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YASHODA TECHNICAL CAMPUS, SATARA
FACULTY OF ENGINEERING

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Department of Electrical Engineering

Unit	Smart Grid Technology BTEEPE604B	CO	BL
1	1) Illustrate the architecture of a smart grid and explain how it functions in practical energy distribution 2) Illustrate the smart metering mechanism and explain how it will be beneficial. 3) Interpret the real time pricing scheme and its benefits to the consumers. 4) Illustrate and explain outage management system in smart grid? 5) Draw and explain mechanism of vehicle to grid operation? 6) Apply your interpretations on following. a) Smart sensors used in smart grid operation b) Home automation system in smart grid c) Substation automation system in smart grid d) Feeder automation system in smart grid e) Geographic information system [G.E.S] in smart grid f) Intelligent electronic devices [I.E.D] in smart grid 7) List smart storage devices required in smart grid. Explain any one in detail?	604B_1	L3
2	1) Explain with suitable diagram, components and architecture of smart grid design? 2) Apply your interpretations on following. a) Fundamental components of smart grid design b) Transmission automation of smart grid design c) Distribution automation of smart grid design 3) Explain with neat diagram renewable energy integration tools and techniques for smart grid?	604B_2	L3
3	1) Discuss in detail integration of renewable energy sources in smart grid. 2) Draw and explain architecture of micro grid system? 3) Draw and explain A.C micro-grid system. 4) Draw and explain D.C micro grid system. 5) Explain with neat diagram integration of electric vehicles in micro- grid? 6) Explain role of micro- grid for E.V charging infrastructure. 7) Apply your interpretations on Reduction in impact on the environment due to micro grid.	604B_3	L3
4	1) Draw and explain Advanced Metering Infrastructure (AMI). 2) Draw and explain Home Area Network (HAN). 3) Draw and explain Neighborhood Area Network (NAN) 4) Draw and explain Wide Area Network (WAN) 5) Apply your interpretations on a) Bluetooth b) ZigBee c) GPS d) Wi-Fi e) Wi-Max based communication 6) Draw and explain Synchro Phasor Measurement Units (PMUs) 7) Draw and explain Wide Area Measurement Systems (WAMS). 8) Draw and explain Two-way Digital Communications Paradigm 9) Draw and explain Network Architectures. 10) Draw and explain IP- based Systems Power Line Communications.	604B_4	L3
5	1. Discuss in detail load Frequency Control (LFC) in Micro Grid System 2. Discuss in detail Voltage Control in Micro Grid System 3. Discuss in detail Reactive Power Control in Smart Grid. 4. Apply your interpretations on a) Cyber Security Challenges in Smart Grid b) Load Altering Attacks c) False Data Injection Attacks d) Defense Mechanisms	604B_5	L3