Study questions on IT and Society

Multiple-choice questions below are intended for sampling for self-tests to see if you are ready for a quiz. The multiple-choice quizzes will ask students to choose the best of several possible answers.

The recommended way of using these sample questions is to see if you can answer a question or two on a topic or subtopic correctly; if so, you may have the facts down; if not, you may wish to look at the course material some more. Knowing the reason for the correct answer is more helpful than knowing the correct answer.

For essay or discussion questions, good answers will take account both of the IT and the social aspects, and will acknowledge reasons on both sides of a position.

Introduction
1. Technical background
2. Social, ethical, and legal background
3. Privacy
4. Free expression
5. Intellectual property
6. Work, culture, and education
7. Risks, ethics, and evaluation of IT
8. Network structures and the information society

Summary (multiple topics)

1. (a) ; (b) ; (c) ; (d) ; (e) none of these
2. (a) ; (b) ; (c) ; (d) ; (e) none of these
3. (a) ; (b) ; (c) ; (d) ; (e) none of these
4. (a) ; (b) ; (c) ; (d) ; (e) none of these
Study questions on Introduction

Multiple choice

1. What this course offers
   1. In this course, the influence between IT and society is said to be (a) unidirectional; (b) network; (c) hierarchy; (d) democracy; (e) none of these

2. How this course delivers
   1. The classroom setting is viewed here chiefly as a (a) listening place; (b) network; (c) hierarchy; (d) democracy; (e) none of these
   2. In this classroom assignments are accepted (a) only on time; (b) late with penalty; (c) late without penalty; (d) as written by two or more students; (e) none of these
   3. Direct use of text found on the Internet (a) is free without attribution; (b) requires a reference; (c) requires quoting and a reference; (d) costs money; (e) none of these
   4. Academic honesty is of concern to (a) students only; (b) instructors only; (c) the College community; (d) entertainers; (e) the Student Life office
   5. Plagiarism is (a) claiming another person’s work as one’s own; (b) copying exam answers; (c) copying exam questions; (d) unauthorized collaboration; (e) none of these
   6. Cases of alleged academic dishonesty (a) stay between student and instructor; (b) are discussed among instructors; (c) may go to the office of the Dean of Students; (d) are adjudicated in court; (e) none of these
   7. The basic stated objectives of the course include (a) memorizing facts by repetition; (b) agreeing with the instructor; (c) agreeing with the textbook; (d) presenting to a group; (e) writing programs
   8. The basic stated objectives of the course include (a) memorizing facts by repetition; (b) agreeing with the instructor; (c) agreeing with the textbook; (d) documenting research; (e) writing programs
   9. The most emphasized guidelines in this classroom are (a) taking notes and getting facts; (b) attending class and being on time; (c) focus and mutual respect; (d) listening and remembering; (e) none of these

3. What is IT?
   1. IT is claimed by the textbook author and instructor to embody and have an effect on (a) political theories; (b) changing social policies and values; (c) consumerism; (d) isolation; (e) none of these
   2. Information is (a) data; (b) organized and communicated data; (c) feedback; (d) experience; (e) judgment
   3. A feature of IT that we focus on throughout this course is (a) power; (b) speed; (c) communication; (d) change; (e) none of these
   4. We consider the Internet in this class primarily in relation to (a) individuals; (b) software; (c) ideas; (d) groups of people; (e) business
   5. Data with meaning is (a) binary; (b) in words or numbers; (c) information; (d) accurate; (e) none of these
   6. Information technology is (a) a department; (b) tools and devices for processing meaningful data; (c) hardware; (d) software; (e) none of these

4. Sources of some ideas
   1. Knowledge is best said to represent (a) data; (b) experience; (c) information; (d) communication; (e) action
   2. Which is not considered a reason why the Internet creates new ethical challenges? (a) speed of communication; (b) interactivity; (c) people do harmful things; (d) easy reproducibility of information; (e) none of these
   3. A feature of computer technology with social consequences is (a) ethical ambiguity; (b) philosophical nondeterminism; (c) logical malleability; (d) human incompetence; (e) none of these
   4. Knowledge is most closely related to (a) experience; (b) news; (c) entertainment; (d) sentiments; (e) none of these
   5. The arrival of digital media has a special effect on society in that it (a) provides better quality; (b) is more expensive; (c) is less expensive; (d) can store any intellectual object; (e) none of these
   6. A major factor in raising ethical and legal issues is (a) malleability of information; (b) accuracy of processing; (c) hard-disk speed; (d) cheap copying; (e) none of these
   7. A major factor in raising ethical and legal issues is (a) unreliability of communication; (b) accuracy of processing; (c) opportunities for anonymity; (d) interoperability; (e) none of these
   8. A major factor in raising ethical and legal issues is (a) unreliability of communication; (b) accuracy of processing; (c) hard-disk speed; (d) cheap copying; (e) none of these
   9. A significant new feature of computer technology with ethical implications is (a) variety of media; (b) mass distribution of music; (c) malleability of information; (d) control of content by powerful institutions; (e) none of these
   10. The malleability of information is (a) high communication speed; (b) the ability of anyone to shape it; (c) low cost; (d) high value; (e) none of these
   11. This course has the perspective of (a) computer science; (b) sociology; (c) computer science and sociology; (d) ethics; (e) several disciplines
   12. Sociology examines primarily (a) individual or couple behavior; (b) law and government; (c) philosophy and ethics; (d) class, family, community and power; (e) none of these
   13. Ethics is a branch of (a) sociology; (b) computer science; (c) philosophy; (d) law; (e) none of these
   14. Law consists of (a) theories of ethics; (b) mandated rules of conduct; (c) scientific results; (d) temporary resolutions of power struggles; (e) none of these
   15. Economics is concerned with (a) the greatest good; (b) the pursuit of luxury; (c) choices about scarce resources; (d) choices about ethics; (e) none of these
   16. Social sciences include
      i. sociology
      ii. Computer science
      iii. Economics
      iv. Political science
      (a) i; (b) i and ii; (c) i, iii, and iv; (d) i and iv; (e) all four
Multiple-choice study questions on topic 1: Technical background

1. History of computing

1. Cybernetics relates most closely to (a) the Internet; (b) computers; (c) feedback-driven systems; (d) intelligence; (e) none of these

2. The early history of IT includes (a) steel mills; (b) coal mines; (c) census tabulation; (d) astronomy; (e) none of these

3. The early history of IT includes (a) steel mills; (b) coal mines; (c) developments in mathematics; (d) astronomy; (e) none of these

4. The early history of IT includes (a) steel mills; (b) coal mines; (c) mechanical computing machines; (d) astronomy; (e) none of these

5. Prices of semiconductors have _____ since 1950 (a) risen; (b) fallen; (c) remained the same; (d) fluctuated wildly; (e) none of these

6. Computer technology is based on (a) resistors; (b) capacitors; (c) transistors; (d) relays; (e) none of these

7. The microprocessor was introduced in (a) 18th century; (b) 19th century; (c) 1900-1950; (d) 1951-1985; (e) 1986-2010

8. Since 1960, the cost of data processing, per operation, has (a) fallen sharply; (b) fallen slightly; (c) stayed the same; (d) risen slightly; (e) risen sharply

9. Today’s computers use (a) vacuum tubes; (b) semiconductors; (c) single-transistor components; (d) relays; (e) none of these

10. The Internet was _____ from the start (a) centralized; (b) PC based; (c) web based; (d) decentralized; (e) none of these

11. Cybertechnology is equivalent to (a) the World Wide Web; (b) information technology; (c) software; (d) hardware; (e) none of these

12. A change driving the IT revolution has been (a) new marketing approaches; (b) healthier populations; (c) graphical interfaces in application software; (d) high profit margins; (e) new faith in progress

13. A change driving the IT revolution has been (a) new marketing approaches; (b) healthier populations; (c) interactive software; (d) high profit margins; (e) new faith in progress

14. A change driving the IT revolution has been (a) new marketing approaches; (b) healthier populations; (c) higher processor speed; (d) high profit margins; (e) new faith in progress

15. A change driving the IT revolution has been (a) new marketing approaches; (b) healthier populations; (c) communication infrastructure; (d) high profit margins; (e) new faith in progress

16. A change driving the IT revolution has been (a) new marketing approaches; (b) healthier populations; (c) communication standards; (d) high profit margins; (e) new faith in progress

17. Information technology research includes (a) bioinformatics; (b) discovery of DNA; (c) hydroelectric power; (d) petroleum discovery; (e) topology

2. Hardware and operating systems

1. A hard disk is (a) application software; (b) operating-system software; (c) hardware; (d) hardware and software; (e) none of these

2. A DVD player is (a) application software; (b) operating-system software; (c) hardware; (d) a job name; (e) none of these

3. RAM is (a) application software; (b) operating-system software; (c) hardware; (d) hardware and software; (e) none of these

4. Input/output is data that moves between RAM and (a) the program counter; (b) data registers; (c) the instruction register; (d) RAM; (e) peripherals

5. Electronic storage composed of silicon chips is (a) RAM; (b) CDROM; (c) hard disk; (d) keyboard; (e) monitor

6. Microprocessors have on them: (a) a disk; (b) a screen; (c) registers; (d) high-level code; (e) documentation

7. The characteristic feature of all general-purpose computers is that they (a) display colors; (b) have CDROMs; (c) can be upgraded; (d) can store programs; (e) run faster than 166 MHz

8. An operating system provides services for (a) applications; (b) remote sites; (c) hardware; (d) Microsoft Corp.; (e) surgeons

9. Which is not an operating system: (a) Linux; (b) Internet Explorer; (c) Windows; (d) Mac OS; (e) all are operating systems

10. Windows is (a) application software; (b) hardware; (c) a Web app; (d) an operating system; (e) none of these

11. Which is not hardware? (a) general-purpose computer; (b) operating system; (c) video game console; (d) printer; (e) all are hardware

12. Application software (a) serves operating systems and users; (b) is served by operating systems; (c) serves applications; (d) is subordinate to the hardware; (e) none of these

13. A file system is hierarchical in that it (a) gives orders; (b) receives orders; (c) makes some entities more important than others; (d) has folders within folders; (e) none of these

14. A standard file system is (a) egalitarian; (b) organized manually; (c) hierarchical; (d) accessed only by applications; (e) none of these

15. A bit’s value (a) is 0 to 255; (b) is 0 or 1; (c) fills a register; (d) fills a memory cell; (e) corresponds to a color pixel

16. Of the following, the smallest is: (a) bit; (b) kilobyte; (c) megabyte; (d) byte; (e) word

17. All data is stored by computers in what form? (a) analog; (b) digital; (c) megabyte; (d) packet; (e) other

3. Networked computing and the Internet

1. A network (a) is a hierarchy of computers; (b) is any group of computers on the same wireless access point; (c) is a set of computers configured to communicate; (d) requires a central management structure; (e) none of these
2. A set of computers configured to communicate among themselves is a(n) (a) tree; (b) Internet; (c) network; (d) hierarchy; (e) none of these
3. Data is always transferred on the Internet in the form of (a) packets; (b) kilobytes; (c) files; (d) folders; (e) queries
4. Networked computing requires (a) communication standards; (b) a centralized structure; (c) wires; (d) use of the same kind of computer; (e) none of these
5. A server is (a) any network node; (b) a piece of hardware that channels data among computers; (c) a computer that responds to requests for data on a network; (d) a piece of software that runs on all Internet-connected machines; (e) none of these
6. A number used to identify a device on the Internet is (a) an IP address; (b) a URL; (c) a formula; (d) a protocol; (e) none of these
7. The Internet’s infrastructure is governed by (a) the government; (b) one corporation; (c) a set of boards and consortiums; (d) no one; (e) all the users
8. The Internet is (a) a company; (b) a centralized unit; (c) a network of networks; (d) an idea; (e) a methodology
9. The Internet originated to address ____ problems (a) military; (b) sports; (c) business; (d) revenue; (e) none of these
10. The founding ideas of the Internet were (a) analog transmission and hierarchical control; (b) packet transmission and decentralized control; (c) analog transmission and decentralized control; (d) packet transmission and hierarchical control; (e) none of these
11. Visiting a web site is a case of (a) client/server computing; (b) FTP; (c) database design; (d) machine language; (e) procedural language
12. Which of the following is invoked when you type a query in Google? (a) a web crawler; (b) Internet Explorer; (c) a search engine; (d) a browser function; (e) none of these
13. Web 2.0 relies heavily on (a) user involvement to make sites more attractive to new users; (b) the posting of content by large media outlets; (c) email; (d) menu-driven windowed interfaces; (e) command interfaces
14. The Internet originated to address ____ problems (a) military; (b) sports; (c) business; (d) revenue; (e) none of these
15. The Internet originated in (a) the 19th century; (b) the 20s or 30s; (c) the 40s or 50s; (d) the 60s or 70s; (e) the 90s
16. The founding ideas of the Internet were (a) analog transmission and hierarchical control; (b) packet transmission and decentralized control; (c) analog transmission and decentralized control; (d) packet transmission and hierarchical control; (e) none of these
17. Network communication is characterized by (a) limited scope; (b) easy identification of all communicators; (c) reproducibility of information; (d) only one-to-one interaction; (e) none of these
18. Anonymity _____ on the Internet (a) is enabled in new ways; (b) does not exist; (c) is universal; (d) is considered unethical; (e) none of these

4. Text formatting, spreadsheets, and database management

1. MS Word is (a) application software; (b) operating-system software; (c) hardware; (d) hardware and software; (e) none of these
2. PowerPoint is (a) application software; (b) operating-system software; (c) hardware; (d) hardware and software; (e) none of these
3. Collaboration among people working on the same document is aided by (a) Track Changes; (b) page headers; (c) named styles; (d) search engines; (e) blogs
4. Excel is (a) application software; (b) operating-system software; (c) hardware; (d) hardware and software; (e) none of these
5. One of the chief features that distinguish a spreadsheet from a word processor is (a) styles; (b) formatting; (c) export features; (d) calculated formulas; (e) none of these
6. A spreadsheet is a (a) sequential list; (b) tree; (c) network; (d) grid or matrix; (e) text file
7. Automatic calculation of values is a principle of (a) word processing; (b) presentation graphics; (c) web posting; (d) spreadsheet software; (e) application design
8. A database normally consists of (a) pixels; (b) tables; (c) keys; (d) protocols; (e) none of these
9. In a database, an object or instance corresponds to a (a) record; (b) table; (c) bit; (d) relation; (e) all of these
10. In a database, a category or class of objects is implemented by a (a) record; (b) table; (c) bit; (d) number; (e) device
11. A database table’s columns correspond to (a) records; (b) tables; (c) instances; (d) attributes; (e) all of these
12. A record is a(n) ____ of an entity (a) column; (b) field; (c) instance; (d) summary; (e) none of these
13. An attribute of a record is represented by a (a) column; (b) file; (c) instance; (d) summary; (e) none of these
14. An instance of an entity is a(n) (a) attribute; (b) column; (c) table; (d) record; (e) none of these
15. To display information from a database, we use a (a) format command; (b) named style; (c) master page; (d) query; (e) all of these
### Terminology on topic 1 (see IT glossary for definitions)

1. **analog data**
   9. **computer**
   17. **feedback**

2. **application software**
   10. **cookie**
   18. **fetch-execute cycle**

3. **bandwidth**
   11. **cybertechnology**
   19. **gigabyte**

4. **bit**
   12. **data**
   20. **hard disk**

5. **browser**
   13. **database**
   21. **hardware**

6. **byte**
   14. **digital data**
   22. **HTML**

7. **client/server computing**
   15. **DNA**
   23. **HTTP**

8. **computing**
   16. **exporting data**
   24. **hyperlink**

9. **counter**
   17. **feedback**
   25. **importing data**

10. **information**
    18. **Internet**
    26. **information technology**

11. **Internet**
    19. **query**
    27. **internet technology**

12. **ISP**
    20. **RAM**
    28. **IP**

13. **network**
    21. **social network**
    29. **interoperability**

14. **network**
    22. **software**
    30. **ISP protocol**

15. **network**
    23. **spreadsheet**
    31. **network formula**

16. **operating system**
    24. **streaming video**

17. **operating system**
    25. **system**

18. **software**
    26. **TCP/IP**

19. **SQL**
    27. **URL**

20. **TCP/IP**
    28. **Web 2.0**

21. **TCP/IP**
    29. **wikipedia**

22. **telnet**
    30. **World Wide Web**

23. **URL**
    31. **World Wide Web client**

24. **WiFi**
    32. **World Wide Web server**

25. **Wiki**

### Questions on topic-1 (Intro to IT) subtopic outcomes

#### 1.1 Describe how computing has evolved

1. What role did semiconductor technology play in the computer revolution?
2. Defend or refute: “The study of the mathematics of computation began in the 1950s”
3. What does the study of feedback-driven systems have to do with information technology?
4. Describe the origin and evolution of cybertechnology.
5. What were the first electronic computers like?
6. Describe some stages in the evolution of IT leading to the Internet.
7. What changes have occurred in software since the 1990s?
8. What changes have occurred in hardware since the 1990s?
9. Describe how life sciences have converged with computing.
10. Defend or refute: “Technology has always been mostly about information.”

#### 1.2 Identify some basic principles of computer hardware and operating systems

1. Compare the functions of an operating system with those of the software that manages a network.
2. What do Windows, Linux, the Mac OS, and the Droid OS have in common? Explain.
3. What unit of storage is used in all instances of information technology, and why?
4. Give two cases where in using a word-processing application, you sometimes are making use of an operating system.
5. Describe how a processor, a computer program, memory, and devices interact.
6. Describe the category of software that offers services to applications. What other services does it offer?
7. Distinguish analog and digital data, with examples of each.
8. How does information technology differ from other technology?

#### 1.3a Explain some concepts of networked and Internet computing (core)

1. What is a protocol and how do protocols support connectivity?
2. What is a network server, and what does it serve?
3. What are networks, servers, and packets, and how are they related?
4. What hardware and software elements are required for computers to communicate and work together?

5. Just after you send an email, where does your message reside, physically?
6. What does the client communicate to a web server, and what does the server communicate to the client?
7. Distinguish the World Wide Web from the Internet.
8. What is a browser and how does it work?
9. What do firewalls do, how, and why?
10. What are two ways to use a URL to visit a web site?
11. Describe a social effect of networking technology.

#### 1.3b Use software that supports collaboration

1. What are your experiences with Facebook or other social media? In your experience, how do social media affect relationships among friends, in a family, or in a work environment? Wiki: “social media.”
2. What are your social experiences with mobile computing (smart phone, tablet, etc.)? Wiki: “mobile computing.”
3. What computing system(s) do you use for schoolwork? Give specifics about processor, RAM, hard disk, printer.
4. Describe how Twitter interfaces with the user.
5. Enter a search on Google Scholar and describe the response. Describe what unseen events occur when you enter your query. Wiki: “google.”
6. Compare your experience constructing a document by wiki with other ways of creating documents.
7. How does a wiki work? Briefly review and evaluate your experience with a wiki in this course.

#### 1.4 Explain some concepts of major office applications

1. How did the appearance of spreadsheet software change the work lives of people in business careers?
2. Under what conditions are spreadsheet formulas used, and why are they used instead of ordinary numerals?
3. Give an example of a database query. The course materials recommend that all numbers in a spreadsheet be in a certain kind of form if they depend on other numbers. What is that form, and why is it used?
4. What are the essential features of the layout of a database table, and what do they represent?
5. What are the main uses of (a) database queries; (b) spreadsheet formulas, and (c) named styles?
6. What do columns and rows in a database table represent?
Multiple-choice study questions on topic 2:
Social, ethical, and economic background

1. Foundations of ethics

1. Ethics addresses mainly issues of (a) religion; (b) voluntary behavior; (c) mental health; (d) what is legal; (e) random acts
2. The view that society’s needs take priority over personal ones is called (a) communitarianism; (b) liberal individualism; (c) communism; (d) deontology; (e) utilitarianism
3. The view that society must not violate a person’s integrity is called (a) communitarianism; (b) liberal individualism; (c) communism; (d) deontology; (e) utilitarianism
4. Utilitarianism is based on concern about (a) universal rules; (b) results of actions; (c) divine law; (d) libertarianism; (e) communitarianism
5. Deontological ethics is based on concern about (a) universal rules; (b) results of actions; (c) divine law; (d) libertarianism; (e) communitarianism
6. The view presented in this course is that changes in information technology (a) raise no new ethical questions; (b) raise ethical issues for IT professionals only; (c) raise some new ethical issues for almost everyone; (d) completely change society’s ethics standards; (e) all of the above
7. The notion of judging acts by their results is central to the _____ theory of ethics (a) utilitarian; (b) Kant; (c) rule-based; (d) deontological; (e) none of these
8. According to the course materials, ethics assumes (a) rationality; (b) emotionality; (c) random behavior; (d) evil intentions; (e) none of these
9. The notion of rules that apply universally is central to the _____ theory of ethics (a) utilitarian; (b) consequentialist; (c) Mill; (d) deontological; (e) none of these
10. The notion of judging acts by their results is central to the _____ theory of ethics (a) Kant; (b) consequentialist; (c) Mill; (d) deontological; (e) none of these
11. Negative rights are (a) claim rights; (b) liberties; (c) obligations to provide resources; (d) considered unethical; (e) none of these
12. Positive rights are (a) claim rights; (b) liberties; (c) obligations not to prevent action; (d) universally accepted; (e) none of these
13. Claim rights are (a) liberties; (b) negative rights; (c) positive rights; (d) rights to insurance payments; (e) rights to health care
14. Liberties are (a) rights to be provided with a benefit; (b) negative rights; (c) positive rights; (d) rights to insurance payments; (e) rights to health care

2. Informationalism

1. Whereas informationalism is aimed at technical development, industrialism was aimed at (a) applying knowledge to knowledge; (b) universal higher education; (c) communication among all humans; (d) economic growth; (e) none of these
2. The information-technology revolution is said to have taken place as part of a (a) collapse of capitalism; (b) restructuring of capitalism; (c) rise of statism; (d) cultural blossoming; (e) breakthrough in scientific thinking
3. It is said that societies are associated most closely with relationships of (a) technology; (b) ethics; (c) philosophy; (d) culture; (e) production and power
4. The network society is said to be associated with (a) feudalism; (b) sexism; (c) communitarianism; (d) informationalism; (e) hierarchies
5. Industrialism is said to be a (a) mode of production; (b) mode of development; (c) cultural trend; (d) technical approach; (e) philosophical school
6. Informationalism is said to be a (a) mode of production; (b) mode of development; (c) cultural trend; (d) technical approach; (e) philosophical school
7. Capitalist enterprises are driven by maximization of (a) technology; (b) production; (c) profit; (d) culture; (e) conflict
8. Keynessianism was replaced by (a) regulation; (b) deregulation; (c) nationalization; (d) socialism; (e) protectionism
9. The informational mode of development is distinguished by (a) exclusion of humans; (b) application of knowledge to knowledge; (c) machine intelligence; (d) economic growth; (e) none of these
10. Internet use is said to have increased (a) socialization; (b) test scores; (c) competition; (d) trusts; (e) central control of the market
11. Capitalism is said to be (a) statism; (b) a mode of production; (c) a mode of development; (d) unchanging; (e) none of these
12. Informationalism is said to be (a) statism; (b) a mode of production; (c) a mode of development; (d) unchanging; (e) none of these
13. Statism is said to be (a) statism; (b) a mode of production; (c) a mode of development; (d) unchanging; (e) none of these
14. The informational mode of development is characterized by the action of (a) machinery on machinery; (b) energy on machinery; (c) energy on energy; (d) knowledge on machinery; (e) knowledge on knowledge
15. IT has enabled (a) profit minimization; (b) wage maximization; (c) merger processes; (d) stable methods of management; (e) none of these
16. A free market is said to be (a) well managed; (b) centralized; (c) decentralized; (d) free of technology; (e) none of these
17. A key new element in the global networked economy is said to be (a) computers; (b) the application of knowledge to knowledge; (c) human involvement; (d) mass production; (e) mass culture

18. Application of knowledge to knowledge, enabled by _____, is said to be an accelerating factor for change (a) spreadsheets; (b) word processing; (c) telephones; (d) information technology; (e) none of these

19. Output yield per unit of input is (a) speed; (b) power; (c) profit; (d) employment; (e) productivity

20. Productivity is (a) the rate of employment; (b) the rate of profit; (c) output yield per unit of input; (d) profit per unit of input; (e) none of these

21. IT is closely associated with (a) world travel; (b) buying and selling; (c) a customer-focused business strategy; (d) expert knowledge; (e) none of these

22. The customer-centric enterprise is associated with (a) mass culture; (b) mass production; (c) mass customization; (d) automation; (e) computer billing

23. A mode of development in which productivity is enhanced by the action of knowledge on knowledge is (a) statism; (b) capitalism; (c) industrialism; (d) informationalism; (e) nationalism

24. Informationalism enhances productivity by (a) speeding up all processes; (b) applying knowledge to knowledge; (c) automating payrolls; (d) enabling videoconferencing; (e) none of these

3. Globalization

1. The informational economy (a) is global; (b) deemphasizes profit; (c) is no longer concerned with productivity; (d) is driven by the search for knowledge; (e) none of these

2. In the era of globalization, information technologies are appearing that enable (a) faster cars; (b) greater energy consumption; (c) new kinds of collaboration; (d) slow communication at large distances; (e) none of these

3. In the global era (a) vertical control replaces horizontal connections; (b) vertical control replaces bottom-up democracy; (c) horizontal connections replace vertical control; (d) horizontal connections replace bottom-up democracy; (e) none of these

4. A significant factor enabling globalization was (a) communication standards; (b) high-quality automatic language translation; (c) the Java language; (d) mobile phone apps; (e) none of these

5. Wireless Internet helped enable (a) the collapse of intellectual property; (b) the end of privacy; (c) globalization; (d) the end of the use of metal connections; (e) none of these

6. A global economy is one that (a) has international trade; (b) uses fiber optics; (c) has international stock exchanges; (d) can work as a unit in real time; (e) none of these

7. Globalization’s goal was to unify all economies under the rules of (a) the U.S.; (b) the U.N.; (c) the market; (d) the Internet; (e) the IT industry

8. The U.S. role in the global informational economy is (a) peripheral; (b) central; (c) military; (d) media-based; (e) ancillary
Questions on topic-2 subtopic outcomes

2.1 Contrast two concepts of ethics or rights (core)
1. Explain two of the main theories of ethics presented.
2. What are the two main categories of rights presented? Give an example of each.
3. Which theory of ethics would argue that it is wrong to drive a car on a different side of the road from the customary one? Explain.
4. Differentiate communitarianism from liberal individualism.
5. Distinguish positive rights from negative rights, with examples.
6. Distinguish deontological from utilitarian ethics.
7. Differentiate the concepts that guide personal choices, business policies, and laws.
8. Distinguish liberties from claim rights, with examples.

In answering the following questions, state and support your view, and give foundations for alternative views, and name a theory of ethics or rights that supports your view.

9. What theory of ethics would say that there is an ethical obligation to obey a law or Netiquette guideline just because it is a law or custom?
10. If a behavior common on the Internet is not illegal, is it therefore not unethical? Give examples.
11. Does the IT revolution favor some ethical theories over others? Include specifics.
12. Should business and government web sites be required by law to provide full access to disabled people? (Baase) What would be required?
13. Should the government lead in the development and application of information technology?
14. Is the use of IT in public services such as revenue and motor-vehicles registration adequate?
15. Give reasons why utilitarianism best describes ethical principles and why deontological ethics is preferable.
16. Consider the slide, “Possible policies for a web browser.” Give some reasons for and against each policy.

2.2 Explain economic and political origins of informationalism (core)
1. What world political or economic events in the 1970s and 1980s drove the information revolution?
2. Explain the role of IT in addressing a problem of the capitalist economy in past decades.
3. In what sort of economic and political environment did the information revolution emerge and develop?
4. What economic developments in the 1970s brought about the demand for IT that led to the IT revolution?
5. Give social/economic factors in the rise of the Internet.
6. What role did the fall of the Berlin Wall have in the information revolution and globalization, according to course sources?
7. Compare informationalism with industrialism.
8. What events in the 1980s and 1990s are said to have spurred globalization, and why?
9. Give reasons to argue for and against: “The Internet has successfully solved problems of industrialized capitalism.”
10. Use the terms informationalism, capitalism, industrialism, and statism meaningfully in a paragraph.
11. What are some ways that capitalism has been restructured since the 1970s?
12. Explain the relationship of informationalism to capitalism.

2.3 Discuss how information technology has contributed to a globalized economy
1. What is globalization and what is the role of IT in it?
2. Explain the role of IT in the globalized economy.
3. How has Windows helped enable globalization?
4. What are some common IT technical standards and how have they helped enable globalization?
5. Relate offshoring and supply chaining to IT and to globalization.
6. Thomas Friedman, in “The world is flat,” asserts that the convergence of a flattened world, new business processes, and billions of new technology users, is defining the course of this century. What does he mean by “flatness”, and what technologies is he referring to? Comment.
7. (8-10) To what degree does a problem referred to below result from digital information technology, and to what degree did the general problem pre-exist IT? Explain briefly.
8. ATM transactions enable tracking of our locations.
9. Persons may record and share digital music heard on web radio broadcasts, infringing on copyrights.
10. Digital medical records make it possible for office personnel other than doctors to obtain private patient information.

Readings for case analysis
4. G. Cook, “Trusting your instincts”
5. T. Friedman, “The world is flat”
6. T. Friedman, “Something’s happening here”
8. P. Krugman, “Jobs, Jobs, and cars”
9. C. Rampell, “Companies spend on equipment, not workers”
10. M. Vardi, “The financial meltdown and computing”

**Research questions**

1. In what industries have mega-mergers occurred, and to what degree due to IT?
2. What are the relative weights of *innovation* and *following standards* in the IT revolution?
3. When you use a search tool such as Google, Yahoo, Bing, or Siri, are you most seeking *data, information, or knowledge*? (Google computer scientist, quoted.)
4. Vint Cerf, co-inventor of the main Internet protocols, has pointed to new ways that people with common interests may find each other via the World Wide Web, and “the incredible willingness of people to share the information they have”

Give examples of this or refute the claim.

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1 S. Lohr. Can these guys make you ‘Bing’? Microsoft’s costly battle to redefine the web search. *New York Times*, July 31, 2011.
Multiple-choice study questions on topic 3: Security and privacy

1. Crime, law enforcement, and IT

1. Internet advertising is negatively affected by (a) auction fraud; (b) click fraud; (c) stock fraud; (d) digital forgery; (e) denial-of-service attacks

2. The problem of “hacking” on the Internet is most generally associated with (a) stealing; (b) destroying data; (c) intrusion; (d) writing software in an unprofessional way; (e) poor writing

3. Worms are (a) software that installs itself without authorization; (b) software that replicates itself; (c) web crawlers; (d) hidden messages; (e) none of these

4. Viruses are (a) software that spreads due to infected media physically touching user hardware; (b) software that replicates itself; (c) web crawlers; (d) hidden messages; (e) none of these

5. Sending millions of requests to a web server is (a) fraud; (b) hacking; (c) a denial-of-service attack; (d) spam; (e) a privacy violation

6. A firewall (a) all access; (b) spam; (c) blocks phishing; (d) filters outside access to computers via the Internet; (e) none of these

7. Authentication, access privileges, and firewalls help provide (a) reliability; (b) speed; (c) connectivity; (d) security; (e) storage space

8. Encryption (a) enables authentication of user ID; (b) examines packets to block unauthorized access; (c) scrambles data to be unreadable without a special key; (d) requires special hardware; (e) none of these

9. Secure web sites are (a) firewall protected; (b) password protected or encrypted; (c) government protected; (d) accessible via special hardware; (e) none of these

10. Authentication assures that (a) a computer is safe to use; (b) a website is safe; (c) only users with permission gain access; (d) facts at a website are correct; (e) none of these

11. Examining packets to block unauthorized outside access to a computer is done (a) by the user; (b) the network administrator; (c) a firewall; (d) encryption; (e) hacking

12. Botnets are (a) viruses; (b) Trojan horses; (c) spam messages; (d) groups of computers controlled remotely without owners’ permission; (e) none of these

13. The USA PATRIOT Act is challenged because it authorizes (a) pre-emptive war; (b) warrantless searches of Internet traffic; (c) playing the Star Spangled Banner; (d) video surveillance; (e) no international data collection

14. A denial-of-service event is (a) a server’s action toward the client; (b) the decision of an ISP regarding a customer; (c) a form of malicious Internet activity; (d) a client’s response to a server; (e) none of these

15. Sexting is (a) risqué emails; (b) web porn; (c) creation or dissemination of nude pictures, often of minors; (d) determining gender of newborns; (e) none of these

16. Seizure of evidence is subject to (a) sole police authority; (b) attorney consent; (c) owner’s consent; (d) court-issued warrant; (e) none of these

17. The Fourth Amendment, regarding search and seizure, (a) is a typical consequentialist measure; (b) is a personal ethical guideline; (c) codifies a positive right; (d) codifies a negative right; (e) none of these

18. Electronic devices (a) may be searched but not seized; (b) may be seized or searched any time police determine probable cause; (c) may be seized or searched subject to court warrant; (d) are exempt from search; (e) none of these

2. Definitions and theories of privacy

1. Privacy is (a) a person’s control of the revelation of information about the person; (b) widely considered a human right; (c) often placed in question by the wide dissemination of data; (d) not guaranteed in workplace email systems; (e) all of the above

2. The obligations of friendship are guaranteed by (a) legislation; (b) business policy; (c) personal decisions; (d) all of these; (e) none of these

3. One theory of privacy defines it as (a) control of information about oneself; (b) control of information about others; (c) the use of soundproof walls; (d) absence from the Internet; (e) free speech

4. A ______ view of privacy might accept greater access by society to personal data (a) liberalistic; (b) utilitarian; (c) libertarian; (d) communitarian; (e) none of these

5. The communitarian view of privacy (a) elevates the autonomous self; (b) supports the “leave me alone” wish; (c) accepts society’s greater access to personal data; (d) rejects surveillance; (e) none of these

6. The liberalistic view of privacy (a) elevates the autonomous self; (b) asks “What do you have to hide?”; (c) accepts society’s greater access to personal data; (d) supports surveillance; (e) none of these

7. A consumer-protection view of privacy would emphasize that (a) customers have voluntary relations with vendors that collect data on them; (b) consumers are in a weak position relative to vendors; (c) consumers must protect their own privacy; (d) vendors must protect consumer privacy; (e) consumers must protect vendors’ privacy

3. Privacy issues raised by IT

1. Encryption (a) provides complete privacy; (b) enables government inspection of messages; (c) provides security of varying reliability; (d) makes messages unreadable by the recipient; (e) all of the above

2. Privacy in the electronic era includes (a) anonymity at all times; (b) control of dissemination of personal information; (c) sufficient time alone; (d) freedom from exposure to undesirable ideas; (e) none of these

3. Privacy issues are raised directly by IT due to the (a) existence of data storage media; (b) existence of digital processing; (c) ease of copying and communication; (d) existence of curiosity; (e) none of these

4. Ease of collecting data raises issues of (a) free speech; (b) protection of children from porn; (c) privacy; (d) intellectual property; (e) PC security
5. Privacy may be strongly associated with (a) notoriety; (b) seriousness; (c) freedom to post on the web; (d) freedom to criticize; (e) anonymity.
6. Utilization of personal information for purposes of other than those for which it was provided is (a) felonious; (b) a copyright violation; (c) hacking; (d) secondary use; (e) libel.
7. Analyzing and searching databases to find patterns and to enable analysis is (a) hacking; (b) data mining; (c) a privacy violation; (d) a free-speech violation; (e) a free-speech issue.
8. Courts have (a) upheld; (b) overturned; (c) investigated; (d) questioned; (e) none of these.
9. Predicting behavior of an individual based on data analysis is (a) computer profiling; (b) data mining; (c) a claim right; (d) a denial-of-service attack; (e) libel.
10. Categorical privacy is the right (a) not to be spammed; (b) not to be profiled; (c) not to be libeled; (d) to one’s own records; (e) to be left alone.
11. The ease of copying provided by IT (a) raises privacy concerns; (b) reduces privacy concerns; (c) resolves issues of privacy; (d) eliminates privacy; (e) none of these.
12. The ease of communications provided by IT (a) raises privacy concerns; (b) reduces privacy concerns; (c) resolves issues of privacy; (d) eliminates privacy; (e) none of these.
13. The ease of collecting data provided by IT (a) raises privacy concerns; (b) reduces privacy concerns; (c) resolves issues of privacy; (d) eliminates privacy; (e) none of these.
14. One possible side effect of RFIDs is (a) intellectual property violations; (b) warrantless search and seizure; (c) unauthorized publication of private data; (d) location monitoring; (e) none of these.
15. The increased storage capacity provided by IT (a) raises privacy concerns; (b) reduces privacy concerns; (c) resolves issues of privacy; (d) eliminates privacy; (e) none of these.
16. Opt-in means (a) data may be collected about a person unless the person requests otherwise; (b) a court warrant is required for data collection; (c) a person may choose to participate or not in data collection; (d) data about a corporation may not be released without its permission; (e) none of these.
17. Opt-out means (a) data may be collected about a person unless the person requests otherwise; (b) a court warrant is required for data collection; (c) a person may choose to participate or not in a video conference; (d) data about a corporation may not be released without its permission; (e) none of these.
18. Opt-in versus Opt-out is a matter of (a) constitutional law; (b) civil law; (c) business policy; (d) personal ethics; (e) none of these.
19. Opt-in versus opt-out relates to (a) privacy; (b) intellectual property; (c) security; (d) free expression; (e) copyrights.
20. Data mining is (a) a way to address the energy crisis; (b) a method of obtaining more data directly from individuals; (c) analyzing and searching databases to find patterns and support decisions; (d) illegal; (e) hacking.

4. Proposed protections

1. What monitors incoming data to filter out suspicious packets? (a) operating system software; (b) processor hardware; (c) memory; (d) application software; (e) firewall software.
2. Fair Information Practices principles set standards for (a) limited collection of personal data, quality, and limitations on use; (b) government agencies that protect privacy; (c) penalties on invasions of privacy; (d) lawsuits over privacy issues; (e) computer hardware that might invade privacy.
3. Established regulations on processing of personal data include (a) obligation to request a person’s permission to store data; (b) freedom to process “sensitive” data; (c) freedom to use data for purposes not originally intended; (d) obligation to correct errors; (e) copyrighting.
4. Established regulations on processing of personal data include provisions of (a) freedom from obligation to follow original purpose; (b) no processing of “sensitive” data; (c) freedom from obligation to correct errors; (d) use for purposes not originally intended; (e) copyrighting.
5. Established regulations on processing of personal data include provisions of (a) freedom from obligation to follow original purpose; (b) freedom to process “sensitive” data; (c) obligation to correct errors; (d) use for purposes not originally intended; (e) copyrighting.
6. Established regulations on processing of personal data include provisions of (a) freedom from obligation to follow original purpose; (b) freedom to process “sensitive” data at will; (c) freedom from obligation to correct errors; (d) obligation to use data for intended purpose; (e) copyrighting.
7. ______ hides data in plain view (a) hacking; (b) encryption; (c) mass storage; (d) copyright; (e) surveillance.
8. One technical solution to the problem of privacy is (a) legislation; (b) processing speed; (c) mass storage; (d) professional ethics; (e) encryption.
9. One technical solution to the problem of privacy is (a) legislation; (b) processing speed; (c) mass storage; (d) professional ethics; (e) firewall software.
10. One technical solution to the problem of privacy is (a) legislation; (b) processing speed; (c) mass storage; (d) professional ethics; (e) authentication.
Topic-3 terminology (Security and privacy)

1. anonymity
2. caller ID
3. click fraud
4. communitarian view
5. consumer profiling
6. consumer-protection view
7. Cybercrime-protection view
8. data mining
9. denial of service
10. digital forgery
11. encryption
12. firewall
13. Fourth Amendment
14. free-market view
15. identity theft
16. intrusion
17. liberalistic view
18. location monitoring
19. malware
20. opt-in
21. privacy
22. probable cause
23. RFID
24. search warrant
25. secondary use
26. seizure of evidence
27. sexting
28. USA PATRIOT Act
29. virus
30. warrant

Questions on topic-3 subtopic outcomes

3.1 Explain issues raised by IT related to security and crime

1. Explain some forms of crime enabled by changes in IT, referring to these changes.
2. What are worms, viruses, and denial of service attacks, and what are the related social concerns?
3. How does IT raise new issues related to security and crime?
4. What are some forms of malware?
5. Describe and relate to changes in IT: hacking, phishing, click fraud, ID theft.
6. Give reasons for and against allowing use of digital cash.
7. Give reasons for and against having the government regulate the handling of credit-card and other confidential information.

3.2 Discuss privacy in a theoretical context (core)

(1-6) Give reasons to support and reject the following:
1. “Freedom from the inappropriate judgment of others” is a good definition of privacy? (Baase)
2. Privacy is a social construct.
3. Search warrants require proof beyond a reasonable doubt.
4. Privacy is about power.
5. Privacy is something we just have or don’t have; we don’t have it to a degree.
6. Police knowledge that a crime has been committed is sufficient to authorize police to conduct a search.
7. Distinguish the communitarian and liberalistic views of privacy.
8. What does the Fourth Amendment say that law enforcement agencies need to have, in order to search or seize property?
9. Is there a natural human right to privacy that needs new protection today? Refer in your answer to developments in IT.
10. Under what procedure and on what factual basis may law-enforcement agencies search and seize a computer at a home or workplace?
11. What is the Fourth Amendment, and what issues does IT raise with respect to it?
12. What do you think the Fourth Amendment means by “papers and effects” as applied in 2013? What does “seizure” mean here?
13. What is the control theory of privacy?

3.3 Explain how IT raises new issues of privacy (core)

(1-4) Give reasons to support and reject the following:
1. Anything done on the Internet is public, not private.
2. Privacy is obsolete.
3. Insurance companies should have the right to purchase pharmacy and convenience-store transaction records in order to see whether their non-smoker customers are purchasing cigarettes.
4. The “in plain view” concept means that if a laptop is in plain view during a police search, the laptop may be seized.
5. How have the notion and protection of privacy been affected by changes in technology?
6. In exchange for services such as free email, what restraints on the use of information are reasonable to expect from providers of free email services such as Gmail, Yahoo, and Hotmail?
7. Would privacy issues raised by a system in which an amusement park tracks customers’ locations for anonymous traffic-monitoring purposes with an electronic card that is provided upon entry and discarded on exit from the amusement park? Describe two possible conflicting views and provide support.
8. Give reasons to support and reject having the government increase surveillance of persons or organizations that use encryption to protect the privacy of their communication.
9. Explain privacy issues raised by RFID tags on products.
10. How does IT change the considerations in deciding what personal records (bankruptcy, divorce, political contributions, property ownership) should be made public?
11. What features of IT raise privacy issues for public discussion?
12. How have the notion and protection of privacy been affected by changes in technology?
13. How does caller ID affect the privacy of the caller and call recipient?
14. Is it wrong to post a picture on a web site without permission if the picture was taken with permission? Discuss.
15. How does IT raise new issues with respect to the use of cameras?
16. How do modern surveillance tools change the meaning of “reasonable expectation of privacy”?
18. Give pros and cons of closed-circuit TV surveillance, citing cases on either side.
19. The September 2010 news article, “US wants stronger wiretap powers over Web,” reports that some law-enforcement officials asked the U.S. Congress to require that all communications-enabling services, including encrypted ones, have the technological capability to comply if served with an order to intercept communications content for surveillance purposes. Critics said that the proposal put in question fundamental aspects of Internet use. (a) Give technical and security reasons supporting the officials’ request, and give reasons for challenging it. (b) Which view is more consistent with communitarian views of privacy, and which with liberalistic theories?

20. The November 2010 article, “Privacy is dead,” reported that massive quantities of personal data about all of us are obtainable quickly on the Web. What technical changes have brought this situation about? Give reasons to view it as unavoidable and reasons for trying to alter the situation.

21. The December 2010 news article, “Panel set to study safety of electronic patient data,” describes concerns about potential harm to patients due to malfunctions of systems for storing and retrieving patient data. Give reasons to support prioritizing (a) safety; (b) privacy; or (c) maximum data collection. Give reasons to support a different priority from the one you chose. Which priorities are consistent with communitarian views of privacy and which are consistent with liberalistic theories?

22. Is it ethical for targeted commercial or political marketing to attract individual interest by changing the terms of sale or political message according to the individual’s preferences? Should the profiled person be informed of the profiling? Should the law enforce ethical standards in such cases? Justify.

23. Does a bank own our account records, or have the obligation to share them with law enforcement? The right to share them with other businesses?

24. Baase, p. 40, #1.25 (video cam after political debate)
25. Baase, p. 40, #1.26 (creating fictional person on social networking site)
26. Baase, p. 133, #2.41 (privacy policy of a large site)
27. Learn and discuss the privacy policy of
   a. The social-networking site you use
   b. The FSU student accounts, including email
   c. An employer in this area

3.4 Describe proposed protections for privacy
1. What are authentication, firewalls, and encryption used for?
2. What are some guidelines adopted in Europe or the U.S. for the processing of personal data?
3. What are attributes of a secure web site?
4. What role does packet filtering play in computer security?
5. What are some rights, that course materials have discussed, to apply to persons about whom electronic data is collected?
6. What does the term, “intended purpose,” have to do with guidelines for privacy protection?
7. Summarize facts given, defining relevant terms.

Case analysis
Please refer to the item below that matches your classroom ID.
   a. Give the issues and implications that relate to freedom of expression and the technical developments that generate the social issues.
   b. Reference relevant theories of ethics, legal principles, and categories of rights.
   c. Define an opinion on the issues involved, supporting it with specific facts and reasoning.
   d. Provide facts and reasoning to support the opposite view.
   e. Give the source you used, including date and publication info.

Readings for case analysis
1. C. Savage, “US wants stronger wiretap powers over Web”
2. J. Bennett, “Privacy is dead” (Newsweek, November, 2010)
3. J. Bennett, “Panel set to study safety of electronic patient data”
4. M. Freudenheim, “Ohio State says hackers breached data on 760,000”
5. E. Wyatt and T. Vega, F.T.C. backs plan to honor privacy of online users (2010)
7. C. Albenseius, “House approves FISA bill; strips Telcom immunity”
8. S. Moore, FBI and states vastly expand DNA databases (2009)
9. C. C. Miller and T. Vega, “Google introduces a social tool, and settles charges related to another”
11. P. Schwartz, [Adult sexting] “When it crosses the line”
13. T. Shanker, E. Bumiller, “Hackers gained access to sensitive military files”
14. E. Helms, “The right to sue over wiretapping”
15. S. Sengupta, “British police make arrest in Net attacks”
17. H. Bray, “Plugging privacy leaks”
18. E. Lichtblau and J. Risen, “Recent wiretapping’s scale exceeded law, officials say”
19. B. Meeks, “Is privacy possible in the digital age?”
20. S. Sengupta and E. Rusli, “Personal data’s value? Facebook set to find out” (2/12)
21. N. Perlroth, “Web attacks may rattle consumers” (1/12)
22. E. Schmitt, “US cyberattacks against Khadafy’s military debated before strikes” (10/11)
25. E. Lichtblau and J. Risen, “Recent wiretapping’s scale exceeded law, officials say”

Research questions
1. What communications data do phone and Internet service providers retain? What data do they make available to the police without court warrant?
Multiple-choice study questions on topic 4: Freedom of expression

1. Rights of free expression

1. The first amendment to the U.S. constitution constrains (a) individuals; (b) businesses; (c) the government; (d) political parties; (e) none of these

1. The First Amendment encodes a (a) positive right; (b) negative right; (c) notion of privacy; (d) notion of property; (e) none of these

2. According to our sources, widespread access to electronic media (a) raises dilemmas regarding freedom of expression; (b) limits need for first-amendment protections; (c) means that free expression is overused; (d) is harmful to free expression; (e) none of these

3. Censorship (a) implements the First Amendment; (b) suppresses speech condemned as subversive to the common good; (c) is a felony; (d) is advocated by libertarians; (e) none of these

4. A legal guideline for free expression specifies that speech and action are (a) in the same category; (b) incompatible; (c) distinguished; (d) protected alike; (e) none of these

5. Legal guidelines for application of the First Amendment state that conflicts should be resolved (a) quickly; (b) administratively; (c) in favor of persons asserting the right to express themselves; (d) by least-restrictive means; (e) by the market

6. According to our sources, risks concerning children are raised because (a) adults look for adult sex on the Internet; (b) sexual content is widely available for free on the Internet; (c) the Internet is full of sex; (d) the Internet encourages wanton sex; (e) laws encourage distribution of sexual images on the Internet

7. The U.S. Supreme Court has ____ legislation to outlaw transmitting any “indecent” material on the Internet (a) upheld; (b) modified; (c) rejected; (d) invited; (e) none of these

8. The outcome of legal conflicts over regulation of content on the Internet indicates that (a) children will not see sexual content if they log in to the Internet; (b) parents will want to control what their children see; (c) Congress will regulate content as it sees fit; (d) the Supreme Court will regulate content; (e) none of these

9. Content-blocking software is considered (a) foolproof; (b) reliable; (c) useful for detecting sexual images; (d) unreliable; (e) none of these

10. ACLU recommendations related to libraries include (a) filters to protect children; (b) restricted Internet areas; (c) free speech as the default setting; (d) censorship; (e) content-based regulation of media

2. The global information infrastructure and democracy

1. The global information infrastructure includes (a) personal laptops; (b) software running on cell phones; (c) computer and telecommunications technology; (d) user data stored in the cloud; (e) water and electrical utilities

2. An argument for the position that the global information infrastructure embodies democratic values includes the observation that (a) elections use electronic voting machines; (b) web sites usually present both sides of an issue; (c) information and access to public space are put in the hands of everyone; (d) tech-savvy people are fair minded; (e) election ads appear on the Web

3. The U.S. Supreme Court’s Citizens United decision (a) restricted use of soft money; (b) accorded First Amendment rights to corporations; (c) denied free-speech rights to some businesses; (d) expanded use of donations to candidates; (e) regulated management of elections

4. The democratic aspect of the global information infrastructure derives from (a) processor speed; (b) memory; (c) human connectivity; (d) a global democratization of political institutions; (e) none of these

5. An allegedly undemocratic aspect of the global information infrastructure derives from (a) processor speed; (b) greater concentration of filtering and packaging power; (c) communications technology; (d) a global centralization of political institutions; (e) none of these

6. In election campaigns, restrictions on use of soft money have recently been applied to (a) personal computer use; (b) web-based campaigning; (c) payrolls; (d) email; (e) none of these

7. The global information infrastructure is said to combine (a) market and government; (b) left and right; (c) culture with business; (d) information technology with communications; (e) matter with energy

8. The “power to the many” argument states that democracy (a) is bad; (b) is good; (c) is thwarted by the Internet; (d) is an inherent value of the global information infrastructure; (e) requires participation by everybody in all decisions

9. Net neutrality is a form of (a) antispam action; (b) regulation of Internet content; (c) regulation of telcoms’ policies on Internet content; (d) election-campaign legislation; (e) none of these

10. Requiring telecommunication firms to treat all content on broadband lines alike is (a) spam protection; (b) copyright protection; (c) child protection; (d) the digital divide; (e) net neutrality

3. Unprotected expression

1. An unprotected form of speech is (a) political; (b) economic; (c) religious; (d) repugnant; (e) defamation

2. An unprotected form of speech is (a) political; (b) economic; (c) religious; (d) repugnant; (e) incitement

3. An unprotected form of speech is (a) political; (b) economic; (c) religious; (d) repugnant; (e) spam
4. An unprotected form of speech is (a) political; 
   (b) economic; (c) religious; (d) repugnant; (e) threat
5. Those liable for defamation may include (a) ISPs; 
   (b) readers of defamatory information; (c) owners of 
   computers used to view defamatory information; 
   (d) publishers of defamatory information; 
   (e) passive onlookers
6. Anonymity (a) is disreputable in literary circles; 
   (b) has been successfully outlawed from the Internet; 
   (c) does not protect against consequences of libel; 
   (d) is considered evidence of hostile intent; (e) none of 
   these
7. Spam (a) is considered by the courts to be free speech; 
   (b) cannot be blocked by ISPs; (c) cannot be blocked by 
   law; (d) is regulated by legislation; (e) none of these
8. Pay-to-email is a (a) proposed solution to spam; 
   (b) Internet fraud scheme; (c) way to promote spam; 
   (d) way to reduce email; (e) none of these
9. Challenge-response is a (a) child-protection technology; 
   (b) measure against Internet defamation; (c) proposed 
   solution to spam; (d) technique used in the classroom; 
   (e) none of these
10. Slander is (a) protected by the First Amendment; 
    (b) defamation in writing; (c) oral defamation; 
    (d) advocacy of unpopular views; (e) none of these
11. Libel is (a) protected by the First Amendment; 
    (b) defamation in writing; (c) oral defamation; 
    (d) advocacy of unpopular views; (e) none of these
12. Which is protected by the First Amendment? 
    (a) disgusting adult web sites; (b) cyberbullying; 
    (c) advocacy of violations of the law; (d) promises of 
    physical harm; (e) spam
Topic-4 terminology (Freedom of expression and democracy)

2. spam filtering 6. First Amendment 10. ISP 14. media distributor 20. soft money
3. chilling effect 7. global information 11. least-restrictive 15. net neutrality 21. spam filter

Questions on topic-4 subtopic outcomes

4.1 Explain what freedoms of expression are protected under U.S. and international laws and values (core)

(1-4) Give reasons to support and reject:
1. There should be a law against lying on the Internet.
2. The posting of web sites should be licensed by the government to ensure that content is factually accurate and safe.
3. Information technology creates new threats to children’s welfare that require regulation of Internet content.
4. No government, court, or police restrictions whatsoever of Internet content should occur.

5. Kenneth Starr urges Congress to mandate the Supreme Court to install cameras to record its sessions. Today only 250 observers at a time may view proceedings. Give reasons for expanding or not expanding the public’s right to watch the Court on TV. Why would this proposal, if implemented, have a different effect today than it did in 1980?

6. An article reports that attorneys general of many states have asked Backpage.com not to host “adult services” ads, because some of these ads are used to exploit children via sex trafficking. Give reasons why some persons say new restrictions are required to protect children, and reasons why critics are concerned about possible pressures for censorship of free expression on the Web.

7. An article reports, “The blogosphere has played a central role in mobilizing young Russians. During the parliamentary campaign, Russians using smartphones filmed authority figures cajoling or offering money to subordinates to get out the vote for United Russia [party]. More video went online after Election Day, when many Russians in their 20s camped out in polling stations as amateur observers.” Referring to this case, explain how the Internet is used differently in some ways today than fifteen years ago, to organize political efforts in some countries.

8. An article discusses efforts to support net neutrality. What is net neutrality and what are reasons for regulating or not regulating communications for its sake?

9. Images may be altered by software to create fictional material that appears to be photographic. How may this affect legal discussions about freedom of expression?

10. Describe how the Internet has changed the meaning of the word “publication” and legal implications of this change.

4.2 Describe how IT offers opportunities for and risks to free expression (core)

1. What is the global information infrastructure, and how does it expand or contract the space for freedom of expression?
2. What degree of anonymity does the Internet provide? Relate this to freedom of expression and to protection against defamation.

3. Discuss the questions of the publication on the Web of state documents without authorization, and the use of technology by young people in different parts of the world who seek more voice in choice of their leaders and government policies. Give specifics.

4. What are the main technical and integrity concerns that have been raised about electronic voting?

5. What are two views about the global information infrastructure? What reasoning supported them? What is your view? Is the 1997 article distributed in this course out of date?

6. An article discusses ways that the Internet may be used either by ordinary citizens or by governments to advance their causes. What are some of these ways, and which kind of power do you think is enhanced more by the Internet today? Support your view with specifics.

7. Is limited access to some research materials on the Internet (in contrast to free library access) a problem? Give reasons for and against this view.

8. An article describes ways that Web sites may curb anonymously posted inflammatory comments. Discuss these ways and discuss pros and cons of applying them. Support your view with specifics and acknowledge alternative views to yours.

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3 K. Starr, “Open up high court to cameras”


6 B. Stelter. F.C.C. is set to regulate net access. NY Times, December 21, 2010.


4.3 Discuss limitations on free expression in environments such as the Internet

1. How have developments in information technology raised new issues in relation to “community standards” as a legal measure of what adult material can be disseminated? Comment on the case of a man who was imprisoned for posting a video that falsely implied that children were applauding a song with obscene lyrics\(^\text{11}\).

2. An article\(^\text{12}\) discusses a law that banned the selling of certain video games to children. Give reasons for a rise in legitimate concern about video games and reasons for opposing such legislation. Support your view with specifics.

3. How do defamation legislation and the First Amendment constrain or define the obligations of ISPs as common carriers?

Case analysis

Please refer to the item below that matches your classroom ID.

a. Summarize facts given, defining relevant terms.

b. Give the issues and implications that relate to freedom of expression and the technical developments that generate the social issues.

c. Reference relevant theories of ethics, legal principles, and categories of rights.

d. Define an opinion on the issues involved, supporting it with specific facts and reasoning.

e. Provide facts and reasoning to support the opposite view.

f. Give the source you used, including date and publication info.

Readings

1. An article on IT and freedom of expression found by you or a member of your group.

2. S. Baase, \textit{A Gift of Fire}, 2008, Ch. 3.

3. M. Richtel, “Egypt cuts off most internet and cell service”

4. J. Preston, “While Facebook plays a star role in the revolts, its executives stay offstage”

5. M. Landler, “U.S. policy to address Internet freedom”

6. J. York, “Grasping the new online reality: Associated networking sites link protesters...the U.S. shifts positions on Internet freedom”

7. G. Greenwald, “The NYT spills key military secrets on its front page”

8. \textit{The Nation}, “For digital democracy”

9. D. Bennett, “Time for a muzzle”

10. S. Galantz and S. Markoff. “U.S. underwrites Internet detour around censors”

11. Y. Ryan, “Anonymous and the Arab uprisings”

12. S. Greenhouse, “Labor board restricts union use of email”

13. H. Bray, “Spam blocking makes big gains”

14. J. Saltzman, “Libel ruling a threat, say media groups”

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\(^{11}\) E. Goode, “\textit{Michigan town split on child porn charges}”

Multiple-choice study questions on topic 5: Intellectual property and IT

1. Purpose and limitations
1. Property is presented in this course as (a) sacred; (b) theft; (c) a claim right; (d) a negative right; (e) valuable
2. The social purpose of recognizing intellectual property rights has been (a) to enable maximum profit; (b) to encourage innovation; (c) to discourage sharing; (d) to discover geniuses; (e) none of these
3. Fair use is (a) justice; (b) copying for purposes of comment or research; (c) copying for resale; (d) use of copyrighted data at a fair price; (e) none of these
4. Copyright (a) dates to the 18th century; (b) is primarily for the purpose of suppressing competition; (c) dates to the start of the Internet; (d) prohibits all copying; (e) none of these
5. Intellectual artifacts (a) dissipate over time; (b) can be used by an unlimited number of persons; (c) are entirely due to their creators, rather than to previous work; (d) have no value; (e) none of these
6. Intellectual property rights are widely considered to derive in part from (a) divine sanction; (b) royal decree; (c) labor invested in creation; (d) public approval; (e) none of these
7. Copyright protects (a) ideas; (b) profits; (c) expression of ideas; (d) inexperience; (e) none of these
8. Derivative works are regulated by (a) patent; (b) trademarks; (c) trade secrets; (d) copyright; (e) copy protection
9. After a legislated period, copyrighted works enter (a) a waiting period; (b) a fair-use zone; (c) the public domain; (d) litigation; (e) none of these
10. Copying a video for later personal viewing is (a) a felony; (b) a misdemeanor; (c) a civil offense; (d) fair use; (e) net neutral
11. One limitation on intellectual property is (a) fair use; (b) universal acclaim; (c) reasonable doubt; (d) due diligence; (e) none of these
12. Copyright infringement (a) is a civil offense at most; (b) is always a criminal offense; (c) has been in some forms a criminal offense since the 18th century; (d) has recently been criminalized in some forms; (e) no longer occurs
13. Plagiarism (a) violates academic integrity but is not illegal; (b) usually brings a lawsuit; (c) is a criminal offense; (d) is subject to FBI investigation; (e) is encouraged by universities

2. Issues raised by IT
1. Legal intellectual-property rights have been (a) reduced; (b) expanded; (c) rejected by the courts; (d) abandoned by industry; (e) none of these
2. Homologization of information means that (a) all people have the same culture; (b) all computers work the same way; (c) all information is stored as bits; (d) all information is free to all people; (e) none of these
3. Before IT (a) it was almost as hard to copy a book as to write one; (b) only publishers could publish books; (c) only writers could write books; (d) sharing information was easier; (e) data was more malleable
4. Electronic publishing (a) increases costs; (b) increases risk; (c) decreases costs without effect on risk; (d) decreases costs and risk; (e) is illegal
5. A technical factor in raising intellectual-property issues is (a) cost of paper; (b) ease of copying; (c) high cost of computers; (d) relaxed morals; (e) TV culture
6. Electronic publishing (a) reduces costs; (b) increases financial risks; (c) increases costs; (d) resolves intellectual-property issues; (e) is illegal
7. IT raises intellectual-property issues because (a) we live in a mass culture; (b) people are greedy; (c) people are generous; (d) copying is easier; (e) we live in an industrial society
8. IT raises intellectual-property issues because (a) we live in a mass culture; (b) people are greedy; (c) people are generous; (d) malleability of information facilitates creation of derivative works; (e) we live in an industrial society
9. IT raises intellectual-property issues because (a) we live in a mass culture; (b) people are greedy; (c) people are generous; (d) communication is cheaper; (e) we live in an industrial society
10. IT raises intellectual-property issues because (a) we live in a mass culture; (b) people are greedy; (c) people are generous; (d) the medium is a tiny part of cost of production; (e) we live in an industrial society
11. Malleability of information enables (a) cheap communication; (b) cheap copying; (c) cheap media; (d) creation of derivative works; (e) none of these
12. Derivative works (a) are made more difficult by IT; (b) are made easier by IT; (c) are a financial product; (d) are prohibited; (e) none of these
13. Derivative works (a) are made more difficult by IT; (b) are covered by copyright laws; (c) are a financial product; (d) are prohibited; (e) none of these
14. File sharing with copyright implications first became widespread with (a) the personal computer; (b) CDROMs; (c) the MP3 file format; (d) email attachments; (e) Limewire
15. The music industry has faced significant difficulty with (a) iTunes; (b) peer-to-peer file sharing; (c) music sent as email; (d) the Congress; (e) none of these

3. Software as intellectual property
1. Software patents could be valid if software were viewed as (a) writing; (b) art; (c) invention; (d) ideas; (e) none of these
2. Software (a) is not copyrighted; (b) is copyrightable; (c) is only seen as ideas; (d) can only be protected by patent; (e) none of these
3. Software and electronic data are (a) sold, so that the customer has full decision power over the product (b) licensed, so that the customer agrees to restrictions on use; (c) always available for unrestricted legal copying; (d) always copyrighted by the distributor; (e) none of the above
4. The term “free software” means (a) software to borrow; (b) unlicensed software; (c) licensed software with permission to copy freely; (d) low-cost software; (e) copyright violation
4. Technical and legal solutions

1. One significant entertainment-industry measure to protect intellectual property rights has been (a) midnight raids; (b) declarations of war; (c) hardware copy protection; (d) withholding songs; (e) encryption

2. Devices that circumvent copy protection (a) are subject to lawsuit; (b) are protected by the courts as free speech; (c) are industry sanctioned; (d) are built into play-record devices; (e) none of these

3. DVD players were introduced (a) in a rapid way; (b) delayed by recording industry efforts; (c) in such a way as to encourage free copying; (d) in the 1970s; (e) none of these

4. Digital Rights Management allows (a) universal copying; (b) restricted use; (c) no use; (d) lawsuits; (e) criminal prosecution

5. Content scrambling (a) is a form of message encryption; (b) restricts DVD playing to special players; (c) controls Internet communication; (d) is a surveillance technique; (e) is a form of hacking

6. The No Electronic Theft act (a) reduced term of copyright ownership; (b) imposed copyright protection; (c) increased civil penalties for copyright violation; (d) criminalized circumvention of copyright protection; (e) criminalized copyright infringement

7. Recording a copyrighted film in a theater may be (a) done by YouTube; (b) a civil offense; (c) a criminal offense; (d) considered a friendly act; (e) none of these

8. Safe harbor is associated with (a) takedown notices about copyrighted material; (b) software piracy; (c) patenting software; (d) criminal profiteering; (e) none of these
Topic-5 terminology (Intellectual property)

1. civil law
2. Content Scramble System
3. copy protection
4. copyright
5. criminal law
6. derivative work
7. Digital Millennium Copyright Act
8. digital rights management
9. fair use
10. file sharing
11. free software
12. intellectual artifact
13. intellectual property
14. labor theory of property
15. look and feel
16. malleability of information
17. MP3
18. No Electronic Theft Act
19. open-source software
20. patent
21. peer-to-peer file sharing
22. personality theory of property
23. public domain
24. reverse engineering
25. safe harbor
26. software patent
27. takedown notice
28. trade secret
29. trademark

Questions on topic-5 subtopic outcomes

5.1 Explain intellectual-property law and its motivations and exceptions (core)

(1-4) Give reasons to support and to refute:

1. Criminal law, rather than civil law, should be used to enforce intellectual property rights when violated on the Internet.
2. Unauthorized software copying for personal use should be subject to civil rather than criminal law.
3. Rights of attribution (author recognition) and integrity (non-alteration) are more important than other intellectual property rights. How does IT raise this question?
4. Electronic publishing should have less copyright law enforcement (penalties, etc.) than print publishing. (Compare to the views favoring same protection; favoring more protection.)
5. What does copyright law say? What are exceptions?
6. Should unauthorized software copying for personal use be subject to civil law, criminal law, or no law enforcement? Provide reasons to support the view you express and an alternative view.
7. An article describes mutual lawsuits by Apple and Samsung over patent infringement. Describe the issues of these lawsuits and give your opinion of the intellectual-property issues involved, and give technically-related reasons why these issues have arisen at this time in court.
8. An article describes how copyright law originated centuries ago, supporting the principle that playwrights and others should be able to gain financial support for their work by limiting access to it and collecting compensation from consumers. How does this article connect this history with information technology and issues under discussion today in our society? How do you respond to its point of view? What are alternative views?
9. Describe the safe-harbor concept, giving pros and cons.
10. Give reasons why free sharing of data and media should be discouraged and encouraged.
11. Give some ways that unauthorized digital copying and sharing is like, and unlike, robbing a bank.
12. Should authors gain more rights to authorize republication of works? (Defend or refute.)
13. What are the social motivations for copyright law?
14. Explain why one person should have exclusive rights over something that everyone could possess and use at the same time.
15. An article describes government seizure of a web site and a criminal complaint based on the claim that linking a website to copyrighted material is a crime. Describe the authorities’ point of view and criticisms of it, giving their reasoning. Provide rationales for these viewpoints, based on course material.
16. Which theory of ethics is reflected in the following argument, and why? “No one may download copyrighted videos or songs without permission, because it is stealing, and stealing is wrong.”
17. Which theory of ethics is reflected in the following argument, and why? “It is OK to share copyrighted music with a friend, because the more people who enjoy the music, the better.”
18. Discuss the ethical and legal arguments relevant to the following: “This cookie that we’re marketing is so good that we will only license one for ten dollars, on the condition that you don’t share it. If you share it with friends, then you will be stealing from us the money that your friend would certainly have paid us for cookies of their own. We will sue you.”

5.2 Explain how intellectual property rights are challenged by information technology (core)

1. What are some changes in information technology that have raised concerns about intellectual property? Explain.
2. What new issues are raised in the area of intellectual property by technical changes in the way information is generated, communicated, and processed in the information revolution?
3. An article describes the economic importance of proprietary software in Europe. Summarize the facts and describe the issues.
4. An article states that “a disconnect that is growing” between students and professors about plagiarism. Describe what you find in this article and agree or disagree with concerns expressed in it.

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14 S. Turow et al. Would the Bard have survived the Web?
15 D. Edwards. “New York man faces five years in jail for ‘linking’ to online videos”
16 L. Brooke, “Computer code an increasingly precious E. U. commodity”
17 T. Gabriel. “Plagiarism lines blur for students in digital age”
5. An article asserts, “The war for humanity’s future is primarily a war for control of the use and exchange of information.” Give reasons to agree and reasons to disagree with this claim, referring to the article’s discussion of intellectual-property issues.

6. Give IT-related reasons for stricter or looser enforcement of copyright today, consistent with the concern that maximum information sharing occur.

7. An article describes controversy in 2012 over anti-piracy legislation. Summarize the points of view and offer yours.

8. An article describes efforts by the Electronic Frontier Foundation to challenge some legal actions taken in the name of enforcement of copyright. Summarize this.

9. Is pinch-to-zoom on mobile phones more like the use of the standard round steering wheel in all cars, or more like the invention of the wheel? Relate this to the Apple-Samsung lawsuit.

5.3 Discuss the ways in which software is protected as intellectual property

1. Describe the terms under which software vendors provide their products.

2. The April, 2011, article, “Samsung countersues Apple on Iphone and Ipod patents,” describes mutual lawsuits by Apple and Samsung over patent infringement. Describe the issues of these lawsuits; give an opinion of the issues involved; and give technically-related reasons why these issues have arisen at this time in court.

3. An article describes the Android operating system as an open-source program, in contrast to IPhone’s proprietary system. Distinguish these terms and explain how the article raises for discussion matters of intellectual property and free flow of information because of technological changes it discusses.

5.4 Explain proposed and actual solutions to issues of intellectual property in the information society

1. What are ways in which some musicians and other artists can survive or thrive financially while allowing free copying of their work?

2. Describe the free-software position and give arguments for and against it.

3. Suggest ways for our society to support artistic creation without restricting the copying of data.

Case analysis
Please refer to the item below that matches your classroom ID.

a. Summarize facts given, defining relevant terms.

b. Give the issues and implications that relate to freedom of expression and the technical developments that generate the social issues.

C. Reference relevant theories of ethics, legal principles, and categories of rights.

d. Define an opinion on the issues involved, supporting it with specific facts and reasoning.

e. Provide facts and reasoning to support the opposite view.

f. Give the source you used, including date and publication info.

Readings


2. D. Carr. The danger of an attack on piracy online. NY Times, 1/2/12.

3. S. Baase, a Ch. 4 question of your choice

4. Protest on web takes on pending antipiracy bills, NY Times, 1/12

5. B. Sisario, “Piracy fight shuts down music blogs”

6. B. Stelter, “Comcast fee ignites fight over videos on Internet”

7. An article found by a member of your group

8. B. Stelter, “New time warp for ‘Doctor Who’”


10. R. Stallman, “Why software should not have owners”

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19 The internet: The war over pirated music, movies, and books. The Week, 2/3/12.

20 G. Sandoval, “EFF’s Cohn fights copyright’s ‘underbelly’ (Q&A)”

Multiple-choice study questions on topic 6:
Work, education, and culture

1. Economic and work-related effects of IT

1. The IT revolution produces “job churn” in that (a) each job changes greatly; (b) jobs are gained; (c) jobs are lost; (d) some jobs disappear and others are created; (e) none of these

2. The introduction of technology is associated with economic (a) growth; (b) contraction; (c) crisis; (d) stagnation; (e) none of these

3. IT fosters ___ in the labor force (a) poverty; (b) prosperity; (c) investment; (d) flexibility; (e) none of these

4. The transition to an informational society has been accompanied by (a) wealth for all; (b) poverty for all; (c) deterioration of living conditions for many; (d) universal happiness; (e) none of these

5. IT enables changes that reduce labor costs to counter the (a) greed of a few; (b) laziness of all; (c) profit crunch; (d) glut of qualified technicians; (e) none of these

6. In the informational economy, knowledge generation and ___ explain productivity and growth (a) high CEO salaries; (b) everyone doing what they’re told; (c) mass production; (d) communication; (e) low wages

7. In the informational economy, activity shifts from goods to (a) profits; (b) services; (c) labor; (d) management; (e) none of these

8. It is hard to distinguish ___ from services in an informational economy (a) goods; (b) labor; (c) management; (d) information; (e) profits

9. In the informational economy, capital is more ___ than labor (a) productive; (b) profitable; (c) mobile; (d) useful; (e) oppressed

10. Small businesses have access to the ___ market via the Web (a) food; (b) black; (c) hidden; (d) local; (e) global

11. Computer-supported narrowing of a business’s focus may result in (a) reducing the sizes of many companies; (b) expanding the markets of many companies; (c) increasing the sizes of many companies; (d) increasing the number of management layers; (e) none of these

12. IT-related factors fostering high performance in work do not include greater (a) skill level; (b) assembly-line speed; (c) teamwork; (d) worker autonomy and feedback; (e) any of these

13. An exception to restrictions on employer surveillance of workplaces is (a) nonexistent; (b) universal; (c) if the monitoring is in the ordinary course of business; (d) if the surveillance is announced when it occurs; (e) none of these

2. IT in education

1. Technology in education is said to decrease (a) interaction; (b) collaboration; (c) active learning; (d) delay time for instructor feedback; (e) engagement

2. An example of a course management system is (a) Facebook; (b) Blackboard; (c) YouTube; (d) Merlot; (e) Web 2.0

3. The concept of active learning pictures learning as (a) physical; (b) energetic; (c) fast; (d) interactive; (e) none of these

4. In collaborative education, students (a) do all assignments together; (b) take tests in groups; (c) reinforce their own learning by supporting each other’s learning; (d) are not graded; (e) have more than one teacher per classroom

5. The definition of learning presented in this course is (a) listening to a teacher; (b) reading a textbook; (c) remembering facts; (d) constructing knowledge; (e) mastering and conquering a topic

3. Effects on culture

1. Computer-mediated communication networks tend to be (a) slow; (b) centralized; (c) decentralized; (d) dominated by broadcast; (e) none of these

2. Mass culture resulted from (a) control of broadcast media by governments and large firms; (b) mass participation in creating culture; (c) Web 2.0; (d) user involvement; (e) none of these
Questions on topic-6 subtopic outcomes

6.1 Explain how changes in IT affect work life (core)

1. What particular changes has IT made in work life?
2. What effects have digital technologies had on the labor force?
3. An article describes a possible trend toward increased use of videoconferencing to replace business travel. Do you see this trend going far? What technology changes have produced it and will determine its progress? What secondary changes in work life are implied?
4. Give reasons why IT has individualized work life and why it has improved possibilities for collaboration.
5. What is job churn and what does it say about whether IT has the effect of putting people out of work?
6. Discuss the two-tiered labor force that is said to be emerging, and relate it to the information revolution.
7. What changes have occurred in the global relationship between employers and workers, due to IT?

6.2 Discuss educational issues raised by use of IT

1. The article, “Liberal arts colleges venture into unlikely territory: online courses,” reports a discussion in which a professor comments and a researcher replies. Describe this discussion of the relation between online learning and student-faculty interaction, giving reasons that support each.
2. An article describes a free online course in artificial intelligence, offered by Stanford University. One of the instructors names quality-control problems but predicts that if they are solved, “it will disrupt all of higher education.” Another educator is quoted as emphasizing the importance of a physical campus. Give arguments for both viewpoints. What changes have enabled this new development in higher education?
3. Describe at least two opinions offered in the article, “Tuition lost on the techno-dependent” and give counter arguments. Also, refer to changes in technology that have raised the issue for discussion.

6.3 Discuss ways in which IT influences cultural life

1. An article describes differences between how people consume online video and television, quotes an observation by Marshall McLuhan, and critiques the White House’s management of the President’s video image. Discuss these aspects of the article and describe effects on our culture of changes in IT.
2. An article describes ways use of technology enables flirting with strangers and ways it increases the chance of disclosure of this behavior. Describe these two effects and their technological origins. Can you predict the future of IT-enabled flirting?

26 New York Times, 1/6/12.
27 J. Anderson. Students of schools on Internet are lagging. NY Times, 1/6/12.
28 M. Richitel. Silicon Valley wows educators, and woos them. NY Times, 11/5/11.
29 V. Heffernan, “Keep your medium in mind” (July, 2011)
30 T. Parker-Pope: “Digital flirting: Easy to do, and easy to get caught” (June, 2011)
3. An article\textsuperscript{31} reports that the engine sound heard from within a 2013 BMW M5 is a digital recording. Please comment on what this indicates about the role of technology in our culture.

4. An article\textsuperscript{32} reports that 30% of teens who were on the Internet regularly had shared a password with a friend or sweetheart. What kinds of password sharing are acceptable ways to show trust and intimacy?

5. What is real virtuality? (See handout chapter by M. Castells)

**Case analysis**

Please refer to the item below that matches your classroom ID.

a. Give the issues and implications that relate to freedom of expression and the technical developments that generate the social issues.

b. Reference relevant theories of ethics, legal principles, and categories of rights.

c. Define an opinion on the issues involved, supporting it with specific facts and reasoning.

d. Provide facts and reasoning to support the opposite view.

e. Give the source you used, including date and publication info.

**Readings**

1. S. Rosenbloom, For the plugged-in, too many choices, *NY Times*.


3. P. Pirolli, “Cyber infrastructure for social action on national priorities”


5. S. Baase, a Ch.-6 question of your choice

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\textsuperscript{31} S. Schmemann, Warning: The next sound you hear will not be your engine. *New York Times*, 1/26/12.

\textsuperscript{32} Young people who share all, including passwords. *NY Times*, 1/18/12.
Multiple-choice study questions on topic 7: Risks, control, and evaluation of IT

1. Humans and IT

1. IT is distinguished from other new technologies in that (a) their software is built from mass-produced components; (b) the pace of change is slow; (c) they are expensive; (d) computers make decisions; (e) none of these

2. Software is unlike mass production in that it is built largely (a) domestically; (b) abroad; (c) from custom components; (d) by geniuses; (e) without planning

3. A special feature of computers that raises risks is that they (a) perform numeric operations; (b) perform operations with words; (c) are becoming faster; (d) make decisions; (e) none of these

4. A special feature of computers that raises risks is that they (a) perform numeric operations; (b) perform operations with words; (c) are becoming faster; (d) run software built from custom components; (e) none of these

5. A special feature of computers that raises risks is that they (a) perform numeric operations; (b) perform operations with words; (c) are becoming faster; (d) change rapidly; (e) none of these

6. Universal access to the Internet is seen by some as a (a) liberty; (b) claim right; (c) utopian idea; (d) present reality; (e) violation of the right to be different

7. In considering advantages and disadvantages of use of information technology, the textbook’s approach is to call attention to (a) advantages; (b) disadvantages; (c) small risks; (d) trade-offs; (e) none of these

8. The “digital divide” refers to the fact that (a) some people lack access to IT; (b) IT divides countries; (c) the Internet is fragmented; (d) some people misuse the Internet; (e) computers perform arithmetic operations well

9. The fact that some people lack access to information technology raises the issue of (a) the “digital divide”; (b) digital starvation; (c) illiteracy; (d) low market demand; (e) none of these

10. The “digital divide” refers to (a) a computation; (b) a category of people who lack access to IT; (c) a cultural separation between IT professionals and others; (d) the competition between Apple and Microsoft; (e) none of these

11. Lack of access to IT is known as the (a) lost generation; (b) exclusion problem; (c) digital divide; (d) universal access problem; (e) none of these

12. A factor that is said to increase risks is (a) human judgment is inferior to computer-generated results; (b) temptation to rely excessively on computer-generated results; (c) software results are no better than the knowledge of the software engineers that wrote the software; (d) more data means lower-quality data; (e) humans can only handle so much information

13. A model (a) generates complexity; (b) analyzes; (c) simplifies; (d) synthesizes; (e) none of these

14. A ___ simplifies by removing inessentials and is based on assumptions (a) design; (b) model; (c) program; (d) web site; (e) none of these

15. The inherent value of a model is limited by (a) the skill of whoever uses it; (b) the state of the marketplace; (c) the credentials of whoever creates it; (d) the accuracy of data used to create the model; (e) none of these

16. Reference materials created by volunteer wiki methods raise the issue of (a) unemployment; (b) banning wiki sources; (c) the need to exercise judgment about sources; (d) excessive quantities of reference materials; (e) Internet addiction

2. System and software failure

1. A significant factor in system failure is (a) hardware unreliability; (b) small errors may have huge effects; (c) major errors are frequent; (d) operator errors; (e) many systems are never tested at all

2. A significant factor in system failure is (a) hardware unreliability; (b) upgrades introduce risk; (c) major errors are frequent; (d) operator errors; (e) many systems are never tested at all

3. A significant factor in system failure is (a) hardware unreliability; (b) weak error detection policies; (c) major errors are frequent; (d) operator errors; (e) many systems are never tested at all

4. Electronic voting systems are said to be subject to the risk of (a) court interference; (b) easy hacking; (c) insufficient testing; (d) bribes; (e) hardware unreliability

5. Electronic voting systems are said to be subject to the risk of (a) court interference; (b) easy hacking; (c) secrecy of proprietary software; (d) bribes; (e) hardware unreliability

6. Many IT projects have been abandoned due to (a) unreasonable requirements; (b) poor and changing requirements; (c) lack of knowledge of programming languages; (d) low processor speed; (e) unavailability of sufficient storage

7. System developers’ responsibilities (a) include good testing practices; (b) include meeting all requirements precisely; (c) end upon shipping a product; (d) include correcting all faults at no cost; (e) none of these

8. Well-designed systems (a) have been tested for all possible inputs; (b) include redundancy and self checking; (c) do not require further testing; (d) do not exist yet; (e) none of these

3. Ethics of IT professionals

1. Ethical responsibilities of IT professionals include (a) concern for persons other than clients; (b) minimizing cost; (c) maximizing profit; (d) minimizing testing; (e) maximizing testing

2. Ethical responsibilities of IT professionals include (a) safety; (b) minimizing cost; (c) maximizing profit; (d) minimizing testing; (e) maximizing testing

3. Ethical responsibilities of IT professionals include (a) honesty; (b) minimizing cost; (c) maximizing profit; (d) minimizing testing; (e) maximizing testing
4. Ethical responsibilities of IT professionals include (a) privacy; (b) minimizing cost; (c) maximizing profit; (d) minimizing testing; (e) maximizing testing

5. Ethical responsibilities of IT professionals include (a) limiting risks; (b) minimizing cost; (c) maximizing profit; (d) minimizing testing; (e) maximizing testing

6. IT professionals have responsibilities to (a) clients only; (b) employers only; (c) coworkers only; (d) clients, employers, coworkers, and others; (e) clients and employers only

7. Considering safety of a particular IT system is an ethical concern of (a) the government; (b) supervisors of IT professionals only; (c) system developers and others; (d) the people affected; (e) none of these

8. Giving a customer a discount on service in exchange for endorsing a product raises concerns of (a) cost-benefit analysis; (b) business policy; (c) legality; (d) ethics; (e) none of these

4. **Future prospects of IT**

1. *Strong AI* is (a) the ability of a machine to defeat a human at chess; (b) the ability of a machine to defeat a human at Jeopardy; (c) the view that a computer may have intelligence; (d) the view that a computer may simulate intelligence; (e) none of these

2. *Weak AI* is (a) pre-1980 research; (b) the claim that machines can play games; (c) the claim that machines can simulate intelligence; (d) the claim that machines can be intelligent; (e) none of these

3. *Strong AI* is (a) post-2000 research; (b) the claim that machines can play games; (c) the claim that machines can simulate intelligence; (d) the claim that machines can be intelligent; (e) none of these

4. The Chinese Room argument asserted that (a) a system of symbols written on paper can’t have understanding; (b) a machine can’t have the experience of thinking; (c) Gödel’s theorem proves machines have limited capacity; (d) machines don’t reference actual things in the world; (e) none of these

5. The argument against strong AI based on *phenomenology* asserted that (a) a system of symbols written on paper can’t have understanding; (b) a machine can’t have the experience of thinking; (c) Gödel’s theorem proves machines have limited capacity; (d) machines don’t reference actual things in the world; (e) none of these

6. The argument against strong AI based on intentionality asserted that (a) a system of symbols written on paper can’t have understanding; (b) a machine can’t have the experience of thinking; (c) Gödel’s theorem proves machines have limited capacity; (d) machines don’t reference actual things in the world; (e) none of these

7. The argument against strong AI that states that machines can’t have the experience of thinking is based on (a) utilitarianism; (b) ontology; (c) ethics; (d) phenomenology; (e) epistemology

8. Technological singularity occurs when intelligent machines (a) understand humans; (b) rebel against humans; (c) invent intelligent machines; (d) have civil rights; (e) are simpler and simpler

9. Phenomenology is the study of (a) thinking; (b) knowledge; (c) experience; (d) ethics; (e) reasoning

10. Intentionality (in philosophy) is (a) desire; (b) planning; (c) thought; (d) knowledge; (e) reference to things in the real world
7.1 Describe problems of human interaction with IT

7.2 Explain risks of failure of IT systems (core)

7.3 Describe ethical responsibilities of IT professionals

7.4 Discuss future prospects for information technology

Discuss the following IT scenarios from an ethical standpoint. What policy constraints would you recommend and why? (See textbook for more detailed descriptions.)

5. A clinic for families with problems with violence wants its staffers to have laptops for home visits – issue is client privacy protection via security steps

6. Designing an email system with targeted ads – issue is storage of customer data related to ads and responses to them

7. Implementing a system design where demographic data is missing from input – ethical issue is related to following system specs

8. Testing of a safety-critical central application under deadline pressures to ship – should delivery be delayed?

9. Copyright violations by installing more copies than licensed

10. Requests to sell confidential information

11. Conflict of interest – stakeholders should be informed

12. Kickbacks – recommendations are expected to be honest opinions, not paid for

13. Use of expert system for judicial sentencing

14. model
15. professional ethics
16. risks in system development
17. safety-critical application
18. software engineering
19. system development
20. system failure
21. system specification
22. system testing practice
23. technological singularity

1. What are some risks related to IT discussed in this topic?

2. Compare the alleged addictive roles of certain kinds of computer use with another form of addiction.


4. Discuss some reasons for system failures.

5. What are some of the main ethical guidelines for IT professionals discussed in class and in the readings?

6. Give reasons why it could be ethical or unethical for professors to grade essay questions by running assignments through computer programs. Give arguments for both sides.

An article reports that a demonstration of a chess-playing program “foretells profound sociological and economic changes” and raises the task of “rethinking what it means to be human.” What was the demonstration and what changes are foretold? Do you agree with the predictions reported and the concerns about IT and the meaning of being human?

7. Is it possible that computers will be smarter than humans soon?

8. Is playing the game “Jeopardy” well the height of human intellectual achievement?

Case analysis

Please refer to the item below under “Readings” that matches your classroom ID.

a. Give the social or ethical issues and implications that relate to freedom of expression and the technical developments that generate the social issues.

b. Reference relevant theories of ethics, legal principles, and categories of rights.

c. Define an opinion on the issues involved, supporting it with specific facts and reasoning.

d. Provide facts and reasoning to support the opposite view.

e. Give the source you used, including date and publication info.

Readings

1. A problem in Baase, pp. 394-398


3. A problem in Baase, pp. 446-449

4. T. Wallack. ’Glitch’ disrupts Citizens Bank (10/11)


6. M. Freudenheim, Panel set to study safety of electronic patient data

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33 J. Markoff, A fight to win the future: computers vs. humans (February, 2011)

Multiple-choice study questions on topic 8: Network structures and the information society

1. The network enterprise
1. In the network enterprise, mass production ________
   (a) is more important than; (b) is less important than; (c) is converted to; (d) replaces; (e) none of these
2. The network enterprise reflects a crisis of
   (a) hierarchical management; (b) horizontal structures; (c) interdepartmental work teams; (d) E business; (e) none of these
3. The network enterprise reflects the emergence of
   (a) vertical integration; (b) non-hierarchical management structures; (c) top-down management; (d) profit-driven management; (e) mass production
4. The network enterprise is (a) management-centric; (b) customer-satisfaction-driven; (c) more stable than predecessors; (d) more hierarchical than predecessors; (e) none of these
5. IT in the network enterprise (a) increases the number of layers of management; (b) eliminates layers of management; (c) gives lower management less say; (d) restricts workers to local collaboration; (e) none of these
6. An organization is (a) any set of people interacting; (b) any system; (c) any set of people with common objectives; (d) any human-based system structured around specific goals; (e) none of these
7. Business systems have especially tended to be based on networks in (a) Eastern Europe; (b) Western Europe; (c) the Americas; (d) East Asia; (e) South Asia
8. According to materials used in this course, for the first time the basic unit of organization in the economy is not a class or a corporation but (a) IT; (b) governments; (c) nonprofits; (d) networks; (e) none of these
9. Network structures shift (a) profit rates; (b) power relationships; (c) the relative importance of profit; (d) cultural values; (e) governmental policies

2. Changes in space and time concepts
1. The networked society is said to feature a space of (a) time; (b) distance; (c) flows; (d) salesmanship; (e) emptiness
2. In the space of flows, a system becomes (a) fragmented; (b) smaller; (c) larger; (d) globally interconnected; (e) diffuse
3. Flows are (a) transactions; (b) decisions; (c) exchanges; (d) repeated interaction sequences; (e) none of these
4. The network society is said to change the experience of
   (a) being paid; (b) showing up for work; (c) time; (d) music; (e) none of these
5. A basic feature of any social structure is (a) email; (b) Facebook; (c) web browsing; (d) flows of messages or images; (e) none of these

3. Decentralized structures and processes
1. The informational economy introduces an era of
   (a) education; (b) interesting work; (c) centralization; (d) decentralization; (e) hierarchy
2. The need for middle managers may fall because IT enables
   (a) more information to go directly to workers; (b) a more hierarchical structure; (c) a more autocratic structure; (d) workers to hire and fire managers; (e) none of these
3. IT may enable management to become (a) obsolete; (b) bloated; (c) decentralized; (d) jobless; (e) none of these
4. The model of the mind as a set of flows of impulses among neurons is (a) hierarchical; (b) mechanical; (c) chemical; (d) decentralized; (e) centralized
5. The Internet is (a) hierarchical; (b) stable in content; (c) decentralized; (d) centralized; (e) none of these
6. An example of a decentralized structure is (a) a military unit; (b) hierarchy; (c) network; (d) patriarchal family; (e) none of these
Topic-8 terminology (Network structures)

1. customer-centric enterprise  5. hierarchical structure  9. mass customization  13. total quality control
2. decentralization  6. horizontal structure  10. network enterprise  14. vertical structure
3. decentralized management  7. just-in-time delivery  11. network society
4. flat management hierarchy  8. liberalization of trade

Questions on topic-8 subtopic outcomes

8.1 Explain the role of the network enterprise in the globalized economy

1. How have the course materials explained the rise of the Internet? Give reasons to support this view and reasons to disagree.
2. What are the social results and the IT factors in the “society of flows”? 3. How have Windows and HTML enabled globalization?
4. Speculate on why the statist economics of the Soviet Union and Eastern Europe collapsed, relating this to structures and to technology factors.
5. Relate the rise of Facebook to the idea of a “network economy,” making both appropriate connections and necessary distinctions.

8.2 Describe how the network society is said to operate through information flows

1. In what way is society built around flows, and how are these flows changing today?

8.3 Explain how IT is said to enable decentralized structures (core)

2. A 2010 article refers to how MoveOn.org and the Tea Party sprang up in decentralized ways. An October 2011 Salon article explains that the use of technologies by young people in Tunisia and Egypt inspired initiators of the Occupy Wall Street effort. A February, 2011 article, “Arabs are democracy’s new pioneers,” refers to a decade of movements around the world organized by “a horizontal network that has no single, central leader.” What relation do these instances have to the notion of hierarchy? What technologies have enabled them? Do you predict an increase in this trend around the world and in the U.S? Why or why not?
3. Describe the network enterprise and relate to IT and globalization.
4. How have corporate organizational forms changed as a result of IT?
5. According to our sources, how do networks restructure society?
6. Explain how IT fosters decentralized structures in the economy and in society.
7. Explain how a “new organizational logic” is said to result from the use of IT.
9. Comment on the claim that, with the rise of the global informational society, some hierarchical structures are tending to be replaced by network structures.
10. Comment on the assertion that mass production is tending to change into mass customization and flexible production.

Case analysis

Please refer to the item below under “Readings” that matches your classroom ID.

a. Summarize facts given, defining relevant terms.
b. Give the issues and implications that relate to this topic and the technical developments that generate the social issues.
c. Reference relevant theories of ethics, legal principles, and categories of rights.
d. Give your opinion on the issues involved, supporting it with specific facts and reasoning.
e. Give counter arguments and provide supporting facts and logic.
f. Give the source you used, including date and publication info.

Readings

5. An article on decentralization found by a member of your group
Multi-topic study questions

1. Please refer to the case (article) that accompanies your copy of this exam.
   a. Summarize the facts of the case, giving specifics and relating your case to the material in one or more of the eight topics of the course.
   b. Define the relevant terms and reference relevant theories of ethics, legal principles, and categories of rights.
   c. State the social or legal issues and implications and giving the technical developments that give rise to the social issues.
   d. Give an opinion on the issues involved, supporting it with specific facts and reasoning.
   e. Give actual or possible counter arguments and refer to facts and logic supporting them.
   f. Acknowledge sources you have used, including the article you are assigned.

2. Refer to D. Streitfeld, “Teacher knows if you’ve done the e-reading.” Describe the technology discussed in this article and comment on the issues of privacy, education, and hierarchy raised by it.

3. Describe two technical developments in IT and how they have raised social issues for public debate.

4. Two ethical theories were discussed in this course. Define them and apply them to current issues raised by changes in IT in two or three of the seven topic areas discussed in class.

5. Distinguish liberties from claim rights, giving examples related to IT in areas such as privacy, security, freedom of expression, and intellectual property.

6. What new issues are raised in the areas of privacy, security, freedom of expression, and intellectual property by technical changes in the way information is generated, communicated, and processed in the information revolution?

7. Describe what technical and legal assurances you would like to be in place to protect your computer’s security, your personal privacy, intellectual property that you create, and your right to share information with friends.

8. Please briefly review your experience with the group work, giving advantages, disadvantages, and suggestions for improving how it is done.

9. Comment on the claim that the global information infrastructure, globalization, or informationalism are value-neutral. Define the relevant terms.