Multiple Choice Questions

Chapter 13: Verification, Validation and Confidence

1. Verification is:

    a. The process of checking the random sampling is correct in the model
    b. The process of ensuring that the conceptual model has been satisfactorily transformed into a computer model
    c. The process of ensuring that the model is sufficiently accurate for the purpose at hand
    d. The process of ensuring the findings are implemented properly

2. Validation is:

    a. The process of checking the random sampling is correct in the model
    b. The process of ensuring that the conceptual model has been satisfactorily transformed into a computer model
    c. The process of ensuring that the model is sufficiently accurate for the purpose at hand
    d. The process of ensuring the findings are implemented properly

3. What type of validation is a detailed check of every part of the model?

    a. Conceptual model validation
    b. White-box validation
    c. Black-box validation
    d. Solution validation

4. How is confidence in a model created?

    a. By proving that it is correct
    b. By improving the visual display of the model
    c. By using statistical methods to compare the model with the real world
    d. By testing the model many times and failing to prove that it is incorrect

5. Which of the following is not a method of white-box validation?

    a. Checking that the right distributions have been used for random sampling
    b. Expressing the code in a non-technical format and asking the client to check it
    c. Stepping through the model event-by-event
    d. Setting extreme conditions in the model

6. A model generates the following results from five independent replications that simulation one week: 102.1, 121.3, 119.4, 106.3, 98.5. Meanwhile, the organisation has provided the results from the last five weeks in the real system: 131.4, 102.5, 111.0, 112.9, 121.8. What is the 95% confidence interval for the difference in the means between these results?

a. -12.0, 19.2
b. -22.0, 9.2
c. -31.7, 18.9
d. -21.7, 28.9

7. Would you describe the model in question 6 as valid?

    a. Yes
    b. No
    c. Maybe
    d. On some occasions

8. It is important to have a model independently verified and validated:

    a. Always
    b. Only if it is a very large scale military model
    c. On some occasions to help determine if a model is suitable for a particular use
    d. Never