

Code No: RR210302

RR

Set No. 2

II B.Tech I Semester Examinations, November 2010

BASIC ELECTRONICS

Common to Mechanical Engineering, Production Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions

All Questions carry equal marks

1. Explain the principle and working of binary weighted resistor type D/A converter with relevant input data. [16]
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) By giving necessary basic setup, explain the theory of induction heating. Explain two applications of induction heating.
(b) Discuss the electrodes used in dielectric heating. Explain when air clearance is permitted between the dielectric material and one or both the electrodes used in dielectric heating. [8+8]
4. (a) Explain the various current components in a p-n-p transistor with forward biased emitter junction and reverse biased collector junction.
(b) Explain the V- I characteristics of SCR. [8+8]
5. (a) Draw the block diagram of a general purpose feedback system and prove that, $A_f = \frac{A}{1+A\beta}$
(b) Draw the schematic block diagram of Oscillator and explain its operation. [8+8]
6. (a) What are the functions performed during fetch and execution cycles of an instruction? Explain with suitable examples if required.
(b) If the memory chip size is 1024 x 4 bits, how many chips are required to make up 2K (2048) bytes of memory? How many address lines are necessary to address 2048K (2 Mega bytes) of memory? [8+8]
7. (a) Classify the timers according to the function and the technique used to achieve the industrial timing.
(b) List the electronic welding controls used in resistance welding. [8+8]
8. (a) Calculate the anticipated factor by which the reverse saturation current of a semi conductor diode is multiplied when the temperature is increased from 25° to 80° C
(b) Derive the expressions of $V_{r.m.s}$ and $V_{d.c}$ of a full - wave rectifier output and hence calculate the ripple factor. [8+8]

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Set No. 4

II B.Tech I Semester Examinations, November 2010

BASIC ELECTRONICS

Common to Mechanical Engineering, Production Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions

All Questions carry equal marks

1. (a) What are the functions performed during fetch and execution cycles of an instruction? Explain with suitable examples if required.
(b) If the memory chip size is 1024 x 4 bits, how many chips are required to make up 2K (2048) bytes of memory? How many address lines are necessary to address 2048K (2 Mega bytes) of memory? [8+8]
2. (a) Classify the timers according to the function and the technique used to achieve the industrial timing.
(b) List the electronic welding controls used in resistance welding. [8+8]
3. (a) Draw the block diagram of a general purpose feedback system and prove that, $A_f = \frac{A}{1+A\beta}$
(b) Draw the schematic block diagram of Oscillator and explain its operation. [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.
(b) What is a time base? State the need for time base in CRO. [8+8]
5. (a) Calculate the anticipated factor by which the reverse saturation current of a semi conductor diode is multiplied when the temperature is increased from 25° to 80° C
(b) Derive the expressions of $V_{r.m.s}$ and $V_{d.c}$ of a full - wave rectifier output and hence calculate the ripple factor. [8+8]
6. (a) Explain the various current components in a p-n-p transistor with forward biased emitter junction and reverse biased collector junction.
(b) Explain the V- I characteristics of SCR. [8+8]
7. (a) By giving necessary basic setup, explain the theory of induction heating. Explain two applications of induction heating.
(b) Discuss the electrodes used in dielectric heating. Explain when air clearance is permitted between the dielectric material and one or both the electrodes used in dielectric heating. [8+8]
8. Explain the principle and working of binary weighted resistor type D/A converter with relevant input data. [16]

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Set No. 1

II B.Tech I Semester Examinations, November 2010

BASIC ELECTRONICS

Common to Mechanical Engineering, Production Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions

All Questions carry equal marks

1. (a) What are the functions performed during fetch and execution cycles of an instruction? Explain with suitable examples if required.
(b) If the memory clip size is 1024 x 4 bits, how many clips are required to make up 2K (2048) bytes of memory? How many address lines are necessary to address 2048K (2 Mega bytes) of memory? [8+8]
2. Explain the principle and working of binary weighted resistor type D/A converter with relevant input data. [16]
3. (a) Calculate the anticipated factor by which the reverse saturation current of a semi conductor diode is multiplied when the temperature is increased from 25⁰ to 80⁰ C
(b) Derive the expressions of $V_{r.m.s}$ and $V_{d.c}$ of a full - wave rectifier output and hence calculate the ripple factor. [8+8]
4. (a) Explain the various current components in a p-n-p transistor with forward biased emitter junction and reverse biased collector junction.
(b) Explain the V- I characteristics of SCR. [8+8]
5. (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]
6. (a) Draw the block diagram of a general purpose feedback system and prove that, $A_f = \frac{A}{1+A\beta}$
(b) Draw the schematic block diagram of Oscillator and explain its operation. [8+8]
7. (a) By giving necessary basic setup, explain the theory of induction heating. Explain two applications of induction heating.
(b) Discuss the electrodes used in dielectric heating. Explain when air clearance is permitted between the dielectric material and one or both the electrodes used in dielectric heating. [8+8]
8. (a) Classify the timers according to the function and the technique used to achieve the industrial timing.
(b) List the electronic welding controls used in resistance welding. [8+8]

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Set No. 3

II B.Tech I Semester Examinations, November 2010

BASIC ELECTRONICS

Common to Mechanical Engineering, Production Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions

All Questions carry equal marks

1. (a) Classify the timers according to the function and the technique used to achieve the industrial timing.
(b) List the electronic welding controls used in resistance welding. [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) Draw the block diagram of a general purpose feedback system and prove that,
$$A_f = \frac{A}{1+A\beta}$$

(b) Draw the schematic block diagram of Oscillator and explain its operation. [8+8]
4. (a) Explain the various current components in a p-n-p transistor with forward biased emitter junction and reverse biased collector junction.
(b) Explain the V- I characteristics of SCR. [8+8]
5. (a) By giving necessary basic setup, explain the theory of induction heating. Explain two applications of induction heating.
(b) Discuss the electrodes used in dielectric heating. Explain when air clearance is permitted between the dielectric material and one or both the electrodes used in dielectric heating. [8+8]
6. Explain the principle and working of binary weighted resistor type D/A converter with relevant input data. [16]
7. (a) Calculate the anticipated factor by which the reverse saturation current of a semi conductor diode is multiplied when the temperature is increased from 25° to 80° C
(b) Derive the expressions of $V_{r.m.s}$ and $V_{d.c}$ of a full - wave rectifier output and hence calculate the ripple factor. [8+8]
8. (a) What are the functions performed during fetch and execution cycles of an instruction? Explain with suitable examples if required.
(b) If the memory clip size is 1024 x 4 bits, how many clips are required to make up 2K (2048) bytes of memory? How many address lines are necessary to address 2048K (2 Mega bytes) of memory? [8+8]
