

MEPE - 302(B)**M.E./M.Tech. III Semester**

Examination, December 2015

EHV AC and DC Transmission (Elective-II)*Time : Three Hours**Maximum Marks : 70*

- Note:** i) Attempt all questions.
 ii) All questions carry equal marks.
 iii) Assume suitable data if necessary.

1. Discuss why insulation design of EHV lines is governed by switching surges. rgpvonline.com

OR

Why series compensation in power system leads to improvement of stability?

2. What are the modern trends in AC and DC transmission? Explain the limitations and advantages of AC and DC transmission systems.

OR

What are the problems associated with Extra long compensated lines? How these problems can be overcome, explain the methods used?

3. What is a static compensation? Explain with neat diagrams working principle of various types of the static compensations.

OR

Describe the constructional features of a synchronous capacitor. Explain its operation and discuss various applications in the power system operation.

4. What is the effect of high electrostatic fields on human beings under a line? Why does a normal human being not experience a shock when walking underneath a line? Why do birds survive even though they come into contact with EHV lines?

OR

Explain reflection and refraction of travelling waves, derive the necessary expressions.

5. Explain the lightning - stroke mechanism. What are the general principles of the lightning protection problem?

OR

A 750 kV bushing is protected by gaps which withstand 2.0p.u. power frequency voltage. Determine their 50% flash over value under 50Hz and lightning-impulse voltages if

- a) Rod - plane gap is used and
 b) Rod - rod gap is used rgpvonline.com
