Reg. No.:.....
Name:.....

Seventh Semester B.Tech Degree Examination, November 2016

(2013 Scheme)

Model Question Paper

ELECTIVE lll-013.706.20 ALTERNATE ENERGY SOURCES (MP)

Time: 3 hours **Max. Marks: 100**

Instructions:

a) ***All*** questions in part ***A*** are ***compulsory***. ***All*** questions in part ***A*** carries **2**marks ***each.***
b) Answer one question from each module from **Part-B. Each** question carries **20** marks.

PART – A

1. What is the need for Non Conventional Energy Sources?
2. What is a Flex Fuel Vehicle?
3. List down the properties of Methanol and Ethanol
4. What are the advantage and disadvantage of using Hydrogen as fuel in IC engines
5. What are the methods in which hydrogen can be transported?
6. Difference between natural gas, producer gas and syngas ?
7. Explain transesterification reaction?
8. Explain the working of a photovoltaic cell
9. What is a solar vehicle?
10. Explain with sketch the series layout hybrid vehicle?

PART - B

MODULE-I

11. Explain how Alcohol can be used as fuel in diesel engine? (10)
12. Explain the methods of methanol production? (10).

OR

13. State the various methods of Ethanol production? (10).
14. Explain about the combustion characteristics of alcohols in SI Engines?(10)

MODULE-II

15. Explain the modification necessary in an SI Engines to use hydrogen as fuel (10).
16. Explain the various methods for production of hydrogen gas (10)

OR

17. What are the advantage and disadvantage of using hydrogen as fuel in automobile from safety point of view (10)
18. What are the various methods of hydrogen storage (10)

Module-III

19. With neat sketch explain the working of KVIC model biogas plant. (10)
20. Explain various stages in biogas production (10)

OR

21. Explain the various raw materials used for biodiesel production (10)
22. Explain the performance of different biodiesel blends in IC engines (10)

Module IV

23. Explain the various methods of collection and storage of Solar thermal energy(20)

OR

24. What is a hybrid vehicle ?Explain various layout used for hybrid vehicle and compare (20)