CBCS SCHEME

USN | | | | | | | | | | |

15AU562

Fifth Semester B.E. Degree Examination, June/July 2018
Alternative Energy Sources for Automobiles

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

1 a. Explain the need for alternative energy sources. **(05 Marks)**

b. Classify the alternative fuels for I.C. engines. **(05 Marks)**

c. Write short notes on:
   i) Present world scenario of conventional auto fuel.
   ii) Fuel quality requirements for lower emissions. **(06 Marks)**

OR

2 a. Classify the methods of solar energy storage. Explain thermal energy storage system. **(08 Marks)**

b. Define the terms:
   i) Declination angle
   ii) Latitude angle
   iii) Hour angle
   iv) Altitude angle. **(08 Marks)**

Module-2

3 a. What is the composition of biogas? Explain the factors essential in selecting a biogas plant. **(08 Marks)**

b. With a suitable example explain the modification required in an SI engine for it to run it on biogas? List the advantages of using biogas as a fuel. **(08 Marks)**

OR

4 a. Explain with neat flow chart for dry milling process for producing ethanol. **(08 Marks)**

b. What modifications are required for a C.I. engine to run on SVO? **(08 Marks)**

Module-3

5 a. With a sketch describe the electrolysis method for the production of hydrogen. **(08 Marks)**

b. Explain the various methods of hydrogen storage. **(08 Marks)**

OR

6 a. Brief the advantages and disadvantages of CNG for automotive applications. **(08 Marks)**

b. Write a short note on emissions from LPG engines. **(08 Marks)**

Module-4

7 a. Describe the production of CWS and discuss its properties. **(08 Marks)**

b. Describe the advantages and limitations of emulsified fuels. **(08 Marks)**

OR

8 a. Discuss the properties and advantages of Ammonia for fuel cell vehicles. **(08 Marks)**

b. What is a water car? How does it work? **(08 Marks)**

Module-5

9 a. With a block diagram, list the components of EV (Electric vehicles). **(08 Marks)**

b. What are the merits and demerits of electric vehicles? **(08 Marks)**

OR

10 a. Write the advantages and disadvantages of dual fuel engine. **(08 Marks)**

b. Write a short note on the working of diesel/CNG engine. **(08 Marks)**

* * * * *