CISC 7500X Final Exam

Short-answer questions. Each question is worth 5-points. Leaving an answer blank earns 1-point (writing a wrong answer earns 0-points).

Note, most questions are short answer: 1-4 sentences max. You may lose a point for every sentence beyond 10—so keep answers short and to the point.

1. Give two reasons why non-technology companies invest in technology?

2. Describe two ways how technology can grow revenues.

3. Describe two ways how technology can cut costs.

4. Give two reasons why it is often cheaper to buy as opposed to build?

5. What are the underlying principles of SDLC.

6. What are the underlying principles of agile systems development methodologies. Contrast with SDLC.

7. What are the primary characteristics of a declaractive language such as SQL?

8. What are fundamental differences between batch processing and online processing.

9. What are advantages and disadvantages of contention bus, token ring, and wireless.

10. What is a data model? What does it contain?

11. Explain why, given the benefits of a consolidated, integrated data architecture, some organizations still maintain multiple databases?

12. What factors are pushing organizations to adopt service-oriented architectures, and what factors are holding them back?

13. Explain the concept of virtualization. Explain at least one type of virtualization that is being used in IT shops today.

14. Explain the concept of Software-as-a-Service (SaaS) and describe at least one application area in which SaaS is becoming important.

15. Differentiate between a fat client and a thin client. Why would a firm choose one of these approaches over the others when implementing a client/server system?

16. Describe the primary components of a decision support system, and how they interact.

17. Explain both data warehousing and data mining. How are they related?

18. What technological innovations are pushing for separation of processing from data storage (e.g. Hadoop vs Spark). What aspects of that will likely continue to exist?

19. Give at least two primary principles of corporate records management.

20. Design: Explain a potential architecture for how MTA metrocards operate. Note: The cards need to maintain a balance, be relatively anonymous (equivalent to paying for a ride with cash), and allow entry into the system even when communication with central office is interrupted.