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Eighth Semester B.E. Degree Examination, Aug./Sept.2020

Alternative Energy Source for Automobile

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART - A

- 1 a. Describe the need of alternative fuel and explain the barriers in implementing the alternative fuel. (10 Marks)
- b. What are the methods of direct energy conversion? Describe in brief. (10 Marks)
- 2 a. What are the installments employed for solar radiation measurements? With the help of neat diagram, explain working principle of EPPLEY pyranometer. (10 Marks)
- b. Mention the advantages and disadvantages of concentrating collector over flat plate collector. (10 Marks)
- 3 a. Mention the characteristics of good wind power site. (06 Marks)
- b. With the help of neat sketch, explain the important parts of a horizontal axial machine for wind energy conversion. (10 Marks)
- c. Define lift and drag with the help of a neat aerofoil structure. (04 Marks)
- 4 a. What are the different methods of hydrogen production? Briefly explain electrolysis of water. (10 Marks)
- b. What type of fuel delivery systems are used for hydrogen in S.I. engine? Write a brief review on carburetion, with neat diagram. (10 Marks)

PART - B

- 5 a. What is the composition of a typical biogas? Give the classification of biogas plants. (04 Marks)
- b. Explain with neat flow chart for dry milling process for producing ethanol. (08 Marks)
- c. What modification are required for a CI engine to run on SVO? (08 Marks)
- 6 a. What is Hythane and HCNG? How is hythane blended? And advantages of hythane fuel. (06 Marks)
- b. Explain the emission benefits of P – series. And application of P – series. (06 Marks)
- c. Write a short note on Plasma arc recyclers. (08 Marks)
- 7 a. Describe the production of coal water slurry. (05 Marks)
- b. What are emulsified fuels? Explain the advantages and limitations of emulsified fuels. (05 Marks)
- c. Describe the blending process of Hydrogen with gasoline. (06 Marks)
- d. Explain any two components of the air car. (04 Marks)
- 8 a. Describe the components of an Electric vehicle. (10 Marks)
- b. Explain the concept of a fuel cell hybrid. (05 Marks)
- c. Briefly explain the working of a diesel CNG engine. (05 Marks)
