Two nodes on a CAN bus each started transmitting a message at the same time. The first message has an 11-bit ID that is 0011111 1000 and the second 001 1111 0000. Explain how arbitration is handled.

Step 1:

Which of the nodes trying to transmit will actually control the bus is decided by an arbitration process. Arbitration. A remote transmission (RTR) bit plus an 11- or 29-bit identifier make up the arbitration field of a CAN message.

One transmitter is the only one still on the bus after the arbitration has been conducted over the whole Arbitration Field. This node keeps sending data as if nothing happened. When the bus is again available, the other possible transmitters will attempt to retransmit their messages.

Step 2:

The four different message kinds are specified by the CAN standard. Each message is assigned a priority, and the messages' sophisticated bit-wise arbitration technique is used to manage access to the bus.

The same ID cannot be used to send messages from two different nodes on the network. Arbitration will not function if two nodes attempt to send a message with the same ID at the same time. A transmitting node will instead notice that his message is distorted outside of the arbitration field. The nodes will then employ CAN's error handling, which in this instance will finally result in the switch-off of one of the transmitting nodes (bus-off mode).