Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **14EC2046** | **Duration :** | **3hrs** |
| **Sub. Name :** | **OPTOELECTRONICS** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Explain the electrical conductivity of extrinsic semiconductors and it’s variation with temperature and impurity addition. | CO1 | 20 |
| (OR) | | | | |
| 2. |  | Explain the frequency response of silicon photodiodes using a suitable graph. | CO1 | 20 |
|  |  |  |  |  |
| 3. | a. | Write short notes on Mode locking of semiconductor laser. | CO1 | 10 |
| b. | Explain in detail the application of laser. | CO1 | 10 |
| (OR) | | | | |
| 4. |  | Explain the following terms  a) Photo luminescence b) Cathode luminescence c) Electro luminescence | CO1 | 20 |
|  |  |  |  |  |
| 5. |  | Discuss in detail about the construction and working of photoconductors. Also explain its classification. | CO2 | 20 |
| (OR) | | | | |
| 6. | a. | Give an account on high speed and long wavelength photodiodes. | CO2 | 10 |
| b. | Discuss the characteristic of p-i-n photodiode with energy band diagram. | CO2 | 10 |
|  |  |  |  |  |
| 7. |  | Write short notes on the following:  i) Tunable threshold logic gates ii) Optical crossbar switching | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Explain the quantum confined stark effect. | CO2 | 20 |
|  | |  |  |  |
|  | | **Compulsory:** |  |  |
| 9. |  | Describe the fabrication process of an opto-electronic integrated transmitter circuit by molecular beam, epitaxy regrowth. | CO3 | 20 |