

**M. Tech.-IV (Electrical -Power System) (CBCS – 2015 Course) :
SUMMER - 2019**

SUBJECT: SELF STUDY PAPER –II : SUBSTATION DESIGN

Day : Thursday	S-2019-3561	Time: 11.00 AM TO 02.00 PM
Date : 13/06/2019		Max. Marks: 60

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to both the sections should be written in **SAME** Answer book.
- 4) Draw neat and labeled diagram **WHEREVER** necessary.
- 5) Assume suitable data, if necessary.

SECTION - I

- Q. 1** Explicate the term Interlocking. Differentiate between Mechanical Interlocking and Electrical Interlocking. (10)

OR

Explain the working of following Bus-bar arrangement with neat sketch: (10)
i) Breaker and Half Bus Scheme ii) Main and Transfer Bus Scheme

- Q. 2** Explicate the various Tests to be conducted on Voltage Transformer as per IS / IEC standards. (10)

OR

Define the following terms related with current transformer (10)
i) Current Error ii) Composite Error

- Q. 3** Explicate the difference between Expulsion Type Lightning Arrester and Valve Type Lightning arrester with a neat sketch. (10)

OR

Define following terms related with circuit breaker (10)
i) Inherent Restriking Voltage
ii) Rate of Rise of Restriking Voltage
iii) Peak Restriking Voltage

SECTION - II

- Q. 4** Explicate the following terms related with Earthing: (10)
i) Step Potential ii) Touch Potential iii) Transfer Potential

OR

Explain the various methods of Cooling Techniques related with Power Transformer. (10)

- Q. 5** Explicate the CT connections for Differential Portion of Star/Delta Transformer. (10)

OR

Differentiate between Wire Pilot Relaying Scheme with Carrier Current Pilot Scheme. (10)

- Q. 6** Explicate the requirements of Charging Equipments incase of Storage Battery. (10)

OR

Draw and explicate the schematic arrangement of Charging Equipment in case of Storage Battery. (10)

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