

GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER– IV (NEW) EXAMINATION – SUMMER 2017

Subject Code: 2740703**Dates: 03/05/2017****Subject Name: Smart Grid Technology and Applications****Time: 2:30 P.M to 5:00 P.M****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** What is smart Grid? Give the comparison between conventional Grid and smart Grid. **07**
- (b)** Explain Concept of Resilient & Self-Healing Grid **07**
- Q.2 (a)** Explain Evolution of electricity metering. **07**
- (b)** Explain in brief: Smart Substation. **07**
- OR**
- (b)** Explain functional block diagram of a smart meter. **07**
- Q.3 (a)** Explain in brief: Outage Management System (OMS). **07**
- (b)** Explain wide area measurement system (WAMS) with its block diagram and its application. **07**
- OR**
- Q.3 (a)** Explain Phase Measurement Unit (PMU) with its block diagram and its application. **07**
- (b)** What is Micro Grid? Explain the Concept of Micro Grid with its need & applications of Micro Grid. **07**
- Q.4 (a)** What is Islanding? Discuss its need and benefits. **07**
- (b)** What is IED? Explain Relay IED in brief. **07**
- OR**
- Q.4 (a)** Discuss different issues of interconnection for micro grid. **07**
- (b)** Discuss different Power Quality issues of Grid connected Renewable Energy Sources. **07**
- Q.5 (a)** Explain Power Quality Audit in brief. **07**
- (b)** Explain voltage regulation with necessary diagram. **07**
- OR**
- Q.5 (a)** Explain in brief: Automatic Meter Reading (AMR). **07**
- (b)** Explain Distributed Energy Resources and Advantages and disadvantages of Distributed Energy Resources. **07**
