

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**ME – SEMESTER IV (NEW) – • EXAMINATION – SUMMER 2016**

**Subject Code: 2740703**

**Date:04/05/2016**

**Subject Name: Smart Grid Technology and Applications**

**Time:10:30 am to 01:00 pm**

**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) Define smart grid. What is need of smart grid? Explain various function of its. **07**  
(b) Explain concept of Resilient & Self-Healing grid. **07**
- Q.2** (a) Which are the three major systems of smart grid? Give the detailed classification of these three major systems. **07**  
(b) Explain Principle of centralized and decentralized control of micro grid. **07**
- OR**
- (b) Discuss different Power Quality issues of Grid connected Renewable Energy Sources. **07**
- Q.3** (a) With diagram explain deployment of Demand-Side Integration (DSI) programs at different time scales. **07**  
(b) Explain evolution of electricity metering. **07**
- OR**
- Q.3** (a) Explain functional block diagram of a smart meter. **07**  
(b) With diagram explain typical communications architecture for smart metering. **07**
- Q.4** (a) Explain ITI (CBEMA) curve for faults in the distribution system **07**  
(b) Discuss different issues of interconnection for micro grid. **07**
- OR**
- Q.4** (a) Explain concept of micro grid. Also explain need & applications of micro grid. **07**  
(b) With configuration explain WAMPAC. **07**
- Q.5** (a) Write a short note on Advanced Metering Infrastructure (AMI) **07**  
(b) What is DER? Give the classification of DER. Also discuss its advantage & Disadvantage. **07**
- OR**
- Q.5** (a) What is Islanding? Discuss its need and benefits. **07**  
(b) Write a short note Home Area Network (HAN). **07**

\*\*\*\*\*