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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Apr/May – 2017**

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| **Sub. Code :** | **14EC2046** | **Duration :** | **3hrs** |
| **Sub. Name :** | **OPTO ELECTRONICS** | **Max. Marks :** | **100** |

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

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| Q. No | Sub Div. | Questions | Course  Outcome | Marks |
| 1. |  | Describe with the help of experimental set up, how will you determine the nature of a semiconductor using Hall Effect? | CO1 | 20 |
| (OR) | | | | |
| 2. |  | Describe the crystal structure of Silicon and GaAs. | CO1 | 20 |
| 3. |  | Explain the operation of LED and derive an expression for the frequency response and bandwidth of an LED. | CO1 | 20 |
| (OR) | | | | |
| 4. |  | Explain Emission, Absorption, and Radiation of Laser. | CO1 | 20 |
| 5. |  | Explain briefly about the principle and operation of electro-optic modulators with necessary diagrams. | CO2 | 20 |
| (OR) | | | | |
| 6. |  | Discuss the different types of noises in the photodiodes. | CO2 | 20 |
| 7. | a. | Differentiate Analog and Digital modulation techniques. | CO2 | 10 |
|  | b. | Explain the operation of Self Electro-Optic device with necessary diagram. | CO2 | 10 |
| (OR) | | | | |
| 8. |  | What is Electro-Optic Effect? and explain how this is suitable for electro-optic phase modulation and electro-optic amplitude modulation. | CO2 | 20 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Discuss about the need for integration of opto-electronic devices. | CO3 | 10 |
|  | b. | Explain briefly the application of opto-electronic integrated circuits(OEIC). | CO3 | 10 |

ALL THE BEST