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

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

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| **Code :** | **09EI221/10EI202/12EI203/EI238** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **ELECTRONIC CIRCUITS** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | Zenor diode maintains a constant output voltage in its \_\_\_\_\_\_\_\_\_\_ region. | 1 |
| 2. | Mention the necessity of using voltage regulator in regulated power supply. | 1 |
| 3. | Write any one of the disadvantages of voltage divider biasing in BJT. | 1 |
| 4. | Why transistor is called as current controlled device? | 1 |
| 5. | List out the advantages of negative voltage feedback. | 1 |
| 6. | Define conversion efficiency of a power amplifier. | 1 |
| 7. | What is quasi-stable state? | 1 |
| 8. | Why astablemultivibrator is called as free running multivibrator? | 1 |
| 9. | Justify that there is no thermal runaway in FET. | 1 |
| 10. | What is the physical meaning of small signal resistance ro? | 1 |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11. | Compare half wave and full wave rectifier. | 3 |
| 12. | Calculate IE in a transistor for which β=50 and IB=20µA. | 3 |
| 13. | Determine the voltage gain for voltage-shunt negative feedback amplifier having A=-100 and β= -0.1 | 3 |
| 14. | State Barkhausen criteria. | 3 |
| 15. | Draw the small signal equivalent circuit for n channel JFET. | 3 |

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| **PART C(5 X 15= 75 MARKS)** | | |
| 16. | With neat circuit diagram and necessary waveforms describe the operation of a fullwave rectifier and derive the expression for ripple factor and rectification efficiency. | 15 |
| (OR) | | |
| 17. | Explain the working of inductor filter and derive its ripple factor. | 15 |
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| 18. | Explain the small signal analysis of common emitter amplifier using h parameters and derive the expression for its voltage gain, current gain, input impedance and output impedance. | 15 |
| (OR) | | |
| 19. | Draw the circuit for fixed-biasing in BJT and derive its stability factor. | 15 |
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| 20. | Prove that the maximum efficiency for class A power amplifier is 25% | 15 |
| (OR) | | |
| 21. | Elucidate voltage series feedback amplifier with neat block diagram and derive its voltage gain, input impedance and output impedance. | 15 |
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| 22. | Summarize the operation of RC phase shift oscillator and derive the frequency of oscillation. | 15 |
| (OR) | | |
| 23. | Describe the operation of bistablemultivibrator in detail with neat circuit diagram and necessary waveform diagrams. | 15 |
|  |  |  |
| 24. | Derive gain, input and output impedance of common source JFET amplifier with a neat circuit diagram and equivalent circuit diagram. | 15 |
| (OR) | | |
| 25. | Analyze fixed bias circuit for FET with neat circuit diagram and highlight the drawback in this biasing and hence, suggest an alternate biasing circuit for FET to overcome that drawback. | 15 |