

Mesleki Yabancı Dil 1 Dersi

Ankara Üniversitesi Elmadağ Meslek Yüksekokulu

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(Bu çalışma Marija Krznaric tarafından yazılmış ELECTRICITY AND ELECTRONICS isimli kitaptan alınan özet bilgilerle hazırlanmıştır.)

Hafta 4

CONDUCTORS, INSULATORS, SEMICONDUCTORS

- In electricity, materials may be classified into three groups, i.e. conducting materials, insulating materials and semi conducting materials depending on their ability to conduct electricity.
- Conductors provide an easy path for an electric current.
- In conductors, electrons are able to move freely in matter or a vacuum when an external electric field acts on them.
- Conductors are mostly metals, such as copper, aluminium, silver, gold, etc.
- Copper is widely used for cables, transformer windings etc.
- Although silver is a slightly better conductor than copper, it is too expensive for common use.
- Aluminium is not as good conductor as copper, but it is cheaper and lighter. It is resistant to atmospheric weathering and today it is the dominant metal for the transmission lines of electrical energy.
- Materials which offer high resistance to current flow are called insulators.

- Common insulator materials used in electrical devices are paper, wood, plastics, rubber, glass etc.
- Between the extremes of conductors and insulators is a group of materials known as semiconductors.
- A semiconductor will carry electric current, but not easily as a normal conductor.
- They are neither good conductors nor good insulators.
- Under certain conditions they allow a current to flow easily but under others they behave as insulators.
- Semiconductors are extremely important industrial materials, they are materials from which electronic devices such as transistors, diodes, integrated circuits, and solar cells are manufactured.
- Without semiconductors modern electronic technology would not be possible, it would be even inconceivable.