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Class	9th	Chapter	05
Subject	Computer Science	Board	Punjab

CHAPTER 05: SOFTWARE SYSTEM

EXERCISE SOLUTION

Part I: Multiple Choice Questions (MCQs)

Q1. What is the primary function of an operating system?

(a) To create documents (b) To manage hardware resources and provide a user interface
(c) To perform calculations (d) To design graphics

Answer: (b) To manage hardware resources and provide a user interface

Q2. Which software is used to enhance system performance and security?

(a) Operating system (b) Utility software (c) Application software (d) Device drivers

Answer: (b) Utility software

Q3. What role do device drivers play in a computer system?

(a) Manage files (b) Facilitate communication between hardware devices and the operating system (c) Create presentations (d) Enhance graphics performance

Answer: (b) Facilitate communication between hardware devices and the operating system

Q4. Which of the following is an example of application software?

(a) Microsoft Word (b) BIOS (c) Disk Cleanup (d) Device Manager

Answer: (a) Microsoft Word

Q5. What is the main purpose of spreadsheet software?

(a) To edit text documents (b) To organize and analyze data
(c) To create visual content (d) To enhance system security

Answer: (b) To organize and analyze data

Q6. How does utility software differ from application software?

(a) Utility software manages system maintenance, while application software performs specific tasks for users
(b) Utility software creates documents, while application software manages hardware
(c) Utility software performs specific tasks for users, while application software manages hardware
(d) Utility software is free, while application software is paid

Answer: (a) Utility software manages system maintenance and optimization, while application software performs specific tasks for users.

Q7. Which type of software would you use to design a logo?

(a) Operating system (b) Spreadsheet software

(c) Graphic design software (d) Utility software

Answer: (c) Graphic design software

Q8. What is the function of system software?

(a) To facilitate communication between hardware and software (b) To perform specific tasks for the user

(c) To create visual content (d) To organize and analyze data

Answer: (a) To facilitate communication between hardware and software

Q9. Why are operating system updates important?

(a) They increase screen brightness (b) They add more fonts

(c) They enhance security and fix bugs (d) They improve battery life

Answer: (c) They enhance security and fix bugs

Q10. What is a common task you can perform using word processing software?

(a) Create and edit text documents (b) Manage hardware resources

(c) Enhance system performance (d) Organize and analyze data

Answer: (a) Create and edit text documents

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Part II: Short Questions

Q1. Define system software and provide two examples.

Answer:

System software is a collection of programs designed to operate, control, and maintain computer hardware, providing a platform for running application software.

Examples:

1. Microsoft Windows (Operating System)
2. Disk Defragmenter (Utility Software)

Q2. Explain the primary functions of an operating system.

Answer:

The primary functions of an operating system are:

1. **Process Management:** Allocates CPU time among multiple running programs.
2. **Memory Management:** Tracks and allocates primary RAM storage.
3. **File Management:** Organizes, creates, and maintains files and directory structures on storage drives.
4. **Device Management:** Coordinates communication between hardware peripherals and software through device drivers.
5. **User Interface:** Provides a graphical user interface (GUI) or command-line interface (CLI) for user interaction.

Q3. What is utility software, and why is it important?

Answer:

Utility software is system software designed to help analyze, configure, optimize, and maintain computer systems. It is important because it prevents data loss, removes malware, cleans junk files, compresses data, and helps ensure peak system performance.

Q4. Describe the role of device drivers in a computer system.

Answer:

A device driver is specialized system software that acts as a translator between the operating system and hardware devices, such as printers, graphics cards, and mice. It allows the operating system to issue commands and receive data from hardware without needing to understand the device's internal machine-level specifications.

Q5. Differentiate between system software and application software with examples.

Answer:

System Software: Manages computer hardware and provides a basic operational platform. Examples include Linux and Microsoft Windows.

Application Software: Helps users perform specific productive or recreational tasks. Examples include Microsoft Word and Adobe Photoshop.

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Q6. What are the main functions of spreadsheet software?
Answer:
Spreadsheet software is used to organize data into rows and columns, perform automated mathematical calculations using formulas, generate charts and graphs, and conduct data analysis.
Q7. How can graphic design software be used in the field of education?
Answer:
In education, graphic design software can be used to create engaging visual aids, educational infographics, textbook illustrations, scientific diagrams, school event posters, and digital presentations.
Q8. What is the significance of data backups, and how can they be performed?
Answer:
Data backups create duplicate copies of important files to protect against accidental deletion, hardware failure, ransomware, and disasters.
Backups can be performed manually by copying files to external hard drives or USB flash drives, or automatically by using cloud storage services and backup utility software.

Part III: Long Questions
Q1. Discuss the importance of system software in a computing system.
Answer:
System software serves as the essential foundation of any computer system. Without it, hardware components remain inaccessible to users. System software abstracts complex hardware operations, manages memory and processor allocation, runs background security services, and provides a stable, user-friendly interface that enables application software to execute efficiently.
Q2. Describe the roles of operating systems, utility software, and device drivers, providing examples of each.
Answer:
1. Operating Systems (OS):
Operating systems act as the main controllers of a computer, managing hardware and software resources.
Examples: macOS, Android, and Microsoft Windows.
2. Utility Software:
Utility software performs maintenance, diagnostic, and optimization tasks to keep a computer system healthy.
Examples: Antivirus scanners and Disk Cleanup tools.
3. Device Drivers:
Device drivers enable communication between the operating system and connected hardware devices.
Examples: NVIDIA Graphics Driver and a printer USB driver.
Q3. Explain the differences between system software and application software.
Answer:

System software and application software differ in the following ways:

1. **Target:** System software interacts primarily with computer hardware, while application software interacts primarily with the user.
2. **Dependency:** Application software depends on underlying system software to run, whereas system software can operate independently to maintain the computer.
3. **Purpose:** System software provides general system management and resource allocation, while application software solves specific user problems, such as writing essays, editing photos, and browsing the web.
4. **Development:** System software requires low-level programming knowledge related to hardware architecture, while application software can be developed using high-level programming frameworks.

Q4. Describe the process of using utility software to optimize system performance and maintain security. Provide detailed steps and examples of common utility tools.

Answer:

Utility software helps improve system performance, maintain security, and remove unnecessary files. Common utility tools include:

1. Disk Cleanup and Defragmentation:

Disk Cleanup scans storage drives to remove temporary files, unnecessary system logs, and other unwanted data, freeing up disk space. Disk defragmentation reorganizes fragmented files on suitable hard disk drives (HDDs) to improve file access efficiency.

2. Antivirus and Anti-malware Scanners:

These tools regularly inspect system files and incoming data for malicious software. They can detect, quarantine, and remove threats.

Steps for Optimization:

1. Open the utility software, such as Windows Disk Cleanup or an antivirus program.
2. Select the target drive or scan mode, such as Quick Scan or Full System Scan.
3. Review the identified junk files or security threats.
4. Click **Clean** to remove unnecessary files or **Quarantine/Remove** to handle security threats.

These steps help free up storage space, improve system maintenance, and protect the computer against malware.

Q5. Explain how to install, update, and troubleshoot device drivers for hardware components.

Answer:

1. Installation:

When new hardware is connected, the operating system may automatically install its driver or prompt the user to install one. Alternatively, the installation software provided by the manufacturer can be used.

2. Updating: To update a driver, open Device Manager, right-click the relevant hardware component, select **Update Driver**, and choose to search automatically or browse for driver files stored on the computer.

3. Troubleshooting:

If a device malfunctions, such as when a yellow exclamation mark appears in Device Manager, the user can:

- Roll back to a previous driver version.
- Uninstall and reinstall the driver package.
- Download and install the latest stable driver from the manufacturer's official website.

Q6. Discuss the main functions of commonly used application software, such as word processing, spreadsheet, presentation, and graphic design applications.

Answer:

1. Word Processing Software:

Word processing software is used to create, edit, format, and print text-based documents, such as letters, résumés, and reports.

Examples: Microsoft Word and Google Docs.

2. Spreadsheet Software:

Spreadsheet software is used to manage numerical data, prepare financial budgets, perform calculations using formulas, and visualize trends through charts.

Examples: Microsoft Excel and Google Sheets.

3. Presentation Software:

Presentation software is used to design slides containing text, images, animations, and video clips to deliver engaging visual presentations to an audience.

Examples: Microsoft PowerPoint and Apple Keynote.

4. Graphic Design Software:

Graphic design software is used to create and manipulate digital images, vector graphics, logos, and other artistic media.

Examples: Adobe Photoshop and Adobe Illustrator.

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