

# CBCS SCHEME

15AU562



## Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020 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. Discuss the need of alternative fuels for automobiles. (08 Marks)  
b. What are your views on the road maps given for alternative fuels? (08 Marks)

OR

- 2 a. Classify solar radiation measuring instruments. Explain any one instrument with sketch. (08 Marks)  
b. Explain the principle of photo voltaic power generation. Discuss the parameters affecting the performance. (08 Marks)

### Module-2

- 3 a. With a neat sketch explain Chinese design biogasplant. (08 Marks)  
b. List the factors affecting biodigestion and explain any two. (08 Marks)

OR

- 4 a. Compare the properties of methanol and gasoline as engine fuels. (08 Marks)  
b. List out the advantages and disadvantages of butanol. (08 Marks)

### Module-3

- 5 a. Describe the method of hydrogen production by electrolysis of water. (08 Marks)  
b. What are the different methods of storage of hydrogen? Explain any two. (08 Marks)

OR

- 6 a. List some of the important properties of CNG. Explain applications of natural gas. (08 Marks)  
b. Explain advantages and disadvantages of LNG. (08 Marks)

### Module-4

- 7 a. Describe the production of CWS fuel. (08 Marks)  
b. List the advantages and limitations of emulsified fuels. (08 Marks)

OR

- 8 a. Explain the properties of Ammonia and write its applications. (08 Marks)  
b. What is the water car? How does it work? (08 Marks)

### Module-5

- 9 a. Explain the advantages and limitations of electric vehicle. (08 Marks)  
b. With a neat sketch, explain the transmission system of Hybrid vehicle. (08 Marks)

OR

- 10 a. Write the advantages and disadvantages of dual fuel engine. (08 Marks)  
b. What are the emission benefits of dual fuel technology? (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.