CHAPTER 1

Introduction

Review Questions

1. We use the definition “issues related to the computer”.
2. The von Neumann Model is the basis for today's computers.
3. This definition is too general. It does not specify what type of data is processed, how it is processed, or if other kinds of processing are possible using the same device.
4. It requires input data and a program to process the input data.
5. The subsystems are the memory, arithmetic/logic unit, control unit, and input/output.
6. Memory is the storage area used for programs and data.
7. The ALU is where calculations and logical operations take place.
8. The control unit controls the operations of the memory, ALU, and the input/output subsystem.
9. The input subsystem accepts input data and the program from outside the computer; the output subsystem sends the result of the processing to the outside.
10. The memory contents of early computers held only the data to be processed. The memory content of computers based on the von Neumann Model holds the data to be processed and the program to process it.
11. Before the von Neumann Model, programming was the act of manipulating a set of switches or changing the wiring system of the computer itself. With the von Neumann Model, programming became the task of writing a finite set of instructions to be executed on the data in sequence and storing these instructions in a form that could be read into the memory of the computer.

Multiple-Choice Questions

12. b
13. c
14. a

15. b
16. d
17. c
18. d
19. c
20. a
21. d
22. a
23. c
24. d
25. d
26. c

Exercises

27. Answer may vary
28. Answer may vary
29. Answer may vary
30. The hard disk of today may be used as either an input device or an output device. When data is read from the disk, it is considered an input device. When data is written to the disk, it is considered an output device.
31. There are 30,240 5-instruction programs. There are 604,800 7-instruction programs.
32. Answer may vary
33. Answer may vary
34. A word processor program sees a file as a series of characters. It uses white space and punctuation to divide this series into words and sentences and it interprets special characters or character sequences as formatting instructions.
35. Answer may vary
36. Answer may vary
37. Answer may vary
38. Answer may vary
39. Answer may vary