Exam.Code:1017
Sub. Code: 7474

2123

M.E. Electrical Engineering (Power System)

First Semester

EE(PS)-8104: Smart Grid Technologies

Time allowed: 3 Hours

Max. Marks: 50

***NOTE**: Attempt any <u>five</u> questions.*

x-x-x

I. a) Define smart grid concept and explain its necessity.

b) Explain the functions of smart grid components. (5,5)

II. a) What do you mean by signal acquisition and signal conditioning? Explain in detail.

b) Discuss about the key components of smart metering. (5,5)

III. Explain the communication network topologies used for data transmission in advanced metering infrastructure. (10)

IV. a) Explain Wide Area Measurement System.

b) Discuss the sustainable energy options for smart grid. (5,5)

V. a) State and explain the issues of interconnecting the micro grid with the utility grid.

b) Discuss the islanding, its need and benefits. (5,5)

VI. a) Explain the voltage and current source converters used for smart grid.

b) Discuss briefly about the Bay controller. (8,2)

VII. a) Compare the conventional metering and smart metering.

b) Explain about the smart storage batteries. (5,5)

VIII. a) Explain IED application for monitoring and protection.

b) Describe substation and feeder automation. (5,5)

x-x-x