LRDI – Mixed Class

Each of the six scholars – K, L, M, N, O and P have exactly two degrees out of B.Tech., M.Sc., B.Com., and B.A. No two scholars have the same pair of degrees.

Further it is known that:
I. K and M do not have M.Sc. degree.
II. L and N do not have B.Com. degree.
III. O and P do not have B.Tech. degree.
IV. Only one out of L and O has B.A. degree.
V. Only one out of M and N has B.A. degree.

1) Which of the following pairs of persons cannot have B.A. degree at the same time?

a. L & M b. M & P c. K & O d. N & P

2) Which of the following degrees does K definitely not have?
a. B.Tech. & B.Com. b. B.Tech. & B.A.
c. B.Com. & B.A. d. None of these

3) If M has a B.A. degree, then for which of the following scholars, the two degrees they have cannot be uniquely determined?
a. L b. N c. O d. K

4) If N does not have a B.Tech. degree, then which of the following is definitely correct?
I. O has B.Com. & B.A. degrees. II. P has M.Sc. & B.Com. degrees.
a. Only I b. Only II c. Both I and II d. Neither I nor II

Manky is given a puzzle called “Prime Game“ by his mathematics teacher. He is required to determine a single digit, non-even prime number which is written on one out of the four cards namely “a”, ”b”, “c” and “d”. The four cards are lying on a table starting from his left to his right. Three out of the four cards have single digit, non-prime even numbers written on them. He can take help of a super computer “Param” which can be given a four-digit binary code cards have as the input. The super computer multiplies each digit of the binary code to the respective number on the card from left to right.
For example: For example:
If computer is given 1011 as the input then it completes multiplication in the following order: 1× a + 0 × b + 1 × c + 1 × d, where a, b, c and d are the single digit distinct numbers written on cards “a”, “b”, “c” and “d” respectively. The super computer then gives the above output in the decimal notation. Manky can see both the input as well as the output on the super computer. In case an input has less than four digits in the binary system, prefix appropriate number of ‘0’ to make the input a four digit number. For example, if an input is 11, then consider it as 0011. input is 11, then consider it as 0011.

Q1. If Manky sends binary equivalent of 15 as input to the super computer and gets 25 as the output, then the prime number thus obtained by Manky is
1 3 2 5 3 2 4 7

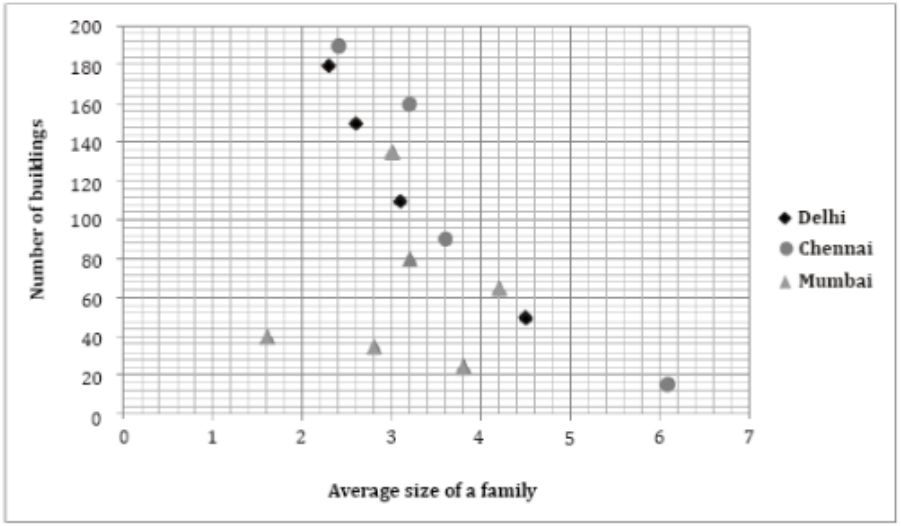
Q2. If the number written on card ‘d’ is 5 and the decimal notation of the input is 14 then which of the following is the output?
1 20 2 22 3 24 4 18

Q3. If input is 13, then the value of output cannot be more than
1 21 2 19 3 18 4 16

Q4. One of the options below shows the set of values in decimal notation , whose binary equivalent as input to the computer would be sufficient to determine the prime number written on one of the cards. Which of the following is the required set ?
1 1, 2, 4 and 8 2 7, 5, 1 and 2 3 3, 2, 1 and 4 4 3, 3, 1 and 2

Refer to the data below and answer the questions that follow.

In 2010, a survey was conducted in different areas of three cities, Delhi, Chennai and Mumbai.
The following scatter plot shows the data for number of buildings and the average size of a family in the different areas surveyed.



If the number of families residing in the surveyed areas of Delhi is 9800 and the average family size is approximately 2.796, determine the average number of families residing in a building.

- 55.92
- 20
- 17.89
- 15

Show Correct Answer, Status & Explanation

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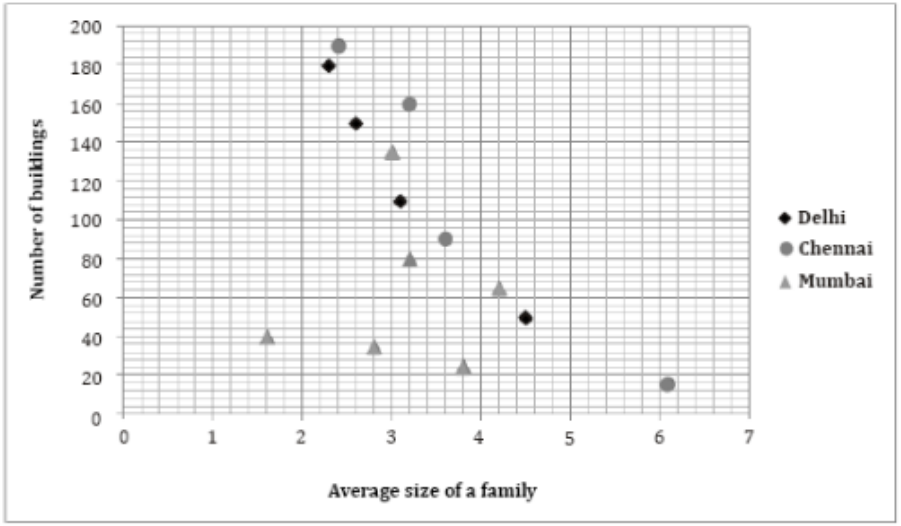
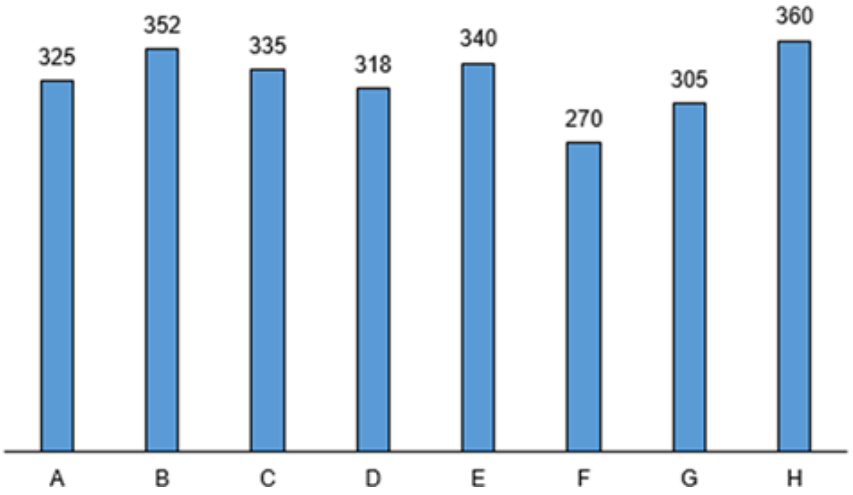


The average number of people per building is 61, 36, 32, 24 for various areas in Chennai (Consider the areas by increasing order of number of buildings in Chennai with respect to the above values). Determine the average family size in the surveyed areas of Chennai.

- 3.83
- 2.10
- 3.04
- Cannot be determined

Show Correct Answer, Status & Explanation

The following bar graph provides, for each of eight countries, A through H, the number of days it rained in 2017:



Q1. What is the maximum number of days during the year on which it could have rained in all the eight countries?
a) 250 b) 260 c) 270 d) 280

Q2. What is the minimum number of days during the year on which it could have rained in all the eight countries?
a) 50 b) 40 c) 70 d) 60

Q3. In how many countries is it possible that the number of days it rained in each month was one more than that in the previous month?
a) 0 b) 1 c) 2 d) 3

Q4. In how many countries is it possible that the number of days it did not rain in each month was one more than that in the previous month?
a) 3 b) 2 c) 1 d) 0