

Wednesday  
03<sup>rd</sup> Nov. 2021

**EE 202: Introduction  
to Analog Circuits**  
Quiz 2 - Part A

Time: 1600 to 1630  
Marks: 15

Make suitable assumptions where you deem necessary and state them in the answerbook.

Write the question number clearly before every answer and show the intermediate steps to demonstrate your thought process.

Write page numbers on all your answer sheets.

You should stop writing at 1620. Take pictures of your answer sheet with the page numbers visible and submit it on Moodle before 1830 Hrs. Your submission could be a zip file of all images or a single PDF file. Please note that Moodle submission link will automatically get disabled at 1630. I will not accept any email submissions.

1. Design an active High pass filter with a gain of 15, and a cutoff frequency of  $XY$  (where  $XY$  are the last 2 digits of your roll number).
2. An engineer is tasked with designing an amplifier that amplifies a signal that lies between 1 KHz and 3 KHz. In order to selectively amplify this signal, the engineer designed a band pass filter, which is shown in Figure 1. However, when he rigged up the circuit and tested in the lab, he found that it did not work as expected.

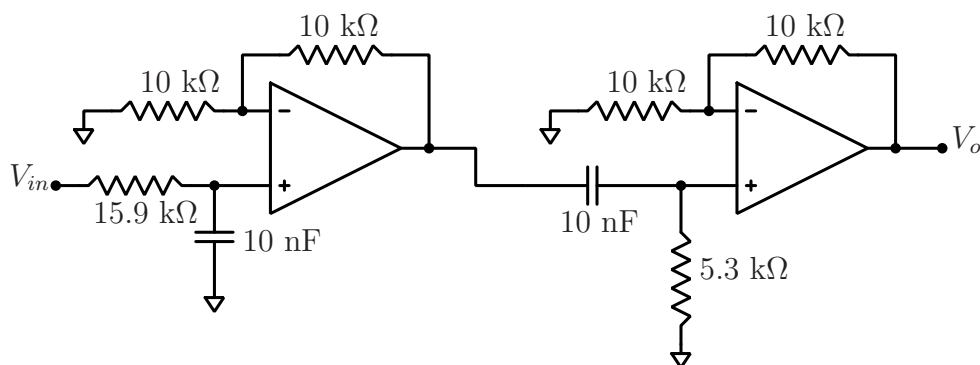


Figure 1: Circuit for question 2.

- (a) Can you help him analyze the circuit he has constructed and predict the behaviour of the same?
- (b) Can you help him correct his design to achieve what he set out to do?