

Roll No

[2]

MTDE-301(C)
M.E./M.Tech., III Semester
Examination, November 2018
Opto Electronics

Time : Three Hours

Maximum Marks : 70

- Note :** i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Explain about Electron-hole pair formation and recombination in semiconductors.
b) Discuss about stark effects. Also discuss about absorption and emission spectra.
2. a) Discuss about stokes shift in optical transitions.
b) Discuss about excitation, recombination and band to band recombination.
3. a) Explain the working of Heterostructure LASER sources.
b) Explain the principle of Acousto-optic modulators.
4. a) Derive the laser rate equations. Also discuss about the laser modes and mode locking.
b) Explain the principle of Magneto-optic modulator.

5. a) Explain the principle of photo transistors and OPFET.
b) Discuss the working of SCCDS and BCCDS.
6. a) Discuss about Half tone processing and nonlinear optical processing.
b) Explain the following:
 - i) Optical phase conjugate devices
 - ii) Spatial light modulator
7. Explain the principle working of following
 - a) Nonlinear Directional couplers
 - b) Nonlinear optical loop mirrors
 - c) Fiber optic PLA
8. Write short notes on any two of the following:
 - a) Auger recombination
 - b) POSC multiprocessor
 - c) Soliton
