IV B. TECH I SEMESTER REGULAR EXAMINATIONS, NOVEMBER - 2023
DATA ANALYTICS FOR SMART GRIDS
(ELECTRICAL AND ELECTRONICS ENGINEERING)

Time: 3 hours   Max. Marks: 70

Note : Answer **ONE** question from each unit **(5 × 14 = 70 Marks)**
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UNIT-I

1. a) Explain the functions of smart grid components. [7M]
   b) Describe the concept and need of smart grids with neat diagram. [7M]

(OR)

2. a) Summarize the basic stages of transformation to smart grid. [7M]
   b) Associate the smart grid stakeholder roles and functions. [7M]

UNIT-II

3. a) Describe the significance of major components in smart grid. [7M]
   b) Discuss the SCADA plus DMS integration of the subsystems. [7M]

(OR)

4. a) Explain the components of SCADA systems. [7M]
   b) Discuss the integration functions in substation automation. [7M]

UNIT-III

5. a) Tabulate the advantages and disadvantages of different wired communication technologies. [7M]
   b) Interpret the comparison between conventional and smart metering. [7M]

(OR)

6. a) Examine the challenges of smart grid communication. [7M]
   b) Demonstrate the Block diagram of Phasor Measurement Units (PMU). [7M]

UNIT-IV

7. a) Explain the Big Data with Analytical Oriented Platform Approach. [7M]
   b) Illustrate the Meter Data Management for Smart Grid. [7M]

(OR)

8. a) Analyze the different sources of data in smart grid. [7M]
   b) Interpret the benefits of big data systems in energy management. [7M]

UNIT-V

9. a) Explain the Characteristics of big data for smart grid. [7M]
   b) Analyze the potential applications of big data analytics in smart grids. [7M]

(OR)

10. a) Demonstrate the Scope of big data analytics in smart grids. [7M]

b) Interpret the Key challenges to apply big data analytics to smart grids. [7M]

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