



Software Engineering

Assignment- 6

TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

For each of the following questions one or more of the given options are correct. Choose the correct options.

QUESTION 1:

A data flow diagram represents which one of the following?

- a. The conditions based on which data items may be processed
- b. The order in which different activities are carried out
- c. The transformation of data through processing stations
- d. The order in which various functions of a program are invoked
- e. Interaction among different modules of a program

Correct Answer: c. The transformation of data through processing stations

Detailed Solution:

DFD represents the transformation of data through processing stations. For more information, please refer slide 13 of week 6 lecture material.

QUESTION 2:

For a given programming problem, a DFD (data Flow Diagram) model depicts which of the following?

- a. Flow of data
- b. Flow of control
- c. Flow of decisions
- d. Flow of atomic conditions
- e. Sequence of interaction among processes
- f. Interaction among modules

Correct Answer: a. Flow of data

Detailed Solution:

DFD model depicts the flow of data in a programming problem.



QUESTION 3:

Which of the following statements are **not** true of a data flow diagram (DFD) model?

- a. It is a hierarchical diagram.
- b. It represents code structure
- c. It does not represent decisions and control flows.
- d. It represents decomposition of functions and data into finer forms.
- e. It represents the sequence in which the different processes are invoked

Correct Answer: b. It represents code structure
e. It represents the sequence in which the different processes are invoked

Detailed Solution:

DFD is a hierarchical graphical model that shows the different functions (or processes) of the system and data interchange among the processes. For more information, please refer slide 13 of week 6 lecture material.

QUESTION 4:

In a procedural design approach, during the detailed design stage, which of the following is undertaken?

- a. Module structure is designed
- b. Data flow representation is developed
- c. Data structures and algorithms for the individual modules are designed
- d. Structure chart is developed
- e. Module call relationships are designed
- f. Module interactions are designed

Correct Answer: c. Data structures and algorithms for the individual modules are designed

Detailed Solution:

Data structure and algorithms are designed during the detailed design module. For more information, please refer slide 11 of week 5 lecture material.



QUESTION 5:

Which one of the following is true of a function-oriented design approach?

- a. Top-down
- b. Bottom-up
- c. Mixed-in
- d. Bottom-out
- e. Bottom-up at system level and top-down at module level

Correct Answer: a. Top-down

Detailed Solution:

Function-oriented design approach is a top-down approach, whereas object-oriented approach is a bottom-up approach. For more details, please refer slide 3 of week 6 lecture material.

QUESTION 6:

A context diagram should not represent which of the following?

- a. External entities.
- b. Module Interactions
- c. Data input to the system by the external entities,
- d. Output data generated by the system.
- e. Module structure

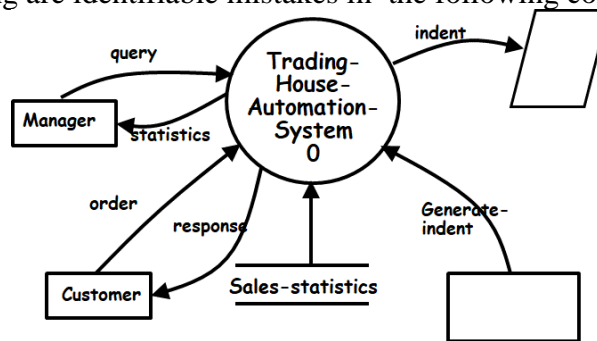
Correct Answer: b. Module Interactions
e. Module structure

Detailed Solution:

Context diagram represents the software at the most abstract level. For more information, please refer slide 32 of week 6 lecture material.

QUESTION 7:

Which of the following are identifiable mistakes in the following context diagram?



- a. External entities are appearing at the context level
- b. Input/Output occurring at the context level
- c. Data item name missing on a data flow arrow
- d. A data store appearing at the context level
- e. Solid arrows have been used in place of dashed arrows
- f. Name of one entity is missing

Correct Answer: d. A data store appearing at the context level
f. Name of one entity is missing

Detailed Solution:

Data store appearing at the context level in the given diagram and name of one entity is missing are the two identifiable mistakes in the given diagram.

QUESTION 8:

Which of the following information are not present in a structure chart model of a software system?

- a. Various modules making up the system,
- b. Module call structure
- c. Parameters passed among different modules
- d. Data structures and algorithms of the modules
- e. How the data is transformed by the functions

Correct Answer: d. Data structures and algorithms of the modules
e. How the data is transformed by the functions

Detailed Solution:

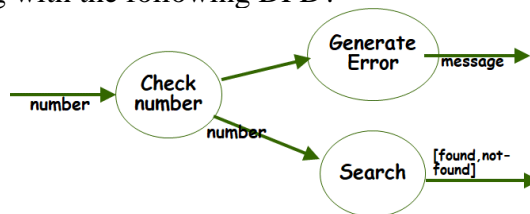
A structure chart represents the software architecture:

- Various modules making up the system,
- Module dependency (i.e. which module calls which other modules),
- Parameters passed among different modules.

For more information, please refer slide 97 of week 6 lecture material.

QUESTION 9:

What is wrong with the following DFD?



- Unbalanced
- Presence of synchronous data flow
- Presence of asynchronous data flow
- Data flow arrows are not numbered
- Presence of control information

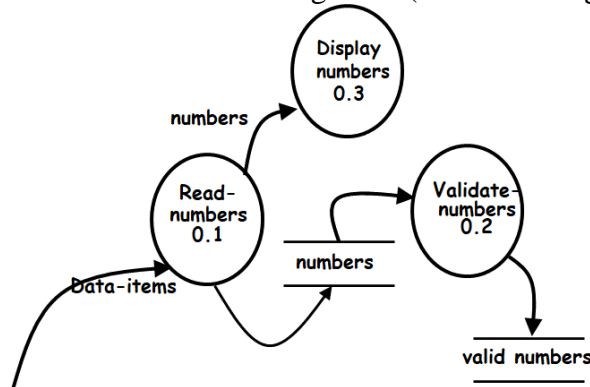
Correct Answer: e. Presence of control information

Detailed Solution:

Dataflow diagram should not represent control information. For more information, please refer slide 82 of week 6 lecture material.

QUESTION 10:

Which of the following can be said about the following DFD (data flow diagram)?



- a. The bubble Display number processes numbers at the same rate as the bubble Read-numbers
- b. The bubble Validate numbers processes numbers at the same rate as the bubble Read-numbers
- c. The bubble Display number processes numbers at a different rate as compared to the bubble Read-numbers
- d. The bubble Validate number processes numbers at a different rate as compared to the bubble Read-numbers
- e. The rate at which the bubble Display numbers processes numbers is the as the rate at which Validate numbers processes numbers.

Correct Answer: a. The bubble Display number processes numbers at the same rate as the bubble Read-numbers

d. The bubble Validate number processes numbers at a different rate as compared to the bubble Read-numbers

Detailed Solution:

Since there is a direct connection between Display number process and Read number process, they are synchronous. On the other hand, Validate number process and Read number process are asynchronous since they communicate through a data store.

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