EEE 363.1

Quiz # 3

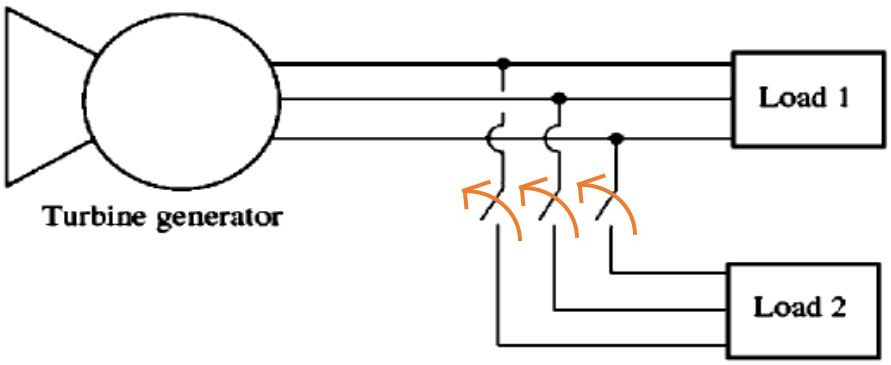
Time: 20 mins

[Answer all the questions]

1. What are the different ways to supply DC power to rotor of an alternator? Which method is superior and why? [5+2]

2. How do you define 'static stability limit' of an alternator? [4]

3. Fig. 1 shows a generator supplying two loads. The generator has a no-load frequency of 51.1 Hz and sp of 1MW/Hz. Load 1 consumes a real power of 1100 KW at 0.8 pf lagging, while load 2 consumes a real power of 800 KW at 0.85 pf lagging.



(a) Before the switch is open, what is the operating frequency? [3]
(b)What action could an operator take to restore the system frequency to 50 Hz in (a)? [3]
(c) After load 2 is disconnected, what is the operating frequency of the system? [3]