SUCCESS INSTITUTE Assignment - 11 10^{th} Class Expert

Q1. Express the following as the product of its prime factors :
(i) 156 (ii) 3825 (iii) 5005 (iv) 7429 (v) 23150 (vi) 32875 (vii) 16380

Ans. (i) $2 \times 2 \times 3 \times 13$ (ii) $3 \times 3 \times 5 \times 5 \times 17$ (iii) $5 \times 7 \times 11 \times 13$ (iv) $17 \times 19 \times 23$
(v) $2 \times 5 \times 5 \times 463$ (vi) $5 \times 5 \times 5 \times 263$ (vii) $2 \times 2 \times 3 \times 3 \times 5 \times 7 \times 13$

Q2. Find the HCF and LCM by prime factorisation method and verify that HCF x LCM = product of two numbers.
(i) 6 and 20 (ii) 56 and 112 (iii) 96 and 404 (iv) 95 and 190 (v) 92 and 510 (vi) 306 and 54 (vii) 336 and 54

Ans. (i) 2 , 60 (ii) $14 , 112$ (iii) $4 , 8736$ (iv) $95 , 190$ (v) $2 , 23460$ (vi) $18 , 918$ (vii) $6 , 3024$

Q3. Find the HCF and LCM of smallest prime number and smallest composite number. Ans. 2 , 4

Q4. Using Euclid's division algorithm, find the HCF :
(i) 135 and 225 (ii) 196 and 38220 (iii) 867 and 255 (iv) 870 and 225 (v) 125 and 425 (vi) 4052 and 12576

(vii) 550 and 155 (viii) 312 and 27 Ans. (i) 45 (ii) 196 (iii) 51 (iv) 15 (v) 25 (vi) 4 (vii) 5 (viii) 3

Q5. The HCF of two numbers is 1 ,then the two numbers are called …… Ans. Co-prime numbers

Q6. Check whether the numbers given are co-prime or not :
(i) 231 and 546 (ii) 121 and 573 (iii) 143 and 187 (iv) 847 and 2160 Ans. (i) No (ii) Yes (iii) No (iv) Yes

Q7. Find the LCM and HCF of the following integers by prime factorisation method :
(i) 12 , 15 and 21 (ii) 17 , 23 and 29 (iii) 8, 9 and 25 (iv) 6, 72 and 120 (v) 12 , 30 and 144 (vi) 150, 120 and 105

Ans. (i) 420 and 1 (ii) 11339 and 1 (iii) 1800 and 1 (iv) 360 and 6 (v) 720 and 6 (vi) 4200 and 15

Q8. If two positive integers p and q are expressed as $p = ab^2 \ and \ q = a^3b \ where \ a \ and \ b \ being \ prime \ numbers,$ then LCM (p,q) $and \ HCF \ (p, q) \ is \ equal \ to$ $Ans. \ a^3b^2 \ and \ ab$

Q9. If two positive integers p and q are expressed as $p = a^3b^2 \ and \ q = ab^3c^2 \ where \ a \ and \ b \ being \ prime \ numbers,$ then LCM (p,q) $and \ HCF \ (p, q) \ is \ equal \ to$ $Ans. \ a^3b^3c^2 \ and \ a\,b^2$

Q10. Find the HCF of $(2^3 \times 3^2 \times 5)$, $(2^2 \times 3^3 \times 5^2)$ and $(2^4 \times 3 \times 5^3 \times 7)$. Ans. 60

Q11. If a and b are prime numbers, then what is their LCM ? Ans. a b

Q12. Given that HCF (306, 657) = 9 , find LCM (306, 657). Ans. 22338

Q13. Given that HCF (16, 100) = 4 , find LCM (16, 100). Ans. 400

Q14. Given that LCM (26, 169) = 338 , find HCF (26, 169). Ans. 13

Q15. Given that LCM (77, 99) = 693 , find HCF (77, 99). Ans. 11

Q16. HCF of two numbers is 9 and their LCM is 90. If one of the numbers is 18. Find the other number. Ans. 45

Q17. HCF of two numbers is 145 and their LCM is 2175. If one of the numbers is 435. Find the other number. Ans. 725

Q18. Find the HCF x LCM for the numbers 100 and 190. Ans. 19000

Q19. Find the HCF x LCM for the numbers 160 and 80. Ans. 12800