These are sample MCQs to indicate pattern, may or may not appear in examination

Mahatma Education Society's
Pillai HOC College of Engineering and Technology

Program: BE Electrical Engineering
Curriculum Scheme: Revised 2016
Examination: BE SEM VIII
Course Code: EEC802 and Course Name: Flexible AC Transmission System

Time: 1hour Max. Marks: 50

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

Q	Main application of FACTS is to compensate	
A	Reactance	1
A	Resistance	0
A	conductance	0
A	admittance.	0
Q	During series resonance, the impedance of the circuit is	S
A	Minimum	1
A	Maximum	0
A	Zero	0
A	Moderate	0
Q	Distance after which cost of HVDCT << cost of HVACT is termed as _____ distance.	S
A	Broad	0
A	Critical point	0
A	Break-even	1
A	Change over	0
Q	In the case of the welding plant, the permitted voltage variation is _____related to the sensitivity of the human eye to light fluctuations as a function of frequency.	M
A	directly	0
A	inversely	1
A	not	0
A	linearly	0
Q	Power factor can be improved by connecting which among these?	M
A	Static capacitors.	0
A	Resistors.	0
A	Synchronous condensers.	0
A	Static capacitors and Synchronous condensers.	1

Q	The most suitable location for the power factor improvement device is	M
A	Near the electrical appliance	0
A	At the sending end	0
A	At the receiving end in case of transmission lines.	0
A	Near the electrical appliance and at the receivind end of the transmission line	1
Q	The intrinsic sensitivity of the supply voltage to variations in the reactive power Q is given as	M
A	$\frac{-E}{S_{SC}}$	1
A	$\frac{V}{S_{SC}}$	0
A	$\frac{E}{S_{SC}}$	0
A	$\frac{Q}{S_{SC}}$	0
Q	Typical variations in the reactive power requirements of a steel rolling mill is found to be	M
A	small	0
A	large and sudden	1
A	gradual	0
A	smooth	0
Q	In TSC, which of the following is not applicable to capacitors switching?	M
A	switching at instant where capacitor voltage and AC voltage are in sync.	0
A	transient-free switching	0
A	firing delay angle control	1
A	switching when thyristor valve voltage is minimum.	0
Q	The aim of switching converter type static VAR generators is to produce a _____ that can be adjusted to meet the compensation requirements.	M
A	variable capacitor shunt impedance	0
A	fixed capacitor shunt impedance	0
A	variable reactive shunt impedance	1
A	fixed reactive shunt impedance	0
Q	With respect to reactive power generation, compensator operation is similar to _____ whose reactive power output is varied by excitation control.	M
A	a DC generator	0
A	a transformer	0
A	an ideal high pass filter	0
A	an ideal synchronous machine	1
Q	In TCR, along with currents, harmonics are also generated, resulting in _____ waveforms, specifically.	M
A	sinusoidal	0
A	non-sinusoidal	1
A	exponential	0
A	saw-tooth	0

Q	Which of the following is not a unique property of STATCOM?	M
A	has symmetric lead-lag capability	0
A	cannot produce resonance with the system	0
A	more useful under large voltage disturbances	0
A	very slow response	1
Q	Assume a 275 kV transmission line having the following line constants:A = 0.5∠5° ; B = 200∠75° If a load is connected at receiving end at unity power factor but maintaining the same voltage profile. Then _____ compensation will be needed at _____	M
A	capacitive, receiving end	1
A	inductive, sending end	0
A	capacitive, sending end	0
A	inductive, receiving end	0
Q	UPFC falls under which generation of FACTS controller?	M
A	first	0
A	second	0
A	third	1
A	fourth	0
Q	UPFC is a form of -	M
A	Series FACTS controllers	0
A	Shunt FACTS controllers	0
A	Combined series series FACTS controllers	0
A	Combined series shunt FACTS controllers	1
Q	what is bang bang control?	M
A	a discrete control form in which the thyristor is either fully switched on (α=90) or fully switched off (α=180)	1
A	a discrete control form in which the thyristor is fully switched on (α=90)	0
A	a discrete control form in which the thyristor is fully switched off (α=180)	0
A	a discrete control form in which the thyristor is either fully switched on (α=180) or fully switched off (α=90)	0
Q	Application of UPFC would include -	M
A	power flow control only	0
A	power oscillation damping only	0
A	fault current limiting only	0
A	can do all three; power flow control, power oscillation damping and fault current limiting	1
Q	Which of the following is not a salient feature of UPFC?	M
A	more reliable	0
A	provides dynamic security	0
A	acts as harmonic isolator	0
A	is capable of increasing conductor cross section for improved current flow	1

Q	The voltage ratings of thyristors present in PAR gives which type of volatages during surges	M
A	transient	1
A	steady state	0
A	both transient and steady state	0
A	neither transient nor steady state	0
Q	The syncronous voltage source used as voltage or angle regulator will exchage which type of power	M
A	reactive Power	0
A	real power	0
A	both real and reactive	1
A	interactive	0
Q	In PARwhich type of magnitude control can be applied at the time of thyristor valve conduction	M
A	current	0
A	emf	0
A	voltage	1
A	power	0
Q	The gating of thyrister controlled valve can be done by	M
A	forward control	0
A	delay control	1
A	fast forward control	0
A	cascade control	0
Q	PAR does not increase	M
A	power	1
A	voltage	0
A	current	0
A	emf	0
Q	For large oscillaton which type of conrol most effective	
A	overdamped	0
A	underdamped	0
A	damped	0
A	bang bang	1
Q	The equal area criteria is usedto invest capability of which compensator	M
A	shunt	0
A	series	0
A	shunt and series	1
A	tssc	0
Q	From which source actully PARs oprates	M
A	fixed current	0
A	fixed voltage	1
A	fixed power	0
A	fixed emf	0
Q	what is relationship between real power and reactive power in PAR	M
A	they are same	1

A	they vary	0
A	they are disfferent	0
A	cannot say	0
Q	FACTS devices generally deals with	M
A	S	0
A	Q	1
A	P	0
A	Load Angle	0
Q	Application of the facts device is	M
A	Generation	0
A	AC transmission	1
A	DC transmission	0
A	Load	0
Q	Transmission Interconnections is applicable in	M
A	to minimize the total power generation capacity and fuel cost	1
A	to minimize reactive power	0
A	to improve power factor	0
A	to maintain flat voltage profle	0
Q	If generation is less than load……..	M
A	the voltage and frequency drop,	1
A	the voltage drop	0
A	the frequency drop	0
A	the power factor improves.	0
Q	Control of the line impedance X can provide a powerful means of……..	M
A	current control	1
A	voltage control	0
A	frequency control	0
A	power factol control	0
Q	all series Controllers inject ……... in series with the line.	M
A	current	0
A	voltage	1
A	voltage and current	0
A	power	0
Q	all shunt Controllers inject…….. into the system at the point of connection.	M
A	current	1
A	voltage	0
A	voltage and current	0
A	power	0
Q	A STATCOM is a	M
A	Series Controller	0
A	Shunt Controller	1
A	combined series- series controller	0
A	Combined Series-Shunt Controller	0

Q	What does GCSC means?	M
A	GTO Controlled Switch Capacitor	0
A	GTO Controlled Series Capacitor	1
A	GTO Controlled Switch Compensator	0
A	GTO Controlled Series Compensator	0
Q	GCSC consists of	M
A	Variable capacitor in parallel with a GTO thyristor	0
A	fixed capacitor in Series with a GTO thyristor	0
A	fixed capacitor in parallel with a GTO thyristor	1
A	Variable capacitor in Series with a GTO thyristor	0
Q	Limitations of series compensation	M
A	Reduce the stability	0
A	increase the voltage drop	0
A	Reduce the power factor	1
A	Increase in fault current	0
Q	Operation of SSSC resemble to	M
A	shunt capacitor	0
A	series inductor	0
A	shunt capacitor and series inductor	1
A	shunt inductor and series capacitor	0
Q	Main Objective of GCSC is	M
A	to control the ac current across the capacitor for a given line current	0
A	to control the ac voltage across the capacitor for a given line current	1
A	to control the ac voltage across the capacitor for a given line voltage	0
A	to control the ac current across the capacitor for a given line voltage	0
Q	TCSC can provide continuously	M
A	Fixed capacitance	0
A	variable capacitance	1
A	Fixed inductance	0
A	Variable inductance	0
Q	TCSC is capable of providing	M
A	Constant supply	0
A	Constant alternating supply	1
A	constant current	0
A	constant voltage	0
Q	Power angle regulator is applied when power between is transmitted in	M
A	Parallel lines of same electrical length	0
A	Parallel lines of different electrical length	1
A	Any parallel lines	0
A	Parallel lines of same polarity	0

Q	In TSSC, when the current crosses zero, ...	M
A	the thyristor valve is turned on	0
A	the thyristor valve is turned off	1
A	the capacitor is turned on	0
A	the capacitor valve is turned off	0
Q	The degree of serirs compensation in TSSC is controlled step wise by increasing or decreasing the no of ...	M
A	Series capacitor	1
A	Parallel capacitor	0
A	Series of inductor	0
A	Series of inductor	0
Q	If the opening of GCSC is delayed by angle gamma wrt the crest of line current i, then Vc =?	M
A	(I/wC)×(sinwt - sin gamma)	1
A	(wC/I)×(sinwt - sin gamma)	0
A	(I/wC)×(sin gamma - sinwt)	0
A	(wc/I)×(sin gamma - sinwt)	0
Q	When the GTO valve is closed, voltage accross the capacitor is	M
A	maximum	0
A	minimum	0
A	zero	1
A	infinity	0
Q	In TSSC, the 1st half of the cycle	M
A	charges the capacitor from zero to maximum	0
A	discharges the capacitor from maximum to zero	1
A	charges the capacitor to minimum	0
A	discharges the capacitor to minimum	0
Q	A capacitor is inserted by which technique in TCSC	M
A	Switching ON the Thyristor	0
A	By manually adding	0
A	Switching OFF the Thyristor	1
A	By removing the Thyristor	0
Q	In TSSC when does the thyristor valve commutates "naturally," that is, it turns off?	M
A	When Current crosses 90°	0
A	When Current crosses 180°	0
A	When Current crosses 0°	1
A	When Current crosses 45°	0
Q	In normal operation TCSC operates at which mode	M
A	Bypassed- thyristor mode	0
A	Blocked - thyristor mode	0
A	Capacitive Vernier mode	1
A	Inductive Vernier mode.	0
Q	What does TCSC means	M

A	Transistor controlled series capacitor	0
A	Thyristor controlled series capacitor	1
A	Transistor controlled switched capacitor	0
A	Thyristor controlled switched capacitor	0
Q	A static VAR compensator is a	M
A	Voltage controlled shunt compensation device	1
A	Current controlled shunt compensation device	0
A	Voltage controlled series compensation device	0
A	Current controlled series compensation device	0
Q	What is the result of frequency instability?	M
A	Voltage collapse	0
A	Frequency swings	1
A	Grid failure	0
A	nothing happens	0
Q	The transient stability limit of a power system can be appreciably increased by introducing	M
A	Series inductance	0
A	Shunt inductance	0
A	Series capacitance	1
A	Shunt capacitance	0
Q	Which equipment is used for EHV lines to improve power transferability?	M
A	Shunt capacitor	0
A	Shunt reactor	0
A	Series capacitor	1
A	Series reactor	0
Q	FACTS will increase	M
A	System transient stability	1
A	Reduce fault currents	0
A	Improves unstability	0
A	Voltage collapse	0
Q	FACTS devices used in	M
A	Generation	0
A	AC transmission	1
A	DC transmission	0
A	Distribution	0
Q	Which of the following equipment is not used for voltage contr	M
A	Tap changing transformer	0
A	Induction generators	1
A	Series compensators	0
A	Synchronous phase modifiers	0
Q	How is the voltage and frequency controlled in automatic gener	M
A	By controlling the excitation	0
A	By controlling the turbine action	0
A	Turbine speed control for voltage and excitation control for fre	1

A	Excitation control for voltage and turbine speed control for volt	0
Q	What is voltage stability?	M
A	To maintain steady voltages at all the buses after the occurrenc	1
A	To maintain steady voltages at all the buses before the occurrer	0
A	To maintain the system frequency after the severe disturbances	0
A	During distrubunance	0
Q	With 100 % inductive shunt compensation, the voltage profile i	M
A	100% loading line	0
A	50% loading line	0
A	Zero loading of line	1
A	45% loading line	0
Q	A series compensated transmission line has better	M
A	Reactive capacity	0
A	Short circuit capacity	0
A	Steady circuit capacity	0
A	Transient stability	1
Q	If a line is 100 % series compensated it may result in series res	M
A	50 or 60 Hz	1
A	100 Hz	0
A	25 Hz	0
A	150 Hz	0
Q	For certain geometry and operating voltage of the uncompensa	M
A	Increases	0
A	Remains unchanged	1
A	Decreases	0
A	Uncertain	0
Q	TSC means	M
A	Thyristor controlled reactor	0
A	Thyristor switched capacitor	1
A	Thyristor switched reactance	0
A	Fixed capacitor-thyristor controlled reactor	0
Q	FC-TCR means	M
A	Thyristor controlled reactor	0
A	Thyristor switched capacitor	0
A	Thyristor switched reactance	0
A	Fixed capacitor-thyristor controlled reactor	1
Q	FACTS devices are generally used for to compensate……	M
A	Reactance	1
A	Resistance	0
A	Conductance	0
A	Inductance	0
Q	AGC controls	M
A	Frequency	1
A	torque	0
A	Steam /water input	0

A	Voltage	0
Q	STATCOM + SSSC will make	M
A	UPQC	0
A	TCSC	0
A	UPFC	1
A	SVR	0
Q	Saturated reactor will generate harmonics of the order of	M
A	16k ± 1	0
A	9k ± 1	1
A	18k ± 1	0
A	20k ± 1	0
Q	Losses in FC-TCR will vary in the range of	M
A	0.5 - 0.9%	1
A	0.8 - 0.15%	0
A	0.5 – 0.12%	0
A	0.5 - 0.7%	0
Q	IGBT is used in HVDC transmission because of	M
A	Fast switching capacity	0
A	Can withstand high voltage	1
A	Can tolerate mechanical shock	0
A	Can withstand high current shock	0
Q	Main problem of HVDC line at receiving end is of	M
A	P balance	1
A	Q balance	0
A	Voltage balance	0
A	S balance	0
Q	Full form of EAG in HVDC converter is	M
A	Extinction angle control	1
A	Extinction angular control	0
A	Excitation angle control	0
A	Excitation angular control	0
Q	FACTS devices are generally used for to compensate..... Of the transmission line	M
A	Reactance	1
A	Resistance	0
A	conductance	0
A	admittance.	0
Q	FACTS devices used in	M
A	Generation	0
A	AC transmission	1
A	DC transmission	0
A	Load	0
Q	Why We Need Transmission Interconnections	M
A	to minimize the total power generation capacity and fuel cost	1
A	to minimize reactive power	0

A	to improve power factor	0
A	to maintain flat voltage profle	0
Q	Control of the line impedance X can provide a powerful means of……..	M
A	current control	1
A	voltage control	0
A	frequency control	0
A	power factol control	0
Q	all series Controllers inject …….. in series with the line.	M
A	current	0
A	voltage	1
A	voltage and current	0
A	power	0
Q	A STATCOM is a	M
A	Series Controller	0
A	Shunt Controller	1
A	combined series- series controller	0
A	Combined Series-Shunt Controller	0
Q	Which one is Series Connected Controller	M
A	TSSR	1
A	TSC	0
A	TSR	0
A	UPFC	0
Q	Which one is Series Connected Controller	M
A	TCBR	0
A	TCSR	1
A	SVG	0
A	TSC	0
Q	Which one is Shunt Connected Controller	M
A	TCSR	0
A	TSSC	0
A	TSSR	0
A	TSC	1
Q	which one is Combined shunt and series connected controller	M
A	UPFC	1
A	TSSC	0
A	TCSR	0
A	TSSR	0
Q	series Controller injects:	M
A	Voltage in phase with the line current.	0
A	current in phase quadrature with line voltage	0
A	Voltage in phase quadrature with line current.	1
A	current in phase with line voltage	0
Q	A shunt controller injects:	M

A	current in phase quadrature with line voltage	1
A	voltage in phase with line voltage	0
A	voltage in phase quadrature with line voltage	0
A	current in phase with line voltage	0
Q	How is STATCOM connected in a system	M
A	Series to the system which requires compensation	0
A	Series or parallel to the system which requires compensation	0
A	Shunt to the system which requires compensation	1
A	As per the sysytem kVAr requirement	0
Q	What does SSG stands for	M
A	Series Source Generatror	0
A	Shunt Source Generator	0
A	Series Static Generator	0
A	Static Synchronous Generator.	1
Q	What does SSSC stands for	M
A	Series Static Superconducting Compensator	0
A	Shunt Static Superconducting Compensator	0
A	Static Synchronous Series Compensator	1
A	Static Synchronous Shunt Compensator	0
Q	What does SMES stands in compensation techniques:	M
A	Series Magnetic Energy Storage	0
A	Shunt Magnetic Energy Storage	0
A	Superconductor Magnetic Energy Storage	1
A	Super Magnetic Energy Storage	0
Q	How is SSSC connected in system	M
A	Series to the system which requires compensation	0
A	Shunt to the system which requires compensation	1
A	Series or parallel to the system which requires compensation	0
A	According to the compensation magnitude.	0
Q	FACTS controller used For ?	M
A	Voltage compensations	0
A	KVARcompensation	1
A	KW compensation	0
A	PF control	0
Q	SVC term defined as	M
A	Synchronous Voltage Converter	0
A	Shunt Voltage Compensator	0
A	Static VAR Compensator	1
A	Synchronous Voltage Converter	0
Q	SVC and STATCOM are _____ device.	M
A	Voltage compensators	0
A	Static series synchronous compensator	0
A	Shunt Compensators	0
A	Seies Compensators	1
Q	UPFC stands for:	M

A	Unified Power Factor Controller	0
A	Unified Power Flow Compensator	0
A	Unified Power Flow Controller	1
A	Unique Power Controller	0
Q	Power flow control, Voltage control and oscillation damping is the main feature of:	M
A	TSC	0
A	SSSC	0
A	UPQC	0
A	UPFC	1
Q	UPFC Consists of	M
A	one voltage sourced converter	0
A	Two voltage sourced converter	1
A	Three voltage sourced converter	0
A	Four voltage sourced converter	0
Q	The function of converter 1 of UPFC is to supply or absorb the.....demanded by converter 2 at the dc link.	M
A	Real Power	1
A	reactive power	0
A	Apperant power	0
A	inductance	0
Q	UPFC control the magnitude and angular position of the	M
A	Injected current	0
A	Injected voltage	1
A	Injected Reactive power	0
A	injected Active Power	0