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10AU834

Eighth Semester B.E. Degree Examination, June/July 2019
Alternative Energy Sources for Automobiles

Time: 3 hrs.

Max. Marks:100

Note: *Answer any FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1   a. Discuss the need of alternative energy sources.   (04 Marks)
   b. Compare conventional versus non conventional energy sources.   (06 Marks)
   c. Explain the present scenario of conventional fuels and also about the world fuel reserves for automobiles.   (10 Marks)

2   a. Illustrate the solar energy geometry terms.   (05 Marks)
   b. List out the types of solar energy collectors and explain any one type with figure.   (07 Marks)
   c. Explain the following:
      i)   Solar energy storage system
      ii) Application of solar energy for automobiles   (08 Marks)

3   a. Explain the principle of wind energy conversion, with the aid of any one type of wind machine.   (10 Marks)
   b. List the various considerations, while selecting a site for wind energy harvesting.   (05 Marks)
   c. State the advantages and disadvantages of wind energy conversion.   (05 Marks)

4   Write note on the following:
   a. Properties of hydrogen
   b. Advantages and disadvantages of hydrogen as a fuel
   c. Safety systems for hydrogen
   d. CNG and LPG as fuels   (20 Marks)

PART – B

5   a. Explain the production of biogas by any one method, with the aid of neat sketch.   (10 Marks)
   b. Discuss the suitability of following fuels for automobiles:
      (i) Methanol and Ethanol   (ii) Biodiesel.   (10 Marks)

6   a. Explain the Hythane production method, state the properties.   (08 Marks)
   b. State the advantages and disadvantages of HCNG.   (04 Marks)
   c. Explain the following: (i) Producer gas as a fuel   (ii) Plastic fuel.   (08 Marks)

7   a. What is meant by reformulated conventional fuel? Explain the production method and state the properties.   (10 Marks)
   b. Justify, hydrogen is future alternative fuel and discuss the advantages/disadvantages.   (10 Marks)

8   a. Explain the transmission layout components of electric vehicle, with the aid of sketch.   (10 Marks)
   b. Write short notes on: i) Hydrid vehicle   ii) Duel fuel technology   (10 Marks)

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