

CLEP® Information Systems and Computer Applications: At a Glance

Description of the Examination

The CLEP® Information Systems and Computer Applications examination covers material that is usually taught in an introductory college-level business information systems course. Questions test knowledge, terminology, and basic concepts about information systems as well as the application of that knowledge. The examination does not emphasize the details of hardware design and language-specific programming techniques. References to applications such as word processing or spreadsheets do not require knowledge of a specific product. The focus is on concepts and techniques applicable to a variety of products and environments. Knowledge of arithmetic and mathematics equivalent to that of a student who has successfully completed a traditional first-year high school algebra course is assumed.

The examination contains approximately 100 questions to be answered in 90 minutes. Some of these are pretest questions and will not be scored.

Knowledge and Skills Required

Questions on the CLEP Information Systems and Computer Applications examination require candidates to demonstrate knowledge of the following content. The percentages next to each main topic indicate the approximate percentage of exam questions on that topic.

25% Information Systems and Office Application Software in Organizations

- Standard office suite tools (word processors, spreadsheets, presentation packages, end-user database packages)
- Basic user functions of a desktop operating system
- Office systems (electronic mail, conferencing, cooperative work environments)
- Web browsers
- Internet and other online services and methods (World Wide Web, FTP, Web search engines, Web bots)
- Specialized systems (statistical analysis, expert systems, DSS, GIS, BI)
- Electronic Data Interchange
- Enterprise-wide systems (ERP, CRM, SCM)

20% Hardware and Systems Technology

- Devices for processing, storage, input and output, telecommunications, and networking
- Functions performed by computer, telecommunications and network hardware

- Digital representation of data for storage and processing (numeric, text, images, audio, video)
- Concepts of local, wide-area and enterprise network architectures
- Concept of mainframe versus client/server architectures
- Operating system and network operating system functions and architectures
- Wireless computing/communication devices (cellular, satellite devices, PDA, GPS)

15% Information Systems Software Development

- Software development methods and tools
- Systems development life cycle concepts
- Project management functions and roles
- Types of information processing methods (batch, real-time, transaction)
- User interface design
- Development and purpose of standards

25% Programming Concepts and Data Management

- Programming language syntax and structures (pseudocode)
- Programming logic
- Object-oriented methods
- Data concepts, types and structures
- File types and structures
- Database management systems
- SQL coding and structures
- Web technologies (HTML, XML)
- Web page development (analysis and design)
- Data warehousing and data mining

15% Business, Social and Ethical Implications and Issues

- Economic effects
- Privacy concerns
- Intellectual property rights and legal issues, including open source initiatives
- Effects of information technology on careers (ergonomics, virtual teams, telecommuting, job design)
- Impact of technology on careers (globalization, outsourcing, insourcing)
- Careers in information systems and information technology
- Knowledge management

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- System, application, and personal computer security and controls
- Business strategies (competition, reengineering, process modeling, e-commerce, TQM)

Study Resources

Most textbooks used in college-level introductory business information systems or information technology courses cover the knowledge and skills in the outline above. The approaches to certain topics and the emphases given to them differ; therefore, it is advisable to study one or more current college textbooks to prepare for the Information Systems and Computer Applications exam. When selecting a textbook, check the table of contents against the Knowledge and Skills Required for this test.

A recent survey conducted by CLEP found that the following textbooks (first author listed only) are among those used by college faculty who teach the equivalent course. You might find one or more of these for sale online or at your local college bookstore. HINT: Look at the table of contents first to make sure it covers the topics required for this exam.

Beekman, <i>Tomorrow's Technology and You</i> (Prentice Hall)
Huber, <i>Information Systems: Creating Business Value</i> (Wiley)
Laudon, <i>Essentials of Business Information Systems</i> (Prentice Hall)
O'Brien, <i>Introduction to Information Systems</i> (Richard D. Irwin)
Rainer and Cegielski, <i>Introduction to Information Systems</i> (Wiley)
Stair, <i>Principles of Information Systems</i> (Course Technology, Inc.)

Visit www.collegeboard.com/clepprep for additional study resources. You can also find suggestions for exam preparation in Chapter IV of the *CLEP Official Study Guide*. In addition, many college faculty post their course materials on their schools' websites.

Sample Test Questions

The following sample questions do not appear on an actual CLEP examination. They are intended to give potential test-takers an indication of the format and difficulty level of the examination and to provide content for practice and review. For more sample questions and info about the test, see the *CLEP Official Study Guide*.

1. Which of the following is NOT true about virtual private networks?
 - (A) They use encryption.
 - (B) They use a public network such as the Internet.
 - (C) They transmit data at a greater speed than a local area network.
 - (D) They are less costly than a regular private network.
 - (E) They provide a way to connect to a remote computer.
2. Expert systems have been most successful when the range of the human expertise being replicated is
 - (A) broad and narrow
 - (B) broad and shallow
 - (C) broad and deep
 - (D) narrow and deep
 - (E) narrow and shallow
3. Which of the following is (are) true about object-oriented programming?
 - I. Objects created for one application can be reused by another application.
 - II. Instructions can be directly understood by the CPU without translation.
 - III. The data and instructions about how to operate on the data are combined.
 - (A) I only
 - (B) II only
 - (C) III only
 - (D) I and III only
 - (E) I, II and III
4. Which of the following best describes data warehousing?
 - (A) Backing up an organization's data to an off-site location
 - (B) Moving data that have not been accessed for some time to an alternate storage system
 - (C) Compiling and storing organization-wide data to assist in decision making
 - (D) Validating all customer data
 - (E) Storing all of an organization's data in two-dimensional tables

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5. Which of the following is NOT a risk associated with outsourcing information systems functions?

- (A) loss of control of functionality
- (B) loss of control of critical in-house knowledge
- (C) compromising sensitive company data
- (D) inability to easily sever the outsourcing relationship
- (E) inability to obtain expertise from outside the company

6. Standards that are developed through a collaborative process and made available for public use are referred to as

- (A) open standards
- (B) cooperative standards
- (C) public standards
- (D) technical standards
- (E) universal standards

7. Which of the following should be taken into consideration in ergonomic design?

- I. Adapting the computer hardware to be comfortable to use
- II. Adapting the office furniture to protect the health of the worker
- III. Adapting the computer software to be easy to learn

- (A) I only
- (B) II only
- (C) III only
- (D) I and II only
- (E) I, II and III

8. Which of the following statements about EDI is FALSE?

- (A) EDI documents contain the same information that would be found in paper documents.
- (B) EDI provides the infrastructure for both voice and data communication.
- (C) EDI standards are industry specific.
- (D) EDI enables the digital transmission of invoices.
- (E) EDI can be used to automate inventory replenishment.

Credit Recommendations

The American Council on Education has recommended that colleges grant 3 credits for a score of 50, which is equivalent to a course grade of C, on the CLEP Information Systems and Computer Applications exam. Each college, however, is responsible for setting its own policy. For candidates with satisfactory scores on the Information Systems and Computer Applications examination, colleges may grant credit toward fulfillment of a distribution requirement, or for a particular course that matches the exam in content. Check with your school to find out the score it requires for granting credit, the number of credit hours granted and the course that can be bypassed with a passing score.

Answers to Sample Questions: 1-C; 2-D; 3-D; 4-C; 5-E; 6-A; 7-D; 8-B.