



**NATIONAL UNIVERSITY**  
of Computer & Emerging Sciences, Lahore

**CS 1005 – Discrete Structures BCS-3E (Fall 2024), Instructor: Dr. Imran Nadeem**

**ASSIGNMENT- I, Maximum Marks: 10 (3+3+4)**

**NOTE:** Assigned Date: 09-09-2024 and Submission Date: 16-09-2024

**Q. No. 1** Are these system specifications consistent? "If the file system is not locked, then new messages will be queued. If the file system is not locked, then the system is functioning normally, and conversely. If new messages are not queued, then they will be sent to the message buffer. If the file system is not locked, then new messages will be sent to the message buffer. New messages will not be sent to the message buffer."

**Q. No. 2** Use rules of inference to show that the hypotheses "If it does not rain or if it is not foggy, then the sailing race will be held and the lifesaving demonstration will go on," "If the sailing race is held, then the trophy will be awarded," and "The trophy was not awarded" imply the conclusion "It rained."

**Q. No. 3** For each of these arguments determine whether the argument is correct or incorrect and explain why.

- a) Everyone enrolled in the university has lived in a dormitory. Mia has never lived in a dormitory. Therefore, Mia is not enrolled in the university.
- b) A convertible car is fun to drive. Isaac's car is not a convertible. Therefore, Isaac's car is not fun to drive.
- c) Quincy likes all action movies. Quincy likes the movie *Eight Men Out*. Therefore, *Eight Men Out* is an action movie.
- d) All lobstermen set at least a dozen traps. Hamilton is a lobsterman. Therefore, Hamilton sets at least a dozen traps.