08/05/2007 (1.00 P.M ~ 3.00P.M)

Major: EEL341

Max. Marks: 40 ***Time: 120 minutes***

Draw neat waveforms

1. Explain the principle of operation of the push-pull topology. How this topology is better than other forward/ flyback topologies?

2. A dc-dc boost converter is operating in the discontinuous inductor current mode of operation. Obtain its mathematical model and then draw its simulation block diagram.

3. Mention the disadvantages of non-isolated buck-boost topology? Which of the non-isolated topology, other than conventional buck-boost, is most suitable solution if load and source side performance is the main constraint? Justify your answer.

4. Why the "flux walking" phenomenon is dominating in case of isolated topologies? Explain.

5. Show that the load voltage of full-bridge isolated dc-dc converter is dependent on the transformer turns ratio and converter duty ratio. Draw neat waveforms for continuous inductor current mode of operation and then discuss its limitations.

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