# PODS Final Exam: Practical Part

Name: _____
Student ID: _____

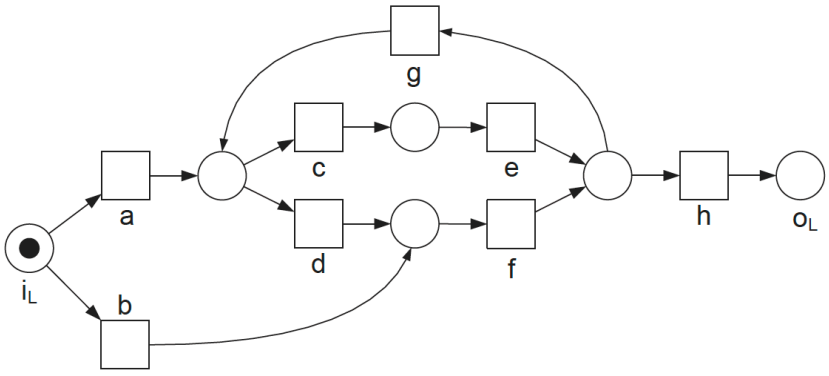
**Exercise 1.** The following event log was extracted from an enterprise information system:

$$L = [< a, b, c, f, g, h >, < d, e, f, g, a, b, c, f, g, h >, < a, c, b, f, g, h>]$$

1. Derive the $\rightarrow_L$ relation.
2. Use the eight steps of the α-algorithm to construct the corresponding Petri net and draw the Petri net (delivering all of the intermediate results is not necessary, only the resulting Petri net is required).
3. Give a trace possible according to the discovered model but not (yet) observed in the log.
4. Is the discovered model sound? Explain your answer.

**Exercise 2.** Consider the following log and Petri net:

$$L = [<b, f, g, d, f, h> 20 , <a, c, d, f, e, h>^{14} , <c, e, g, d, f, h>^{5} ]$$




1. Compute fitness of the event log with respect to the model using token-replay fitness.
2. Compute an optimal alignment for the trace <b, c, g, f, d, f, h, h>, and its corresponding fitness. Use the worst-best case cost function, with log/model moves have cost 1, synchronous moves have cost 0.