Code No: NR420208 **Set No.1**

IV B.Tech. II Semester Regular Examinations, April/May -2005
REAL TIME CONTROL OF POWER SYSTEMS
(Electrical & Electronic Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What are the different indicators available in control centers?
   (b) Explain why the electrical power system is so critically designed.
2. (a) Explain why and how events are classified.
   (b) In a normally working power system a fault occurs. Give the sequence of events in order of their occurrence and operators response to these events.
3. (a) What is poke point? What is use of poke point in DPP?
   (b) What is event messaging? When event messages will be received? How event messaging differs from event data?
4. (a) What is use of LAN and WAN in real time software. In electrical power system how it is achieved.
   (b) What is DMA? What is function of DMA? How it increases the processing speed.
5. Explain, the general modelling of Generator, Transmission line, Transformer and Load in a typical power system.
6. (a) What is Contingency Analysis of power system? What are Contingency conditions?
   (b) How Contingency Analysis differs from Security Analysis?
7. (a) List the different software used for DA? List the specific properties of each.
   (b) Explain the role of 'Call Centre' in DA.
8. Explain in detail the limitations of distribution system that will affect the reliable and effective power distribution system.

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Code No: NR420208 **Set No.2**

IV B.Tech. II Semester Regular Examinations, April/May -2005
REAL TIME CONTROL OF POWER SYSTEMS
(Electrical & Electronic Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Explain the structure of Control room in SCADA system?
   (b) What are the advantages of distributed control system?
2. What are the calculated values? Why these values are called calculated values? What is the use of calculated values? How these values are different from measured values? What is basic advantage of calculating values than measuring them?
3. (a) Explain power system Event display? What are the events displayed?
   (b) Explain power system Status list? What are the statuses listed?
4. (a) Explain interrupt response mechanism.
   (b) Explain multilevel interrupts.
5. (a) Explain metering arrangement in power system control for measurement of real time quantities.
   (b) For a given interconnected area, out of the metered quantities and calculated quantities which quantities are negotiable? What is the need of negotiation of quantities?
6. (a) Which is more complicated, Contingency Conditions or Emergency Condition? Justify your answer.
   (b) What are conditions of a 'Normal Power System'? What type of monitoring is active during this period? Why?
7. With neat layout explain a typical distribution scheme for LT consumers. What are the parameters controlled and monitored.
8. (a) What are the advantages of remote control load management for agricultural load?
   (b) What is failure/outage? What are the causes of failure? (Distribution System)

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Code No: NR420208 **Set No.3**

IV B.Tech. II Semester Regular Examinations, April/May -2005
REAL TIME CONTROL OF POWER SYSTEMS
(Electrical & Electronic Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Explain the hierarchical order of a SCADA system.
   (b) Explain the importance of hierarchical order of a SCADA system.
2. (a) With neat sketch explain 'Status Monitoring'
   (b) Explain limit value monitoring.
3. What is power system displays? Explain One - line diagram and Tabular displays.
4. (a) Explain multi masking program.
   (b) Explain Real time program.
5. (a) Explain the effect of Speed - Governor dead band on the system performance.
   (b) In Hydro-Thermal scheduling what are the advantages of Hydro as base plant and as a peak plant.
6. (a) What is weighted LSE?
   (b) What are the properties of weighted LSE?
7. (a) Explain Distribution Automation? What are the advantages of DA?
   (b) Explain, the difference in role of DA and MIS.
8. (a) How efficiency of distribution system is calculated? What are the different types of losses? How these losses can be reduced?
   (b) What do you mean by accountable losses? What are the causes of accountable losses? How these losses can be reduced?

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Code No: NR420208 **Set No.4**

IV B.Tech. II Semester Regular Examinations, April/May -2005
REAL TIME CONTROL OF POWER SYSTEMS
(Electrical & Electronic Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Explain the major changes in today's technology of power system control.
   (b) Explain the advantages of intergraded EMS with SCADA.
2. (a) How energy values are obtained and processed.
   (b) What is scanning of measured values and how scanning is done.
3. (a) Explain difference between power system Curve Display and power system Status Indication.
   (b) Write a note Operator's note book and information content within it.
4. A replica of charminar is constructed at was lingyon D.C. The outer surface of that replica is to be painted exactly as the 'charminar' at Hyderabad. The painting should be exactly with 0.5% differenace in colour shade. Draw and explain the real time system to paint the replica. The process should be on line.
5. Explain the effect of line reactance on power flow and voltage regulation. Brief about methods of VAR compensation.
6. Explain computer control with related to following:
   (a) Load flow analysis
   (b) Short circuit studies
   (c) Power system stability
   (d) Security
7. (a) What is role of communication in DA? What are the different means of communication?
   (b) Explain the switching operation i.e. auto-sectionalizing and Re-storing in DA, under the occurrence of fault.
8. (a) What are the 'Quality goals' of a Distribution company?
   (b) What is 'Load staggering'? What are the advantages and disadvantages of 'Load staggering'?

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