

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER– VII (New) EXAMINATION – WINTER 2019****Subject Code: 2170505****Date: 03/12/2019****Subject Name: Energy Technology****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.

- Q.1** (a) List the affecting factor for the biogas generation. **03**  
(b) Explain with diagram a closed cycle system for the power generation from MHD. **04**  
(c) Discuss the component of tidal power plant and describe storage system of tidal power. **07**

- Q.2** (a) Explain uranium enrichment process. **03**  
(b) Explain the types of coal. **04**  
(c) Explain the energy conservation from geothermal resources and compare the geo-resources from other non-conventional resources. **07**

**OR**

- (c) Discuss in detail the gasification and liquefaction of solid fuels. **07**
- Q.3** (a) Why site selection is important for installation of biogas plant? **03**  
(b) Discuss the safety features of hydrogen handling. **04**  
(c) List all the solar energy storage systems and explain the electric and thermal storage system in detail. **07**

**OR**

- Q.3** (a) Give the properties of biogas and explain the utilization of biogas. **03**  
(b) Discuss the fossil fuel method for hydrogen generation. **04**  
(c) List the different sector application of solar energy. **07**

- Q.4** (a) Explain the importance of material for magneto hydro dynamic generator. **03**  
(b) Discuss the basic difference of coal cooking and coal cracking. **04**  
(c) Discuss in detail the oxygen fuel cell and molten fuel cell. **07**

**OR**

- Q.4** (a) Explain the role of ultimate analysis for coal. **03**  
(b) List the benefits of magneto hydro dynamic power generation. **04**  
(c) Discuss the type of electrode for fuel cell and list application of fuel cell technology **07**

- Q.5** (a) Give the role of energy audit. **03**  
(b) Explain the nuclear power generation using fast breeder reactor. **04**  
(c) Give the classification of wind energy conservation system. **07**

**OR**

- Q.5** (a) Explain an energy chain for energy resources. **03**  
(b) Discuss the nuclear power plant for power generation. **04**  
(c) Explain with principle the wind energy conversion and list application of wind energy. **07**