

- Q.22 Describe the limitations of HDVD transmission system.
 - Q.23 Explain the measurement of High voltage by sphere gaps.
 - Q.24 Enlist the applications of MTDC system.
 - Q.25 Explain converted transformer.
 - Q.26 Write short note on DC filters.
 - Q.27 Explain the Starting technique of DC link.
 - Q.28 Explain protection against over voltage in HVDC transmission system.
 - Q.29 Enlist the converter fault in HVDC transmission system.
 - Q.30 Write a short note on measurement of radio interference in HVDC transmission system.
 - Q.31 Explain schematic diagram of HVDC converter station.
 - Q.32 Describe the effect of source inductance in HVDC transmission system.
 - Q.33 Discuss various losses in HVAC and HVDC system.
 - Q.34 State the protection for converter transformer.
 - Q.35 Enlist control characteristics of DC link.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain the twelve pulse line commutate converters unit with the help of configuration.

Q.37 Illustrate in detail about different types of DC links.

Q.38 Explain the typical parallel converter MTDC system with the help of schematic diagram. Write also its advantages.

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**6th Sem / Branch : Power Eltx.
Sub. : High voltage D.C. Transmission**

Time : 3Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory
(10x1=10)

- Q.1 High voltage DC transmission requires filters for

 - a) Line commuted converters
 - b) Voltage sourced converters
 - c) Both of these
 - d) None of these

Q.2 Bulk, power transmission over a long HVDC line is preferred because of

 - a) Simple protection
 - b) Minimum line power losses
 - c) Low cost
 - d) No harmonic filters

Q.3 Which of the following is not a type of DC link

 - a) Bipolar
 - b) Homo polar
 - c) Non polar
 - d) Mono polar

Q.4 If only 11th order harmonic is required to be eliminated then which of the following filter is preferred?

 - a) Tuned Filter
 - b) Damped Filter
 - c) Both A and B
 - d) None of above

- Q.5 The main objective of the smoothing reactor
- To reduce the risk of commutation failure
 - Prevent the resonance in the DC circuit
 - To smooth the ripple current in DC
 - All of these
- Q.6 HVDC transmission has _____ as compared to HVAC transmission.
- Smaller transformer size
 - Smaller conductor size
 - Higher corona loss
 - Smaller power transfer capabilities
- Q.7 Which of the following will be provided to reduce the harmonics on the AC side of an HVDC transmission line?
- Synchronous motor is over excited condition
 - Shunt capacitor
 - Static compensator
 - Shunt filters
- Q.8 Sphere gaps are used for measurement
- Instantaneous values of voltage
 - RMS value of voltage
 - Peak values of voltage
 - Average values of Voltage
- Q.9 Modern HVDC systems are
- 3-Pulse converters
 - 6-Pulse converters
 - 24-Pulse converters
 - 12-Pulse converters

- Q.10 The HVDC protections are grouped to:
- DC protections
 - AC protections
 - Apparatus Protective Relays
 - All of these
- SECTION-B**
- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Multi terminal HVDC system for interconnecting two 3 phase AC systems (True/False)
- Q.12 HVDC link has AC system at each end. (True/False)
- Q.13 An mono polar HVDC transmission system has two pole and earth return. (True/False)
- Q.14 The total capital cost of HVDC link is _____ than AC link.
- Q.15 HVDC transmission link does not need any intermediate substation. (True/False)
- Q.16 In 12 pulse converter two 6 pulse converters connected in _____.
- Q.17 Define link inductance.
- Q.18 Corona is more in HVDC transmission (True/False)
- Q.19 During a fault on one of the poles, the Bipolar mode is changed to monopolar mode in HVDC system. (True/False)
- Q.20 Series connected convertors are now preferred for MTDC systems. (True/False)
- SECTION-C**
- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Write about the need of HVDC transmission system.