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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

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

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

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14EC2006** | **Duration :** | **3hrs** |
| **Sub. Name :** | **Electronic Circuits** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Develop the expression for ripple factor of full wave rectifier with capacitor filter with neat circuit diagram and necessary waveforms. | CO1 | 20 |
| (OR) | | | | |
| 2. | a. | Explain the working of a full wave rectifier with a neat sketch and determine its ripple factor. | CO1 | 10 |
| b. | Derive the expression of ripple factor for the half wave rectifier. | CO1 | 10 |
| 3. |  | A full wave rectifier with capacitive filters has to supply 30V dc to a load resistance of 1 kΩ. Assuming the diode and transformer winding resistance to be negligible, estimate the value of capacitor filter for a ripple factor of 0.01. | CO1 | 20 |
| (OR) | | | | |
| 4. |  | With relevant diagram explain how the output voltage is maintained constant by a controlled transistor series regulator. | CO2 | 20 |
| 5. |  | Draw the circuit diagram showing the voltage divider bias of an N-P-N transistor in the Common Emitter mode. Derive the base current and collector voltage equation for the circuit. Discuss the choice of the circuit parameters for better stability. | CO2 | 20 |
| (OR) | | | | |
| 6. |  | Draw the circuit diagram of Transformer coupled amplifier and explain its working with its frequency response. | CO3 | 20 |
| 7. |  | Mention the features of power transistor. Explain the operation of a series fed class A power amplifier and derive its efficiency. | CO3 | 20 |
| (OR) | | | | |
| 8. |  | Sketch the block diagram of voltage series and voltage shunt feedback circuits and originate the input impedance, output impedance and gain with feedback for the above. | CO2 | 20 |
|  | | **Compulsory:** |  |  |
| 9. | a. | The tuned collector oscillator circuit used in the local oscillator of radio receiver makes use of an LC tuned circuit with L=58.6 μH and C=300 pF. Calculate the frequency of oscillation. | CO3 | 15 |
| b. | With neat sketch explain the single tuned transistor amplifier. Mention the requirements and applications of the circuit. | CO3 | 5 |

ALL THE BEST