

No. of Printed Pages : 4
Roll No.

220965A

6th Sem / ELECTRICAL

Subject : HVDC and Flexible AC Transmission Systems

Time : 3 Hrs.

M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

- Q.1** The main advantage of HVDC transmission over AC transmission is : (CO1)

 - a) Lower cost of transformers
 - b) Reduced transmission losses
 - c) Higher insulation requirements
 - d) Increased line reactance

Q.2 In HVDC transmission, power is transmitted using : (CO1)

 - a) Three-phase AC
 - b) Single-phase AC
 - c) Direct Current (DC)
 - d) Pulsating DC

- Q.3 HVDC transmission is preferred for : (CO2)

 - a) Short-distance power transfer
 - b) High-voltage, long-distance transmission
 - c) Low-voltage applications
 - d) Local distribution networks

Q.4 Which of the following is a major component of an HVDC System ? (CO2)

 - a) Rectifier
 - b) Inductor
 - c) Transformer
 - d) Circuit breaker

Q.5 FACTS devices are used to : (CO4)

 - a) Improve power quality
 - b) Enhance power transmission capability
 - c) Reduce losses in AC transmission
 - d) All of the above

Q.6 FACTS devices are classified into : (CO3)

 - a) Series compensation
 - b) Shunt compensation
 - c) Combined series-shunt compensation
 - d) All of the above

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

- Q.7 In an HVDC system, the conversion of AC to DC is done by a _____. (CO1)
- Q.8 A key component in an HVDC system that smooths out DC voltage variations is called a _____. (CO1)
- Q.9 FACTS technology is mainly implemented using ____ devices for fast switching and control. (CO3)
- Q.10 HVDC eliminates reactive power loss issues that occur in AC transmission systems.T/F (CO4)
- Q.11 HVDC systems can provide better stability to the power grid than AC transmission . T/F (CO2)
- Q.12 Expand FACTS. (CO4)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

- Q.13 Compare AC and DC Transmission Systems.(CO1)
- Q.14 What are the applications of DC transmission System. (CO1)

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- Q.15 Explain the advantages and disadvantages of HVDC Transmission systems. (CO2)
- Q.16 Explain the types of dc link . (CO2)
- Q.17 Describe the working of an HVDC system with a block diagram. (CO2)
- Q.18 What are the objections of FACTS. (CO3)
- Q.19 Explain the Concept of FACTS. (CO3)
- Q.20 What is the need of Compensation ? (CO4)
- Q.21 Discuss the classification FACTS Controllers (CO4).
- Q.22 Explain the principle of operation of unified power flow Controller (CO4)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

- Q.23 Explain the equipments of HVDC Transmission Systems in details. (CO1)
- Q.24 Define the FACTS. Explain its importance in modern Power systems (CO3)
- Q.25 Explain the Shunt and Series Compensation with diagrams (CO4)

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