Chapter 1

1. The two principal catalysts for the Information Age have been
   a) books and pamphlets.
   b) computers and communication networks.
   c) movie theaters and public parks.
   d) newspapers and magazines.
   e) radio and television.

2. Which statement best supports the conclusion that society **can** control whether to adopt a new technology?
   a) No new nuclear power plants were built in the United States for 25 years after the accident at Three Mile Island.
   b) About half of all email messages are spam.
   c) Despite decades of research, fusion power is an elusive goal.
   d) People do not have to listen to Rush Limbaugh if they do not want to.
   e) Some new technologies are simply too expensive to even consider adopting.

3. Tablets, abacuses, and manual tables
   a) are no longer used, because of the proliferation of calculators and computers.
   b) are examples of aids to manual calculating.
   c) were developed in Western Europe in the late Middle Ages.
   d) replaced Hindu-Arabic numerals as the preferred way to do calculations.
   e) All of the above.

4. The mechanical adding machines of Pascal and Leibniz were not widely adopted because
   a) they were too expensive.
   b) there were unreliable.
   c) they were too difficult to program.
   d) they could not handle fractions.
   e) bookkeepers successfully lobbied the King, and he made the machines illegal.

5. The calculating machine of Georg and Edvard Sheutz
   a) computed the values of polynomial functions.
   b) typeset the results of its computations.
   c) performed calculations faster than they could be done manually.
   d) performed calculations more reliably than they could be done manually.
   e) All of the above.

6. Which of the following phrases does **not** describe the Gilded Age in America?
   a) rapid industrialization
   b) economic expansion
   c) widespread electrification
   d) concentration of corporate power
   e) corporate mergers

7. Which of the following was **not** a result of the adoption of mechanical calculators?
   a) Less demand for “superstars” who could rapidly compute sums by hand
   b) Higher productivity of bookkeepers
   c) Higher salaries of bookkeepers
   d) Proliferation of companies making calculators
   e) Feminization of bookkeeping

8. Which of the following was **not** a feature of cash registers in the early 1900s?
   a) Ability to compute total of purchases
   b) Ability to print itemized receipts for customers
   c) Ability to print log of transactions for owners
   d) Ability to compute amount of change to give customer
   e) Ability to ring a bell every time cash drawer is opened

9. Punched card tabulation was invented by Herman Hollerith, an employee of
    a) the Pennsylvania Railroad.
    b) the Census Bureau.
    c) the Pennsylvania Steel Company.
    d) the Burroughs Adding Machine Company.
    e) IBM.

10. Which of the following phrases best describes a system that inputs data, performs one or more calculations, and produces output data?
    a) manual calculator
    b) digital computer
    c) data-processing system
    d) difference engine
    e) cash register

11. The first commercial electronic digital computers were produced just after
    a) the Spanish-American War.
    b) World War I.
    c) World War II.
    d) the Korean War.
    e) the Vietnam War.

12. Programming languages were developed in order to
    a) make it possible to program computers in English.
    b) make programming faster and less error-prone.
    c) speed translations between English and Russian during the Cold War.
    d) improve the computation speed of computers, which were very expensive.
    e) All of the above.

13. Which of the following was not an early programming language?
    a) BASIC
    b) COBOL
    c) DATA-FLOW
    d) FLOW-MATIC
    e) FORTRAN

14. Software that allows multiple users to edit and run their programs simultaneously on the same computer is called
    a) a data-processing system.
    b) an intranet.
    c) a microprocessor.
    d) a programming language.
    e) a time-sharing system..

15. A semiconductor device containing transistors, capacitors, and resistors is called
    a) a computer.
    b) a diode.
    c) an integrated circuit.
    d) a radio.
    e) a transformer.

16. Which Cold War program played an important role in advancing integrated circuit technology?
    a) B-52 bomber
    b) Hydrogen bomb
    c) Mark 37 torpedo
    d) Minuteman II ballistic missile
    e) NORAD radar network

17. Which company produced the System/360, a family of 19 compatible mainframe computers?
    a) Fujitsu
    b) Hewlett-Packard
    c) IBM
    d) Intel
    e) Texas Instruments

18. The company that invented the microprocessor is
    a) Fujitsu
    b) Hewlett-Packard
    c) IBM
    d) Intel
    e) Texas Instruments

19. Which of the following was **not** an activity of the People's Computer Company, a not-for-profit corporation in the San Francisco area?
    a) Publishing a newspaper containing the source code to programs
    b) Allowing people to rent time on a time-shared computer
    c) Hosting Friday-evening game-playing sessions
    d) Promoting a culture in which computer enthusiasts freely shared software
    e) Developing the world's first graphical user interface

20. Who wrote "An Open Letter to Hobbyists," complaining about software theft?
    a) Stewart Brand
    b) Bob Frankston
    c) Bill Gates
    d) Steve Jobs
    e) Steve Wozniak

21. A key application that first made personal computers more attractive to business was
    a) the spreadsheet program.
    b) the World Wide Web.
    c) desktop publishing.
    d) video editing.
    e) email.

22. The software company that provided IBM with the operating system for its PC was
    a) Apple.
    b) Boeing.
    c) Microsoft.
    d) Novell.
    e) Tandy.

23. The first electronic networking technology widely used in the United States was the
    a) Internet.
    b) radio.
    c) telegraph.
    d) telephone.
    e) television.

24. The Pony Express went out of business when
    a) the Mexican War ended in 1846.
    b) the Civil War began in 1861.
    c) the transcontinental telegraph was completed.
    d) AT&T completed the national telephone network.
    e) the radio was invented.

25. Alexander Graham Bell invented the harmonic or musical telegraph, which enabled
    a) more than one message to be sent over a single telegraph wire at the same time.
    b) human speech to be sent over a telegraph wire.
    c) music to be send over a telegraph wire.
    d) B and C
    e) None of the above.

26. Nearly all early telephones were installed in businesses, because
    a) people were afraid that telephones were dangerous.
    b) people thought that the government was using telephones as eavesdropping devices.
    c) only men were allowed to use a telephone.
    d) most homes did not have electricity.
    e) leasing a telephone was expensive.

27. A typewriter that prints a message transmitted over a telegraph line is called a
    a) computer.
    b) monitor.
    c) teletype.
    d) terminal.
    e) transponder.

28. Guglielmo Marconi originally conceived of the radio as a way to
    a) transmit telegraph messages without wires.
    b) transmit electricity without wires.
    c) transmit votes in national elections.
    d) transmit light without wires.
    e) All of the above

29. The power of radio as a medium of mass communication was demonstrated in 1938 when Orson Welles put on a dramatization of
    a) *War of the Worlds*.
    b) *Hamlet*.
    c) Homer's *Odyssey*.
    d) the assassination of Franklin Roosevelt.
    e) *20,000 Leagues Under the Sea*.

30. ARPA Director J.C.R. Licklider conceived of a Galactic Network that would
    a) control weapons from space.
    b) guide spacecraft to distant planets.
    c) become the world's most powerful number-crunching machine.
    d) facilitate the exchange of programs and data.
    e) All of the above

31. One of the first and most important applications of the ARPANET was
    a) email.
    b) voice mail.
    c) spreading computer viruses.
    d) disseminating anti-Communist propaganda to American citizens.
    e) stealing secrets from the Soviet Union.

32. What term is used to describe a high-speed Internet connection, such as a cable modem or a DSL modem, that is at least 10 times faster than a dial-up Internet connection?
    a) broadband
    b) hypertext
    c) Internet2
    d) the Matrix
    e) World Wide Web

33. Which country has the fastest broadband connections on average?
    a) China
    b) Germany
    c) India
    d) South Korea
    e) United States

34. In the fourth century the codex replaced the scroll because
    a) it was more durable, and it was much easier to look up a particular passage.
    b) it was much lighter, and it could be made much more rapidly.
    c) Gutenberg's printing press had just been invented.
    d) there was a worldwide shortage of papyrus.
    e) All of the above

35. Hypertext is supposed to mimic
    a) the associative memory of human beings.
    b) the way that creeks flow into streams and streams merge into rivers.
    c) constellations in the night sky.
    d) road networks.
    e) the way that some people "channel surf" with a remote control.

36. What visionary invented the computer mouse and demonstrated windows, email, and live network videoconferencing at "the mother of all demos" in 1968?
    a) Vannevar Bush
    b) Douglas Engelbart
    c) Al Gore
    d) Alan Kay
    e) Ted Nelson

37. The first popular personal computer with a graphical user interface was the
    a) Apple Macintosh.
    b) Compaq Presario.
    c) IBM PC.
    d) NeXT workstation.
    e) Tandy TRS-80.

38. The World Wide Web is the creation of
    a) Tim Berners-Lee.
    b) Vannevar Bush.
    c) Douglas Engelbart.
    d) Alan Kay.
    e) Ted Nelson.

39. A Web browser enables you to
    a) view Web pages.
    b) edit Web pages.
    c) create Web pages.
    d) run programs on many computers at the same time.
    e) All of the above

40. What is the name of a program that follows hyperlinks, collecting information about Web sites?
    a) demon
    b) hacker
    c) spider
    d) trawler
    e) worm

Chapter 1

1. Three important aids to manual calculating are **the tablet, the abacus, and mathematical tables**.

2. Blaise Pascal and Gottfried Leibniz are remembered as computer pioneers for their invention of **mechanical adding machines**.

3. Demand for mechanical calculators increased tremendously in America in the late 19th Century due to the increase in size of **corporations and government agencies**.

4. The adoption of mechanical calculators in offices changed the profession of bookkeeping. Employers **lowered wages** and **replaced men with women**.

5. The invention of the **cash register** addressed two challenges faced by department store owners in the late 19th century: creating detailed sales records and embezzlement by employees.

6. Herman Hollerith invented **punched card tabulation** to help the U.S. Bureau of the Census tally information about tens of millions of residents.

7. A series of inventions led to the creation of the electronic digital computer shortly after this war: **World War II**.

8. In the earliest digital computers every instruction was coded as a long number. People invented **programming languages** to make coding faster and less error-prone.

9. In the 1960s the invention of **time-sharing systems** allowed multiple people to interact more-or-less simultaneously with a single computer.

10. In the first half of the 20th century, AT&T used vacuum tubes to construct amplifiers that made long distance telephone calls possible. AT&T funded research to develop a semiconductor replacement to the vacuum tube. The research resulted in the invention of the **transistor**.

11. In 1957 eight key employees of Shockley Semiconductor left to form their own company. The company founded by "the traitorous eight" was **Fairchild Semiconductor**.

12. A single semiconductor device containing transistors, capacitors, and resistors is called **an integrated circuit**.

13. In 1964 IBM announced the System/360, a series of 19 compatible computers. What advantage do compatible computers have for a business wishing to upgrade its systems? **It does not have to rewrite its application programs.**

14. An integrated circuit that can be programmed to perform a wide variety of tasks is called a **microprocessor**.

15. The development of the personal computer was influenced by the power-to-the-people, do-it-yourself movement around **San Francisco / Silicon Valley** in the late 1960s and early 1970s.

16. What two significant developments made personal computers more attractive to businesses in the late 1970s and early 1980s?
    Computer spreadsheet program, IBM PC