Week 0 : Assignment 0

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment.

1. The efficiency ($\eta$) of the following converter is:

$$\eta = \frac{V_o}{V_i}$$

a) 33.33%

b) 75%

c) 50%

d) 44.44%

No, the answer is incorrect.

Score: 0

Accepted Answers: 

2. The differential equation of the current ($i(t)$) in the circuit shown below is:

$$\frac{di}{dt} + 2i(t) = 3$$

a) $120\frac{di}{dt} + 6i(t) = 20V(t)$

b) $30\frac{di}{dt} + 6i(t) = 20V(t)$

c) $6\frac{di}{dt} + 6i(t) = 20V(t)$

d) $120\frac{di}{dt} + 10i(t) = 20V(t)$

No, the answer is incorrect.

Score: 0

Accepted Answers: 

3. The voltage ($V_{in}$) across and the current ($i(t)$) through a semiconductor device during turn-on and turn-off transitions are shown in the figure. The power loss in the device is:

$$P_{loss} = V_{in}i$$

a) 10W

b) 25W

c) 50W

d) 75W

No, the answer is incorrect.

Score: 0

Accepted Answers: 

4. The efficiency ($\eta$) of the following DC-DC converter, considering the on-state resistance of the switch ($R_{on}$) and the DC resistance (SCR) of the inductor ($L$) is:

$$\eta = \frac{V_{out}}{V_{in}}$$

a) $\eta = 1$

b) $\eta = 1 + \frac{R_{on}}{2L}$

c) $\eta = 1 - \frac{R_{on}}{2L}$

d) $\eta = 1 - \frac{R_{on}}{L}$

No, the answer is incorrect.

Score: 0

Accepted Answers: 

5. The DC-DC converter (shown in the figure) has the nonlinearity of the inductor ($i(t)$). The voltage gain ($\frac{V_{out}}{V_{in}}$) of the DC-DC converter is:

$$\frac{V_{out}}{V_{in}} = \frac{1}{L}$$

a) $i = \frac{1}{L}$

b) $i = \frac{1}{2L}$

c) $i = \frac{1}{3L}$

d) $i = \frac{1}{4L}$

No, the answer is incorrect.

Score: 0

Accepted Answers: 

Due on 2021-07-26, 22:59 IST.