Exam. Code: 0937
Sub. Code: 6681

2123

B.E. (Electrical and Electronics Engineering)
Seventh Semester
EE-711: Electrical Insulation in Power Apparatus and Systems

Time allowed: 3 Hours Max. Marks: 50

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.*

x-x-x

I. Write briefly:-

a) Voltage ranges of the classifications LV, MHV, HV, EHV & UHV.

b) Complex permittivity.

c) Breakdown mechanism in gases.

d) Nano Dielectrics.

e) Voltage doubler circuit for HVDC generation. (5x2)

UNIT - I

II. Discuss the following with reference to insulating oils

a) Thermal transfer characteristics.

b) Reconditioning of insulating oils (10)

III. Discuss the following breakdown mechanisms with reference to solid dielectrics

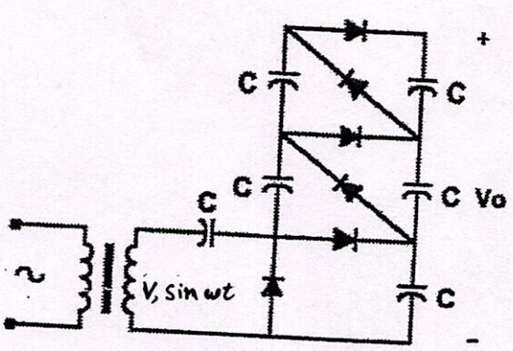
a) Electronic breakdown mechanism

b) Thermal breakdown mechanism (10)

IV. Discuss in detail the merits and demerits of a vacuum circuit breaker (VCB). Also compare VCB with SF6 circuit breaker. (10)

UNIT - II

V. For the High Voltage DC generation circuit shown below, determine the output DC voltage. Also write expression for the voltage drop on loading with a DC current of I amperes.



VI. Discuss partial discharge detection circuits. (10)

VII. Discuss different types of potential dividers used for HV measurement. (10)

x-x-x