**Chapter 1: Introduction**

**TRUE OR FALSE**

T F 1. There is a tremendous variety of products, from single-chip

microcomputers costing a few dollars to supercomputers costing

tens of millions of dollars that can rightly claim the name

“computer”.

T F 2. The variety of computer products is exhibited only in cost.

T F 3. Computer organization refers to attributes of a system visible to

the programmer.

T F 4. Changes in computer technology are finally slowing down.

T F 5. The textbook for this course is about the structure and function of

computers.

T F 6. The number of bits used to represent various data types is an

example of an architectural attribute.

T F 7. Interfaces between the computer and peripherals is an example of

an organizational attribute.

T F 8. Historically the distinction between architecture and organization

has not been an important one.

T F 9. A particular architecture may span many years and encompass a

number of different computer models, its organization changing

with changing technology.

T F 10. A microcomputer architecture and organization relationship is

not very close.

T F 11. Changes in technology not only influence organization but also

result in the introduction of more powerful and more complex

architectures.

T F 12. The hierarchical nature of complex systems is essential to both

their design and their description.

T F 13. Both the structure and functioning of a computer are, in essence,

simple.

T F 14. A computer must be able to process, store, move, and control

data.

T F 15. When data are moved over longer distances, to or from a remote

device, the process is known as *data transport.*

**MULTIPLE CHOICE**

1. Computer technology is changing at a \_\_\_\_\_\_\_\_\_\_ pace.

A. slow B. slow to medium

C. rapid D. non-existent

1. Computer \_\_\_\_\_\_\_\_\_ refers to those attributes that have a direct impact on the

logical execution of a program.

A. organization B. specifics

C. design D. architecture

1. Architectural attributes include \_\_\_\_\_\_\_\_\_\_ .
2. I/O mechanisms B. control signals

C. interfaces D. memory technology used

1. \_\_\_\_\_\_\_\_\_ attributes include hardware details transparent to the programmer.

A. Interface B. Organizational

C. Memory D. Architectural

1. It is a(n) \_\_\_\_\_\_\_\_\_ design issue whether a computer will have a multiply instruction.

A. architectural B. memory

C. elementary D. organizational

6. It is a(n) \_\_\_\_\_\_\_\_\_ issue whether the multiply instruction will be implemented by a special multiply unit or by a mechanism that makes repeated use of the add unit of the system.

A. architectural B. memory

C. mechanical D. organizational

7. A \_\_\_\_\_\_\_\_\_\_ system is a set of interrelated subsystems.

A. secondary B. hierarchical

C. complex D. functional

8. An I/O device is referred to as a \_\_\_\_\_\_\_\_\_\_.

A. CPU B. control device

C. peripheral D. register

9. When data are moved over longer distances, to or from a remote device, the process is known as \_\_\_\_\_\_\_\_\_\_.

A. data communications B. registering

C. structuring D. data transport

10. The \_\_\_\_\_\_\_\_\_ stores data.

A. system bus B. I/O

C. main memory D. control unit

11. The \_\_\_\_\_\_\_\_\_\_ moves data between the computer and its external environment.

A. data transport B. I/O

C. register D. CPU interconnection

12. A common example of system interconnection is by means of a \_\_\_\_\_\_\_\_\_\_.

A. register B. system bus

C. data transport D. control device

13. A \_\_\_\_\_\_\_\_\_ is a mechanism that provides for communication among CPU, main

memory, and I/O.

A. system interconnection B. CPU interconnection

C. peripheral D. processor

14. \_\_\_\_\_\_\_\_\_ provide storage internal to the CPU.

A. Control units B. ALUs

C. Main memory D. Registers

15. The \_\_\_\_\_\_\_\_\_\_ performs the computer’s data processing functions.

A. Register B. CPU interconnection

C. ALU D. system bus

**SHORT ANSWER**

1. \_\_\_\_\_\_\_\_\_\_ refers to those attributes of a system visible to a programmer.

2. \_\_\_\_\_\_\_\_\_ refers to the operational units and their interconnections that realize

the architectural specifications.

3. Control signals, interfaces between the computer and peripherals, and the

memory technology used are all examples of \_\_\_\_\_\_\_\_\_ attributes.

4. The instruction set, the number of bits used to represent various data types,

I/O mechanisms and techniques for addressing memory are all examples of \_\_\_\_\_\_\_\_\_ attributes.

1. The \_\_\_\_\_\_\_\_\_\_ architecture is the architecture of IBM’s mainframe product line.
2. \_\_\_\_\_\_\_\_\_ is the way in which the components are interrelated.
3. \_\_\_\_\_\_\_\_\_ is the operation of each individual component as part of the structure.
4. The basic functions that a computer can perform are: data processing, data movement, control, and \_\_\_\_\_\_\_\_\_.
5. When data are received from or delivered to a device that is directly connected to the computer, the process is known as \_\_\_\_\_\_\_\_\_\_.
6. The four main structural components of the computer are: main memory, I/O, system interconnection, and \_\_\_\_\_\_\_\_\_\_.
7. Often referred to as *processor* the \_\_\_\_\_\_\_\_ controls the operation of the computer and performs its data processing functions.
8. A common example of system interconnection is by means of a \_\_\_\_\_\_\_\_, consisting of a number of conducting wires to which all the other components attach
9. The major structural components of the CPU are: control unit, register, CPU interconnection, and \_\_\_\_\_\_\_\_\_\_.
10. A \_\_\_\_\_\_\_\_\_\_ control unit operates by executing microinstructions that define the functionality of the control unit.
11. The \_\_\_\_\_\_\_\_\_ controls the operation of the CPU and hence the computer.