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| GU_Colour (Final) 23-4-08 | **GITAM INSTITUTE OF TECHNOLOGY**  **GITAM UNIVERSITY**  **Department Of ELECTRICAL AND Electronics Engineering**  **IV/IV B.Tech VII Semester Mid – I Examination 2017-2018** |

**EUREE 463 – High Voltage Engineering Maximum Marks: 30**

**Date: 05-08-2016 Time:11.00am-12.30pm**

Answer **All** Questions

1. **(a)Explain various theories of charge formation in clouds (6M)**

[This question relates to **Course Outcome <1>**: *explain the principle causes of over voltages and currents, over voltage and over current protection, insulation coordination*]

**(b) Explain the control of over voltages due to switching and power frequency over voltages in power systems.(6M)**

[This question relates to **Course Outcome <1>**: *explain the principle causes of over voltages and currents, over voltage and over current protection, insulation coordination*]

**(OR)**

1. **(a) Explain the different aspects of insulation design and insulation coordination adopted for EHV systems. (6M)**

[This question relates to **Course Outcome <1>**: *explain the principle causes of over voltages and currents, over voltage and over current protection, insulation coordination*]

**(b)Derive rate of charge of clouds and explain the mathematical model for lightening (6M)**

[This question relates to **Course Outcome <1>**: *explain the principle causes of over voltages and currents, over voltage and over current protection, insulation coordination*]

1. **(a) Explain the construction and working of Van de Graaff generator used for generation of high DC Voltages (6M)**

[This question relates to **Course Outcome <2>**: *explain the methods of generation of high voltages and currents.*]

**(b) Derive the expression for ripple voltage in voltage multiplier circuits. (6M)**

[This question relates to **Course Outcome <2>**: *explain the methods of generation of high voltages and currents.*]

**(OR)**

1. **(a) With neat circuit explain cascade connection of transformers for producing very high ac voltages. (6M)**

[This question relates to **Course Outcome <2>**: *explain the methods of generation of high voltages and currents.*]

**(b)With a neat circuit explain the generation of high frequency alternating voltage. (6M)**

[This question relates to **Course Outcome <2>**: *explain the methods of generation of high voltages and currents.*]

1. **Explain the causes of power frequency over voltages in power system (6M)**

[This question relates to **Course Outcome <1>**: *explain the principle causes of over voltages and currents, over voltage and over current protection, insulation coordination*]

**(OR)**

1. **With a neat schematic diagram explain the working of Cockroft-Walton voltage multiplier. (6M)**

[This question relates to **Course Outcome <2>**: *explain the methods of generation of high voltages and currents.*]

**Please access the solutions and scheme on X-learn on 07-08-2017**