

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VI (NEW) EXAMINATION – WINTER 2021****Subject Code:3161919****Date:24/11/2021****Subject Name:Energy Conservation and Management****Time:02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) List the Designated Consumers (DC) notified under Energy Conservation (EC) Act-2001.	03
	(b) There are eight National Missions which form the core of the Nation Action Plan, List them.	04
	(c) Write short note on 'Indian Energy Scenario'.	07
Q.2	(a) Define following terms: (1) Monitoring (2) Target setting (3) Reporting.	03
	(b) List the services offers by ESCO (Energy Saving Companies)	04
	(c) Compare between Net Present Value (NPV) and Internal Rate of Return (IRR)	07
	OR	
	(c) Explain in brief Energy Performance Contracts.	07
Q.3	(a) State benefits of Energy Management (EM)	03
	(b) What are the steps involved in CUSUM analysis?	04
	(c) List the Energy Audit Instruments. Explain any one of them.	07
	OR	
Q.3	(a) What is bench marking? Write three approaches for industrial bench marking.	03
	(b) Write only comprehensive Ten steps Methodology for conducting detailed Energy Audit analysis is adopted worldwide.	04
	(c) Name various financing options. Explain self-finance energy management.	07
Q.4	(a) List various types of heat losses in furnace.	03
	(b) List the seven important suggestions for the energy saving in pumps & fans.	04
	(c) With neat sketch explain Gas Turbine co-generation plant.	07
	OR	
Q.4	(a) Prepare a list of measures for energy optimization in boilers and in lighting system.	03
	(b) Explain following terms: (1) Reactive and Active Power (2) Importance of TOD (Time of the Day)	04
	(c) Discuss the sources of waste heat and its potential applications.	07
Q.5	(a) List the types of insulations based on temperature range with Examples.	03
	(b) List the seven basic stages involved in CDM procedure.	04
	(c) Explain the operating principle of a waste heat recovery boiler with examples.	07
	OR	
Q.5	(a) What is the objectives of PCF(Prototype Carbon Fund)	03
	(b) Draw CUSUM chart.	04
	(c) How the furnace performance is evaluated by direct and indirect methods?	07

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3161919****Date:10/06/2022****Subject Name:Energy Conservation and Management****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Discuss pre -audit phase activities.	03
	(b) Briefly explain various schemes relating to Bureau of Energy Efficiency (BEE) for designated consumers, State designated agencies.	04
	(c) Define energy security. Enlist different strategies to achieve it and discuss role of energy conservation to achieve energy security.	07
Q.2	(a) Compare Net Present Value and Internal Rate of Return	03
	(b) What is energy security? Explain how it can be achieved?	04
	(c) Explain Simple pay back method with its advantage & limitation	07
	OR	
	(c) Write note on 'Indian Energy scenario'.	07
Q.3	(a) Explain Sensitivity Analysis.	03
	(b) Discuss the role of Energy Service Companies for financial management.	04
	(c) Explain briefly the various elements of a monitoring and targeting system.	07
	OR	
Q.3	(a) Explain need for energy audit	03
	(b) Distinguish between energy conservation and energy Management.	04
	(c) Classify the energy audit & Explain the three phases of detailed energy audit.	07
Q.4	(a) Define the following terms: Dew Point temperature, HCV, Latent heat of fusion	03
	(b) Explain techniques of energy conservation in refrigerated cold storage plants.	04
	(c) List application, advantages of Thermic fluid heaters and super critical boilers from energy conservation point of view.	07
	OR	
Q.4	(a) Mention the various source of waste heat recovery	03
	(b) List advantages and applications of cogeneration.	04
	(c) Write brief note on ECBC code for Building construction.	07
Q.5	(a) Give tips for energy saving for future.	03
	(b) Explain energy conservation Act 2001 and its features, notifications under the Act.	04

- (c) Explain the importance of CUSUM chart and its procedure to analyze the case with help of diagrams. **07**

OR

- Q.5** (a) List the various key instruments for carrying out energy audit **03**
(b) How to make lighting system of your college campus more efficient? **04**
(c) Explain the terms in detail: Sustainable development, Kyoto Protocol. **07**
