M.E. Second Semester (Electrical Engineering (Electrical Power System))

Application of Power Electronics to Power System

EP 2205

P. Pages : 2 | **AU - 3429**

Time : Three Hours | Max. Marks : 80

Notes : 1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Illustrate your answer necessary with the help of neat sketches.

SECTION – A

1. a) Explain Discrete passive compensation. 7

   b) Explain compensation by a series capacitor connected at the midpoint of line with pure series compensation at the midpoint. 7

OR

2. Draw power angle curve with STATCOM and explain compensation by STATCOM at midpoint of the line. 14

3. a) Explain steady state problem in alternating current system. 4

   b) Analyze the transmission line with SVC connected at midpoint. 9

OR

4. a) Explain in details TSC-TCR. 7

   b) Explain TCSC for stability study with Block diagram. 6

5. a) Explain in brief principle of operation of STATCOM. 7

   b) Compare variable series compensation with SSSC. 6

OR

6. Give the analysis of three phase six pulse STATCOM. 13

SECTION – B

7. a) Describe equivalent ckt of FACTS controller. 7

   b) What are the various PQ problems produces on distribution power system. 7

OR

8. a) Explain Modelling of harmonic propagation. 7

   b) Explain current harmonics generated by thyristor controlled reactors. 7

9.	a)	What are the various mitigation devices used to minimized the effect of harmonics.	**7**
	b)	Explain the working of VSC based series connected active filter.	**6**

OR

10.	a)	Explain in brief the effect of resonance.	**7**
	b)	Explain different types of harmonics creating loads.	**6**
11.	a)	List out the various application of UPFC on the power system.	**7**
	b)	How power quality problems can be minimized using power electronic conditioners.	**6**

OR

12.	a)	Explain the modeling of UPFC with its equivalent ckt.	**7**
	b)	Write the various IEEE power quality standards.	**6**

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