Submission Guidelines:

Due: 11:59pm ending Monday, July 30, 2018.

- The assignment should be submitted via Blackboard.
- The answers must be typed as a document.
- Make sure your name and your student ID are listed in your document.
- Name files as assignment5_<net-id>.<format>
- Accepted document formats are (.pdf, .doc or .docx). If you are using OpenOffice or LibreOffice, make sure to save as .pdf or .doc
- Please do not submit .txt files.
- If there are multiple files in your submission, zip them together as assignment5_<net-id>.zip and submit the .zip file.
- The maximum points one can get in this assignment is 100.
- You may resubmit the submit at any time. Late submissions will be accepted at a penalty of 10 points per day. Maximum latency is 3 days beyond which a grade of zero will be assigned. This penalty will apply regardless of whether you have other excuses.

Assignment Specifications:

Use predicates (1) through (10) to answer the following questions. (Each 10 points)

1. $p = a \wedge (\neg b \vee c)$
2. $p = a \vee (b \wedge c)$
3. $p = a \wedge b$
4. $p = a \rightarrow (b \rightarrow c)$
5. $p = a \oplus b$
6. $p = a \leftrightarrow (b \wedge c)$
7. $p = (a \vee b) \wedge (c \vee d)$
8. $p = (\neg a \wedge \neg b) \vee (a \wedge \neg c) \vee (\neg a \wedge c)$
9. $p = a \vee b \vee (c \wedge d)$
10. $p = (a \wedge b) \vee (b \wedge c) \vee (a \wedge c)$

a) Identify the clauses that go with predicate p.

b) Compute (and simplify) the conditions under which each of the clauses determines predicate p.

c) Write the complete truth table for all clauses. Label your rows starting from 1. That is, row 1 should be all clauses true. You should include columns for the conditions under which each clause determines the predicate, and also a column for the predicate itself (Use the following format). (Remember, for those which have a, b, c, and d you need more rows and columns, and for those with only a, and b, you need less columns and rows)

	a	b	c	p	p_a	p_b	p_c
1	T	T	T				
2	T	T	F				
3	T	F	T				
4	T	F	F				
5	F	T	T				
6	F	T	F				
7	F	F	T				
8	F	F	F				

d) Identify all pairs of rows from your table that satisfy General Active Clause Coverage (GACC) with respect to each clause.

e) Identify all pairs of rows from your table that satisfy Correlated Active Clause Coverage (CACC) with respect to each clause.

f) Identify all pairs of rows from your table that satisfy Restricted Active Clause Coverage (RACC) with respect to each clause.

g) Identify all 4-tuples of rows from your table that satisfy General Inactive Clause Coverage (GICC) with respect to each clause. Identify any infeasible GICC test requirements.

h) Identify all 4-tuples of rows from your table that satisfy Restricted Inactive Clause Coverage (RICC) with respect to each clause. Identify any infeasible RICC test requirements.

Note: Show your work. (Your solutions should include ALL the intermediate steps)