

First Name: .....

English Exam (2016/2017)

Last Name: .....

Group: .....

The key feature of a PV (solar) cell is the pn junction that was covered in the course. The photovoltaic effect is the basic physical process by which a solar cell converts sunlight into electricity. Sunlight contains photons or "packets" of energy sufficient to create electron-hole pairs in the n and p regions. Electrons accumulate in the n-region and holes accumulate in the p region, producing a potential difference (voltage) across the cell. When an external load is connected, the electrons flow through the semiconductor material and provide current to the external load.

A silicon solar cell consists of a thin layer or wafer of silicon that has been doped to create a pn junction. The depth and distribution of impurity atoms can be controlled very precisely during the doping process. The most commonly used process for creating a silicon ingot, from which a silicon wafer is cut, is called the Czochralski method.

**A- Read the text and answer the question.**

- 1- Give a title to this passage?  
.....
- 2- What is the key feature of a PV solar cell?  
.....
- 3- By which process a solar cell converts sunlight into electricity?  
.....
- 4- What is the commonly use method for creating a silicon ingot?  
.....
- 5- From the text give synonyms of these words?  
Generally = ..... , method = ..... , produce = .....
- 6- From the text give opposites of these words?  
Less ≠ ..... , purity ≠ ..... , thick ≠ .....

**B- Complete each of this sentences using a word from the list given below**

liquefy, solidify, condense, vaporize, freeze, melt

- 1- When water is converted to vapour, it is said to .....
- 2- When gas liquefies on cooling, it is said to .....
- 3- When ice melts, it is said to .....
- 4- When a liquid solidifies on cooling, it is said to .....
- 5- When a solid changes to liquid on heating, it is said to .....
- 6- When a liquid changes to solid state, it is said to .....

**C- Give one word for each of these phrases**

Invisible, absorbs, transferred, vacuum, reflects, space

- 1- Completely empty space =
- 2- Cannot be seen =
- 3- The space between sun and the earth =
- 4- Passed from one place to another =
- 5- Throws back =
- 6- Takes in =

**D- What are the three methods by which heat is transferred?**