

Government College of Engineering, Aurangabad
(An Autonomous Institute of Government of Maharashtra)

M. E. (EPS) Examination

End Semester Examination Nov. 2016

EE558: Flexible AC Transmission Systems

Time: Three Hours

Date: 24 NOV 2016

Max. Marks: 60

N.B:-

1. All questions are compulsory
2. Figures to the right indicate full marks
3. Assume suitable data if necessary and state it clearly
4. Use of non-programmable calculator is allowed

Q.1 Solve any three

- A. Explain the midpoint voltage regulation for shunt compensation. (8M)
- B. Explain the Thyristor Controlled and Thyristor switched reactor. (8M)
- C. Explain Fixed capacitor, Thyristor controlled reactor type Var generator (8M)
- D. Explain control scheme for the TSC-TCR type static var generator (8M)
- E. Explain the operating principle of STATCOM (8M)

Q.2 Solve any three

- A. The particulars of the series compensated transmission line are $V=220\text{v}$, $f=50\text{ Hz}$. $X=18\Omega$ and $\delta=80^\circ$. The degree of compensation is 60%. Find i) line current I, ii) active power P, and iii) The reactive power Q? (8M)
- B. Explain the concept of series compensation and its effect on voltage stability. (8M)
- C. Explain GTO Thyristor Controlled Series capacitor (8M)
- D. Explain the Thyristor Controlled Series capacitor (8M)
- E. Explain switching converter type series compensation (8M)

Q.3. Solve any two

- A. Explain the basic operating principle of UPFC . (6M)
- B. Explain the basic operating principle of IPFC. (6M)
- C. What are the parameters which limit the loading capability of transmission line? (6M)