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**A – 3819**

Reg. No. : .....

Name : .....

**Seventh Semester B.Tech. Degree Examination, June 2016  
(2008 Scheme)  
Elective III – 08.706.21 : ALTERNATE ENERGY SOURCES (MPU)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** questions :

1. Why hydrogen engine cannot produce the same power as that of gasoline ?
2. What are the components of a flat plate collector ?
3. Discuss the properties of biogas.
4. State the various performance of natural gas as an engine fuel.
5. State the performance of methanol and gasoline blends.
6. Compare flat plate collectors and concentrating collectors.
7. State some of the limitations of electric vehicles.
8. Compare the properties of LPG and gasoline w.r.t. their use in SI engines.
9. Differentiate between a hybrid vehicle and an electric vehicle.
10. What are the different types of batteries used in electric vehicles ? Compare.

**(10×4=40 Marks)**



**PART – B**

Answer **any one** question from **each** Module :

**Module – I**

11. a) Explain the combustion characteristics of alcohols in SI engines. **10**  
b) Explain the various methods used for producing hydrogen gas. **10**
12. What are the various alternate energy sources available in the transportation sector ? Explain each one of them briefly. **20**

P.T.O.



**Module - II**

- 13. What is LPG ? State some of the important properties of LPG as an alternate fuel. Explain its performance as an SI engine fuel. 20
- 14. With a neat sketch explain the working of a floating dome type biogas plant. Explain the various stages in biogas production. 20

**Module - III**

- 15. a) Briefly explain the principle of photovoltaic conversion. 10  
b) What is the difference between a PV cell and a PV module ? Explain the working of a PV module. 10
- 16. What are the various modes of operation of an electric vehicle ? Explain them with a neat sketch. 20



(10x4=40 Marks)

PART - B

Answer any one question from each module

Module - I

- 1. Explain the composition characteristics of alcohol in SI engine. 10
- 2. Explain the various methods used for producing hydrogen gas. 10
- 3. Explain the various alternate energy sources available in the transportation. 20