

NAME

UCID

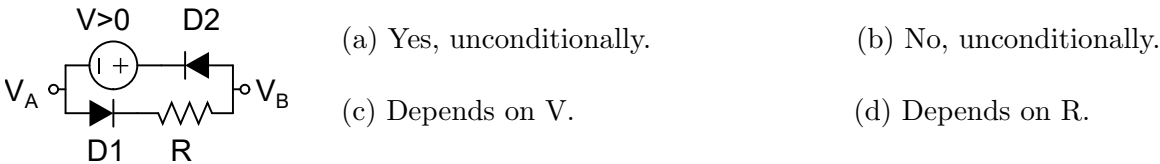
1. Answer all four questions. Maximum mark is 18.

2. For multiple-choice questions, indicate the correct answer. There may be more than one correct answer, in which case indicate all correct answers.

3. Show your work as much as possible, within time and space constraints.

4. Only this one sheet of paper will be collected and graded

1. In the circuit below, V_A, V_B are applied voltages. Diode D1 is forward biased. Is D2 forward biased? (2 marks)

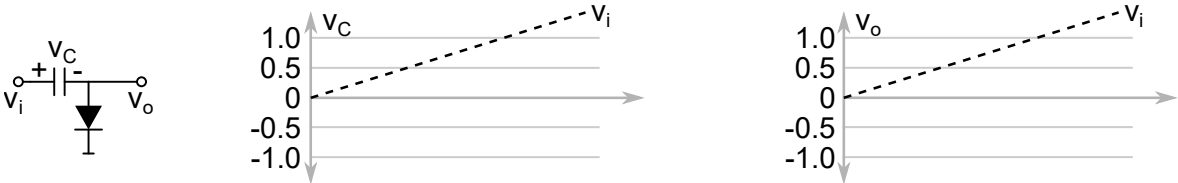


2. You have a half-wave and a bridge rectifier made with the same kind of diodes. With some input, they give you peak-to-peak outputs of 2.6 and 3.3 V. What is the input peak-to-peak value and the diode cut-in voltage? (2 marks)

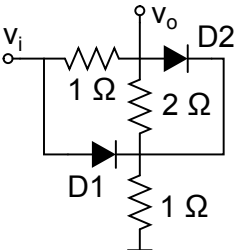
Input peak-to-peak =

Diode cut-in voltage =

3. In the circuit below, v_i increases with time as shown in the dashed traces on two sketches to the right. Draw v_o and v_c on the indicated axes. Diode cut-in voltage is 1 V and the capacitor is ideal i.e. has no leakage. (2 marks)



4. In the circuit below, D1 and D2 have cut-in voltages of 0.6 and 0.3 V, respectively. Find an expression of v_o in terms or v_i . (12 marks)



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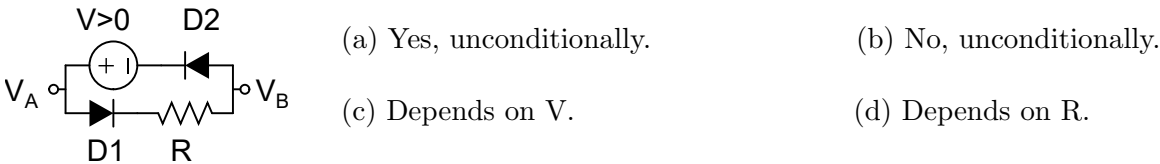
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1. In the circuit below, V_A, V_B are applied voltages. Diode D1 is forward biased. Is D2 forward biased? (2 marks)

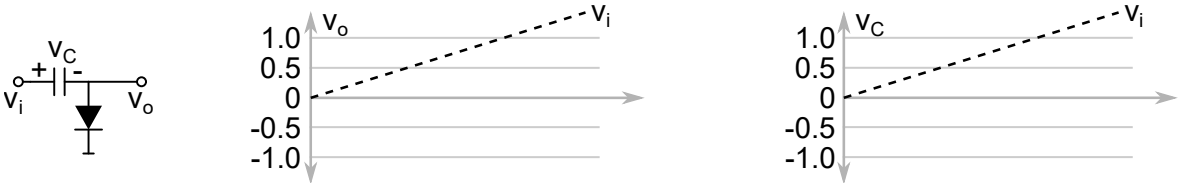


2. You have a half-wave and a bridge rectifier made with the same kind of diodes. With some input, they give you peak-to-peak outputs of 4.8 and 4.6 V. What is the input peak-to-peak value and the diode cut-in voltage? (2 marks)

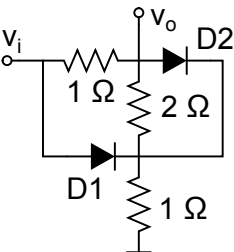
Input peak-to-peak =

Diode cut-in voltage =

3. In the circuit below, v_i increases with time as shown in the dashed traces on two sketches to the right. Draw v_o and v_c on the indicated axes. Diode cut-in voltage is 1 V and the capacitor is ideal i.e. has no leakage. (2 marks)



4. In the circuit below, D1 and D2 have cut-in voltages of 0.6 and 0.3 V, respectively. Find an expression of v_o in terms or v_i . (12 marks)



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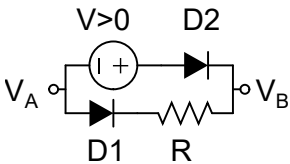
1. Answer all four questions. Maximum mark is 18.

2. For multiple-choice questions, indicate the correct answer. There may be more than one correct answer, in which case indicate all correct answers.

3. Show your work as much as possible, within time and space constraints.

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1. In the circuit below, V_A, V_B are applied voltages. Diode D1 is forward biased. Is D2 forward biased? (2 marks)



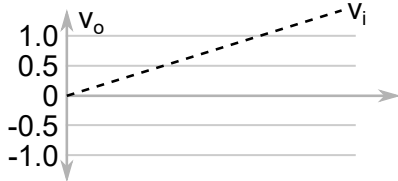
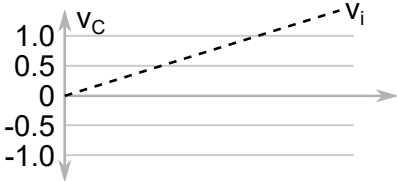
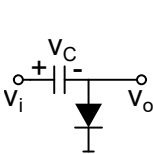
- (a) Yes, unconditionally.
- (b) No, unconditionally.
- (c) Depends on V .
- (d) Depends on R .

2. You have a half-wave and a bridge rectifier made with the same kind of diodes. With some input, they give you peak-to-peak outputs of 2.9 and 2.8 V. What is the input peak-to-peak value and the diode cut-in voltage? (2 marks)

Input peak-to-peak =

Diode cut-in voltage =

3. In the circuit below, v_i increases with time as shown in the dashed traces on two sketches to the right. Draw v_o and v_c on the indicated axes. Diode cut-in voltage is 0.5 V and the capacitor is ideal i.e. has no leakage. (2 marks)



4. In the circuit below, D1 and D2 have cut-in voltages of 0.6 and 0.3 V, respectively. Find an expression of v_o in terms or v_i . (12 marks)

