



R18 Regulation

Subject code:206BA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VI Semester Supplementary Examinations, May 2025

ENERGY STORAGE SYSTEMS

(EEE)

Maximum Marks: 70

Date: 27.06.2025

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	What is Congestion in power grid?	2M	1	L1
2	Define Round trip efficiency.	2M	1	L1
3	What is energy storage capacity?	2M	2	L1
4	Write the advantages of ESS.	2M	2	L1
5	Write the main features of Flywheel energy storage system?	2M	3	L1
6	Write the examples of Secondary batteries?	2M	3	L1
7	What is advantage of Superconducting magnetic energy storage?	2M	4	L1
8	Give the Technical comparison of EES technologies.	2M	4	L1
9	Define Smart Grid.	2M	5	L1
10	Draw the block diagram of PV system designed for energy self-consumption.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	What are the Characteristics of energy storage systems?	10M	1	L2
OR				
12	a) What is the need for continuous and flexible supply? b) What are the applications of energy storage systems?	5M 5M	1	L2
13	Explain the various problems in renewable energy installation and give their possible solutions with neat block diagram.	10M	2	L2
OR				
14	Write the various roles of electrical storage technologies from the viewpoint of a utility and consumers.	10M	2	L2
15	Explain Pumped hydro storage system in detail with neat sketch.	10M	3	L2
OR				
16	Explain the Lead acid battery (LA) in detail.	10M	3	L2
17	Explain the Superconducting magnetic energy storage (SMES).	10M	4	L2
OR				

18	Give the Technical comparison of various EES technologies.	10M	4	L2
19	Explain the following related to ESS: a) Utility use (conventional power generation, grid operation & service) b) Consumer use (uninterruptable power supply for large consumers)	5M 5M	5	L2
	OR			
20	Write the New trends in applications of Energy storage system.	10M	5	L2