

**FACULTY OF ENGINEERING****B.E. 4/4 (AE) II-Semester (Main) Examination, April / May 2013****Subject : Alternative Fuels and Emerging Systems for Automobiles****Time : 3 Hours****Max. Marks: 75****Note: Answer all questions of Part - A and answer any five questions from Part-B.****PART – A** (10x2½=25 Marks)

1. Name some vegetable oils used for automobile engines.
2. What is meant by hybrid vehicle?
3. Name some alternate fuels used for automobiles.
4. Name some pollutants that are considerably reduced by using ethyl alcohol in SI engines.
5. What are DME and DEE?
6. Write short notes on need for alternate fuels.
7. What are the disadvantages of LPG Fuel?
8. What are the combustible constituents of CNG?
9. Name some basic components of electric vehicle.
10. How Biodiesel is produced ?

**PART – B** (5x10=50 Marks)

11. Explain the availability of CNG and also the modifications required in automobiles for its use as alternate fuel. (10)
12. Write about merits and demerits of LPG gas when used as alternate fuel as compared to CNG in automobile. (10)
13. Describe the working of TOYOTA concept electric Hybrid vehicle. (10)
14. Explain the production of methanol and ethanol fuels and discuss about economics of using them as alternate fuels in automobiles. (10)
15. Explain with neat sketches, about the hybrid vehicle, fuel cell vehicle and solar powered vehicle. (10)
16. Draw the layout of electric vehicle and mention its advantages and limitations. (10)
17. Write about the performance and emission characteristics of petrol engine when ethyl alcohol blended petrol is used in SI engines when % of alcohol is changing from 0% to 20%.

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