Printed Pages: 01 **Sub Code: OEE-241**

Paper Id 900168 **Roll No.** | | | | | | | | | | |

MTECH
(SEM-II) THEORY EXAMINATION 2017-18
NON CONVENTIONAL ENERGY SOURCE & ENERGY CONVERTERS

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

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

SECTION A

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

a. Describe in brief, the energy position of India?
b. What are the types renewable energy resources
c. Write short note on Solar Cell material.
d. What is surface azimuth angle?
e Explain limitations of wind energy conversion system.
f. What fuels are used for fuel cell?
g Explain the momentum theory in wind energy.
h What is peltier effect?
i. What are the applications of Flat Plate collectors?
j. What are conventional energy resource.

SECTION B

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

a. Define solar cooker and its types with neat sketch?
b. Write the application of solar cell in detail.
c. With a sketch explain the working of grid integrated PV System.
d. Differentiate between focusing and non focusing solar collectors.
e. Discuss about the barriers in implementing renewable energy system in india.

SECTION C

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

(a) Describe solar photovoltaic (SPV) module with neat sketch?
(b) Explain the working of horizontal axis two blade windmill with suitable diagram.

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

(a) What is fuel cell? Define working, operation and advantages?
(b) Give the classification of wind turbine on the basis of axis of rotation? with neat sketch

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

(a) What are basic requirements for locating a solar power plants?
(b) What is maximum efficiency of conversion of wind machine? Discuss its principle of conversion

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

(a) Write short Notes on (a) phosphoric acid fuel cell (b) Zinc air Fuel cell?
(b) Define Solar constant and also differentiate between beam and diffusion radiation.

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

(a) Discuss prospects and status of solor energy in india .
(b) How can you get the maximum power output from solar cell. compare monocrystalline, polycrystalline and amorphous silicon as materials for solar cell