

(Pages : 3)

H – 2942

Reg. No.

Name :

Eighth Semester B.Tech Degree Examination, November 2019

(2013 Scheme)

13.805.3 OPTICAL INTEGRATED CIRCUITS (T) (Elective V)

Time : 3 Hours

Max. Marks : 100

PART– A

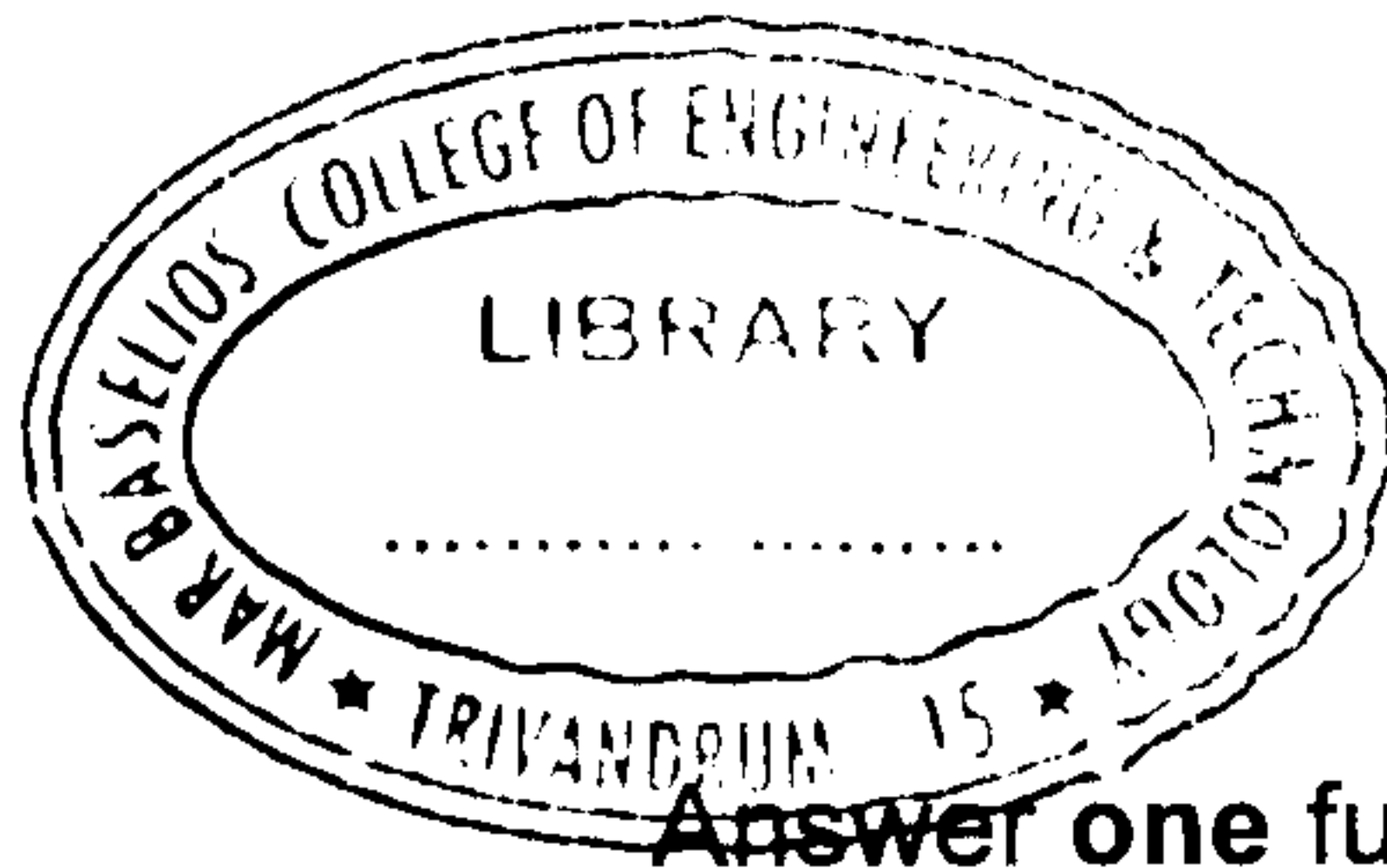
Answer **all** the questions.

1. What do you understand by Integrated optics?
2. Name any two substrate materials used for making an optical IC.
3. Define numerical aperture of a fiber.
4. What is Dominant mode of a fiber?
5. Mention the primary function of a waveguide coupler.
6. What is Electrooptic effect?
7. Differentiate: Symmetric and Asymmetric wave guides.
8. What is an Integrated optical Amplifier?
9. What are strip loaded waveguides?
10. Name the sources for absorption in a fiber.

(10 × 2 = 20 Marks)

P.T.O.





PART – B

Answer one full question from each Module. Each question carries 20 marks.

Module I

11. (a) Compare an optical IC with an Electrical IC. State the advantages of each category. (7)
- (b) Elaborate on the applications of Integrated optics. (5)
- (c) Discuss on the modes in a planar waveguide. (8)
12. (a) Examine the effectiveness of rectangular waveguides. (10)
- (b) Elucidate on optical waveguide mode. (10)

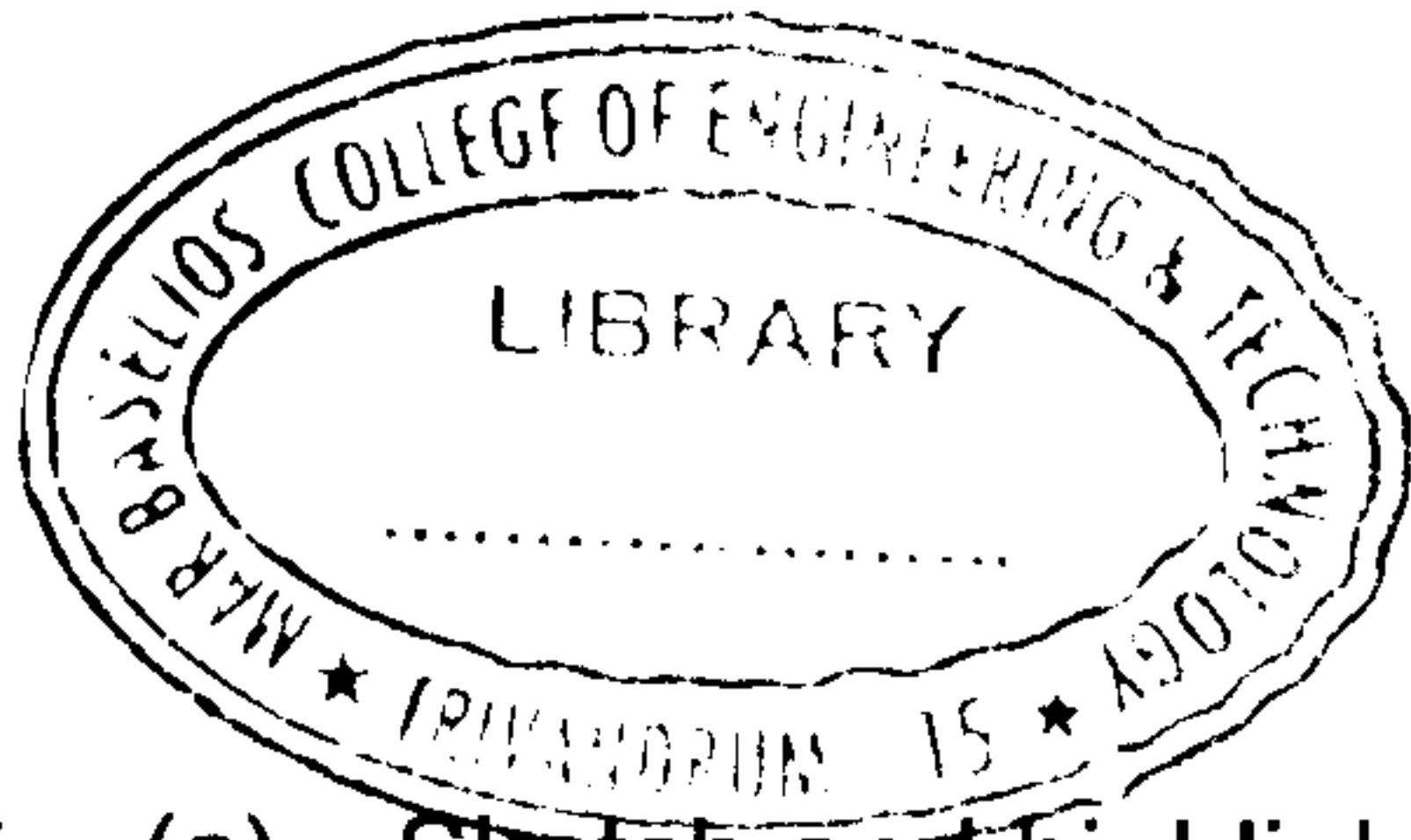
Module II

13. (a) Critically examine the deposited its in film structures. (10)
- (b) Demonstrate the behaviour of substitution dopant atoms. (10)
14. Develop a treatise on the concept, working, characteristics and applications of Electro–optic waveguides. (20)

Module III

15. (a) What are the losses occur in optical wave guides? Explain. (5)
- (b) Classify the types of optical waveguides. (5)
- (c) Describe the processes of measuring different losses. (10)
16. (a) Present coupled mode theory. (8)
- (b) Depict the salient features of Raman–Nath and Bragg types Modulators. (6+6)





Module IV

17. (a) Sketch and highlight the principle of working of semiconductor LASER. (10)
- (b) Enumerate on Direct modulator of QD LASER. (10)
18. (a) What are micro optical Devices? How do they work? (7)
- (b) Explain the structures of Micro optical devices. (7)
- (c) List out the applications of micro optical devices. (6)
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