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

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

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| **Code :** | **16PH2001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **SEMICONDUCTOR PHYSICS I** | **Max. marks :** | **100** |

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

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain about the Energy Band Diagram of conductors, semiconductors and insulators. | CO1 | 10 |
| b. | Describe about intrinsic and extrinsic semiconductor with neat diagram. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Describe with equation in detail about Drift and Diffusion current in semiconductor. | CO1 | 15 |
| b. | Discuss about the total current. | CO1 | 5 |
|  |  |  |  |  |
| 3. |  | Explain in detail about forward and reverse bias of PN diode with neat circuit and its current voltage characteristics. | CO1 | 20 |
| (OR) | | | | |
| 4. | a. | Design the half wave rectifier circuit using PN diode. | CO2 | 8 |
| b. | Explain about the various resistive transducers with its neat diagram. | CO1 | 12 |
|  |  |  |  |  |
| 5. | a. | Design AND, OR, NOT, NAND and NOR logic gates with its truth table. | CO1 | 10 |
| b. | Explain about the block diagram of microcomputer. | CO2 | 10 |
| (OR) | | | | |
| 6. |  | Explain about working principles of Junction Field Effect Transistor (JFET) with neat diagram. | CO2 | 20 |
|  |  |  |  |  |
| 7. |  | Elaborate the working principles of Metal Oxide Semiconductor Field Effect Transistor with neat diagram. | CO2 | 20 |
| (OR) | | | | |
| 8. | a. | Discuss with block diagram of optical communication using fibre optic cable. | CO3 | 10 |
| b. | Explain about the RAM, ROM, EPROM and block diagram of the microcomputer. | CO2 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Elaborate in detail about the Communication system with its block diagram. | CO3 | 20 |