

SUBJECT CODE NO:- P-8253
FACULTY OF ENGINEERING AND TECHNOLOGY
M.E. (Electrical Power Systems) Examination May/June 2017
Elective-II: Special Topics in Power System
(Revised)

[Time : Three Hours]

[Max Marks :80]

Please check whether you have got the right question paper.

- N.B
- i) Solve any two questions from each section.
 - ii) Assume suitable data if required.
 - iii) All questions carry equal marks.
- Section A
- Q.1
- a) Explain in detail following power quality problems with their causes and effects on power systems. 10
 - 1) Sag
 - 2) Swell
 - 3) Harmonics
 - 4) Transients
 - 5) Under voltage & Overvoltage
 - b) Explain in detail various harmonics creating loads. 05
 - c) Explain in detail propagation of harmonics in power system. 05
- Q.2
- a) Explain in detail series & parallel resonance condition occurring in power system. 10
 - b) Explain in detail various mitigation techniques of harmonics. 10
- Q.3
- a) Define reliability & explain in general reliability function. 05
 - b) Explain in detail Markov process. 05
 - c) Explain in detail generation reliability & distribution system reliability. 10
- Section B
- Q.4
- a) Explain in detail functions of SCADA system. 10
 - b) Explain in detail common features of to all SCADA systems. 10
- Q.5
- a) Explain in detail alarm function, security control ad control actions during various operating states of power system. 10
 - b) Explain in detail integration of measurement control and protection functions by SCADA system. 10
- Q.6
- a) Explain in detail with diagram the utilization of SCADA system in substation. 10
 - b) Explain in detail SCADA system configurations. 10