**Fundamentals of Electronics Engineering (BEC 105)**

**Assignment 4**

1. What is Operational Amplifier. Draw it using symbolic representation and explain the inverting and non-inverting mode.
2. Explain why there is infinite bandwidth for Ideal Op-amp.
3. Explain the ideal op-amp Characteristics.
4. Define
5. BW
6. PSRR
7. CMRR for an op-amp.
8. Explain Ideal Op-amp and find derive the expression for
9. Differential Gain.
10. Common Mode Gain.
11. Common Mode rejection ratio.
12. Voltage level and its saturating property.
13. Why is it necessary to reduce the gain of op-amp from its open loop value?
14. Explain voltage transfer characteristics of open loop configuration of Op-amp.
15. State the realistic assumptions related to the op-amps and state their uses.
16. Why an inverting amplifier is called scale changer? Derive the expression with the help of neat and clean circuit diagram
17. Draw the circuit diagram of the op-amp integrator and derive the expression for its output voltages and list all the applications of it.
18. Draw the output waveforms of op-amp differentiator if its input waveform is
19. Step Signal.
20. Square wave.
21. Sine Signal.