Code No: R07A10201 **R07** **Set No. 2**

I B.Tech Examinations,December 2010
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
Bio-Technology

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. What are the necessary torques required in an indicating instrument? Explain.[16]
2. Three resistance of 25Ω each are connected in Delta across a 400V, 3 phase AC supply. Calculate
   (a) Line and phase currents
   (b) Phase voltage
   (c) Power consumed. [16]
3. Write the steps involved in the design procedure for Asynchronous sequential circuits. Design a type of T flip - flop from logic gates. [16]
4. (a) Draw the circuit and explain the characteristics of CB configuration. [10]
   (b) Write short notes about thermal runaway problems. [6]
5. (a) Show that maximum collector efficiency of class B amplifier is 78.6%. [5]
   (b) Draw neatly the configuration of push - pull amplifier and explain its working. Derive the collector efficiency. [11]
6. A Hartley oscillator is designed with $L_1 = 2$mH, $L_2 = 20\mu$H and a variable capacitance. Determine the range of capacitance values if the frequency of oscillation is varied from 2050 KHz to 3050 KHz. [16]
7. Explain the methods of making single phase induction motor self starting. [16]
8. (a) Give the energy band description of conductors, semiconductors and insulators.
   (b) What do you understand by intrinsic and extrinsic semiconductors? [8+8]

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Code No: R07A10201 **R07** **Set No. 4**

I B.Tech Examinations,December 2010
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
Bio-Technology

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain the methods of making single phase induction motor self starting. [16]
2. (a) Draw the circuit and explain the characteristics of CB configuration. [10]
   (b) Write short notes about thermal runaway problems. [6]
3. A Hartley oscillator is designed with $L_1 = 2$mH, $L_2 = 20\mu$H and a variable capacitance. Determine the range of capacitance values if the frequency of oscillation is varied from 2050 KHz to 3050 KHz. [16]
4. (a) Give the energy band description of conductors, semiconductors and insulators.
   (b) What do you understand by intrinsic and extrinsic semiconductors? [8+8]
5. (a) Show that maximum collector efficiency of class B amplifier is 78.6%. [5]
   (b) Draw neatly the configuration of push - pull amplifier and explain its working. Derive the collector efficiency. [11]
6. What are the necessary torques required in an indicating instrument? Explain.[16]
7. Write the steps involved in the design procedure for Asynchronous sequential circuits. Design a type of T flip - flop from logic gates. [16]
8. Three resistance of 25Ω each are connected in Delta across a 400V, 3 phase AC supply. Calculate
   (a) Line and phase currents
   (b) Phase voltage
   (c) Power consumed. [16]

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Code No: R07A10201 **R07** **Set No. 1**

I B.Tech Examinations,December 2010
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
Bio-Technology

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Show that maximum collector efficiency of class B amplifier is 78.6%. [5]
   (b) Draw neatly the configuration of push - pull amplifier and explain its working. Derive the collector efficiency. [11]
2. (a) Give the energy band description of conductors, semiconductors and insulators.
   (b) What do you understand by intrinsic and extrinsic semiconductors? [8+8]
3. Explain the methods of making single phase induction motor self starting. [16]
4. What are the necessary torques required in an indicating instrument? Explain.[16]
5. Three resistance of 25Ω each are connected in Delta across a 400V, 3 phase AC supply. Calculate
   (a) Line and phase currents
   (b) Phase voltage
   (c) Power consumed. [16]
6. (a) Draw the circuit and explain the characteristics of CB configuration. [10]
   (b) Write short notes about thermal runaway problems. [6]
7. A Hartley oscillator is designed with $L_1 = 2$mH, $L_2 = 20\mu$H and a variable capacitance. Determine the range of capacitance values if the frequency of oscillation is varied from 2050 KHz to 3050 KHz. [16]
8. Write the steps involved in the design procedure for Asynchronous sequential circuits. Design a type of T flip - flop from logic gates. [16]

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Code No: R07A10201 **R07** **Set No. 3**

I B.Tech Examinations,December 2010
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
Bio-Technology

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. What are the necessary torques required in an indicating instrument? Explain.[16]
2. Write the steps involved in the design procedure for Asynchronous sequential circuits. Design a type of T flip - flop from logic gates. [16]
3. (a) Show that maximum collector efficiency of class B amplifier is 78.6%. [5]
   (b) Draw neatly the configuration of push - pull amplifier and explain its working. Derive the collector efficiency. [11]
4. (a) Draw the circuit and explain the characteristics of CB configuration. [10]
   (b) Write short notes about thermal runaway problems. [6]
5. A Hartley oscillator is designed with $L_1 = 2$mH, $L_2 = 20\mu$H and a variable capacitance. Determine the range of capacitance values if the frequency of oscillation is varied from 2050 KHz to 3050 KHz. [16]
6. (a) Give the energy band description of conductors, semiconductors and insulators.
   (b) What do you understand by intrinsic and extrinsic semiconductors? [8+8]
7. Three resistance of 25Ω each are connected in Delta across a 400V, 3 phase AC supply. Calculate
   (a) Line and phase currents
   (b) Phase voltage
   (c) Power consumed. [16]
8. Explain the methods of making single phase induction motor self starting. [16]

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