**ASSIGNMENT NO 1**

1. What is bipolar transistor? Explain the types of BJT.

2. Explain the working of pnp-BJT with suitable diagram. Also, explain emitter injection efficiency and base transport factor.

3. What are the different biasing techniques used in a BJT?

4. Explain with suitable diagram the following phenomena in a BJT:

(1) Base-Width modulation

(2) Thermal Runaway

5. Explain the role Stability factor (S) in a BJT. Support your answer for different biasing techniques.

6. What is the need of compensation techniques in a BJT?

7. What is the main use of darlington pair? What is the effect on current gain in a darlington pair?

8. Why darlington pair is not preferable for more than two-stages?

9. Explain difference between cascade and cascade amplifier? Why cascade amplifier has high bandwidth?

10. Which is the objective in designing a differential amplifier? Also, explain the different configurations used in differential amplifier?