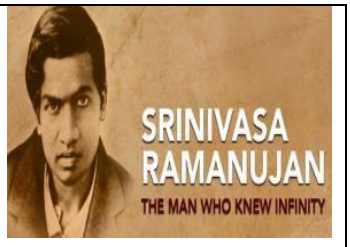
	SRM Institute of Science and Technology **Kattankulathur** **DEPARTMENT OF MATHEMATICS** **18MAB302T-DISCRETE MATHEMATICS FOR ENGINEERS** **UNIT–III MATHEMATICAL LOGICS** **Tutorial Sheet -1**	
Sl.No.	**Questions**	**Answer**
	Part – A	
1	Show that $(p \wedge q) \Rightarrow p \rightarrow q$	
2	Test the validity of the following argument, If I study, then i will not pass in the examination. If i watch TV, then i will not study. I failed in the examination. Therefore I watched TV	
3	Prove by using indirect method $\neg q, p \rightarrow q, p \vee r \Rightarrow r$	
4	Prove that the set statements $p \rightarrow q, p \rightarrow r, q \rightarrow \neg r, p.$ is inconsistent.	
5	If A works hard then B or C will enjoy themselves. If B enjoys himself then A will not work hard. If D enjoys himself then C will not work hard. Therefore, If A works hard D will not enjoy himself. Translate the above into symbolic statements.	
	Part – B	
6	Show that $(\neg p \wedge (\neg q \wedge r)) \vee (q \wedge r) \vee (p \wedge r) \Rightarrow r$	
7	Show that d can be derived from the premises $(a \rightarrow b) \wedge (a \rightarrow c), \neg(b \wedge c), d \vee a$	
8	Show that the following premises are inconsistent: (i) If Jack misses many classes through illness, then he fails high school. (ii) If Jack fails high school, then he is uneducated (iii) If Jack reads a lot of books then he is not uneducated (iv) Jack misses many classes through illness and reads a lot of book	
9	Using conditional proof prove that $\neg P \vee Q, \neg Q \vee R, R \rightarrow S \Rightarrow P \rightarrow S$	
10	Using indirect method derive $p \rightarrow \neg s$ from the premises $p \rightarrow (q \vee r), q \rightarrow \neg p, s \rightarrow \neg r, p$	