

(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

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| 1. | (a) | Explain emerging trends in batteries. | 20 |
| | (b) | Explain the necessity of energy storage. | |
| | (c) | Explain different types of fuel cell. | |
| | (d) | Write a short note on: Solar Pond. | |
| 2 | (a) | Write a short note on Flywheel. | 10 |
| | (b) | Explain in detail about latent heat storage. | 10 |
| 3. | (a) | Explain working principle of Rechargeable battery. | 10 |
| | (b) | Explain in detail about design considerations for sizing of different types of energy storage systems for various applications | 10 |
| 4. | (a) | Write a short note on Superconducting magnetic energy storage (SMES). | 10 |
| | (b) | Explain in briefly about seasonal thermal energy storage. | 10 |
| 5. | (a) | Explain in detail about Pumped hydro storage system. | 10 |
| | (b) | Write a short note on: Supercapacitors | 10 |
| 6. | (a) | Explain in brief: Future technology in energy storage as Electric vehicle | 10 |
| | (b) | Explain briefly about Compressed air energy storage (CAES) | 10 |
