Roll No .....

EX - 7201 (NGS)

B.E. VII Semester

Examination, December 2013

EHV AC and DC Transmission

(Elective)

Time : Three Hours

Maximum Marks : 100 ***Minimum Marks : 35***

Note: 1. Attempt any two parts from each question.
2. All questions carry equal marks.
3. Answer should be precise and to the point only.

1. a) Explain the various types of H.V.D.C. system mentioning about merits and demerits of each system.
   b) Compare the performance of AC and DC transmission for the view point of
      i) Reactive power requirement
      ii) Stability.
   c) Explain how the power handling capacity of EHV AC transmission line is depend upon its parameters.

2. a) Briefly explain the relative importance of different types of FACTS controllers.
   b) Explain the functions of thyristor-controlled series capacitor (TCSC) and thyristor-controlled series reactor (TCSR).
   c) Write short notes on the following:-
      i) STATCOM ii) UPFC

3. a) Justify the suitability of three phase full bridge converter for HVDC application.
   b) Discuss the following:-
      i) The reactive power requirement of HVDC converters.
      ii) Converter faults and protection.
   c) What are the causes of harmonics in HVDC system? Explain d.c. filters mentioning the criteria about effectiveness of d.c. filters.

4. a) Explain the desired features of constant extinction angle control of EHV DC system.
   b) Discuss in brief the problems associated with the parallel operation of EHV AC and DC systems.
   c) Explain the following:
      i) Mode Stabilization.
      ii) Firing angle control.

5. a) What are the origin of switching over voltages and temporary over voltages? Compare the characteristics of these over voltages.
   b) Prove that the velocity of travelling wave in a lossless line is $1/\sqrt{LC}$, where 'L' is inductance and 'C' is capacitance of the line.
   c) Write explanatory notes on the following:
      i) Reflection and Refraction coefficient of traveling waves.
      ii) Behaviour of traveling wave when it reaches at the end of open circuited line.

******