

Either:

4. a) What is microwave device? Explain the construction and working of magnetrons. 8
- b) Discuss the principle and operation of Klystrons. 8

OR

- e) Explain the working of Helix travelling wave tubes. 8
- f) Write note on- 8
- i) IMPATT diode
 - ii) TRAPATT diode
5. All questions are compulsory.
- a) Explain how operational amplifier is used as buffer amplifier. 4
- b) Why modulation is necessary in communication? Define modulation index. 4
- c) Differentiate between Ladder and weighted registers. 4
- d) Explain velocity modulation. 4
