16/12/2024 ELECTRICAL SEM-VI C SCHEME ES (DLOC) QP CODE: 10066907

Time : 3 Hours **Total Marks: 80**

N.B. : **(1) Question No.1 is compulsory**
(2) Attempt any three from the remaining
(3) Figures to the right indicate full marks
(4) Assume suitable data if necessary

1.	(a)	Write a short note on: flow battery.	**20**
	(b)	Explain the necessity of energy storage.	
	(c)	Explain the types and applications of fuel cell.	
	(d)	Explain energy trends in batteries.	
2.	(a)	Write a short note on Supercapacitors.	**10**
	(b)	Explain in detail about seasonal thermal energy storage.	**10**
3.	(a)	Explain briefly about Compressed air energy storage (CAES).	**10**
	(b)	What are solar ponds? Explain with a neat diagram how energy can be stored and utilised from a solar pond?	**10**
4.	(a)	Explain the configurations and applications of hybrid energy storage systems (HESS).	**10**
	(b)	What are the Design considerations for sizing of different types of energy storage systems for various applications?	**10**
5.	(a)	Explain in detail about the Pumped hydro storage system. Give its applications.	**10**
	(b)	Explain the working principle of Rechargeable battery.	**10**
6.	(a)	Write a short note on Superconducting magnetic energy storage (SMES).	**10**
	(b)	Explain in detail about Flywheel	**10**

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