

PODS Final Exam: Theoretical Part

Name: _____
Student ID: _____

The following of questions represent the first part of the exam. For every question, select the correct answers by crossing the letters. Notice that in some questions more than one selection needs to be done in order to answer correctly the question. For each question, an all-or-nothing policy will be applied: it will only be considered in the grade if it is answered exactly as expected.

1. A workflow net is: (Single-Choice)

- a) A non-free choice Petri net.
- b) A Petri net that has a single input place and a single output place, and it is connected.
- c) The mapping between all transitions between a model and a given log trace.

2. Given a Petri net with several transitions that share the same name. Which metric would be affected? (Single-Choice)

- a) Fitness
- b) Simplicity
- c) Precisión
- d) Generalization

3. When a model does not fit a trace in the log, what could the source of the problem? (Single-Choice)

- a) Non fitting model
- b) Noisy or incomplete log
- c) Both

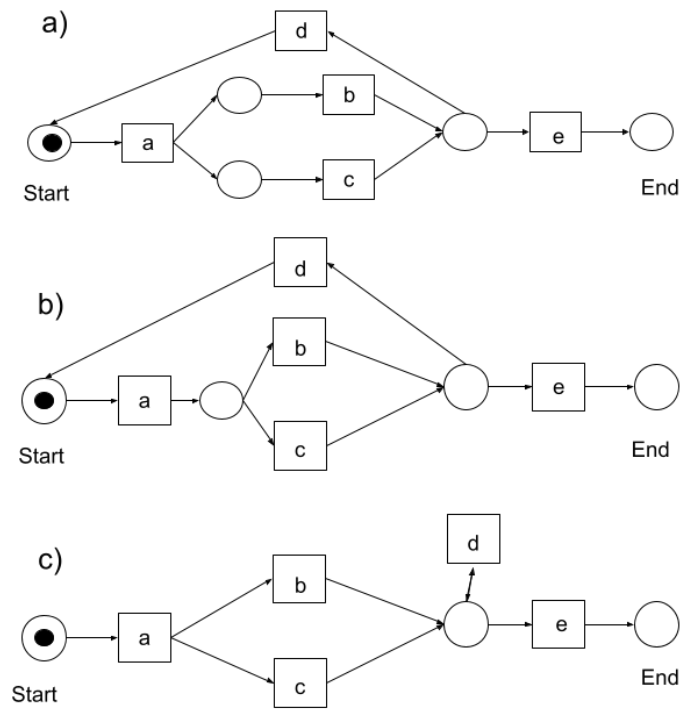
4. Which of these options are known problems of the alpha algorithm? (Multi-Choice)

- a) It does not take into account the cardinality of the traces.
- b) It does not take into account all the traces in the log.
- c) It is computationally expensive.
- d) It is unable to identify loops of size 2 or less

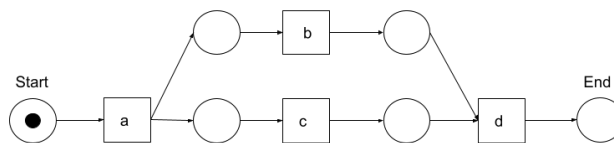
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5. Given the following log, which Petri nets fits the traces better:

$L = [\langle a, c, b, d, a, b, c, e \rangle 40, \langle a, b, c, e \rangle 25, \langle a, c, b, d, a, c, b, d, a, c, b, d, a, b, c, e \rangle 100]$



6. Given the following Workflow net, which is the right footprint matrix?



a)

	a	b	c	d
a	#	→	→	#
b	←	#	#	→
c	←	#	#	→
d	#	←	←	#

b)

	a	b	c	d
a	#	→	→	#
b	←	#		→
c	←		#	→
d	#	←	←	#

c)

	a	b	c	d
a	#	→	→	#
b	←	#	#	←
c	←	#	#	←
d	#	→	→	#

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7. Which conformance checking technique provides the most accurate diagnostics (Single-choice):
- a) Rule checking
 - b) Token-replay
 - c) Alignments
8. What is an optimal alignment? (Single-Choice)
- a) The shortest path between the start and sink places in the model.
 - d) The best match between a given model and log trace.
 - c) The most frequent trace in the event log.
9. What are the benefits of social networks for process enhancement? (Multiple-Choice):
- a) Improve model's fitness.
 - b) Assign actives to the most suitable resources in case of need.
 - c) Discover new activities to include to the model.
 - d) Find bottlenecks between actives that share resources.
10. Multi-perspective conformance checking (Single-Choice):
- a) Provides a narrow view to flat conformance checking since it only focuses in roles and resources
 - b) Enables explaining deviations from different angles: control-flow, cost, resources, etc ...
 - c) Can only be applied over the standard cost function.