SRM Institute of Science and Technology
College of Engineering and Technology
Department of Mathematics

SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamilnadu

Academic Year: 2023-2024 (ODD)

Unit II Tutorial sheet - 3

Date: 16/08/2023

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

Q. No	Questions	Answer Keys
1	In how many ways 6 girls and 6 boys sit together in a row such that no two boys can sit together?	6! * 7!
2	How many ways 6 boys and 6 girls can sit in a row such that the boys occupy the extreme positions?	P (6, 2) * 10!
3	How many ways 8 different beads can be arranged to form a necklace?	7!/2
4.	Find the minimum number of students in CSE 5^{th} semester to be sure that at least six students will receive the same grades in Discrete Mathematics, if there are 5 different grades are available.	26
5.	How many digits can be formed using 2,3,2,4,4,5,6,7 such that the numbers must be greater than 50,000,000.	3*8!/(2!*2!)
6.	Using prime factorization technique find the gcd and lcm of 21600 and 337500 and prove that gcd (21600, 337500) * lcm (21600, 337500) = 21600 * 337500.	gcd (21600, 337500) = 22700, lcm (21600, 337500) = 2700000
7.	Using Euclidean algorithm find gcd(1819, 3587) and hence express the gcd as a linear combination of 1819, 3587.	
8.	Prove that square of an integer is of the form $4m$ or $4m+1$, where m be an integer.	
9.	Prove that if gcd(a, b) = d then gcd (Ka, Kb) = Kd, where K be any integer.	
10.	Prove that if gcd (a, b) = d then gcd (a^2, b^2) = d^2.	