

# CUET General Test Solved Paper-2023

Held on 2 June 2023 (Shift-I)

1. A, B and C started a business on partnership by investing ₹ 20000 more. After 2 more months D also joined the business by investing ₹ 60000. After 2 more months C withdrew ₹ 10000. Find the sum of the shares of C and D in the profit of ₹ 92100 earned at the end of the year.
- (a) ₹ 42800 (b) ₹ 43500  
(c) ₹ 44265 (d) ₹ 44515

2. Pair of linear equations  $2x + ky = 5$  and  $4x + 6y = p$  is inconsistent. Which one of the following cannot be the value of  $(k + p)$ ?
- (a) 11 (b) 12  
(c) 13 (d) 15

3. Find the missing term  
R91, T6G, V11E, ?, Z13A

- (a) X4C (b) X9C  
(c) W4C (d) Y9D

4. Jamshedpur is situated on the bank of river:

- (a) Ganga (b) Mahanadi  
(c) Subarnarekha (d) Godavari

5. Match List I with List II

### List I

#### (Dance)

- (A) Bharatnatyam  
(B) Bihu  
(C) Kathakali  
(D) Kuchipudi

### List II

#### (State)

- (I) Andhra Pradesh  
(II) Assam  
(III) Kerala  
(IV) Tamil Nadu

Choose the most appropriate answer from the options given below:

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

6. 23rd January is to be celebrated as "Parakram Diwas" every year to honour services and indomitable spirit of

- (a) Jawaharlal Nehru  
(b) Narendra Modi  
(c) Sardar Bhagat Singh  
(d) Netaji Subhash Chandra Bose

7. Rohit ranks seventeenth from top in a class of 40 students. What is his rank from the bottom?

- (a) 23 (b) 24  
(c) 25 (d) 26

8. Choose the missing term in the series from the options given below:

J2AZ, M4BY, L6 CX, O8DW, ?, Q12FU

- (a) N9EV (b) P10GH  
(c) N10EV (d) P10EV

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

**Assertion (A):** Copper is used to make electrical wires.

**Reason (R):** Copper has very low electrical resistance.

In the light of the above statements, choose the correct answer from the options given below.

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

10. The volume of a wall which is 5 times as high as it is broad and 8 times as long as it is high, is  $12.8\text{m}^3$ . The breadth of the wall is

- (a) 40 cm (b) 50 cm  
(c) 60 cm (d) 70 cm

11. The book "Last Queen" is written by:

- (a) Chitra Banerjee (b) Ruman Alam  
(c) Te-Pina Chan (d) Richard Wright

12. The Saffron (Kesari) colour in Indian National Flag is symbol of:

- (a) Renunciation of Material gains  
(b) Path of truth  
(c) Relation of soil and plant life  
(d) Dharma

13. Who has the authority to decide all doubts and disputes connected with the election of President?

- (a) Vice President  
(b) Speaker of the Lok Sabha  
(c) Parliament  
(d) The Supreme Court

14. When the minute hand of a clock covers a distance of 1 hr 30 min, then the angular distance covered by it is:

- (a)  $480^\circ$  (b)  $192^\circ$   
(c)  $420^\circ$  (d)  $540^\circ$

15. The string of a kite is 100 meter long and it makes an angle of  $30^\circ$  with the horizontal. Find the height of the kite from ground.

- (a) 100 m (b) 50 m  
(c) 60 m (d) 48 m

16. Match List I with List II

| List I<br>(Year of Launch) | List II<br>(Programme/Measure)         |
|----------------------------|--|
| (A) 2015                   | (I) National rural Livelihood Mission  |
| (b) 2000                   | (II) Pradhan Mantri Gram Sadak Yojana  |
| (C) 2011                   | (III) National Skill Developed Mission |
| (D) 2018                   | (IV) Ayushman Bharat                   |

Choose the most appropriate answer from the options given below:

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

17. Here are some words translated from artificial language 'id nim nop' means 'they are innocent' 'god ots al' means 'We like roses' 'nop ed al' mean 'They like flowers'

Which code represents 'Flowers' in the same language.

- (a) nop (b) al  
 (c) ed (d) ots

18. The Himalayan peak Makalu is situated in which of the Indian neighbouring country?

- (a) Bhutan (b) China  
 (c) Nepal (d) Pakistan

19. The founder of "servant of Indian Society" is

- (a) Mahatma Gandhi  
 (b) Bal Gangadhar Tilak  
 (c) Gopal Krishna Gokhale  
 (d) Lala Lajpat Rai

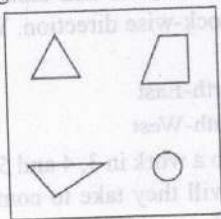
20. If the base radius of a cylinder is doubled, then how many times will its volume become with respect to its original volume?

- (a) 2 (b) 4  
 (c) 6 (d) 8

21. On July 22, 2019, Chandrayan-2 was launched by ISRO through it's Rocket:

- (a) GSLV-mK III (b) PSLV  
 (c) SLV (d) Ariane Rocket

22. Find out the figure which can be formed from the pieces given in the Figure.



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

23. A rectangle has length 24 cm and diagonals of length 25 cm each. The area of the rectangle (in cm<sup>2</sup>).

- (a) 576 (b) 312.5  
 (c) 288 (d) 168

24. In which quadrants do the points (-2, 3) and (3, -2) lie?

- (a) Both in second quadrant  
 (b) First and Fourth quadrants  
 (c) Second and Third quadrants  
 (d) Second and Fourth quadrants

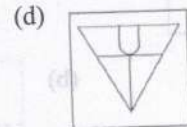
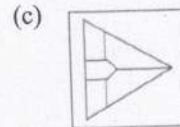
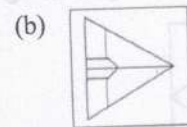
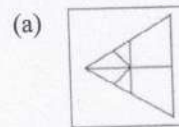
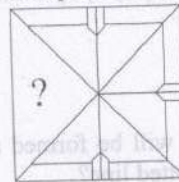
25. Choose the odd one

- 9105, 9837, 7125, 4314, 3927, 2958  
 (a) 9105 (b) 9837  
 (c) 7125 (d) 4314

26. The average of 5 numbers is 15. Find a number which should be included in these numbers to make the average 16.

- (a) 20 (b) 19  
 (c) 21 (d) 17

27. Complete the figure?



28. A. Andrology is study of male reproductive organ.

B. Agrology is study of grass.

C. Angiology is study of blood vascular system including arteries and veins.

D. Angronomy is science of soil management and production of crop.

Choose the Most appropriate answer from the options given below:

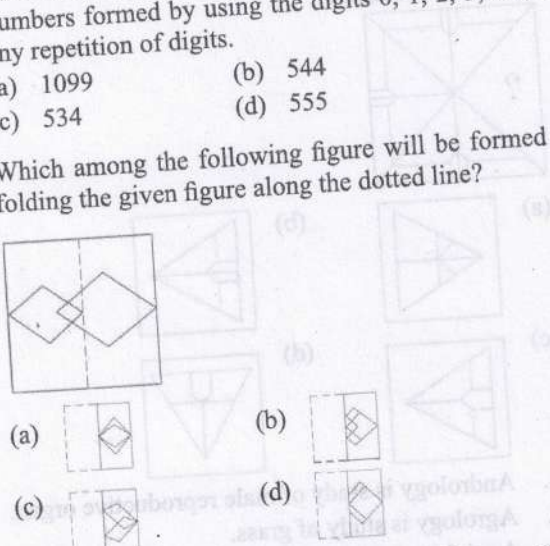
- (a) A and B only (b) A and D only  
 (c) B and D only (d) A, C and D only

29. Who wrote the book "Poverty and Un-British Rule in India"

- (a) Pt. Jawaharlal Nehru  
 (b) Mahatma Gandhi  
 (c) Dadabhai Naoroji  
 (d) Sardar Ballabh Bhai Patel

30. Ram took 15 minutes 30 seconds to reach his friend's house which is 900 meters away. The speed of Ram (in km/h) is (correct to two decimal places)

- (a) 3.48 (b) 4.48  
 (c) 34.80 (d) 13.48

31. Which of the following are true about Union Budget 2021?
- Atmanirbhar health care system was announced.
  - Big boost for roads and infrastructure.
  - Vehicle scrappage policy
  - Fuel and liquor cess imposed
- Choose the most appropriate answer from the options given below:
- A and B only
  - A, B and C only
  - A, B, C & D only
  - A only
32. If in  $\triangle ABC$ ,  $AB = 5\text{cm}$ ,  $BC = 12\text{cm}$  and  $AC = 13\text{cm}$ , then the length of the median  $BE$  is :
- 5.5 cm
  - 7.5 cm
  - 6.5 cm
  - 4.5 cm
33. If March 24, 2011 was Thursday, What was the day on June 24, 2012.
- Saturday
  - Sunday
  - Thursday
  - Friday
34. Find the sum of the smallest and the greatest 3-digit numbers formed by using the digits 0, 1, 2, 3, 4 without any repetition of digits.
- 1099
  - 544
  - 534
  - 555
35. Which among the following figure will be formed after folding the given figure along the dotted line?
- 
36. In how many years will a sum of ₹ 90 become ₹ 108 at  $6\frac{1}{4}\%$  simple interest?
- $3\frac{1}{5}$  years
  - $4\frac{1}{5}$  years
  - 2—years
  - $6\frac{1}{5}$  years
37. Ozone layer is located in which layer of the atmosphere?
- Troposphere
  - Stratosphere
  - Mesosphere
  - Thermosphere
38. There are five different houses, H1, H2, H3, H4 and H5 in a row. H1 is to the right of H2 and H5 is to the left of H3 and right of H1. H2 is to the right of H4. Which of the house is in the middle?
- H1
  - H2
  - H4
  - H5
39. The territory known as Yanam Puducherry shares boundaries with which state of India?
- Ladakh
  - Kerala
  - Goa
  - Andhra Pradesh
40. Disease due to deficiency of Vitamin D is:
- Night Blindness
  - Covid-19
  - Scurvy
  - Osteomalacia
41. Statement: Buy pure & natural Honey of company X, "—An advertisement.
- Assumptions
- Artificial honey can be prepared.
  - No other company supplies pure honey.
- Choose the correct option which is/are implicit in the statement.
- Only I is implicit
  - Only II is implicit
  - Neither I nor II is implicit
  - Both I & II are implicit
42. Which article of the India constitution has provisions of Uniform civil code?
- Article 42
  - Article 43
  - Article 51—A
  - Article 44
43. The Central Government has renamed Rajpath as:?
- Azad Path
  - Atal Path
  - Kartavya Path
  - Bharat Path
44. If the sum of first 14 terms of an AP is 1050 and its first term is 10, then its 20<sup>th</sup> term is:
- 200
  - 100
  - 300
  - 400
45. P is directly proportional to Q and  $Q = 7$  when  $P = 15$ . Find P when  $Q = 14$ .
- 10
  - 20
  - 30
  - 22
46. A girl is facing north. She turns  $90^\circ$  in the anti-clockwise direction and then  $45^\circ$  in the clockwise direction. Which direction is she facing now?
- West
  - North-East
  - North-West
  - South-West
47. Mother, daughter and son can do a work in 3, 4 and 5 days respectively. How many days will they take to complete the work, if they work together?
- $\frac{47}{60}$  days
  - $2\frac{13}{47}$  days
  - $1\frac{13}{47}$  days
  - $\frac{13}{47}$  days

48. Match List I with List II

List I

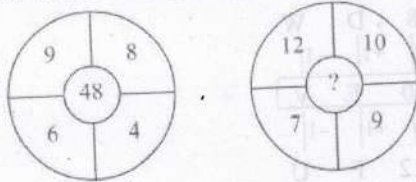
List II

- (A) Probability of getting a prime number in a single throw of a dice is (I)  $\frac{1}{6}$
- (B) Probability of getting neither a prime nor a composite number in a single throw of a dice is (II)  $\frac{1}{3}$
- (C) Probability of getting a multiple of 3 in a single throw of a dice is (III)  $\frac{1}{2}$
- (D) Probability of getting a number greater than 2 in a single throw of a dice is (IV)  $\frac{2}{3}$

Choose the correct answer from the options given below:

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

49. Insert the Missing term:



- (a) 69 (b) 57
- (c) 53 (d) 60

50. Ethanol is obtained commercially by:

- (a) Dehydration (b) Distillation
- (c) Fermentation (d) Evaporation

51. The atomic energy program in India was launched by:

- (a) C. V. Raman (b) Dr. APJ Abdul Kalam
- (c) Satish Dhawan (d) Homi J. Bhabha

52. The ratio between two number is 2:3. If each number is increased by 2, then the ratio becomes 3:4. Find the sum of the original numbers.

- (a) 10 (b) 6
- (c) 8 (d) 5

53. What will be the angle between the hour hand & the minute hand of a clock when time is 5:36 am?

- (a)  $47^\circ$  (b)  $48^\circ$
- (c)  $49^\circ$  (d)  $50^\circ$

54. Pankaj is younger than Sonali and Rupali is older than Tinu. Who among them is oldest?

Statements:

- A. Rupali is older than Pankaj.
- B. Sonali is older than Rupali
- C. Tinu is youngest among all.

Choose the correct answer from the options given below to answer the above question:

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

55. If mean of the numbers 2, (p + 1), 8, 19, 16, 3 and p is 9, then find the mode of the numbers.

- (a) 2 (b) 8
- (c) 16 (d) 19

56. Simplify  $\left(\frac{x^m}{x^n}\right)^{m+n} \cdot \left(\frac{x^n}{x^p}\right)^{n+p} \cdot (x^p \times x^m)^{p-m}$

- (a) mnp (b) 0
- (c) 1 (d)  $m^2 - p^2 + n^2$

57. When an article is sold for ₹ 115, the profit is twice as much as when it is sold for ₹ 95. The cost price of the article is.

- (a) ₹ 65 (b) ₹ 75
- (c) ₹ 85 (d) ₹ 90

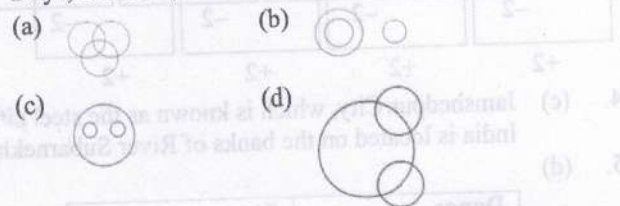
58. One evening before sunset two friends shahrukh and Rakesh were talking to each other face - to - face. If Rakesh's shadow is exactly to his right side, which direction was Shahrukh facing?

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

59. Pointing to a woman in a picture, Raju said, "Her mother in-law has only one grand child whose mother is my wife". How is the woman in the picture related to Raju?

- (a) Cousin (b) Wife
- (c) Sister (d) Aunt

60. Choose the correct Venn diagram for the given elements: Boys, Students, Athletes



|                |                |
|----------------|----------------|
| State          | State          |
| Assam          | Assam          |
| Kerala         | Kerala         |
| Andhra Pradesh | Andhra Pradesh |

# Hints & Explanations

1. (d) A, B and C started a business on partnership by investing 40,000, 50,000 and 70,000 respectively

| A                   | B                  | C                   | D                 |
|---------------------|--------------------|---------------------|-------------------|
| $40,000 \times 4$   | $50,000 \times 12$ | $70,000 \times 8$   | $60,000 \times 6$ |
| $+ 60,000 \times 8$ |                    | $+ 60,000 \times 4$ |                   |
| 6,40,000            | 6,00,000           | 8,00,000            | 3,60,000          |
| 32                  | 30                 | 40                  | 18                |

The sum of shares of C and D in the profit of 92100

$$= \frac{92100 \times 58}{120} \Rightarrow ₹44515$$

2. (c) Pair of linear equations  $2x + ky = 5$  and  $4x + 6y = p$  is inconsistent which means both the lines are parallel to each other. There is no solutions in common.

When inconsistent

$$\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$$

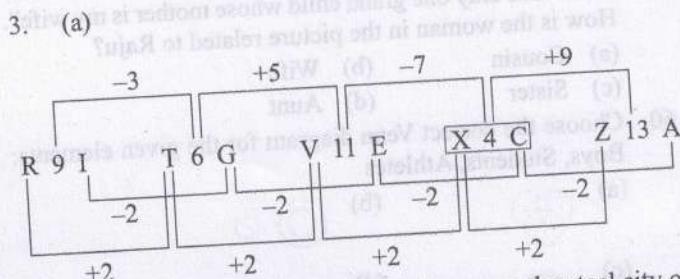
$$\frac{2}{4} = \frac{k}{6} \neq \frac{5}{p}$$

Let put  $k = 3$  and  $p = 10$

$$\frac{2}{4} = \frac{3}{6} = \frac{5}{10}$$

$$\frac{1}{2} = \frac{1}{2} = \frac{1}{2}$$

for  $(k+p = 13)$ . This is coincident lines and consistent  
So, 13 cannot be the value of  $k+p$ .



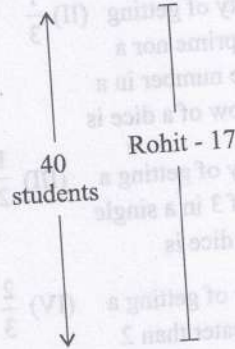
4. (c) Jamshedpur City, which is known as the steel city of India is located on the banks of River Subarnekha.
5. (d)

| Dance        | State          |
|--------------|----------------|
| Bharatnatyam | Tamil Nadu     |
| Bihu         | Assam          |
| Kathakali    | Kerala         |
| Kuchipudi    | Andhra Pradesh |

6. (d) Parakram Diwas is celebrated in the honour of Netaji Subhash Chandra Bose. The day literally means the Day of Courage. Netaji Subhas Chandra Bose

(popularly called Netaji), a prominent nationalist, politician, and freedom fighter.

7. (b)



$$\text{Rohit's rank from the bottom} = (40 - 17) + 1 = 23 + 1 = 24$$

8. (c)

|    |    |    |    |
|----|----|----|----|
| J  | 2  | A  | Z  |
| +3 | +2 | +1 | -1 |
| M  | 4  | B  | Y  |
| -1 | +2 | +1 | -1 |
| L  | 6  | C  | X  |
| +3 | +2 | +1 | -1 |
| O  | 8  | D  | W  |
| -1 | +2 | +1 | -1 |
| N  | 10 | E  | V  |
| +3 | +2 | +1 | -1 |
| Q  | 12 | F  | U  |

9. (a) **Assertion A:** Copper is used to make electrical wires  
**Reason R:** Copper has very low electrical resistance.  
'R' is the correct explanation of 'A'.  
So, both A and R are true.

10. (a) According to question  
length -  $40x$   
breadth -  $x$   
height -  $5x$   
Volume of the wall =  $12.8 \text{ m}^3$   
 $40x \times x \times 5x = 12.8 \times 100 \times 100 \times 100 \text{ cm}^3$   
 $200x^3 = 12800000$   
 $x^3 = 64000$   
 $x = 40 \text{ cm}$

- The breadth of the wall is =  $40 \text{ cm}$
11. (a) The Book 'The last Queen' was written by Chitra Banerjee and was released in 2021. The book is based on the lesser known story of Rani Jindan Kaur of Punjab.
12. (a) According the History of the Indian Tricolour the colours of the Tri-colour carries a meaning in itself, where in The Saffron colour indicates the renunciation of the material gains; the white middle band indicates

peace and truth with Dharma Chakra. The last band is green in colour shows the fertility, growth and auspiciousness of the land.

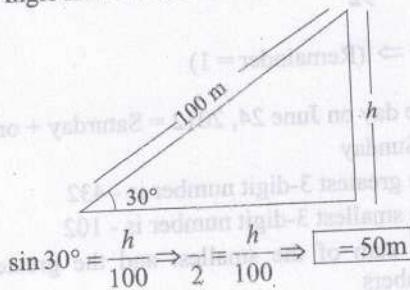
13. (d) The Supreme Court of India is the highest authority which decides all doubts and disputes connected with the election of President.

14. (d) **Minute hand**  
In 60 minutes angle made by minute hand is =  $360^\circ$

In 1 minute, angle made by minute hand is =  $\frac{360}{60} = 6^\circ$

In 90 minutes (1 hour 30 minutes), angle made by minute hand is  $90 \times 6 = 540^\circ$

15. (b) The string of a kite is = 100 meter long  
Angle made with horizontal =  $30^\circ$



16. (b)

| Year of Launch | Programmes/ Measures              |
|----------------|-----------------------------------|
| 2015           | National Skill Developed Mission  |
| 2000           | Pradhan Mantri Gram Sadak Yojana  |
| 2011           | National Rural Livelihood Mission |
| 2018           | Ayushman Bharat                   |

17. (c)

id nim nop → they are innocent

god ots al → we like roses

nop ed al → they like flowers

'ed' code represents 'flowers'

18. (c) Mount Makalu, the fifth highest mountain in the world, located in the Mahalangur range of the Nepal Himalayas, southeast of Mount Everest is in the border between Nepal and Tibet. Makalu is an isolated peak which is shaped like a four-sided pyramid.

19. (c) Gopal Krishna Gokhale CIE was an Indian political leader and a social reformer during the Indian independence movement. Apart from being a senior leader of the Indian National Congress, he was the founder of the Servants of India Society. Through the Society as well as the Congress and other legislative bodies he served in, Gokhale campaigned for Indian self-rule and for social reforms

20. (b) The radius of a cylinder =  $r$   
The volume of a cylinder =  $\pi r^2 h$

According to question

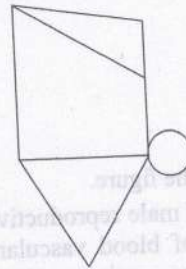
The radius of a cylinder =  $2r$

The volume of a cylinder =  $\pi(2r)^2 h$   
=  $4\pi r^2 h$

Hence, volume become 4 times with respect to its original volume.

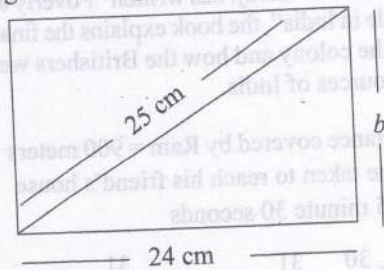
21. (a) Chandrayaan 2 was launched by ISRO through its latest rocket GSLV mK III. It is a three-stage medium-lift launch vehicle developed by the Indian Space Research Organisation (ISRO).

22. (d)



Option (d) can be formed the pieces given in the figure.

23. (d) Length of the rectangle is = 24 cm  
Diagonal of length = 25 cm



$$(25)^2 = (24)^2 + (b)^2$$

$$b^2 = 625 - 576$$

$$b^2 = 49$$

$$b = 7 \text{ cm}$$

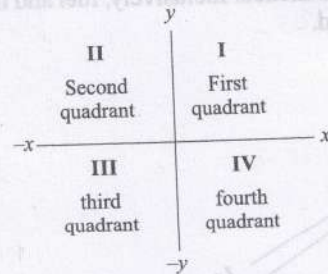
Area of the rectangle

$$= l \times b$$

$$= 24 \times 7$$

$$= 168 \text{ cm}^2$$

24. (d)



Hence, the points lie in second and fourth quadrants.

25. (b) Firstly, add three digits from starting and divide it from the last digit will give 2.

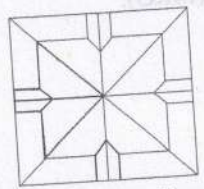
$$\frac{9+1+0}{5} = \frac{10}{5} = 2$$

$\frac{9+8+3}{7} = \frac{20}{7}$  which is not equal to 2.

'9837' is the odd one.

26. (c) The average of 5 numbers is = 15  
 The total of 5 numbers is =  $15 \times 5 = 75$   
 The average of 6 numbers is = 16  
 The total of 6 numbers is =  $16 \times 6 = 96$   
 The number which should be added is =  $96 - 75 = 21$

27. (b)



Option (b) will complete the figure.

28. (d) Andrology is the study of male reproductive organ, Angiology is the study of blood vascular system including arteries and veins, moreover, Angronomy is science of soil management and production of crop. These statement are all true.

29. (c) Dadabhai Naoroji has written "Poverty and Un-British Rule in India", the book explains the financial drainage in the colony and how the Britishers were ruining the resources of India.

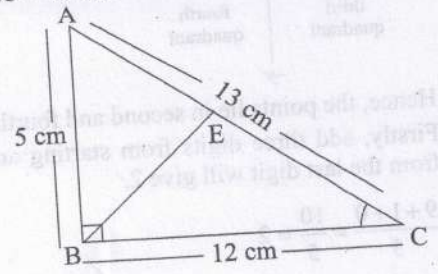
30. (a) Distance covered by Ram = 900 meters  $\Rightarrow \frac{900}{1000}$  km  
 Time taken to reach his friend's house = 15 minute 30 seconds

$= 15 \frac{30}{60} = \frac{31}{2}$  minute or  $\frac{31}{2 \times 60}$  hours

The speed of Ram =  $\frac{900}{\frac{31}{2}} = \frac{900 \times 120}{31} = \frac{108}{31} \approx 3.48$

31. (c) In the Budget of 2021, The Atmanirbhar Health care system was announced, a big boost to roads and infrastructure was given, and the vehicles scrappage policy was launched. Inclusively, fuel and liquor cess was imposed.

32. (c) In  $\Delta ABC$   
 AB = 5 cm  
 BC = 12 cm  
 AC = 13 cm



We know that the median drawn from the right angle to the hypotenuse divides the hypotenuse into two equal parts and also it is equal to half of the hypotenuse.

$BE = \frac{1}{2} \times AC = \frac{13}{2} = 6.5$  cm

33. (b) 24 March, 2011 - Thursday  
 24 March, 2012 - Saturday  
 Total days till 24 June 2012  
 March - 7  
 April - 30  
 May - 31  
 June - 24

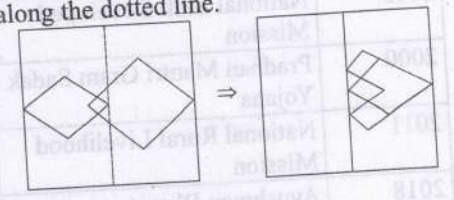
92

$\frac{92}{7} \Rightarrow$  (Remainder = 1)

The day on June 24, 2012 = Saturday + one day = Sunday

34. (c) The greatest 3-digit number is - 432  
 The smallest 3-digit number is - 102  
 The sum of the smallest and the greatest 3-digit numbers =  $432 + 102 = 534$

35. (b) Option (b) will be formed after folding the given figure along the dotted line.



36. (a) Principal = ₹ 90  
 Amount = ₹ 100

Rate of interest =  $6\frac{1}{4}\%$

Simple interest of one year

$= 90 \times \frac{25}{4 \times 100} = ₹ \frac{45}{8}$

Simple Interest =  $108 - 90 = ₹ 18$

Number of years =  $\frac{18 \times 8}{45}$

$= \frac{16}{5} \Rightarrow 3\frac{1}{5}$  years

37. (b) The ozone layer or ozone shield is a region of Earth's stratosphere that absorbs most of the Sun's ultraviolet radiation. It is a protective layer which protects the earth from the harmful rays. The Ozone has been negatively affected by the CFCs, which created a hole in the layer.

38. (a) H4 H2 H1 H5 H3  
 'H1' is in the middle.

39. (d) Andhra Pradesh

40. (d) Osteomalacia describes a disorder of "bone softening" in adults that is usually due to prolonged deficiency of vitamin D. This results in abnormal osteoid mineralization. In contrast, rickets describes deficient mineralization at the cartilage of growth plates in children.

41. (a) **Statement :** Buy pure & natural Honey of company X, "\_\_\_ An advertisement.

I. This statement means that artificial honey can be prepared by the companies. So buy pure and natural honey.

The first assumption is implicit in the statement.

II. This statement does not mean that no other company supplies pure honey. There may be some companies that can supply pure honey.

The second assumption is not implicit in the statement.

42. (d) The Uniform Civil Code is defined under the Directive Principles of state policy. It is under Article 44 of the Indian Constitution.

43. (c) Rajpath is renamed as Kartavya path by the central government. Formely, the Rajpath was known as Kingsway, in the colonial times.

44. (a)  $n = 14$

$$S_{14} = 1050$$

$$a = 10$$

$$a_{20} = ?$$

$$S_n = \frac{n}{2} \{2a + (n-1)d\}$$

$$1050 = \frac{14}{2} \{2 \times 10 + (14-1)d\}$$

$$150 = 20 + 13d$$

$$d = \frac{130}{13} = 10$$

$$a_{20} = a + (n-1)d$$

$$a_{20} = 10 + (20-1)10$$

$$\boxed{a_{20} = 200}$$

45. (c)  $Qx = P$

$$7x = 15$$

$$x = \frac{15}{7}$$

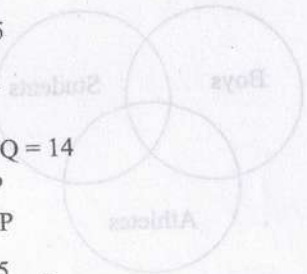
When  $Q = 14$

$$Qx = P$$

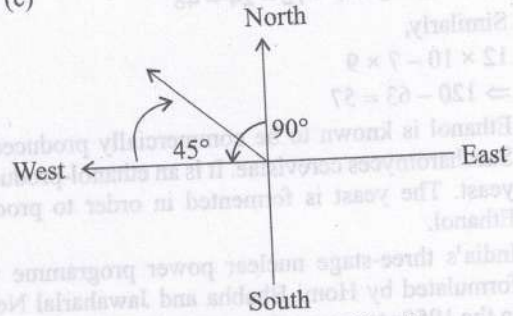
$$14x = P$$

$$14 \times \frac{15}{7} = P$$

$$\boxed{P = 30}$$



46. (c)

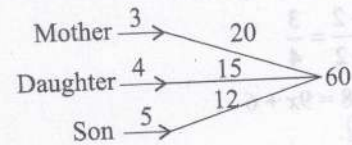


She is facing North-West direction

47. (c) Mother can complete the work in = 3 days

daughter can complete the work in = 4 days

Son can complete the work in = 5 days



Together they can complete the work in =  $\frac{60}{20+15+12}$

$$= \frac{60}{47} \Rightarrow 1 \frac{13}{47} \text{ days}$$

48. (c) (A) Prime numbers on a dice = 2, 3, 5

Total numbers on a dice = 1, 2, 3, 4, 5, 6

Probability of getting a prime number  $\Rightarrow \frac{3}{6} = \frac{1}{2}$

(B) Neither a prime nor a composite number on a dice = 1

Total number on a dice = 1, 2, 3, 4, 5, 6

Probability of getting neither a prime nor a composite number =  $\frac{1}{6}$

(C) Multiples of 3 on a dice = 3, 6

Total numbers on a dice = 1, 2, 3, 4, 5, 6

Probability of getting a multiple of 3  $\Rightarrow \frac{2}{6} = \frac{1}{3}$

(D) Numbers greater than 2 on a dice = 3, 4, 5, 6

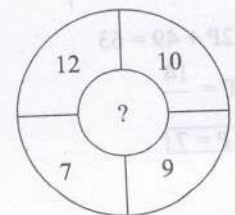
Total numbers on a dice = 1, 2, 3, 4, 5, 6

Probability of getting a number greater than 2

$$\Rightarrow \frac{4}{6} = \frac{2}{3}$$

A-(iii), B-(i), C-(ii), D-(iv) is the correct answer.

49. (b)



$\Rightarrow 9 \times 8 - 6 \times 4 = 72 - 24 = 48$

Similarly,  
 $12 \times 10 - 7 \times 9$   
 $\Rightarrow 120 - 63 = 57$

50. (c) Ethanol is known to be commercially produced by *Saccharomyces cerevisiae*. It is an ethanol-producing yeast. The yeast is fermented in order to produce Ethanol.
51. (d) India's three-stage nuclear power programme was formulated by Homi Bhabha and Jawaharlal Nehru 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.

52. (a) According to question

$\frac{2x+2}{3x+2} = \frac{3}{4}$

$8x + 8 = 9x + 6$

$x = 2$

The original numbers are  $= 2 \times 2 = 4$

$3 \times 2 = 6$

The sum of the original numbers  $= 4 + 6 = 10$

53. (b) Angle  $= \left| 30H - \frac{M \times 11}{2} \right|$   
 H : M  
 5 : 36

Angle  $= \left| 30 \times 5 - \frac{36 \times 11}{2} \right|$

$\Rightarrow |150 - 198| = |-48|$

Angle  $= 48^\circ$

54. (a) According to question  
 Pankaj < Sonali  
 Tinu < Rupali

Cases

I. Pankaj < Tinu < Rupali < Sonali

II. Tinu < Rupali < Pankaj < Sonali

III. Tinu < Pankaj < Rupali < Sonali

In each case Sonali will be the oldest.

**Statement B:** Sonali is older than Rupali

Now, we can conclude that Sonali is the oldest among them.

55. (b) Mean of the numbers  $-2, (p+1), 8, 19, 16, 3$  and  $p$  is 9

According to question

$\frac{2 + (P+1) + 8 + 19 + 16 + 3 + P}{7} = 9$

$2P + 49 = 63$

$P = \frac{14}{2}$

$P = 7$

**Mode:** The number which has maximum frequency  
 Numbers are = 2, 8, 8, 19, 16, 3, 7

Mode = 8

56. (c)  $\left(\frac{x^m}{x^n}\right)^{m+n} \times \left(\frac{x^n}{x^p}\right)^{n+p} \times (x^p \times x^m)^{p-m}$

$\Rightarrow x^{m^2-n^2} \times x^{n^2-p^2} \times x^{p^2-m^2}$

$\Rightarrow x^{m^2-n^2+n^2-p^2+p^2-m^2}$

$\Rightarrow x^0 \Rightarrow 1$

57. (b) Let the cost price is = ₹ x

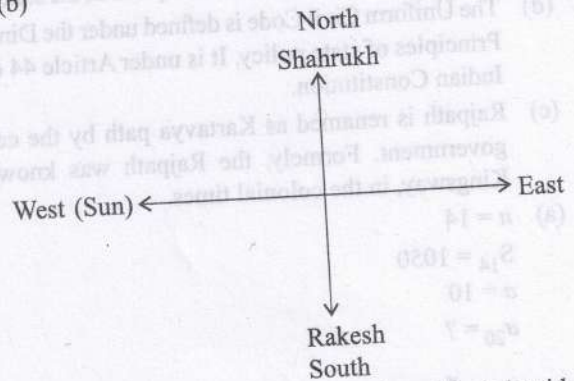
$(115 - x) = 2(95 - x)$

$115 - x = 190 - 2x$

$x = 75$

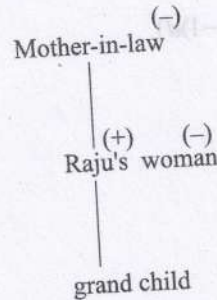
Cost price of the article is = ₹ 75

58. (b)



If Rakesh's shadow is exactly to his right side than Shahrukh is facing in South direction.

59. (b)



The women in the picture is wife of Raju.

60. (a)

