

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (OLD) - EXAMINATION – SUMMER 2018

Subject Code:161904

Date:05/05/2018

Subject Name:Alternate Energy Sources

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) Explain following terms: - Energy conservation, Energy management, Energy audit, Energy efficiency, Energy security **07**
- (b) What is meant by renewable energy sources? What are the prospects of non-conventional energy sources in India? **07**
- Q.2** (a) List different types of concentrating collector. Explain any one with figure. **07**
- (b) Discuss the working of compound parabolic concentrator (CPC) and state its advantages and disadvantages **07**
- OR**
- (b) Define the following terms: solar constant, air mass, solar declination, zenith angle, day length, local solar time, solar altitude angle. **07**
- Q.3** (a) How are biomass gasifiers classified? With a neat sketch explain any one. **07**
- (b) List advantages and disadvantages of Geothermal energy as compared to Wind and Solar energy **07**
- OR**
- Q.3** (a) Explain in detail site selection criteria for biogas plant and list digester design consideration. **07**
- (b) List application and prospects of geothermal energy with reference to Indian context. **07**
- Q.4** (a) Classify wind mills. Explain vertical axis wind turbine (VAWT). **07**
- (b) Write brief note on Performance Characteristic of Wind machine. **07**
- OR**
- Q.4** (a) Write down advantages and disadvantages of MHD Power plant system. **07**
- (b) Write a short note on vapour dominated hydrothermal system. **07**
- Q.5** (a) Explain principle open cycle OTEC system with suitable diagram **07**
- (b) Explain construction and working Pyranometer with diagram. **07**
- OR**
- Q.5** (a) Write a short note on Tidal power plant with double basin system. **07**
- (b) Describe in brief, the different energy storage methods used in the solar system. **07**
