PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING
MID TERM EXAMINATION - NOV 2023

Semester : Semester III - 2022

Course Code : EEE3024

Course Name : Sem III - EEE3024 - Solar Photovoltaic and Wind Energy Systems

Program : B. TECH

Date : 3-NOV-2023

Time : 11:30AM - 1:00PM

Max Marks : 50

Weightage : 25%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS   **(5 X 2 = 10M)**

1. List out the Merits and demerits of Mono crystalline Solar Panels

(CO1) [Knowledge]

2. Solar photovoltaic devices, or solar cells, change sunlight directly into electricity. Provide two main limitations of solar energy.

(CO1) [Knowledge]

3. Define the terms: (a) Extraterrestrial Radiation (b) Terrestrial Radiation

(CO1) [Knowledge]

4. What are the different types of Geothermal Energy. Name them.

(CO2) [Knowledge]

5. What is the principle of working of Tidal Stream Generator.

(CO2) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS   **(2 X 10 = 20M)**

6. Mr. Reddy wants to install a stand-alone PV system in his home. Being a Solar Engineer advise him the requirements and challenges. Justify.

(CO2) [Comprehension]

7. When a load is connected, some combination of current and voltage will result and power will be delivered. To figure out how much power is delivered, we have to consider the I-V characteristic curve of the module as well as the I-V characteristic curve of the load. Explain the Maximum Power Point (MPP) with proper P-V and I-V curve.

(CO2) [Comprehension]

PART C

ANSWER THE FOLLOWING QUESTION   (1 X 20 = 20M)

8. Explain the important features of 'Grid Connected Solar Power System. With the help of a suitable block diagram explain the operation of such a System with battery backup and other Interface and Synchronization features

(CO2) [Application]