PAPER ID-420102

Subject Code: NOE081

Roll No: | | | | | | | | | | | | | |

BTECH
(SEM VIII) THEORY EXAMINATION 2021-22
NON CONVENTIONAL ENERGY RESOURCES

Time: 3 Hours ***Total Marks: 100***

Note: Attempt all Sections. If you require any missing data, then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2*10 = 20

Q.no	Questions	Marks
(a)	What do you mean by the Solar radiation?	2
(b)	What are the needs of Energy Resources?	2
(c)	What do you mean by Aerobic digestion?	2
(d)	What do you mean by the Non-Conventional Energy Resources?	2
(e)	What do you mean by the Geothermal Energy?	2
(f)	Define the term Fuel Cells?	2
(g)	What do you mean by Wind Energy?	2
(h)	What do you mean by Energy conversion?	2
(i)	What do you mean by the Bio-mass Energy?	2
(j)	Why is geothermal energy considered a renewable resource?	2

SECTION B

2. Attempt any *three* of the following: 10*3 = 30

Q.no	Questions	Marks
(a)	Discuss about the Waste Recycling Plants in Non-Conventional Energy Resources.	10
(b)	Describe the basic principle of ocean thermal energy conversion system. Describe the "Open Cycle" Ocean thermal energy conversion system.	10
(c)	How can solar energy be converted into electrical energy? Give a diagram showing the elements of such a plant.	10
(d)	Discuss about the site selection criterion and momentum theory in Thermo-Electrical and Thermionic Conversions.	10
(e)	Discuss the classification of Non-Conventional Energy Resources.	10

SECTION C

3. Attempt any *one* part of the following: 10*1 = 10

Q.no	Questions	Marks
(a)	Explain the principle of operation of a simple single effect tidal power plant and give a graph of sequential operating modes.	10
(b)	What are the limitations of Solar Thermal Energy? Define Fill Factor.	10

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4. Attempt any *one* part of the following: 10 *1 = 10

Q.no	Questions	Marks
(a)	Discuss the role of Solar cell materials under the Non-Conventional Energy Resources.	10
(b)	Define Geothermal Electrical conversion and Geothermal Non-Electrical conversion.	10

5. Attempt any *one* part of the following: 10*1 = 10

Q.no	Questions	Marks
(a)	Explain the 'Single Basin' and 'Two Basin' systems of tidal power harnessing. Discuss their advantages and limitations.	10
(b)	Describe the factors that affect the size of a biomass plant. Describe the materials used for bio-gas generation.	10

6. Attempt any *one* part of the following: 10*1 = 10

Q.no	Questions	Marks
(a)	What do you understand by the nature of wind? Describe with the help of a neat sketch the construction and working of a Wind Energy Conversion System (WECS).	10
(b)	Discuss the need and application of solar cell power plant under the Non-Conventional Energy Resources.	10

7. Attempt any *one* part of the following: 10*1 = 10

Q.no	Questions	Marks
(a)	Discuss about the Principle of working of Magneto-hydrodynamics (MHD) Power plant.	10
(b)	Define concentrations and augments in Thermo-Electrical and Thermionic Conversions.	10