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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)

**B.Tech II Year II Semester Supplementary Examinations March-2021**  
**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 | <ul style="list-style-type: none"> <li>a List out secondary energy resources. <span style="float: right;">2M</span></li> <li>b List main components of solar PV power generation. <span style="float: right;">2M</span></li> <li>c List out wind turbine site environmental considerations. <span style="float: right;">2M</span></li> <li>d What are the methods used to analysis of biomass? <span style="float: right;">2M</span></li> <li>e What is fuel cell? <span style="float: right;">2M</span></li> </ul> |  |
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**PART-B**

(Answer all Five Units 5 x 10 = 50 Marks)

**UNIT-I**

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| 2 | <ul style="list-style-type: none"> <li>a Describe the working of hot wire anemometer with a neat sketch Conventional energy sources. <span style="float: right;">5M</span></li> <li>b Name the renewable energy sources and explain them in brief. <span style="float: right;">5M</span></li> </ul> |  |
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**OR**

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| 3 | <ul style="list-style-type: none"> <li>a Explain the working of Pyrheliometer with a neat sketch. <span style="float: right;">5M</span></li> <li>b Discuss about the environmental aspects of Energy Utilization. <span style="float: right;">5M</span></li> </ul> |  |
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**UNIT-II**

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| 4 | <ul style="list-style-type: none"> <li>a Illustrate the functions of various components in flat plate collectors. <span style="float: right;">5M</span></li> <li>b How Flat plate collectors are different from Concentrating collectors. <span style="float: right;">5M</span></li> </ul> |  |
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| 5 | <ul style="list-style-type: none"> <li>a Write the applications of solar energy. <span style="float: right;">5M</span></li> <li>b Explain the working principle of solar PV cells. <span style="float: right;">5M</span></li> </ul> |  |
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**UNIT-III**

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| 6 | <ul style="list-style-type: none"> <li>a Explain the performance and operational characteristics of wind machines. <span style="float: right;">5M</span></li> <li>b What are the safety and environmental impact of wind energy? <span style="float: right;">5M</span></li> </ul> |  |
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| 7 | <ul style="list-style-type: none"> <li>a What is wind power? Explain it in detail. <span style="float: right;">6M</span></li> <li>b Mention the merits and demerits of wind energy. <span style="float: right;">4M</span></li> </ul> |  |
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**UNIT-IV**

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| 8 | <ul style="list-style-type: none"> <li>a Compare fixed dome and float drum type bio digesters. <span style="float: right;">6M</span></li> <li>b Explain the function of Deenbandhu biogas digester with a neat sketch. <span style="float: right;">4M</span></li> </ul> |  |
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| 9 | <ul style="list-style-type: none"> <li>a What is biomass and why it is called as renewable energy? <span style="float: right;">5M</span></li> <li>b What are the different forms of bio-energy? <span style="float: right;">5M</span></li> </ul> |  |
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**UNIT-V**

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| 10 | <ul style="list-style-type: none"> <li>a What is tide? Explain tidal energy and its conversion with neat diagram. <span style="float: right;">5M</span></li> <li>b Explain in detail the wave energy conversion by floats. <span style="float: right;">5M</span></li> </ul> |  |
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**OR**

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| 11 | <ul style="list-style-type: none"> <li>a How do you classify hydrogen production and mention any one method. <span style="float: right;">5M</span></li> <li>b Mention the applications of hydrogen. <span style="float: right;">5M</span></li> </ul> |  |
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\*\*\*END\*\*\*