CBCS SCHEME

USN | | | | | | | | | |

15EE744

Seventh Semester B.E. Degree Examination, Aug./Sept. 2020
Power System Planning

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Describe supply side options and demand side options in integrated resource planning. **(06 Marks)**

b. Explain the stages of power project planning. **(06 Marks)**

c. What do you know about planning tools? **(04 Marks)**

OR

2 a. Explain following forecast techniques : (i) Time series (ii) Trend projection. **(08 Marks)**

b. What are load leveling strategies? **(05 Marks)**

c. Name forecast horizons stating their time period. **(03 Marks)**

Module-2

3 a. Describe the modes of private participation in power project. **(06 Marks)**

b. Differentiate between cost based tariff and market based tariff. **(06 Marks)**

c. Explain the following with respect to a power project:
(i) Rate of return (ii) Net present value. **(04 Marks)**

OR

4 a. Explain generation mix strategy for providing energy at optimal cost. **(08 Marks)**

b. Explain clean coal technology of CGCC system. **(08 Marks)**

Module-3

5 a. Define distributed power generation, giving out its merits. **(06 Marks)**

b. Describe the importance of renovation and modernization of power plants. **(05 Marks)**

c. What are the advantages of small hydropower projects? **(05 Marks)**

OR

6 a. State the distinct techno-economic advantages of HVDC lines. **(08 Marks)**

b. Define power grid stating its functions. **(04 Marks)**

c. What are the planning criteria for reactive power compensation? **(04 Marks)**

Module-4

7 a. Describe the six basic distribution systems used by utilities. **(09 Marks)**

b. Describe the components of rural electrification. **(07 Marks)**

OR

8 a. Explain the three hierarchical levels of reliability assessment. **(08 Marks)**

b. Define the following distribution reliability indices:
(i) SAIDI (ii) SAIFI (iii) CAIDI and (iv) MAIFI **(08 Marks)**

Module-5

9 a. Explain the ten demand response programmes of power system planning. **(10 Marks)**

b. What do you mean by energy efficiency? Give at least five purposes of energy efficiency. **(06 Marks)**

OR

10 a. What are the functions of Distribution System Operator (DSO)? **(08 Marks)**

b. What is power exchange market? **(02 Marks)**

c. Explain (i) Retail market (ii) Real-time market. **(06 Marks)**

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