

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 86
(For candidates admitted from the academic year 2023 – 2024)

BACHELOR OF VOCATIONAL DEGREE EXAMINATION, APRIL 2024
DEPARTMENT OF SUSTAINABLE ENERGY MANAGEMENT
SECOND SEMESTER

COURSE : MAJOR CORE
PAPER : FUNDAMENTALS OF PHOTOVOLTAICS
SUBJECT CODE : 23VS /VM/PV26 **MAX. MARKS : 100**
TIME : 5 HOURS **(Theory: 50marks +Practical: 50marks)**

SECTION A (5 x 2 = 10)			
Q. No.	All Questions To Be Answered	CO	KL
1	Define figure of merit of a solar cell.	1	1
2	What is the role of an inverter?	1	1
3	What is meant by shadow analysis?	1	1
4	On what basis the performance of a solar vehicle measured?	1	1
5	Define solar constant.	1	1
SECTION B (4 x 3=12)			
Q. No.	Answer FOUR	CO	KL
6	(6a) Differentiate between homo and hetero junctions. (Or) (6b) Define the term photo conductivity.	2	2
7	(7a) What is a hybrid system? (Or) (7b) What is meant by solar array?	2	2
8	(8a) Write a note on net power meter. (Or) (8b) Write a note on integrated photovoltaic units.	3	3
9	(9a) What is a charge controller? (Or) (9b) What is end life management?	3	3
SECTION C (2 x 4 = 8)			
Q. No.	Answer TWO	CO	KL
10	(10a) Describe the characteristic of a metal semiconductor interface. (Or) (10b) Discuss about the PV system connected to the Utility Grid.	4	4
11	(11a) Discuss about the design of PV system for home lighting. (Or) (11b) Explain the method of load calculation.	4	4

SECTION D (4 x5 =20)			
Q. No.	Answer any TWO:	CO	KL
12	(12a) Discuss about the dark and illumination of a photovoltaic cell.	5	5
	(12b) Explain the energy level of a semiconductor photovoltaic material.	5	5
	(12c) Discuss about solar cell array and system analysis and performance prediction.	5	5
	(12d) Explain design of solar PV systems and cost estimation.	5	5
13	Answer any TWO:		
	(13a) Discuss about solar cars.	5	6
	(13b) Explain the use of Photovoltaic systems in space solar power Satellites.	5	6
	(13c) Describe solar energy to electric energy conversion experiment using solar panel.	5	6
	(13d) Discuss about the efficiency of Solar panel calculation over the day with the use of meters.	5	6
