

| Name | Score |
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Question 1:

- a) Define a semiconductor material (1 mark)

Question 2:

- a) Describe the band gap in the following: (3 marks)
- a. Metal
 - b. Insulator
 - c. Semiconductor

Metal.

Insulator.

Semiconductor.

- b) Draw the band gap of a semiconductor (1 mark)

c) What is a band gap measured in? (1 mark)

d) Explain what effect heating has on the band gap (2 marks)

Question 3:

a) Describe what doping is in terms of a semiconductor (2 marks)

b) Describe the difference between P-type and N-type doping (4 marks)

Question 5:

a) What is a diode used for (1 mark)

b) What is the difference between a junction diode and a Zener diode? (2 marks)

Question 6:

a) What role does a transistor play in a circuit? (2 mark)

b) What is the difference between a FET and a BJT transistor? (4 marks)
