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**M.Tech.(Power System) (2018 Batch) (Sem.-1)****FACTS AND CUSTOM POWER DEVICES****Subject Code : MTPS-104D-18****M.Code : 75789****Time : 3 Hrs.****Max. Marks : 60****INSTRUCTIONS TO CANDIDATES :****1.Attempt any FIVE questions out of EIGHT questions.****2.Each question carries TWELVE marks.**

- Q1. Discuss the need of reactive power flow control in power system and methods to control it.
- Q2. Explain operation and control of TSC. Plot operating characteristics, explain conditions for transient free switching for TSC with different residual voltages.
- Q3. Draw and explain V-I characteristic of the SVC and the STATCOM. Compare SVC and STATCOM.
- Q4. Explain variable impedance type series compensators.
- Q5. Explain principle operation and control of TCPAR and its applications.
- Q6. With the help of block diagram explain functional control structure of UPFC to control real and reactive power independently.
- Q7. Mention loads that create harmonics. Explain ways to mitigate harmonics.
- Q8. Write the IEEE standards on power quality. Explain various power quality issues like voltage flicker and voltage imbalance and how to mitigate these.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**