Lesson 8 – Answers

Q1 Write the formula to calculate dBs in the following cases.

Voltage – **db = 20 Log Vout / V in**

Power – **db = 10 Log P out / P in**

Q2 Complete the following decibel table. (Use the correct suffixes)

Input or Reference	Output	+- Decibels
0.25 V	6 V	**27.6 dB**
1.2 V	6 mV	**44.4 db**
dBV	**1.78 V**	5 dBV
dBµV	171 µV	**44.7 dB**
12 V	**6 V**	- 6 dB
22 µV	22 mV	**60 dB**
31.6 V	100 V	10dB
0.5 V	97 V	**45.7 dB**
1 V	**6.13 V**	15.75 dB

Q3 Complete the following decibel table. (Use the correct suffixes)

Input or Reference	Output	+- Decibels
0.25 W	6 W	**13.8 dB**
1.2 W	**10.2 W**	9.3 dB
dBW	12 W	**10.7 dB**
dBm	171 mW	**22.3 dB**
12 W	**3.79 W**	- 5 dB
22 µW	22 mW	**30 dB**
1 W	**3.98 W**	6 dB
0.001 W	1 W	**30 DB**
10 W	**20 W**	3 dB

Q4 What is a valve and describe how it works?

The basis of the valve is that electrons flow from the heated cathode to the anode, which are separated and placed in a vacuum chamber. This is a diode. Now, if you can control or vary the flow of electrons between the cathode and anode, you have an amplifier.

Q5 Why is it necessary to be cautious when handling equipment with valves?

Valves get very hot during operation and some of the anode voltages on the valve can be very high.

Q6 What is the gain of a valve if the change in plate voltage is 50 V and the change in grid voltage is 2 V?

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