



VI SEMESTER B.TECH END SEMESTER EXAMINATIONS, APRIL/MAY 2017

SUBJECT: INTRODUCTION TO ALTERNATIVE FUELS AND APPLICATIONS [MME 3285]

REVISED CREDIT SYSTEM

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed.

- 1A. What are the barriers in implementing alternative fuels? (03)
- 1B. Write a short note on the energy security of a nation (04)
- 1C. Explain how alternative fuels are better than petro-fuels. (03)
- 2A. What are the requirements of an alternative fuel in SI engines to be considered? (03)
- 2B. What are the benefits of blending of liquid fuels in case of SI engines? (03)
- 2C. Discuss the performance and emission characteristics of alternative liquid fuels in SI engines. (04)
- 3A. Discuss the different techniques for the utilization of alternative liquid fuels in CI engines. (04)
- 3B. What are the differences between biodiesel and straight vegetable oil? (03)
- 3C. Describe the production of biodiesel. (03)
- 4A. Discuss in detail the importance of hydrogen from an Indian perspective. (04)
- 4B. Discuss the factors affecting biogas generation. (03)
- 4C. What are the advantages of using biogas as a fuel in SI engines? (03)
- 5A. What are the advantages of using gaseous fuels in CI engines? (03)
- 5B. Explain the dual fueling technique in CI engines. (02)
- 5C. List the advantages and drawbacks of electric vehicles. (02)
- 5D. Explain the different configurations of hybrid vehicles. (03)