

Reg.No. _____



Karunya 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

Code : **14EC2006**
Sub. Name : **Electronic Circuits**

Semester : **2016-17 ODD**
Duration : **3hrs**
Max. marks : **100**

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

| Q. No. | Sub Div. | Questions | Course Outcome | Marks |
|---------------------------|----------|---|----------------|-------|
| 1. | a. | 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. | A full wave rectifier with capacitive filters has to supply 30V dc to a load resistance of 1 k Ω . Assuming the diode and transformer winding resistance to be negligible, estimate the value of capacitor filter for a ripple factor of 0.01. | CO1 | 5 |
| (OR) | | | | |
| 4. | a. | With relevant diagram explain how the output voltage is maintained constant by a controlled transistor series regulator. | CO2 | 20 |
| 5. | a. | 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. | a. | Draw the circuit diagram of Transformer coupled amplifier and explain its working with its frequency response. | CO3 | 5 |
| 7. | a. | 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. | a. | 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 |
| <u>Compulsory:</u> | | | | |
| 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 μ H 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