QP Code: 5077

(b) Explain fan regulator with diac-triac scheme.  4. Solve the following.  (a) Draw and explain H-Bridge inverter, with neat waveforms, using IGBT.  (b) Explain series inverter. Write down its merits and demerits.  10  5. Attempt following questions.  (a) Explain Buck converter. Derive the expression for selection of inductor.  10						
<ol> <li>(2) Solve any three from the remaining</li> <li>(3) Assume suitable data wherever required.</li> <li>Solve any four</li> <li>(a) Compare SCR, IGBT, with various parameters.</li> <li>(b) Explain UJT with basic construction.</li> <li>(c) Write a short note on brushless DC motor.</li> <li>(d) Write a protection scheme for over voltage for SCR.</li> <li>(e) Compare series and parallel inverter.</li> <li>Solve the following.</li> <li>(a) List out various triggering methods of SCR. Explain RC triggering of SCR with diagram.</li> <li>(b) What is commutation of SCR? Explain class C type of commutation with neat waveforms.</li> <li>Solve the following.</li> <li>(a) Explain asymmetric semiconverter along with waveforms for α = 45°.</li> <li>(b) Explain fan regulator with diac-triac scheme.</li> <li>Solve the following.</li> <li>(a) Draw and explain H-Bridge inverter, with neat waveforms, using IGBT.</li> <li>(b) Explain series inverter. Write down its merits and demerits.</li> <li>Attempt following questions.</li> <li>(a) Explain Buck converter. Derive the expression for selection of inductor.</li> <li>(b) Explain working principle of induction heating. Give example and write down its merits and demerits.</li> <li>Solve the following.</li> <li>Design an AC power control for firing angle of 90° to supply ac voltage to a resistive load of 10 Q from 230 v, 50 H<sub>2</sub> mains supply. Use SCR- UJT circuit. No temp.</li> </ol>				(3 Hours)	[ Total Marks	: 80
<ul> <li>(a) Compare SCR, IGBT, with various parameters.</li> <li>(b) Explain UJT with basic construction.</li> <li>(c) Write a short note on brushless DC motor.</li> <li>(d) Write a protection scheme for over voltage for SCR.</li> <li>(e) Compare series and parallel inverter.</li> <li>2. Solve the following.</li> <li>(a) List out various triggering methods of SCR. Explain RC triggering of SCR with diagram.</li> <li>(b) What is commutation of SCR? Explain class C type of commutation with neat waveforms.</li> <li>3. Solve the following.</li> <li>(a) Explain asymmetric semiconverter along with waveforms for α =45°.</li> <li>(b) Explain fan regulator with diac-triac scheme.</li> <li>4. Solve the following.</li> <li>(a) Draw and explain H-Bridge inverter, with neat waveforms, using IGBT.</li> <li>(b) Explain series inverter. Write down its merits and demerits.</li> <li>5. Attempt following questions.</li> <li>(a) Explain Buck converter. Derive the expression for selection of inductor.</li> <li>(b) Explain working principle of induction heating. Give example and write down its merits and demerits.</li> <li>6. Solve the following.</li> <li>Design an AC power control for firing angle of 90° to supply ac voltage to a resistive load of 10 Ω from 230 v , 50 H<sub>x</sub> mains supply. Use SCR- UJT circuit. No temp.</li> </ul>	N	.в. :	(2)	Solve any three from the remai		5
<ul> <li>(a) List out various triggering methods of SCR. Explain RC triggering of SCR 10 with diagram.</li> <li>(b) What is commutation of SCR? Explain class C type of commutation with 10 neat waveforms.</li> <li>3. Solve the following.</li> <li>(a) Explain asymmetric semiconverter along with waveforms for α =45°. 10</li> <li>(b) Explain fan regulator with diac-triac scheme. 10</li> <li>4. Solve the following.</li> <li>(a) Draw and explain H-Bridge inverter, with neat waveforms, using IGBT. 10</li> <li>(b) Explain series inverter. Write down its merits and demerits. 10</li> <li>5. Attempt following questions.</li> <li>(a) Explain Buck converter. Derive the expression for selection of inductor. 10</li> <li>(b) Explain working principle of induction heating. Give example and write down its merits and demerits.</li> <li>6. Solve the following. Design an AC power control for firing angle of 90° to supply ac voltage to a resistive load of 10 Ω from 230 v, 50 H₂ mains supply. Use SCR- UJT circuit. No temp.</li> </ul>	1.	<ul><li>(a) Compa</li><li>(b) Explain</li><li>(c) Write a</li><li>(d) Write a</li></ul>	nre SCI n UJT a short a prote	with basic construction. note on brushless DC motor. ction scheme for over voltage for	6.	20
<ul> <li>(a) Explain asymmetric semiconverter along with waveforms for α =45°.</li> <li>(b) Explain fan regulator with diac-triac scheme.</li> <li>4. Solve the following.</li> <li>(a) Draw and explain H-Bridge inverter, with neat waveforms, using IGBT.</li> <li>(b) Explain series inverter. Write down its merits and demerits.</li> <li>5. Attempt following questions.</li> <li>(a) Explain Buck converter. Derive the expression for selection of inductor.</li> <li>(b) Explain working principle of induction heating. Give example and write down its merits and demerits.</li> <li>6. Solve the following.</li> <li>Design an AC power control for firing angle of 90° to supply ac voltage to a resistive load of 10 Ω from 230 v, 50 H<sub>z</sub> mains supply. Use SCR- UJT circuit. No temp.</li> </ul>	2.	(a) List ou with di (b) What i	it vario iagram is com	ous triggering methods of SCR mutation of SCR ? Explain cla		
<ul> <li>(a) Draw and explain H-Bridge inverter, with neat waveforms, using IGBT.</li> <li>(b) Explain series inverter. Write down its merits and demerits.</li> <li>5. Attempt following questions.</li> <li>(a) Explain Buck converter. Derive the expression for selection of inductor.</li> <li>(b) Explain working principle of induction heating. Give example and write down its merits and demerits.</li> <li>6. Solve the following.</li> <li>Design an AC power control for firing angle of 90° to supply ac voltage to a resistive load of 10 \Omega from 230 v, 50 H<sub>z</sub> mains supply. Use SCR- UJT circuit. No temp.</li> </ul>	3.	(a) Explai	n asym	metric semiconverter along with	waveforms for $\alpha = 45^{\circ}$ .	10 10
<ul> <li>(a) Explain Buck converter. Derive the expression for selection of inductor. 10</li> <li>(b) Explain working principle of induction heating. Give example and write down its merits and demerits.</li> <li>6. Solve the following.  Design an AC power control for firing angle of 90° to supply ac voltage to a resistive 20 load of 10 Ω from 230 v, 50 H<sub>z</sub> mains supply. Use SCR- UJT circuit. No temp.</li> </ul>	4.	(a) Draw a	and ex	plain H-Bridge inverter, with nea	The second secon	10 10
Design an AC power control for firing angle of 90° to supply ac voltage to a resistive 20 load of 10 \O from 230 v, 50 H <sub>z</sub> mains supply. Use SCR- UJT circuit. No temp.	5.	<ul><li>(a) Explai</li><li>(b) Explai</li></ul>	n Bucl n work	c converter. Derive the expression in the converter of induction heating		10 10
	6.	Design and load of 10	AC pov	ver control for firing angle of 90° n 230 v , 50 H <sub>z</sub> mains supply. U	se SCR- UJT circuit. No temp.	

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