



# VIDYA BHAWAN BALIKA VIDYAPEETH

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(Affiliated to CBSE up to +2 Level)

Class: X

Subject: Mathematics

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1. For any positive integer  $a$  and  $3$ , there exist unique integers  $q$  and  $r$  such that  $a = 3q + r$ , where  $r$  must satisfy :

- (a)  $0 \leq r < 3$                       (b)  $1 < r < 3$                       (c)  $0 < r < 3$                       (d)  $0 < r \leq 3$

2.  $\pi = \frac{22}{7}$  is:

- (a) a rational number                      (b) an irrational number  
(c) a prime number                      (d) an even number

3. L.C.M. of  $23 \times 32$  and  $22 \times 33$  is :

- (a) 23                      (b) 33                      (c)  $23 \times 33$                       (d)  $22 \times 32$

4. The HCF and LCM of two numbers are 33 and 264 respectively. When the first number is completely divided by 2 the quotient is 33. The other number is:

- (a) 66                      (b) 130                      (c) 132                      (d) 196

5. What will be the least possible number of the planks, if three pieces of timber 42 m, 49 m and 63 m long have to be divided into planks of the same length?

- (a) 5                      (b) 6                      (c) 7                      (d) none of these

6. What is the greatest possible speed at which a man can walk 52 km and 91 km in an exact number of minutes?

- (a) 17 m/min                      (b) 7 m/min                      (c) 13 m/min                      (d) 26 m/min

7. If  $A = 2n + 13$ ,  $B = n + 7$ , where  $n$  is a natural number then HCF of  $A$  and  $B$  is:

- (a) 2                      (b) 1                      (c) 3                      (d) 4

8. Pairs of natural numbers whose least common multiple is 78 and the greatest common divisor is 13 are:

- (a) 58 and 13 or 16 and 29                      (b) 68 and 23 or 36 and 49  
(c) 18 and 73 or 56 and 93                      (d) 78 and 13 or 26 and 39

9. Two natural numbers whose sum is 85 and the least common multiple is 102 are:

- (a) 30 and 55            (b) 17 and 68            (c) 35 and 55            (d) 51 and 34

**10.** 4 Bells toll together at 9.00 am. They toll after 7, 8, 11 and 12 seconds respectively. How many times will they toll together again in the next 3 hours?

- (a) 3                            (b) 4                            (c) 5                            (d) 6

**11.** A forester wants to plant 66 apple trees, 88 banana trees and 110 mango trees in equal rows (in terms of number of trees). Also he wants to make distinct rows of trees (i.e., only one type of trees in one row). The number of minimum rows required are

- (a) 2                            (b) 3                            (c) 10                            (d) 12

**12.** A number  $10x + y$  is multiplied by another number  $10a + b$  and the result comes as  $100p + 10q + r$ , where  $r = 2y$ ,  $q = 2(x + y)$  and  $p = 2x$ ;  $x, y < 5$ ,  $q \neq 0$ . The value of  $10a + b$  may be:

- (a) 11                            (b) 13                            (c) 31                            (d) 22

**13.** If the HCF of 65 and 117 is expressible in the form  $65m - 117$ , then the value of  $m$  is

- (a) 4                            (b) 2                            (c) 1                            (d) 3

**14.** The largest number which divides 70 and 125, leaving remainders 5 and 8 respectively, is

- (a) 13                            (b) 65                            (c) 875                            (d) 1750

**15.** If two positive integers  $a$  and  $b$  are written as  $a = x^3y^2$  and  $b = xy^3$ ;  $x, y$  are prime numbers, then HCF ( $a, b$ ) is

- (a)  $xy$                             (b)  $xy^2$                             (c)  $x^3y^3$                             (d)  $x^2y^2$

**16.** If two positive integers  $p$  and  $q$  can be expressed as  $p = ab^2$  and  $q = a^3b$ ;  $a, b$  being prime numbers, then LCM ( $p, q$ ) is

- (a)  $ab$                             (b)  $a^2b^2$                             (c)  $a^3b^2$                             (d)  $a^3b^3$

**17.** The least number that is divisible by all the numbers from 1 to 10 (both inclusive) is

- (a) 10                            (b) 100                            (c) 504                            (d) 2520