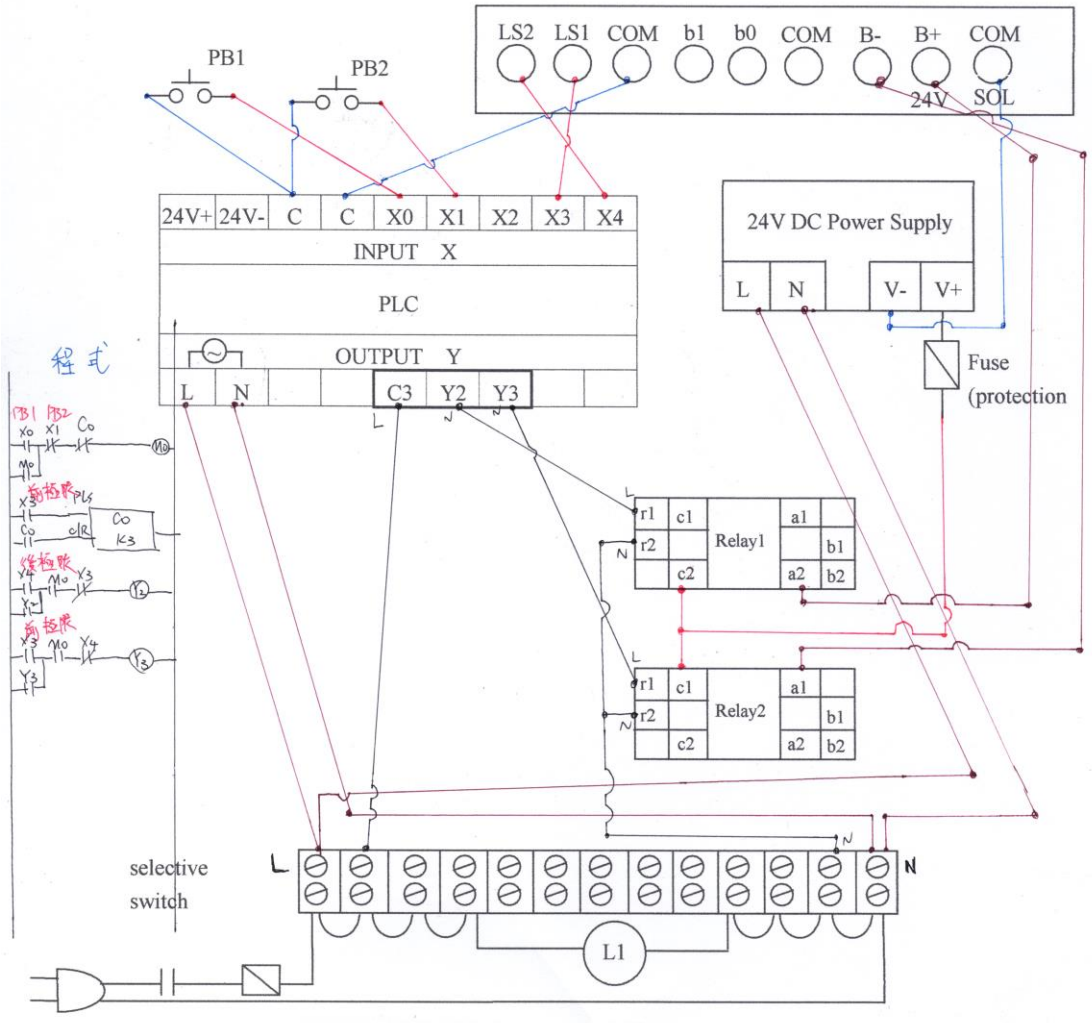
Final Exam Student ID #: Name:

start time (A)		finish time (B)		time used in minutes (B-A)	

The figure below shows one PLC, two push button switches PB1 and PB2, two Relays, one 24V DC power supply, and one double-solenoid-valve piston module. L1 is an indicator of AC power supply.

Please read the course material "class note part 6 PLC on solenoid valve control" posted on My e-learning platform for the usage and programming of the double-solenoid-valve piston module.

1. Connect all the elements into a control system and draw the connection on the below figure.
2. Write one PLC program to control the piston to move out and back 4 times then stop.

Table 1

Element	PB1 Green	PB2 Red	LS1	LS2	Relay 1	Relay 2
Contact	X0	X1	X3	X4	Y2	Y3