



(Pages : 3)

N – 5751

Reg. No. :

Name :

Eighth Semester B.Tech. Degree Examination, April 2022.

(2013 Scheme)

Elective – V

13.805.3 – OPTICAL INTEGRATED CIRCUITS (T)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer all questions. Each Question carries 2 marks

1. Differentiate between electrical IC and optical IC.
2. List the merits of rectangular waveguides?
3. What are the advantages of optical ICs?
4. Briefly explain substitution dopant atoms?
5. Write notes on deposited thin film?
6. What are the measurement losses?
7. Explain any one of coupler?
8. Explain the principle of Raman-Nath modulator?
9. What is direct modulation?
10. List out the applications of micro optical devices

(10 × 2 = 20 Marks)

P.T.O.



PART – B

Answer any one questions from each module. Each question carries 20 marks

Module – I

11. (a) Explain strip loaded wave guide with diagrams. 10
- (b) What is meant by modes of a waveguide? Explain boundary conditions of a planar waveguide. 10

OR

12. Write notes on materials for optical ICs and applications of Integrated optics. 20

Module – II

13. (a) Explain electro-Optic waveguide Characteristics. 10
- (b) Explain epitaxial growth techniques. 10

OR

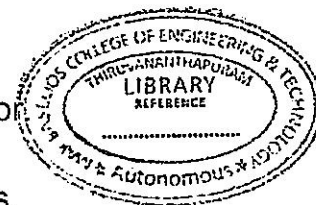
14. Briefly explain any four polymers. 20

Module – III

15. Explain various types of couplers? How coupling between waveguides are materialised? 20

OR

16. (a) Explain the principle of acoustic optic modulator. 10
- (b) Explain electron-optic modulator with diagrams. 10



Module – IV

17. (a) Explain the operation principle of semiconductor Laser? **10**
- (b) Explain the working of integrated semiconductor optical amplifier with proper diagram. **10**

OR

18. (a) What is the principle of micro optical devices? Explain its application. **10**
- (b) Explain factors affecting performance of integrated optical devices. **10**

(4 × 20 = 80 Marks)

