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- Answer all the following questions
 - Illustrate your answers with sketches when necessary.
 - The exam consists of **One** page
 - *(put your final results in a border)*
- Total Mark: **20** Marks
 - Examiners: Dr. Moataz Elsherbini
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1. It is required to broadcast a shoubra radio station to be detected through your FM radio. Design a suitable series RLC circuit to verify this mission. The station must be heard within bandwidth of 2MHz, while the most purity sound heard at 90MHz. **(6 marks)**

2. Your friend in your project team suggested broadcasting the same station by using ideal parallel resonance circuit. Do all necessary modifications to verify the required design at the same resonant frequency and BW, then **Calculate** the upper and lower cut off frequencies obtained from the new design. **(6 marks)**

3. Another friend of your project team claimed that he can use passive BPF (using Resistors and Capacitors only) to achieve the same resonant frequency and bandwidth. Help him reaching the suitable design. **(6 marks)**

4. A genius student tries to change the design to obtain Quality factor of 55 at BW of 2MH. will he success receiving the channel with FM mobile radio?(why?) . **(2 marks)**