



EXAM INFORMATION

This exam was developed to enable schools to award credit to students for knowledge equivalent to that learned by students taking the course. This exam tests the ability to understand hardware, software licensing and development tools; development life cycles; data management; connectivity, privacy concerns; intellectual property; network etiquette; telecommunications law; artificial intelligence, and globalization.

The exam contains 100 questions to be answered in 2 hours.

The use of nonprogrammable calculators is permitted during the test. Scratch paper for computations will be provided. A calculator function is available during computer-based exams.

Form Codes: SS536, ST536, SY536, SZ536

CREDIT RECOMMENDATIONS

The American Council on Education's College Credit Recommendation Service (ACE CREDIT) has evaluated the DSST test development process and content of this exam. It has made the following recommendations:

Area or Course Equivalent: Introduction to Computer and Information Technology

Level: Lower-level baccalaureate

Amount of Credit: 3 Semester Hours

Minimum Score: 400

Source: www.acenet.edu

EXAM CONTENT OUTLINE

The following is an outline of the content areas covered in the examination. The approximate percentage of the examination devoted to each content area is also noted.

I. Computer Organization and Hardware – 17%

- a. Processing components (e.g. CPU, Fetch, Execute Cycle)
- b. Primary storage (e.g. RAM, ROM, virtual memory)
- c. Peripherals (e.g. secondary storage, disk storage, I/O devices [RFID, biometrics, printers and scanners], communication hardware)
- d. Platforms (e.g. personal computers, workstations, mainframes, mobile devices)
- e. Data representation (e.g. binary system [bits, bytes], hexadecimal, words, numbering systems, coding systems, graphic and multimedia formats)
- f. Units of measurement (e.g. kilobytes, gigabytes, terabytes, megahertz, gigahertz, microseconds, nanoseconds, bandwidth)

II. Systems Software – 10%

- a. Operating systems (e.g. Windows, Apple Mac OS, Apple IOS, Android, Linux, Unix)
- b. Features and functionalities (e.g. resource allocations, job scheduling, file management, virtual computing)
- c. Utilities (e.g. virus protection/detection, backup, disk maintenance and recovery)
- d. User interfaces (e.g. command line, menu-driven, graphical, voice, touch, gesture, facial interfacing, keyboard, virtual reality, augmented reality)

III. Application Software – 22%

- a. Word processing (Microsoft Word, Google Docs, Apple Pages) and desktop publishing
- b. Spreadsheets (e.g. charts, graphs, functions, Microsoft Excel, Google Sheets, Apple Numbers)
- c. Presentation software (PowerPoint, Google Slides, Apple Keynote)
- d. Electronic communications (e.g. email, chat groups, conferencing software, social media)
- e. Graphics (e.g. draw, CAD, image processing)
- f. Business application software (e.g. inventory management, accounting, collaboration tools)

IV. Data Communications and Networks – 19%

- a. The Internet (e.g. browsers, web pages, search engines, internet service providers [ISPs])
- b. Network architectures (e.g. local area networks, wide area networks, peer-to-peer, network topology, Cloud infrastructure)
- c. Protocol [http/https], FTP, SSH, SSL, TLS, TCP)
- d. Safety and security (e.g. firewalls, Intrusion Detection System (IDS)/Intrusion Prevention System (IPS), encryption schemes, identity and access management, VPN)
- e. Mobile networks (e.g. wireless, cellular)

V. Software Development – 21%

- a. Software development life cycle (e.g. planning, analysis, design, development, debugging, testing, maintenance)
- b. Programming paradigms (e.g. procedural, object-oriented, Low-Code/No-Code Programming)
- c. Software development tools (e.g. assemblers, profilers, debuggers, compilers/interpreters)
- d. Database (e.g. fields, records, files, relational, network, hierarchical, object, data access mechanisms)
- e. Artificial Intelligence (Neural Networks, machine learning, large language model)

VI. Social Impact and History – 11%

- a. History (e.g. evolution of hardware, software, and the Internet)
- b. Ethical/legal issues (e.g. privacy concerns, intellectual property rights, telecommunications law,

- accessibility, artificial intelligence)
 - c. Safety and security (e.g. hacking, malware, system access authorisation, privacy, identity theft)
 - d. Social issues (e.g. social media responsibility/etiquette [professionally and personally], globalization, development of social skills)
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REFERENCES

Below is a list of reference publications that were either used as a reference to create the exam, or were used as textbooks in college courses of the same or similar title at the time the test was developed. You may reference either the current edition of these titles or textbooks currently used at a local college or university for the same class title. It is recommended that you reference more than one textbook on the topics outlined in this fact sheet.

You should begin by checking textbook content against the content outline provided before selecting textbooks that cover the test content from which to study.

Sources for study material are suggested but not limited to the following:

1. *Computer Science Illuminated*, 7th Edition, 2019, Nell Dale & John Lewis, Jones & Bartlett Learning.
 2. *MIS*, 11th Edition, 2024, Hossein Bidgoli, Cengage Learning.
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SAMPLE QUESTIONS

All test questions are in a multiple-choice format, with one correct answer and three incorrect options. The following are samples of the types of questions that may appear on the exam.

1. Which supports the largest number of users simultaneously?
 - a. Personal computer
 - b. Workstation
 - c. Graphics terminal
 - d. Mainframe

2. What is the term for a utility program that is used to make a copy of all the files on a disk?
 - a. Backup
 - b. Defragmenter
 - c. Formatter
 - d. Translator

3. What is the term for a computer that processes requests from other computers to access a data base?
 - A. Client
 - B. Data warehouse
 - C. Server
 - D. Router

4. Which stage of the software life cycle usually requires the most time and effort?
 - a. Design
 - b. Requirements analysis
 - c. Maintenance
 - d. Coding

5. The first electronic digital computer was produced in the
 - A. 1920s
 - B. 1940s
 - C. 1960s
 - D. 1980s

6. What is a mechanism that prevents unauthorized access to computers that reside on a network?
 - a. Sniffer
 - b. Spoofer
 - c. Firewall
 - d. Ethernet

Answers to sample questions:
1-D; 2-A; 3-C; 4-C; 5-B; 6- C.