AIC NAIVASHA TECHNICAL TRAINING INSTITUTE

ELECTRONICS

1. Define the following terms 10 Marks
   1. EMF
   2. PD
   3. Charge
   4. Resistance
   5. Power
2. Explain the term ohms as used in electricity 2 Marks
3. With the aid of a diagram, outline the structure of pure silicon doped with a pentavalent atom 8 Marks
4. Distinguish between electrons and protons 4 Marks
5. Differentiate between current and electromotive force as used in electricity 4 Marks
6. During a basic electronics lecture, students came across the following junction diode behaviour. Explain each of the term 4 Marks
   * 1. Forward bias
     2. Reverse bias
7. Three capacitors with capacitance 12µF, 20µF and 15µF are connected in series across a 200V DC supply. 10 Marks
   1. Draw a diagram to illustrate the connection
   2. Determine the
      1. Charge across each capacitor
      2. Potential difference across each of the capacitor
8. Explain two uses of diodes in electricity 2 Marks
9. With the aid of a sketch, describe a pure germanium atom 6 Marks
10. Outline three AC wave form characteristics 6 Marks
11. A circuit of 6mA flows in a television resistor R when a potential difference of 12V is connected. Determine the: 4 Marks
    1. Resistance
    2. Conductance
12. Convert the following 20 Marks
    1. 1110101010012 to Decimal
    2. 7056­8 to binary
    3. 95610 to octal
    4. 567­8 to decimal
    5. 101011018 to octal