

SAD Chapter 5

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- _____ 1. A process model is:
- The output of the interviewing process
 - The work plan
 - The model that is produced by extreme prototyping
 - The expanded and thoroughly balanced use case for a system
 - A formal way of representing how a business system operates
- _____ 2. A process model can _____:
- Only document the as-is system
 - Only document the to-be system
 - Document both the as-is and the to-be system
 - Only be used in BPR situations
 - Only be used with JAD sessions
- _____ 3. The relation between use cases and data flow diagrams is generally:
- Use cases are developed by users and data flow diagrams are developed by systems analysts
 - Data flow diagrams are developed first and then use cases ensue
 - Use cases are developed first and then data flow diagrams ensue
 - Use cases show logical processes, while data flow diagrams show physical processes
 - There is not a relationship between use cases and data flow diagrams
- _____ 4. An external entity is:
- An activity or a function that is performed for some specific business reason
 - A single piece of data
 - A collection of data
 - A trigger to a use case
 - A person, organization or system outside of the system
- _____ 5. Brianna has a process has two inputs but only one output.
- This is an error as there needs to be the same amount of inputs as outputs
 - This is an error as process do not have inputs or outputs
 - This is normal as all processes have two inputs and one output
 - This is normal as all processes need at least one input and at least one output
 - This is an error as processes only produce output

SAD Chapter 5

- _____ 6. The relationship between use cases and data flow diagrams is:
- Use cases tend to be developed with users to make sure the analyst has fully captured the processes and relationships; DFD's are built upon the use cases to more fully formally understand the processes involved
 - Both are tools in a systems analysts toolbox, although they do unrelated things
 - Use cases are developed by users exclusively; while DFD's are developed by analysts exclusively
 - Use cases come out of JAD sessions and clarify what was discussed by users in those sessions; DFD's come out of analysts interviews.
 - They are the same thing – use cases are process models using the DeMarco and Yourdon notation; and DFD's are process models using the Gane and Sarson notation.
- _____ 7. Andrea is creating a diagram model for processes (without regard to whether it is computerized or a manual process). She is probably creating _____.
- A physical process model
 - A PMT (process management tool) model
 - A logical process model
 - A user process model
 - A UML system case model
- _____ 8. Ruth is an analyst. On her DFD diagram she has just placed a process. She will
- Give it a verb phrase name, like 'search inventory'
 - Give it a noun description phrase, like 'Inventory-process-1'
 - Give it only a number – and depending on whether it is a major process (a whole number) or a subsidiary process (a whole number with a decimal point and value – like 1.3)
 - Give it a sentence name, like 'Customer arrives at checkout counter'
 - Use whatever process she feels comfortable with – as long as she is consistent
- _____ 9. Which Data Flow Diagram does not have data stores?
- Context diagram
 - Level 0 diagram
 - Level 1 diagrams
 - Level 2 diagrams
 - Process Diagram
- _____ 10. On your level 0 diagram you have a process #2 and when you create a level 1 diagram for process #2, you *might* have processes like:
- 2.1, 2.2, 2.3
 - 2-1, 2-2, 2-3
 - 2A, 2B, 2C
 - 2-A, 2-B, 2-C
 - 2-initial, 2-main, 2-end

SAD Chapter 5

- _____ 11. A payroll data flow diagram has a data-store called Accumulated Salary Data. At one stage in the DFD, a process “Calculate YTD-Taxes” gets data from that data store, updates it in the process, and writes it back out. The diagram should show:
- A single line with arrows on both ends labeled YTD Payroll Details
 - A dashed line with arrows on both ends labeled YTD Payroll Details
 - A line out of the data store labeled: Current YTD Payroll Details; and a line into the data store labeled: Updated YTD Payroll Details
 - Two separate data flow lines but each with the same name YTD Payroll Details
 - Two dashed lines but each with the same name of YTD Payroll Details
- _____ 12. Vanessa has a data flow diagram with an item called ‘Register for Class’. That item would be:
- A process
 - A data flow
 - A data store
 - An external entity
 - A process relationship
- _____ 13. Andrei has a diagram that shows only one process and external entities. He is developing a:
- Context diagram
 - Use case diagram
 - Level 0 diagram
 - Level 1 diagram
 - Level 2 diagram
- _____ 14. What diagram will have processes with one decimal place (like 3.1, 3.2, and 3.3) and might have flows coming in (or going out) that are not illustrated?
- Context diagram
 - Level 0 diagram
 - Level 1 diagram
 - UML state diagram
 - Level 0 diagram
- _____ 15. The context diagram shows:
- Detailed processing logic
 - All major processes
 - All the data stores in the system
 - The “big picture” of the system with external entities and only one process
 - The system in context with all other systems in that department (for example, accounts payable, accounts receivable, etc.)
- _____ 16. A process is:
- An activity of a function that is performed for some specific business reason
 - A single piece of data within a system
 - A collection of data within a system
 - A person, organization or system that is external to the system
 - A combination of function and the data it acts upon

SAD Chapter 5

- _____ 17. A data flow is:
- An activity of a function that is performed for some specific business reason
 - A single piece of data within a system
 - A collection of data within a system
 - A person, organization or system that is external to the system
 - A combination of function and the data it acts upon
- _____ 18. Carlos has a Level 0 DFD diagram where one of the external entities is the “Internal Revenue Service” – and he has a data store called “Tax Rate Table”. He has drawn a data flow arrow from the Internal Revenue Service to the data store as the data has been loaded into the Tax Rate Table prior to the processing. What would be true?
- This is correct
 - This is incorrect, ‘data at rest stays at rest until moved by a process’ so he needs a process (like ‘load Tax Rate Table’) first in this system
 - This is incorrect – he doesn’t need a data flow as the data was loaded into the Tax Rate Table someplace else (within the payroll system someplace, but not in this process)
 - This is almost correct. The correct diagram would be a dashed line indicating that the loading of the data was implied prior to the start of this process
 - This is incorrect. What should happen is an ‘external process’ should be called at the start of the process – like “Call IRS for data load”
- _____ 19. Which of the following is NOT correct?
- Every set of DFD’s must have one context diagram
 - Every process is wholly and completely described by the processes on its children DFD’s
 - Every process must be broken down farther on Level 1 and Level 2 diagrams
 - Every data store has at least one input data flow someplace in the entire DFD system
 - Every process has a unique name that is a action oriented verb phrase
- _____ 20. Decomposing a DFD means:
- Balancing the processes so that each process has three and only three sub-processes
 - Breaking complex processes into a structured set of detailed diagrams
 - Doing a walk through on the entire DFD structure with all the analysts on the project team
 - Taking lower levels of process refinement and aggregating them into a major system
 - Making sure that all data stores are shown on each child DFD diagram
- _____ 21. Chunxia is balancing her DFD. This means she is:
- Making sure that all information presented at one level is accurately represented in the next level
 - Making sure that each data store has at least one input data flow and at least one output data flow
 - Making sure that each process has at least one input data flow and at least one output data flow
 - Making sure that all processes start with action verb phrases
 - Making sure that all data flows have noun names

SAD Chapter 5

- ___ 22. Data flow diagrams are:
- Usually created by users and reviewed by analysts
 - Usually jointly created by analysts and users
 - Usually created by the project team and reviewed by users for correctness
 - Usually created by the project champion and reviewed by the project team
 - Usually created by business analyst and reviewed by the infrastructure analyst
- ___ 23. Which would be the normal order of tasks?
- Requirements gathering, creating DFDs, creating use cases
 - Creating use cases; creating DFD, holding JAD sessions
 - Interviewing and/or JAD sessions; creating use cases; creating data flow diagrams
 - Doing BPR, analyzing documents, creating DFDs, creating use cases
 - Doing activity elimination, doing use cases, doing DFDs
- ___ 24. Tom is trying to change his Use Case into a Data Flow Diagram. He has found that a use case step generally is the same as a _____ on the Level 1 Data flow diagram.
- Process
 - External Entity
 - Data flow
 - Internal Entity
 - Data store
- ___ 25. Ramesh has drawn a set of DFD's that are not properly balanced. This is probably a:
- Syntax error
 - Semantic error
 - Modeling error
 - First law of conservation of data error
 - Second law of conservation of data error

True/False

Indicate whether the statement is true or false.

- ___ 26. The normal order of processes would be: requirements gathering, use case development, process modeling (data flow diagrams).
- ___ 27. A process model is an informal way of showing the external entities, event triggers, inputs and outputs.
- ___ 28. Process models are only used to document the current system (that is, the "as-is" system), since that is the system the users know and is the system that will be modified.
- ___ 29. Process models can be used with either 'as-is' systems or 'to-be' systems.
- ___ 30. Data Flow diagramming is a tool for doing process modeling.
- ___ 31. Data flow diagrams (as the name implies) focus on the physical data in a system.

SAD Chapter 5

- ___ 32. According to the authors “Process modeling – and the creating of PMPs in particular – is one of the most important skills needed by systems analysts”.
- ___ 33. Processes in DFDs are shown as circles in the Gane and Sarson notation.
- ___ 34. Data that is moving from a process to another process is called a ‘data stream’.
- ___ 35. A repository for data in DFDs is called a ‘data store’
- ___ 36. Data (like Year-to-date totals) that come from a data store and are used in a process (like ‘Calculate YTD Totals’) and then the updated amounts are written back to the data store – can be drawn on a DFD model as a two-headed arrow.
- ___ 37. A well-constructed use case makes developing a data flow diagram fairly straightforward.
- ___ 38. The data stores on the DFD correspond to Major Steps Performed on a use case.
- ___ 39. Every process on a DFD must have at least one input data flow.
- ___ 40. Every process has a unique identification number, a name and a description.
- ___ 41. Processes should be named with a verb and ending with a noun (like Calculate Sales Tax).
- ___ 42. Data flows are named with verb phrases (like ‘Move Payroll Information to Payroll Database’).
- ___ 43. Data stores are named with nouns and have an identification number and description.
- ___ 44. External entities are a person, organization, or system that is external to the system, but interacts with it.
- ___ 45. Many business processes are too complex to be explained in one DFD.
- ___ 46. One important principal in process modeling with DFD’s is the decomposition on the business processes into a series of DFD’s.
- ___ 47. Context diagrams show the entire system in context with the environment (like external entities).
- ___ 48. The level 0 diagram shows all the major processes (at the first level of numbering – like 1 through 4), the data stores, data flows, but does not show external entities.
- ___ 49. The purpose of the Level 0 DFD is to show all the major high-level processes of the system and how they are interrelated.
- ___ 50. In general, all process models will have as many level 1 diagrams as there are processes on the level 0 diagram.
- ___ 51. Children processes collectively make up the parent process (but give more detail).

SAD Chapter 5

- ___ 52. It is possible to decompose level 1 processes even farther, so for example, process 2.1 on a Level 1 DFD might become 2.1A, 2.1B, 2.1C, etc.
- ___ 53. The second law of conservation of data states: “Processes cannot consume or create data”.
- ___ 54. A ‘black hole’ error on a DFD is when a process creates output without an input.
- ___ 55. Data cannot go from one process to another process without going to a data store first