

QUESTION

Figure 1 shows a circuit diagram of a two-stage amplifier. The input signal V_{in} is applied to the input terminals. The output signal V_{out} is taken from the output terminals. The circuit consists of two stages, each represented by a block with a gain of 10. The input resistance of the first stage is $100\ \Omega$ and the output resistance is $100\ \Omega$. The input resistance of the second stage is $100\ \Omega$ and the output resistance is $100\ \Omega$. The input resistance of the second stage is connected to the output of the first stage. The output resistance of the second stage is connected to the output terminals. The input resistance of the first stage is connected to the input terminals. The output resistance of the first stage is connected to the input of the second stage. The input resistance of the second stage is connected to the output of the first stage. The output resistance of the second stage is connected to the output terminals.



ANSWER

The input resistance of the first stage is $100\ \Omega$ and the output resistance is $100\ \Omega$. The input resistance of the second stage is $100\ \Omega$ and the output resistance is $100\ \Omega$. The input resistance of the second stage is connected to the output of the first stage. The output resistance of the second stage is connected to the output terminals. The input resistance of the first stage is connected to the input terminals. The output resistance of the first stage is connected to the input of the second stage. The input resistance of the second stage is connected to the output of the first stage. The output resistance of the second stage is connected to the output terminals.