**PVP 12**

Code: EE8T3B

**IV B.Tech - II Semester – Regular/Supplementary Examinations– April 2017**

# SMART GRID

## (ELECTRICAL & ELECTRONICS ENGINEERING)

Duration: 3 hours Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. a) What are the advantages of smart grid over today's grid? 8 M

   b) What is the working definition of the smart grid based on the performance measures? 6 M

2. a) Describe the role of wide-area monitoring system in smart grids. 7 M

   b) Explain in details about the Phasor measurement unit. 7 M

3. a) Discuss about the challenges in load flow in smart grid. 7 M

   b) Explain about congestion management effect in detail. 7 M

4. a) With a neat sketch explain the importance of power system security. 7 M

b) Explain in detail about the steady state contingency analysis. 7 M

5. a) Discuss about Strengths and weakness of existing voltage stability analysis tools. 7 M

b) Describe various voltage stability assessment techniques. 7 M

6. a) Explain about boundary of region of stability in detail. 7 M

b) Explain about robust state estimation with flow chart. 7 M

7. a) Explain the importance of computation tools in smart grid. 7 M

b) Discuss about the different optimization techniques for development of smart grid development. 7 M

8. a) What are the computational challenges for the development of smart grid? 5 M

b) Explain in detail about the Artificial Neural Networks. 9 M