International Islamic University Chittagong
Department of Electrical and Electronic Engineering

Final Assessment Test Autumn-2020 Program: B.Sc. Engg. (EEE)
Course Code: **EEE-4807** Course Title: **High Voltage Engineering**
Time: **5 hours** (Writing - **4 hours 30 minutes** + **30 minutes** submission time) Full Marks: **50** (**Written** 30 + **Viva**/**Viva-Quiz**-20)

[Answer **each of the** questions from the followings; Figures in the right margin indicate full marks. **Answer script must be submitted through online method within 5 hours from starting time. Also, write down the Q. Set on the front page of your answer script]**

SET-B

1(a).	**Develop and explain** the stepwise operation of a 4-stage Marx impulse generator.	**CO2**	**C, An**	**04**
1(b).	**Compare** the various types of capacitors used in impulse generator.	**CO2**	**An**	**02**
2(a).	**Justify** the suitability of Streamer mechanism over Townsend's mechanism. **Explain** the characteristics of the breakdown voltage as the function of product pressure and electrode separation with related figure.	**CO1**	**An, E**	**02+02= 04**
2(b).	From the various methods of breakdown in solid dielectric, **illustrate** the fastest breakdown mechanism with related diagram.	**CO1**	**U**	**02**
3(a).	**Develop** a flow chart for the stepwise operation of peak voltmeter consisting of capacitive voltage divider arrangement for measuring high voltage. Why modification of peak voltmeter is required?	**CO2**	**C**	**03+01= 04**
3(b).	**Explain** the routine test and test between terminals in case of testing of power capacitors.	**CO2**	**E**	**02**
4(a).	**Explain** the volt-time characteristic curve considering the variation of time range between wave front flashover to no impulse flashover.	**CO3**	**E**	**04**
4(b).	**Discuss** various features of external and internal overvoltage protection based on shielding and non-shielding technique.	**CO3**	**An**	**02**
5(a).	**Describe** the importance of Simpson's theory and Wilson's theory for lightning phenomenon.	**CO3**	**U**	**03**
5(b).	**Analyze** the characteristics of various types of lightning arrester.	**CO3**	**An**	**03**
6.	Viva/Viva-Quiz: The time of viva/viva-quiz will be declared in google classroom.	**CO2, CO3**	**An, Ap**	**20**