

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.

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 ii) Power pool (05)

OR

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