

Siliguri Institute of Technology
Department of Electrical Engineering
B. Tech. 3rd Year 1st Semester 1st Internal Examination, 2020

Paper Name: Renewable & Non conventional Energy
Full Marks: 30

Paper Code: PE-EE-501C
Time: 1h

Question 1. Choose the correct answer (CO.1)
5 X 1 = 5

- (i) Petroleum and coal are example of
A. fossil fuel B. Renewable fuels C. Non-fossil fuel D. None of these
- (ii) Which of the following is not biomass
A. plants & trees B. Wood C. Cattle dung D. water
- (iii) What is the standard value of solar constant
A. 1 kW/m² B. 1.367 kW/m² C. 1.5 kW/m² D. 5 kW/m²
- (iv) Pyranometer is an instrument used for measuring
A. Temperature B. Solar radiation C. Wind speed D. Efficiency of PV cell
- (v) Solar still is a device which is used for
A. heating of water B. Cooling of water
C. distillation of water D. Production of electricity

Question 2. ANSWER ANY TWO(02) QUESTIONS (CO.1) **2 X**
5 = 10

- a. Discuss the advantages & limitations of renewable energy sources.
- b. Explain briefly the impact of conventional sources of energy on environment.
- c. Discuss the environmental impact due to power generation from solar energy
- d. Write a short note on Kyoto Protocol.

Question 3. ANSWER ANY ONE (01) QUESTION (CO.1) **1 X 15 =**
15

- a. What are solar collectors? With neat sketches, discuss important parts of flat plate solar collector. What are the limitations of flat plate collector.
- b. Define latitude, longitude, Solar constant, declination, hour angles with proper diagram
- c. What is the principle of solar photovoltaic power generation. Draw the equivalent circuit of a practical solar cell and describe its I-V characteristics.