Energy Management System (CBCS Pattern) M. Tech. Second Semester OLD+CBCS
(C.B.S. Pattern)

PEMS21 - Integrated Energy Systems

P. Pages : 1 **GUG/W/18/10999**

Time : Three Hours * 3 1 2 3 * Max. Marks : 70

Notes : 1. All questions carry equal marks.
2. Answer **any five** questions.
3. Assume suitable data wherever necessary.
4. Illustrate your answers wherever necessary with the help of neat sketches.

1.	a)	Draw & Explain the electrical characteristics of load acid cell.	**7**
	b)	Write a brief on economic evaluation of Hybrid energy system.	**7**
2.	a)	Explain the importance of standalone system. How they are selected?	**7**
	b)	Draw the block diagram of solar PV-Wind -Diesel integrated system & explain.	**7**
3.	a)	Step out the mathematical model of integrated (renewable) energy system.	**7**
	b)	Write short not on automatic control of dynamic system and its regression analysis.	**7**
4.	a)	Explain superconducting magnet energy storage system.	**7**
	b)	Compare Grid connected and stand alone system.	**7**
5.	a)	Explain the method of upgrading the capacity of micro hydro system using available renewable energy sources.	**7**
	b)	Explain hybrid energy system with suitable block diagram.	**7**
6.	a)	Explain the factors which plays major role in increasing primary & secondary energy demands.	**7**
	b)	Briefly discuss the different terms of energy & energy chain with suitable example.	**7**
7.	a)	With the help of load curve, explain load levelling.	**7**
	b)	Explain stability of integrated energy system.	**7**
8.		Write short note on.	
	a)	Parallel operation with grid of RES.	**7**
	b)	Merits & demerits of solar energy system.	**7**

****