

Code No:RR210302

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SET-1

**B.Tech II Year - I Semester Examinations, December 2011**  
**BASIC ELECTRONICS**  
**(MECHANICAL ENGINEERING)**

**Time: 3 hours**

**Max. Marks: 80**

**Answer any five questions**  
**All questions carry equal marks**

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- 1.a) From the V-I characteristics of a diode, explain the terms dynamic resistance and static resistance.
- b) Draw Bridge rectifier circuit and explain the working of it. What are the advantages of it over the full wave rectifier with centre tapped transformer? [8+8]
- 2.a) What is "Early effect" phenomenon in a transistor and explain its consequences?
- b) Draw and explain the input and output characteristics of n-p-n transistor in Common Base configuration. [8+8]
- 3.a) What are the advantages and disadvantages of negative feed back in amplifiers?
- b) Explain the working of a Wein Bridge oscillator circuit, and derive the expression for frequency of oscillation. [6+10]
- 4.a) List the electronic welding controls used in resistance welding.
- b) Classify the timers according to the function and the technique used to achieve the industrial timing. [8+8]
- 5.a) Discuss important applications of induction heating.
- b) Briefly explain the principle of dielectric heating? Explain what is loss factor? [8+8]
- 6.a) Explain the working and construction of a CRT with neat sketch. Give the detailed description of all parts in a CRT.
- b) What is a time base? State the need for time base in CRO. [8+8]
- 7.a) Explain the block diagram of a microprocessor?
- b) Explain about various addressing modes of microprocessor with suitable examples. [8+8]
- 8.a) List various analog-to-digital conversion techniques.
- b) Explain the operation of flash A-to-D converter. [8+8]

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SET-2

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**BASIC ELECTRONICS**  
**(MECHANICAL ENGINEERING)**

**Time: 3 hours**

**Max. Marks: 80**

**Answer any five questions**  
**All questions carry equal marks**

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- 1.a) What are the advantages and disadvantages of negative feed back in amplifiers?  
b) Explain the working of a Wein Bridge oscillator circuit, and derive the expression for frequency of oscillation. [6+10]
- 2.a) List the electronic welding controls used in resistance welding.  
b) Classify the timers according to the function and the technique used to achieve the industrial timing. [8+8]
- 3.a) Discuss important applications of induction heating.  
b) Briefly explain the principle of dielectric heating? Explain what is loss factor? [8+8]
- 4.a) Explain the working and construction of a CRT with neat sketch. Give the detailed description of all parts in a CRT.  
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- 5.a) Explain the block diagram of a microprocessor?  
b) Explain about various addressing modes of microprocessor with suitable examples. [8+8]
- 6.a) List various analog-to-digital conversion techniques.  
b) Explain the operation of flash A-to-D converter. [8+8]
- 7.a) From the V-I characteristics of a diode, explain the terms dynamic resistance and static resistance.  
b) Draw Bridge rectifier circuit and explain the working of it. What are the advantages of it over the full wave rectifier with centre tapped transformer? [8+8]
- 8.a) What is "Early effect" phenomenon in a transistor and explain its consequences?  
b) Draw and explain the input and output characteristics of n-p-n transistor in Common Base configuration. [8+8]

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SET-3

**B.Tech II Year - I Semester Examinations, December 2011**  
**BASIC ELECTRONICS**  
**(MECHANICAL ENGINEERING)**

**Time: 3 hours**

**Max. Marks: 80**

**Answer any five questions**  
**All questions carry equal marks**

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- 1.a) Discuss important applications of induction heating.
- b) Briefly explain the principle of dielectric heating? Explain what is loss factor? [8+8]
- 2.a) Explain the working and construction of a CRT with neat sketch. Give the detailed description of all parts in a CRT.
- b) What is a time base? State the need for time base in CRO. [8+8]
- 3.a) Explain the block diagram of a microprocessor?
- b) Explain about various addressing modes of microprocessor with suitable examples. [8+8]
- 4.a) List various analog-to-digital conversion techniques.
- b) Explain the operation of flash A-to-D converter. [8+8]
- 5.a) From the V-I characteristics of a diode, explain the terms dynamic resistance and static resistance.
- b) Draw Bridge rectifier circuit and explain the working of it. What are the advantages of it over the full wave rectifier with centre tapped transformer? [8+8]
- 6.a) What is "Early effect" phenomenon in a transistor and explain its consequences?
- b) Draw and explain the input and output characteristics of n-p-n transistor in Common Base configuration. [8+8]
- 7.a) What are the advantages and disadvantages of negative feed back in amplifiers?
- b) Explain the working of a Wein Bridge oscillator circuit, and derive the expression for frequency of oscillation. [6+10]
- 8.a) List the electronic welding controls used in resistance welding.
- b) Classify the timers according to the function and the technique used to achieve the industrial timing. [8+8]

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SET-4

**B.Tech II Year - I Semester Examinations, December 2011**  
**BASIC ELECTRONICS**  
**(MECHANICAL ENGINEERING)**

**Time: 3 hours**

**Max. Marks: 80**

**Answer any five questions**  
**All questions carry equal marks**

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- 1.a) Explain the block diagram of a microprocessor?  
b) Explain about various addressing modes of microprocessor with suitable examples. [8+8]
- 2.a) List various analog-to-digital conversion techniques.  
b) Explain the operation of flash A-to-D converter. [8+8]
- 3.a) From the V-I characteristics of a diode, explain the terms dynamic resistance and static resistance.  
b) Draw Bridge rectifier circuit and explain the working of it. What are the advantages of it over the full wave rectifier with centre tapped transformer? [8+8]
- 4.a) What is "Early effect" phenomenon in a transistor and explain its consequences?  
b) Draw and explain the input and output characteristics of n-p-n transistor in Common Base configuration. [8+8]
- 5.a) What are the advantages and disadvantages of negative feed back in amplifiers?  
b) Explain the working of a Wein Bridge oscillator circuit, and derive the expression for frequency of oscillation. [6+10]
- 6.a) List the electronic welding controls used in resistance welding.  
b) Classify the timers according to the function and the technique used to achieve the industrial timing. [8+8]
- 7.a) Discuss important applications of induction heating.  
b) Briefly explain the principle of dielectric heating? Explain what is loss factor? [8+8]
- 8.a) Explain the working and construction of a CRT with neat sketch. Give the detailed description of all parts in a CRT.  
b) What is a time base? State the need for time base in CRO. [8+8]

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