**Topic: System software and application software**

Reading Time: 15 mins

**·        Note\* Highlight important/core points while reading**

·        Read the content and write the answers given in the document in your words to get a solid grip on the topic.

**System Software and Application Software**

Computers use **system software** and **application software** to operate effectively and perform tasks. Each serves a unique role and has distinct features.

**System Software**

System software is essential for running and managing computer hardware and provides a platform for application software.

**General Features of System Software:**

1. **Manages Hardware Resources**: Coordinates CPU, memory, storage, and I/O devices.
2. **Low-Level Operations**: Operates closer to the hardware, providing the interface for other software.
3. **Always Running**: Works continuously in the background to ensure the system operates smoothly.
4. **Essential for Functionality**: Without system software, application software cannot run.

**Examples of Typical System Software:**

* **Operating Systems**: Windows, macOS, Linux
* **Utility Programs**: Antivirus software, disk cleanup tools
* **Device Drivers**: Printer drivers, network drivers
* **Firmware**: BIOS, embedded software in hardware devices

**Working of System Software:**

1. **Operating System**: Manages all hardware and software, allocates resources, and facilitates user interaction with the machine.
2. **Device Drivers**: Allow hardware devices to communicate with the operating system.
3. **Utility Programs**: Perform maintenance tasks such as virus scanning, file compression, and backup.
4. **Firmware**: Provides low-level control for hardware devices and is stored in read-only memory.

**Application Software**

Application software is designed for users to perform specific tasks.

**General Features of Application Software:**

1. **Task-Oriented**: Focuses on performing specific tasks such as word processing, browsing, or gaming.
2. **User-Friendly Interface**: Provides an easy-to-use graphical interface for users.
3. **Customizable**: Can often be tailored to specific user needs.
4. **Dependent on System Software**: Relies on the operating system to access hardware resources.

**Examples of Typical Application Software:**

* **Productivity Tools**: Microsoft Word, Excel, Google Docs
* **Media Players**: VLC Media Player, Spotify
* **Web Browsers**: Google Chrome, Mozilla Firefox
* **Games**: Minecraft, Fortnite

**Working of Application Software:**

1. **Task Execution**: Designed to handle specific user requirements, such as writing documents or browsing the internet.
2. **Dependency on System Software**: Operates through system software, using its resources to access hardware components.
3. **Interactive**: Often features user interfaces that make the software accessible to non-technical users.

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| **Feature** | **System Software** | **Application Software** |
| **Purpose** | Manages and controls hardware resources. | Performs specific tasks for users. |
| **Dependency** | Operates independently of application software. | Requires system software to operate. |
| **User Interaction** | Minimal direct user interaction. | Designed for direct user interaction. |
| **Examples** | Operating systems, device drivers, utilities. | Word processors, browsers, games. |

### ****A-Rated Questions/Answers By Examiner****

**Q1**: **What is the main role of system software in a computer system?**

**Answer**: System software manages hardware resources, runs the computer, and provides a platform for application software.

**Q2**: **Give two examples of system software.**

**Answer**: Examples of system software include operating systems like Windows and Linux, and utility programs like antivirus software.

**Q3**: **What is a key difference between system software and application software?**

**Answer**: System software manages hardware and facilitates system operations, while application software performs specific tasks for the user.

**Q4**: **Name two examples of application software and their uses.**

**Answer**: Microsoft Word is used for word processing, and Google Chrome is used for web browsing.

**Q5**: **Why is system software essential for running application software?**

**Answer**: Application software depends on system software to access hardware resources and run properly. For instance, an operating system manages memory and CPU resources needed by application software.

### Write your Answers on your Notebook and Verify it on Next Screen

**Q6:** **Explain how device drivers contribute to the working of system software.**

**Q7:** **What are two key features of utility programs, and how do they differ from application software?**

**Q8:** **How does firmware differ from general system software, and where is it stored?**

**Q9:** **Why is it necessary for application software to rely on system software to function?**

**Q10: Compare the level of user interaction required by system software and application software.**

**6. Answer:** Device drivers enable the operating system to communicate with hardware devices by translating high-level commands into hardware-specific instructions. For example, a printer driver allows the OS to send print jobs to the printer.

**7. Answer:** Utility programs perform maintenance tasks (e.g., virus scanning, disk cleanup) and operate closer to the hardware. Unlike application software, utility programs focus on optimizing and maintaining the system rather than performing specific user tasks.

**8. Answer:** Firmware provides low-level control for specific hardware and is stored in non-volatile memory like read-only memory (ROM). Unlike general system software, firmware is often embedded directly in devices and not easily modified by users.

**9. Answer:** Application software depends on system software to access hardware resources such as memory, CPU, and I/O devices. The system software manages these resources and provides a stable environment for application software to run.

**10. Answer:** System software typically requires minimal direct user interaction as it operates in the background, managing resources and hardware. In contrast, application software is designed for direct user interaction with features like graphical interfaces to perform specific tasks.

### ****Kindly Write down your answers on your Note book and than verifiy it with answers given at the end****

6- A computer needs firmware and system software to operate.

 (a) State the purpose of firmware.

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(b) Give one example of firmware.

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(c) Give two examples of system software.

1 ..........................................................................................................................

2 ..........................................................................................................................       [2]

4- A student uses both system software and application software on their computer.

(a) Give one example of system software.

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(b) Give two examples of application software.

 1.................................................................................................................................

 2................................................................................................................................. [2]

(c) Describe the difference between system software and application software.

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