Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MEVD-301(A)

M.E./M.Tech. III Semester

Examination, November 2018

Opto-Electronics Integrated Circuits

(Elective - IV)

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.
iii) Assuming missing data suitably.

1. a) Discuss the theory of optical waveguide using two dimensional wave guide system. 7
   b) Discuss the mode cut off conditions. 7

2. a) Explain the fabrication process for waveguides. Write all the steps and explain with help of a suitable diagram. 7
   b) Explain about the epitaxial growth of III-V compound semiconductor materials. 7

3. a) Discuss about the wave guide theory. Explain the one dimensional waveguides. 7
   b) Discuss the radiation and bending losses of optical waveguides. 7

4. a) Draw and explain the procedure of coupling between optical waveguides. 7
   b) "Modulators and switches play a vital role in wave guides" State reasons to support your answer. 7

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5. a) Discuss about the acousto-optic and magneto-optic effect. 7
   b) Write an introductory note on Distributed feedback lasers. Write its applications. 7

6. a) Discuss the various consequences for the wave equations in optoelectronics. 7
   b) Discuss the principle of distributed feedback lasers. 7

7. a) Discuss the principle working of tunable laser diodes. 7
   b) Given an over view of optical integrated circuits. 7

8. Write short notes on: 14
   a) Laser diodes
   b) Optical lasers
   c) Grating couplers
   d) Waveguide Profiling
   e) Electro optic effects

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