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BTECH
(SEM VI) THEORY EXAMINATION 2021-22
RENEWABLE SOURCE OF ENERGY

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.**10*2=20**

Q.no	Questions	Marks	CO
(a)	What do you mean by Solar radiation?	2	1
(b)	Define the term Renewable Energy Resources.	2	1
(c)	Discuss about the concept of Geothermal Energy.	2	2
(d)	What is the need of Solar thermal power plants?	2	2
(e)	What is the need of Magneto-hydrodynamics (MHD) Power plants?	2	3
(f)	Briefly define Electrical conversions.	2	3
(g)	What do you mean by Wind Energy?	2	4
(h)	What is the concept of Site selection?	2	4
(i)	What is the need of Bio-mass?	2	5
(j)	Briefly define the Ocean Thermal Energy Conversion (OTEC).	2	5

SECTION B

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

Q.no	Questions	Marks	CO
(a)	Discuss about the performance and limitations of Magneto-hydrodynamics (MHD) Power plants?	10	3
(b)	Describe in detail about the concept of Thermodynamics of Geothermal Energy.	10	2
(c)	Describe in detail about the concept of Waste Recycling Plants (WRP).	10	5
(d)	Describe in detail about the Thermo-Electrical and Thermionic Conversions	10	4
(e)	Discuss about the Flat plate collectors and their materials.	10	1

SECTION C

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

Q.no	Questions	Marks	CO
(a)	Answer the following. (i) Wave and Tidal Wave. (ii) Bio-mass conversion theory.	10	5
(b)	Discuss about the following: (i) Limitations of Thermal Energy. (ii) Solar Cells	10	2

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

Q.no	Questions	Marks	CO
(a)	Discuss in detail about the focusing of collectors and their materials.	10	1
(b)	Answer the following: (i) Fuel Cells. (ii) Non-Electrical conversion	10	3

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

Q.no	Questions	Marks	CO
(a)	Describe in detail about Wind Energy, Wind power and its sources.	10	4
(b)	Discuss in brief about the Availability and Working principle of Solar Thermal Energy.	10	5

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

Q.no	Questions	Marks	CO
(a)	Answer the following. (i) Solar pond (ii) Direct Radiation and Diffuse Radiation.	10	2
(b)	Mention about the Thermal energy storage for solar heating and cooling.	10	1

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

Q.no	Questions	Marks	CO
(a)	Describe about the sensible Heat storage, Latent heat storage and Thermochemical storage of Solar energy.	10	3
(b)	What methods are used to overcome the fluctuating power generation of a Windmill? Discuss their merits and demerits.	10	4