Code No: RR312202   **RR**   **Set No. 2**

III B.Tech I Semester Examinations,November 2010
INDUSTRIAL ELECTRONICS
Instrumentation And Control Engineering

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. Draw and explain the triac time delay relay circuit. [16]

2. Draw the circuit and explain the working of switching mode voltage regulator. What are the salient features of thus circuit? [16]

3. Draw and explain the simple SCR series inverter circuit employing Class A type commutation. Draw and explain the relevant waveforms. Explain its limitations.

[16]

4. (a) Draw the circuit of monolithic regulator connected as a current regulator and explain it. Also obtain the expression for its load current.

   (b) Differentiate between the monolithic and hybrid integrated circuits. [8+8]

5. Explain the functioning of a 2 stage DC amplifier Miller compensation and inverse feedback. [16]

6. (a) List the merits of Induction Heating.

   (b) Explain the main principle behind induction heating. [8+8]

7. (a) Draw and explain the Static DC circuit breaker using SCR and explain its operation.

   (b) Design the proper values in the above circuit if the supply voltage is 100 V, load current is 10 A, and SCR1 has a turn-off time of 15μ sec. SCR2 has a holding current of 3 mA. [8+8]

8. (a) Explain the theory and operation of Triac.

   (b) Explain the characteristics, ratings of Triac. [8+8]

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Code No: RR312202 $\boxed{\textbf{RR}}$ $\boxed{\textbf{Set No. 4}}$

III B.Tech I Semester Examinations,November 2010
INDUSTRIAL ELECTRONICS
Instrumentation And Control Engineering

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Draw and explain the Static DC circuit breaker using SCR and explain its operation.

   (b) Design the proper values in the above circuit if the supply voltage is 100 V, load current is 10 A, and SCR1 has a turn-off time of 15μ sec. SCR2 has a holding current of 3 mA.   [8+8]

2. Draw and explain the simple SCR series inverter circuit employing Class A type commutation. Draw and explain the relevant waveforms. Explain its limitations.

   [16]

3. (a) List the merits of Induction Heating.

   (b) Explain the main principle behind induction heating.   [8+8]

4. Draw the circuit and explain the working of switching mode voltage regulator. What are the salient features of thus circuit?   [16]

5. Explain the functioning of a 2 stage DC amplifier Miller compensation and inverse feedback.   [16]

6. Draw and explain the triac time delay relay circuit.   [16]

7. (a) Draw the circuit of monolithic regulator connected as a current regulator and explain it. Also obtain the expression for its load current.

   (b) Differentiate between the monolithic and hybrid integrated circuits.   [8+8]

8. (a) Explain the theory and operation of Triac.

   (b) Explain the characteristics, ratings of Triac.   [8+8]

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Code No: RR312202　　　　　　**RR**　　　　　　**Set No. 1**

III B.Tech I Semester Examinations,November 2010
INDUSTRIAL ELECTRONICS
Instrumentation And Control Engineering

Time: 3 hours　　　　　　　　　　　　　　　　　　　　　Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Draw the circuit of monolithic regulator connected as a current regulator and explain it. Also obtain the expression for its load current.

   (b) Differentiate between the monolithic and hybrid integrated circuits.　　[8+8]

2. (a) Explain the theory and operation of Triac.

   (b) Explain the characteristics, ratings of Triac.　　　　　　　　　　　[8+8]

3. Draw the circuit and explain the working of switching mode voltage regulator. What are the salient features of thus circuit?　　　　　　　　　　　　[16]

4. Draw and explain the triac time delay relay circuit.　　　　　　　　　　[16]

5. (a) List the merits of Induction Heating.

   (b) Explain the main principle behind induction heating.　　　　　　　　[8+8]

6. Explain the functioning of a 2 stage DC amplifier Miller compensation and inverse feedback.　　　　　　　　　　　　　　　　　　　　　　　　　　[16]

7. Draw and explain the simple SCR series inverter circuit employing Class A type commutation. Draw and explain the relevant waveforms. Explain its limitations.

   　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　[16]

8. (a) Draw and explain the Static DC circuit breaker using SCR and explain its operation.

   (b) Design the proper values in the above circuit if the supply voltage is 100 V, load current is 10 A, and SCR1 has a turn-off time of 15μ sec. SCR2 has a holding current of 3 mA.　　　　　　　　　　　　　　　　　　[8+8]

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Code No: RR312202 | **RR** | **Set No. 3**

III B.Tech I Semester Examinations,November 2010
INDUSTRIAL ELECTRONICS
Instrumentation And Control Engineering

Time: 3 hours | Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. (a) Explain the theory and operation of Triac.

    (b) Explain the characteristics, ratings of Triac. [8+8]

2. Explain the functioning of a 2 stage DC amplifier Miller compensation and inverse feedback. [16]

3. Draw the circuit and explain the working of switching mode voltage regulator. What are the salient features of thus circuit? [16]

4. (a) Draw the circuit of monolithic regulator connected as a current regulator and explain it. Also obtain the expression for its load current.

    (b) Differentiate between the monolithic and hybrid integrated circuits. [8+8]

5. Draw and explain the simple SCR series inverter circuit employing Class A type commutation. Draw and explain the relevant waveforms. Explain its limitations.

    [16]

6. (a) Draw and explain the Static DC circuit breaker using SCR and explain its operation.

    (b) Design the proper values in the above circuit if the supply voltage is 100 V, load current is 10 A, and SCR1 has a turn-off time of 15μ sec. SCR2 has a holding current of 3 mA. [8+8]

7. Draw and explain the triac time delay relay circuit. [16]

8. (a) List the merits of Induction Heating.

    (b) Explain the main principle behind induction heating. [8+8]

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