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BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)
B.Tech.Sem - VII ELECTRICAL : WINTER- 2022
SUBJECT : OPERATION & CONTROL OF POWER SYSTEM

Day : Friday

Time : 02:30 PM-05:30 PM

Date : 09-12-2022

W-13338-2022

Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Assume suitable data if necessary.
 - 4) Draw neat and labeled diagram **WHEREVER** necessary.
 - 5) Use of non-programmable **CALCULATOR** is allowed.
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Q.1 Classify power system stability and derive equal area criterion for stability study of one machine infinite bus system. **(10)**

OR

Q.1 Explain in detail point by point method for transient stability study. **(10)**

Q.2 What is the concept of economic load dispatch? Explain optimal load dispatch neglecting transmission losses. **(10)**

OR

Q.2 Discuss concept of unit commitment in short and explain priority list method of unit commitment in detail. **(10)**

Q.3 a) Draw block diagram of two area load frequency control. **(05)**
b) What is meant by speed governor dead band? What is its effect on AGC? **(05)**

OR

Q.3 Explain the concept of AGC in short. Derive block diagram of load frequency control of isolated power system. **(10)**

Q.4 What is the necessity of reactive power compensation in power system? Compare the performance and use of shunt and series compensators for reactive power compensation. **(10)**

OR

Q.4 a) Discuss the system voltage and reactive power dependency. **(05)**
b) Write a short note on concept of sub synchronous resonance. **(05)**

Q.5 Classify FACT controllers and sketch the schematic diagram for SVC, STATCOM and UPFC. **(10)**

OR

Q.5 a) Sketch and explain the principle of operation of static VAR compensator. **(05)**
b) Explain use of SSSC as FACT controller. **(05)**

Q.6 a) Discuss the different types of energy interchange or exchange. **(05)**
b) Write a short note on:
i) Energy banking **(05)** ii) Power pool

OR

Q.6 What are the advantages of interconnected power system? Explain the concept of interchange evaluation with unit commitment. **(10)**