[Total No. of Printed Pages:1] **CODE NO:- U-447**

FACULTY OF ENGINEERING

BE(EEE/EEP/EE) Examination - DEC – 2014

Flexible AC Transmission Systems(Revised)

[Time: THREE *Hours*] **[Max. Marks: 80]**

"Please check whether you have got the right question paper."

i) Question no. 1 and 6 are compulsory.
ii) Attempt from each section any two questions from the remaining questions.
iii) Assume suitable data wherever necessary.

SECTION- A

Q1		Solve any five questions:	(10)
	i)	What is the necessity of compensation?	
	ii)	How is reactive power controlled in the electrical networks?	
	iii)	What is meant by STATCOM?	
	iv)	What are different types of facts controlling devices?	
	v)	What is the TCSC?	
	vi)	Which types of harmonics are percent in the o/p of 3 bridge convertor?	
	vii)	What is the cause for voltage instability?	
	viii)	What are the advantages of the slope in the SVC dynamic characteristics?	
Q2	a)	Explain how power flows & types of powers in ac systems?	(08)
	b)	What are the factors which limits loading capacity?	(07)
Q3	a)	How shunt compensation is classified? Explain in detail.	(08)
	b)	Explain the functional control scheme for FC-TCR	(07)
Q4	a)	Explain the working principle and V-I characteristics of the STAT COM?	(08)
	b)	Compare STATCOM with SVC	(07)
Q5	a)	Explain the merits and demerits of hybrid compensators.	(07)
	b)	Explain TSR & TCR by covering the following points. I) Diagram ii) operation iii)V-I characteristics.	(08)

SECTION-B

Q6		Solve any five questions.	(10)
	i)	Write the application of SVC?	
	ii)	Define passive and active VAR control.	
	iii)	What will happen if the SVC absence in a power system network?	
	iv)	What do you meant by load compensation?	
	v)	List out the application of UPFC	
	vi)	Define the function of control system on SSSC.	
	vii)	How power flow takes place in parallel electrical system?	
	viii)	How TCBR is used to improve the transient stability?	
Q7	a)	Explain the hybrid phase angle regulator.	(08)
	b)	Explain the objectives of voltage and phase angle regulation.	(07)
Q8	a)	Explain the NGH-SSR damping scheme with circuit diagram. Wave form.	(08)
	b)	Explain the basic operating control schemes for TCSC.	(07)
Q9	a)	Differentiate clearly between on UPFC & IPFC	(08)
	b)	How an UPFC scheme can be implemented using two back to back voltage source convectors.	(07)
Q10	a)	Explain GTO thyristor controlled series capacitor.	(08)
	b)	With the help of power angle curve explain how transient stability is improved of series controllers.	(07)