DLMDSINDA01\_Unit01\_Question01

Which kind of automation offers high product variety and low product volume?

* programmable automation (1 Pts)
* flexible automation (0 Pts)
* fixed automation (0 Pts)
* electrical automation (0 Pts)

DLMDSINDA01\_Unit01\_Question02

Which of the following levels of the automation pyramid deals with discrete control?

* level 2 (1 Pts)
* level 3 (0 Pts)
* level 4 (0 Pts)
* level 5 (0 Pts)

DLMDSINDA01\_Unit01\_Question03

Which of the following is one of the most important challenges of modern industrial automation?

* integration and interoperability (1 Pts)
* software development (0 Pts)
* hardware development (0 Pts)
* artificial intelligence (0 Pts)

DLMDSINDA01\_Unit01\_Question04

Which of the following is not a typical task of SCADA systems?

* data analysis (1 Pts)
* input/output (0 Pts)
* alarm (0 Pts)
* report (0 Pts)

DLMDSINDA01\_Unit01\_Question05

Which of the following is the biggest technology trend in industrial automation?

* IT automation (1 Pts)
* 3D printing (0 Pts)
* 5G (0 Pts)
* edge computing (0 Pts)

DLMDSINDA01\_Unit02\_Question01

Which of the following languages are accepted by pushdown automata?

* context-free languages (1 Pts)
* context-sensitive languages (0 Pts)
* regular languages (0 Pts)
* recursively enumerable languages (0 Pts)

DLMDSINDA01\_Unit02\_Question02

What is the class of grammars that generate recursively enumerable languages called?

* phrase structure grammars (1 Pts)
* context-sensitive grammars (0 Pts)
* context-free grammars (0 Pts)
* regular grammars (0 Pts)

DLMDSINDA01\_Unit02\_Question03

Which of the following languages are accepted by linear bounded automata?

* context-sensitive languages (1 Pts)
* context-free languages (0 Pts)
* regular languages (0 Pts)
* recursively enumerable languages (0 Pts)

DLMDSINDA01\_Unit02\_Question04

What is the alphabet of a formal language?

* a set of symbols (1 Pts)
* a sequence of characters (0 Pts)
* a set of words (0 Pts)
* a set of production rules (0 Pts)

DLMDSINDA01\_Unit02\_Question05

Which of the following does not belong to the formal definition of deterministic finite automata?

* transition relation (1 Pts)
* transition function (0 Pts)
* alphabet (0 Pts)
* set of states (0 Pts)

DLMDSINDA01\_Unit03\_Question01

Which of the following types of Petri nets differentiates between multiple types of tokens?

* colored Petri net (1 Pts)
* workflow net (0 Pts)
* condition-event net (0 Pts)
* place-transition net (0 Pts)

DLMDSINDA01\_Unit03\_Question02

Which of the following components of Petri nets defines the actions of a system?

* transitions (1 Pts)
* places (0 Pts)
* arcs (0 Pts)
* tokens (0 Pts)

DLMDSINDA01\_Unit03\_Question03

Which of the following components of Petri nets defines the resources of a system?

* tokens (1 Pts)
* places (0 Pts)
* transitions (0 Pts)
* arcs (0 Pts)

DLMDSINDA01\_Unit03\_Question04

What do you call a place of a Petri net that is not marked with more than 3 tokens at any reachable marking?

* 3-bounded (1 Pts)
* safe (0 Pts)
* live (0 Pts)
* deadlock-free (0 Pts)

DLMDSINDA01\_Unit03\_Question05

How can a marking of a Petri net be represented in linear algebra?

* with a column vector (1 Pts)
* with a row vector (0 Pts)
* with a matrix (0 Pts)
* with a scalar (0 Pts)

DLMDSINDA01\_Unit04\_Question01

Which of the following timed models can be regarded as a birth-death process?

* queue node (1 Pts)
* Markov process (0 Pts)
* timed automaton (0 Pts)
* timed Petri net (0 Pts)

DLMDSINDA01\_Unit04\_Question02

Which of the following models has a random timing specification?

* stochastic Petri net (1 Pts)
* timed Petri net (0 Pts)
* deterministic timed places Petri net (0 Pts)
* deterministic timed transitions Petri net (0 Pts)

DLMDSINDA01\_Unit04\_Question03

How many servers does an M/M/1 queue have?

* one (1 Pts)
* unlimited (0 Pts)
* undefined (0 Pts)
* m (0 Pts)

DLMDSINDA01\_Unit04\_Question04

What is the extended state in the context of timed automata?

* tuple consisting of state and clock valuation (1 Pts)
* tuple consisting of state and state transition (0 Pts)
* tuple consisting of state and probability (0 Pts)
* tuple consisting of state and guard (0 Pts)

DLMDSINDA01\_Unit04\_Question05

For what purpose is Kendall’s notation used?

* classification of queuing processes (1 Pts)
* classification of Petri nets (0 Pts)
* classification of automata (0 Pts)
* classification of Markov processes (0 Pts)

DLMDSINDA01\_Unit05\_Question01

Which of the following terms describes a system incorporating mathematical and logical relationships in an abstract manner?

* model (1 Pts)
* entity (0 Pts)
* event (0 Pts)
* system state (0 Pts)

DLMDSINDA01\_Unit05\_Question02

Which of the following is a conditional wait?

* delay (1 Pts)
* activity (0 Pts)
* action (0 Pts)
* state (0 Pts)

DLMDSINDA01\_Unit05\_Question03

Which of the following is an unconditional wait?

* activity (1 Pts)
* delay (0 Pts)
* action (0 Pts)
* state (0 Pts)

DLMDSINDA01\_Unit05\_Question04

Which of the following types of simulation is intended to run for a long time or even continuously?

* steady-state simulation (1 Pts)
* transient simulation (0 Pts)
* terminating simulation (0 Pts)
* non-terminating simulation (0 Pts)

DLMDSINDA01\_Unit05\_Question05

What is SimPy?

* a Python library that can be used for the simulation of discrete event systems (1 Pts)
* a Python library that can be used for concatenation of automata (0 Pts)
* a Python library that can be used for the synthesis of supervisors (0 Pts)
* a Python library that can be used for determination of steady states of Markov chains (0 Pts)

DLMDSINDA01\_Unit06\_Question01

What is a process variable?

* a variable capturing the value of a monitored part of a process (1 Pts)
* a variable defining the type of process (0 Pts)
* a variable containing supervisor information (0 Pts)
* a variable describing the type of discrete event system (0 Pts)

DLMDSINDA01\_Unit06\_Question02

What is a controller containing a feedback from the output called?

* closed-loop controller (1 Pts)
* open-loop controller (0 Pts)
* reverse controller (0 Pts)
* direct controller (0 Pts)

DLMDSINDA01\_Unit06\_Question03

Behaviors violating safety conditions are …

* … not acceptable. (1 Pts)
* … undesirable. (0 Pts)
* … physically inadmissible. (0 Pts)
* … admissible. (0 Pts)

DLMDSINDA01\_Unit06\_Question04

Behaviors leading to a deadlock are …

* … undesirable. (1 Pts)
* … not acceptable. (0 Pts)
* … physically inadmissible. (0 Pts)
* … admissible. (0 Pts)

DLMDSINDA01\_Unit06\_Question05

Behaviors violating a certain necessary ordering of events are …

* … not allowed. (1 Pts)
* … not acceptable. (0 Pts)
* … undesirable. (0 Pts)
* … physically inadmissible. (0 Pts)

DLMDSINDA01\_Unit07\_Question01

The deviation between actual and nominal value of a parameter is …

* … a defect. (1 Pts)
* … an error. (0 Pts)
* … a fault. (0 Pts)
* … a failure. (0 Pts)

DLMDSINDA01\_Unit07\_Question02

A malfunction is …

* … the deviation from expected behavior after executing an operation. (1 Pts)
* … a state resulting from a failure which does not allow a specified service. (0 Pts)
* … information representing abnormal behavior. (0 Pts)
* … a defined execution of an action after the recognition of a symptom. (0 Pts)

DLMDSINDA01\_Unit07\_Question03

An exception is …

* … a defined execution of an action after the recognition of a symptom. (1 Pts)
* …the deviation from expected behavior after executing an operation. (0 Pts)
* … a state resulting from a failure which does not allow a specified service. (0 Pts)
* … information representing abnormal behavior. (0 Pts)

DLMDSINDA01\_Unit07\_Question04

What does SCADA mean?

* supervisory control and data acquisition (1 Pts)
* system control and data analysis (0 Pts)
* service control and data administration (0 Pts)
* summary control and data allocation (0 Pts)

DLMDSINDA01\_Unit07\_Question05

The sequence of observable events that equals the sequence of recorded observations for a fault is called …

* … trace. (1 Pts)
* … transition. (0 Pts)
* … event. (0 Pts)
* … monitoring. (0 Pts)