SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No: | | | | | | | | | | | | | **Total number of pages:[2]**

Total number of questions: 06

May 2018.
Reappear
2011-14 onwards

B.Tech. || EE || 5th Sem

Electric Generation & Economics

Subject Code: BTEE-502

Paper ID:

Max Marks: 60

Time allowed: 3 Hrs

Important Instructions:

- **All questions are compulsory**
- **Assume any missing data**

PART A (2×10)

All Cos

Q. 1. Short-Answer Questions:

(a) What is the difference between present worth and capitalized cost?
(b) What are the objectives of tariff?
(c) What is the effect of load factor on unit generation cost?
(d) How can most economic power factor be calculated?
(e) Define demand factor.
(f) Name the various cooling tower impacts.
(g) What is spinning reserve?
(h) What is Langrangian multiplier?
(i) Explain the term entrapment and entrainment.
(j) Differentiate between topping and bottoming cycle.

PART B (8×5)

Q. 2. What is coordination equation and iterative procedure to solve coordination equations in steam plants? CO1

OR

What are the roles of NTPC, NHPC and Power Grid Corporation of India? CO1

Q. 3. A 400 V 3 phase star connected induction motor draws a current of 25 A at 0.8 lagging power factor under full load condition. It is desired to install a bank of capacitors to raise the full load overall power factor to 0.9 lagging. Find the kVAR rating of the star connected capacitor bank and the value of each capacitor. CO3

OR

Two generating units of a thermal station have cost characteristics as under: CO3

$C_1 = 561 + 7.92P_1 + 0.001562P_1^2$ Rs./hr.

$C_2 = 310 + 7.85P_2 + 0.00194\,P_2^2$ Rs./hr.

Obtain the cost characteristics of the composite unit for a total demand P_T.

Q. 4. What do you understand by cogeneration systems? Explain the technologies used for cogeneration system. CO2

OR

Discuss the methods used for computing the generation schedules in a combined hydro thermal system. CO2

Q. 5. What are the environmental impacts of hydro power plant? CO1

OR

What are the environmental impacts of aquatic and nuclear plants? CO1

Q. 6. Define input-output characteristics and incremental cost curve. Derive the expression for load allocation between two generating units neglecting transmission losses. CO1

OR

Discuss the importance and philosophy of short term hydro thermal coordination. CO1