Attempt <u>all</u> the questions

Observe silence in the exam hall

1. Define the following:
   - **i. Energy –**
   - **ii. Mass –**
   - **iii. Power –**
   - **iv. Biomass –**
   - **v. Weather –**
   - **vi. Climate –**
   - **vii. Desert –**
   - **viii. Building-integrated photovoltaics (BIPV) –**
   - **ix. Energy audit –**
   - **x. Green building –**

2. Name and discuss SIX Factors influencing the energy use in building
3. Discuss how energy efficient buildings should be designed in the following classification of climate

   i. **Temperate climate**:

   ii. **Hot-arid climate**:

   iii. **Hot-humid climate**:

   iv. **Cool climate**:

4. State the four main four climatic zones of Kenya:

5. The heat flow due to radiation and air movement can be controlled by varying the following aspects of the building configuration. Explain each of them.
   - i. **Surface area to volume ratio (S/V ratio):**
   - ii. **Shape of the building:**
   - iii. **Buffer spaces:**
   - iv. **Arrangement of openings:**

6. Energy can be classified into two categories; Renewable and Non-Renewable. Briefly explain.

7. What do you understand by the term Efficient energy use –