**18EED51**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **May , 2022** | **Electrical & Electronics Engineering** | | |
| **Seventh Semester** | **Energy Storage Systems** | | |
| **Time:** Three Hours | | **Maximum:**50 Marks | |
| ***Answer question 1 compulsory.*** | | | **(10X1 = 10Marks)** |
| ***Answer one question from each unit.*** | | | **(4X10=40Marks)** |

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|  |  |  | CO | BL | M |
| 1 | a) | List the types of energy storage | CO1 | BL1 | 1M |
|  | b) | What are the different thermal storage types | CO1 | BL1 | 1M |
|  | c) | Which type of energy storage system has maximum Life time? | CO1 | BL1 | 1M |
|  | d) | Which parameters will govern battery performance | CO2 | BL1 | 1M |
|  | e) | Name the different types of batteries | CO2 | BL1 | 1M |
|  | f) | What is the advantage of Lithium battery | CO2 | BL1 | 1M |
|  | g) | What are the main characteristics of Hydrogen Storage? | CO3 | BL1 | 1M |
|  | h) | List any tow methods of Hydrogen Storage. | CO3 | BL1 | 1M |
|  | i) | What is the purpose of flywheel | CO4 | BL1 | 1M |
|  | j) | Give the application of super capacitors | CO4 | BL1 | 1M |
| **Unit-I** | | | | | |
| 2 | a) | Explain types of Energy Storage Systems. | CO1 | BL3 | 5M |
|  | b) | Write about pressurized water storage system | CO1 | BL2 | 5M |
|  |  | **(OR)** |  |  |  |
| 3 | a) | Explain various energy storage applications | CO1 | BL3 | 5M |
|  | b) | Describe the modelling of thermal storage units | CO1 | BL2 | 5M |
| **Unit-II** | | | | | |
| 4 | a) | Explain the fundamental concepts of batteries | CO2 | BL3 | 5M |
|  | b) | What are the safety issues in Batteries? | CO2 | BL2 | 5M |
| **(OR)** | | | | | |
| 5 | a) | Explain the different types of Batteries. | CO2 | BL2 | 5M |
|  | b) | Explain any one of the modern batteries with example | CO2 | BL3 | 5M |
| **Unit-III** | | | | | |
| 6 | a) | Describe the liquid Hydrogen storage. | CO3 | BL2 | 5M |
|  | b) | Explain the principle of operation of chemical storage method. | CO3 | BL3 | 5M |
| **(OR)** | | | | | |
| 7 | a) | Describe the biogas storage process. | CO3 | BL3 | 5M |
|  | b) | Write about the safety procedure of hydrogen and biogas storage. | CO3 | BL2 | 5M |
| **Unit-IV** | | | | | |
| 8 | a) | Describe about flywheel mechanism of energy storage | CO4 | BL2 | 5M |
|  | b) | Write the applications for various types of Super Capacitors Storage Mechanisms. | CO4 | BL3 | 5M |
| **(OR)** | | | | | |
| 9 | a) | Describe about super capacitor energy storage technology | CO4 | BL2 | 5M |
|  | b) | Write the applications of Hybrid Storage Systems. | CO4 | BL3 | 5M |

