12. With neat sketch, explain the operation of common emitter JFET amplifier. Sketch its frequency response and give the analysis of the circuit mathematically.

13. With circuit diagram, explain the working of a 2-stage RC coupled amplifier and derive the output relation of each stage.

Or

14. Derive the relationship between cut-off frequency and bandwidth in an RC coupled amplifier in single stage and double stage. Compare both.

15. With circuit diagram, explain the working of complementary symmetry amplifiers. Describe its advantages over other models.

Or

16. Explain the operation of class B power amplifier. Derive the equation of power gain and efficiency.

17. With diagram, explain the working of a current shunt feedback circuit.

Or

18. Explain the operation of RC phase shift oscillator with neat circuit diagram. Give equation of frequency of oscillation.

19. With circuit diagram, explain the operation of astable multivibrator.

Or

20. Sketch a monostable multivibrator. Derive the design steps and give the necessary mathematical representation at each step.

(5 × 12 = 60 marks)