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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)**B.Tech II Year II Semester Regular Examinations October-2020**
NON- CONVENTIONAL ENERGY RESOURCES
(Mechanical Engineering)

Time: 3 hours

Max. Marks: 60

PART-A(Answer all the Questions **5 x 2 = 10** Marks)

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|----------|----------|---------------------------------------------------------------------|-----------|
| 1 | a | In world energy consumption what are the major energy consumptions? | 2M |
| | b | What is photovoltaic cell function? | 2M |
| | c | What are the disadvantages of wind power? | 2M |
| | d | List out major benefits of using bioenergy | 2M |
| | e | What are the hydrogen storage methods? | 2M |

PART-B(Answer all Five Units **5 x 10 = 50** Marks)

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|------------------------|----------|-----------------------------------------------------------------------------|-----------|
| <u>UNIT-I</u> | | | |
| 2 | a | What is the need of renewable energy? | 5M |
| | b | Describe Renewable Energy Scenario in Andhra Pradesh. | 5M |
| OR | | | |
| 3 | a | Mention the merits and demerits of solar energy. | 5M |
| | b | What are energy resources available in India? | 5M |
| <u>UNIT-II</u> | | | |
| 4 | a | Explain the construction and uses of evacuated tube collectors. | 5M |
| | b | What are the factors effected on performance of solar flat plate collector. | 5M |
| OR | | | |
| 5 | a | Mention the thermal analysis of flat plate collector. | 5M |
| | b | Write the working principle of flat plate collector with a neat sketch. | 5M |
| <u>UNIT-III</u> | | | |
| 6 | a | Differentiate HAWT and VAWT. | 5M |
| | b | Explain briefly the functioning of Darrieus Wind Turbine. | 5M |
| OR | | | |
| 7 | a | Explain the performance and operational characteristics of wind machines. | 6M |
| | b | What are the safety and environmental impact of wind energy. | 4M |
| <u>UNIT-IV</u> | | | |
| 8 | a | What is biomass gasifier and write its gasification reactions. | 6M |
| | b | How do you classify the gasifiers and explain anyone in detail. | 4M |
| OR | | | |
| 9 | a | Write short notes on various methods of biomass analysis. | 5M |
| | b | Mention the characteristics of biodiesel. | 5M |
| <u>UNIT-V</u> | | | |
| 10 | a | What are the different methods of hydrogen storage? | 5M |
| | b | Differentiate wave and tidal energy. | 5M |
| OR | | | |
| 11 | a | How do you classify hydrogen production and mention any one method. | 5M |
| | b | Mention the applications of hydrogen | 5M |

END