

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI- 600 086

(For candidates admitted during the academic year 2023–2024)

B.Voc. DEGREE EXAMINATION, NOVEMBER 2023
SUSTAINABLE ENERGY MANAGEMENT
FIRST SEMESTER

COURSE : MAJOR CORE
PAPER : SOLAR ENERGY
SUBJECT CODE : 23VS/VM/SE16
TIME : 2 HOURS

MAX.MARKS: 50

Q. No.	SECTION A Answer ALL questions (2 x 5 = 10 marks)	CO	KL
1.	Define solar radiation.	1	1
2.	State the different types of semiconductors.	1	1
3.	What is meant by solar mapping?	1	1
4.	Draw a schematic diagram of a solar dryer.	1	1
5.	Define Rydberg's constant.	1	1
Q. No.	SECTION B Answer ALL questions (4 x 3 = 12 marks)	CO	KL
6.	a) What is blackbody? Explain blackbody radiation.	2	2
	(OR)		
	b) What are direct, diffused and global radiations?	2	2
7.	a) Define insolation. Write the factors affecting insolation.	2	2
	(OR)		
	b) Explain the classification of solids based on energy band diagram.	2	2
8.	a) Discuss grid tied solar systems.	3	3
	(OR)		
	b) Illustrate the performance testing of solar cookers.	3	3
9.	a) Explain different types of solar collectors.	3	3
	(OR)		
	b) Differentiate single and dual axis solar trackers	3	3

Q. No.	SECTION C Answer any ALL questions (2 x 4= 8 marks)	CO	KL
10.	a) Explore global and Indian solar energy scenario. (OR) b) Explain personal protective equipments used in PV installation.	4	4
11.	a) How does a solar tracker function? Is a solar energy tracker suitable for residential installations? Explain. (OR) b) Explain solar pond.	4	4
Q. No.	SECTION D Answer ALL questions (2 x 10 = 20 marks)	CO	KL
12.	a) Illustrate basic components of a solar water heating system with necessary diagram. (OR)	5	5
	b) Mention different types of solar PV systems. Discuss any one of them in detail.	5	5
13.	a) Discuss solar distillation in detail. (OR)	5	6
	b) Briefly explain photovoltaic cells and hence explain the operation of solar cells.	5	6
