

Program: BE Electrical Engineering

Curriculum Scheme: Revised 2012

Examination: Final Year Semester VII

Course Code: EEE701 and Course Name: High Voltage Engineering

Time: 1hour

Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	Most suitable numerical method to solve electrostatic field problem is _____
Option A:	Laplace equation method
Option B:	Charge simulation method
Option C:	Finite element method
Option D:	Resistance analog method
Q2.	The transient high voltages of surge voltages originate in power system due to _____
Option A:	Lightning only
Option B:	Switching operations only
Option C:	Lightning and Switching operations
Option D:	Load variations
Q3.	The force F on any charge q at that point in the field is given by _____
Option A:	$F=qE$
Option B:	$F=q/E$
Option C:	$E=Fq$
Option D:	$E=F$
Q4.	Dielectric Strength of Dry atmospheric air is _____
Option A:	10 KV/cm
Option B:	20 KV/cm
Option C:	30 KV/cm
Option D:	100 KV/cm
Q5.	With reference to Townsend's mechanism, within dielectric, an electron starting from the cathode will drift towards the anode and during this motion _____
Option A:	Gains energy from the field and loses during collision
Option B:	Gains energy during both motion and collision
Option C:	loses energy during both motion and collision

Option D:	loses energy from the field and gains during collision
Q6.	Formative time lag depends on the mechanism of the avalanche growth in gap. The formative time lag is usually _____
Option A:	Much shorter than the statistical time lag
Option B:	Much greater than the statistical time lag
Option C:	Equal to the statistical time lag
Option D:	square root of the statistical time lag
Q7.	The Townsend's mechanism experiment measures the growth of current (electrons) in _____
Option A:	Non-uniform Electric field
Option B:	Uniform Electric field
Option C:	Electric field produced by pointed electrode
Option D:	Uniform magnetic field
Q8.	Assuming 'p' to be Constant and Townsend's second ionization coefficient to be small during the applicability of Paschen's law. Then if $(pd) > (pd)_{min}$ _____
Option A:	electrons crossing in the gap make more frequent collisions with gas molecules than at $(pd)_{min}$
Option B:	energy gained between successive collisions is smaller than at $(pd)_{min}$
Option C:	energy gained between successive collisions is larger than at $(pd)_{min}$
Option D:	electrons crossing in the gap make more frequent collisions with gas molecules but the energy gained between successive collisions is smaller than at $(pd)_{min}$
Q9.	Which of the following dielectric medium has the highest breakdown strength?
Option A:	Vaccum
Option B:	Gaseous dielectric
Option C:	Liquid dielectric
Option D:	Solid dielectric
Q10.	Stressed oil volume theory is applicable when _____
Option A:	Small volume of liquid is involved
Option B:	Large volume of liquid is involved
Option C:	Large gap distance is involved
Option D:	Pure liquids are involved
Q11.	Long-term deterioration and breakdown occurs in solid dielectrics due to _____
Option A:	Thermal phenomenon
Option B:	Surface discharges
Option C:	Internal discharges
Option D:	Treeing phenomenon
Q12.	Paper insulation is mainly used in _____
Option A:	Cables and Capacitors
Option B:	Transformers

Option C:	Rotating machines
Option D:	Circuit breakers
Q13.	The Impulse voltage wave represented by 1000 KV, 1.2/50 micro-sec. As per the Indian Standard, 1.2 microsec stands for _____
Option A:	Wave Fall time
Option B:	Wave Front time
Option C:	Wave Tail time
Option D:	Time to obtain 50% of peak value
Q14.	Tesla coil is used for _____
Option A:	Generation of sinusoidal output voltage
Option B:	Generation of very high voltage at power frequency
Option C:	Generation of rectangular voltage
Option D:	Generation of high frequency AC voltage
Q15.	In a Cockroft-Walton circuit, input voltage ( $V_{max}$ ) is 100 kV and the load current is 4mA, supply frequency 100 Hz, each capacitor 10 nF. The optimum no. of stages for maximum output voltage is _____
Option A:	1
Option B:	2
Option C:	5
Option D:	10
Q16.	In a generation of High AC voltage, for a 3 stage Cascaded transformer, if $P_1$ , $P_2$ , $P_3$ are the loadings of I, II and III stages primaries of each transformer respectively, then _____
Option A:	$P_1 = P_2 = P_3$
Option B:	$P_1 > P_2 > P_3$
Option C:	$P_1 < P_2 < P_3$
Option D:	$P_2 < P_1 < P_3$
Q17.	Sphere gap measurement is linear and valid for gap spacing less than or equal to _____
Option A:	Radius of sphere
Option B:	Diameter of sphere
Option C:	Half the radius of sphere
Option D:	Two times diameter of sphere
Q18.	The principle operation of Generating voltmeter is based on _____
Option A:	Variable resistance
Option B:	Variable capacitor electrostatic voltage generator
Option C:	Variable inductance
Option D:	Linear resistance

Q19.	For resistivity and dielectric constant measurement the electrode system used is _____
Option A:	Two electrodes
Option B:	Three electrodes
Option C:	Four electrodes
Option D:	Five electrodes
Q20.	The bridge commonly used for measurement of dielectric constant and loss factor in the audio frequency range (100Hz to 10 KHz) is _____
Option A:	High voltage Schering Bridge
Option B:	Transformer Ration Bridge
Option C:	Wagner's Bridge
Option D:	Low voltage high frequency Schering Bridge
Q21.	The voltage at which the electric stress in the insulation causes a failure resulting in a collapse in voltage and passage of current, called as _____
Option A:	Over voltage
Option B:	Withstand voltage
Option C:	Disruptive discharge voltage
Option D:	Lightening voltage
Q22.	Impulse test on transformer indicates _____
Option A:	Winding to ground insulation strength
Option B:	Winding to winding insulation strength
Option C:	Dielectric strength, quantity of insulation and processing
Option D:	Induced voltage in other winding during transient
Q23.	If the source is not able to supply charging current required by the test cable, it is desirable to use _____
Option A:	shunt capacitor
Option B:	series capacitor
Option C:	Series resistance
Option D:	series inductor
Q24.	The Impulse voltage rating of test equipment in small size HV laboratory can be about _____
Option A:	Less than 400 KV
Option B:	More than 400 KV
Option C:	Equal to or Less than 1000 KV
Option D:	More than 1000 KV
Q25.	Which of the following type of high voltage testing laboratory, meant to carry out testing and undertakes the research work?
Option A:	Small size laboratory
Option B:	Medium size laboratory

Option C:	Large size laboratory
Option D:	UHV laboratory

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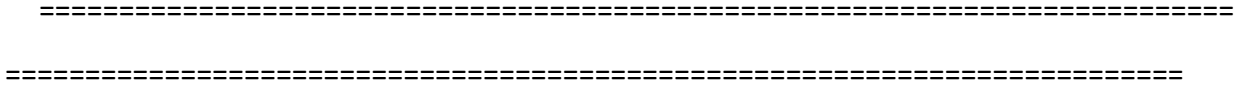
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<b>Question</b>	<b>Correct Option (Enter either 'A' or 'B' or 'C' or 'D')</b>
Q1.	B
Q2.	C
Q3.	A
Q4	C
Q5	A
Q6	A
Q7	B
Q8.	D
Q9.	D
Q10.	B
Q11.	C
Q12.	A
Q13.	B
Q14.	D
Q15.	C

Q16.	B
Q17.	A
Q18.	B
Q19.	B
Q20.	D
Q21.	C
Q22.	C
Q23.	D
Q24.	A
Q25.	C