Code No: R05321801 **R05** **Set No. 2**

III B.Tech II Semester Examinations,December 2010
BASIC ELECTRONICS
Metallurgy And Material Technology

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

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Give typical examples of instruments needing accurate control time.
   (b) Classify timers according to the function performed by them.
   (c) Explain the following types of resistance welding: [4+4+8]
      i. Projection welding
      ii. Butt welding.

2. (a) Draw and explain the SCR triggering circuit employing phase control with RC network.
   (b) Draw the V I characteristics of DIAC and explain its working principle. [8+8]

3. (a) Discuss the effect of negative feedback in amplifiers on
      i. Input impedance
      ii. Stability of gain for changes in device parameters and
      iii. output impedance of the amplifier.
   (b) Calculate the gain of a negative feedback amplifier having A=500 and β =0.02. If the input impedance of the amplifier is 2 kΩ , determine the input impedance of the feedback amplifier. [8+8]

4. (a) Give the measures adopted to reduce undesirable radiation in Induction heating.
   (b) Give the block diagram of CRO and explain each block in detail. [8+8]

5. (a) Discuss how the Burkhausen conditions are satisfied for amplitude stabilization in the R-C phase shift oscillator.
   (b) Draw the circuit of Hartley oscillator and briefly explain the working of it. What is the normal range of frequency of operation of the LC oscillators? [6+10]

6. (a) Sketch a family of CB input characteristics of a transistor and explain the shape of the characteristics qualitatively.
   (b) Derive the relation between α and β of a transistor.
   (c) Define (a) trans-conductance & drain resistance of J F E T. Give their units. [6+6+4]

7. (a) What are the functional units of central processing unit. Briefly explain each of them.

(b) What are the various status flags provided in 8085? Discuss their role. [10+6]

8. (a) Define mean life time of a carrier.

(b) Draw the forward and reverse bias characteristics of a p - n junction diode and explain them qualitatively.

(c) Compare the merits and demerits of H.W. Rectifier, Full Wave Rectifier and Bridge rectifier. [2+8+6]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R05321801 **R05** **Set No. 4**

III B.Tech II Semester Examinations,December 2010
BASIC ELECTRONICS
Metallurgy And Material Technology

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

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Discuss how the Burkhausen conditions are satisfied for amplitude stabilization in the R-C phase shift oscillator.
   (b) Draw the circuit of Hartley oscillator and briefly explain the working of it. What is the normal range of frequency of operation of the LC oscillators? [6+10]
2. (a) Give the measures adopted to reduce undesirable radiation in Induction heating.
   (b) Give the block diagram of CRO and explain each block in detail. [8+8]
3. (a) Sketch a family of CB input characteristics of a transistor and explain the shape of the characteristics qualitatively.
   (b) Derive the relation between α and β of a transistor.
   (c) Define (a) trans-conductance & drain resistance of J F E T. Give their units. [6+6+4]
4. (a) Give typical examples of instruments needing accurate control time.
   (b) Classify timers according to the function performed by them.
   (c) Explain the following types of resistance welding: [4+4+8]
      i. Projection welding
      ii. Butt welding.
5. (a) What are the functional units of central processing unit. Briefly explain each of them.
   (b) What are the various status flags provided in 8085? Discuss their role. [10+6]
6. (a) Define mean life time of a carrier.
   (b) Draw the forward and reverse bias characteristics of a p - n junction diode and explain them qualitatively.
   (c) Compare the merits and demerits of H.W. Rectifier, Full Wave Rectifier and Bridge rectifier. [2+8+6]
7. (a) Draw and explain the SCR triggering circuit employing phase control with RC network.
   (b) Draw the V I characteristics of DIAC and explain its working principle. [8+8]

8. (a) Discuss the effect of negative feedback in amplifiers on
   i. Input impedance
   ii. Stability of gain for changes in device parameters and
   iii. output impedance of the amplifier.

   (b) Calculate the gain of a negative feedback amplifier having A=500 and β =0.02. If the input impedance of the amplifier is 2 kΩ , determine the input impedance of the feedback amplifier. [8+8]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R05321801 **R05** **Set No. 1**

III B.Tech II Semester Examinations,December 2010
BASIC ELECTRONICS
Metallurgy And Material Technology

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

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Discuss the effect of negative feedback in amplifiers on
   i. Input impedance
   ii. Stability of gain for changes in device parameters and
   iii. output impedance of the amplifier.
   (b) Calculate the gain of a negative feedback amplifier having A=500 and β =0.02. If the input impedance of the amplifier is 2 kΩ , determine the input impedance of the feedback amplifier. [8+8]
2. (a) What are the functional units of central processing unit. Briefly explain each of them.
   (b) What are the various status flags provided in 8085? Discuss their role. [10+6]
3. (a) Draw and explain the SCR triggering circuit employing phase control with RC network.
   (b) Draw the V I characteristics of DIAC and explain its working principle. [8+8]
4. (a) Give the measures adopted to reduce undesirable radiation in Induction heating.
   (b) Give the block diagram of CRO and explain each block in detail. [8+8]
5. (a) Discuss how the Burkhausen conditions are satisfied for amplitude stabilization in the R-C phase shift oscillator.
   (b) Draw the circuit of Hartley oscillator and briefly explain the working of it. What is the normal range of frequency of operation of the LC oscillators? [6+10]
6. (a) Sketch a family of CB input characteristics of a transistor and explain the shape of the characteristics qualitatively.
   (b) Derive the relation between α and β of a transistor.
   (c) Define (a) trans-conductance & drain resistance of J F E T. Give their units. [6+6+4]
7. (a) Define mean life time of a carrier.
   (b) Draw the forward and reverse bias characteristics of a p - n junction diode and explain them qualitatively.

(c) Compare the merits and demerits of H.W. Rectifier, Full Wave Rectifier and Bridge rectifier. [2+8+6]

8. (a) Give typical examples of instruments needing accurate control time.

(b) Classify timers according to the function performed by them.

(c) Explain the following types of resistance welding: [4+4+8]

i. Projection welding

ii. Butt welding.

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R05321801 **R05** **Set No. 3**

III B.Tech II Semester Examinations,December 2010
BASIC ELECTRONICS
Metallurgy And Material Technology

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

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Give the measures adopted to reduce undesirable radiation in Induction heating.
   (b) Give the block diagram of CRO and explain each block in detail. [8+8]
2. (a) Discuss the effect of negative feedback in amplifiers on
      i. Input impedance
      ii. Stability of gain for changes in device parameters and
      iii. output impedance of the amplifier.
   (b) Calculate the gain of a negative feedback amplifier having A=500 and β =0.02. If the input impedance of the amplifier is 2 kΩ, determine the input impedance of the feedback amplifier. [8+8]
3. (a) Draw and explain the SCR triggering circuit employing phase control with RC network.
   (b) Draw the V I characteristics of DIAC and explain its working principle. [8+8]
4. (a) Give typical examples of instruments needing accurate control time.
   (b) Classify timers according to the function performed by them.
   (c) Explain the following types of resistance welding: [4+4+8]
      i. Projection welding
      ii. Butt welding.
5. (a) Sketch a family of CB input characteristics of a transistor and explain the shape of the characteristics qualitatively.
   (b) Derive the relation between α and β of a transistor.
   (c) Define (a) trans-conductance & drain resistance of J F E T. Give their units. [6+6+4]
6. (a) What are the functional units of central processing unit. Briefly explain each of them.
   (b) What are the various status flags provided in 8085? Discuss their role. [10+6]
7. (a) Discuss how the Burkhausen conditions are satisfied for amplitude stabilization in the R-C phase shift oscillator.

(b) Draw the circuit of Hartley oscillator and briefly explain the working of it. What is the normal range of frequency of operation of the LC oscillators? [6+10]

8. (a) Define mean life time of a carrier.

(b) Draw the forward and reverse bias characteristics of a p - n junction diode and explain them qualitatively.

(c) Compare the merits and demerits of H.W. Rectifier, Full Wave Rectifier and Bridge rectifier. [2+8+6]

⋆ ⋆ ⋆ ⋆ ⋆