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



**End Semester Examination – Nov/Dec - 2017**

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| **Code :** | **14EC2090** | **Duration :** | **3hrs** |
| **Sub. Name :** | **FUNDAMENTALS OF 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. | a. | Illustrate the applications of op-amp for various mathematical operations. | CO1 | 14 |
| b. | List out the ideal op-amp characteristics. | CO1 | 6 |
| (OR) | | | | |
| 2. | a. | Why NAND and NOR gates are called as universal gates? What are the types of semiconductor memories? | CO1 | 8 |
| b. | Convert the Decimal number (74.3125)10 to octal, binary and hexadecimal. | CO1 | 12 |
|  |  |  |  |  |
| 3. | a. | Why BJT is called as a current controlled device? With neat sketch explain the working principle of common emitter BJT with input and output DC characteristics. | CO1 | 15 |
|  | b. | Differentiate n-type and p-type semiconductor. | CO1 | 5 |
| (OR) | | | | |
| 4. |  | With neat sketch explain the operation of UJT and plot the current curve to show the negative resistance property. | CO1 | 20 |
|  |  |  |  |  |
| 5. |  | State Barkhausen criteria. How transistor circuit is designed to produce oscillations? Explain it with an example. | CO1 | 20 |
| (OR) | | | | |
| 6. | a. | With neat diagram explain the construction and working principle of n channel Junction Field Effect Transistor. | CO2 | 12 |
|  | b. | Discuss the advantages and limitations of JFET with respect to BJT | CO2 | 8 |
|  |  |  |  |  |
| 7. |  | Draw the architecture of 8085 microprocessor and explain its functions. | CO2 | 20 |
| (OR) | | | | |
| 8. | a. | With neat circuit explain the DC signal conditioning unit. | CO2 | 8 |
|  | b. | What are the advantages of virtual instrumentation? | CO3 | 4 |
|  | c. | How telemetry is employed in remote places? | CO3 | 8 |
|  | |  |  |  |
|  | | **Compulsory:** |  |  |
| 9. | a. | Why modulation is done in transmitter side of communication system. | CO3 | 6 |
|  | b. | What are the types of analog modulation? | CO3 | 4 |
|  | c. | How informations are transferred using optical cables? List out the applications and advantages of optical communication. | CO3 | 10 |

ALL THE BEST