

**SANT GADGE BABA AMRAVATI UNIVERSITY**  
**BACHELOR OF ENGINEERING SEMESTER VII (CGS) EXAMINATION OF S-2020**

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**H.V.P.Mandal's College of Engineering & Technology, Amravati**  
**Department of Mechanical Engineering**

**Academic Session: 2019-20**

**Semesters: VII**

**Unit- I ,II ,III, IV ,V,VI**

**Date: 31/10/2020**

**Subject Name: Non-Conventional Energy Sources.**

**Subject Code:**

**Max Marks:**

**Note: Solve any 2 Questions out of 4 Question.**  
**All question Carry equal marks**

**Ques 01**

- a. Explain Cabinet Solar Dryer. (03M)
- b. Draw close cycle OTEC power plant (03M)
- c. Define the following : (i) Angle of Latitude (ii) Hour Angle (01M)
- d. Discuss the effect of following on the performance of LFPC. Intensity of Solar Radiation (01M)
- e. What is biodiesel? (01M)
- f. State the properties of biodiesel. (01M)

**Ques 02**

- a. Explain the principle of operation of a sunshine recorder (03M)
- b. Explain working close cycle OTEC power plant (03M)
- c. Only Explain fixed dome biogas plant (01M)
- d. Explain Box type solar cooker. (01M)
- e. State the properties for latent heat storage material. (01M)
- f. State the applications of photovoltaic cell. (01M)

**Ques 03**

- a. Explain solar energy plantation and economics (03M)
- b. Explain vapour dominated Geothermal power plant (03M)
- c. Discuss the effects of Inlet fluid temperature parameter on the performance of LFPC (01M)
- d. Discuss in brief and define solar constant (01M)
- e. Explain mechanism briefly of green plant photosynthesis. (01M)
- f. Discuss in brief, Effect of various factors on Bio-gas production rate. (01M)

**Ques 04**

- a. Discuss the following applications of solar energy utilization with neat sketch i) Passive method of space heating. (03M)
  - b. Explain the concept of energy conversion in photovoltaic solar cell (03M)
  - c. State the advantages and disadvantages of Fuel cell (01M)
  - d. Differentiate between flat plate collectors and concentrating collectors (01M)
  - e. Define the following: i. Zenith angle ii. Solar Azimuth angle (01M)
  - f. limitations of biodiesel as an alternative fuel (01M)
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