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



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **17EC2006** | **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. | a. | Compare Half Wave Rectifier and Full Wave Rectifier. | CO2 | 10 |
| b. | Sketch the shunt voltage regulator and derive equations for its output voltage. | CO2 | 5 |
| c. | Evaluate the value of inductance (L) connected to a full wave rectifier operating at 60Hz and provides DC output with 4% ripple for a 100Ω load. | CO2 | 5 |
| **(OR)** | | | | |
| 2. |  | Explain the working of center tapped full wave rectifier with neat circuit diagram and derive its efficiency, ripple factor. | CO2 | 20 |
|  |  |  |  |  |
| 3. | a. | Demonstrate and derive the stability factor for voltage divider bias circuit using BJT and give reason why it is advantageous than fixed bias circuit. | CO4 | 15 |
| b. | Explain the short circuit protection method used for series voltage regulator with a neat circuit diagram. | CO2 | 5 |
| **(OR)** | | | | |
| 4. | a. | With a neat circuit diagram explain fixed bias using FET and determine its Q-point through transfer characteristics using necessary expressions. | CO4 | 12 |
| b. | Determine the operating point for fixed bias using BJT with the following specifications RC=3K Ω, RB=1M Ω, VCC=12V, VBE=0.7V and β=60 | CO4 | 8 |
|  |  |  |  |  |
| 5. | a. | Sketch the transformer coupled Class B power amplifier and discuss the power dissipation, distortion and collector efficiency in detail. | CO5 | 16 |
| b. | What are the special features incorporated in a power transistor? | CO5 | 4 |
| **(OR)** | | | | |
| 6. |  | Construct a single stage practical Common emitter amplifier and explain the function of circuit components in detail. | CO6 | 20 |
|  |  |  |  |  |
| 7. | a. | Sketch the block diagram for Class D power Amplifier and explain its working. | CO5 | 12 |
| b. | Formulate the negative feedback characteristics in voltage amplifiers. | CO1 | 3 |
| c. | Compare current series and current shunt amplifiers. | CO1 | 5 |
| **(OR)** | | | | |
| 8. | a. | What is barkhausen Criterion and explain how an Oscillator Operates? |  | 4 |
| b. | Construct the diagram for voltage shunt feedback amplifier. Explain its working, derive an expression for input impedance, output impedance and gain with feedback, noise,distortion. | CO1 | 16 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Discuss the working principle of RC phase shift oscillator with neat circuit diagram. | CO3 | 10 |
| b. | Construct the diagram of a hartley oscillator and explain its working, advantages, disadvantages and its applications. | CO3 | 10 |