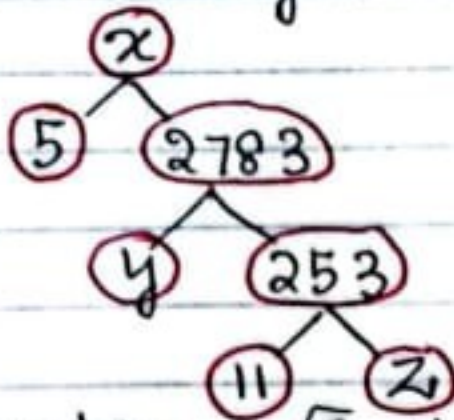


X Test-2

1) Case-study :- a factor tree is given



(i) Find the value of x

(ii) Find the value of y

(iii) Find the prime factorisation of 13915

(iv) What is the value of $\frac{x+y+z}{13}$?

2) Assertion: $\sqrt{3}$ is an irrational number

Reason: If p is prime, then \sqrt{p} is an irrational number.

3) The exponent of 2 in prime factorisation of 288 is
(a) 2 (b) 3 (c) 4 (d) 5

4) If LCM of 24 and 48 is expressed as $10m+8$, then m is —
(a) 4 (b) 8 (c) 2 (d) 1

5) HCF of $(2^3 \times 3^3 \times 5)$, $(2^2 \times 3^2 \times 5^2)$ and $(2^5 \times 3 \times 5^3 \times 7)$ is
(a) 30 (b) 60 (c) 105 (d) 210

6) State fundamental theorem of arithmetic.

7) ~~Verify~~ If $a = pq^2$ and $b = p^3q$, then LCM $(a, b) =$ —
(a) pq (b) p^3q^3 (c) p^3q^2 (d) p^2q^2

8) HCF $(m, n) =$ — if $m = pq^3$ and $n = p^3q^2$
(a) pq (b) pq^2 (c) p^3q^3 (d) p^2q^3

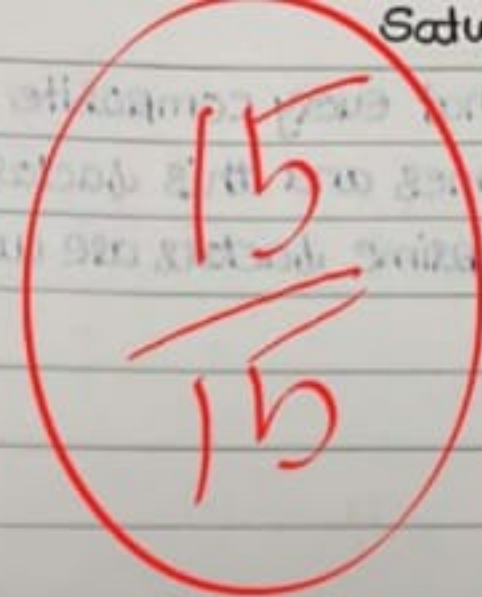
9) The LCM and HCF of two rational numbers are equal, then the numbers must be —

(a) prime (b) co-prime (c) composite (d) equal.

10) For some integer q , every odd integer is of the form
(a) q (b) $q+1$ (c) $2q$ (d) $2q+1$

TEST - 2

- (i) 13915 ✓
- (ii) 11 ✓
- (iii) $13915 = 5 \times 11^2 \times 23$ ✓
- (iv) $\frac{x+y+z}{13}$ ✓



$$= \frac{13915 + 11 + 23}{13}$$

$$= \frac{13949}{13}$$

$$= 1073$$

(a) Both A and R are true, and R is the correct explanation of A. ✓

(d) 5 ✓

$10m + 8 = 48$ ✓

$10m = 40$

$m = 4$

$x = 2^3 \times 3^3 \times 5$ ✓

$y = 2^2 \times 3^2 \times 5^2$

$z = 2^5 \times 3 \times 5^3 \times 7$

HCF = $2^2 \times 3 \times 5$ ✓

$= 60$

2	288
2	144
2	72
2	36
2	18
3	9
	3

11:46 am

6) It states that every composite number can be expressed as a product of primes and this factorization is unique apart from the order in which the prime factors are written.

- 7) (c) p^3q^2 ✓
- 8) (d) pq^2 ✓
- 9) (a) equal ✓
- 10) (d) $2q+1$ ✓