SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No:		Total number of pages:[1]
Total number	of questions:06	,

B.Tech. || EE || 5thSem

Electric Generation & Economics

Subject Code: BTEE-502
Paper ID:

Time allowed: 3 Hrs

Max Marks: 60

- Important Instructions:
 - · All questions are compulsory
 - · Assume any missing data

PART A (2×10)

Q. 1. Short-Answer Questions:

All COs

- (a) What is the effect of load factor on unit generation cost?
- (b) Explain the term present worth.
- (c) Define utilization factor.
- (d) How is diversity helpful in reducing cost?
- (e) State the components on which annual fixed cost depends.
- (f) Name the various stack emission.
- (g) What is operating reserve?
- (h) What is the significance of no spill rule curve?
- (i) Explain the term entrapment and entrainment.
- (i) Differentiate between topping and bottoming cycle.

PART B (8×5)

Q. 2. How can most economic power factor be calculated when kVA and kW CO1 demand is constant?

OR

What is depreciation reserve? Why is it necessary to maintain it? Discuss the methods to calculate the depreciation charges.

Q. 3. An industrial consumer has an annual energy consumption of 201500 kWh at a load factor of 0.35. The tariff is Rs.4000 + Rs. 1200 per kW of maximum demand + Rs. 2.20 per kWh. (a) Find his annual bill (b) what is the bill if total energy consumption is the same but the load factor improved to 0.55 (c) what is the bill if energy consumption is reduced by 25% and the load factor remains at the same initial value of 0.35 (d) find average energy cost in each case.

OR

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

	$C_1 = 561 + 7.92P_1 + 0.001562P_1^2 \text{ Rs./hr.}$ $C_1 = 561 + 7.92P_1 + 0.001562P_1^2 \text{ Rs./hr.}$	
	$C_1 = 561 + 7.92P_1 + 0.001562P_1^2 Rs./hr.$ $C_2 = 310 + 7.85P_2 + 0.00194 P_2^2 Rs./hr.$ Obtain the cost characteristics of the composite unit for a total demand P_T . What are the different types of load? Explain and draw the Chronological load	CO5
Q. 4.	What are the different types of load.	
	OR Briefly explain the long term and short term load forecasting.	CO2
	Briefly explain the long term and short term load	
Q. 5.	covergy and organization of power sector in	CO1
	or OR	
	What are the environmental impacts of hydro power plant?	C01
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Q. 6.	What is coordination equation and iterative procedure to solve coordination equations in steam plants?	C01
	OR	
	What advantages accrue from operating a hydro and thermal plant in co- ordination?	C01

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