

Secondary storage

Describe how data is stored on optical media.

(2)

State the type of secondary storage that stores data as electric charges.

(1)

Describe how data is stored on magnetic media.

(2)

State the type of secondary storage that uses a laser to read the disk.

(1)

Explain the best type of secondary storage for an embedded system such as might be found in a car or washing machine.

(3)

Describe how data is stored on solid state media.

(2)

ANSWERS

1. **Data on optical media** (such as CDs, DVDs, and Blu-ray discs) is stored using tiny pits and lands on the disc's surface. These pits and lands are non-reflective and reflective parts of the disc. They represent binary information (0s and 1s), and a laser reads (or writes) these patterns to retrieve (or save) the stored data.
2. **Solid state storage**
3. **Data on magnetic media** (such as hard drives, tapes, and floppy disks) is stored using tiny magnetized regions where the polarity of magnets represents the ones and zeros. These regions represent binary information (0s and 1s), and a read-and-write head detects and modifies the magnetization to read or write data.
4. **Optical storage**
5. The best type of secondary storage for an embedded system is solid state. It has no moving parts and very fast read-write access. It is small and light and low power. All of these are important considerations in embedded systems.
6. **Data on solid-state media (such as SSDs)** is stored using tiny electronic pools that can be either charged (or full of electrons) or uncharged (empty of electrons). These pools represent binary information (0s and 1s), and the arrangement of charged and uncharged pools determines the stored data.