

# **Solid State Electronics (EE113FZ)**

## **Tutorial 1**

### **Matter and Atomic Models**

Answer the following questions.

1. What are the 4 fundamental states of matter and what is the main difference between them?
2. Explain the characteristics that make a solid 'solid'.
3. Compare the 3 states of matter, e.g., solid, liquid and gas, in terms of kinetic energy.
4. List 4 physical properties of matter.
5. What are the differences between physical properties and chemical properties.
6. What is a phase transition and what causes it to occur?
7. If a gas becomes a solid directly, what is this transition called?
8. What is the state of matter that has a higher enthalpy than gas? What is the transition between gas and this state of matter called?
9. Define what a mixture is.
10. How does a compound differ from an element?
11. Explain what an atom is made of.
12. Compare the 3 subatomic particles in terms of electrical charge.
13. In its most basic form, what is the periodic table of elements?
14. Why are noble gases mostly unreactive?
15. There are 3 numbers printed for each element on the periodic table. Explain what these numbers relate to and where appropriate give their symbols.