

Roll No.....

Total No. of Printed Pages: [01]

Total No. of Questions: [11]

M. Tech EE (Semester – 3rd)
POWER SYSTEM PLANNING
SUBJECT CODE: MELE1372
Paper ID: [190524]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It carries 16 marks. It consists of 4 questions of 4 marks each.
2. Section B consist of 4 questions of 8 marks each. The student has to attempt any 3 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A (4 marks each)

- Q1. What is the basic tariff making philosophy? Explain with flow chart.
- Q2. What is least-cost optimization? Explain with an example.
- Q3. List the sources of generation and absorption of reactive power in transmission and distribution lines. Explain in detail.
- Q4. What do you understand by load prediction?

Section – B (8 marks each)

- Q5. Explain the term adequacy and security with reference to power system reliability.
- Q6. Explain the following real time operation in brief
- (a) Automatic Generation Control (AGC)
 - (b) State Estimation
- Q7. Write a short note on:
- (a) Insulation co-ordination in power system.
 - (b) Rural Electrification
- Q8. Write a short note on:
- (a) Greenhouse effect.
 - (b) Private participation in generation planning.

Section – C (10 marks each)

- Q9. (a) What do you understand by planning process? Briefly explain the different planning tools.
- (b) Discuss the impact of power generation on environment. What are the measures to be taken for minimizing environmental effect? **(5+5)**
- Q10. (a) With the help of flow chart, explain the least-cost utility planning. Provide necessary mathematical equations.
- (b) What is co-generation? Describe the basic of co-generation processes in detail with explanatory figures.
- Q11. Explain the choice of technology to minimize emission from power plants. Explain the method of post-combustion cleanup process to reduce gaseous pollutants.