Week 5 Homework

Started: Jul 2 at 7:48am

Quiz Instructions

Question 1	1 pts

(Lesson 4.1: Steps in a Simulation Study.) Which steps are regarded as essential for a successful simulation study? (There may be more than one correct answer.)

- ☑ a. Problem formulation ✓
- ☐ b. Model validation ✓
- ☐ c. Model verification ✓
- ☑ d. Experimental design ✓
- ☐ e. Output analysis ✓
- ☐ f. Attendance at a Justin Bieber concert

Question 2	1 pts

model building

(Lesson 4.1: Steps in a Simulation Study.) Suppose that I have modelled the arriving calls to a call center as a Poisson process. What do I have to carry out in order to determine if that's indeed a reasonable model assumption?

- ○ a. Problem formulation
- ○ b. Model validation ✓
- ○ c. Model verification
- ○ d. Attend a Justin Bieber concert

Question 3   1 pts

(Lesson 4.2: Some Useful Definitions.) Which of the following times could be regarded as events? (There may be more than one correct answer.)

- ☐ a. Customers arrive at Justin's concert venue
- ☑ b. Justin forgets a lyric
- ☑ c. Justin sings the wrong note
- ☑ d. Angry customers depart the venue
- ☒ e. A customer is 11 years old

Question 4   1 pts

(Lesson 4.2: Some Useful Definitions.) TRUE or FALSE? Customer waiting times are activities because these are typically explicitly specified in the simulation.

- ☑ True
- ☐ False

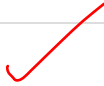## Question 5   1 pts

(Lesson 4.3: Time-Advance Mechanisms.) TRUE or FALSE? The simulation clock time is a variable.

- ☑ True
- ☐ False

Question 6   1 pts

(Lesson 4.3: Time-Advance Mechanisms.) TRUE or FALSE? The simulation clock time always equals real time.

○ True

○ False

Question 7   1 pts

(Lesson 4.3: Time-Advance Mechanisms.) TRUE or FALSE? In this class, time always moves forward.

○ True

○ False

Question 8   1 pts

(Lesson 4.3: Time-Advance Mechanisms.) TRUE or FALSE? A fixed-increment time-advance mechanism is used primarily in continuous-time models such as those involving differential equations.

○ True

○ False

Question 9   1 pts

(Lesson 4.3: Time-Advance Mechanisms.) TRUE or FALSE? A next-event time-advance mechanism is typically used in queueing models involving customer arrivals, services, and departures.

○ True

○ False

Question 10   1 pts

(Lesson 4.3: Time-Advance Mechanisms.) TRUE or FALSE? The future events list contains all known upcoming events, including arrival times, departure times, and machine breakdown times.

○ True

○ False

Question 11   1 pts

(Lesson 4.3: Time-Advance Mechanisms.) TRUE or FALSE? The FEL can be updated any time an event occurs.

○ True

○ False

Question 12   1 pts

(Lesson 4.3: Time-Advance Mechanisms.) TRUE or FALSE? It is possible for the system state to change between consecutive event times.

○ True ✗ *Why?*

(○) False

Question 13   1 pts

(Lesson 4.3: Time-Advance Mechanisms.) TRUE or FALSE? In a simulation using the "next-event" time-advance mechanism, the simulation clock moves to the most-imminent event.

⊘ True

○ False

Question 14   1 pts

(Lesson 4.3: Time-Advance Mechanisms.) TRUE or FALSE? When a new event occurs, the simulation may update the chronological order of the FEL's events by inserting new events, deleting events, moving them around, or even doing nothing.

⊘ True

○ False

Question 15   1 pts

(Lesson 4.3: Time-Advance Mechanisms.) TRUE or FALSE? Almost every discrete-event computer simulation language maintains a FEL somewhere.

⊘ True

○ False

Question 16   1 pts

(Lesson 4.3: Time-Advance Mechanisms.) TRUE or FALSE? In Arena, *you* are responsible for maintaining the language's FEL.

○ True

○ False

Question 17   1 pts

(Lesson 4.4: Two Modeling Approaches.) Which is generally the easier simulation modeling approach — Event-Scheduling or Process-Interaction?

○ a. Event-Scheduling

○ b. Process-Interaction

Question 18   1 pts

(Lesson 4.4: Two Modeling Approaches.) Which is the modeling approach adopted by Arena — Event-Scheduling or Process-Interaction?

○ a. Event-Scheduling

○ b. Process-Interaction

Question 19   1 pts

(Lesson 4.4: Two Modeling Approaches.) TRUE or FALSE? A simulation language incorporating the P-I approach considers the events that a generic customer undergoes as it passes through the system, and then automatically does the bookkeeping to keep track of how all such customers interact with each other.

- ☑ True
- ○ False

Question 20

1 pts

(Lesson 4.5: Simulation Languages.) How many simulation languages are there?

- ○ a. Just a few.
- ○ b. 5-10.
- ○ c. 10-50.
- ☑ d. >>50.

Question 21

1 pts

(Lesson 4.5: Simulation Languages.) Where can you learn about simulation languages? (There may be more than one correct answer.)

- ☑ a. Right here, right now!
- ☑ b. Simulation language textbooks
- ☑ c. The Winter Simulation Conference
- ☑ d. Vendor short courses
- ☐ e. The Justin Bieber School of Hard Knox. (Nice spelling, Justin.)

Question 22

1 pts

(Lesson 4.5: Simulation Languages.) When selecting a simulation language, what characteristics do you have to take into consideration?

- a. Cost
- b. Ease of use
- c. Modeling "world view" (e.g., event-scheduling or process-interaction)
- d. Random variate generation capabilities
- e. Output analysis capabilities
- f. All of the above

Not saved   Submit Quiz