Arizona State University (ASU) CIS105 Computer Applications and Information Technology Midterm Practice Exam (Sample)

Study Guide
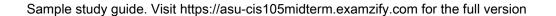

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Questions

1. What is the primary function of a hub in a network?

    A. To manage bandwidth

    B. To connect multiple devices

    C. To store data

    D. To assign IP addresses

2. Physically, how is a motherboard characterized?

    A. Circuit Board

    B. Plastic Board

    C. Metal Plate

    D. Silicon Chip

3. Where does a search engine typically obtain a description of a website?

    A. Header Tags

    B. Content Summary

    C. Meta-description Tag

    D. External Links

4. Which operating system is known for being open-source?

    A. Windows

    B. Linux

    C. macOS

    D. iOS

5. What is a graphical user interface element that allows for interaction called?

    A. Window

    B. Frame

    C. Panel

    D. Box

6. Which type of memory is categorized as secondary storage?

    A. RAM

    B. ROM

    C. Hard Drive

    D. Cache Memory

7. What is the best protocol for transferring a large database file through a network?

    A. UDP

    B. TCP/IP

    C. HTTP

    D. SMTP

8. What term is used for the memory where programs and data are temporarily stored while being processed?

    A. Cache Memory

    B. ROM

    C. Virtual Memory

    D. RAM

9. Who invented the World Wide Web?

    A. Bill Gates

    B. Al Gore

    C. Vint Cerf

    D. Sir Tim Berners-Lee

10. What is the primary function of a word processor?

    A. Creating financial models

    B. Editing text documents

    C. Managing databases

    D. Designing presentations

Answers

1. B
2. A
3. C
4. B
5. A
6. C
7. B
8. D
9. D
10. B

Explanations

1. What is the primary function of a hub in a network?

   A. To manage bandwidth

   B. To connect multiple devices

   C. To store data

   D. To assign IP addresses

The primary function of a hub in a network is to connect multiple devices. Hubs serve as networking hardware that enables various devices, such as computers and printers, to communicate with each other within a local area network (LAN).   When data is sent to the hub, it broadcasts that data to all connected devices rather than directing it to a specific device. This means that while a hub connects multiple devices, it does not have intelligence in the data transfer process or manage the traffic. Hubs operate at the physical layer of the OSI model, and their main role is to facilitate communication between devices on the same network segment, which is essential for creating a functional network environment.   In contrast, options such as managing bandwidth, storing data, or assigning IP addresses are functions typically associated with more advanced networking devices like switches, routers, and servers, which perform specific roles that a basic hub does not address.

2. Physically, how is a motherboard characterized?

   A. Circuit Board

   B. Plastic Board

   C. Metal Plate

   D. Silicon Chip

A motherboard is primarily characterized as a circuit board because it is an intricate assembly of electronic components, pathways, and connections that facilitate communication between various hardware parts of a computer. The motherboard serves as the backbone of the system, housing the CPU, memory, and other critical components while providing slots for expansion cards and ports for peripherals.   This characterization highlights the essential function of the motherboard in connecting and allowing communication between different electronic components through its circuit pathways. The complexity and design of these circuits are tailored to support various hardware interfaces and signal transmission, ensuring the system operates efficiently. While the material composition may include plastics and metals, and certain components on the motherboard may involve silicon (such as chips), the defining feature that categorizes a motherboard is its function and structure as a circuit board, making it an integral part of modern computing architecture.

3. Where does a search engine typically obtain a description of a website?

   A. Header Tags

   B. Content Summary

   C. Meta-description Tag

   D. External Links

A search engine typically obtains a description of a website from the meta-description tag. This tag, found in the HTML of a web page, is specifically designed to provide a concise summary of the page's content. Although it is not directly visible on the web page itself to regular users, search engines often use this information to display snippets in search results. A well-crafted meta-description can enhance a site's visibility and click-through rates by offering clear and relevant information to users about what they can expect on the page.   In contrast, while header tags can help outline the structure of a webpage and convey important topics, they are not specifically created for search engine descriptions. A content summary refers to a broader overview of the entire website's content but lacks the specificity and optimization that the meta-description offers. External links are links to other websites and do not provide internal information about the site's own content; hence they do not function similarly to meta-descriptions. The focused and optimized nature of the meta-description tag makes it the primary source for search engines when summarizing a webpage in search results.

4. Which operating system is known for being open-source?

   A. Windows

   B. Linux

   C. macOS

   D. iOS

The correct answer, Linux, is known for being an open-source operating system, which means that its source code is freely available for anyone to view, modify, and distribute. This characteristic allows users and developers to customize the operating system to meet their specific needs and enhances collaboration within the community. The open-source model encourages innovation and the sharing of improvements, contributing to the rapid development of various distributions or "distros" of Linux, such as Ubuntu, Fedora, and CentOS, each tailored for different purposes.   The community-driven approach of Linux fosters a broad support network, providing users with access to a wealth of documentation and forums where they can seek help or share solutions. This flexibility and transparency contrast with proprietary operating systems, which restrict access to their source code and often require licensing fees. Linux's open-source nature has made it particularly popular among developers, system administrators, and organizations that prioritize customization, security, and cost-effectiveness.

5. What is a graphical user interface element that allows for interaction called?

A. Window

B. Frame

C. Panel

D. Box

The correct answer is a window. In the context of graphical user interfaces (GUI), a window is a distinct area on the screen that displays information and allows the user to interact with the application. It typically contains elements such as buttons, menus, icons, and other interactive components, enabling users to perform tasks like opening files, running programs, or viewing information. Windows serve as containers that can be resized, minimized, maximized, and closed, providing both organizational and functional capabilities. They facilitate user interaction by isolating content and controls, creating a more manageable and visually appealing experience. Windows can also support various GUI elements within them, enhancing functionality. While frames, panels, and boxes are also elements found within graphical user interfaces, they are generally considered subcomponents or variations of windows. For example, a frame can refer to the outer border of a window that holds other graphics or controls, while a panel typically serves as a region within a window, often grouped for organizing related elements. A box could refer to dialog boxes or input fields used for specific interactions but does not encompass the broader idea of a window as a whole interactive area.

6. Which type of memory is categorized as secondary storage?

A. RAM

B. ROM

C. Hard Drive

D. Cache Memory

The correct answer is the hard drive, as it is classified as secondary storage. Secondary storage refers to non-volatile storage that retains data even when the computer is powered off. Hard drives, whether traditional spinning disks or solid-state drives, are designed to store large amounts of data persistently, allowing users to save files, applications, and the operating system. In contrast, RAM (Random Access Memory) is considered primary memory or main memory, as it is used for temporary storage while the computer is running. It loses all data when the power is turned off. ROM (Read-Only Memory) is also categorized as primary storage, specifically for firmware that is not meant to be modified frequently, and it retains data without power but is not designed for general data storage. Cache memory serves as a very fast type of volatile memory that stores frequently accessed data to speed up processing but does not retain information when the computer is shut down. Thus, the hard drive stands out as the type of memory used for long-term data storage, which is the defining characteristic of secondary storage.

7. What is the best protocol for transferring a large database file through a network?

   A. UDP

   B. TCP/IP

   C. HTTP

   D. SMTP

The best protocol for transferring a large database file through a network is TCP/IP. This protocol suite is designed to ensure reliable communication between devices, which is crucial when handling large files. TCP, or Transmission Control Protocol, provides error checking and guarantees the delivery of data packets in the correct order without loss, which is essential for maintaining the integrity of a large database. When dealing with large files, the ability to confirm that all parts of the file arrive intact and in sequence is vital. This ensures that the comprehensive data structure of a database is preserved during the transfer. Additionally, TCP's flow control mechanisms prevent network congestion and ensure efficient transmission rates. In contrast, other options like UDP, while faster in some instances, do not guarantee delivery or order, which could result in corrupted or incomplete files. HTTP is a protocol used primarily for transferring web pages, and while it can handle file transfers, it is built on top of TCP, so it inherits those same reliability features. SMTP is specifically designed for sending and receiving emails, making it unsuitable for file transfers, especially large ones.

8. What term is used for the memory where programs and data are temporarily stored while being processed?

   A. Cache Memory

   B. ROM

   C. Virtual Memory

   D. RAM

The term used for the memory where programs and data are temporarily stored while being processed is Random Access Memory (RAM). RAM is a type of volatile memory, meaning that it loses its contents when the power is turned off. During operation, the CPU uses RAM to store and access data quickly, as it provides faster read and write access compared to long-term storage options like hard drives or SSDs. This speed makes RAM essential for the efficient performance of applications, as it allows for quick data retrieval and manipulation. While other types of memory serve distinct purposes—like ROM, which is used to store firmware and is not intended for program execution, or cache memory, which is a smaller storage that speeds up access to frequently used data—RAM specifically handles the immediate and temporary storage needs of active programs and processes in the computing environment. Virtual memory, on the other hand, extends the apparent amount of RAM by using disk space to simulate additional memory, but it does not represent the physical RAM itself. This makes RAM the correct choice for the question regarding temporary storage during processing.

9. Who invented the World Wide Web?

A. Bill Gates

B. Al Gore

C. Vint Cerf

D. Sir Tim Berners-Lee

The invention of the World Wide Web is attributed to Sir Tim Berners-Lee, who created it in 1989 while working at CERN (the European Organization for Nuclear Research). His goal was to facilitate information sharing among researchers by developing a system that used hypertext to allow users to navigate between different documents over the internet. Berners-Lee also established the first web browser and web server, and he introduced the concept of web addresses (URLs), making it possible to locate and access various resources on the internet. The contributions made by Berners-Lee have had a profound impact on the development of the internet as we know it today, enabling the creation of websites, online services, and social media platforms. His work laid the foundation for the modern web, and he continues to advocate for open standards and web accessibility. Understanding his role highlights the importance of innovation in technology and how it shapes our communication and information exchange.

10. What is the primary function of a word processor?

A. Creating financial models

B. Editing text documents

C. Managing databases

D. Designing presentations

A word processor's primary function is to edit text documents. This includes the ability to create, format, and manipulate written content, which is fundamental to producing documents such as letters, reports, essays, and other text-based materials. Word processors provide various tools that allow users to adjust font styles, sizes, and colors, as well as to include features like spell check, grammar suggestions, and page layout functions. While creating financial models typically requires specialized software like spreadsheets, managing databases involves the use of database management systems. Designing presentations is the domain of presentation software, which is distinct from word processing tasks. Therefore, the correct answer highlights the core purpose of word processors in the realm of document preparation and text editing, distinguishing it from other types of software used for different applications.