**20EE703/ PE**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular) DEGREE EXAMINATION** | | | | |
| **January, 2024** | | **Electrical & Electronics Engineering** | | |
| **Seventh Semester** | **Smart Grid Technology & Applications** | | | |
| **Time:** Three Hours | | | **Maximum:** 70 Marks | |
| ***Answer question 1 compulsory.*** | | | | **(14X1 = 14Marks)** |
| ***Answer one question from each unit.*** | | | | **(4X14=56 Marks)** |
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|  |  |  | CO | BL | M |
| 1 | a) | What is Ageing Assets? | CO1 | L1 | 1M |
|  | b) | What is the concept of Thermal Constraints? | CO1 | L1 | 1M |
|  | c) | Draw the Architecture of a DMSC. | CO1 | L2 | 1M |
|  | d) | What is main aim of National initiatives? | CO1 | L1 | 1M |
|  | e) | What is shared Communication Channel? | CO2 | L1 | 1M |
|  | f) | Define decryption. | CO2 | L2 | 1M |
|  | g) | Draw the IEEE802 architecture. | CO2 | L2 | 1M |
|  | h) | What are the types of Cyber security standards? | CO2 | L1 | 1M |
|  | i) | What is smart metering? | CO3 | L1 | 1M |
|  | j) | What is Home-area network? | CO3 | L1 | 1M |
|  | k) | What are the functions of Data concentrator? | CO3 | L1 | 1M |
|  | l) | What is signal acquisition? | CO4 | L1 | 1M |
|  | m) | What is DNP3? | CO4 | L2 | 1M |
|  | n) | What is the function of Customer information system? | CO4 | L1 | 1M |
| **Unit-I** | | | | | |
| 2 | a) | Write the Overview of Technologies required for The Smart Grid. | CO1 | L2 | 7M |
|  | b) | Explain about Virtual Power Plant. | CO1 | L2 | 7M |
| **(OR)** | | | | | |
| 3 | a) | Explain Thermal Constraints in smart grid. | CO1 | L2 | 7M |
|  | b) | List out the Initiatives and Demonstrations in smart grid. | CO1 | L2 | 7M |
| **Unit-II** | | | | | |
| 4 | a) | Explain about Multi-protocol label switching. | CO2 | L2 | 7M |
|  | b) | Explain the Standards for smart metering Modbus in detail. | CO2 | L3 | 7M |
| **(OR)** | | | | | |
| 5 | a) | Explain Encryption and decryption in detail. | CO2 | L2 | 7M |
|  | b) | Discuss about the Cyber security standards. | CO2 | L3 | 7M |
| **Unit-III** | | | | | |
| 6 | a) | Explain analogue to digital conversion | CO3 | L2 | 7M |
|  | b) | Explain Home area network and Neighbourhood Area Network. | CO3 | L2 | 7M |
| **(OR)** | | | | | |
| 7 | a) | Discuss meter data management system. | CO3 | L2 | 7M |
|  | b) | Explain the Protocols for communication. | CO3 | L2 | 7M |
| **Unit-IV** | | | | | |
| 8 | a) | Discuss Customer Information System. | CO4 | L2 | 7M |
|  | b) | Explain Operation Management in detail. | CO4 | L2 | 7M |
| **(OR)** | | | | | |
| 9 | a) | Explain Outage Management System. | CO4 | L2 | 7M |
|  | b) | Discuss Distribution System Modelling. | CO4 | L2 | 7M |

