Name:
Teacher:
Class:
Date:

**Logic And Electrical Engineering - Practice Problems Set 1**
**逻辑和电子工程-练习题1**

1. The diagram below shows part of a control circuit. At first both **input A** and **input B** are **low (0)**, and the lamp is **OFF**.
下图显示了控制电路的一部分。输入A和输入B均为低电平（0），指示灯灭。


a) If **input A** becomes **high (1)**, the lamp will turn **ON**. Explain why this is.
如果输入A变为高电平（1），指示灯亮。解释这是为什么。

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b) If **input A** returns to a **low (0)** state after being in a **high (1)** state, the lamp will remain **ON**. Explain why this happens.
如果输入A在处于高（1）状态后返回低（0）状态，指示灯将保持亮。解释为什么会发生这种情况。

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c) What is a feedback loop?
什么是反馈电路?

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d) What effect does a negative feedback loop have on this control system?
负反馈电路对该控制系统有什么影响?

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2. The names of four electrical devices are given on the left. What each device does is given on the right. Draw a line to join each device with what it does.
左边是四个电气设备的名称，右边给是每个设备的功能。将每个设备与其对应功能连接起来。

| | |
|---|---|
| LED | Measures current, voltage or resistance |
| Speaker | Emits light when a current flows through it |
| Multimeter | Produces an output sound |
| Microphone | Transfers sound energy to electrical energy |

3. The following is a list of electrical components that may be used in electrical circuits以下是电路中可能使用的电气部件列表：

capacitor(电容器)　diode(二极管)　microphone 麦克风)　multimeter(万用表)　transistor(晶体管)

a) Allows current to flow in one direction only. 允许电流只向一个方向流动。

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b) Can store a small charge. 可以储存少量电荷。

_____

c) Can act as an electronic switch. 可以用作电子开关。

_____

d) Can be used to measure voltage. 可用于测量电压。

_____

e) Can act as a sound sensor .可以用作声音传感器。

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4. The diagram following shows an input signal and an output signal. Which of the components listed in question 2 would result in this type of signal transformation?
下图显示了输入信号和输出信号。问题2中列出的哪些部件会导致这种类型的信号转换?