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B. E. (Eighth Semester) Examination, 2020

APR-MAY

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(New Scheme)

(Electrical Engg. Branch)

EHV AC & DC TRANSMISSION

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

***Note : Part (a) of each question is compulsory.
Attempt any two parts from (b), (c) and (d).***

Unit-I

1. (a) Describe briefly DC transmission system. 2
- (b) What are the different types of links used in HVDC system? 7

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- (c) Explain the conduction of thyristor without overlapping in GRAETZ circuit. 7
- (d) Compare the EHV AC and HVDC transmission on basis of technical performance. 7

Unit-II

2. (a) Explain tuned power lines. 2
- (b) Explain voltage profile along a long. EHV AC lines with 7
- (i) Light load
- (ii) Heavy load
- (c) What are the different methods of reactive power compensation in EHV AC lines. 7
- (d) Explain FACTS (Flexible AC Transmission System) concepts and its applications. 7

Unit-III

3. (a) What is Travelling Wave? 2
- (b) Explain the terms “attenuation and distortion” of travelling waves propagating on overhead lines. 7

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- (c) Explain the following terms related with travelling waves on transmission line. 7
- (i) Reflection coefficient
 - (ii) Refraction coefficient
 - (iii) Attenuation factor
- (d) Explain the protective measures for the control of lightning and switching overvoltages in transmission system. 7

Unit-IV

4. (a) Explain Multiterminal DC (MTDC) system. 2
- (b) Describe about the generation of harmonics and the designing to remove them. 7
- (c) Discuss various converter faults and their protection scheme in HVDC system. 7
- (d) On what factors is the reactive power requirement of a convertor station depend. 7

Unit-V

5. (a) Name the different types of fault occur in the converter valve. 2
- (b) Explain the problems associated with parallel operation of HV AC and DC system. 7
- (c) Explain the desired features of control of EHV DC system. 7
- (d) Write short one on any **one** of the following : 7
- (i) Constant ignition angle control
 - (ii) Constant extinction angle control