Q.22 Explain briefly the schematic diagram of HVDC converter station.

Q.23 Enlist the applications of MTDC system.

Q.24 Discuss various losses in AC and DC system.

Q.25 Explain Graetz circuit for AC to DC conversion.

Q.26 Describe the modern trends in HVDC transmission.

Q.27 Compare HVAC and HVDC.

Q.28 Write short note on AC filters used to reduce harmonics.

Q.29 Describe the features of insulators.

Q.30 Enlist the different locations, where smoothing reactors can be connected in converters.

Q.31 Explain the Staring of DC link.

Q.32 Give the three advantages and disadvantages of HVDC.

Q.33 Describe the protection of HVDC Substation from over voltage and Lightening.

Q.34 Enlist the convertor control characteristics.

Q.35 Explain protection against over voltages.

Section-D

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

Q.36 Explain in detail about the different types of DC links.

Q.37 Explain the twelve pulse line commutated converters unit.

Q.38 Explain methods of high voltage measurement.

No. of Printed Pages : 4
Roll No.....

Branch - Power Electx.
Subject : High Voltage DC Tansmission

Time : 3 Hrs. **M.M. : 100**

SECTION-A

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

Q.1 Following section is more costly to setup HVDC link.

a) Converter Transformer
b) Civil Works Buildings
c) Valves
d) Lightening arrestor

Q.2 Which type of HVDC scheme uses only one conductor?

a) Homopolar b) Bipolar
c) Monopolar d) Back to back

Q.3 _____ type of HVDC link can provide the more than half the rated power transfer capacity under the fault in any one conductor condition

a) Homopolar b) Bipolar
c) Monopolar d) None of above

Q.4 _____ would be the operating polarity of the conductor in homoploar HVDC scheme.

a) All conductors are operated with positive
b) All conductors are operated with negative
c) One with positive and rest conductors are operated with negative
d) One with negative and rest conductors are operated with positive

Q.5 Which is the lowest order harmonic present in the source current of 12 pulse converter?
a) 5^{th} order b) 7^{th} order
c) 11^{th} order d) 13^{th} order

Q.6 The main objective of the smoothing reactor
a) To reduce the risk of commutation failure
b) Prevent the resonance in the DC circuit.
c) To smooth the ripple current in DC.
d) All of these

Q.7 HVDC transmission has _____ as compared to HVAC transmission
a) smaller transformer size
b) Smaller conductor size
c) Higher corona loss
d) Smaller power transfer capabilities

Q.8 To get the high current capability in the current the valves used in construction of the converter and connected in
a) Series
b) Parallel
c) Series-parallel combination
d) All of these

Q.9 Earthing of resistance of major substation is _____
a) 1 ohm b) 2.5 ohm
c) 5 ohm d) 10 ohm

Q.10 Stay wire is used for _____
a) Earthing b) Support of Pole
c) Cross arm protection d) None of these

Section

Note: Objective types Questions. All Questions are compulsory. (10x1=10)

Q.11 We need communication channel in the Monopolar HVDC scheme (T/F)

Q.12 Expand ACSR.

Q.13 It is desirable the voltage regulation of the transmission line should be _____.

Q.14 Overload Capacity of EHVAC is more than HVDC (T/F)

Q.15 Corona is more in HVDC transmission (T/F)

Q.16 Lightening arrestor provides the protection from _____

Q.17 Define spark over voltage.

Q.18 Define line inductance.

Q.19 Function of surge arrestor_____

Q.20 Give the full form of MTDC.

Section-C

Note: Short answer type Questions. Attempt any twelve Questions out of fifteen Questions. (12x5=60)

Q.21 Give the details of the essential protection gears at HVDC stations.