SRM Institute of Science and Technology
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Academic Year: 2023-2024 (ODD)

Unit II Tutorial sheet - 2

Date: 16/08/2023

Course Code &Title: 18MAB302T-Discrete Mathematics for Engineers
Year & Sem: III/V

Q. No	Questions	Answer Keys
1	Use the Euclidean algorithm to find (i) gcd(2464, 7469) and (ii) gcd(6060, 9888)	(i) 77 (ii) 12
2	Prove that d|n and d|m implies d|(an+bm)	
3	If gcd(a,d)=1, then show that gcd (a+b, a^2-ab+b^2) is either 1 or 3.	
4.	Let a, b ∈Z and suppose gcd(a, b) = 1. Prove the following. (a) gcd(a + b, a − b) = 1 or 2. (b) gcd(a + 2b, 2a + b) = 1 or 3. (c) gcd(an,bn) = 1 for all n ∈ N.	
5.	Find the value of m and n such that gcd (1575, 231) = 1575m + 231n	m = 5, n = -34
6.	Using prime factorization technique find the gcd and lcm of 256 and 1166 and prove that gcd (256, 1166) * lcm (256, 1166) = 256 * 1166	gcd (256, 1166) = 2, lcm (256, 1166) = 1166
7.	Prove that number of primes is infinite.	
8.	Prove that every natural number is either 1 or it is a prime or it can be expressed as product of primes.	
9.	Prove that one of every three consecutive integers is divisible by 3.	
10.	Let a, b ∈Z and suppose gcd(a, b) = 1. Then prove that gcd (a+b, ab) =1.	