****

**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

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

**End Semester Examination – Nov/Dec - 2016**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **09EI221/10EI202/12EI203/EI238** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **ELECTRONIC CIRCUITS** | **Max. marks :** | **100** |

|  |  |  |
| --- | --- | --- |
| **Q. No** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | When the diode is reverse biased, it acts as \_\_\_\_\_\_\_\_\_\_\_ circuit. | (1) |
| 2. | Why filter is needed in the design of regulated power supply? | (1) |
| 3. | Is biasing essential for transistor? Why? | (1) |
| 4. | Mention the region of operation of the transistor in which it behaves as a switch. | (1) |
| 5. | Write any two advantages of using negative feedback in the design of amplifier. | (1) |
| 6. | How power amplifier differs from voltage amplifier? | (1) |
| 7. | Define quasi stable state. | (1) |
| 8. | Why astable multivibrator is called as free running oscillator? | (1) |
| 9. | Why thermal runaway is not present in FET? | (1) |
| 10. | Define transconductance in JFET? | (1) |

|  |  |  |
| --- | --- | --- |
| **PART B(5 X 3= 15 MARKS)** | | |
| 11 | Compare half wave rectifier and full wave rectifier. | (3) |
| 12 | Draw the frequency response of RC coupled amplifier. | (3) |
| 13 | A power amplifier operated from 12 V battery gives an output of 2W. Find the maximum collector current in the circuit. | (3) |
| 14 | State Barkhausen criteria. | (3) |
| 15 | List the different types of FET biasing. | (3) |

|  |  |  |
| --- | --- | --- |
| **PART C(5 X 15= 75 MARKS)** | | |
| 16. | With neat circuit diagram and necessary waveforms describe the operation of a full wave rectifier and derive the expression for ripple factor and rectification efficiency. | (15) |
| (OR) | | |
| 17. | Derive the expression for ripple factor for the inductor filter. | (15) |
| 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 self-biasing in BJT and derive its stability factor. | (15) |
| 20. | Prove that the maximum efficiency of series fed directly coupled class A amplifier is 25%. | (15) |
| (OR) | | |
| 21. | With a neat block diagram, explain about voltage series feedback and derive its voltage gain, input impedance and output impedance. | (15) |
| 22. | Explain the operation of Colpitts Oscillator and derive the frequency of oscillation. | (15) |
| (OR) | | |
| 23. | Elucidate the operation of monostablemultivibrator. | (15) |
| 24. | Explain low frequency common source amplifier and derive the expression for voltage gain. | (15) |
| (OR) | | |
| 25. | Discuss about self-biasing in FET with a circuit diagram. | (15) |

ALL THE BEST