UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, April/May 2018

Course: Energy Management and Audit (ETEG-433) **Semester:** VI

Program: B Tech ETIPR

Time: 03 hrs. **Max. Marks: 100**

Instructions: In Q9 of section B attempt any one question
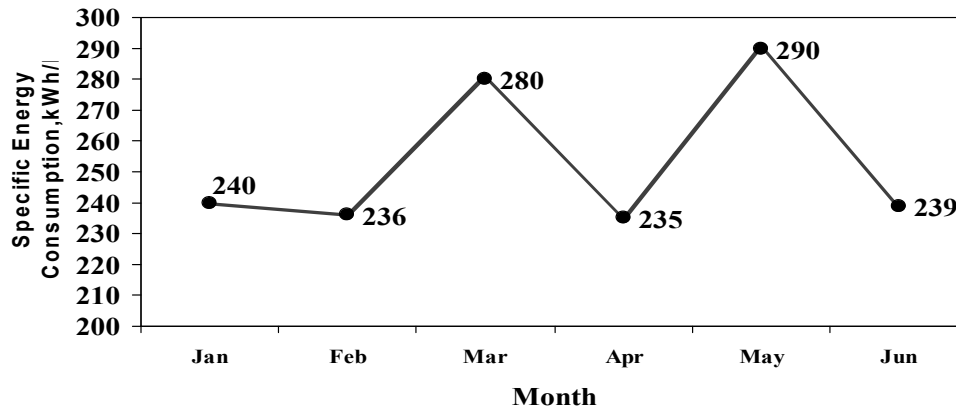
In Q11 of Section C attempt any one question

S. No.		Marks	CO
SECTION A			
Q1.	List four examples falling under "Optimizing the input energy requirements" while maximizing system efficiency.	**(4)**	**(CO3)**
Q2.	List the steps involved in a walk through audit and list the information collected during walk through audit.	**(4)**	**(CO1)**
Q3.	List the important contents of Energy Audit Report.	**(4)**	**(CO2)**
Q4.	Differentiate between Energy Monitoring and Targeting giving one example.	**(4)**	**(CO3)**
Q5.	Explain briefly the concept of Demand Side Management and list two advantages of implementing DSM programs in a country.	**(4)**	**(CO4, CO5)**
SECTION B			
Q6.	Discuss in detail Standard and Labelling program initiated by Bureau of Energy Efficiency (BEE) to reduce the energy intensity from the economy of India and explain in detail various labels used for star rating system of domestic loads.	**(10)**	**(CO4, CO5)**
Q7.	(a) Discuss how energy conservation can be achieved by matching energy use to requirement and by increasing the system efficiency by giving some examples.	**(7)**	**(CO3)**
	(b) Discuss in brief the electricity tariff structure of industries.	**(3)**	
Q8.	Energy saving measures was implemented in a process plant prior to Jan-2008. Use CUSUM technique and calculate energy savings for 6 months period of 2008. The company produced consistently 3000 T/month in each of the six months. Refer the graph given below.	**(10)**	**(CO2)**

Actual Specific Energy Consumption Profile

The predicted Specific energy consumption for 3000 MT production is 260 kWh/MT.

It may be noted that retrofits were not functioning during March & May 2008.

Q9	Discuss in detail any five energy conservation options available in Induction Motor. Explain how various Energy Conservation Measures are categorized by giving examples.	**(10)**	**(CO1)**
	OR		
Q9	Describe in detail the use of any four instruments in an Energy Audit and prepare the list of parameters that is collected from respective instruments.	10	CO2
	SECTION- C		
Q10.	With the help of one example, explain DSM design and implementation steps.	20	**(CO4)**
Q11	A Lighting Energy Audit was conducted in UPES. Explain in detail how energy audit report is too prepared by listing the segments of Lighting energy audit report along with the formats for taking the data of lighting system audit.	20	**(CO1)**
	OR		
	Describe the concept of Green Buildings. Elaborate any 8 criterions of GRIHA on which buildings are evaluated for green building rating system.	20	**(CO5)**