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10AU834

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)

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.