Systems Analysis and Design Methods
Chapter 8: Process Modeling

Multiple Choice Questions

1.   In a data flow diagram, _____ are used to represent processes.

A. rounded rectangles
B. squares
C. open-ended boxes
D. arrows

The correct answer is A.

2.   In data flow diagrams, _____ are used for data stores and _____ are used for external agents - the boundary of the system.

A. squares, rounded rectangles
B. squares, open-ended boxes
C. open-ended boxes, rounded rectangles
D. open-ended boxes, squares

The correct answer is D.

3.   In data flow diagrams arrows represent:

A. data flows
B. processes
C. data stores
D. external agents

The correct answer is A.

4.   During _____, each level of abstraction reveals more or less detail as desired, about the overall system or a subset of that system

A. drawing decision table
B. decision analyzing
C. decomposition
D. none of the above

The correct answer is C.

5.   A(n) _____ is a set of related and ongoing activities of the business. It has no start or end; it just continuously performs its work as needed.

A. function
B. event
C. elementary process
D. none of the above

The correct answer is A.

6.   Events are sometimes called:

A. functions
B. transactions
C. elementary processes
D. none of the above

The correct answer is B.

7.   Which of the following is the lowest level of detail in a process model?

A. functions
B. transactions
C. elementary processes
D. none of the above

The correct answer is C.

8.   Which of the following is NOT a components of a decision table:

A. condition stubs
B. data stores
C. rules
D. action stubs

The correct answer is C.

9.   Which of the following is the smallest piece of data that has meaning to the end users and the business?

A. attribute
B. entity
C. function
D. event

The correct answer is A.

10. A type of data flow that merges multiple data flows into a single data flow in:

A. converging
B. diverging
C. decomposing
D. none of the above

The correct answer is A.

11. An enterprise process model typically identifies only business _____ and _____. Events and detailed processes are rarely examined.

A. functions, processes
B. models, events
C. areas, functions
D. functions, elementary processes

The correct answer is C.

12. Which type of event trigger processes on the basis of time?

A. external events
B. temporal events
C. state events
D. none of the above

The correct answer is B.

13. A(n) _____ is anything that needs to interact with the system to exchange information; this could be a customer, user, department, organization or another system.

A. actor
B. processes
C. data store
D. function

The correct answer is A.

14. For each _____, we need to list: 1) the actor initiating the event; (2) the event; (3) the input or trigger for the event; (4) all outputs and responses.

    A. decision tables
    B. event diagram
    C. decomposition diagram
    D. use case

    The correct answer is D.

15. A process-to-location matrix is a table in which:
    1) the _____ indicate processes (event or elementary processes);
    2) the _____ indicate locations; and
    3) the _____ (the intersections of rows and columns) document which

    A. rows; columns; cells
    B. columns; rows; cells
    C. cells; rows; columns
    D. columns; cells; rows

    The correct answer is A.

True or False Questions

16. Data modeling is a technique for organizing and documenting the structure and flow of data through a system's processes.

    A. True   B. False

    The correct answer is B.
    Data modeling is a technique for organizing and documenting system data. Process modeling is a technique for organizing and documenting the structure and flow of data through a system's processes.

17. Physical models show not only what a system is or does, but also how the system is physically and technically implemented. They are implementation dependent because they reflect technology choices and limitations of those technology choices.

    A. True   B. False

    The correct answer is A.

18.   Another name for the data flow diagram is a transformation graph.

A. True   B. False

The correct answer is A.

19.   Another name for the data flow diagram is a data model.

A. True   B. False

The correct answer is B.
Another name for the data flow diagram is a process model.

20.   In a data flow diagram, squares are used to represent processes.

A. True   B. False

The correct answer is B.
In DFDs, rounded rectangles are processes and squares are external agents.

21.   In data flow diagrams, data flows are represented by rounded rectangles.

A. True   B. False

The correct answer is B.
data flows are represented by arrows, and processes are represented by rounded rectangles.

22.   A complex system is usually too difficult to understand when viewed as a whole.

A. True   B. False

The correct answer is A.

23.   A system must be viewed as a whole.

A. True   B. False

The correct answer is B.
decomposition is the act of breaking a system into component parts to make it easier to understand.

24. An entity relationship diagram shows the top down functional decomposition and structure of a system.

A. True   B. False

The correct answer is B.
A decomposition diagram shows the top down functional decomposition and structure of a system.

25. A data flow diagram is another name for a decomposition diagram.

A. True   B. False

The correct answer is B.
A hierarchy chart is another name for a decomposition diagram.

26. Each logical process is (or will be) implemented as one or more physical processes that may include work performed by people; work performed by robots or machines; or work performed by computer software.

A. True   B. False

The correct answer is A.

27. A function is a set of related activities of the business that occurs at one specific point in time, and then is over.

A. True   B. False

The correct answer is B.
A function is a set of related and ongoing activities of the business. A function has no start or end; it just continuously performs its work as needed.

28. Events are sometimes called functions.

A. True   B. False

The correct answer is B.
Events are sometimes called transactions. A function is a set of related and ongoing activities. An event or transaction is a logical unit of work that must be completed as a whole.

29. Another name for an elementary process is a primitive process.

A. True   B. False

The correct answer is A.

30.   A miracle is an acceptable elementary process, since the process and data model were specified as metadata.

A. True   B. False

The correct answer is B.
A miracle is an elementary process that has only outputs and no inputs.

31.   A logical process can sort, filter or otherwise summarize data.

A. True   B. False

The correct answer is A.

32.   Data flow diagrams are very good for detailing the internal logic for a process.

A. True   B. False

The correct answer is B.
Data flow diagrams and decomposition diagrams are NOT very good for detailing the logic for a process.

33.   Structured English is built using the following fundamental constructs that have governed structured programming: a sequence of simple declarative sentences; a conditional or decision structure; an iteration or repetition structure.

A. True   B. False

The correct answer is A.

34.   A decision structure specifies that a process must perform different steps under well-specified conditions.

A. True   B. False

The correct answer is A.

35.   In Structured English, when in doubt, programmer preferences should take priority over user readability.

A. True   B. False

The correct answer is B.
In Structured English, when in doubt, user readability should take priority over programmer preferences.

36. A data flow can be either 1) the input or output of data from a process; or 2) the representation of the creation, reading, deletion or updating of data in a file or database (known as a data store).

A. True   B. False

The correct answer is A.

37. It is important to make sure that each data flow represents a single, unique attribute.

A. True   B. False

The correct answer is B.
The packet concept is critical to the creation of data flow diagrams. Data that should travel together should be shown as a single data flow, no matter how many physical documents or attributes are included in the data flow.

38. By ensuring that processes receive only as much data as they really need, we simplify the interface between those processes.

A. True   B. False

The correct answer is A.

39. Data structures are specific arrangements of data attributes that define the organization of a single instance of a data flow.

A. True   B. False

The correct answer is A.

40. The data type of an attribute defines what values that an attribute can legitimately take on.

A. True   B. False

The correct answer is B.
The data type for an attribute defines what class of data can be stored in an attribute, whereas the domain of an attribute defines what values an attribute can legitimately take on.

41. A converging data flow is one that splits into multiple data flows.

A. True   B. False

The correct answer is B.
A diverging data flow is one that splits into multiple data flows. A converging data flow is one that merges multiple data flows into a single data flow.

42. A data store is the same as a data entity, but includes all the attributes and relationships too.

A. True   B. False

The correct answer is B.
A data store is an inventory of data.

43. An enterprise process model typically identifies only business areas and functions. Events and detailed processes are rarely examined.

A. True   B. False

The correct answer is A.

44. A system context diagram is drawn to partition the system into logical subsystems and/or functions.

A. True   B. False

The correct answer is B.
A system context diagram is constructed to establish initial project scope. A functional decomposition diagram is drawn to partition the system into logical subsystems and/or functions.

45. Primitive diagrams are constructed for those event processes that require additional processing details. These data flow diagrams include all the elementary processes, data stores and data flows for single events.

A. True   B. False

The correct answer is A.

46. External events are so named because they are initiated by the basis of time.

A. True   B. False

The correct answer is B.
External events are so named because they are initiated by external agents. Temporal events are initiated by the basis of time.

47. An event diagram is a context diagram for a single event. It shows the inputs, outputs and data store interactions for the event.

A. True   B. False

The correct answer is A.