

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 120669

Roll No.

**B.TECH.**

**Theory Examination (Semester-VI) 2015-16**

**SMART ENERGY & DELIVERY SYSTEMS**

*Time : 3 Hours*

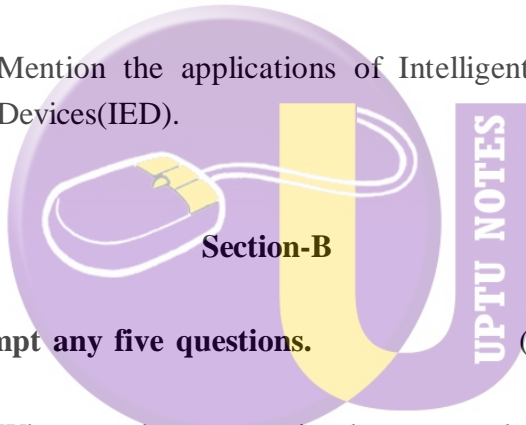
*Max. Marks : 100*

**Section-A**

**1. Attempt all Questions. All Questions carry equal marks. Write answer of each in short. (2×10 = 20)**

- (a) How does a Smart Grid differ from convention distribution grid?
- (b) Give the concept of smart meters.
- (c) Define Outage Management System.
- (d) What is meant by Geographic Information System.
- (e) List the applications of smart sensors.

- (f) What is the role of storage like battery in Smart grid technology?
- (g) What are the different components of microgrid?
- (h) Comment on real time pricing of sale and purchase of power.
- (i) What do you mean by distributed energy resources?
- (j) Mention the applications of Intelligent Electronic Devices(IED).



**2. Attempt any five questions.** (10×5 = 50)

- (a) What are the present development and international policies in smart grid?
- (b) Explain concept of micro-grid, and its need and application.
- (c) Explain the role of power quality audit in smart grid.

- (d) Explain, the "Feeder Automation".
- (e) Write a note on, "Thin film solar cells".
- (f) Highlight on role of geographic information system in smart grid, and also give its function.
- (g) Explain the Resilient and self-healing grid.
- (h) FOCUS on Wireless mesh network in smart grid.

**Attempt any 2 questions.**

(15×2 = 30)

- 3. (a) Explain the need of Substation Automation, and what are the components involved in it?
- (b) Write notes on Phase Measurement Unit (PMU).
- 4. (a) Write notes on methodology involved in integration of renewable energy source to the micro-grid.
- (b) Explain the different protection & control issues involved in micro-grid.

5. (a) Explain on present development in Smart Grid considering any one case study.
- (b) Explain the concept of Plug in Hybrid Electric Vehicles and vehicle to grid (V2G) Concept. How V2G could be helpful for maintaing grid support?

