

Code: EE8T2C

**IV B.Tech - II Semester – Regular / Supplementary Examinations  
July-2021**

**SMART GRID  
(ELECTRICAL & ELECTRONICS ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

**PART – A**

Answer *all* the questions. All questions carry equal marks

11 x 2 = 22 M

1.

- a) Mention any two characteristics of Smart grid.
- b) Mention various components exist in Smart grid.
- c) What is the purpose of advanced metering infrastructure in Smart grid?
- d) What is GIS technology?
- e) Mention any two applications of Micro grid.
- f) What is load flow state?
- g) Define Congestion Management.
- h) Define Voltage stability.
- i) What is Voltage Stability Indexing?
- j) Mention different Optimization Techniques.
- k) What is Integer Programming?

## PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Discuss in detail the functioning of each Smart grid component. 8 M
- b) Explain the principles of operation of Smart grid and also discuss the essence of smart grid in present day world. 8 M
3. a) Explain the functioning of PMU in detail with necessary support of diagram. 8 M
- b) Discuss the architecture and technique involved in Multi Agent system (MAS) technology. 8 M
4. a) Discuss the concept of load flow studies in Smart grid. 8 M
- b) Explain the concept of contingency in brief. 8 M
5. a) What is Voltage stability assessment and explain any one Voltage stability method in detail. 8 M
- b) Classify Voltage Stability assessment techniques in brief. 8 M

6. a) What are the differences between linear and non linear Programming? 8 M
- b) Explain how the classical optimization techniques can be used for Smart grid operation. 8 M