PBR VISVODAYA INSTITUTE OF TECHNOLOGY & SCIENCE::KAVALI

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ACADEMIC YEAR : 2023 – 24
CLASS : IV B.TECH, I SEM
BRANCH : COMMON TO ALL BRANCHES
SUBJECT NAME RENEWABLE ENERGY SYSTEMS **(20A02705)**

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CO	COURSE OUTCOMES	K LEVEL
CO1	Understand various alternate sources of energy for different suitable application requirements	K2
CO2	Understand the concepts of PV Energy systems and its applications	K2
CO3	Understand the concepts of Wind energy, its coversion and its applications.	K2
CO4	Interpret the concept of geo thermal energy and its applications.	K2
CO5	Understand the use of biomass energy and the concept of Ocean energy and fuel cells.	K2

QUESTION BANK

Essay Questions

UNIT-I

Q. NO.	QUESTION	CO	K LEVEL
1	Define solar radiation and explain types of radiation with neat sketch?	1	K3
2	Explain the construction and principle of operation of solar measurement devices?	1	K3
3	Explain the terms: (i) Altitude angle(ii) Incident angle(iii) Zenith angle(iv) Solar azimuth angle (v) Latitude angle (vi) Declination angle(vii) Hour angle.	1	K3
4	Explain about solar flat plate collectors and principle of operation with neat sketch?	1	K3
5	Mention different types of concentrating collectors and explain any two of them with neat sketch?	1	K3
6	Explain about storage of solar energy and Describe thermal energy storage system with neat sketch.	1	K3

UNIT-II

Q. NO.	QUESTION	CO	K LEVEL
1	Describe the principle of solar photovoltaic energy conversion with neat sketch?	2	K3
2	Define solar cell and Explain the types of PV Cell?	2	K3
3	Explain about solar cell, module, panel and array with neat sketch?	2	K3
4	Explain about electrical characteristics of a silicon PV cells and modules?	2	K3
5	Explain the construction and principle of operation of PV systems for remote power (stand alone system)?	2	K3
6	Explain the construction and principle of operation of grid connected PV system?	**2**	**K3**

TWO MARKS

UNIT–I

Q. NO.	QUESTION
1	Define solar constant?
2	Define attenuation?
3	Explain about local solar time?
4	Explain about sunrise, sunset and day length?
5	Define solar collector?

UNIT–II

Q. NO.	QUESTION
1	Define PV cell?
2	Define photo voltaic effect?
3	Mention different materials used in solar cell?
4	Explain about thin film PV techonology?
5	Mention different types of PV systems?

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