



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)
Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai
Accredited by NAAC-UGC with 'A++' Grade (Cycle III) &
Accredited by NBA (B.E - CSE, EEE, ECE, Mech & B.Tech.IT)
COIMBATORE-641 035, TAMIL NADU

Reg. No:

B.E/B.Tech- Internal Assessment – III
Academic Year 2024-2025 (Even Semester)
Sixth Semester
Mechanical Engineering
19MEO302–Solar Energy Utilisation

A

Time: 1^{1/2} Hours

Maximum Marks: 50

Answer All Questions

		CO	Blooms
1.	Illustrate the need for doping in solar cells. (First Solar, 2022)	CO4	ANA
2.	Define fill factor. (SunPower, 2021)	CO4	REM
3.	Illustrate the need for a clean development mechanism. (Siemens Energy, 2020)	CO5	ANA
4.	Define the payback period. (Tesla, 2023)	CO5	REM
5.	Differentiate between sensible heat storage and latent heat storage of solar energy. (ABB, 2022)	CO5	ANA

PART – B (2*13=26 Marks) & (1*14=14 Marks)

		CO	Blooms
6.	(a) What is solar cell? Explain the working principle of a solar cell with a neat sketch. (GATE, 2021)	13 CO4	UND
	(OR)		
	(b) Describe the manufacturing process of solar cells with the help of a neat sketch. (SunPower, 2022)	13 CO4	UND
7.	(a) Construct about the Solar Vehicle and its importance for a green environment. (Tata Motors, 2023)	13 CO5	APP
	(OR)		
	(b) Interpret the working of Building Integrated Photovoltaic (BIPV) cells with a neat sketch and its necessity in the future. (GATE, 2022)	13 CO5	UND
8.	(a) Utilize the construction and working of a PV cell with a neat sketch by its application in real time. (GATE, 2024)	14 CO4	APP
	(OR)		
	(b) Illustrate briefly the necessity of thermal storage with examples for sensible and latent heat storage. (Siemens Energy, 2023)	14 CO5	ANA

Bloom's Taxonomy:

REM – Remember UND – Understand APP – Apply ANA – Analyze EVA – Evaluate

CRT – Create

Faculty in-charge

Teaching Coordinator

HoD /Mech

[Signature]
DINESH R.
AP/Mech.

[Signature]
Teaching Coordinator
V.K.

[Signature]
HoD /Mech



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B

Time: 1^{1/2} Hours

Maximum Marks: 50

Answer All Questions

		CO	Blooms
1.	Summarize the factors that contribute to solar cell efficiency. (Enphase Energy, 2021)	CO4	REM
2.	Distinguish the difference between PV and other solar energy technologies. (Canadian Solar, 2022)	CO4	ANA
3.	Identify the need for storage of energy. (GATE, 2024)	CO5	ANA
4.	What is thermal energy storage? (Vestas, 2020)	CO5	REM
5.	Define the payback period. (Tesla, 2023)	CO5	REM

PART – B (2*13=26 Marks) & (1*14=14 Marks)

		CO	Blooms
6.	(a) Contrast the need and working of solar Photovoltaic cells with relevant sketches with case study. (GATE, 2022)	13 CO4	UND
	(OR)		
	(b) Describe the manufacturing process of solar cells with the help of a neat sketch. (First Solar, 2021)	13 CO4	UND
7.	(a) Interpret briefly the necessity of thermal storage with examples for sensible and latent heat storage. (GATE, 2023)	13 CO5	UND
	(OR)		
	(b) Construct about the Solar Vehicle and its importance for a green environment. (Tata Motors, 2022)	13 CO5	APP
8.	(a) Interpret the construction and working of a PV cell with a neat sketch by its application in real time. (GATE, 2024)	14 CO4	APP
	(OR)		
	(b) Construct about the Solar Vehicle and BIPV and its importance for a green environment. (Tesla Energy, 2023)	14 CO5	APP

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Institution	SNSCT	SET- A
Branch	MECHANICAL	
Semester	VI	
Course Code/Name	19ME0302 - SOLAR ENERGY UTILISATION	
Name of the Faculty	Mr. DINESH.R	

S.No	Quality Parameters based on blooms	Grade points (g)	Part	No of Questions(n)	Allotted marks (m)	n*m	Q= n*m*g
1	Remember/ Understand (Level - 1,2)	1	A	2	2	4	4
			B	3	13	39	39
			C				
2	Apply (Level - 3)	2	A				
			B	1	13	13	26
			C	1	14	14	28
3	Analyze (Level - 4)	3	A	3	2	6	18
			B				
			C	1	14	14	42
4	Evaluate (Level-5)	4	A				
			B				
			C				
5	Create (Level -6)	5	A				
			B				
			C				

90 157

Quality Index $Q_i = \frac{\sum Q}{\sum (n \times m)} = \frac{157}{90} = 1.74 \approx \text{Low}$

03/05/2025
Faculty

Teaching Coordinator

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Institution	SNSCT	SET-B
Branch	MECHANICAL	
Semester	VI	
Course Code/Name	19ME0302-SOLAR ENERGY UTILISATION	
Name of the Faculty	Mr. DINESH.R	


S.No	Quality Parameters based on blooms	Grade points (g)	Part	No of Questions(n)	Allotted marks (m)	n*m	Q= n*m*g
1	Remember/ Understand (Level - 1,2)	1	A	3	2	6	6
			B	3	13	39	39
			C				
2	Apply (Level - 3)	2	A				
			B	1	13	13	26
			C	2	14	28	56
3	Analyze (Level - 4)	3	A	2	2	4	12
			B				
			C				
4	Evaluate (Level-5)	4	A				
			B				
			C				
5	Create (Level -6)	5	A				
			B				
			C				

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$$\text{Quality Index } Q_i = \frac{\sum Q}{\sum (n \times m)} = \frac{139}{90} = 1.54 \text{ low}$$


03/05/2025
Faculty


Teaching Coordinator


3/5/25
HoD/Mech