

## CLEP® Information Systems: at a Glance

### Description of the Examination

The Information Systems 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. The time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

### Knowledge and Skills Required

Questions on the Information Systems examination require test-takers to demonstrate knowledge of the following content. The percentage next to each main topic indicates the approximate percentage of exam questions on that topic.

#### 10% Office Applications

- Productivity software (word processing, spreadsheet, presentation package, database package)
- Operating systems (memory management, file management, interfaces, types of OS)
- Office systems (email, conferencing, collaborative work, document imaging, system resources)

#### 15% Internet and World Wide Web

- Internet and other online services and methods (World Wide Web, protocol, Web search engines, Web bots, intranet, cloud computing, communications, push/pull technology, W3C)
- Web browsers (URLs, protocols, standards, history, cookies, resource allocation)
- Web technologies (HTML, XML, Javascript)
- Website development (analysis, design, functionality, accessibility)

#### 15% Technology Applications

- Specialized systems (knowledge management, expert systems, TPS/OLTP, DSS, GIS, BI, workflow management, project management)
- E-commerce/E-business (EDI, standards, tools, characteristics, types of transactions, business models)
- Enterprise-wide systems (ERP, CRM, SCM)
- Data management (data warehousing, data mining, networking, security, validation, migration, storage, obsolescence)
- Business strategies (competition, process reengineering, process modeling, TOM, Web 2.0)
- Information processing methods (batch, real-time, transaction)

#### 15% Hardware and Systems Technology

- Devices (processing, storage, input and output, telecommunications, networking)
- Functions (computer, telecommunications, network hardware)
- Network architectures (local area, wide area, VPN, enterprise)
- Computer architectures (mainframe, client/server, operating systems)
- Wireless technologies (Wi-Fi, cellular, satellite, mobile, GPS, RFID)

#### 10% Software Development

- Methodologies (prototyping, SDLC, RAD, CASE, JAD, Agile)
- Processes (feasibility, systems analysis, systems design, end-user development, project management)
- Implementation (testing, training, data conversion, system conversion, system maintenance, post-implementation activities, post-implementation review, documentation)
- Standards (proprietary, open source)

## CLEP Information Systems: at a Glance

### 10% Programming Concepts and Data Management

- Programming logic (Boolean, arithmetic, SQL)
- Methodologies (object-oriented, structured)
- Data (concepts, types, structures, digital representation of data)
- File (types, structures)
- Database management systems (relational, hierarchical, network, management strategies)

### 25% Social and Ethical Implications and Issues

- Economic effects (secure transactions, viruses, malware, cost of security)
- Privacy concerns (individual, business, identity theft)
- Property rights (intellectual, legal, ownership of materials, open-source software)
- Effects of information technology on jobs (ergonomics, virtual teams, telecommuting, job design)
- Technology's influence on workforce strategies (globalization, virtual teams, telecommuting, outsourcing, insourcing)
- Careers in IS (responsibilities, occupations, career path, certification)
- Computer security and controls (system, application, personal computer, disaster recovery)
- Social networking (benefits, risks, ethics, technology, Web 2.0)

### 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 approach to certain topics and the emphasis given to them differ; therefore, it is advisable to study one or more current college textbooks to prepare for the Information Systems 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 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 [clep.collegeboard.org/test-preparation](http://clep.collegeboard.org/test-preparation) 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*.

- Which of the following is NOT true about virtual private networks?
  - They use encryption.
  - They use a public network such as the Internet.
  - They transmit data at a greater speed than a local area network.
  - They are less costly than a regular private network.
  - They provide a way to connect to a remote computer.

## CLEP Information Systems: at a Glance

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 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
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
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 is (are) true about object-oriented programming?
  - I. Once defined, a class can be reused to build different objects.
  - II. Instructions can be directly understood by the CPU without translation.
  - III. An object can contain both data and instructions.
  - A. I only
  - B. II only
  - C. III only
  - D. I and III only
  - E. I, II, and III

## CLEP Information Systems: at a Glance

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.
9. Asking a group of users to evaluate the functionality of a prelaunch graphical user interface occurs during which phase of the systems development process?
  - A. Analysis
  - B. Design
  - C. Implementation
  - D. Maintenance
  - E. Planning
10. A spreadsheet has values 1, 2, 3, and 4, respectively, in cells A1, B1, A2, and B2. Cell C1 contains the formula “= A1 + \$B\$1.” If the formula in cell C1 is copied to cell C2, what value is displayed in cell C2?
  - A. 3
  - B. 4
  - C. 5
  - D. 6
  - E. 7

### Credit Recommendations

---

The American Council on Education (ACE) has recommended that colleges grant three credits for a score of 50, which is equivalent to a course grade of C, on the Information Systems exam. Each college, however, is responsible for setting its own policy. For candidates with satisfactory scores on the Information Systems 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; 9-B; 10-C