*Total No. of Questions : 8]* *[Total No. of Printed Pages : 2*

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# MEPS-104

## M.E./M.Tech., I Semester

Examination, November 2019

## Power Electronics Applications to Power Systems

***Time : Three Hours***

***Maximum Marks : 70***

***Note:*** i) Attempt any Five questions.

ii) All questions carry equal marks.

1. a) Write any five comparisons between SVC and TCSC.

   b) Discuss the equivalent circuit diagram and working principle of TCSC. What are the merits and demerits of TCSC?

2. a) Explain the following:

   i) TCR

   ii) FC - TCR

   b) Write a short notes on the following:

   i) O.L.T.C

   ii) Phase shifting transformers

3. a) State and explain "Phase Angle Compensation".

   b) What do you mean by "Power System Security"? How to it is enhanced by Facts controllers?









4. a) What do you mean by "Voltage Stability"? How to it is enhanced by Facts controllers?

   b) What do you mean by "Rotor Angle Stability"? How to it is enhanced by Facts controllers?

5. a) Define "PV - Curve". What are the significances and limitations of this curve?

   b) State and explain the power system reliability enhanced by Facts controllers in multi-machines power systems.

6. a) What do you understand by "Sensitivity Analysis"? What are the significances and limitations of this analysis?

   b) Write a short notes on the "Regulated Shunt Compensation". 

7. a) State and explain "Power Flow Analysis"? What are importance and limitations of this analysis?

   b) State and explain "Transient stability model of TCSC".

8. a) What do you understand by "Shunt Compensation"? How to it is compensated by SVCs.

   b) Explain the following:

   i) Pre-contingency corrective rescheduling

   ii) TSC

   iii) IEEE-Facts controllers and its advantages

   iv) Reactive power control by Facts controllers.

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