

Program: BE Electrical Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester VI

Course Code: EEC601 and Course Name: Power System Analysis

Time: 1 hour

Max. Marks: 50

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

Q1.	The machine reactance used for computation of short circuit current ratings of a circuit breaker are
Option A:	synchronous reactance
Option B:	transient reactance
Option C:	sub-transient reactance
Option D:	Transient Conductance
Q2.	Which among the following methods are generally used for the calculation of symmetrical faults?
Option A:	Thevenin's theorem
Option B:	Kirchhoff's law
Option C:	Superposition Theorem
Option D:	Both Thevenin's and Kirchhoff's law
Q3.	On which among the following factors does the magnitude of the fault current depend?
Option A:	Total impedance upto the fault point
Option B:	Pre-fault Voltage at the fault point
Option C:	Both Pre-fault Voltage at the fault point and Total impedance upto the fault point
Option D:	Post fault Voltage at the fault point
Q4.	When all the three phases are short circuited it gives rise to
Option A:	Symmetrical Fault current
Option B:	Asymmetrical Fault current
Option C:	Zero Fault current
Option D:	Unsymmetrical Fault current
Q5.	Transient in synchronous generator is similar to which of the following circuit?
Option A:	Parallel RLC circuit
Option B:	Series RLC circuit
Option C:	Series RL circuit
Option D:	Parallel RL circuit
Q6.	In a 3-phase, 220kV, 2200MVA system, what is the base impedance?
Option A:	11 $\Omega$
Option B:	15 $\Omega$
Option C:	22 $\Omega$

Option D:	25Ω
Q7.	Zb is added from an existing old bus to another existing old bus of the given power network comes under which type modification
Option A:	Type-1
Option B:	Type-2
Option C:	Type-3
Option D:	Type-4
Q8.	Three generators rated 100 MVA, 11 kV have an impedance of 0.18pu each are installed in the plant. If in the same plant, these generators are being replaced by a single equivalent generator, the effective impedance of equivalent generator will be
Option A:	0.06pu
Option B:	0.18pu
Option C:	0.12pu
Option D:	0.54pu
Q9.	What happens to the value of the fault current in case of Single Line to Ground (SLG) fault, if fault impedance is introduced?
Option A:	The fault current increase
Option B:	The fault current remains same as before in case of SLG fault.
Option C:	The fault current becomes zero
Option D:	The fault current is reduced
Q10.	The positive sequence component of voltage at the point of fault is zero when it is a
Option A:	3-phase fault
Option B:	L-L fault
Option C:	L-L-G fault
Option D:	L-G fault
Q11.	What is the value of fault current (If) in the case of Line-Line fault, if the neutral grounding is absent in the network?
Option A:	$I_f = -j\sqrt{3}E_a / (Z_1 + Z_2 + Z_f)$
Option B:	$I_f = -j3E_a / (Z_1 + Z_2 + Z_f)$
Option C:	0
Option D:	∞
Q12.	If the positive, negative and zero sequence reactance of an element of a power system are 0.15, 0.15 and 0.15pu respectively, then the element would be a
Option A:	Synchronous generator
Option B:	Synchronous motor
Option C:	Transformer
Option D:	Transmission line
Q13.	A balanced three phase system network consists of
Option A:	Zero sequence current only
Option B:	Positive sequence current only
Option C:	Negative sequence current only
Option D:	Zero, negative and positive sequence current

Q14.	A Single line to fault can be limited to less severe than three phase fault on the generator terminal if its
Option A:	$X_n = 0$
Option B:	$X_n = X_1 - X_0$
Option C:	$3X_n > X_1 - X_0$
Option D:	$3X_n < X_1 - X_0$
Q15.	If $X_s$ is self-reactance of each line and $X_m$ is mutual reactance of any line pair then negative sequence impedance of transmission line is equal to
Option A:	$j(X_s + 2X_m)$
Option B:	$j(X_s + X_m)$
Option C:	$j(X_s - X_m)$
Option D:	0
Q16.	For a given base voltage and base volt amperes, the per unit impedance value of an element is X. The per unit impedance value of this element when the voltage and volt amperes bases are both doubled will be
Option A:	0.5X
Option B:	X
Option C:	2X
Option D:	4X
Q17.	Arcing ground phenomenon occurs in the ungrounded star connected three-phase systems because of the flow of _____ during single line to ground fault condition
Option A:	Inductive Current
Option B:	Resistive Current
Option C:	Capacitance Current
Option D:	All of these
Q18.	During Lightning, which type of a discharge occur between electrically charged regions of a cloud
Option A:	Electromagnetic
Option B:	Electrolytic
Option C:	Chemical
Option D:	Electrostatic
Q19.	In travelling waves equation of a transmission line, transmission line parameters are represented as _____ parameters
Option A:	Distributed
Option B:	Lumped
Option C:	Linear
Option D:	Parallel
Q20.	A overhead line has an inductance per meter length is $46\mu\text{H}$ and capacitance per meter length $0.28\text{nF}$ , calculate surge impedance of cable
Option A:	405 Ohm
Option B:	389 Ohm
Option C:	453 Ohm
Option D:	458 Ohm

Q21.	In an extra high voltage overhead transmission line earth wire is provided to protect the line against
Option A:	switching surge
Option B:	lightening surge
Option C:	corona effect
Option D:	To ensure fault voltages
Q22.	What is the role of corona ring?
Option A:	Increases corona formation
Option B:	Do not have any effect
Option C:	Suppresses corona formation
Option D:	Increases Ionization
Q23.	Among following which are not the examples of surface irregularity which causes corona?
Option A:	Broken strands on conductor
Option B:	Sharp edges
Option C:	Water droplets on conductor
Option D:	Smooth conductor
Q24.	Surge impedance loading of transmission line is measured in
Option A:	megawatt
Option B:	kilowatt
Option C:	ohms
Option D:	kilo ohm
Q25.	For a long uncompensated line the limit to the line loading is governed by
Option A:	Thermal limit
Option B:	Voltage drop
Option C:	Stability limit
Option D:	Corona loss

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<b>Question</b>	<b>Correct Option (Enter either 'A' or 'B' or 'C' or 'D')</b>
Q1.	C
Q2.	D
Q3.	C
Q4	A
Q5	C
Q6	C
Q7	D
Q8.	A
Q9.	D
Q10.	A
Q11.	A
Q12.	C
Q13.	B
Q14.	C
Q15.	C
Q16.	A

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