

**GUJARAT UNIVERSITY**  
**BE Semester- 7 (Mechanical Engineering)**  
**Question Bank**

**B.E. SEM VII (MECHANICAL)**  
**M-705/5 (ELECTIVE PAPER-I) ENERGY AUDIT & MANAGEMENT**

**All questions carry equal marks (10 marks)**

Q.1	Explain in brief about the following. a) Primary and secondary energy sources b) Renewable and non-renewable energy sources Commercial and non-commercial energy sources
Q.2	How Bureau of energy efficiency (BEE) facilitates energy efficiency programs in India?
Q.3	Define energy conservation and energy efficiency. How do an Industry, nation and globe work would benefit from energy efficiency program.
Q.4	Write a short note on energy security.
Q.5	Explain need of energy sector reforms in India.
Q.6	Write a short note on Indian energy scenario.
Q.7	Discuss in brief energy conservation act 2001 and its features.
Q.8	State and explain the factors that influence thermal performance of the buildings.
Q.9	Explain Power factor, Load factor, calorific value, latent heat of vaporisation and humidity.
Q.10	Classify the energy audit & explain the three phases of detailed energy audit.
Q.11	Define energy management. State the basic principles and benefits of energy management.
Q.12	What is energy audit? Discuss types of energy audit briefly.
Q.13	State the ten instruments used in energy audit process with its function.
Q.14	Explain in detail about Energy storage in batteries
Q.15	Explain in detail about Thermal storage of energy
Q.16	Explain in detail about performance parameters of cogeneration systems.
Q.17	Explain in detail about electricity saving techniques by category of end use.
Q.18	Explain in detail about classification of waste heat recovery systems.
Q.19	Explain in detail about energy management strategies for industry
Q.20	Explain in detail about Electrical energy management in residential buildings
Q.21	Explain in detail about Energy conservation in I.C.engines.
Q.22	State the different energy saving tips in pump.
Q.23	State the different energy saving tips in fan & compressors.
Q.24	List the energy saving opportunities in refrigeration and air conditioning plant.
Q.25	What are the losses in boiler? How to calculate the different losses in boiler?
Q.26	Discuss the sources of waste heat and its potential application.
Q.27	With a neat sketch explain Gas turbine co-generation plant.
Q.28	What is co-generation system? Explain with example how co-generation system increases the efficiency of the systems.

Q.29	What are co-generation plants? Explain the difference between bottoming and topping cycle co-generation plants.
Q.30	Write a short note on Regenerators and Recuperators.
Q.31	Write a short note on thermal wheel and economiser.
Q.32	Write a short note on waste heat boiler and heat pipes.
Q.33	Define energy conservation. Explain the long term energy scenario for India.
Q.34	Explain a) Plant energy performance b) Production factor c) Reference year equivalent energy use.
Q.35	Explain the different methods to improve the energy performance.
Q.36	Explain the ten step methodology for detailed energy audit.
Q.37	Explain Immediate-term, Medium-term and long –term strategies used for energy to be available for future use.
Q.38	State the different grades of energy? Why steam is used as a popular mode of conveying energy?
Q.39	Explain Reactive power, Active power, Time of the day (TOD) tariff, Contract demand and Maximum demand with respect to electricity.
Q.40	Explain performance assessment of steam traps