

(3 Hours)

[Total Marks: 80]

N.B.

1. **Question No.1 is Compulsory.**
2. Answer any three out of remaining five questions.
3. Assume any suitable data wherever required but justified the same.
4. Illustrate answer with sketches wherever required.

- Q 1 a) Write a short note on: Solar Pond. (05)
b) Explain the necessity of energy storage. (05)
c) Explain different types of energy storage. (05)
d) Write a short note on: E-mobility storage applications. (05)
- Q 2 a) Write a short note on Supercapacitors. (10)
b) Explain in detail about sensible heat storage. (10)
- Q 3 a) Explain briefly about Compressed air energy storage (CAES). (10)
b) Explain in detail about design considerations for sizing of different types of energy storage systems for various applications. (10)
- Q 4 a) Write a short note on Superconducting magnetic energy storage (SMES). (10)
b) Explain in briefly about latent heat storage. (10)
- Q 5 a) Explain in detail about Pumped hydro storage system. (10)
b) Write a short note on: Hybrid Energy storage systems. (10)
- Q 6 a) Explain in brief: Future technology in energy storage as Electric vehicle. (10)
b) Explain working principle of Rechargeable battery. Illustrate emerging trends in batteries. (10)
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