**18EE303**

Hall Ticket Number:

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| **II/IV B.Tech (Regular / Supplementary) DEGREE EXAMINATION** | | | |
| **February, 2021** | **Electrical and Electronics Engineering** | | |
| **Third Semester** | **Analog Electronics** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| *Answer* ***ALL*** *Questions from* ***PART-A.*** | | | (1X10= 10 Marks) |
| *Answer* ***ANY FOUR*** *questions from* ***PART-B.*** | | | (4X10=40 Marks) |
| ***Part-A*** | | |  |

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| 1. | Answer all questions | | |  | (1X10=10 Marks) | | |
|  | a) | | What is diode | | | CO1 |  |
|  | b) | | Define clipper | | | CO1 |  |
|  | c) | | What is an amplifier | | | CO2 |  |
|  | d) | | What are different regions of operation of transistor | | | CO2 |  |
|  | e) | | Define negative feedback | | | CO3 |  |
|  | f) | | Classify different types of feedback amplifier | | | CO3 |  |
|  | g) | | Write the condition for sustained frequency of oscillations | | | CO3 |  |
|  | h) | | What is op-amp | | | CO4 |  |
|  | i) | | What is comparator | | | CO5 |  |
|  | j) | | Draw the circuit diagram of differentiator circuit | | | CO5 |  |
|  | | **Part-B** | | | | | |
| 2. |  | | Explain the operation of P-N junction diode and also plot the V-I characteristics of diode | | | CO1 | 10M |
|  | |  | | | | | |
| 3. |  | | With neat sketch explain the operation of full wave bridge rectifier and also derive the expression for efficiency and ripple factor. | | | CO1 | 10M |
|  | |  | | | | | |
| 4. | a) | | With neat sketch Explain the input and output characteristics of CE configuration of transistor | | | CO2 | 8M |
|  | b) | | Compare CE,CB,CC configurations of the transistor | | | CO2 | 2M |
|  | |  | | | | | |
| 5. | a) | | With neat sketch explain the drain and transfer characteristics of JFET | | | CO2 | 8M |
|  | b) | | Give differences between BJT and JFET | | | CO2 | 2M |
|  | |  | | | | | |
| 6. | a) | | Derive expression for input and output resistance of voltage series feedback amplifier | | | CO3 | 5M |
|  | b) | | Derive expression for input and output resistance of voltage shunt feedback amplifier | | | CO3 | 5M |
|  | |  | | | | | |
| 7. | a) | | Explain the characteristics of Negative feedback | | | CO3 | 5M |
|  | b) | | With neat sketch explain the operation of RC phase shift oscillators | | | CO3 | 5M |
|  | |  | | | | | |
| 8. |  | | Explain the operation of instrumentation amplifier with neat sketch and also give its applications | | | CO5 | 10M |
|  | |  | | | | | |
| 9. |  | | With neat sketch explain the operation Integrator circuit using op-amp | | | CO5 | 10M |

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