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Question Paper Code: 55021

Ph.D COURSE WORK EXAMINATION, MAY 2018

Elective

Course Work

15PPE521 – DISTRIBUTED GENERATION AND MICRO GRID

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Explain in detail about the electric energy generation by tidal power and wind power. CO1-U (20)
- Or
- (b) Explain in detail about the electric energy generation by Fuel Cell and Biomass. CO1-U (20)
2. (a) (i) Explain in detail the concept, classification and selection of various sources of Distributed Generation. CO2- U (12)
- (ii) Summarize the purpose of storage devices in Distributed Generation. Discuss in detail the various types of energy system storage systems. CO2- U (8)
- Or
- (b) (i) Explain IEEE 1547 series of Standards for interconnecting Distributed resources to electric power systems. CO2- U (12)
- (ii) Illustrate the working principle of Captive Power Plants. CO2- U (8)
3. (a) (i) Demonstrate how Voltage, Frequency, THD respond to grid abnormal operating conditions. CO3-Ana (12)
- (ii) Comment on Islanding in Power systems. CO3-Ana (8)

Or

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| (b) | (i) Elucidate in detail the reliability issues associated with Grid Integration of Non Conventional Energy resources on existing power system. | CO3-Ana | (12) |
| | (ii) Micro grids are performing better than Conventional Grid-Justify. | CO3-Ana | (8) |
| 4. | (a) (i) With neat sketch, explain the typical structure and configuration of Micro grid. | CO4-U | (16) |
| | (ii) What are the benefits of Micro grid? | CO4-U | (4) |
| | | Or | |
| (b) | (i) Mention the various sources of Microgrids. | CO4-U | (8) |
| | (ii) Enumerate the significance of Power Electronic Interfaces in AC and DC Micro grid. | CO4-U | (12) |
| 5. | (a) Elaborate the passive, active and communication based techniques involved in anti-islanding schemes. | CO5-U | (20) |
| | | Or | |
| (b) | Detail the power quality issues in micro grids and the associated regulatory standards. | CO5-U | (20) |