

b) If the Gain of the Operation Amplifier is reduced by half to 20d. Calculatethe bandwidth?
(5 Marks)

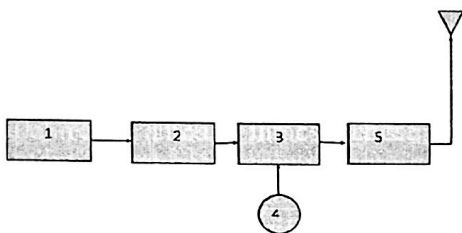
c) Comment on the bandwidth of an Idea Operational Amplifier and a Practical (Real) Operational Amplifier. (5 Marks)

4. a) List 3 Electrical Sensors and state what they measure (6 Marks)

b) Describe an Actuator in less than 100 words. (4 Marks)

c) List Four Common Actuator Challenges (10 Marks)

5. a) Elements of an Electronic Communication System



Name the blocks labelled 1 to 5 (7.5 Marks)

b) What are the Three characteristics in the carrier signal that can be modified by the baseband signal during the process of modulation? (3 Marks)

c) i. Between the Carrier and Baseband Signal which one carries information? (1 Marks)

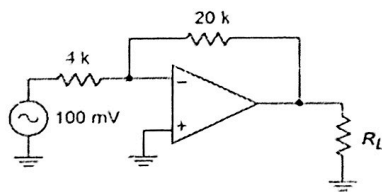
ii. Give 2 Examples of the information carried in (i). (1 Marks)

iii. Give a Sketch of a Satellite communication system (7.5 Marks)

6. a) Describe Amplitude Modulation using Sketches. (15 Marks)

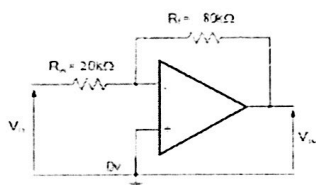
b) In Less than 200 words describe Amplitude Modulation. (5 Marks)

7. a) For the following inverting amplifier circuit, calculate the input impedance and output voltage.



(10 Marks)

b) Calculate the closed Loop gain of the below Op amp.



10 Marks)