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



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **16PH2008** | **Duration :** | **3hrs** |
| **Sub. Name :** | **PHYSICS OF LINEAR INTEGRATED CIRCUITS AND VLSI DESIGN** | **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. | Derive and prove the summer circuit of non-inverting op-amp. | CO1 | 15 |
| b. | Calculate an amplifier gain for given parameters (A) = 34000 and a feedback ratio (B) of 0.02. | CO1 | 5 |
| **(OR)** | | | | |
| 2. |  | Derive and explain the ideal condition of operational amplifier with negative feedback system. | CO1 | 20 |
|  |  |  |  |  |
| 3. |  | Derive and explain the Inverting and Non-Inverting operational amplifier with neat diagram. | CO1 | 20 |
| **(OR)** | | | | |
| 4. |  | Elaborate the various steps involved in PMOS fabrication with neat diagram. | CO2 | 20 |
|  |  |  |  |  |
| 5. |  | Explain in detail the importance of stick diagram and also draw the stick diagram of CMOS inverter. | CO2 | 20 |
| **(OR)** | | | | |
| 6. | a. | Compare the Full Custom Design with Semi Custom design of VLSI technology. | CO2 | 15 |
| b. | Draw the tree diagram of integrated circuit design. | CO1 | 5 |
|  |  |  |  |  |
| 7. | a. | Discuss the Hardware description Language in VLSI design. | CO3 | 10 |
| b. | Explain in detail the programmable logic devices. | CO2 | 10 |
| **(OR)** | | | | |
| 8. |  | Elaborate the function of VLSI design flow with neat flow chart. | CO2 | 20 |
|  | | **Compulsory**: |  |  |
| 9. |  | Explain in detail the Field Programmable Gate Array (FPGA) with any example. | CO2 | 20 |