Assignment 3 of CS2209A

Completion of the assignment must be an individual effort.
Due date: 2021.10.22 (by 11:55 pm)
This assignment is worth 10% towards your final mark.

Please refer to these pages of the textbook for this written assignment (Note that this assignment does not need LogiCola. These questions would be similar to questions in exams).

Exercise 4.5a, 3%
On page 1 of the PDF file above, prove questions 2, 4, 6, each with
a. Truth-table method
b. S/I rules strictly
c. Resolution
(Therefore, there are a total of 9 ways to answer these 3 questions. For c, you need to convert to clauses first.)

Exercise 4.5b, 4%
On page 2 of the PDF file above, prove questions 2, 4 and 7, each with
a. Truth-table method
b. S/I rules strictly
c. Resolution
(Note: you need to first translate sentences to WFFs; the square in the file means "therefore", or "to prove")

Exercise 4.6a, 2%
On top part of page 5 of the PDF file, show the argument is invalid (by refuting it) for questions 2, and 7, each with
a. Truth-table method
b. S/I rules strictly
c. Resolution

(Note: in exams, I may give you a question that you need to decide and show either the argument is valid by proving it, or invalid by refuting it).

1%:
a. Given the standard set of connectives is adequate, prove that {~, V} is also adequate
b. Prove that {V} alone is not adequate for propositional logic

How to Submit:
Submit your writing in one PDF file via OWL. You could use handwriting and/or drawing in the file but make sure they can be viewed clearly otherwise marks can be deducted.