

Roll No.

Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (EE) (2012 Onwards E-II) (Sem.-7)
POWER SYSTEM OPERATION AND CONTROL
Subject Code : BTEE-804A
M.Code : 71936

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

Answer briefly :

1. What is the objective of power system control?
2. List out the various needs for frequency regulation in power system.
3. What happens to frequency if the load on the generator increases?
4. What is meant by control area?
5. Define Area Control Error.
6. What are the methods of increasing response in AVR?
7. Define Spinning Reserve.
8. Distinguish between economic dispatch and unit commitment.
9. What do you mean by priority list method?
10. What is contingency analysis program?

SECTION-B

11. Describe the factors affecting security.
12. Explain briefly the constraints on unit commitment problem.
13. Describe Security analysis.
14. Discuss the voltage stability of power system. What are the suitable effective counter measures to prevent voltage instability?
15. Derive the necessary formula for active power scheduling taking into effect of transmission loss and also derive the exact and approximate expressions for penalty factor.

SECTION-C

16. Derive the expression for transmission loss formula and state the assumptions if any to derive this formula.
17. Derive the suitable mathematical formulation for voltage stability of a two bus radial systems and correlate it with the PV curve for different values of power factor and QV characteristics for different Values of P/P_{\max} .
18. Derive coordination equation for economic dispatch including losses, in the power system. Give steps for economic dispatch calculation. Neglecting losses.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.