

BENGAL ENGINEERING AND SCIENCE UNIVERSITY, SHIBPUR

M.E. (Electrical) 2nd Semester Examination 2013

Power System Planning

(EE 1020)

Time : 3 Hrs.

Full Marks : 70

Attend any five questions.

1. What is planning? Is power system planning activities at all depends on the economic condition of the country? Why and how these planning activities are divided into different time horizons? Why is electric power sector planning demand special attention compared to other industries? Name some of the restrictions imposed on electrical power industries? [2+2+4+2+4]
2. State, with the help of block diagram, the fundamental relations of power system planning activities. State the objective of Electricity (supply) Act 1948. State important changes caused due to the implementation of Electricity Act 2003. [5+3+6]
3. State the objective of Economic Planning in India. Give an evaluation of the long-term objective planning. State the background of adoption of Democratic Socialism in India. [5+4+5]
4. Why are generating units divided into base-load, mid-range, and peaking plants to match the load curve? What advantages the said method offers? Give a flow chart of Least Cost Generation Planning. [4+4+6]
5. State importance of reliability evaluation in power system planning. Draw the Cost versus System reliability curve. What is F.O.R? Describe 4-state model of planning activities. [3+3+8]
6. Explain the cost evaluation techniques followed in Power System Planning activities. [14]
7. State the importance of transmission planning in the context of inter-connected system. State the difference between tie-line and transmission line. State the importance of R.O.W and transmission corridor in power system planning. [6+2+6]
8. "Electricity Planning Process begins with load demand fore-casting" - Explain. State the importance of Peak-load fore-casting. [10+4]
9. State the relationship between Capacity Reserve and Reliability. Define LOLE and ENS. State the difference between Forced outage and Planned outage. [6+4+4]
10. Write Short notes on (any two):
a) Planning of renewable energy ; b) Distributed generation ; c) Hydro-Thermal mix. [7x2]