delhi was inaugurated on 5th August 1954 by the then Minister for Education, Maulana Abul Kalam Azad and was registered under the Societies Registration Act 1860, on 11th March 1957.
10. (b) The Panchatantra is an ancient Indian collection of interrelated animal fables in Sanskrit verse and prose, arranged within a frame story. It is written by Pt. Vishnu Sharma.
 The five principles or practices illustrated by Panchatantra are 'Mitra Bhedha' (Loss of Friends), 'Mitra Laabha' (Gaining Friends), 'Suhrubhedha' (Causing discord between Friends), 'Vigraha' (Separation) and 'Sandhi' (Union).
11. (c) Order according to English dictionary-
 Mahender $\rightarrow$ Mahinder $\rightarrow$ Mohendra $\rightarrow$ Mohinder
 Hence, Mohinder will come in the last in a telephone directory.
12. (a) Pattern is that

$$\frac{84}{12} = 7 \rightarrow 7 \times 2 = 14 \text{ (In circle 1)}$$

$$\frac{81}{9} = 9 \rightarrow 9 \times 2 = 18 \text{ (In circle 2)}$$

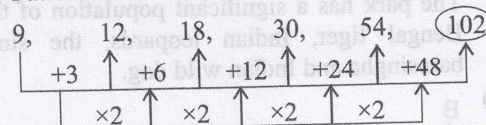
$$\frac{88}{11} = 8 \rightarrow 8 \times 2 = 16 \text{ (In circle 3)}$$

13. (c) The historical events during the course of freedom struggle and the year they've taken place as mentioned in the table:

Event	Year
Partition of Bengal	1905
Fondation of Indian National Congress	1885
Champaran Satyagrah	1917
Civil Disobedience Movement	1930

14. (c) (a) $7 - 11 = -4$, $3 - 7 = -4$, $-1 - 3 = -4$, $-5 - (-1) = -4$ (A.P.)
 (b) $-3 - 0 = -3$, $-6 - (-3) = -3$, $-9 - (-6) = -3$ (A.P.)
 (c) $9 - 3 = 6$, $19 - 9 = 10$, $33 - 19 = 14$, $51 - 33 = 18$ (Not A.P.)
 (d) $13 - 9 = 4$, $17 - 13 = 4$, $21 - 17 = 4$, $25 - 21 = 4$ (A.P.)

15. (d) Pattern of the series -

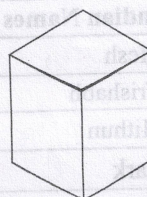


16. (a) Let total number of girls in the class is x .
 According to question,
 $20 \times 50 + (x - 20) \times 20 = 40 \times x$
 $\Rightarrow 1000 + 20x - 400 = 40x$
 $\Rightarrow 20x = 600$
 $\Rightarrow x = 30$ total girls
17. (a) Gregor Johann Mendel proposed the law of inheritance of traits from the first generation to the next generation. Law of inheritance is made up of three laws: Law of segregation, law of independent assortment and law of dominance.
18. (a) Radius of sphere = $\frac{2.8}{2} = 1.4 \text{ mm}$
 Hence, medicine needed to fill this capsule (volume)

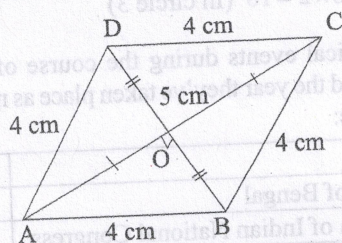
$$= \frac{4}{3} \pi r^3 = \frac{4}{3} \times \frac{22}{7} \times 1.4 \times 1.4 \times 1.4$$

$$= 11.5 \text{ mm}^3$$
19. (b) Suresh's part = $1 - \left(\frac{1}{2} + \frac{1}{3}\right) = 1 - \frac{5}{6} = \frac{1}{6}$
 Hence, the ratio of their profits = $\left(\frac{1}{2} : \frac{1}{3} : \frac{1}{6}\right) \times 6$
 $= 3 : 2 : 1$

20. (b)



21. (c) I:



By pythagoras theorem:

$$AO^2 = (AB)^2 - (OB)^2 = (4)^2 - (2.5)^2$$

$$\Rightarrow AO = \sqrt{16 - 6.25} = \sqrt{9.75} = 3.1225$$

$$\therefore AC = 2 \times 3.1225 = 6.245 \text{ cm}$$

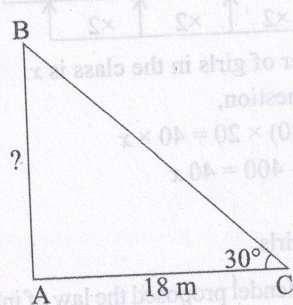
So, only one Rhombus ABCD can drawn.

II. We can't draw a parallelogram using only two known elements.

Hence, statement I is true but statement II is false.

22. (c) Kanha National Park is situated in Madhya Pradesh. The park has a significant population of the Royal Bengal tiger, Indian leopards, the sloth bear, barasingha and Indian wild dog.

23. (b)



$$\tan 30^\circ = \frac{AB}{AC} \Rightarrow \frac{1}{\sqrt{3}} = \frac{AB}{18}$$

$$\Rightarrow AB = \frac{18}{\sqrt{3}} = \frac{18}{13} \times \frac{\sqrt{3}}{\sqrt{3}} \Rightarrow AB = 6\sqrt{3}$$

Hence, height of the tower is $6\sqrt{3}$ m.

24. (b)

Liquid	pH Value
Milk	6.5
Pure Water	7
Blood	7.4
Apple Juice	3

25. (a) Order according to their ages-
Alka > Gopal > Mala > Ram > Kapil
Hence, Kapil is the youngest.

26. (b)

Constellations	Indian Names
Aries	Mesh
Taurus	Vrishabh
Gemini	Mithun
Cancer	Kark

Leo	Singh
Virgo	Kanya
Libra	Tula
Scorpio	Vrishchik
Sagittarius	Dhanu
Capricorn	Makar
Aquarius	Kumbha
Pisces	Meen

27. (c) Sunderban National Park is situated in West Bengal. The park is home to Royal Bengal tiger and receives its name from Sundari Trees which are endemic to the region.

28. (c) A's probability = $\frac{2}{20} = \frac{1}{10} = 0.10$

B's probability = $\frac{175}{200} = \frac{7}{8} = 0.875$

C's probability = $\frac{92}{100} = 0.92$

D's probability = $\frac{2}{5} = 0.40$

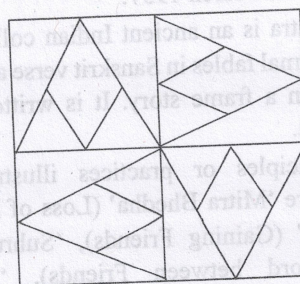
E's probability = $\frac{5}{13} = 0.38$

Hence, ascending order of their probabilities

$$A < E < D < B < C$$

29. (b) Udaipur is known as the city of lakes. Often referred to as the 'Venice of the East', the city of lakes Udaipur is located around azure water lakes and is hemmed in by lush green hills of Aravallis. The famous Lake Palace, located in the middle of Lake Pichola is one of the most beautiful sights of Udaipur

30. (b)



31. (d) 1st January = Friday

$$\therefore \text{No. of odd days} = \frac{30 + 29 + 31}{7} = \frac{90}{7} = 6 \text{ days}$$

$$\text{Hence, 31st March} = \text{Friday} + 6 = \text{Thursday}$$

32. (d)

Subjects Name	Dramatic	Computer science	Physics	History	Mathematics
A	x	✓	✓	✓	✓
B	✓	✓	✓	x	x

C	x	x	✓	✓	✓
D	✓	x	✓	✓	x
E	✓	✓	x	✓	x

Hence, E is good in computer science, History and Dramatics.

33. (a) Vikram Ambalal Sarabhai was an Indian physicist and an astronomer who started the space research organization and initiated the nuclear power plant in India. He is known as the father of Indian Space Program.

34. (c) $n^3 = 27 = 3^3$

$$\Rightarrow n = 3$$

Hence, number of small cubes are painted on one face only $= (n-2)^2 \times 6 = (3-2)^2 \times 6 = 6$

35. (b) The Milky Way is a huge collection of stars, dust and gas. It's called a spiral galaxy because if you could view it from the top or bottom, it would look like a spinning pinwheel. The Sun is located on one of the spiral arms, about 25,000 light-years away from the center of the galaxy.

36. (b) The Revolt of 1857 began as Sepoy mutiny as the Indian soldiers were paid low salaries, another reason were doctrine of lapse and the annexation of Jhansi. Additionally, heavy taxation was the reason of revolt of 1857.

37. (b) Let the value of capital is x.

According to question,

$$\frac{x}{3} \times \frac{10}{100} + \frac{x}{4} \times \frac{20}{100} + \left(x - \frac{x}{3} - \frac{x}{4}\right) \times \frac{30}{100} = 50000$$

$$\Rightarrow \frac{x}{30} + \frac{x}{20} + \frac{x}{8} = 50000$$

$$\Rightarrow \frac{4x + 6x + 15x}{120} = 50000$$

$$\Rightarrow \frac{25x}{120} = 50000$$

$$\Rightarrow x = 2000 \times 120 = ₹ 2,40,000 \text{ capital value}$$

38. (b) As Necklace is a jewellery. Similarly, Shirt is an apparel.

39. (c) A combination reaction is a reaction in which two or more substances combine to form a single new substance. Combination reactions can also be called synthesis reactions. The general form of a combination reaction is: $A+B \rightarrow AB$. One combination reaction is two elements combining to form a compound

40. (b) $\frac{x_1 + x_2 + x_3}{3} = \frac{11}{3}$

$$\Rightarrow 1 + 3 + x = 11 \Rightarrow x = 7$$

$$\text{And, } \frac{y_1 + y_2 + y_3}{3} = \frac{16}{3}$$

$$\Rightarrow 3 + 5 + y = 16 \Rightarrow y = 8$$

$$\text{Hence, } (x, y) = (7, 8)$$

41. (b) The Higgs boson is the fundamental particle associated with the Higgs field, a field that gives mass to other fundamental particles such as electrons and quarks.

42. (b) Let x_{cy} = radius of cylinder

$$x_{co} = \text{radius of cone}$$

$$h_{co} = \text{height of cone}$$

$$h_{cy} = \text{height of cylinder}$$

$$\frac{x_{cy}}{x_{co}} = \frac{3}{4} \text{ and } \frac{h_{cy}}{h_{co}} = \frac{2}{3}$$

$$\text{Hence, the ratio of their volume} = \frac{\pi r_{cy}^2 h_{cy}}{\frac{1}{3} \pi r_{co}^2 h_{co}} = \frac{x_{cy}^2 h_{cy}}{\frac{1}{3} x_{co}^2 h_{co}}$$

$$= 3 \left(\frac{x_{cy}}{x_{co}} \right)^2 \times \left(\frac{h_{cy}}{h_{co}} \right)$$

$$= 3 \times \left(\frac{3}{4} \right)^2 \times \frac{2}{3}$$

$$= \frac{9}{16} \times 2 = \frac{9}{8} = 9 : 8$$

43. (d) As per statement product is reasonable in price with good quality.

Hence, both conclusion I and II follow.

44. (b) Total number of parallelograms

$$= 1 + 2 + 5 + 4 + 10 + 8 = 30$$

45. (d) Let present ages of Nuri and Sonu are respectively x and y years.

According to question,

$$(x-5) = 3(y-5) = 3y-15$$

$$\Rightarrow x-3y = -10 \quad \dots(i)$$

$$\text{And, } x+10 = 2(y+10) = 2y+20$$

$$\Rightarrow x-2y = 10 \quad \dots(ii)$$

By solving eq. (i) and (ii)

$$x = 50 \text{ and } y = 20$$

Hence, Nuri's present age = 50 years and Sonu's present age = 20 years.

46. (c)

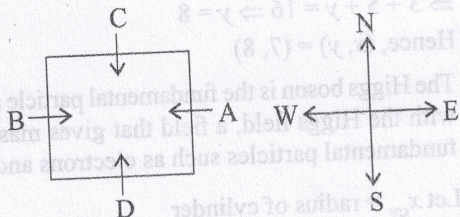
W	O	R	D	G	O	D	P	U	T
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1	2	3	4	5	2	4	6	7	8

Hence, GOOD will written as - 5224

47. (a) Pattern of the series-

$$\begin{array}{ccccccc} Z & \xrightarrow{-2} & X & \xrightarrow{-2} & V & \xrightarrow{-2} & T & \xrightarrow{-2} & R \\ A & \xrightarrow{+1} & B & \xrightarrow{+1} & C & \xrightarrow{+1} & D & \xrightarrow{+1} & E \\ Y & \xrightarrow{-2} & W & \xrightarrow{-2} & U & \xrightarrow{-2} & S & \xrightarrow{-2} & Q \end{array}$$

48. (c)



49. (c) The South Asian Association for Regional Cooperation (SAARC) was established on 8 December 1985. The Secretariat of the Association was set up in Kathmandu, Nepal.

SAARC has eight member countries (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri-Lanka).

50. (a) Let present age of Anita is x years.

$\therefore$ Asha's present age = $2x$

According to question,

$$(2x - 3) = 3(x - 3)$$

$$\Rightarrow 2x - 3 = 3x - 9 \Rightarrow x = 6$$

Hence, Asha's present age = $2 \times 6 = 12$ years

51. (c)

List I (Players)	List II (Nick Names)
Flying Fish	Michael Phelps
Black Pearl	Pele
The Turbanator	Harbhajan Singh
Pocket Dynamo	K.D Jadhav

52. (d) Total work = LCM of 45 and 40 = 360 days

$$\therefore \text{A's efficiency} = \frac{360}{45} = 8$$

$$\text{B's efficiency} = \frac{360}{40} = 9$$

$$\therefore \text{Work done by B in 23 days} = 23 \times 9 = 207$$

$$\text{Remaining work} = 360 - 207 = 153$$

$$153 \text{ work completed by A and B in } \frac{153}{8+9} = 9 \text{ days}$$

Hence, A left after 9 days.

53. (c) Let the sum is P .

According to question,

$$\frac{P \times 3 \times 2}{100} = 360$$

$$\Rightarrow P = \frac{360}{6} \times 100 = ₹ 6000$$

54. (b) $\frac{p+q+r}{3} = M$

$$\Rightarrow p+q+r = 3M$$

By squaring both side-

$$\Rightarrow (p+q+r)^2 = 9M^2$$

$$\Rightarrow p^2 + q^2 + r^2 + 2(pq + qr + rp) = 9M^2$$

$$\Rightarrow p^2 + q^2 + r^2 = 9M^2 \quad (\because pq + qr + rp = 0 \text{ given})$$

Hence, mean of p^2, q^2 and r^2

$$= \frac{p^2 + q^2 + r^2}{3} = \frac{9M^2}{3} = 3M^2$$

55. (c) 8 when 12 will 16 you 2 come 10

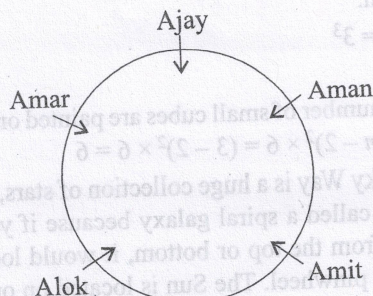
$$\Rightarrow 8 \times 12 + 16 \div 2 - 10$$

$$\Rightarrow 96 + 8 - 10$$

$$\Rightarrow 104 - 10 \Rightarrow 94$$

56. (c) Hence, the enquiry cleark gives this information to Anil at $9:35 - 20 \text{ min} = 9:15 \text{ am}$

57. (a)



Hence, Amar is sitting immediate right of Ajay.

58. (c) A number is divisible by 8 if last 3 digit is divisible by 8.

For $N = 4$, 624 is divisible by 8.

For divisibility of 11-

$$|M + 0 + 4 + 4 + 2| - (3 + 3 + 8 + 6 + 4) = 0 \text{ or } 11's \text{ multiple.}$$

$$\Rightarrow |M + 10 - 24| = 11 \Rightarrow 14 - M = 11$$

$$\Rightarrow M = 14 - 11 = 3$$

$$\text{Hence, } M^2 + N^2 - 18 = (3)^2 + (4)^2 - 18$$

$$= 9 + 16 - 18 = 7$$

$$59. (b) \frac{2}{3}A = \frac{75}{100}B = \frac{6}{10}C$$

$$\Rightarrow \frac{2}{3}A = \frac{3}{4}B = \frac{3}{5}C$$

$$\therefore \frac{A}{B} = \frac{3}{4} \times \frac{3}{2} = \frac{9}{8}$$

$$\text{And, } \frac{B}{C} = \frac{3}{5} \times \frac{4}{3} = \frac{4}{5} \times \frac{2}{2} = \frac{8}{10}$$

$$\text{Hence, } A : C : B = 9 : 10 : 8$$

60. (a) C's expenditure = 2000

$$\text{B's expenditure} = \frac{2000}{2} \times 5 = ₹ 5,000$$

$$\therefore \text{B's salary} = 5000 + 700 = ₹ 5,700$$

$$\text{A's expenditure} = \frac{2000}{2} \times 8 = ₹ 8,000$$

$$\therefore \text{A's salary} = \frac{5700}{3} \times 5 = ₹ 9,500$$

$$\text{Hence, A saves} = 9,500 - 8,000 = ₹ 1,500$$