Reg. No.



## VII SEMESTER B.TECH (ELECTRICAL & ELECTRONICS ENGINEERING)

## END SEMESTER EXAMINATIONS, DECEMBER 2020

## **ENERGY AUDITING [ELE 4006]**

REVISED CREDIT SYSTEM

Time:	3 Hours	Date: 01 January 2021	Max. Ma	rks: 50
Instru	<ul> <li>ctions to Candidates:</li> <li>Answer ALL the questions.</li> <li>Missing data may be suitable</li> </ul>	ly assumed.		
1A.	What is the basis aim of difference between ener suitable example.	Energy Security for any country? Exp gy conservation and energy efficiency	lain the / with a	(04)
1B.	Explain three important Act 2001.	features of the Indian Energy Conse	ervation	(03)
1C.	What are the base line conducting detailed ene	data that an audit team should colled rgy audit?	ct while	(03)
2A.	An autoclave contains 10 temperature of 100 °C. leaving the autoclave, h at 15 °C and leaves at 3 the can metal are respe weight of each can is 60 that the heat content of kJ and that there is no h	000 cans of pea soup. It is heated to an If the cans are to be cooled to 40 °C ow much cooling water is required if it 35 °C? The specific heats of the pea so ctively 4.1 kJ/ kg °C and 0.50 kJ/ kg g and it contains 0.45 kg of pea soup. The autoclave walls above 40 °C is 1. heat loss through the walls.	overall before t enters oup and °C. The Assume 6 x 10 <sup>4</sup>	(04)
2B.	What do you understand any four benefits of Ene	l by Energy monitoring and targeting? rgy Monitoring and Targeting system.	Discuss	(03)
2C.	What is Demand Side I design of Demand Side	Management (DSM)? Write the Steps Management (DSM) projects.	s in the	(03)
3A.	Explain in brief the " committee" in an organ you expect as support fo	position of energy manager" and ` ization? In your own words, explain v rom top management?	`Energy what do	(04)
3B.	Write short notes on the motor?	e factors to be considered while select	ing a	(03)
3C.	What is Fanless Coolir Cooling Tower.	ng Tower? Explain the features of	Fanless	(03)
4A.	Write a short notes on c	lifferent Analysis of Electric Power Sys	tems.	(04)

- **4B.** Briefly explain the Energy Conservation Building Codes (ECBC) guidelines on Heating Ventilation and Air conditioning (HVAC) System. **(03)**
- **4C.** Discuss the Energy Saving Measures of Diesel Generator Sets.

(03)

(03)

**5A.** Calculate the internal rate of return for the following cash flow of a project.

Year	0	1	2	3	4	
Cash flow	(100,000)	30,000	30,000	40,000	45,000	(04)

- **5B.** What is Critical Path Method (CPM)? Also write down the steps in CPM project planning.
- **5C.** Calculate net present value for an investment towards a Compact Fluorescent Lamp (CFL). The following table gives investment and cash flow. (Assume discount rate is 10% and life of the CFL is 2 years).

Investment Rs.400/-

Savings in year	Cash flow, Rs	
Year # 1	1000	
Year # 2	1000	(03)