

## Multiple Choice Questions

### Chapter 2: Inside Simulation Software

1. Which of the following is a B-event?
  - a. Telephone call arrives at a call centre
  - b. Telephone call answered by an operator
  - c. Supervisor receives a telephone call forwarded by an operator
  - d. None of the above
2. Which of the following is a C-event?
  - a. Telephone call arrives at a call centre
  - b. Telephone call answered by an operator
  - c. Telephone call completed by an operator
  - d. None of the above
3. In the three-phase simulation approach, which of the following best describes the way C-events are handled?
  - a. Attempt to execute each C-event once
  - b. Attempt to execute only C-events that relate to the B-event just executed
  - c. Continue to attempt to execute all C-events until none can be executed
  - d. Stop the simulation once a C-event has been executed
4. Which of the following is not a discrete-event simulation approach?
  - a. Three-phase
  - b. Activity based sampling
  - c. Process-based
  - d. Event scheduling
5. The key properties of random numbers are:
  - a. Uniform and dependent
  - b. Different and independent
  - c. Different and dependent
  - d. Uniform and independent
6. An outcome has a probability of 35% of occurring. To simulate this outcome, which integer random numbers on a scale 00-99 should be associated with it?
  - a. 00-34
  - b. 00-35
  - c. 65-99
  - d. Any set of 35 unique numbers

7. It is beneficial to generate the same sequence of random numbers in each simulation run because:
  - a. It saves generating many different sequences of random numbers
  - b. It enables the same conditions to be repeated over-and-over again
  - c. The simulation runs faster
  - d. It removes any variability from the simulation.
8. When sampling from standard statistical distributions, a random number is used to represent:
  - a. The area under the curve
  - b. The sample value
  - c. The height of the curve
  - d. The skew of the distribution
9. Using the linear congruential random number generator with  $Z_0=10$ ,  $a=6$ ,  $c=2$  and  $m=80$ , what is the next random number in the sequence?
  - a. 52
  - b. 62
  - c. 72
  - d. 82