Case Study Questions for Class 10 Maths Chapter – 1 Real Numbers

Question 1:

HCF and LCM are widely used in number system especially in real numbers in finding relationship between different numbers and their general forms. Also, product of two positive integers is equal to the product of their HCF and LCM
Based on the above information answer the following questions.

(i) If two positive integers x and y are expressible in terms of primes as x $=p^2q^3$ and y$=p^3q$, then which of the following is true?
(a) HCF = pq^2 x LCM
(b) LCM = pq^2 x HCF
(c) LCM = p^2q x HCF
(d) HCF = p^2q x LCM

(ii) A boy with collection of marbles realizes that if he makes a group of 5 or 6 marbles, there are always two marbles left, then which of the following is correct if the number of marbles is p?
(a) p is odd
(b) p is even
(c) p is not prime
(d) both (b) and (c)

(iii) Find the largest possible positive integer that will divide 398, 436 and 542 leaving remainder 7, 11, 15 respectively.
(a) 3
(b) 1
(c) 34
(d) 17

(iv) Find the least positive integer which on adding 1 is exactly divisible by 126 and 600.

(a) 12600
(b) 12599
(C) 12601
(d) 12500

(v) If A, B and C are three rational numbers such that $85C - 340A = 109$, $425A + 85B = 146$, then the sum of A, B and C is divisible by
(a) 3
(b) 6
(c) 7
(d) 9

Answers:
(i) b
(ii) d
(iii) d
(iv) b
(v) a

Question 2:

To enhance the reading skills of grade X students, the school nominates you and two of your friends to set up a class library. There are two sections- section A and section B of grade X. There are 32 students in section A and 36 students in section B.

(i) What is the minimum number of books you will acquire for the class library, so that they can be distributed equally among students of Section A or Section B?
(a) 144
(b) 128
(c) 288
(d) 272

(ii) If the product of two positive integers is equal to the product of their HCF and LCM is true then, the HCF (32 , 36) is
(a) 2
(b) 4

(c) 6
(d) 8

(iii) 36 can be expressed as a product of its primes as
(a)
(b)
(c)
(d)

(iv) 7 is a
(a) Prime number
(b) Composite number
(c) Neither prime nor composite
(d) None of the above

(v) If p and q are positive integers such that p = a and q= b, where a , b are prime numbers, then the LCM (p, q) is
(a) ab
(b) a^2b^2
(c) a^3b^2
(d) a^3b^3

Answers:
(i) c
(ii) b
(iii) a
(iv) b
(v) b