

MAH-CET-2023

Slot-2

Q1.

A and B invest in a business in the ratio 3 : 2. If 5% of the total profit goes to charity and A's share is Rs. 855, the total profit is :

- A) 500
- B) 1000
- C) 1500
- D) 2000
- E) 2500

Q2.

In an election between two candidates, one got 55% of the total valid votes, 20% of the votes were invalid. If the total number of votes was 7500, the number of valid votes that the other candidate got, was :

- A) 2500
- B) 2700
- C) 2900
- D) 3100
- E) 2800

Q3. A bag contains 50 P, 25 P and 10 P coins in the ratio 5: 9: 4, amounting to Rs. 206. Find the number of coins of each type respectively.

- A) 360, 160, 200
- B) 160, 360, 200
- C) 200, 360, 160
- D) 200, 160, 300
- E) 360, 200, 160

Q4.

Two numbers are respectively 20% and 50% more than a third number. The ratio of the two numbers is:

- A) 2:5
- B) 3:5
- C) 4:5
- D) 5:4
- E) 5:3

Q5.

A student multiplied a number by $\frac{3}{5}$ instead of $\frac{5}{3}$, What is the percentage error in the calculation ?

- A) 54 %
- B) 64 %
- C) 74 %
- D) 84 %
- E) 94%

Q6.

Find the odd man out.

2, 5, 10, 17, 26, 37, 50, 64

- A) 50
- B) 37
- C) 26
- D) 64
- E) 17

Q7.

Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5?

- A) $\frac{1}{2}$
- B) $\frac{3}{5}$
- C) $\frac{9}{20}$
- D) $\frac{8}{15}$
- E) $\frac{7}{15}$

Q8.

A grocer has a sale of Rs 6435, Rs. 6927, Rs. 6855, Rs. 7230 and Rs. 6562 for 5 consecutive months. How much sale must he have in the sixth month so that he gets an average sale of Rs, 6500 ?

- A) 4991
- B) 5467
- C) 5987
- D) 6453
- E) 6435

Q9.

If selling price is doubled, the profit triples. Find the profit percent ?

- A) 100%
- B) 200%
- C) 300%
- D) 400%
- E) 50%

Q 10.

If 20% of $a = b$, then $b\%$ of 20 is the same as :

- A) 4% of a
- B) 6% of a
- C) 8% of a
- D) 10% of a
- E) 7% of a

Q 11.

Insert the missing number.

7, 26, 63, 124, 215, 342, (....)

- A) 391

- B) 421
- C) 481
- D) 511
- E) 581

Q 12.

Find the odd man out.

41, 43, 47, 53, 61, 71, 73, 81

- A) 41
- B) 61
- C) 71
- D) 81
- E) 73

Q 13. A clock is set right at 8 a.m. The clock gains 10 minutes in 24 hours will be the true time when the clock indicates 1 p.m. on the following day?

- A) 48 min. past 12.
- B) 46 min. past 12.
- C) 45 min. past 12.
- D) 47 min. past 12.
- E) 48 min. past 12

Q 14.

Out of 7 consonants and 4 vowels, how many words of 3 consonants and 2 vowels can be formed?

- A) 25200
- B) 52000
- C) 120
- D) 24400
- E) 150

Q 15.

A, B and C can do a piece of work in 24 days, 30 days and 40 days respectively. They began the work together but C left 4 days before the completion of the work. In how many days was the work completed?

- A) 11 days
- B) 12 days
- C) 13 days
- D) 14 days
- E) 15 days

Q 16.

A trader mixes 26 kg of rice at Rs. 20 per kg with 30 kg of rice of other variety at Rs. 36 per kg and sells the mixture at Rs. 30 per kg. His profit percent is:

- A) No profit, no loss

- B) 5%
- C) 8%
- D) 10%
- E) 7%

Q 17.

Three number are in the ratio of 3 : 4 : 5 and their L.C.M. is 2400. Their H.C.F. is:

- A) 40
- B) 80
- C) 120
- D) 200
- E) 100

Q 18.

A father said his son , " I was as old as you are at present at the time of your birth. " If the father age is 38 now, the son age 5 years back was :

- A) 14
- B) 19
- C) 33
- D) 38
- E) 21

Q 19.

If the length of the diagonal of a square is 20cm, then its perimeter must be

a. $402 - \sqrt{402}$ cm b. $302 - \sqrt{302}$ cm c. 10cm d. $152 - \sqrt{2}$ cm

- A) a
- B) b
- C) c
- D) d
- E) NONE OF THE ABOVE

Q 20.

Find the odd man out?

396, 462, 572, 427, 671, 264.

- A) 671
- B) 462
- C) 427
- D) 264
- E) 396

Q 21.

A, B and C enter into a partnership and their shares are in the ratio $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$. After 2 months, A withdraws half of his capital and after 10 months, a profit of Rs. 378 is divided among them. What is B's share ?

- A) 144
- B) 169
- C) 225

- D) 339
- E) 298

Q 22. The compound interest on rs.30000 at 7% per annum is Rs.4347. The period is

- A) 2 years
- B) 2.5 years
- C) 3 years
- D) 4 years
- E) 3.5 years

Q 23.

At what time between 2 and 3 o'clock will the hands of a clock be together?

- A) $(9 + 10/11)$ min past 2
- B) $(10 + 10/11)$ min past 2
- C) $(11 + 10/11)$ min past 2
- D) $(12 + 10/11)$ min past 2
- E) NONE OF THE ABOVE

Q 24.

The solution of the system $x + y - 3z = -6$, $-7y + 7z = 7$, $3z = 9$ is

- (1) $x = 1, y = 2, z = 3$
- (2) $x = -1, y = 2, z = 3$
- (3) $x = -1, y = -2, z = 3$
- (4) $x = 1, y = 2, z = 3$
- (5) $x = 1, y = 2, z = -3$

Q 25.

If $(x - 6)$ is the HCF of $x^2 - 2x - 24$ and $x^2 - kx - 6$ then the value of k is

- (1) 3
- (2) 5
- (3) 6
- (4) 8
- (5) 7

Q 26.

$$\frac{3y-3}{y} \div \frac{7y-7}{3y^2} \text{ IS}$$

- 1. $9y/7$
- 2. $9y^3/(21y-21)$
- 3. $21y^2 - 42y + 21/3y^3$
- 4. $7(y^2 - 2y + 1)/y^2$
- 5. None of the above

Q 27.

$y^2 + \frac{1}{y^2}$ IS NOT EQUAL TO

1. $y^4 + 1 / y^2$
2. $(y + 1/y)^2$
3. $(y - 1/y)^2 + 2$
4. $(y + 1/y)^2 - 2$
5. None of the above

Q 28.

$\frac{x}{x^2 - 25} - \frac{8}{x^2 + 6x + 5}$ GIVES

- a. $x^2 - 7x + 40 / (x-5) (x+5)$
- b. $x^2 + 7x + 40 / (x-5) (x+5) (x+1)$
- c. $x^2 - 7x + 40 / (x^2-25) (x+1)$
- d. $x^2 + 10 / (x^2 - 25) (x+1)$
- e. none of the above

Q 29.

Which of the following should be added to make $x^4 + 64$ a perfect square

- (1) $4x^2$
- (2) $16x^2$
- (3) $8x^2$
- (4) $-8x^2$
- (5) $8x$

Q 30.

The solution of $2x - 1^2 = 9$ is equal to

- (1) -1
- (2) 2
- (3) -1, 2
- (4) None of these
- (5) 1

Q 31.

The values of a and b if $4x^4 - 24x^3 + 76x^2 + ax + b$ is a perfect square are

- (1) 100,120
- (2) 10,12
- (3) -120,100

- (4) 12,10
- (5) 100, 0

Q 32.

If the roots of the equation $qx^2 + px + r = 0$ are the squares of the roots of the equation $qx^2 + px + r = 0$, then q, p, r are in _____

- (1) A.P
- (2) G.P
- (3) Both A.P and G.P
- (4) none of these
- (5) either 1 or 2

Q 33. Graph of a linear polynomial is a

- (1) straight line
- (2) circle
- (3) parabola
- (4) hyperbola
- (5) square

Q 34.

The number of points of intersection of the quadratic polynomial $x^2 + 4x + 4$ with the X axis is

- (1) 0
- (2) 1
- (3) 0 or 1
- (4) 2
- (5) 0 or 2

Q 35.

$$A = \begin{pmatrix} 1 & 3 & 5 & 7 \\ 2 & 4 & 6 & 8 \\ 9 & 11 & 13 & 15 \end{pmatrix}$$

For the given matrix A = the order of the matrix A^T is

- (1) 2×3
- (2) 3×2
- (3) 3×4
- (4) 4×3
- (5) 4×4

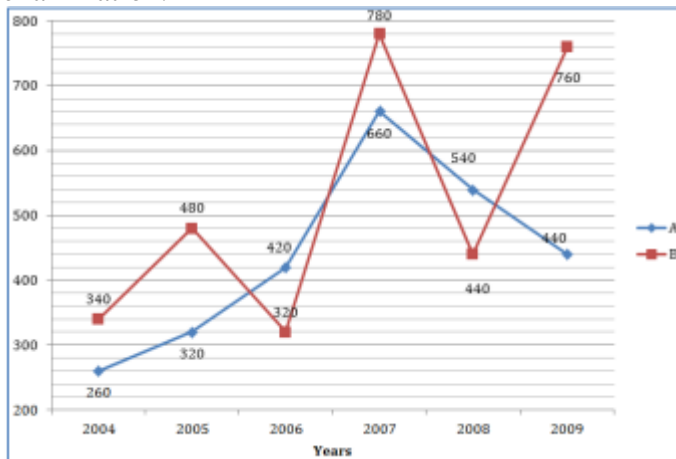
Q 36.

If A is a 2×3 matrix and B is a 3×4 matrix, how many columns does AB have

- (1) 3
- (2) 4
- (3) 2
- (4) 5
- (5) 6

Study the following table and answer the questions that follow. (question 37 to 41)

Given line graph shows the number of students appeared from state A and state B in an examination.



Q37. Number of students appeared from state B in 2009 is about what percent of total students appeared from state A?

- (a) 32
- (b) 30
- (c) 33
- (d) 28
- (e) 22

Q 38. What is the difference between the total number of students from state A in 2004 and 2005 together and those of state B in 2008 and 2009 together?

- (a) 520
- (b) 580
- (c) 620
- (d) 720
- (e) 680

Q39. What is the ratio of number of students appeared in examination from state B in 2004 ,2006 and 2008 to the number of students appeared from state A in 2005,2007 and 2009?

- (a) 73:55
- (b) 55:71
- (c) 79:15
- (d) 75:13
- (e) 13:85

Q40. If in 2010 the number of students appeared from state A is increase by 10% and those from state B increased by 15% as compared to the number of students from respective states in year 2009, then what is the ratio of number of students from state A and state B in 2010?

- (a) 287:439
- (b) 285:437
- (c) 289:437
- (d) 433:189
- (e) 242:437

Q41. What is the difference between average number of students from state A and state B?

- (a) 90
- (b) 60
- (c) 80
- (d) 70
- (e) 110

Q 42. A seller mark the price 50% above the cost price and give 10% discount on an item. While selling he cheats customer by giving 20% less in weight. Find his overall profit percent (approximate)?

- (a) 26% (b) 65% (c) 68% (d) 72% (e) 76%

Q43. There are 81 liters pure milk in a container. One-third of milk is replaced by water in the container. Again one-third of mixture is extracted and equal amount of water is added. What is the ratio of milk to water in the new mixture?

- (a) 1 : 2 (b) 1 : 1 (c) 2 : 1 (d) 4 : 5 (e) None of these

Q44. . A is 2 years older than B while B is 3 year younger than C. The ratio of age of A 6 years hence and B 2 years ago is 5:3. What was age of C 6 years ago?

- (a) 12 years (b) 19 years (c) 15 years (d) 14 years (e) 21 years

Q45. A, B and C started a business with their investments in the ratio 1 : 2 : 4. After 6 month A invested the half amount more as before and B invested same the amount as before while C withdrew th of his investment. Find the ratio of their profits at the end of the year.

- (a) 5 : 12 : 13 (b) 5 : 11 : 14 (c) 5 : 12 : 14 (d) 5 : 12 : 10 (e) None of these

Q 46. The average marks in Science subject of a class of 20 students is 68. If the marks of two students were misread as 48 and 65 of the actual marks 72 and 61 respectively, then what would be the correct average?

- (a) 68.5 (b) 69 (c) 69.5 (d) 70 (e) 66

Q 47. Study the following table and answer the question

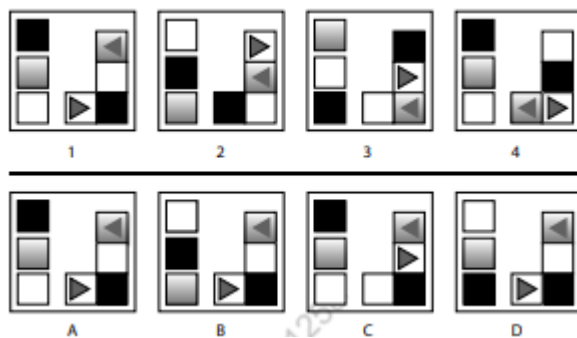
Village→	A		B		C	
Year ↓	Total Votes	Valid votes	Total Votes	Valid votes	Total Votes	Valid votes
2000	2500	2250	8000	7600	4400	4250
2005	3800	3250	6250	5800	5000	4600
2010	3400	3000	5900	5400	6720	6750

What is the average invalid votes for village A for the given years(approximate)?

- (a)400
- (b)425
- (c)450
- (d)375
- (e)350

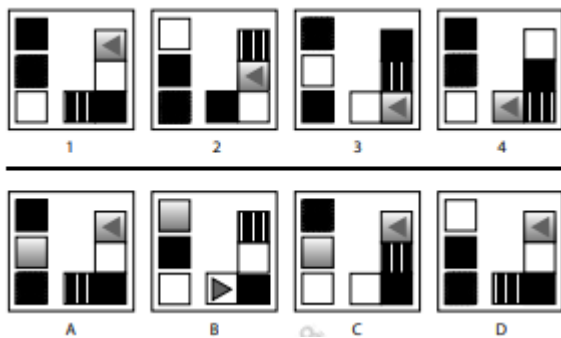
WHICH FIGURE COMPLETS THE SERIES IN THE FOLLOWING QUESTIONS

Q 48.



- 1. A
- 2. B
- 3. C
- 4. D
- 5. None of the above

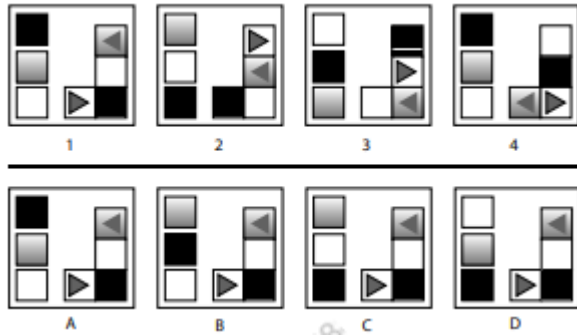
Q49.



- a. A

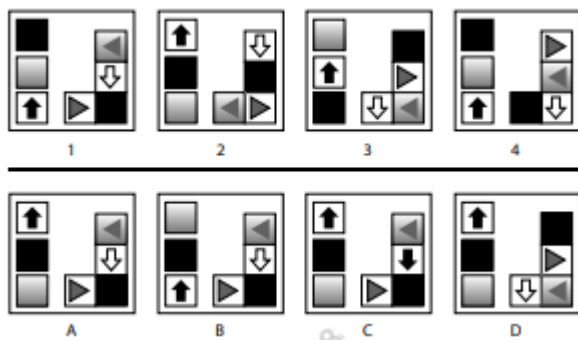
- b. B
- c. C
- d. D
- e. None of the above

Q 50.



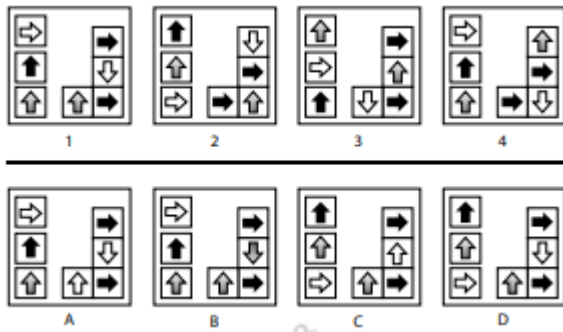
- a. A
- b. B
- c. C
- d. D
- e. None of the above

Q 51.



- a. A
- b. B
- c. C
- d. D
- e. None of the above

Q 52.



- A
- B
- C
- D
- None of the above

Q 53.

Find the SI on rupees 10000 deposited for 3 years at 5% per annum.

- 1200
- 1500
- 1800
- 4000
- None of the above

Q 54.

A person borrowed Rs 60,000 for 4 years at the rate of 2.5% per annum. Find the interest accumulated at the end of 4 years.

- 5000
- 6000
- 7000
- 8000
- None of the above

Q 55.

$a^3 - b^3 - 3ab(a-b)$ is equal to which of the following expression?

- $(a-b)^3$
- $(a-b)^2$
- $(a-b)^4$
- $(b-a)^3$
- $(a+b)^3$

Q 56.

Simplify $(2x-3y)^2 + (2x+3y)^2$.

- $4x^2 + 18y^2$
- $8x^3 + 18y^2$
- $8x^2 + 15y^2$
- $8x^3 + 18y^2$
- $4x^2 + 18y^3$

Q 57.

If $X+Y=7$ and $XY=12$, then find the value of $X^3 + Y^3$?

- 71

- b. 81
- c. 91
- d. 57
- e. 85

Q 58.

Find the area of the triangle whose vertices are A(2, 7), B(3, -1), and C(-5, 6).

- a. 57
- b. $57/2$
- c. 25
- d. 37
- e. 48

Q 59.

Find the coordinate of point O(x, y) which divides the line joining the points P(3, 4) and Q(1, 2) in the equal ratio.

- a. (2,4)
- b. (3,3)
- c. (2,5)
- d. (2,3)
- e. (4,3)

Q 60.

If a pole 6 m high casts a shadow $2\sqrt{3}$ m long on the ground, find the Sun's elevation.

- a. 40
- b. 50
- c. 60
- d. 70
- e. 80

Q 61.

Hollow spheres melt into the same small hollow sphere. The inner and outer radii of the larger sphere are 5 cm and 7 cm, respectively. If the inner and outer radii of the small spheres are 3 cm and 4 cm, respectively, how many small spheres can be formed? ($\pi=3.14$)

- a. 4
- b. 5
- c. 6
- d. 18
- e. None of the above

Q 62. Find the diagonal of the rectangle whose length is 12 cm and height is 5 cm.

- a. 13
- b. 23
- c. 33
- d. 15
- e. 18

Q 63.

Find the side of a cube whose surface area is 384 cm²?

- a. 1
- b. 2
- c. 3
- d. 8
- e. 5

Q 64.

Find the total surface area of a cuboid having dimensions as length = 4cm , width = 3cm , height = 2cm?

- a. 52
- b. 58
- c. 57
- d. 82
- e. 32

Q 65.

Find the Lateral Surface area of the cuboid, if its length, breadth, and height are 8cm, 9cm, and 10cm respectively?

- a. 352
- b. 358
- c. 340
- d. 820
- e. 320

Q 66.

Find the volume and capacity of cylinder whose radius is 14 cm and height is 21cm.

- a. 12.930
- b. 14.930
- c. 19.930
- d. 23.470
- e. 25.350

Q 67.

Which of the following is the roots of $x^2 - 5 + 6 = 0$

- a. 1
- b. 2
- c. 3
- d. 4
- e. Both b and d

Q 68.

Peter buys a bag at the price of Rs 27.50. After some days, he sells it at the price of Rs 28.90. What is the percentage of his gain?

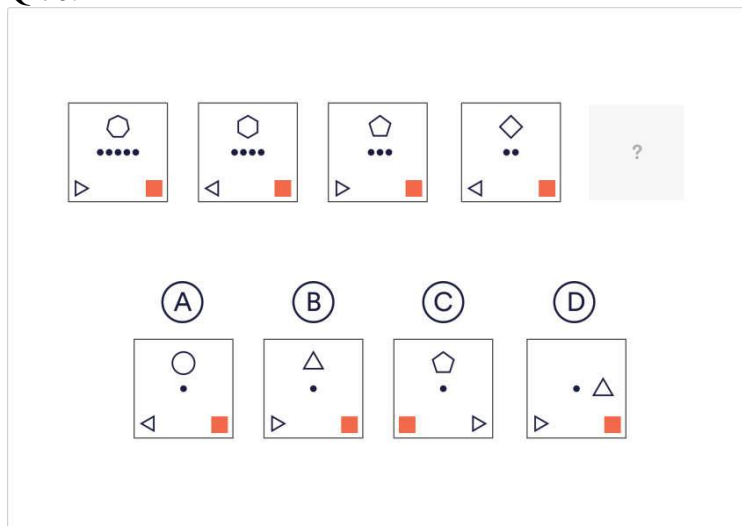
- (A) 7.19%
- (B) 5.09%
- (C) 5.55%
- (D) 6.09%
- (E) 8.25%

Q69.

A fruit seller sells all his bananas at the cost price but gives 15% less bananas as he should give. Find his profit percentage?

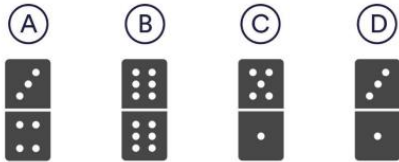
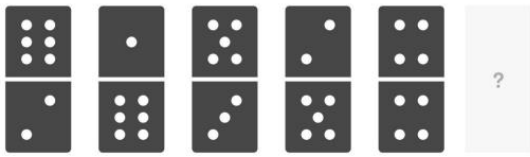
- (A) 17.64%
- (B) 15.64%
- (C) 18.60%
- (D) 4.45%
- (E) 8.25%

Q 70.



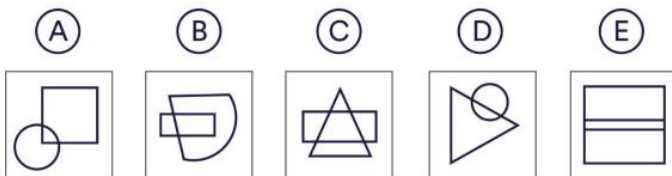
- a. A
- b. B
- c. C
- d. D
- e. None of the above

Q 71.



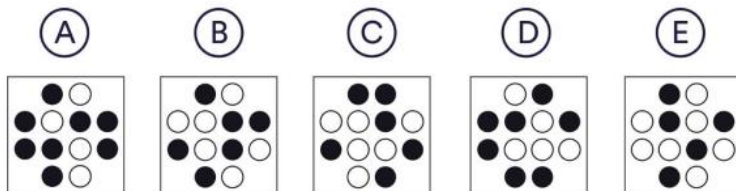
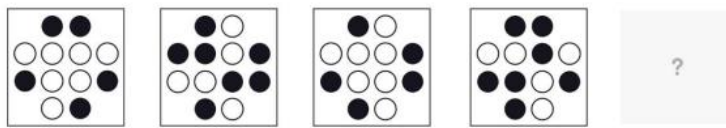
- a. A
- b. B
- c. C
- d. D
- e. None of the above

Q 72.



- a. A
- b. B
- c. C
- d. D
- e. E

Q 73.



- a. A
- b. B
- c. C
- d. D
- e. E

In each of the following sentences, a part of the sentence is underlined. Beneath each sentence, four different ways of phrasing the underlined part are indicated. Choose the best alternative from among the four.

Q 74 . Amar, Binod, Chand and me were all cited for contempt of court.

- (a) Amar, Binod, Chand and me were all cited
- (b) Amar, Binod, Chand and I were all cited
- (c) Amar, Binod, Chand and I were the ones cited
- (d) Amar, Binod, Chand and I were cited
- (e) Amar, Binod, Chandan are cited

Q75. It is often better to try repairing an old vehicle than to junk it.

- (a) to try repairing an old vehicle than to junk it.
- (b) to repair an old vehicle than to have it junked.
- (c) to try repairing an old vehicle than to junking it.
- (d) to try to repair an old vehicle than to junk it.
- (e) to try and repair old vehicle instead to junk it.

Q76. Vijayendra eats faster than me.

- (a) Vijayendra eats faster than me.
- (b) Vijayendra eats the fastest of us two.
- (c) Vijayendra eats the fastest of us both.
- (d) Vijayendra eats faster than I.
- (e) vijayendra eats fast

Q77. I think everybody in this office works faster than me.

- (a) everybody in this office works faster than me.
- (b) everybody in this office works faster than I.
- (c) everybody in this office works more quickly than me.
- (d) everybody in this office works more quickly than I do.
- (e) none of the above

Q78. Neither of the two boys' explanations were satisfactory.

- (a) Neither of the two boys' explanations were
- (b) Neither of the two boys' explanation were
- (c) Neither of the two boys' explanations was
- (d) Neither of the two boy's explanations were
- (e) Neither of the two boy explanations was

Pick out the most effective pair of words from the given pair of words to make the sentence/sentences meaningfully complete.

Q79. Many people take spirituality very seriously and _____ about those who do not worrying about them and _____ them to believe.

- (a) think, criticizing
- (b) pride, appraising
- (c) rationalize, enabling
- (d) wonder, prodding
- (e) none of the above

Q80. Unless new reserves are found soon, the world's supply of coal is being _____ in such a way that with demand continuing to grow at present rates reserves will be _____ by the year 2050.

- (a) consumed, completed
- (b) depleted, exhausted
- (c) reduced, argument
- (d) brunt, destroyed
- (e) used, dispossed

Q81. If you are _____, you tend to respond to stressful situations, in a calm secure, steady and _____ way.

- (a) resilient, rational
- (b) obdurate, manageable
- (c) propitious, stable
- (d) delectable, flexible
- (e) none of the above

Q82. Management can be defined as the process of _____ organizational goals and non-human resources to _____ improve value added to the world.

- (a) getting, deliberately
- (b) managing, purposefully
- (c) targeting, critically
- (d) reaching, continuously

(e) proper, carefully

Q83. If you are an introvert, you _____ to prefer working alone and, if possible, will _____ towards projects where you can work by yourself or with as few people as possible.

- (a) like, depart
- (b) advocate, move
- (c) tend, gravitate
- (d) express, attract
- (e) none of the above

Read the passage below and solve the questions based on it. (question 84 to 87)

It is difficult to compare countries because various factors such as size, Culture, History, Geography, natural endowments, geopolitics and internal polity comes into play. There are some goals which can be achieved by smaller countries; but sometimes smaller countries find it difficult to embark upon certain big technological plans even if they have the funds, because the size of the domestic market is too small. If we consider the bigger countries, the closest comparison to India is China, though there are many crucial differences. The Chinese vision is to prepare the county for entry into the ranks of mid-level developed nations by the middle of the twenty-first century. Acceleration of his nation's economic growth and social development by relying on advances in science and technology is pivotal in this. Documents describing the Chinese vision state that science and technology constitute premier productive forces and represent a great revolutionary power that can propel economic and social development. It is interesting to note that the main lessons the Chinese have drawn from their past performance is their failure to promote science and technology as strategic tools for empowerment. They also point to the absence of mechanisms and motivations in their economic activity to promote dependences on science and technology. Similarly, they hold that their scientific and technological efforts were not oriented. They conclude that a large number of achievements were not converted into productive forces as they were too far removed from China's immediate economic and social needs. The Chinese vision is therefore aimed at exploiting state-of-art science and technology to enhance the nation's overall power and strength, to improve the people's living standards, to focus on resolving problems encountered in large-scale industrial and agricultural production and to effectively control and alleviate pressures brought on by population resources and the environment. By the year 2000, China had aimed at bringing the main industrial sectors up to the technological levels achieved by the developed countries in the 1970s or 80s and by 2020 to the level they would have attained by the early twenty-first century. The aim is to bridge an overall gap with the advanced world. There is a special emphasis on research and development of high technologies that would find defense applications. Some of these technologies are critical for improving the features of key conventional weapons. Some technologies are meant for enhancing future military capabilities. Other efforts are aimed at maintaining the momentum to develop capabilities for cutting-edge defense technologies. They call for defense technologies. They call for unremitting efforts in this regard with the aim of maintaining effective self defense and nuclear deterrent capabilities and to enable parity in defense, science and technology with the advanced world.

Q84. Comparison between two countries becomes difficult because
A. the countries differ in their internal political systems.

B. each country has its own culture and natural resources which differ from those of others.

C. the countries with homogeneous backgrounds are many in number.

(a) Only A

(b) Only B

(c) Only A and B

(d) All the three A, B and C 38.

(e) only C

Q85.

Which of the following have the Chinese identified as their pitfall(s) from their past?

A. Lack of orientation of Science and Technology towards economic growth.

B. Lack of mechanisms in their economic activities to promote use of Science and Technology.

C. Neglect of Science and Technology as a strategic measure for empowerment.

(a) Only A and B

(b) Only B and C

(c) Only A and C

(d) All the three A, B and C

(e) NONE OF THE ABOVE

Q86.

Which of the following is/are the expected result/s of China's new visions?

A. To augment peoples' standard of living.

B. To tackle pressure effectively brought on by the population.

C. To utilize modern technology for bringing the latent power under control.

(a) Only A and B

(b) Only B and C

(c) Only A and C

(d) All the three A, B and C 40.

(e) CAN NOT BE DETERMINED

Q87.

Which of the following is the essence of the contents of the passage?

(a) Enormous population of the country can be positively utilized for developments.

(b) Scientific and Technological principles may not necessarily be instrumental in economic growth. (c) Harmonious development of a country can take place even in the absence of technology upgradation.

(d) Economic growth needs to be driven by science and technology

(e) can not be determined

Q 88.

Teenagers are best reached via their favourite pastimes and hobbies – internet, music, movies, peer groups, sports, etc. It is through these very formats they can be told of things that would be good for them in the long run – decency, patriotism, honesty, hard work, fair play, community feeling, harmony and tolerance. Being natural rebels, no teenager likes to be lectured. These

values must be communicated to them in palatable ways of their own choice via their own favorite communication modes. Only then will the lessons stick.

Which of these can be derived from the passage:

- (a) Everything cannot be taught in schools and colleges.
- (b) Subtlety and sensitivity would help in reaching out to teenagers.
- (c) Being young, teenagers tend to have short attention spans. Long term issues must be communicated in special ways, which they are attracted to.
- (d) (a) and (b) both.
- (e) only C

Q89.

Brushing your teeth regularly, no matter which toothpaste you use, will reduce your chances of tooth decay. Scientists have concluded that, when you brush, you reduce tooth decay by removing the film of plaque that forms on teeth and gums. So, you can forget about fluorides: brush your teeth carefully and say goodbye to cavities

Which one of the following is a criticism of the reasoning in the argument?

- (a) Brushing with fluoride toothpaste has been shown to reduce tooth decay.
- (b) The fact that brushing will reduce tooth decay does not show that fluorides are of no value.
- (c) Few people adequately remove plaque by brushing.
- (d) People have plaque on their teeth most of the time.
- (e) forget about fluorides: brush your teeth carefully and say goodbye to cavities

Read the passage and answer the questions (90 to 93)

The new financial secretary Donald Tsang has said he is committed to the principle and philosophy of financial management enshrined by his predecessor Sir Hamish Macleod. It was really not surprising to hear such a message as our Government has consistently reiterated its noninterventionist policy.

Our Government is proud of the low taxation policy, free market operations and the enterprising nature of the economy, as it believes that all these lay the strong financial foundations that make possible the economic boom in Hong Kong. Hence, the role of the Government is to interfere, as little as possible, in the public sector, for fear of damaging the "normal" operation of the market.

Government spending in money terms has never exceeded 20 per cent of the Gross Domestic Product (GDP). since 1945, Many people in Hong Kong are scared by the spectre of unemployment and yet the Government has done nothing to solve the problem, because administration officials do not want to spoil the miraculous market mechanism. There is talk of "self help" by entrepreneurs involved in the market. Meanwhile, the unemployment rate is rocketing. I believe the Government should act to combat this problem. Owing to the lack of a comprehensive unemployment security scheme and unemployment insurance which exist in western industrial countries (for example, the US and Germany), Hong Kong's jobless suffer more psychological and social pressure than their Western Counterparts.

The unemployed have a heavy psychological burden to bear. This can lead to them having feelings of low self-esteem and a feeling that they are worthless. Those who seek help from the Social Welfare Department (SWD) have to endure the complicated application procedure and the inhuman and harsh means test. The procedure to apply for assistance is not as easy as one

would imagine. This puts the unemployed under great pressure. I do not believe that maintaining the policy of minimal government intervention will stem rising unemployment. The Government should make its "invisible" hand in the market become visible by, for example, creating more job opportunities for the unemployed; ensuring age and sex discrimination do not exist in the workplace, restraining employers from exploiting employees, in the way that some employers do by taking on casual staff and making them work long hours and, finally, bringing under control the "crazy" property speculation of capitalists.

Q.90 What is the writer's attitude to the new financial secretary Donald Tsang?

- (a) Encouraging
- (b) Critical
- (c) Supportive
- (d) Committed
- (e) Important

Q91. What is the main point of paragraph 4?

- (a) To analyze the problem
- (b) To give reasons for the call for action
- (c) To describe the pattern of government spending
- (d) To describe the operation of the free market.
- (e) To define problem

Q92. What is the writer's attitude to the role of government in the Hong Kong economy?

- (a) Critical of the new initiatives taken
- (b) Agreeing that the less intervention, the better
- (c) Arguing that more intervention is required
- (d) Arguing that in the past the wrong type of intervention has taken place in Hong Kong.
- (e) none of the above

Q93. In paragraph 4 'endure' could be replaced by which of the following?

- (a) Enjoy
- (b) Wait for
- (c) Demanding
- (d) Put up with
- (e) delighted

Table given below shows total number of students in five different schools and ratio of boys and girls in each school. Answer the following questions based on given data-

Schools	Total Students	Boys : Girls
A	1250	13 : 12
B	1500	13 : 17
C	1400	11 : 9
D	1350	8 : 7
E	1100	5 : 6

Q94. What is the ratio between average number of boys in school A, C, E together to the average number in girls of school B and D together ?

- (a) 33 : 35
- (b) 32 : 37
- (c) 31 : 39
- (d) 39 : 31
- (e) 37 : 32

Q95. In a school F, total number of students are 40% of school B and school D students altogether. If number of boys in school F is 650, find number of girls in school F?

- (a) 490
- (b) 440
- (c) 480
- (d) 475
- (e) 500

Q96. Find ratio between total number of boys in school A, B and C together to total number of girls in school C, D and E together?

- (a) 72 : 65
- (b) 67 : 61
- (c) 69 : 62
- (d) 75 : 64
- (e) 36 : 29

Q97.

Total number of boys in school C is what percent of the total number of girls in school D?

- (a) $127\frac{2}{9}\%$
- (b) $120\frac{2}{9}\%$
- (c) $125\frac{2}{9}\%$
- (d) $130\frac{2}{9}\%$
- (e) $122\frac{2}{9}\%$

In each question, there are five sentences. The sentence labelled A is in its correct place. The four that follow are labelled B, C, D and E, and need to be arranged in the logical order to form a coherent paragraph. From the given options, choose the most appropriate option.

Q98.

- A. I think about this when I take my own children to galleries.
- B. My most artistic child is actually the most bored by galleries.
- C. So, I take my children to see idiosyncratic art, such as the Turner prize but they often think it's silly.
- D. You just don't know what is going to capture their attention.

E. Although I'm the daughter of a painter, art didn't light me up in the way theatre and stories did that is why it's so important for children to get access to a broad range of culture.

- (a) ECDB
- (c) DECB
- (b) EBCD
- (d) DCBE
- (e) ABCD

Q99.

A. Multiculturalism is best understood neither as a political doctrine with a programmatic content nor a philosophical school with a distinct theory of man's place in the world but as a perspective on or a way of viewing human life.

B. This does not mean that they are determined by their culture in the sense of being unable to rise above its categories of thought and critically evaluate its values and system of meaning.

C. Rather that they are deeply shaped by it and can overcome some but not all of its influences. They necessarily view the world from within a culture, be it the one they have inherited and uncritically accepted or reflectively revised or, in rare cases, the one they have consciously adopted.

D. Its central insights are sometimes misinterpreted by its advocates and needs to be carefully reformulated if it is to carry conviction.

E. Human beings are culturally embedded in the sense that they grow up and live within a culturally structured world and organise their lives and social relations in terms of a culturally derived system of meaning and significance.

- (b) DBEC
- (d) DEBC
- (a) EDCB
- (c) EBCD
- (e) ABCD

Q 100.

A. Many animals possess protective markings to avoid predation, including patterns to reduce the risk of detection, to indicate that the animal is toxic or inedible, or to mimic another animal or object.

B. Many eyespots are effective in startling or intimidating predators, and can help to prevent or stop an attack.

C. In addition, many creatures such as butterflies, moths, and fish possess two or more pairs of circular markings, often referred to as 'eyespot'.

D. However, recent work by zoologists indicates that this widely held hypothesis has no experimental support. E. For the past 150 years it has been assumed that this is because they mimic the eyes of the predator's own enemies.

E. For the past 150 years it has been assumed that this is because they mimic the eyes of the predator's own enemies.

- (a) CBED
- (c) BCDE
- (b) EBDC

- (d) CDBE
- (e) ABCD

Q 101.

- A. Students aren't taught to read and draw maps of different scales and to analyse places, distances, areas and distributions using maps,
- B. Our cognitive abilities allow us to use those mental maps to answer questions.
- C. Mapping exercises help build students' mental maps, or those maps that we all see "in our mind's eye."
- D. Instead, students in today's classrooms are shown. simple maps of places they are studying, with the intent being to learn the place names and something about the places.
- E. Our brains are capable of being trained not only to draw mental maps, but also to zoom and pan across those maps, to associate many different spatial pat- terns and to make decisions based on the analysis.

- (a) BCDE
- (c) CBED
- (b) BEDC
- (d) BDEC
- (e) ABCD

SELECT THE CORRECT WORD (question 102 – 105)

Q 102.

- 1 Synchronize
- 2. Syycronise
- 3. Synchronize
- 4. Synchromise
- 5 . Synchronis

Q 103.

- 1.Surveillance
- 2. Surveillence
- 3. Survellence
- 4. Survaillence
- 5. survalence

Q 104

- A. Iminent
- B. Imminent
- C. Iminnent
- D. Imineent
- E. Imennt

Q 105.

- A. Cheqe
- B. Ceque
- C. Cheque
- D. Chequee
- E. Chek

Q 106.

Tenacious.....

- (A) holding fast
- (B) collecting
- (C) fast running
- (D) intentional
- (E) quick

Q 107.

Terse.....

- (A) brief in speech
- (B) beyond fear
- (C) without honor
- (D) under strain
- (E) detailed

Q 108.

Maya Said to him, "You can do this work."

- (A) Maya told him that he could do that work.
- (B) Maya told him that he could do this work.
- (C) Maya told him that he can do that work.
- (D) Maya told him that he would do that work.
- (E) Maya told him that she can do that work.

Q 109.

Read the following passage and answer the given questions:

Abraham Lincoln served as the 16th President of the United States. yet he never went to college. In fact, Lincoln had nearly no formal education whatsoever, attending schools for less than a year throughout his childhood. Yet this should not be construed to mean that Lincoln was ignorant or unlearned; on the contrary, he was one of the most well-read leaders of the time. The fact is that Abraham Lincoln educated himself by studying books of religion, philosophy, and literature, and he continued his voracious reading throughout his life. A lack of public school education did not prevent Lincoln from becoming a great leader. He led the United States through four years of civil war, which threatened to divide the nation into two separate countries. He was a powerful opponent of slavery, and it was largely through his leadership that slavery was abolished in this country. Lincoln's determination to educate himself through diligent reading also led to his reputation as a great orator-and even today his speeches are

quoted and studied worldwide. He serves as an example of a great leader and a great reader. His love of books and good literature enabled Abe Lincoln to rise to world renown.

Identify the part of speech of the word "renown" in the context of the given passage.

1. Adjective
2. Verb
3. Noun
4. Adverb
5. pronoun

Q 110.

Directions: Read the passage given below and answer the questions that follow by choosing the correctmost appropriate options:

On his way back from Tokyo, Chief Minister M.K. Stalin on Wednesday wrote to Union Minister for Civil Aviation Jyotiraditya Scindia, requesting him to re-introduce direct flight connectivity between Tokyo and Chennai. He also sought more flights between Singapore and Madurai.

The Chief Minister visited Japan and Singapore to invite industrialists to the Global Investors' Meet in Chennai in January. The direct flight between Chennai and Tokyo, launched in October 2019 by All Nippon Airways (ANA), was discontinued during the COVID-19 pandemic, he pointed out.

"The lack of direct flight connectivity more than doubles the travel time between these two destinations by about seven hours, which is significant. There have been persistent requests from the Japanese business community in Tamil Nadu to resume direct flight services between Chennai and Tokyo," he said.

Several Japanese conglomerates such as Nissan, Toshiba, Yamaha, Komatsu, Mitsubishi and Hitachi had set up manufacturing facilities in Tamil Nadu. Of the 12 industrial townships established in India under the Japan-India Investment Promotion Partnership Program, three were in Tamil Nadu. With over 600 Japanese companies having establishments in the State for the past two decades, the influx of Japanese expatriates had gradually increased. Chennai was home to the largest Japanese community in India, Mr. Stalin said.

Uitarature MCO

Linguistics MCD

"At the same time, Japan also has a significant Tamil diaspora, particularly professionals in fields related to information Technology and finance. As a result, there has been a steady strengthening of economic and cultural relations between Tamil Nadu and Japan, and people-to-people relationships in the form of tourism are also growing," the Chief Minister said.

Singapore had nearly 4 lakh people of Tamil origin, who maintained links with their native towns and villages, predominantly in southern Tamil Nadu. Further, many people travelled from the southern districts of Tamil Nadu to Singapore for employment, the Chief Minister said. While there are multiple daily flights between Singapore and Chennai and Tiruchi and one daily flight between Singapore and Coimbatore, there is only a tri-weekly flight between Singapore and Madurai. This need for more flight services between Singapore and Madurai was raised by the Minister for Home Affairs and Law of the Government of Singapore, K Shanmugam, when he met me," Mr. Stalin said.

A similar request was made by many members of the Tamil diaspora in Singapore, Mr. Stalin said. Would be grateful the request for permitting more flights between Singapore and Madurai is favourably considered he added

What is the main theme or focus of the passage?

1. Industrial development in Tamil Nadu
2. Tamil diaspora in Singapore
3. Strengthening economic relations between Tamil Nadu and Japan
4. Request for increased flight connectivity
5. Tamil development

Q111. Only those who work hard will enjoy the later__

- a) Suckcess
- b) succes
- c) sucess
- d) success
- (e) freedom

Q112. The word outside the bracket will go with only four of the words inside the brackets to make longer words. Which one word will it not go with?

Land (lady, lord, car, slide)

- a) lady
- b) lord
- c) car
- d) slide
- (e) none of the above

Q113. Pencil is to write as eraser is to

- a) pen
- b) ink
- c) scale
- d) erase
- (e) draw

Q114. RAPID means

- a) quick
- b) fast
- c) speedy
- d) all of above
- (e) none of the above

Q115. Which word describes all other words?

- a) milk
- b) rice
- c) food
- d) tomato
- (e) onion

Q116. $5760 \div 45 \times 15 = ?$

- (a) 1850
- (b) 1875
- (c) 1920
- (d) 1925
- (e) 1970

Q117. $81\% \text{ of } 2300 - 34\% \text{ of } 550 = ?$

- (a) 1574
- (b) 1676
- (c) 1624
- (d) 1596
- (e) 1723

Q118. $25639 - 5252 - 3232 = ?$

- (a) 17254
- (b) 16154
- (c) 17155
- (d) 16255
- (e) 17815

Q119. The word outside the bracket will go with only four of the words inside the brackets to make longer words. Which one word will it not go with?

Con (tent, sent, man, jibe, verge)

- a) tent
- b) sent
- c) man
- d) jibe
- e) verge

Q120. Which word describes all other words?

- a) Blue
- b) Color
- c) Green
- d) Orange
- e) black

Q 121. Statements:

No toffee is coffee.
No sweet is toffee.

Conclusions:

- I. No coffee is sweet.
- II. All sweets are coffee.

OPTIONS

- A. if only conclusion I follows.
- B. if only conclusion II follows.
- C. if either conclusion I or conclusion II follows.
- D. if neither conclusion I nor conclusion II follows.
- E. if both conclusion I and conclusion II follow.

Q122.

Statements:

All medals are awards.
All rewards are medals.

Conclusions:

- I. All rewards are awards.
- II. All awards are medals.

OPTIONS

- A. if only conclusion I follows.
- B. if only conclusion II follows.
- C. if either conclusion I or conclusion II follows.
- D. if neither conclusion I nor conclusion II follows.
- E. if both conclusion I and conclusion II follow.

Q123.

Statements:

Some trees are plants.
All bushes are plants.

Conclusions:

- I. At least some trees are bushes.
- II. Some trees are definitely not bushes.

OPTIONS

- A. if only conclusion I follows.
- B. if only conclusion II follows.
- C. if either conclusion I or conclusion II follows.
- D. if neither conclusion I nor conclusion II follows.
- E. if both conclusion I and conclusion II follow.

Q124.

Statements:

All bottles are glasses.
No cup is a glass.

Conclusions:

- I. No bottle is a cup.
- II. At least some glasses are bottles.

OPTIONS

- A. if only conclusion I follows.
- B. if only conclusion II follows.
- C. if either conclusion I or conclusion II follows.
- D. if neither conclusion I nor conclusion II follows.
- E. if both conclusion I and conclusion II follow.

Q125.

Statements:

- All windows are doors.
- All entrances are windows.
- No gate is a door.

Conclusions:

- I. At least some windows are gates.
- II. No gate is an entrance.

OPTIONS

- A. if only conclusion I follows.
- B. if only conclusion II follows.
- C. if either conclusion I or conclusion II follows.
- D. if neither conclusion I nor conclusion II follows.
- E. if both conclusion I and conclusion II follow.

Q126.

- All planets are stars.
- All meteors are planets.
- No orbit is a star.

Conclusions:

- I. All meteors are stars.
- II. No planet is an orbit.

OPTIONS

- A. Conclusion I follows.
- B. Conclusion II follows.
- C. Either conclusion I or conclusion II follows.
- D. Both conclusion I and conclusion II follows.
- E. if both conclusion I and conclusion II follow.

Q127.

Which assumptions are implied from the below statement? Statement: The teacher warned the class to maintain silence otherwise she will stop teaching.

Assumptions:

I: Hearing the warning, the students may stop talking.

II: The students are very notorious to stop just by the teacher's request.

1. Only I is implicit
2. Only II is implicit
3. Both I and II are implicit
4. Neither I nor II is implicit
5. Not attempted

Q128.

Direction: In the question below, a statement and assumptions numbered I and II are given. An assumption is something supposed or taken for granted. You have to consider the following assumption and decide which of the assumption is implicit in the statement.

Statement: "In 10-20 years, the real impact of global warming will be felt, says climatologist"

Assumptions:

- I. Global warming is melting arctic ice and raising sea levels.
II. Global warming can affect climate change.

1. Only assumption I is implicit
2. Only assumption II is implicit
3. Both I and II are implicit
4. Neither I nor II is implicit
5. None of these

Answer the following questions with help of the paragraph below. (q 129 and q 130)

Aliya is the youngest member of the family. Her cousin Boman's paternal grandmother, Chaaru, is her maternal grandmother, while Boman's maternal grandfather, Dinkar, is her paternal grandfather. Mother of Aliya's father, Fenil and Boman's mother, Geet is Esha. Hitharth is Fenil and Geet's father-in-law. Ilesh, Geet's husband is very fond of Jugal, his only brother-in-law's son. Kajri warns her brother Ilesh not to spoil her son Jugal by pampering him too much.

Q129. How is Dinkar's daughter related to Jugal's father?

- (1) Sister-in-law
- (2) Sister
- (3) Wife
- (4) Daughter
- (5) Niece

Q130. What is the relationship of Hitharth with Boman and Kajri respectively?

- (1) Father, Paternal grandfather
- (2) Maternal grandfather, Father

- (3) Maternal grandfather, Father-in-law
- (4) Paternal grandfather, Father
- (5) Paternal grandfather, Father-in-law

Q 131.

Pointing to Reena is the photograph, I said, "This woman's father's wife's only brother Rahul is the father of my daughter's father". How is Rahul related to Reena?

- (1) Father
- (2) Aunt
- (3) Uncle
- (4) Cannot be determined
- (5) sister

Q132. Radha Dholakia, the unmarried daughter of Amit said, "I have two brothers and one sister. My sister's sister-in-law Ratnika Shah's son is named Rajan"

What is Radha's sister's surname?

- (1) Dholakia
- (2) Shah
- (3) Dholakia or Shah
- (4) Cannot be determined
- (5) Radha

Q133.

Ramesh's brother-in-law's only sister Rita's son is Rahul. How is Rahul related to Ramesh, if Ramesh is male?

- (1) Son
- (2) Son-in-law
- (3) Niece
- (4) Uncle
- (5) brother

Q134. Amongst 3 couples who went for a movie, there are 2 sisters and 2 brothers Santa is married to Clara, who is the sister-in-law of Raj, the eldest male How are Raj and Banta related?

Clara has no sister

Banta calls Kanta his sister-in-law Another female is named Nandita

- (1) Brothers
- (2) Brothers-in-law
- (3) None of these
- (4) Cannot be determined
- (5) sister

Q135. A family of 6 has 3 couples from 3 different generations. The members of the family are A,B,C,D,E,F and their professions are Lawyer, Doctor, Engineer, Housewife, Electrician and Business; not necessarily in the same order

1. A, the lawyer is married to a female Doctor
2. E, an electrician is the son of F

3. C, the businessman is married to an engineer and is the son-in-law of B, a housewife
Who is E's child?

- (1) A
- (2) C
- (3) D
- (4) B
- (5) F

Q136. Rahul is presently facing north. He turns right and walks 7 km. He again turns right and walks along a curved path towards the south and stops at a point exactly south of the starting point at a distance of 7 km from the starting point. Find the length of the curved path (in km) travelled by Rahul

- (1) 31.42 kms
- (2) 14 kms
- (3) 11 kms
- (4) 24 kms
- (5) 20 kms

Q 137.

Aadesh is currently facing north. He turns east and walks for 4 km. He then turns south and walks 4 km. He repeats this process 2 more times. Find the distance between his starting point and the final point

- (1) $12\sqrt{2}$ kms
- (2) $8\sqrt{2}$ kms
- (3) 24 kms
- (4) None of these
- (5) 20 kms

Q138.

Raghu starts his journey on a straight line railway track, moving in a direction perpendicular to the track. He moves 9 km to the south, then takes a 135° anti-clockwise turn and moves 15 kms to reach back on the track. If Raghu's speed is 12 km/hr, how much time would it take for Raghu to travel in a straight line from the start point to the end point?

- (1) 2 hours
- (3) 1 hour
- (2) 40 minutes
- (4) Cannot be determined
- (5) 3 hours

Q139.

Five friends Shobhit, Sumit, Shardul, Shrenik and Shirish are sitting on adjacent chairs facing the east, not necessary in the given order. Sirish sits to the right of Sumit while Shobhit sits to Sumit's left

Shirish has only one person to his right

Shobhit sits at one of the corners Shardul is third to the left of Shrenik.
The correct order of their arrangement from North to South is:

- (1) Shirish, Shardul, Sumit, Shobhit, Shrenik
- (2) Shobhit, Sumit, Shardul, Shirish, Shrenik
- (3) Shobhit, Shardul, Sumit, Shirish, Shrenik
- (4) None of the above
- (5) Shobhit, Shardul, Sumit, Shirish, Shrenik

Q140.

Five friends individually visit a factory on six days from Monday to Saturday. On one day of the week, no one goes to the factory. C goes before D but not on the immediate previous day. B goes after D. If E goes on Friday, on how many out of 6 days can A probably go?

- (1) 5
- (2) 2
- (3) 3
- (4) 4
- (5) 1

Q141.

4 couples are sitting at the vertices of a regular octagon with every husband-wife pair diagonally opposite each other. The males are Gopi, Rajan, Aman and Ketan while the females are Radha, Anisha, Geeta and Kavita. All of them face the centre.

Husband wife share the same initials. Gopi and Ketan individually sit between two females. The other two males sit next to each other with Rajan sitting opposite the girl neighbouring Ketan.

What is Anisha's position?

- (1) Between Kavita and Geeta
- (2) Between Ratan and Geeta
- (3) Between Radhika and Gopi
- (4) Between Gopi and Ratan
- (5) between ratan and gopi

Read the given information carefully and answer the questions given beside:

Eight friends Pratheep, Rahim, Tushar, Uday, Ximon, Yadav, Wafiq and Zaheer have their birthday on either 17th or 28th of four different months among May, June, July and September but not necessarily in the same order. Ximon has birthday on 17th of a month of 31 days. Only one person has birthday before Rahim. Number of persons having birthday between Rahim and Uday is one more than the number of persons having birthday between Rahim and Ximon. Yadav and Zaheer have their birthdays in the same month having 30 days but not in the month of June. Wafiq's birthday is after Pratheep's birthday. Only three persons have birthday between Rahim and Tushar. Yadav don't have birthday before Zaheer.

Q142. Who has birthday on 28th September?

- A. Tushar
- B. Zaheer

- C. Uday
- D. Yadav
- E. None of these

Q143.

Who among the following have birthdays between 28th June and 17th September?

- A. Only Wafiq
- B. Only Tushar
- C. Both Wafiq and Tushar
- D. Both Tushar and Yadav
- E. None of these

Q144. **How many persons have their birthdays between Pratheep and Zaheer?**

- A. One
- B. One
- C. Three
- D. Four
- E. None of these

Q145.

On which of the following dates Uday has his birthday?

- A. 28th September
- B. 28th June
- C. 17th September
- D. 17th May
- E. None of these

Q146. Which of the following statements is correct?

- I. Two persons have their birthdays between the birthday of Rahim and Uday.
 - II. Wafiq's birthday is after Tushar's birthday.
 - III. Ximon and Yadav have their birthdays in the beginning and end respectively.
- A. Only I and II
 - B. Only II
 - C. Only III
 - D. Only II and III
 - E. All of these

Q147.

If the code for 'life and us' is 'xy av ba', then what is the code for 'in and meet' in the given code language?

- A. ba la ny
- B. av xy ny
- C. ny xy la
- D. Can't be determined
- E. Either A or C

Q 148.

AD EI IN OS _ ?

- A. UX
- B. XY
- C. WY
- D. UY
- E. VY

Q149.

MN QR UV _ ?

- A. XY
- B. WX
- C. YX
- D. YZ
- E. CF

Q150.

C J P _ ? Y B

- A. W
- B. U
- C. R
- D. T
- E. N

Q151. AN, CP, ER, _ ?

- A. VI
- B. GT
- C. AP
- D. WJ
- E. NH

Q 152. CX , GT, JQ, LO, _ ?

- A. NM
- B. KP
- C. MN
- D. PK
- E. HG

Q 153.

In a fair, there are six types of rides viz. Roller Coaster, Ferris wheel, Fast Forward, Mad Bull, Big Beat and Loco Motion which are priced differently. Their prices ranged between Rs. 70 and Rs. 150.

What is the price of the ride which is priced second lowest?

Statement I : Loco Motion was priced 25 rupees higher than Big Beat. Roller Coaster was priced Rs. 110, which was not the highest price, but was higher than the price of Ferris Wheel.

Statement II : Big Beat was priced Rs. 80, which is just lower than that of Ferris Wheel, whose price is a multiple of 5. Only two rides were priced below Rs. 100. Big Beat and Mad Bull share the maximum difference of prices. The price of Loco Motion was 10 rupees more than that of Ferris Wheel.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.
- D. If the data in both statement I and II together are not sufficient to answer the question.
- E. If the data in both statement I and II together are necessary to answer the question.

Q154.

Find the code for "drive"?

Statement I : 'slow move road' is coded as 'ge hu ba' and 'traffic rules drive' is coded as 'to la se'.

Statement II : 'road rules follow' is coded as 'hu ve la' and 'slow traffic change' is coded as 'to ba nu'.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.
- D. If the data in both statement I and II together are not sufficient to answer the question.
- E. If the data in both statement I and II together are necessary to answer the question.

Q155.

Point Z is in which direction from Point B?

Statement I : Point X is towards 15m south of Point Y. Point Z is towards 5m west of Point X, which is 13m south-east of Point B.

Statement II : Point B is 6m west of Point X. Point Y is 12m east of Point Z, which is 8m to the north of Point X.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.
- D. If the data in both statement I and II together are not sufficient to answer the question.
- E. If the data in both statement I and II together are necessary to answer the question.

Q156.

Find the code for "river"?

Statement I : 'work never down' is coded as 'ge hu ba' and 'my river work' is coded as 'to la se'.

Statement II : 'down river house' is coded as 'hu ve la' and 'work my friend' is coded as 'to ba nu'.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.

- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.
- D. If the data in both statement I and II together are not sufficient to answer the question.
- E. If the data in both statement I and II together are necessary to answer the question.

Q 157.

If one is subtracted from each odd number and two is added to each even number then how many numbers thus formed will be divisible by three?

- A. None
- B. Four
- C. One
- D. Three
- E. More than four

Q158.

What will be the resultant number if the second digit of the second highest number is multiplied by the third digit of the highest number?

- A. 0
- B. 12
- C. 18
- D. 10
- E. 15

Q159.

What is the difference between the second digit of the third highest number and the third digit of the lowest number?

- A. 1
- B. 5
- C. 2
- D. 3
- E. 4

Q160. If all the digits in each of the numbers are arranged in descending order within the number, which of the following numbers given in the original sequence will become the lowest number in the new arrangement?

- A. 172
- B. 241
- C. 463
- D. 421
- E. 751

Q 161. If in each number the first and the third digits are interchanged then which originally given number will be the highest number in the new arrangement?

- A. 571
- B. 645
- C. 172
- D. 843
- E. 241

Q 162.

Who among the following is the second lightest?

- A. PRANAV
- B. RINKU
- C. KAJAL
- D. SHREYA
- E. NONE OF THESE

Q163.

How many person(s) are heavier than the one who is second shortest?

- A. NONE
- B. ONE
- C. TWO
- D. THREE
- E. MORE THAN THREE

Q164.

Who among the following is the heaviest?

- a. Shreya
- b. Mandeep
- c. Kajal
- d. Pranav
- e. None of these

Q165.

Which of the following statements is/are true?

- a. Kiran is heaviest
- b. Shreya is shortest
- c. Bhagat is third heaviest
- d. All are true
- e. None is true

Q166.

Which of the following persons is the tallest?

- a. Kiran
- b. Kajal
- c. Rinku
- d. Shreya
- e. None of these.

Q167.

- | | | | | |
|------------------|-------------|------------|------------|----|
| 1. Trillion | 2. Thousand | 3. Billion | 4. Hundred | 5. |
| Million | | | | |
| 1) 1, 2, 4, 3, 5 | | | | |
| 2) 1, 5, 3, 2, 4 | | | | |
| 3) 4, 2, 3, 5, 1 | | | | |
| 4) 4, 2, 5, 3, 1 | | | | |
| 5) 5, 4, 3, 2, 1 | | | | |

Q168.

- | | | | | |
|------------|----------|----------|---------------|----|
| 1. Windows | 2. Walls | 3. Floor | 4. Foundation | 5. |
| Roof | 6. Room | | | |

- 1) 4, 1, 5, 6, 2, 3
- 2) 4, 2, 1, 5, 3, 6
- 3) 4, 3, 5, 6, 2, 1
- 4) 4, 5, 3, 2, 1, 6
- 5) 6, 5, 4, 3, 2, 1

Q169.

- | | | | | |
|------------------|-----------------|------------------|----------------|---------------|
| 1. Curd | 2. Grass | 3. Butter | 4. Milk | 5. Cow |
| 1) 2, 5, 4, 3, 1 | | | | |
| 2) 4, 2, 5, 3, 1 | | | | |
| 3) 5, 2, 3, 4, 1 | | | | |
| 4) 5, 2, 4, 1, 3 | | | | |
| 5) 5, 4, 3, 2, 1 | | | | |

Q 170.

- | | | | | |
|------------------|-----------------|----------------|---------------|-----------------|
| 1. Mother | 2. Child | 3. Milk | 4. Cry | 5. Smile |
| a. 1, 5, 2, 4, 3 | | | | |
| b. 2, 4, 1, 3, 5 | | | | |
| c. 2, 4, 3, 1, 5 | | | | |
| d. 3, 2, 1, 5, 4 | | | | |
| e. 1, 2, 3, 4, 5 | | | | |

Q171.

- | | | | | |
|------------------|----------------|----------------|------------------|------------------|
| 1. Gold | 2. Iron | 3. Sand | 4. Copper | 5. Silver |
| a. 2, 4, 3, 5, 1 | | | | |
| b. 3, 2, 4, 5, 1 | | | | |
| c. 4, 5, 1, 3, 2 | | | | |
| d. 5, 4, 3, 2, 1 | | | | |
| e. 1, 2, 3, 4, 5 | | | | |

Q172.

The positions of how many digits in the number 2451479638 will remain same when the first half and the second half of the digits are arranged in ascending order separately?

- a. Only one
- b. Two
- c. None
- d. Three
- e. one of these

Q173.

In a row where all are facing north, Priya is 15th from the left end and Garima is 19th from the right end. They interchange their positions, and Ram who sits 24th from the left end sits at the 5th place to the left of Priya's new position. How many persons were there in the row?

- a. 36
- b. 42
- c. 47
- d. 56
- e. None of this

Q174.

Odometer is to mileage as compass is to

- A. speed
- B. hiking

- C. needle
- D. direction
- E. weather

Q175. Window is to pane as book is to

- A. novel
- B. glass
- C. cover
- D. page
- E. door

Q176.

Cup is to coffee as bowl is to

- A. dish
- B. soup
- C. spoon
- D. food
- E. pizza

Q 177.

Yard is to inch as quart is to

- A. gallon
- B. ounce
- C. milk
- D. liquid
- E. water

Q 178. Marathon is to race as hibernation is to

- A. winter
- B. bear
- C. dream
- D. sleep
- E. rest

Q 179.

Eileen is planning a special birthday dinner for her husband's 35th birthday. She wants the evening to be memorable, but her husband is a simple man who would rather be in jeans at a baseball game than in a suit at a fancy restaurant. Which restaurant below should Eileen choose?

- A. Alfredo's offers fine Italian cuisine and an elegant Tuscan decor. Patrons will feel as though they've spent the evening in a luxurious Italian villa.
- B. Pancho's Mexican Buffet is an all-you-can-eat family style smorgasbord with the best tacos in town.
- C. The Parisian Bistro is a four-star French restaurant where guests are treated like royalty. Chef Dilbert Olay is famous for his beef bourguignon.

- D. Marty's serves delicious, hearty meals in a charming setting reminiscent of a baseball clubhouse in honor of the owner, Marty Lester, a former major league baseball all-star.
- E. Pancho's Mexican Buffet is an all-you-can-eat family style smorgasbord with the best tacos in town.

Q180.

The film director wants an actress for the lead role of Lucy who perfectly fits the description that appears in the original screenplay. He is not willing to consider actresses who do not resemble the character as she is described in the screenplay, no matter how talented they are. The screenplay describes Lucy as an average-sized, forty something redhead, with deep brown eyes, very fair skin, and a brilliant smile. The casting agent has four actresses in mind.

Actress #1 is a stunning red-haired beauty who is 5'9" and in her mid-twenties. Her eyes are brown and she has an olive complexion.

Actress #2 has red hair, big brown eyes, and a fair complexion. She is in her mid-forties and is 5'5".

Actress #3 is 5'4" and of medium build. She has red hair, brown eyes, and is in her early forties.

Actress #4 is a blue-eyed redhead in her early thirties. She's of very slight build and stands at 5'.

- A. 1, 2
- B. 2, 3
- C. 1, 4
- D. 2, 4
- E. 2, 4

Q181.

The school principal has received complaints from parents about bullying in the school yard during recess. He wants to investigate and end this situation as soon as possible, so he has asked the recess aides to watch closely. Which situation should the recess aides report to the principal?

- A. A girl is sitting glumly on a bench reading a book and not interacting with her peers.
- B. Four girls are surrounding another girl and seem to have possession of her backpack.
- C. Two boys are playing a one-on-one game of basketball and are arguing over the last basket scored.
- D. Three boys are huddled over a handheld video game, which isn't supposed to be on school grounds.
- E. Difficult to determine

Q182.

Mrs. Carson took a taxi to meet her three friends for lunch. They were waiting for her outside the restaurant when she pulled up in the car. She was so excited to see her

friends that she left her tote bag in the taxi. As the taxi pulled away, she and her friends took notice of the license plate number so they would be able to identify the car when they called the taxi company.

#1: The four women seem to agree that the plate starts out with the letter J.

#2: Three of them agree that the plate ends with 12L.

#3: Three of them think that the second letter is X, and a different three think that the third letter is K.

The four license plate numbers below represent what each of the four women thinks she saw. Which one is most likely the license plate number of the taxi?

- A. JXK 12L
- B. JYK 12L
- C. JXK 12I
- D. JXX 12L
- E. JXJ 12L

Q183.

Zachary has invited his three buddies over to watch the basketball game on his wide-screen television. They are all hungry, but no one wants to leave to get food. Just as they are arguing about who should make the food run, a commercial comes on for a local pizze-ria that delivers. The phone number flashes on the screen briefly and they all try to remember it. By the time Zachary grabs a pen and paper, each of them recollects a different number.

#1: All of the men agree that the first three numbers are 995.

#2: Three of them agree that the fourth number is 9.

#3: Three agree that the fifth number is 2.

#4: Three agree that the sixth number is 6; three others agree that the seventh number is also 6.

Which of the numbers is most likely the telephone number of the pizzeria?

- A. 995-9266
- B. 995-9336
- C. 995-9268
- D. 995-8266
- E. 995-9826

The following questions are based on the information given below:

All the opposite faces of a big cube are coloured with red, black and green colours. After that is cut into 64 small equal cubes.

Q184. How many small cubes are there where one face is green and other one is either black or red ?

- A. 28
- B. 8
- C. 16
- D. 24
- E. 7

Q185.

How many small cubes are there whose no faces are coloured ?

- A. 0
- B. 4
- C. 8
- D. 16
- E. 9

Q186.

How many small cubes are there whose 3 faces are coloured ?

- A. 4
- B. 8
- C. 16
- D. 24
- E. 43

Q187.

How many small cubes are there whose only one face is coloured ?

- A. 32
- B. 8
- C. 16
- D. 24
- E. 19

Q188.

How many small cubes are there whose at the most two faces are coloured ?

- A. 48
- B. 56
- C. 28
- D. 24
- E. 20

Q189.

An accurate clock shows 8 o'clock in the morning. Through how many degrees will the hour hand rotate when the clock shows 2 o'clock in the afternoon?

- a. 144°
- b. 150°
- c. 168°
- d. 180°
- e. 140

Q190.

The reflex angle between the hands of a clock at 10.25 is:

- A. 180°

- B. $192\frac{1}{2}$
- C. 195°
- D. $197\frac{1}{2}$
- E. 170

Q 191.

A clock is started at noon. By 10 minutes past 5, the hour hand has turned through:

- A. 145°
- B. 150°
- C. 155°
- D. 160°
- E. 140

Q 192.

Eight people carrying food baskets are going for a picnic on motorcycles. Their names are A, B, C, D, E, F, G, and H. They have 4 motorcycles M1, M2, M3 and M4 among them. They also have 4 food baskets O, P, Q and R of different sizes and shapes and each can be carried only on motorcycles M1, M2, M3 and M4 respectively. No more than 2 persons can travel on a motorcycle and no more than one basket can be carried on a motorcycle. There are 2 husband-wife pairs in this group of 8 people and each pair will ride on a motorcycle together. C cannot travel with A or B. E cannot travel with B or F. G cannot travel with F, or H, or D. The husband-wife pairs must carry baskets O and P. Q is with A and P is with D. F travels on M1 and E travels on M2 motorcycles. G is with Q, and B cannot go with R. Who is travelling with H?

- a. A
- b. B
- c. C
- d. D
- e. Not possible to determine

Q193.

Persons X, Y, Z and Q live in red, green, yellow or blue coloured houses placed in a sequence on a street. Z lives in a yellow house. The green house is adjacent to the blue house. X does not live adjacent to Z. The yellow house is the only house in between the green and red houses. The colour of the house X lives in is:

- a) blue
- b) green
- c) red
- d) not possible to determine
- e) black

Q194.

There are ten animals - two each of lions, panthers, bison, bears, and deer - in a zoo. The enclosures in the zoo are named X, Y, Z, P and Q and each enclosure is allotted to one of the following attendants: Jack, Mohan, Shalini, Suman and Rita. Two animals of different species are housed in each enclosure. A lion and a deer cannot be together. A panther cannot be with either a deer or a bison. Suman attends to animals from among bison, deer, bear and panther only. Mohan attends to a lion and a panther. Jack does not attend to deer, lion or bison. X, Y

and Z are allotted to Mohan, Jack and Rita respectively. X and Q enclosures have one animal of the same species. Z and P have the same pair of animals. The animals attended by Shalini are:

- a) bear & bison
- b) bison & deer
- c) bear & lion
- d) bear & panther
- e) bear and deer

Study the following information carefully and answer the questions given below.

P, Q, R, S, T, V and **W** are seven students of a college. Each of them has a favorite subject from Physics, Chemistry, English, Biology, History, Geography and Philosophy, not necessarily in the same order. Each of them also has a favorite sport from Football, Cricket, Hockey, Volleyball, Badminton, Table Tennis, and Basketball, not necessarily in the same order. **R** likes Philosophy and his favorite sport is Hockey. The one who likes Football likes English. **T's** favorite sport is not Badminton or Table Tennis, **V** does not like either History or Biology. The one whose favorite sport is Basketball does not like physics. **W** likes chemistry and his favorite sport is Volleyball. **S** likes Geography. **Q's** favorite sport is Badminton. **V** does not like English and his favorite sport is not Basketball. **P's** favorite sport is Cricket. The one whose favorite sport is Badminton does not like biology.

Q195.

Who likes history?

- a. P
- b. R
- c. Q
- d. V
- e. Data inadequate

Q196.

What is Q's favorite sport ?

- a. Cricket
- b. Table Tennis
- c. Football
- d. Badminton
- e. None of these

Q197.

Whose favorite sport is Basketball?

- a. S
- b. W
- c. Q
- d. Data Inadequate
- e. None of these

Q198.

Which subject does T like ?

- a. Biology

- b. Physics
- c. Chemistry
- d. Data inadequate
- e. None of these

Q199.

Which subject does P like ?

- a. History
- b. Biology
- c. Chemistry
- d. data inadequate
- e. None of these

Q200.

Read the following information and answer the question given below:

- (i) A, B, C, D, E, F, and G are sitting along a circle facing at the center and are playing cards,
- (ii) E is the neighbor of A and D
- (iii) G is not between F and C
- (iv) F is on the immediate right of A
- (v) A is on left of F

Who are the neighbor of B?

- a. C and D
- b. F and C
- c. A and F
- d. Data inadequate
- e. None of these

SOLUTION

Q1.

Let the total profit be Rs. 100.

After paying to charity, A's share = $(95 \times \frac{3}{5}) = \text{Rs. } 57$.

If A's share is Rs. 57, total profit = Rs. 100.

If A's share is Rs. 855, total profit = $(100/57 \times 855) = 1500$.

CORRECT OPTION : C

Q2.

Total number of votes = 7500

Given that 20% of Percentage votes were invalid

=> Valid votes = 80%

Total valid votes = $7500 \times (80/100)$

1st candidate got 55% of the total valid votes.

Hence the 2nd candidate should have got 45% of the total valid votes

=> Valid votes that 2nd candidate got = total valid votes $\times (45/100)$

$7500 \times (80/100) \times (45/100) = 2700$

Q3.

Answer: C) 200, 360, 160

Explanation:

let ratio be x.

Hence no. of coins be 5x, 9x, 4x respectively

Now given total amount = Rs. 206

=> $(.50)(5x) + (.25)(9x) + (.10)(4x) = 206$

we get $x = 40$

=> No. of 50p coins = 200

=> No. of 25p coins = 360

=> No. of 10p coins = 160

Q4.

Answer: C) 4:5

Explanation:

Let the third number be x.

Then, first number = 120% of $x = 120x/100 = 6x/5$

Second number = 150% of $x = 150x/100 = 3x/2$

Ratio of first two numbers = $6x/5 : 3x/2 = 12x : 15x = 4 : 5$

Q5.

Answer: B) 64 %

Explanation:

Let the number be x .

Then, ideally he should have multiplied by x by $5/3$. Hence Correct result was $x * (5/3) = 5x/3$.

By mistake he multiplied x by $3/5$. Hence the result with error = $3x/5$

Then, error = $(5x/3 - 3x/5) = 16x/15$

Error % = $(\text{error/True value}) * 100 = [(16/15) * x / (5/3) * x] * 100 = 64 \%$

Q6.

Answer: D) 64

Explanation:

$(1*1)+1$, $(2*2)+1$, $(3*3)+1$, $(4*4)+1$, $(5*5)+1$, $(6*6)+1$, $(7*7)+1$, $(8*8)+1$

But, 64 is out of pattern.

Q7.

Answer: C) 9/20

Explanation:

Here, $S = \{1, 2, 3, 4, \dots, 19, 20\}$.

Let E = event of getting a multiple of 3 or 5 = $\{3, 6, 9, 12, 15, 18, 5, 10, 20\}$.

$P(E) = n(E)/n(S) = 9/20$.

Q8.

Answer: A) 4991

Explanation:

Total sale for 5 months = Rs. $(6435 + 6927 + 6855 + 7230 + 6562) = \text{Rs. } 34009$.

Required sale = Rs. $[(6500 \times 6) - 34009]$

= Rs. $(39000 - 34009)$

= Rs. 4991.

Q9.

Answer: A) 100%

Explanation:

Let the C.P be Rs.100 and S.P be Rs. x , Then

The profit is $(x-100)$

Now the S.P is doubled, then the new S.P is $2x$

New profit is $(2x-100)$

Now as per the given condition;

$\Rightarrow 3(x-100) = 2x-100$

By solving, we get

$x = 200$

Then the Profit percent = $(200-100)/100 = 100$

Hence the profit percentage is 100%

Q 10.

Answer: A) 4% of a

Explanation:

20% of a = b

=> $(20/100) * a = b$

b% of 20 = $(b/100) \times 20 = [(20a/100) / 100] \times 20 = 4a/100 = 4\%$ of a.

Q 11.

Answer: D) 511

Explanation:

Numbers are $(2^3 - 1)$, $(3^3 - 1)$, $(4^3 - 1)$, $(5^3 - 1)$, $(6^3 - 1)$, $(7^3 - 1)$ etc.

So, the next number is $(8^3 - 1) = (512 - 1) = 511$.

Q 12.

Answer: D) 81

Explanation:

Each of the numbers except 81 is a prime number.

Q 13.

Answer: A) 48 min. past 12.

Explanation:

Time from 8 a.m. on a day to 1 p.m. on the following day = 29 hours.

24 hours 10 min. of this clock = 24 hours of the correct clock.

14561456 hrs of this clock = 24 hours of the correct clock.

29 hours of this clock = $24 \times 6145 \times 29$ hrs of the correct clock

= 28 hrs 48 min of the correct clock.

Therefore, the correct time is 28 hrs 48 min. after 8 a.m.

This is 48 min. past 12.

Q 14.

Answer: A) 25200

Explanation:

Number of ways of selecting (3 consonants out of 7) and (2 vowels out of 4) =

$({}^7C_3 \times {}^4C_2)$

= 210.

Number of groups, each having 3 consonants and 2 vowels = 210.

Each group contains 5 letters.

Number of ways of arranging 5 letters among themselves = $5! = 120$

Required number of ways = $(210 \times 120) = 25200$.

Q 15.

Answer: A) 11 days

Explanation:

One day's work of A, B and C = $(1/24 + 1/30 + 1/40) = 1/10$.

C leaves 4 days before completion of the work, which means only A and B work during the last 4 days.

Work done by A and B together in the last 4 days = $4 (1/24 + 1/30) = 3/10$.

Remaining Work = $7/10$, which was done by A, B and C in the initial number of days.

Number of days required for this initial work = 7 days.

Thus, the total numbers of days required = $4 + 7 = 11$ days.

Q 16.

Answer: B) 5%

Explanation:

C.P. of 56 kg rice = Rs. $(26 \times 20 + 30 \times 36) = \text{Rs. } (520 + 1080) = \text{Rs. } 1600$.

S.P. of 56 kg rice = Rs. $(56 \times 30) = \text{Rs. } 1680$.

Gain = $(80/1600 \times 100) \% = 5\%$

Q 17.

Answer: A) 40

Explanation:

Let the numbers be $3x$, $4x$ and $5x$.

Then, their L.C.M. = $60x$.

So, $60x = 2400$ or $x = 40$.

The numbers are (3×40) , (4×40) and (5×40) .

Hence, required H.C.F. = 40.

Q 18.

Answer: A) 14

Explanation:

Let the son's present age be x years. Then, $(38 - x) = x \Rightarrow x = 19$.

Son's age 5 years back = $(19 - 5) = 14$ years

Q 19.

Answer: A) a

Explanation:

We know that $d = \sqrt{2}s$ Given diagonal = 20 cm

$\Rightarrow s = 20/\sqrt{2} = 10\sqrt{2}$ cm

Therefore, perimeter of the square is $4s = 4 \times 10\sqrt{2} = 40\sqrt{2}$ cm.

Q. 20

Answer: C) 427

Explanation:

Here the given series is 396, 462, 572, 427, 671, 264.

In all the terms, the middle digit is the sum of first and third digit except 427.
So the Odd number in the given series is 427.

Q 21.

Answer: A) 144

Explanation:

Ratio of initial investments = $1/2 : 1/3 : 1/4 = 6 : 4 : 3$.

Let their initial investments be $6x$, $2x$ and $3x$ respectively.

$A : B : C = (6x * 2 + 3x * 10) : (4x * 12) : (3x * 12) = 42 : 48 : 36 = 7 : 8 : 6$.

B's share = Rs. $(378 * 8/21) = \text{Rs. } 144$.

Q 22.

Answer: A) 2 years

Explanation:

Amount = Rs. $(30000 + 4347) = \text{Rs. } 34347$

let the time be n years

Then, $30000(1 + 7/100)^n = 34347$

$(107/100)^n = 34347/30000 = 11449/10000 = (107/100)^2$

$\therefore n = 2 \text{ years}$

Q 23.

Answer: B) $(10 + 10/11)$ min past 2

Explanation:

At 2 o'clock, the hour hand is at 2 and the minute hand is at 12, i.e. they are 10 min spaces apart. To be together, the minute hand must gain 10 minutes over the hour hand.

Now, 55 minutes are gained by it in 60 min.

$\therefore 10$ minutes will be gained in $60 \times 10 / 55 = 10 \frac{10}{11}$ min.

The hands will coincide at $10 \frac{10}{11}$ min. past 2.

Q 24.

Solution :

$$3z = 9$$

$$z = 3$$

$$-7y + 7z = 7$$

$$\div 7 \Rightarrow -y + z = 1$$

$$-y + 3 = 1$$

$$\boxed{y = 2}$$

$$x + y - 3z = -6$$

$$x + 2 - 3 \times 3 = -6$$

$$x + 2 - 9 = -6$$

$$\boxed{x = 1}$$

So, the answer is option (1)

$$x = 1, y = 2, z = 3$$

Q 25.

Solution :

If $k = 3, 6$ and 8 , we do not have the factor $(x - 6)$

So, the value k must be 5

the answer is option (2)

Q 26.

Solution :

$$\begin{aligned} \frac{3y-3}{y} \div \frac{7y-7}{3y^2} &= \frac{3(y-1)}{y} \times \frac{3y^2}{7(y-1)} \\ &= \frac{9y}{7} \end{aligned}$$

So, the answer is option (1) $= \frac{9y}{7}$

Q 27.

Solution :

We know that $a^2 + b^2 \neq (a+b)^2$

$$\therefore y^2 + \left(\frac{1}{y}\right)^2 \neq \left(y + \frac{1}{y}\right)^2$$

So the answer is option (2) $\left(y + \frac{1}{y}\right)^2$

Q 28.

Solution :

$$\begin{aligned} & \frac{x}{x^2 - 25} - \frac{8}{x^2 + 6x + 5} \\ &= \frac{x}{(x+5)(x-5)} - \frac{8}{(x+1)(x+5)} \\ &= \frac{x(x+1) - 8(x-5)}{(x+5)(x-5)(x+1)} \\ &= \frac{x^2 + x - 8x + 40}{(x+5)(x-5)(x+1)} \\ &= \frac{x^2 - 7x + 40}{(x+5)(x-5)(x+1)} = \frac{x^2 - 7x + 40}{(x^2 - 25)(x+1)} \end{aligned}$$

So, the answer is option (3) $\frac{x^2 - 7x + 40}{(x^2 - 25)(x+1)}$

Q 29.

Solution :

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

(Here $a = x^2$, $b = 8$)

$$\begin{aligned} \text{Added term} &= 2ab \\ &= 2 \times x^2 \times 8 \\ &= 16x^2 \end{aligned}$$

So, the answer is option (2) $16x^2$

Q 30.

Solution:

$$(2x-1)^2 = 9$$

$$(2x-1)^2 = 3^2$$

$$2x-1 = \pm 3$$

$$2x-1 = 3 \text{ and } 2x-1 = -3$$

$$2x = 4 \qquad 2x = -2$$

$$x = 2 \qquad x = -1$$

So, the answer is (3) -1, 2

Q 31.

Solution:

$$\begin{array}{r|rrrrrr}
 & 2 & -6 & 10 & & & \\
 2 & 4 & -24 & 76 & a & b & \\
 & 4 & & & & & (-) \\
 \hline
 4 & -6 & & -24 & 76 & & \\
 & & & -24 & 36 & & (-) \\
 \hline
 4 & -12 & 10 & & 40 & a & b \\
 & & & & 40 & -120 & 100 \\
 \hline
 & & & & & 0 &
 \end{array}$$

So, the answer is 3) -120, 100

Q 32.

Solution:

Let α, β are the roots of $q^2x^2 + p^2x + r^2 = 0$

$\therefore \alpha^2, \beta^2$ are the roots of $qx^2 + px + r = 0$

$$\alpha + \beta = \frac{-P^2}{q^2} \text{ and } \alpha^2 + \beta^2 = \frac{-P}{q}$$

$$\alpha\beta = \frac{r^2}{q^2} \quad (\alpha\beta)^2 = \frac{r}{q}$$

$$\text{Now } \alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta$$

$$\frac{-P}{q} = \left(\frac{-P^2}{q^2} \right)^2 - 2 \frac{r^2}{q^2}$$

$$P^2 = qr$$

q, p, r are in G.P.

So, the answer is 2) G.P

Q 33.

Solution:

i) Straight line

because linear polynomial is a degree 1

Q 34.

Solution:

$$(x+2)^2 = x^2 + 4x + 4$$

It has real and equal roots

So, the number of points of intersection is 1

the answer is 2) 1

Q 35.

Solution:

Clearly the order of matrix A is 3×4 .

So, the answer is 3) 3×4

Q 36.

Solution:

Order of A : 2×3

Order of B : 3×4

Order of AB : 2×4

\therefore It has 4 columns

\therefore So, the answer is 2) 4

Q 37.

(d); Required percent = $760 \div 2640 \times 100 = 28.78\% \approx 28\%$

Q38.

(c); Total students from state A in 2004 and 2005 = $260 + 320 = 580$ Total students from state B in 2008 and 2009 = $440 + 760 = 1200$ Difference = $1200 - 580 = 620$

Q39.

(b); Required Ratio = $340+320+440 \div 320+660+440 = 1100 \div 1420 = 55 \div 71$

Q 40.

$$\begin{aligned} \text{(e); Required ratio} &= \frac{\frac{110}{100} \times 440}{\frac{115}{100} \times 760} = \frac{484}{874} \\ &= \frac{242}{437} \end{aligned}$$

Q 41.

(c); Difference = $3120 \div 6 - 2640 \div 6 = 520 - 440 = 80$

Q 42.

(c); Let seller bought 100 gram at Rs. 100.

$$\text{Selling price} = \frac{90}{100} \times \frac{150}{100} \times 100 = 135$$

But he weighs 80 gram instead of 100 gram because he cheats 20% in weight.

$$\begin{aligned} \text{Profit\%} &= \frac{135 - 80}{80} \times 100 \\ &= \frac{55}{80} \times 100 \end{aligned}$$

$$= 68.75 \approx 68\%$$

Q 43.

$$(d); \text{Milk left} = 81 \left(1 - \frac{27}{81}\right)^2$$

$$= 81 \left(1 - \frac{1}{3}\right)^2$$

$$= 81 \times \frac{4}{9} = 36$$

$$\text{Required Ratio} = \frac{36}{81-36} = \frac{36}{45} = \frac{4}{5}$$

Q 44.

$$(d); \begin{array}{ccc} \text{A} & \text{B} & \text{C} \\ x+2 & x & x+3 \end{array}$$

$$\frac{x+2+6}{x-2} = \frac{5}{3}$$

$$\frac{x+8}{x-2} = \frac{5}{2}$$

$$3x+24 = 5x-10$$

$$34 = 2x$$

$$x = 17$$

$$\text{Age of C, 6 year ago} = 17 + 3 - 6$$

$$= 14 \text{ years}$$

Q 45.

64. (c)

$$\begin{array}{ccc} \text{A} & \text{B} & \text{C} \\ x \times 6 + 6 \times \frac{3}{2}x & : & 2x \times 6 + 4x \times 6 & : & 4x \times 6 + 3x \times 6 \\ 6x + 9x & : & 12x + 24x & : & 24x + 18x \\ 15x & : & 36x & : & 42x \\ 5 & : & 12 & : & 14 \end{array}$$

Q 46.

$$(b); \text{Increase in average marks} = \frac{(72+61)-(48+65)}{20}$$

$$= \frac{133-113}{20} = \frac{20}{20}$$

$$\text{Correct average} = 68 + 1 = 69$$

Q47.

$$(a); \text{Required average} = \frac{250+550+400}{3} = 400$$

Q48.

B

Within each square of the series, the 3 squares to the left move down one as the sequence progresses. Within each square of the series, the 4 shapes to the right move down one as the sequence progresses.

Q49.

D

Within each square of the series, the 3 squares to the left move down one as the sequence progresses. Within each square of the series, the 4 shapes to the right move down one as the sequence progresses.

Q50.

C

Within each square of the series, the 3 squares to the left move up one as the sequence progresses. Within each square of the series, the 4 shapes to the right move down one as the sequence progresses.

Q51.

A

Within each square of the series, the 3 squares to the left move down one as the sequence progresses. Within each square of the series, the 4 shapes to the right move up one as the sequence progresses.

Q52.

D

Within each square of the series, the 3 squares to the left move up one as the sequence progresses.

Within each square of the series, the 4 shapes to the right move up one as the sequence progresses.

53.

P = Rupees 10,000

R = 5% per annum

T = 3 years

Thus, $SI = (P \times R \times T / 100)$

$\Rightarrow SI = (10000 \times 5 \times 3) / 100 = 1500$

Thus the interest earned is rupees 1,500

54.

Principal = Rs 60,000

Rate of Interest = 2.5 %

Time = 4 years

$SI = (P \times R \times T) / 100$

$= (60,000 \times 2.5 \times 4) / 100$

$= Rs\ 6000$

55.

$a^3 = (a-b)^3 + b^2(a-b) + (a-b)^2b + (a-b)b^2 + b^3 + (a-b)^2b + (a-b)b^2 + (a-b)b^2$

$\Rightarrow a^3 = (a-b)^3 + b(a-b)[b+a-b+a-b+a-b+b+b] + b^3$

$\Rightarrow a^3 = (a-b)^3 + b(a-b)[3a] + b^3$

$\Rightarrow a^3 = (a-b)^3 + 3ab(a-b) + b^3$

Rearranging this, we get $(a-b)^3 = a^3 - b^3 - 3ab(a-b)$

Hence, proved the identity $(a-b)^3 = a^3 - b^3 - 3ab(a-b)$.

56.

As we know, $(a+b)^2 = a^2 + 2ab + b^2$ and $(a-b)^2 = a^2 - 2ab + b^2$

adding both together, $(a+b)^2 + (a-b)^2 = a^2 + 2ab + b^2 + a^2 - 2ab + b^2$

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

here, $a=2x$ and $b=3y$

$(2x-3y)^2 + (2x+3y)^2 = 2(2x)^2 + 2(3y)^2$

$\Rightarrow (2x-3y)^2 + (2x+3y)^2 = 2(4x^2) + 2(9y^2)$

$\Rightarrow (2x-3y)^2 + (2x+3y)^2 = 8x^2 + 18y^2$

57.

As we know, $(X+Y)^3 = X^3 + Y^3 + 3XY(X+Y)$

Putting values of $X+Y=7$ and $XY=12$,

$$7^3 = X^3 + Y^3 + 3 \times 12 \times 7$$

$$\Rightarrow 343 = X^3 + Y^3 + 252$$

$$\Rightarrow X^3 + Y^3 = 343 - 252$$

$$\Rightarrow X^3 + Y^3 = 91$$

Thus, the value of $X^3 + Y^3$ is 91.

58.

Let $A(2, 7)$, $B(3, -1)$ and $C(-5, 6)$ be the vertices of the given $\triangle ABC$.

Then,

$(x_1 = 2, y_1 = 7)$, $(x_2 = 3, y_2 = -1)$ and $(x_3 = -5, y_3 = 6)$.

$$\begin{aligned} \text{Area of } \triangle ABC &= \left| \frac{1}{2} \{x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)\} \right| \\ &= \frac{1}{2} |2(-1 - 6) + 3(6 - 7) - 5(7 + 1)| \\ &= \frac{1}{2} |-14 - 3 - 40| \\ &= \frac{1}{2} |-57| \\ &= 57/2 \end{aligned}$$

59.

It is given that O divides PQ in equal ratio. Hence, O is the midpoint of PQ .

Therefore by using midpoint formula we have

$$x = (3 + 1)/2 \text{ and } y = (4 + 2)/2$$

$$\Rightarrow x = 4/2 = 2 \text{ and } y = 6/2 = 3$$

Hence the coordinates of the point is $O(2, 3)$

60.

Let **AB** be the pole which is of height **6 m**.

Let **BC** be the shadow of the building $2\sqrt{3}$.

Now, in $\triangle ABC$,

$$\tan \theta = AB / BC$$

$$\tan \theta = 6 / 2\sqrt{3}$$

Now, simplifying using rationalization

$$\tan \theta = (3 / \sqrt{3}) * (\sqrt{3} / \sqrt{3})$$

$$\tan \theta = 1 / \sqrt{3}$$

$$\theta = \tan^{-1}(1 / \sqrt{3})$$

Hence, $\theta = 60^\circ$

Therefore, sun's elevation from the ground is **60°**.

61.

We know that Volume of the sphere $= (4/3)\pi r^3$

Now, Volume of the bigger sphere = volume of the sphere with outer radius –
volume of the sphere with inner radius

\Rightarrow Volume of the bigger sphere = $(4/3) * \pi * (7\text{cm})^3 - (4/3)\pi(5\text{cm})^3$
 \Rightarrow Volume of the bigger sphere = $(4/3) * \pi * (343-125) = (4/3) * \pi * (218) \text{ cm}^3$
 In the same way, Volume of smaller sphere = $(4/3) * \pi * (4\text{cm})^3 - (4/3) * \pi * (3\text{cm})^3$
 \Rightarrow Volume of the smaller sphere = $(4/3) * \pi * (64-27) = (4/3) * \pi * (37) \text{ cm}^3$
 hence, the number of spheres that can be formed = volume of the bigger sphere/ volume of the smaller sphere
 therefore, the number of spheres that can be formed = $(4/3) * \pi * (218) \text{ cm}^3 / (4/3) * \pi * (37) \text{ cm}^3$
 \Rightarrow the number of spheres that can be formed = $5.92 \approx 6$ spheres.

62.

Length of quadrilateral l = 12 cm

Height of quadrilateral h = 5 cm
 (Using Pythagoras Theorem)

a = 12 cm

b = 5 cm

c = 13 cm

63.

Surface area of a cube = 384 cm^2

Let 'a' be the side of a cube .

we know that , surface area of cube = $6a^2$

$$\Rightarrow 6a^2 = 384$$

$$\Rightarrow a^2 = 384 / 6$$

$$\Rightarrow a^2 = 64$$

$$\Rightarrow a = \sqrt{64}$$

$$\Rightarrow a = 8$$

Therefore, side of a cube = 8cm.

64.

Given h = 2cm, l = 4cm, w = 3cm

TSA = $2(lw + wh + hl)$

$$= 2(4 * 3 + 3 * 2 + 2 * 4)$$

$$= 2(12 + 6 + 8)$$

$$= 2(26)$$

$$= 52 \text{ sq.cm}$$

65.

Given length = 8cm

breadth = 9cm, height = 10cm

$$\begin{aligned}
 \text{Lateral Surface Area} &= 2h(l + b) \\
 &= 2 * 10(8 + 9) \\
 &= 2 * 10(17) \\
 &= 2 * 170 \\
 &= 340 \text{ cm}^2
 \end{aligned}$$

$$66. V = \pi r^2 h = \pi \cdot 14^2 \cdot 21 \approx 12.930$$

67.

$$x^2 - 5x + 6 = 0$$

Factor as $(x - 2)(x - 3) = 0$

Roots: $x = 2$ and $x = 3$

68.

Cost price of the bag is Rs 27.50 and Selling price is Rs 28.90.

So, Peter gains Rs $(28.90 - 27.50) = \text{Rs } 1.40$.

Percentage of gain = $(1.40/27.50 \times 100)\% = 140/27.5 \% = 5.09 \%$

69.

let 100 bananas are there.

Banans left = 15% = 15 bananas

So, bananas sold = $100 - 15 = 85$

On 85 bananas sold, he gets 15 bananas as profit

Profit % = $[\text{bananas left} / \text{bananas sold}] * 100 = [15/85] * 100 = 17.64\%$

Q 70.

Each string of letters contains S, F, G, H and J appearing in a loop. It is easier to imagine if you can see multiple loops appearing consecutively: S-F-G-H-J-S-F-G-H-J-S-F-G-H-J A, B, C and D strings all include letters in the right order to fit in the same loop. For example, F always follows S and precedes G however in the last string (E) The letters are out of order.

Correct Answer; E

Q 71.

Answer = A.

This question is a bit trickier, as it is asking you to notice that there are two patterns appearing at the same time with alternating dominos. If you consider the 1st, 3rd and 5th dominos the pattern becomes more obvious; the top number is decreasing by 1 and the bottom is increasing by 1. Now look at the 2nd and 4th dominos, there is a similar progression happening with increasing and decreasing dots.

Q72.

Answer = B. Each tile contains 2 overlapping shapes, 1 larger than the other. As the 2 shapes overlap a new, smaller shape is created inside the first large shape. The large shape in the following tile corresponds directly with this new shape that was created. When the shapes overlap the largest bisection is always within the biggest shape.

Q 73.

Answer = E. The black and white dots are alternating between 5 and 7 in number. In the last picture there are 5 white dots and 7 black ones, meaning the following image should contain 7 white dots and 5 black ones.

Q 74.

ANSWER B

Q 75.

ANSWER D

Q 76.

ANSWER D

Q 77.

ANSWER B

Q 78.

ANSWER C

Q 79.

ANSWER D

Q 80.

ANSWER B

Q 81.

ANSWER A

Q82.

ANSWER D

Q83.

ANSWER C

Q.84

ANSWER C

Q85.

ANSWER D

Q86.

ANSWER D

Q87.

ANSWER D

Q 88.

ANSWER D

Q89.

ANSWER (b)

Q90.

It is no doubt critical. Hence, Option (b) is correct.

Q91.

The 4th paragraph is suggesting that definitely the government should start interfering and the reasons are given for it. Hence, Option (b) is correct.

Q92.

It is clearly written in the passage. Hence, Option (c) is correct.

Q93.

"It means to bear or to put up with". Hence, Option (d) is correct.

94 Ans(b)

Sol.

Total number of boys in school A, C and E together

$$= \frac{13}{25} \times 1250 + \frac{11}{20} \times 1400 + \frac{5}{11} \times 1100 = 1920$$

Total number of girls in school B and D together

$$= \frac{17}{30} \times 1500 + \frac{7}{15} \times 1350 = 1480$$

$$\text{Required ratio} = \frac{\frac{1920}{8}}{\frac{1480}{2}} = \frac{640}{740} = \frac{32}{37}$$

95. Ans(a)

Sol.

$$\text{Total number of students in school F} = (1500 + 1350) \times \frac{40}{100}$$

$$= 2850 \times \frac{2}{5} = 1140$$

$$\text{Number of girls in school F} = 1140 - 650$$

$$= 490$$

96 Ans(c)

Sol.

$$\text{Required number of boys} = \frac{13}{25} \times 1250 + \frac{13}{30} \times 1500 + \frac{11}{20} \times 1400$$

$$= 650 + 650 + 770$$

$$= 2070$$

$$\text{Required number of girls} = \frac{9}{20} \times 1400 + \frac{7}{15} \times 1350 + \frac{6}{11} \times 1100$$

$$= 630 + 630 + 600$$

$$= 1860$$

$$\text{Required ratio} = \frac{2070}{1860} = \frac{69}{62}$$

97. Ans(e)

Sol.

$$\text{Required percent} = \frac{\frac{11}{20} \times 1400}{\frac{7}{15} \times 1350} \times 100$$

$$= \frac{770}{630} \times 100$$

$$= \frac{1100}{9}$$

$$= 122\frac{2}{9}\%$$

Q98.

According to the given options, Sentence D or E follows A. Sentence E explains the author's own experience as a child but sentence D contains the pronoun antecedent 'their'. So, if D

follows A, then only option (c) or (d) can be the correct choice. Although sentence C seems to follow D but in Sentence E the author refers to her own example. This validates the statement made in D. Also, in Sentence E the author explains that 'that is why it's so important for children to get access to a broad range of culture'. This is followed by C where the author explains that because of her own experience as a child, she takes her children to 'see idiosyncratic art'; however, this does not inspire them. In sentence B, the author presents her own child's example as a decisive statement that justifies that 'you just don't know what is going to capture their attention'.

Hence, Option (c) is the correct answer.

Q99.

Read the given sentence A carefully. The paragraph begins with the subject of 'multiculturalism'. The statement tries to define 'multiculturalism' and how it can be 'best understood'. Now, according to the given options, the sentence following A could be sentence B, D or E. Sentence B begins with 'This does not mean that they are determined by their culture'; the pronoun used in the sentence clearly suggests that it is referring to persons. If the sentence was talking about 'multiculturalism' then the pronoun 'it' would have been used. So, clearly, B does not follow A. Sentence D explains that 'its central insights are sometimes misinterpreted by its advocates'. The pronoun 'its' refers to 'multiculturalism'. This is confirmed by the usage of 'its advocates' or the advocates of multiculturalism. On checking sentence E, one finds that the subject has moved onto 'human beings' and 'culture'. So, D follows A instead of E. Now, only options 2 and 4 can be considered. As noted earlier, the pronoun 'they' used in B refers to persons or in this case 'human beings'. The subject of 'human beings' is introduced and defined in sentence E. So, EB forms a mandatory pair. According to the given options, only option 4 contains EB in the desired order. Also, sentence B begins with 'this does not mean' whereas sentence C begins with 'rather that'. On one hand, B explains what it 'does not mean' and on the other hand, statement C provides the contrary view and explains what it means. Hence, Option (d) is the answer.

Q 100.

Read the given sentence A carefully. The paragraph is about 'protective markings' on some animals to 'avoid predation'. According to the given options sentence B, C or E could follow A. Sentence B explains that 'many eyespots.... The subject of 'eye-spots' has not been mentioned earlier. One is not aware of what 'eyespots' are. So, sentence B cannot follow A. Sentence C begins with the keyword 'In addition, many creatures such as butterflies moths, and fish possess two or more pairs of circular markings, often referred to as 'eyespots'. This sentence begins with the keyword, it moves from general information about 'many animals' who possess these protective markings to specific examples of such creatures like 'butterflies, moths etc. and it explains what are 'eye-spots. One also deduces that sentences C and B form a mandatory pair because of the common idea (of eyespots) carried forward in the two sentences. So, C follows A and CB forms a mandatory pair. According to the given options, only option 1 contains the correct order. Also, sentence B explains that due to these eyespots many creatures can prevent an attack and sentence E further adds that 'this is because'. This explains why creatures are able to do so and the commonly held belief regarding the same. So, E follows CB. Sentence D refers to 'this widely-held hypothesis'; this hypothesis has been explained in sentence E. So, D follows E.

Hence, Option (a) is the correct answer.

Q101.

Read the given sentence A carefully. The paragraph is related to geography. According to the given options, sentence B or C can follow the given sentence A. Sentence B refers to 'cognitive abilities' and 'those mental maps'. But the subject of 'mental maps' is not mentioned in sentence A. So, this sentence should be placed somewhere else in the order. So, C follows A. There is only one option that contains the order. Also, sentences CBE form a mandatory sequence. This is because sentence C explains the advantage of using 'mapping exercises' and mentions 'mental maps'. Sentence B refers to those mental maps'. The use of the pronoun signals that this sentence follows C. Sentences C and B focus on the advantage of our 'cognitive abilities' and drawing 'mental maps'. Sentence E gives additional information about our 'cognitive abilities'. So, E follows CB. Sentence D presents the contrary situation that presently exists in 'today's classrooms'.

Hence, Option (c) is the correct answer.

Q 102.

OPTION 3

Q 103.

OPTION 2

Q 104.

OPTION B

Q 105.

OPTION C

Q 106.

OPTION A

Q 107.

OPTION A

Q 108.

OPTION A

Q 109.

OPTION 3

Q 110.

OPTION 4

Q 111.

OPTION D

Q 112.

OPTION C

Q 113.

OPTION D

Q 114.

OPTION D

Q 115.

OPTION C

Q 116. OPTION C

$$5760 \times \frac{1}{45} \times 15 = ?$$

$$? = 1920$$

Q 117.

OPTION B

$$1863 - 187 = ?$$

$$? = 1676$$

Q 118.

OPTION C

$$25639 - 8484 = ?$$

$$? = 17155$$

Q 119.

OPTION D

Q 120.

OPTION B

Q 121.

E + E = No conclusion

Thus, neither conclusion I nor conclusion II follows.

Hence, option D is correct.

Q 122.

All rewards are medals (A) + All medals are awards (A) = A + A = A = All rewards are awards.

Hence, conclusion I follows.

But, conclusion II does not follow.

Hence, option A is correct.

Q123.

All bushes are plants + Some plants are trees = A + I = No conclusion.

Hence, neither conclusion I nor conclusion II follows.

However, since they make a complementary pair I-O,

therefore, either conclusion I or conclusion II follows.

Hence, option C is correct.

Q124.

All bottles are glasses (A) + [No cup is a glass (E)] = No glass is a cup (E) = A + E = E = No bottle is a cup.

Hence, conclusion I follows.

Again ,

All bottles are glasses (A) = Some glasses are bottles (I). It means,

At least some glasses are bottles.

Hence conclusion II follows.

Thus, both conclusion I and II follow.

Hence, option E is correct.

Q125.

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All entrances are windows (A) + All windows are doors (A) + [No gate is a door (E)] = No door is a gate (E) = A + E = E = No entrance is a gate.

Hence, conclusion II follows .

Again,

All window are doors (A) + [No gate is a door (E)] = No door is a gate (E) = A + E = E = No window is a gate.

Thus, conclusion I does not follow.

Hence, option B is correct.

Q126.

All planets are stars (A) + All meteors are planets (A) = A + A = A = All meteors are stars.

This is conclusion I follows.

All planets are stars (A) + No orbit is a star (E) = A + E = E = No planet is an orbit.

This is conclusion II follows.

Hence, both conclusion I and conclusion II follows.

Hence, option D is correct.

Q127.

From the information above we can assume that hearing the teacher's warning, the students may stop talking. Therefore, assumption I is implicit Similarly, the information available in the statement above is sufficient to determine that the kids were very naughty and will never stop talking just by the request. They needed a strict warning.

Therefore, assumption II is also implicit

Hence, Both I and II are implicit.

Q128.

Climatologists study weather patterns and the processes that cause them.

Now, the climatologist says that the impact of global warming will be felt in 10-20 years.

Therefore, it is safe to assume that he is talking about the impact of global warming on climate change.

Hence, assumption II is implicit

There is nothing mentioned or hinted at in the statement about the melting of arctic ice and rising sea levels caused due to global warming.

Hence, the assumption I is not implicit

Thus, only assumption II is implicit.

Q129.

Chaar is Boman's paternal grandmother and Aliya's maternal grandmother.

Therefore, Chaar is the mother of Boman's father and Aliya's mother.

Dinkar is Boman's maternal grandfather and Aliya's paternal grandfather.

Therefore, Dinkar is the father of Boman's mother and Aliya's father.

Now, Fenil is Aliya's father and Geet is Boman's mother. Esha is the mother of Fenil and Geet.

Therefore, Esha is Dinkar's wife.

Now, Hitarth is Fenil and Geet's father-in-law. So Hitarth is the father of Fenil's wife and Geet's husband.

Therefore, Hitarth is Chaar's husband.

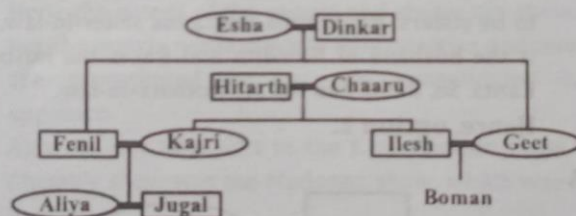
Ilesh is Geet's husband. So Fenil is Ilesh's brother-in-law. Jugal is Ilesh's brother-in-law's son.

Since Ilesh has only one brother in law, Jugal has to be Fenil's son. Jugal is also Kajri's son. Therefore, Kajri is Fenil's wife.

The data mentions "Her cousin Boman" with respect to Aliya.

Hence, Aliya has to be female while Boman's gender is unclear.

Thus, the final family tree is as shown below. Though Hitarth and Chaar are shown below Esha and Dinkar, they belong to the same generation. This representation is just to ensure ease in drawing the family tree.



Now, Dinkar's daughter is Geet and Jugal's father is Fenil.

From the family tree, Geet is Fenil's sister.

Hence, **option 2**.

Q130.

From the family tree in the solution to the first problem, Hitarth is Boman's paternal grandfather. At the same time, Hitarth is also Kajri's father. Hence, option 4.

Q131.

The father of my daughter's father is either my father (if I am male) or my father-in-law (if I am female). This person is Rahul. Now, Reena's father's wife is Reena's mother. So, Rahul is the brother of Reena's mother. So, in any case, Rahul is Reena's uncle. Hence, option 3.

Q132.

Since Radha Dholakia is unmarried, the surname of her family is Dholakia.

Now, Radha's sister's sister-in-law Ratnika can either be the wife of one of Radha's brothers or be the sister of Radha's sister's husband.

However, Ratnika's surname is Shah and so she cannot be the wife of Radha's brother. So, she is the sister of Radha's sister's husband. However, it cannot be said whether Shah is the surname of Radha's sister's family. So, the surname cannot be found. Hence, option 4.

Q101.

Read the given sentence A carefully. The paragraph is related to geography. According to the given options, sentence B or C can follow the given sentence A. Sentence B refers to 'cognitive abilities' and 'those mental maps'. But the subject of 'mental maps' is not mentioned in sentence A. So, this sentence should be placed somewhere else in the order. So, C follows A. There is only one option that contains the order. Also, sentences CBE form a mandatory sequence. This is because sentence C explains the advantage of using 'mapping exercises' and mentions 'mental maps'. Sentence B refers to those mental maps'. The use of the pronoun signals that this sentence follows C. Sentences C and B focus on the advantage of our 'cognitive abilities' and drawing 'mental maps'. Sentence E gives additional information about our 'cognitive abilities'. So, E follows CB. Sentence D presents the contrary situation that presently exists in 'today's classrooms'.

Hence, Option (c) is the correct answer.

Q 102.

OPTION 3

Q 103.

OPTION 2

Q104.

OPTION B

Q105.

OPTION C

Q 106.

OPTION A

Q 107.

OPTION A

Q 108.

OPTION A

Q 109.

OPTION 3

Q110.

OPTION 4

Q111.

OPTION D

Q112.

OPTION C

Q113.

OPTION D

Q114.

OPTION D

Q115.

OPTION C

Q116.

OPTION C

Q117.

OPTION A

Q118.

OPTION C

Q119.

OPTION D

Q120.

OPTION B

Q121.

E + E = No conclusion

Thus, neither conclusion I nor conclusion II follows.

Hence, option D is correct

Q122.

All rewards are medals (A) + All medals are awards (A) = A + A = A = All rewards are awards.

Hence, conclusion I follows.

But, conclusion II does not follow.

Hence, option A is correct.

Q123.

All bushes are plants + Some plants are trees = A + I = No conclusion.

Hence, neither conclusion I nor conclusion II follows.

However, since they make a complementary pair I-O,

therefore, either conclusion I or conclusion II follows.

Hence, option C is correct.

Q124.

All bottles are glasses (A) + [No cup is a glass (E)] = No glass is a cup (E) = A + E = E = No bottle is a cup.

Hence, conclusion I follows.

Again ,

All bottles are glasses (A) = Some glasses are bottles (I). It means,

At least some glasses are bottles.

Hence conclusion II follows.

Thus, both conclusion I and II follow.

Hence, option E is correct.

Q125.

All entrances are windows (A) + All windows are doors (A) + [No gate is a door (E)] = No door is a gate (E) = A + E = E = No entrance is a gate.

Hence, conclusion II follows .

Again,

All window are doors (A) + [No gate is a door (E)] = No door is a gate (E) = A + E = E = No window is a gate.

Thus, conclusion I does not follow.

Hence, option B is correct.

Q126.

All planets are stars (A) + All meteors are planets (A) = A + A = A = All meteors are stars.

This is conclusion I follows.

All planets are stars (A) + No orbit is a star (E) = A + E = E = No planet is an orbit.

This is conclusion II follows.

Hence, both conclusion I and conclusion II follows.

Hence, option D is correct.

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From the information above we can assume that hearing the teacher's warning, the students may stop talking. Therefore, assumption I is implicit

Similarly, the information available in the statement above is sufficient to determine that the kids were very naughty and will never stop talking just by the request. They needed a strict warning.

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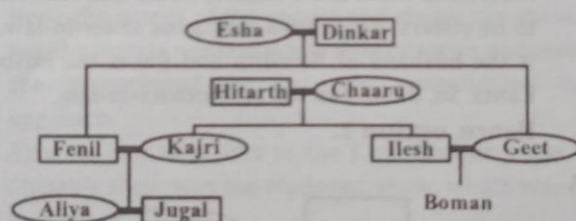
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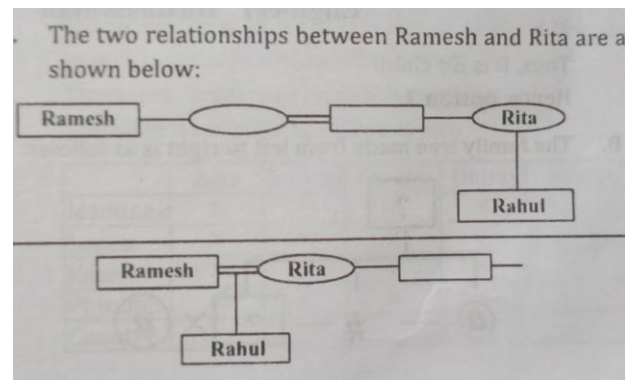
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Q133.



In the first case, Ramesh and Rahul are unrelated while in the second case, Ramesh is the father of Rahul.

Based on the answer options, Rahul is the son of Ramesh.

Hence, **option 1**.

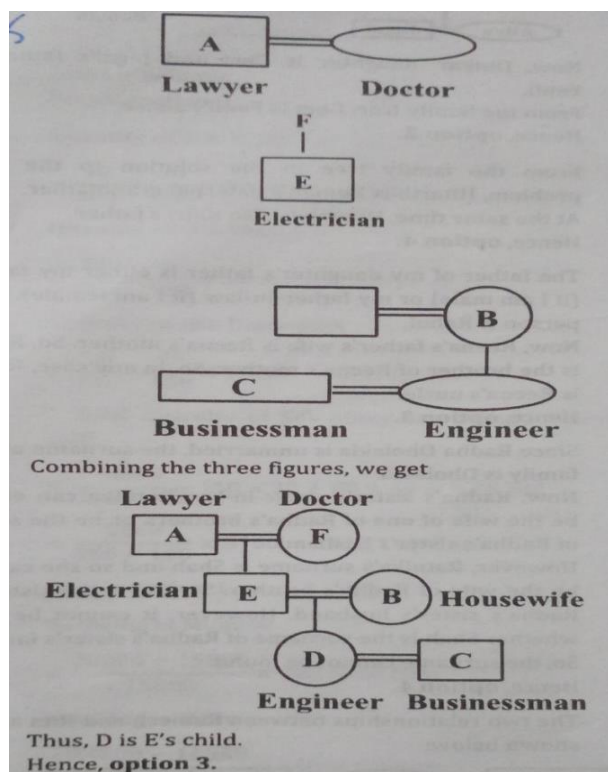
Q134.

Santa and Clara are one couple such that Clara is the sister-in-law of Raj. Since Clara has no sister, Raj and Santa have to be brothers.

Also, since there are 2 sisters, Kanta and Nivedita have to be sisters. Banta calls Kanta his sister-in-law, Banta is the husband of Nivedita and Raj is the husband of Kanta. So, Banta and Raj are brothers-in-law.

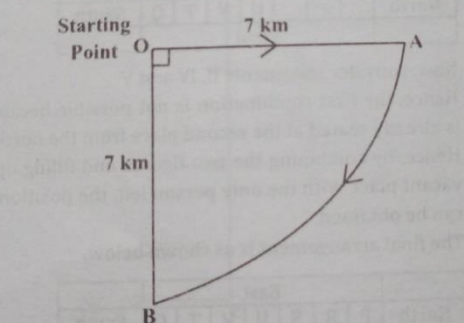
Hence, option 2.

Q135.



Q136.

The route travelled by Rahul forms a quarter circle with radius 7 km. The distance of the curved path is the length of the arc with radius 7 km and central angle 90° .



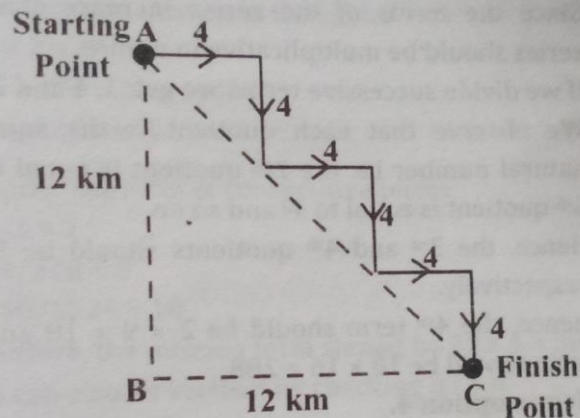
$$\text{length of arc AB} = \frac{90}{360} \times 2\pi r$$

$$= \frac{90}{360} \times 2 \times \frac{22}{7} \times 7 = 11 \text{ km}$$

Hence, **option 3**.

Q137.

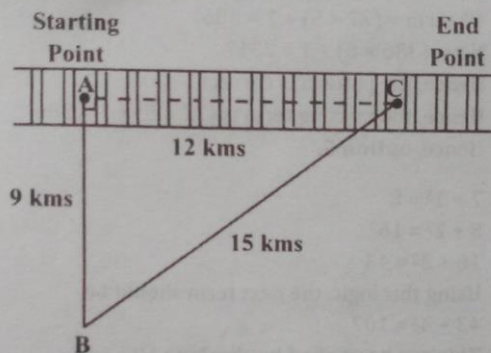
The route travelled by Aadesh is as follows:



∴ Distance between the starting point and its final point = $d(AC)$
 $\therefore AC^2 = AB^2 + BC^2$
 $\therefore AC^2 = 12^2 + 12^2$
 $\therefore AC = 12\sqrt{2} \text{ km}$
Hence, **option 1.**

Q138.

The route travelled by Raghu is as shown below:



AC is the straight line path between the start point and the end point.

By Pythagoras theorem,

$$AC^2 = AB^2 + BC^2 = 9^2 + 15^2$$

$$\therefore AC = 12 \text{ kms}$$

Since Raghu's speed = 12 km/hr.

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}} = \frac{12}{12} = 1 \text{ hour}$$

Hence, **option 3.**

Q139.

Since the five people are facing the east, the person closest to the north will be at the extreme left. Shobhit is at one of the corners and is also to Sumit's left. So, Shobhit is at the extreme left. Hence, option 1 can be eliminated.

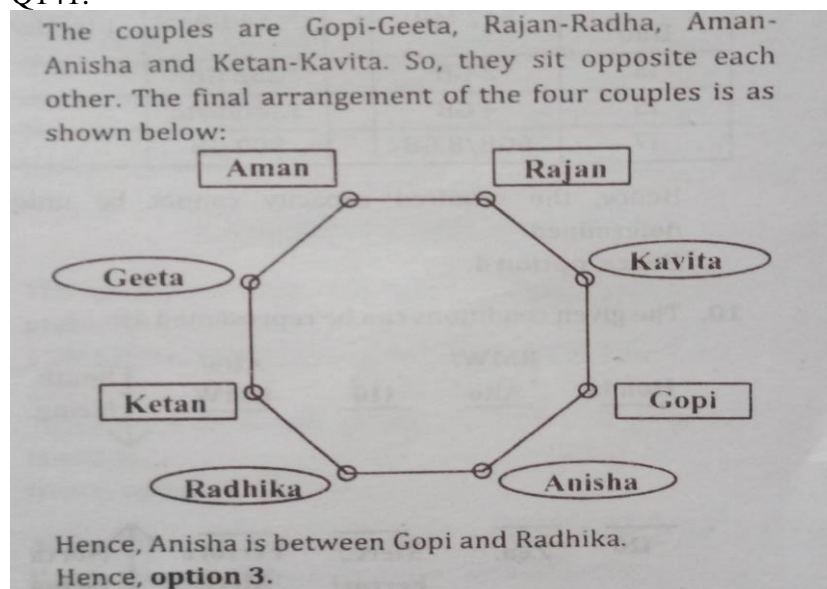
Shirish has only one person to his right. So, Shirish is second from the right or fourth from the left. Shardul is third to the left of Shrenik. This can happen only if Shardul is first or second from left. However, Shobhit is already at the extreme left. So, Shardul is second from left and Shrenik is at the extreme right. Now, the only person left is Sumit, who is at the centre. So, the correct order of their arrangement is: Shobhit, Shardul, Sumit, Shirish, Shrenik Hence, option 3. Q140.

D can go to the factory only on Wednesday or Thursday. If D goes on Wednesday, C goes on Monday and B goes on Thursday or Saturday. So, in this case, A can go on Tuesday, Thursday or Saturday.

If D goes on Thursday, B goes on Saturday and C goes on Monday or Tuesday. So, A can go on Monday, Tuesday or Wednesday.

Thus, A can go on one of 5 possible days. Hence, option 1.

Q141.



Q142. Correct Option: D

The following common explanation, we get "**Yadav-28th September**".Hence, option D is correct.

Case: 1			
Days	Month	Date	Person
31	May	17	Ximon
		28	Rahim
30	June	17	Pratheep
		28	Uday
31	July	17	Wafiq
		28	Tushar
30	Sep	17	Zaheer
		28	Yadav

Q143.

Correct Option: C The following common explanation, we get "**Both Wafiq and Tushar**".

Wafiq-17th July & Tushar-28th July

Hence, option C is correct.

Case: 1			
Days	Month	Date	Person
31	May	17	Ximon
		28	Rahim
30	June	17	Pratheep
		28	Uday
31	July	17	Wafiq
		28	Tushar
30	Sep	17	Zaheer
		28	Yadav

Q144.

Correct Option: C The following common explanation, we get "**Three**". Hence, option C is correct.

Case: 1			
Days	Month	Date	Person
31	May	17	Ximon
		28	Rahim
30	June	17	Pratheep
		28	Uday
31	July	17	Wafiq
		28	Tushar
30	Sep	17	Zaheer
		28	Yadav

Q145.

Correct Option: B From the following explanation we get "Uday – 28th June". Hence option B is correct.

Case: 1			
Days	Month	Date	Person
31	May	17	Ximon
		28	Rahim
30	June	17	Pratheep
		28	Uday
31	July	17	Wafiq
		28	Tushar
30	Sep	17	Zaheer
		28	Yadav

Q 146.

Correct Option: C From the following explanation, we get "Ximon and Yadav have their birthdays in the beginning and end respectively" is the true statement. Hence option C is correct.

Case: 1			
Days	Month	Date	Person
31	May	17	Ximon
		28	Rahim

30	June	17	Pratheep
		28	Uday
31	July	17	Wafiq
		28	Tushar
30	Sep	17	Zaheer
		28	Yadav

Q 147.

Correct Option: E

On the basis of following common explanation we know that-

av → life (refer to equation (iv))

la/ ny → meet/ in (refer to equation (xii))

Now,

xy/ ba → and/ us.....(xiv)

The code given as option A 'ba la ny' or as option C 'ny xy la' is a possible set for the words 'in and meet'.

Hence , **option 'E'** is the right choice.

Q148.

Correct Option: A

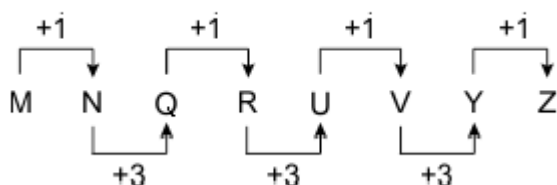
A – E – I – O – U ⇒ Vowels

$D \xrightarrow{+5} I \xrightarrow{+5} N \xrightarrow{+5} S \xrightarrow{+5} X$

Hence, option A is correct.

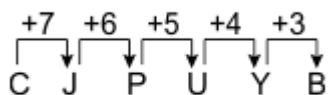
Q149.

Correct Option: D



Q150.

Correct Option: B

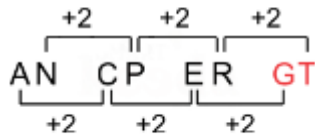


Hence, option B is correct.

Q151.

Correct Option: B

Pattern of the series is:

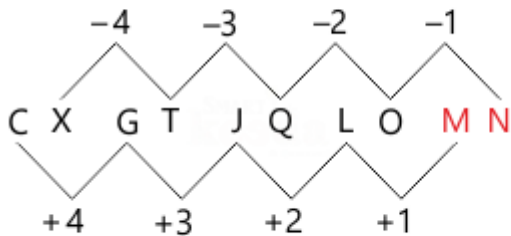


Hence, option B is correct.

Q152.

Correct Option: C

From the below image we can say that MN is the missing term of series.



Hence option C is the correct answer.

Q153.

Correct Option: E

In a fair, there are six types of rides viz. Roller Coaster, Ferris wheel, Fast Forward, Mad Bull, Big Beat and Loco Motion which are priced differently. Their prices ranged between Rs. 70 and Rs. 150.

What is the price of the ride which is priced second lowest?

Statement I: Loco Motion was priced 25 rupees higher than Big Beat. Roller Coaster was priced Rs. 110, which was not the highest price, but was higher than the price of Ferris Wheel.

Statement II: Big Beat was priced Rs. 80, which is just lower than that of Ferris Wheel, whose price is a multiple of 5. Only two rides were priced below Rs. 100. Big Beat and Mad Bull share the maximum difference of prices. The price of Loco Motion was 10 rupees more than that of Ferris Wheel.

Checking statement I:

Loco Motion > Big Beat

Thus, we cannot figure out the price of second lowest ride with the given hints.

Hence data in statement I alone is not sufficient to answer the question.

Checking statement II:

With the first hint, it is clear that Ferris Wheel has an immediate higher price than Big Beat. Big Beat and Mad Bull share the maximum difference means that Mad Bull is the highest priced ride, because we know that Big Beat is priced Rs. 80, which can't be the highest price, so it the lowest price.

Mad Bull > _ > _ > _ > Ferris Wheel > Big Beat (80)

So, price of Ferris Wheel (second lowest priced ride) could be 85 or 90 or 95 or any other multiple of 5.

Hence data in statement II alone is not sufficient to answer the question.

Checking both statements I and II:

Reference:

Big Beat was priced Rs. 80, which is just lower than that of Ferris Wheel, whose price is a multiple of 5.
Loco Motion was priced 25 rupees higher than Big Beat.
The price of Loco Motion was 10 rupees more than that of Ferris Wheel.
Only two rides were priced below Rs. 100.

Inference:

With respect to first and second hint, price of Loco Motion can be fixed as Rs. 105.
Thus, with the help of third hint, price of Ferris Wheel can be determined as Rs. 95.

Loco motion (105) > Ferris Wheel (95) > Big Beat (80)

As only two rides are priced below Rs. 100, so Ferris Wheel must be the second lowest priced ride.

Hence both the statements together are necessary to answer the question.

Hence option E is correct.

Q 154.

Correct Option: E

Find the code for "drive"?

Statement I: 'slow move road' is coded as 'ge hu ba' and 'traffic rules drive' is coded as 'to la se'.

Statement II: 'road rules follow' is coded as 'hu ve la' and 'slow traffic change' is coded as 'to ba nu'.

Checking statement I:

Code for the word drive cannot be found.

Hence data in statement I alone is not sufficient.

Checking statement II:

Code for the word drive cannot be found because it is not mentioned in statement II.

Hence data in statement II alone is not sufficient.

Checking both statements I and II:

Code for drive is 'se'.

Hence data in both the statements together is necessary to answer the question.

Hence option E is correct.

Q155.

Correct Option: C

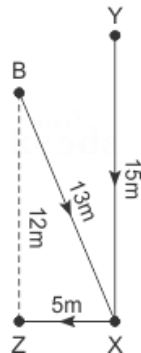
Point Z is in which direction from Point B?

Statement I: Point X is towards 15m south of Point Y. Point Z is towards 5m west of Point X, which is 13m south-east of Point B.

Statement II: Point B is 6m west of Point X. Point Y is 12m east of Point Z, which is 8m to the north of Point X.

Checking statement I:

We can have the following arrangement:

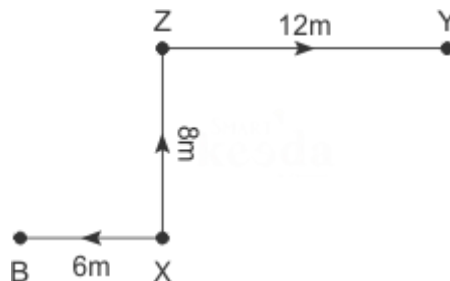


Thus, Point Z is in south from Point B.

Hence data in statement I alone is sufficient.

Checking statement II:

We can have the following arrangement:



Thus Point Z is in north-east from Point B.

Hence data in statement II alone is sufficient.

Hence data in either statement I or II is sufficient to answer the question.

Hence option C is correct.

Q156.

Correct Option: E

Find the code for "river"?

Statement I: 'work never down' is coded as 'ge hu ba' and 'my river work' is coded as 'to la se'.

Statement II: 'down river house' is coded as 'hu ve la' and 'work my friend' is coded as 'to ba nu'.

Checking statement I:

Code for the word river cannot be found.

Hence data in statement I alone is not sufficient.

Checking statement II:

Code for the word river cannot be found.

Hence data in statement II alone is not sufficient.

Checking both statements I and II:

Code for river is 'la'.

Hence data in both the statements together is necessary to answer the question.

Hence option E is correct.

Q157.

Correct Option: B

Given sequence:

645 172 843 241 463 571

New sequence:

644 174 842 240 462 570

We know that a number is divisible by 3 if the sum of its digits is also divisible by 3.

Following this, we can observe that the numbers '174', '240', '462' and '570' are divisible by 3.

Hence, Option B is correct.

Q158.

Correct Option: B

Given sequence:

645 172 843 241 463 571

Second highest number: 645

Its 2nd digit = 4

Highest number: 843

Its 3rd digit = 3

Clearly, the resultant = $4 \times 3 = 12$

Hence, Option B is correct.

Q159.

Correct Option: B

Given sequence:

645 172 843 241 463 571

Third highest number: 571

Its 2nd digit = 7

Lowest number: 172

Its 3rd digit = 2

Clearly, the resultant difference = $7 - 2 = 5$

Hence, Option B is correct.

Q 160.

Correct Option: B

Given sequence:

645 172 843 241 463 571

New sequence:

654 721 843 421 643 751

Clearly, 421 is the lowest here and its original number is 241.

Hence, Option B is correct.

Q 161.

Correct Option: B

Given sequence:

645 172 843 241 463 571

New sequence:

546 271 348 142 364 175

Clearly, 645 has become the highest number in the new sequence.


Hence, Option B is correct.

Q162.

Correct Option: D

Following the final solution we can say that Shreya is the second lightest. Hence, the correct answer is option D.

final Solution:

Order	Height	Weight
Highest	Rinku	Kajal
	Mandeep	Mandeep
	Bhagat	Pranav
	Pranav	Bhagat
	Kiran	Rinku
	Kajal	Shreya
Lowest	Shreya	Kiran

Q163.

Correct Option: A

Following the final solution we can say that no one is heavier than the one who is second shortest. Hence, the correct answer is option A.


Final Solution:

Order	Height	Weight
Highest	Rinku	Kajal
	Mandeep	Mandeep
	Bhagat	Pranav
	Pranav	Bhagat
	Kiran	Rinku

	Kajal	Shreya
Lowest	Shreya	Kiran

Q164.
 Correct Option: C
 Following the final solution we can say that Kajal is the heaviest. Hence, the correct answer is option **C**.

Final Solution:

Order	Height	Weight
Highest	Rinku	Kajal
	Mandeep	Mandeep
	Bhagat	Pranav
	Pranav	Bhagat
	Kiran	Rinku
	Kajal	Shreya
Lowest	Shreya	Kiran

Q165.
 Correct Option: B
 Following the final solution we can say that Shreya is shortest is the true statement. Hence, the correct answer is option **B**.

Final Solution:

Order	Height	Weight
Highest	Rinku	Kajal
	Mandeep	Mandeep
	Bhagat	Pranav
	Pranav	Bhagat
	Kiran	Rinku

	Kajal	Shreya
Lowest	Shreya	Kiran

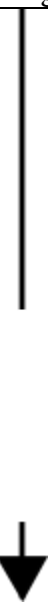
Q166.

Correct Option: C

Following the final solution we can say that Rinku is the tallest.

Hence, the correct answer is option **C**.

Final Solution:

Order	Height	Weight
Highest	Rinku	Kajal
	Mandeep	Mandeep
	Bhagat	Pranav
	Pranav	Bhagat
	Kiran	Rinku
	Kajal	Shreya
Lowest	Shreya	Kiran

Q 167.

Correct Option: D

Clearly the sequence will be -

Hundred – Thousand – Million – Billion – Trillion

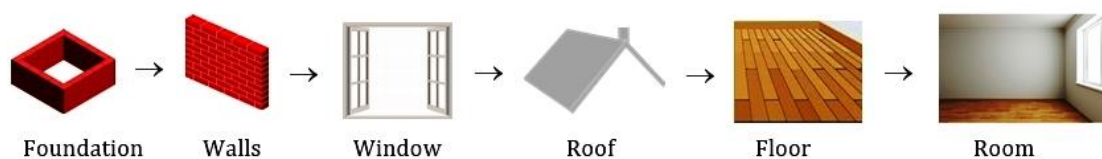
100 – 1,000 – 1,000,000 – 1,000,000,000 – 1,000,000,000,000

Hence, the option D is correct.

Q168.

Correct Option: B

Correct sequence will be -

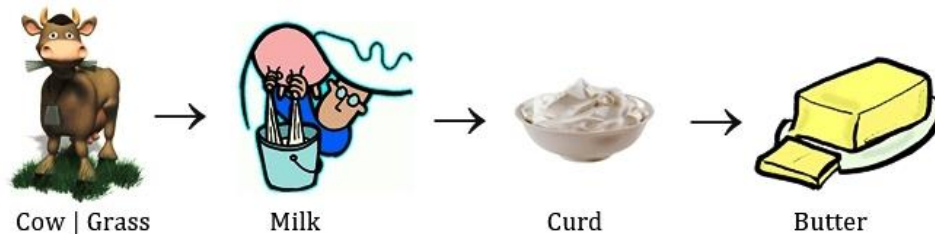


So, the option B is correct.
Hence, the option B is correct.

Q169.

Correct Option: D

Correct sequence is-



Hence, the option D is correct.

Q170.

Correct Option: B

When a child feels hungry, it cries. The mother, then, feeds it with milk and it, then, smiles. So, the correct sequence is-



Hence, the option B is correct.

Q171.

Correct Option: B

Clearly, the given names when arranged in order of increasing value, i.e., from cheapest to the most expensive, form the sequence : Sand, Iron, Copper, Silver, Gold. Thus, the correct Sequence is 3, 2, 4, 5, 1.

Hence, the option B is correct.

Q172.

Correct Option: C

The given number:

2 4 5 1 4 7 9 6 3 8

After arranging the first half and the second half of the digits of given number in ascending order, we get new number as:

1 2 4 4 5 3 6 7 8 9

Now,

2	4	5	1	4	7	9	6	3	8
1	2	4	4	5	3	6	7	8	9

Comparing both the numbers, we can say that there is no number whose position remains

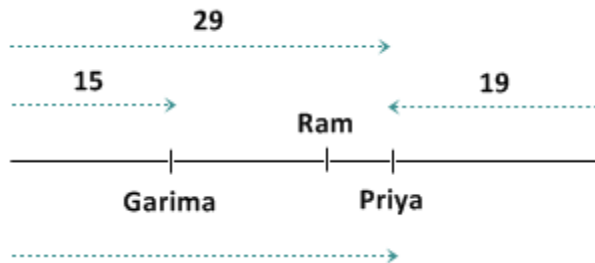
unchanged.

Hence, the correct answer is option C.

Q173.

Correct Option: C

Using the given information we can create a following figure:



Here the total number of persons in the queue = $(29 + 19 - 1) = 47$
Note: 29 is derived by adding Ram's position from left end of the row (24) and his position with respect to Priya (5). Hence, the correct answer is option C.

Q174.

An odometer is an instrument used to measure mileage. A compass is an instrument used to determine direction. Choices a, b, and c are incorrect because none is an instrument.

Q175.

A window is made up of panes, and a book is made up of pages. The answer is not (choice a) because a novel is a type of book. The answer is not (choice b) because glass has no relationship to a book. (Choice c) is incorrect because a cover is only one part of a book; a book is not made up of covers.

Q176.

Coffee goes into a cup and soup goes into a bowl. Choices a and c are incorrect because they are other utensils. The answer is not choice d because the word food is too general.

Q177.

A yard is a larger measure than an inch (a yard contains 36 inches). A quart is a larger measure than an ounce (a quart contains 32 ounces). Gallon (choice a) is incorrect because it is larger than a quart. Choices c and d are incorrect because they are not units of measurement.

Q178.

A marathon is a long race and hibernation is a lengthy period of sleep. The answer is not choice a or b because even though a bear and winter are related to hibernation, neither completes the analogy. (Choice c) is incorrect because sleep and dream are not synonymous.

Q 179.

Since Eileen's husband does not enjoy fancy restaurants, choices a and c can be ruled out. Choice b, although casual, doesn't sound as though it would be the kind of special

and memorable evening that Eileen is looking for. Choice d, which is owned by a former baseball star and is described as "charming" and "reminiscent of a baseball clubhouse", sounds perfect for Eileen's husband, who is described as a baseball fan and a man with simple tastes.

Q180.

Actresses #2 and #3 possess most of the required traits. They both have red hair and brown eyes, are average-sized, and are in their forties. Actress #1 is very tall and is only in her mid-twenties. She also has an olive complexion. Actress #4 is of very slight build and is in her early thirties. She also has blue eyes.

Q181.

Seeing four girls surrounding another girl, while in possession of her backpack, is the most suspicious of the incidents described.

Q182.

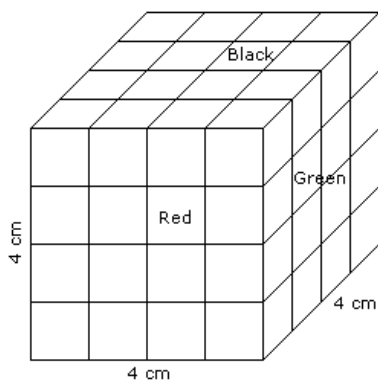
The four women seem to agree that the plate starts out with the letter J. Three of them agree that the plate ends with 12L. Three of them think that the second letter is X, and a different three think that the third letter is K. The plate description that has all of these common elements is **"Option A"**.

Q183.

All of the men agree that the first three numbers are 995. Three of them agree that the fourth number is 9. Three agree that the fifth number is 2. Three agree that the sixth number is 6; three others agree that the seventh number is also 6. **"Option A"** is the best choice because it is made up of the numbers that most of the men agree they saw.

Q184.

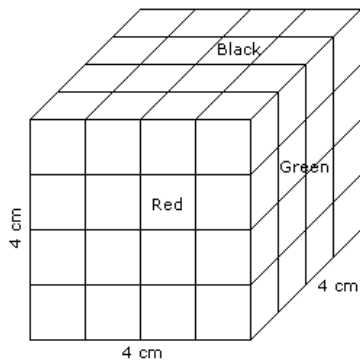
One side of the big cube = $\sqrt[3]{64} = 4$ cm.



Number of small cubes having one face green and the other one is either red or black
 $= 8 \times 2 = 16$

Q185.

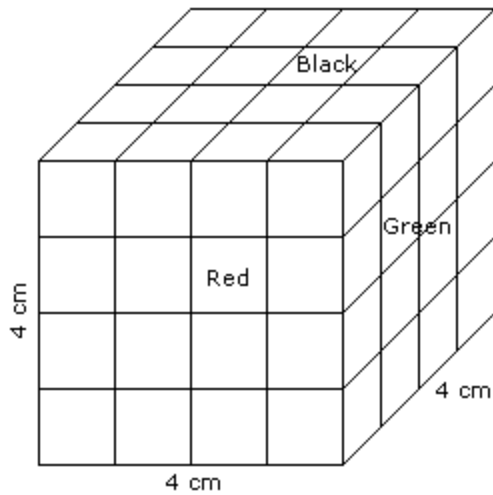
One side of the big cube = $\sqrt[3]{64} = 4$ cm.



Number of small cubes having no face coloured = $(x - 2)^3$
 $= (4 - 2)^3$
 $= 8$

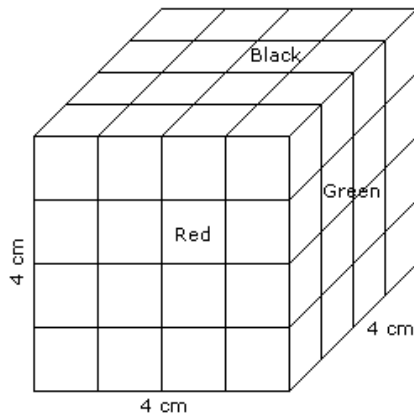
Q186.

One side of the big cube = $\sqrt[3]{64} = 4$ cm.



Number of small cubes having three faces coloured = 1 at each corner
 $= 1 \times 8$
 $= 8$
 $>$
 Q187.

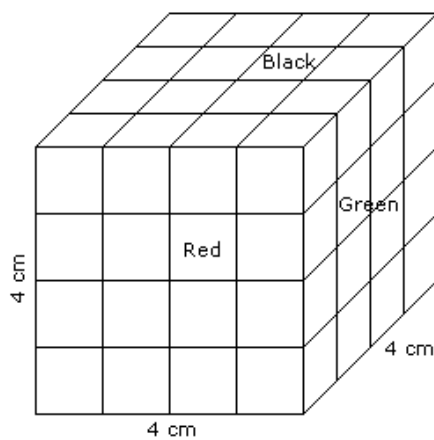
One side of the big cube = $\sqrt[3]{64} = 4$ cm.



Number of small cubes having only one face coloured = 4 from each face
 = 4 x 6
 = 24

Q188.

One side of the big cube = $\sqrt[3]{64} = 4$ cm.



Number of small cubes having two faces coloured = 8 + 8 + 4 + 4 = 24
 and Number of small cubes having only one face coloured = 4 x 6 = 24
 and Number of small cubes having no face coloured = 4 + 4 = 8
 Therefore, total number of small cubes whose at the most two faces are coloured = 24 + 24 + 8 = 56.

Q189.

Angle traced by the hour hand in 6 hours = $\left(\frac{360}{12} \times 6 \right)^\circ = 180^\circ$.

Q190.

Explanation:

Angle traced by hour hand in	$\frac{125}{12}$	hrs =	$\left(\frac{360}{12} \times \frac{125}{12} \right)^\circ$	=	$312\frac{1}{2}^\circ$
Angle traced by minute hand in 25 min =			$\left(\frac{360}{60} \times 25 \right)^\circ$	=	150°
\therefore Reflex angle =	$360^\circ - \left(312\frac{1}{2} - 150 \right)^\circ$		=	$360^\circ - 162\frac{1}{2}$	= $197\frac{1}{2}^\circ$

Q 191.

Angle traced by hour hand in 12 hrs = 360° .

Angle traced by hour hand in 5 hrs 10 min. <i>i.e.</i> ,	$\frac{31}{6}$	hrs =	$\left(\frac{360}{12} \times \frac{31}{6} \right)^\circ$	=	155°
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Q 192.

It is given in the statements, that C cannot travel with A or B. E cannot travel with B or F. G cannot travel with F, or H, or D. By formulating the table we get

	A	B	C	D	E	F	G	H
A	X		X					
B		X	X		X			
C	X	X	X					
D				X			X	
E		X			X	X		
F					X	X	X	
G				X		X	X	X
H							X	X

Q is with A and G is with Q => G and Q are travelling together on motorcycle M3

F travels on M1 and E travels on M2 motorcycles.

D is travelling with P on M2 => D and E are traveling together on M2

B cannot go with R => F and B go together on M1

Therefore, C and H go together on M4

So, the table can formed as below :

	A	B	C	D	E	F	G	H
A	X	X	X	X	X	X	✓	X
B	X	X	X	X	X	✓	X	X
C	X	X	X	X	X	X	X	✓
D	X	X	X	X	✓	X	X	X
E	X	X	X	✓	X	X	X	X
F	X	✓	X	X	X	X	X	X
G	✓	X	X	X	X	X	X	X
H	X	X	✓	X	X	X	X	X

Basket	Motorcycle		
O	M1	F	B
P	M2	E	D
Q	M3	A	G
R	M4	C	H

Person	A	B	C	D	E	F	G	H
Basket	Q	O	R	P	P	O	Q	R
Motorcycle	M3	M1	M4	M2	M2	M1	M3	M4

Hence, C would be travelling with H.

Q193.

Answer (A)

According to given condition the correct sequence of houses is 1st is blue, 2nd green, 3rd is yellow and last red. Now in the yellow house i.e. 3rd Z lives and X doesn't live as a neighbour i.e. Green and Red house. So, X lives in blue house.

Q194.

Correct arrangement would be

NAME	JACK	Mohan	Shalini	Suman	Rita
ENCLOSURES	Y	X	Q	P	Z
ANIMALS	BEAR	LION	LION	BISON	BISON
	PANTHER	PANTHER	BEAR	DEER	DEER

Hence option C.

Q195.

Correct Option: C

Draw a table with Student, Subject and Sport.

P's favorite sport is Cricket.

Q's favorite sport is Badminton.

R likes Philosophy and his favorite sport is Hockey.

S likes Geography.

W likes chemistry and his favorite sport is Volleyball.

T's favorite sport is not Badminton or Table Tennis.

V does not like either History or Biology.

The one whose favorite sport is Basketball does not like physics.

V does not like English and his favorite sport is not Basketball.

The one who likes Football likes English.

The one whose favorite sport is Badminton does not like biology.

Student	Subject	Sport
P	Biology	Cricket
Q	History	Badminton
R	Philosophy	Hockey
S	Geography	Basketball
T	English	Football
V	Physics	Table Tennis
W	Chemistry	Volleyball

Q196.

Correct Option: D

Draw a table with Student, Subject and Sport.

P's favorite sport is Cricket.

Q's favorite sport is Badminton.

R likes Philosophy and his favorite sport is Hockey.

S likes Geography.

W likes chemistry and his favorite sport is Volleyball.

T's favorite sport is not Badminton or Table Tennis.

V does not like either History or Biology.

The one whose favorite sport is Basketball does not like physics.

V does not like English and his favorite sport is not Basketball.

The one who likes Football likes English.

The one whose favorite sport is Badminton does not like biology.

Student	Subject	Sport
P	Biology	Cricket
Q	History	Badminton
R	Philosophy	Hockey
S	Geography	Basketball
T	English	Football
V	Physics	Table Tennis
W	Chemistry	Volleyball

Q197.

Correct Option: A

Draw a table with Student, Subject and Sport.

P's favorite sport is Cricket.

Q's favorite sport is Badminton.

R likes Philosophy and his favorite sport is Hockey.

S likes Geography.

W likes chemistry and his favorite sport is Volleyball.

T's favorite sport is not Badminton or Table Tennis.

V does not like either History or Biology.

The one whose favorite sport is Basketball does not like physics.

V does not like English and his favorite sport is not Basketball.

The one who likes Football likes English.

The one whose favorite sport is Badminton does not like biology.

Student	Subject	Sport
P	Biology	Cricket
Q	History	Badminton
R	Philosophy	Hockey
S	Geography	Basketball
T	English	Football
V	Physics	Table Tennis
W	Chemistry	Volleyball

Q198.

Correct Option: E

Draw a table with Student, Subject and Sport.

P's favorite sport is Cricket.

Q's favorite sport is Badminton.

R likes Philosophy and his favorite sport is Hockey.

S likes Geography.

W likes chemistry and his favorite sport is Volleyball.

T's favorite sport is not Badminton or Table Tennis.

V does not like either History or Biology.

The one whose favorite sport is Basketball does not like physics.

V does not like English and his favorite sport is not Basketball.

The one who likes Football likes English.

The one whose favorite sport is Badminton does not like biology.

Student	Subject	Sport
P	Biology	Cricket
Q	History	Badminton
R	Philosophy	Hockey
S	Geography	Basketball
T	English	Football
V	Physics	Table Tennis
W	Chemistry	Volleyball

Q 199.

Correct Option: B

Draw a table with Student, Subject and Sport.

P's favorite sport is Cricket.

Q's favorite sport is Badminton.

R likes Philosophy and his favorite sport is Hockey.

S likes Geography.

W likes chemistry and his favorite sport is Volleyball.

T's favorite sport is not Badminton or Table Tennis.

V does not like either History or Biology.

The one whose favorite sport is Basketball does not like physics.

V does not like English and his favorite sport is not Basketball.

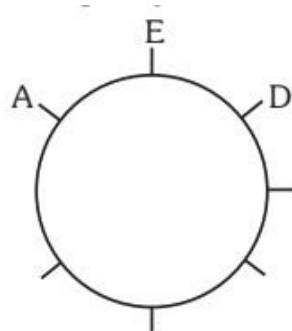
The one who likes Football likes English.

The one whose favorite sport is Badminton does not like biology.

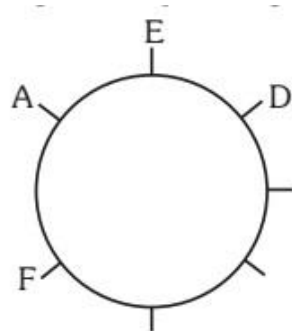
Student	Subject	Sport
P	Biology	Cricket
Q	History	Badminton
R	Philosophy	Hockey
S	Geography	Basketball
T	English	Football
V	Physics	Table Tennis
W	Chemistry	Volleyball

Q 200.

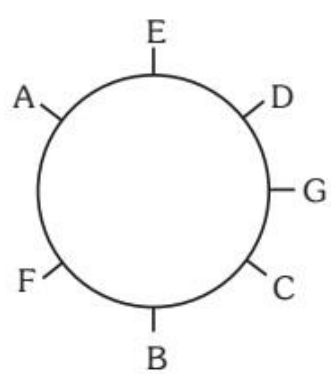
From the second point we can draw the figure below the position of A and D can interchange but the figures below can be drawn on following the position of F. Following the rest points figures are drawn below.



Step: I



Step: II



Step: III