

NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : BE/EEE	Year / Semester : III/V	Format No.	NAC/TLP-07a.13
Subject Code : EE8553	Subject Name : Power Electronics	Rev. No.	02
Unit No : 3	Unit Name : DC to DC converters	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ / True or False / Fill up with Choices)	BTL
1	In the _____ type of chopper, two stage conversions takes place. A) AC link B) AC-DC C) None of the mentioned D) DC link	L1
2	Choppers convert A) AC to DC B) DC to AC C) AC to AC D) DC to DC	L1
3	A chopper may be thought as a A) DC equivalent of an induction motor B) DC equivalent of an AC transformer C) Diode rectifier D) Inverter with DC input	L2
4	Which device can be used in a chopper circuit? A) BJT B) MOSFET C) GTO D) All of the mentioned	L1
5	A chopper is a A) Time ratio controller B) High speed semiconductor switch C) AC to DC converter D) DC transformer	L1
6	What is the duty cycle of a chopper ? A) Ton/Toff B) Ton/T C) Toff x Ton D) T/Ton	L1
7	The load voltage of a chopper can be controlled by varying the A) firing angle B) duty cycle C) reactor position D) extinction angle	L2
8	The values of duty cycle (α) lies between A) $0 < \alpha < 1$ B) $0 \leq \alpha \leq 1$ C) $0 > \alpha > -1$ D) $1 < \alpha < 100$	L2
9	If T is the time period for a chopper circuit and α is its duty cycle, then the chopping frequency is	L3

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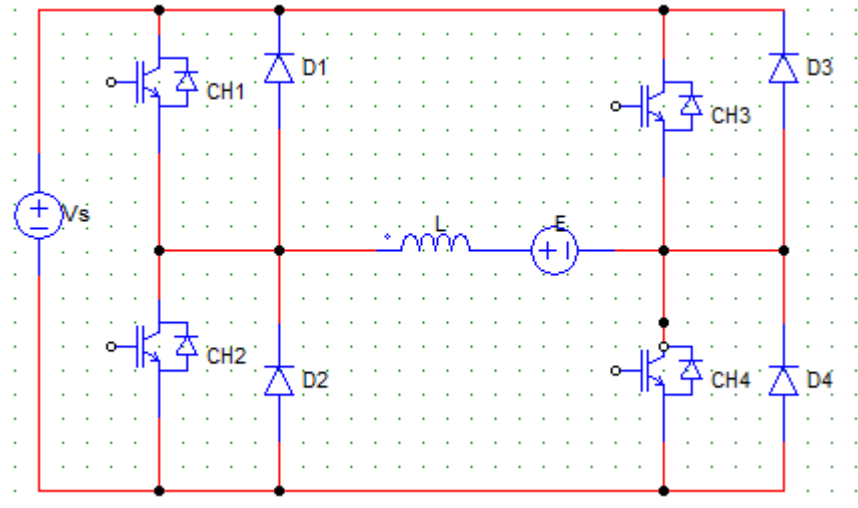
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	<p>A) T_{on}/α B) α/T_{on} C) T_{off}/α D) α/T_{off}</p>	
10	<p>Find the output voltage expression for a step down chopper with V_s as the input voltage and α as the duty cycle. A) $V_o = V_s/\alpha$ B) $V_o = V_s \times \alpha$ C) $V_o = V_s/2\alpha$ D) $V_o = 2V_s/\alpha\pi$</p>	L3
11	<p>A type C chopper consists of _____ diodes and _____ switches in anti-parallel. A) 3, 4 B) 4, 4 C) 2,2 D) 3,3</p>	L2
12	<p>Identify the given circuit</p> <p>A) type F chopper B) type E chopper C) type D chopper D) two quadrant type C chopper</p>	L3
13	<p>For the first quadrant operation of type E chopper</p>	L3

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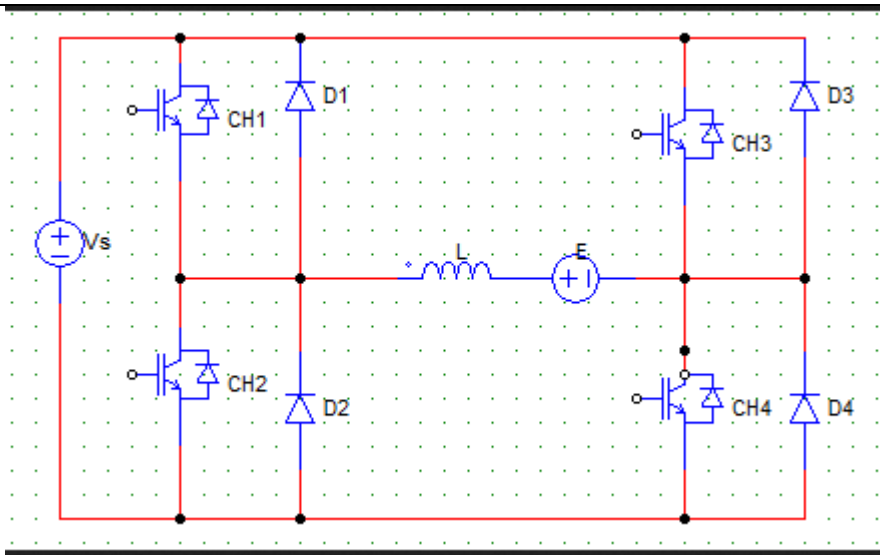
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	 <p>A) CH1 and CH2 is on B) CH1 and CH4 is on C) CH1 and CH3 is on D) Only CH1 is on</p>	
14	<p>What is the expression for load voltage when the chopper is operated in the second quadrant?</p> <p>A) 0 B) V_s C) E D) $E + Ldi/dt$</p>	L2
15	<p>For a type E chopper operating in the first quadrant, find the expression for average output voltage.</p> <p>A) V_s B) $E - Ldi/dt$ C) 0 D) $E + Ldi/dt$</p>	L2
16	<p>The load emf E must be reversed for</p> <p>A) fourth quadrant operation B) third quadrant operation C) first and second quadrant operation D) both third and fourth quadrant operation</p>	L2
17	<p>The load emf E will be be forwarded for</p> <p>A) Both third and fourth quadrant operation B) first and second quadrant operation C) third quadrant operation D) fourth quadrant operation</p>	L2
18	<p>For the third quadrant operation of type E chopper</p>	L3

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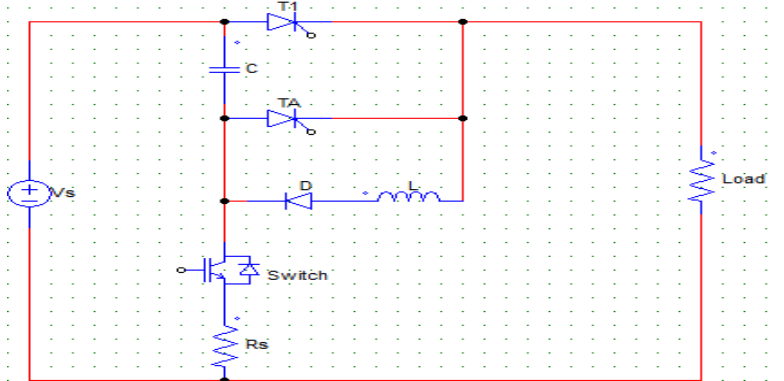
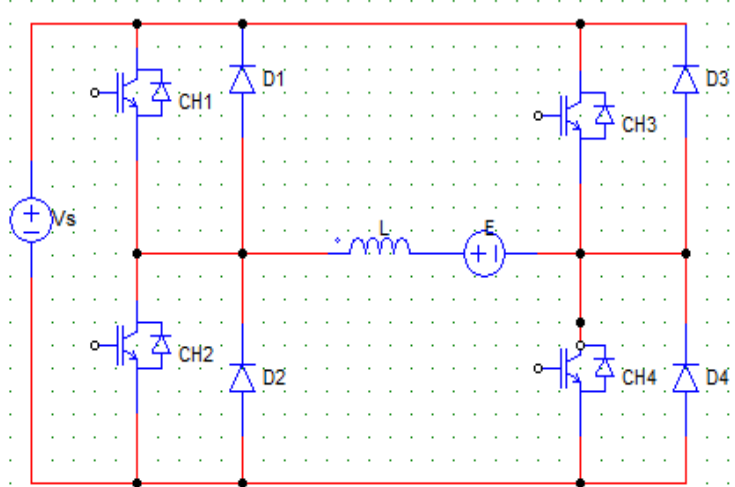


- A) CH3 is on
- B) CH2 and CH1 are on
- C) CH1 is on
- D) None of the mentioned**

19	In case of TRC (Time Ratio Control), _____ is varied A) duty cycle B) firing angle C) supply voltage magnitude D) supply frequency	L2
20	In constant frequency TRC or pulse width modulation scheme, _____ is varied. A) T_{on} B) V _s C) T D) f	L2
21	The process of commutating a SCR by applying a reverse voltage to an SCR through a previously charged capacitor is called as A) Voltage commutation B) Capacitor commutation C) Forced commutation D) Current commutation	L1
22	In a flyback converter, the inductor of the buck-boost converter has been replaced by a A) Flyback capacitor B) Flyback resistor C) Flyback transformer D) Flyback transistor	L2

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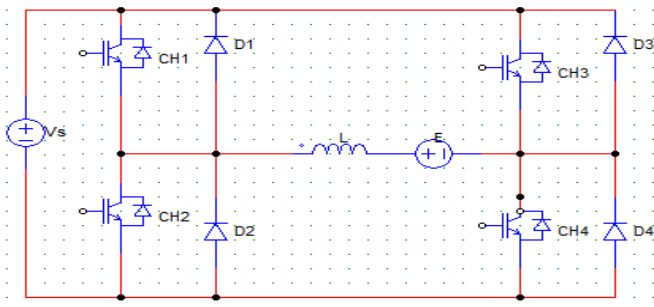
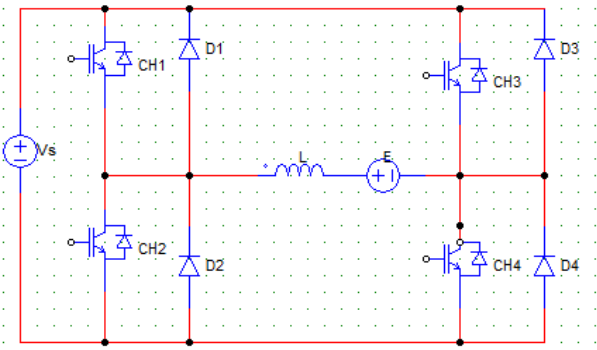
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23	<p>Below given circuit is a</p>  <p>A) voltage commutated chopper B) current commutated chopper C) load commutated chopper D) none of the mentioned</p>	L3
24	<p>In the below shown voltage commutated chopper circuit, the chopper operation can only start when</p>  <p>A) the capacitor is charged B) t1 is gated C) the capacitor is dis-charged D) the diode is forward biased</p>	L3
25	<p>In a voltage commutated chopper circuit, the capacitor C can be charged to Vs by</p>	L3

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	 <p>A) gating TA B) both gating TA and closing the switch C) gating T1 D) closing the switch</p>	
26	<p>In the below given circuit, when the main thyristor T1 is triggered after charging the capacitor, the commutation current flows through the path</p>  <p>A) S – C – T1 – Load – S B) C – T1 – L – D – C C) C – T1 – TA – C D) Vs – T1 – Load – Vs</p>	L3
27	<p>In a voltage commutated SCR, the main SCR is commutated by</p> <p>A) sending a negative pulse to the main SCR B) none of the mentioned C) removing the supply Vs D) triggering the auxiliary SCR</p>	L2
28	<p>The below given figure is that of a _____ (IGBT is used as a chopper switch)</p>	L3

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	<p>A) step-down chopper B) none of the mentioned C) step-up chopper D) step-up/step-down chopper</p>	
<p>29</p>	<p>In the below given circuit, when the main SCR T1 is commutated at t_2, the load voltage is</p> <p>A) 2Vs B) Vs C) 0 D) $V_s + L di/dt$</p>	<p>L3</p>
<p>30</p>	<p>Which type of commutation circuit does not work on no load?</p> <p>A) Voltage commutation B) Current commutation C) None of the mentioned D) voltage and current commutation</p>	<p>L2</p>