

Assignment- 10

1. Design a passive filter that can be used as a part of your FM radio to tune into the radio station **BIG 92.7**. Define the components that you use (practical values preferred)
2. In your designed filter, it is noticed that while the tuner is moved towards the lower frequency end, voices and music from the immediately previous station is heard. Find the frequency below which these can be heard
3. It is desired to study mathematically the characteristics of the filter you designed. In this regard, to improve performance, you increased the order to 2. Re-design and find the transfer function of the final filter. Hence obtain a Bode Plot for the same and comment about the roll-off performance after increasing order
4. For the above filter design process, it is desired to boost up the output signal with a gain of 10. Design a single stage active filter, find out the transfer function and obtain a Bode Plot for the same

N.B.

- **All questions are compulsory for everyone and is to be done manually and in LTSpice**
- **While designing, define clearly the assumptions you make and the practical absurdities (if any) you come up with**
