BINGHAM UNIVERSITY
PHYSICS DEPARTMENT
PHY 202 (INTRODUCTION TO ELECTRONICS) TEST 2020/2021 SESSION

Instruction: Answer all the questions **Time: 45 Mins**

1. With an appropriate diagram, describe how the P-type material is formed.

2. List four differences between a conductor, an insulator, and a semiconductor

3. Explain the forward and reverse bias operation of a diode.

4. What type of input does the light-emitting diode (LED) uses to produce light? Write the basic functions of a PN-junction and a Zener diode? Draw their circuit symbols.

5. Name two types of transistors and list five differences between them.

6. Explain what the potential barrier is and how it is formed in the PN-junction.

7. i) What is rectification. ii) With appropriate diagrams, explain how a half-wave rectifier differs from a full-wave rectifier. iii) Why is the half-wave rectification insufficient?

8. i) Why is silicon and not germanium more widely used as a semiconductive material ii) Define the following terms i) recombination ii) doping iii) hole

9. Name and draw the diagram of the most used configuration of NPN transistors? ii) Give reasons for its common usage. iii) List two characteristics of a transistor.

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