MEMT -103

M.E./M.Tech., 1 Semester

Examination, December 2014

Advanced Electronic Devices

Time : Three Hours

Maximum Marks :70

Note : All questions are compulsory. All questions carry equal marks. Assume data if necessary.

1. a) Derive electrostatic lens field paraxial ray equation. b) What are the properties aberrations of general lens?

OR

a) Derive the magnetic field equation of motion of paraxial electron defects.

b) Explain briefly the focussing action of magnetic lenses.

2. Explain electron microscope structures in detail.

OR

Explain multicavity magnetron in detail state their resonant properties, electron behavior in crossed magnetic and electric fields.

3. a) Describe the principle and theory of LASERS. b) Derive Manley-Rowe equation.

OR

a) Explain mounting microstrip in detail.

b) Describe the output characteristics of magnetrons strapping?

4. a) Explain the behavior of semiconductor devices at microwave frequencies.
b) Explain microstrip transmission lines in detail.

OR

a) Explain the phenomenon of Gunn effect.
b) Explain construction working and characteristics of PIN diodes.

5. Write short notes on any two

a) TWT

b) Backward Oscillators

c) Tunnel diode

d) Varactor diode