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**GIET UNIVERSITY, GUNUPUR – 765022**  
Ph.D. (Second Semester) Examinations, April – 2024  
**PPEPH2029 – Study of Super Capacitors**  
(Physics)

Time: 3 hrs

Maximum: 70 Marks

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The figures in the right-hand margin indicate marks.

**Answer ANY FIVE Questions****(14 x 5 = 70 Marks)**

	Marks
1. Explain the mechanism of operation of electrochemical cell on the basis of Faradays law.	14
2. With appropriate diagram explain the energy storage mechanism of Li-ion batteries.	14
3. Explain the basic principle of energy storage in case of Super capacitors. How it is superior than conventional capacitors.	14
4. Why it is important to fabricate new energy storage devices over traditional energy storage devices.	14
5. Explain the function of nanostructural materials used for energy storage.	14
6. Explain thermodynamics of electrochemical cell.	14
7. Explain different types of Super capacitors based on the electrode materials used.	14
8. Explain the charge storage mechanism of electrochemical double layer capacitor.	14

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