

Unit 10 - week 9

Course outline

How does an NPTEL online course work?

Week 1

Week 2

Week 3

Week 4

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Week 8

week 9

- Neutral Point Clamped Converter - Mid-point Voltage Fluctuations
- Neutral Point Clamped Converter - Capacitor Voltage Balancing
- Neutral Point Clamped Converter - Another Strategy of Capacitor Voltage Balancing
- Other Topologies of NPC Converters - Higher Level NPC, TNPC and Active NPC
- Multipulse Transformer - Part I
- Lecture Slides week 9
- Quiz : Assignment 9
- Week 9 Feedback Form

Week 10

Week 11

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Assignment Solutions

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Assignment 9

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2020-04-01, 23:59 IST.

1) Which among the following switching state does not affect the mid-point voltage?

1 point

- (0 0 -)
- (+ - +)
- (+ 0 -)
- (+ 0 0)

No, the answer is incorrect. Score: 0

Accepted Answers: (+ - +)

2) Which among the following group has complimentary effects on the mid-point voltage?

1 point

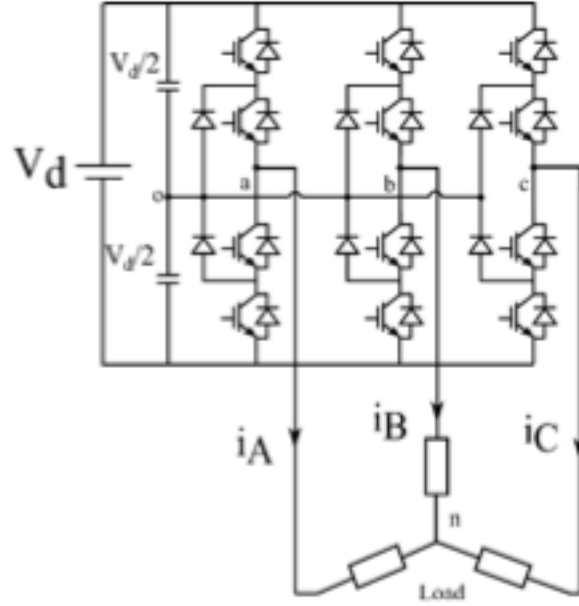
- (0 + 0), (- 0 -)
- (+ + 0), (0 0 +)
- (+ 0 +), (0 + 0)
- (0 + +), (+ - -)

No, the answer is incorrect. Score: 0

Accepted Answers: (0 + 0), (- 0 -)

3) The figure shows the circuit diagram of a three phase NPC converter feeding a balanced load. If during (00+) switching combination, $i_A > 0$, $i_B > 0$ and $i_C < 0$, then the neutral point voltage with respect to lower DC bus during this switching cycle will,

2 points



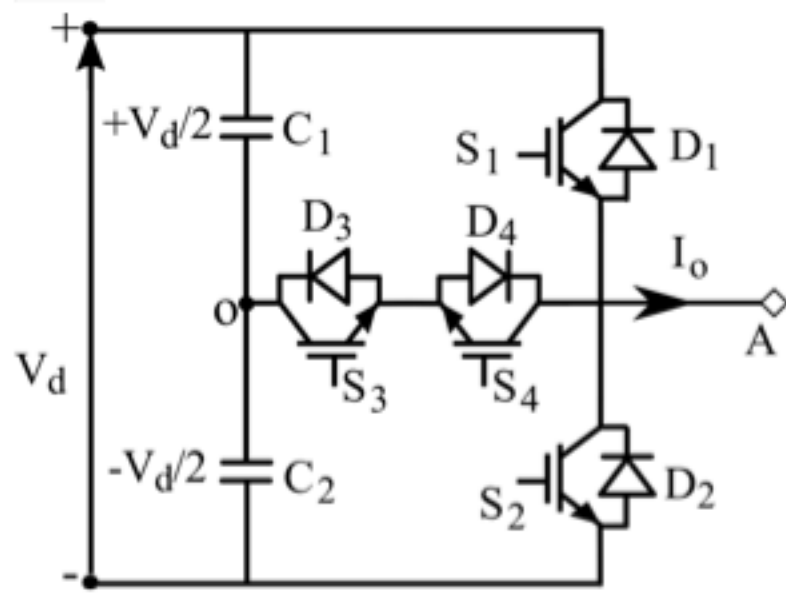
- remain same
- increase
- decrease
- fall to zero

No, the answer is incorrect. Score: 0

Accepted Answers: decrease

4) The figure shows the circuit diagram of a single phase TNPC converter. Which among the following devices are conducting for producing $V_{AO} = -V_d/2$ and $I_o > 0$?

2 points



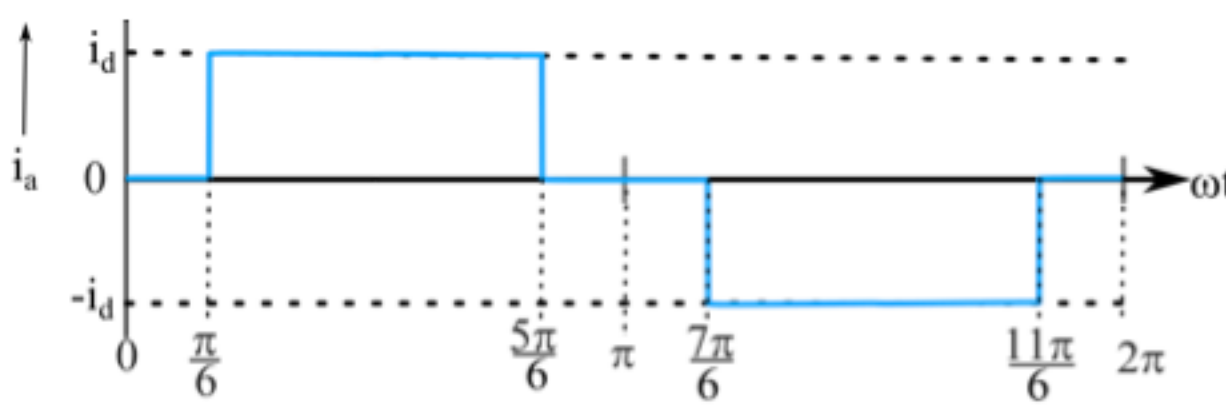
- S4 and D3
- Only S1
- Only S2
- Only D2

No, the answer is incorrect. Score: 0

Accepted Answers: Only D2

5) Consider the waveform shown in the figure representing one cycle of a periodic waveform. Find out 11th harmonic component magnitude in the input current in Ampere. Where $I_d = 1$.

2 points



- 0.1
- 0.7
- 0.4
- 0.5

No, the answer is incorrect. Score: 0

Accepted Answers: 0.1

6) The magnitude of the 28th harmonic component in A, present in the waveform given in Q5. is _____.

No, the answer is incorrect. Score: 0

Accepted Answers: (Type: Numeric) 0

2 points