

B.Tech II Year 5th Semester

Year(2022)

Branch ECE

Subject : Integrated Circuits

Class Test 1st

Time : 1 Hour

M.M : 15

Note : Attempt All question

1. Draw the circuit of instrumentation amplifier and obtain the input and output relationship for it. Also list the important features of instrumentation amplifier. (5)

OR

2. Draw the circuit of logarithmic amplifier using BJT & explain its operation. Also find the expression for its output. (5)

3. Draw the circuit for 1st order High-Pass Butterworth filter and its frequency response curve. Also develop the expression for magnitude of voltage gain. (5)

OR

4. Obtain the transfer function for narrow band reject filter. (5)

- a) Implement the following equation using resistor and a single OP-AMP only. (2)

$$V_{out}=2V_1+3V_2-3V_3-2V_4$$

- b) Design a wide band pass filter having $f_i=400$ Hz, $f_h=3$ KHz and pass band gain of 4. (3)
Find the value of Q of the filter.

