Final Exam

Name: _____

Take your time, and write *legibly* (or just type!).

Additionally, please keep each step in your proof(s), as well as your rules/line citations, well organized.

Lines and Steps:

For each line (other than the stated premise/premises) in the following proof, state both the line(s) from which the step follows and the rule of inference used to obtain it. These problems are intended as confidence builders ☺. (5 pts each)

a.

1.	S ⊃ (D • I)	/ S ⊃ D
2.	~S v (D • I)	_____
3.	(~S v D) • (~S v I)	_____
4.	(~S v D)	_____
5.	S ⊃ D	_____

b.

1.	H ≡ I	
2.	H ⊃ (I ⊃ F)	
3.	~(H v I) ⊃ F	/ F
4.	(H • I) v (~H • ~I)	_____
5.	(H • I) ⊃ F	_____
6.	(~H • ~I) ⊃ F	_____
7.	[(H • I) ⊃ F] • [(~H • ~I) ⊃ F]	_____
8.	F v F	_____
9.	F	_____

18 Rules:

Use the 18 rules **alone** to derive the conclusion of the following arguments. Do **not** use conditional proof. (15 pts each)

c.

1. M ⊃ (R • E)
2. (E v H) ⊃ G / M ⊃ G

d.

1. K ∨ (S • N)
2. ~(K • ~Q)
3. ~(N • ~Q) / Q

Conditional Proof:

Use the 18 rules of inference and the conditional proof method to derive the conclusion of the following arguments. Do **not** use indirect proof. (20 pts each)

e.

1. (F • G) ≡ H
2. F ⊃ G / F ≡ H

f.

1. (G • ~P) ⊃ K
2. E ⊃ Z
3. P ⊃ ~Z
4. G ⊃ (L v E) / (G • ~L) ⊃ K

Extra Credit:

For the following argument do **two** proofs. For the first proof, use only the 18 rules to derive the conclusion of the following premises (i.e. do **not** use conditional proof). (15 pts) For the second proof, you must use the 18 rules and conditional proof. (10 pts)

h.

1. $(T \supset (H \cdot J)$
2. $(H \vee N) \supset T$ / $T \equiv H$