

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Electrical Engg.) (Sem.-7)

ENERGY STORAGE SYSTEM

Subject Code : BTEE-703D-18

M.Code : 90582

Date of Examination : 06-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a. On what factors does energy storage depend?
- b. Which is better off-grid system or on-grid system?
- c. What is the difference between supercapacitor and capacitor?
- d. How do supercapacitors charge?
- e. Why is fuel cell better than the conventional methods of energy generation?
- f. What are the types of mechanical energy storage systems?
- g. What is grid energy storage system?
- h. What is energy storage capacity?
- i. What are the criteria that has to be considered for the selection of energy storage system?
- j. List two major advantages and two major disadvantages of fuel cells compared to other power conversion devices.

SECTION-B

2. Discuss the principle and working of fuel cell.
3. What are the thermal energy storage systems? Discuss the various categories of thermal energy storage?
4. Explain how the potential energy involves the imposition of forces upon materials systems?
5. Explain the simple addition methods in positive electrode materials.
6. Explain the steam reforming method for converting methane to hydrogen.

SECTION-C

7. Explain the linear and rotational kinetic energy in mechanical systems. Also discuss how the flywheel is used for the purpose of storing kinetic energy.
8. Explain the major types of reaction mechanisms used in Electrochemical cells.
9. Define the basic working principles of supercapacitors. Discuss various classifications of supercapacitors.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.