**TU/ CODL**

**TEZPUR UNIVERSITY**

**SEMESTER END EXAMINATION (SPRING) 2020**

**DRE 105: NEW ENERGY RESOURCES**

Time:**3 Hours** Total Marks:**70**

*The figures in the right-hand margin indicate marks for the individual question.*

*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\**

1. Fill in the blanks with appropriate answer(s). 1×5= 5

1. Overall efficiency of power generation from geothermal power plant is around \_\_\_\_\_\_\_\_\_\_ %.
2. The density of liquid hydrogen is about \_\_\_\_\_\_ kg/m3.
3. In battery, chemical energy of active materials is converted into electrical energy by \_\_\_\_\_\_\_\_\_ reaction.
4. The net achievable conversion efficiency of OTEC power plant is about \_\_\_\_\_\_\_\_ %.
5. Typical depth for geo-pressured resources ranges from \_\_\_\_\_ to \_\_\_\_\_\_ m.

2. Briefly explain the following abbreviations: 2×5= 10

1. CER
2. ODS
3. PAFC
4. SSPP
5. SMES

3. Briefly explain the following, citing examples wherever necessary.

5×5= 25

1. Role of biofouling in ocean thermal energy conversion system
2. Super capacitor energy storage devices
3. Primary and secondary air pollutants
4. Approaches to climate change mitigation
5. Advantages and drawbacks of secondary batteries

4. Illustrate the expressions used for estimating power from ocean

wave. Also, present an overview on different routes of harvesting

ocean energy. 4+6= 10

**P.T.O.**

5. Explain global warming and its implications. Also, suggest some

corrective measures for mitigating adverse effect of global warming.

5+5= 10

6. What are the parameters used to classify fuel cells? Present a brief

overview on different types of fuels cells and their suitable

applications. 4+6= 10

\*\*\*