



(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 147852**

Roll No.

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## B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15  
ALTERNATIVE ENERGY SOURCES FOR  
AUTOMOBILES

Time : 3 Hours]

[Total Marks : 100

**Note:** - Attempt all sections.

1. Attempt ***four*** questions: **(5\*4=20)**
  - A) What are the Different methods of Hydrogen Storage?
  - B) Explain BioGas Production from Organic waste.
  - C) Write the Working Principle of Solar Photo Voltaic Conversion?
  - D) Explain Solar Distillation Process With neat Diagram.
  - E) Why do we need of Renewable sources of Energy?
2. Attempt ***any two*** questions: **(10\*2=20)**
  - A) What is Energy Plantation & Explain the Thermal decomposition of water for Hydrogen Production?
  - B) Explain the Process of Electrolysis of water for Hydrogen Production? Write all the Chemical reactions needed for it?
  - C) What is Solar Collector & write the names of different types of solar collector? Explain Concentrating type Collector?

3. Attempt **any two** questions: **(10\*2=20)**
- A) Explain the Process of Photosynthesis & Write the Different Properties of Hydrogen?
  - B) Explain the Precautions and Safety Measures for Hydrogen to be used in Engine,& explain Properties of Hydrogen?
  - C) What is Biodiesel?What are the Performance Emission Characteristics of Biodiesel used in Engine?

4. Attempt **any two** questions: **(10\*2=20)**
- A) Explain the Thermo chemical Production of Hydrogen & What are the Applications of it?
  - B) Explain how the Solar Energy harnessing the world &how it can be used in Automobile as a Energy source?
  - C) Write the names of different types of Bio Gas Plants& explain Janta Type Biogas Plant with neat Sketch?

5. Attempt **any two** questions: **(10\*2=20)**
- A) What are the Problems involved in Production of Hydrogen Gas? Is there any need of modification in Engines for use Hydrogen as a fuel?
  - B) Explain the working of Turbochargers and performance characteristics?
  - C) How Electric Car Works and what are the Material Requirement for it, & Explain its Future Possibilities?
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