

Problem	1	2	3	4	5	6	7	Total
Mark								

MACM 101 Midterm Test February 15, 2008

Last Name _____ First Name and Initials _____

Student No. _____

NO AIDS allowed. Answer ALL questions on the test paper. Use backs of sheets for scratch work.

Total Mark: 100

1. State the rule of universal generalization. 12
2. Simplify $(\neg p \wedge (p \vee q)) \rightarrow q$. 15
3. Give an example of a function whose range and codomain are not equal. 13
4. Draw Venn diagram of the difference of sets A and B . 12
5. Show that $(p \rightarrow q) \rightarrow (r \rightarrow s)$ and $(p \rightarrow r) \rightarrow (q \rightarrow s)$ are not logically equivalent. 18
6. Give a definition of an equivalence relation. State the theorem about the connection between equivalence relations and partitions of sets. 14
7. Given premises: 16
 - “If you send me an e-mail, then I will finish writing the program.”
 - “If you do not send me an e-mail, then I will go to sleep early.”
 - “If I go to sleep early, then I will wake up feeling refreshed.”

Infer the conclusion

“If I do not finish writing the program, then I will wake up feeling refreshed.”