ANNAMACHARYA UNIVERSITY

EXCELLENCE IN EDUCATION; SERVICE TO SOCIETY

(ESTD UNDER AP PRIVATE UNIVERSITIES (ESTABLISHMENT AND REGULATION) ACT, 2016)

RAJAMPET, Annamayya District, A.P – 516126, INDIA.

Date: 23-01-2026.

From

The Head of the Department

Department of Electrical & Electronics Engineering

AITS, Rajampet.

To

The DEAN-School of Engineering,

AU, Rajampet.

New Boyanapally-516126.

Respected Sir,

Sub: Requisition to conduct Value Added Course for II B.Tech II Sem EEE Students-Reg.

The Department of Electrical and Electronics Engineering would like to conduct Value Added Course in **"Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems"** for the II B.Tech II Sem students during the academic year 2025-26 from 27.01.2026 to 20. 04.2026. In this regard, we request you to kindly approve the following Value added Course and do the needful.

S.No	Course Title	Code allotted	Category	Lecture Hours
1	**Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems**	**25VACEEE01**	Value added Course	30

Thanking you,

Yours Sincerely,

P. B. V

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CIRCULAR

Date: 22-01-2026

This is to inform that the value-added course titled ***'Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems'*** will be conducted from 27.01.2026 to 20.04.2026 for II B Tech -II sem EEE students. Registration will be on a first-come, first-served basis. Students are requested to enroll their names for the above-mentioned course at the earliest using the following Google Form link:https://forms.gle/vtBcKtXivfxcqKXu7

HOD and respective department staff member instructed to follow up the same. Your wholehearted cooperation is needed to conduct the session in a gentle manner.

Last date for registration: 26-01-2026

Course Coordinator: Mr. R. Madhan Mohan

Mail ID: rmm@aitsrajampet.ac.in

DEAN-SCHOOL OF ENGINEERING

ANNAMACHARYA UNIVERSITY

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RAJAMPET, Annamayya District, A.P – 516126, INDIA.

VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

About the Course

Comprehensive understanding of solar PV systems, focusing on efficient and cost-effective solutions for residential applications.

Course Objectives

Understand fundamentals of energy and electricity billing, learn solar PV system components and working, analyze appliance efficiency and energy consumption, design solar systems for homes, evaluate cost and environmental impact.

Course Outcomes

Explain energy and power concepts, identify solar system components, analyze appliance efficiency, design a residential solar PV system, evaluate economic and environmental benefits.

Course Highlights

36 Hours Structured Learning, Practical Design Approach, Real-Time Case Studies, Focus on Energy Efficiency, Industry-Relevant Skills.

Modules Covered

Fundamentals of Energy & Power, Electricity Billing, Solar PV Systems, Solar Panels & Technologies, Batteries & Storage Systems, Inverters & Charge Controllers, Appliance Efficiency (BEE Ratings), Solar System Design & Sizing, Cost Analysis & Subsidies.

Who Can Attend?

Electrical & Mechanical Engineering Students, Diploma Students, Renewable Energy Enthusiasts, Faculty Members.

Why This Course?

Reduce electricity bills, Promote renewable energy adoption, Gain practical design skills, Contribute to sustainable development.

Key Insight

1 unit of electricity consumption = 1 kg of CO_2 emission. Learn how solar energy helps reduce carbon footprint.

Certification

Participants will receive a Certificate of Completion from Annamacharya University.

Contact Details

Dr. M. Padma Lalitha, padmalalitha.mared@gmail.com

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

DATE:

NAME OF THE STUDENT: **ROLL NUMBER:**

1) Energy can neither be created nor destroyed. This is: ( )

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: ( )
A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: ( )
A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: ( )
A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Battery capacity is measured in: ( )
A) Watt
B) Volt
C) Ampere-hour
D) Joule

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

COURSE OBJECTIVES AND OUTCOMES

Course Objectives:

- To Understand basic electrical concepts such as power, energy, and electricity billing
- To learn the components and working of solar PV systems
- To analyze energy consumption and efficiency of household appliances
- To design a basic solar PV system for residential use
- To evaluate cost, subsidy, and environmental impact of solar energy systems

Course Outcomes:

At the end of the course, the student will be able to:

CO1: Explain fundamental concepts of energy, power, and electricity billing
CO2: Describe components of solar PV systems and their functions
CO3: Analyze appliance efficiency and energy consumption in solar systems
CO4: Design a solar PV system for residential applications
CO5: Evaluate economic and environmental aspects of solar PV systems

PO / CO	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012	PS01	PS02
C01	3	2	-	-	-	-	-	-	-	1	-	1	3	3
C02	3	2	1	-	1	-	-	-	-	-	-	1	3	3
C03	2	3	1	1	1	-	2	-	-	-	-	1	3	3
C04	3	3	3	2	2	1	2	-	1	1	2	1	3	3
C05	2	2	2	1	-	2	3	1	-	1	2	1	3	3

Course Co-ordinator:

Head of the Department

ANNAMACHARYA UNIVERSITY

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RAJAMPET, Annamayya District, A.P – 516126, INDIA.

VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

COURSE CONTENT

Module 1: Fundamentals (Hours 1–5)

1. Introduction to Energy and Solar Energy
2. Law of Conservation of Energy & Its Relevance
3. Difference Between Power and Energy
4. Identification of Household Electrical Loads
5. Calculation of Daily and Monthly Energy Consumption

Module 2: Electricity Billing (Hours 6–9)

6. Understanding Electricity Bills – Overview
7. Unit Consumption Charges & Fixed Charges
8. Fuel Adjustment Charges (FAC) & Wheeling Charges
9. Electricity Duty, Taxes & Total Bill Calculation

Module 3: Solar PV System Basics (Hours 10–13)

10. Introduction to Solar PV Systems
11. Types of Solar Systems (Grid-tied, Off-grid, Hybrid)
12. Basic Solar PV System Configuration
13. Matching Voltage and Current in Solar Systems

Module 4: Solar Panels (Hours 14–18)

14. Solar Panel Fundamentals and Working Principle
15. Solar Panel Ratings (Wp, Vmp, Imp)
16. Solar Panel Technologies (Mono, Poly, Thin Film)
17. Solar Panel Efficiency and Performance Factors
18. Cost, Area Requirement & Maintenance of Panels

Module 5: Batteries (Hours 19–23)

19. Role of Batteries in Solar Systems
20. Battery Capacity (Ah) and Energy Storage
21. Battery Terminal Voltage and Selection
22. Battery Technologies (Lead-acid vs Lithium-ion)
23. Battery Life, Depth of Discharge & Maintenance

Module 6: Power Electronics (Hours 24–27)

24. Electronic Management System (EMS) Overview
25. Inverters – Types, Ratings, Efficiency
26. Charge Controllers – Function and Performance
27. Comparison of AC and DC Power in Solar Systems

Module 7: Appliances & Efficiency (Hours 28–31)

28. Energy-Efficient Appliances and BEE Star Ratings
29. AC vs DC Appliances – Performance Comparison
30. Operating Cost Analysis of Household Appliances-1
31. Operating Cost Analysis of Household Appliances-2

Module 8: System Design (Hours 32–34)

32. Designing Solar System – Step-by-Step Approach
33. Inverter and Battery Sizing Calculations
34. Solar Panel Sizing and System Optimization

Module 9: Cost, Policy & Sustainability (Hour 35-37)

35. Cost Analysis
36. Subsidies
37. Environmental Impact of Solar Systems

Course Co-ordinator:

Head of the Department

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

FINAL ENROLLMENT LIST

S. No.	Full Name	Roll Number	Section
1	S. Abdul Malik	24AFEEE001	A
2	M. Amaresh	24AFEEE003	A
3	Shaik Anjum	24AFEEE004	A
4	Kesagani Banu	24AFEEE006	A
5	M. Dinesh	24AFEEE011	A
6	M. Divya	24AFEEE013	A
7	M. Ganesh	24AFEEE014	A
8	K. Goutam Sai	24AFEEE017	A
9	Mydukur Grace Nissy	24AFEEE018	A
10	D. Guru Babu	24AFEEE019	A
11	Hasini Nagireddy	24AFEEE022	A
12	Chilakala Jeevana Jyothi	24AFEEE024	A
13	K. Lakshmi Krishna Veni	24AFEEE028	A
14	A. Likitha Reddy	24AFEEE031	A
15	N. Manvitha Maha Lakshmi	24AFEEE034	A
16	K. Mohan Krishna	24AFEEE037	A
17	M. Nandhu	24AFEEE040	A
18	S. Naveen Kumar Yadav	24AFEEE042	A
19	M. Navyasree	24AFEEE043	A
20	Dhanakondugari Poojitha	24AFEEE047	B
21	Sunkasula Rahil	24AFEEE051	B

22	Narayana Rakesh	24AFEEE053	B
23	Bheemu Sai Chandan Reddy	24AFEEE058	B
24	Sai Karthik	24AFEEE060	B
25	Goula Sai Tharun	24AFEEE063	B
26	A. Shameer Khan	24AFEEE064	B
27	G. Sravan Kumar Goud	24AFEEE070	B
28	Mandla Sri Lakshmi Gowri	24AFEEE072	B
29	Singamreddy Supriya	24AFEEE077	B
30	Surendra Pennam	24AFEEE078	B
31	T. Thrilok	24AFEEE080	B
32	G. Uday Kumar	24AFEEE081	B
33	K. Vishnu Vanshika	24AFEEE087	B
34	Kasi Yaswanth	24AFEEE091	B
35	Deepika	25ALEEE003	A
36	J. Eswar	25ALEEE004	A
37	Nalliboyena Goutham	25ALEEE006	A
38	B. Guru Harsha Reddy	25ALEEE007	A
39	Galam Guru Narendra	25ALEEE008	A
40	B. Guruprasanna	**25ALEEE009**	**A**
41	D. Naveen Kumar	**25ALEEE015**	**B**
42	S. Suneha Sanam	**25ALEEE016**	**B**

COURSE COORDINATOR

HEAD OF THE DEPARTMENT

ANNAMACHARYA UNIVERSITY

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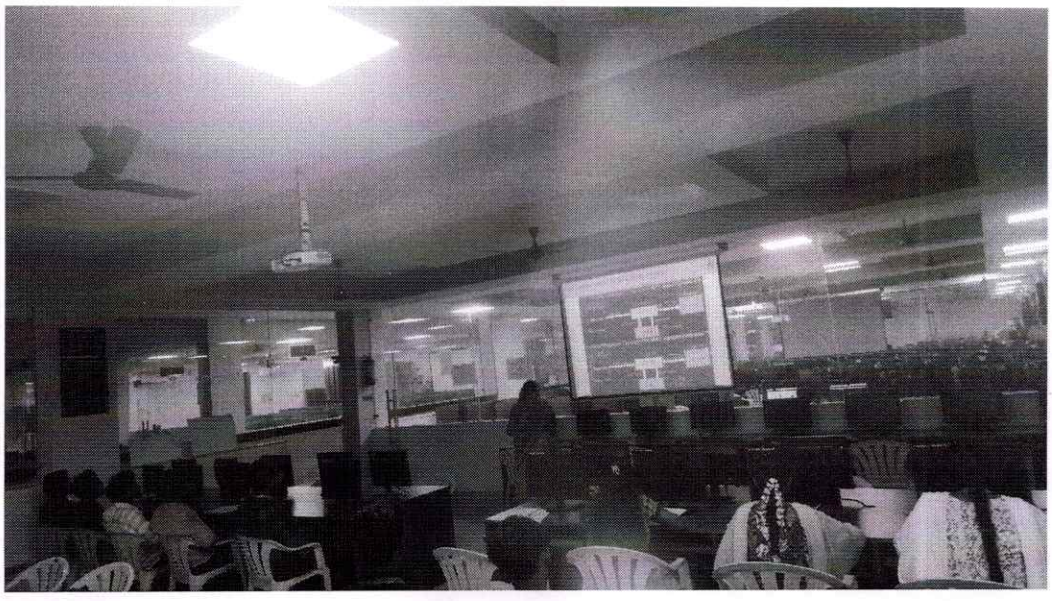
COURSE REPORT

Name of the Value added Course: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems
Course Code: 25VACEEE01
Course Coordinator: Dr.M.Padma Lalitha, Professor, Dept. of EEE
Year: 2025-2026
Date: 04.02.2026 to 10.04.2026
Course Type: Self Framed Course

The Value Added Course on **Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems** is conducted for II B.Tech II Sem students. The total contact hours 37 have been planned and executed as per the course plan.

Assessment Mode
Number of Students enrolled: 42
Number of Students appeared: 42
Date of Exam: 13.04.2024
Type of assessment: Multiple Choice Questions & Fill in the blanks
Scheme of Exam: Multiple Choice Questions & Fill in the blanks
Number of students passed: 42



Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE COORDINATOR

HEAD OF THE DEPARTMENT

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

FINAL ATTENDANCE SHEET

Total No. Of Classes : 37

Full Name	Roll Number	Classes Present	%	Full Name	Roll Number	Classes Present	%
S. Abdul Malik	24AFEEE001	36	97.3	Nalliboyena Goutham	25ALEEE006	34	91.89
M. Amaresh	24AFEEE003	35	94.59	B. Guru Harsha Reddy	25ALEEE007	35	94.59
Shaik Anjum	24AFEEE004	36	97.3	Galam Guru Narendra	25ALEEE008	35	94.59
Kesagani Banu	24AFEEE006	35	94.59	B. Guruprasanna	25ALEEE009	37	100
M. Dinesh	24AFEEE011	35	94.59	D Poojitha	24AFEEE047	33	89.19
M. Divya	24AFEEE013	37	100	Sunkasula Rahil	24AFEEE051	33	89.19
M. Ganesh	24AFEEE014	30	81.08	Narayana Rakesh	24AFEEE053	37	100
K. Goutam Sai	24AFEEE017	36	97.3	B Sai Chandan Reddy	24AFEEE058	37	100
Mydukur Grace Nissy	24AFEEE018	36	97.3	Sai Karthik	24AFEEE060	37	100
D. Guru Babu	24AFEEE019	36	97.3	Goula Sai Tharun	24AFEEE063	37	100
Hasini Nagireddy	24AFEEE022	37	100	A. Shameer Khan	24AFEEE064	37	100
Chilakala Jeevana Jyothi	24AFEEE024	32	86.49	G. Sravan Kumar Goud	24AFEEE070	37	100
K. Lakshmi Krishna Veni	24AFEEE028	37	100	M Sri Lakshmi Gowri	24AFEEE072	33	89.19
A. Likitha Reddy	24AFEEE031	37	100	Singamreddy Supriya	24AFEEE077	37	100
N. Manvitha Maha Lakshmi	24AFEEE034	37	100	Surendra Pennam	24AFEEE078	37	100
K. Mohan Krishna	24AFEEE037	36	97.3	T. Thrilok	24AFEEE080	37	100
M. Nandhu	24AFEEE040	37	100	G. Uday Kumar	24AFEEE081	37	100
S. Naveen Kumar Yadav	24AFEEE042	36	97.3	K. Vishnu Vanshika	24AFEEE087	37	100
M. Navyasree	24AFEEE043	37	100	Kasi Yaswanth	24AFEEE091	37	100
Deepika	25ALEEE003	37	100	D. Naveen Kumar	25ALEEE015	37	100
J. Eswar	25ALEEE004	32	86.49	S. Suneha Sanam	25ALEEE016	34	91.89

Course Co-ordinator:

Head of the Department

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VALUE ADDED COURSE 2025-26

COURSE NAME: **Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems**

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: ROLL NUMBER: DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: ( )

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: ( )

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: ( )

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: ( )

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? ( )

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? ( )

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates: ( )

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: ( )

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: ( )

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: ( )

A) ISRO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? ( )

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? ( )

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to _____.

14.Solar panel generates _____ power.

15.Battery capacity is expressed in _____.

16.Inverter converts _____ power into _____ power.

17.Higher star rating appliances consume _____ energy.

18.1 unit of electricity consumption produces approximately _____ kg of CO_2.

19.Charge controller supplies _____ power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into _____.

COURSE COORDINATOR

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

ASSESSMENT SHEET

Full Name	Roll Number	Marks	Full Name	Roll Number	Marks
S. Abdul Malik	24AFEEE001	18	Nalliboyena Goutham	25ALEEE006	19
M. Amaresh	24AFEEE003	18	B. Guru Harsha Reddy	25ALEEE007	18
Shaik Anjum	24AFEEE004	18	Galam Guru Narendra	25ALEEE008	14
Kesagani Banu	24AFEEE006	18	B. Guruprasanna	25ALEEE009	20
M. Dinesh	24AFEEE011	18	Dhanakondugari Poojitha	24AFEEE047	17
M. Divya	24AFEEE013	17	Sunkasula Rahil	24AFEEE051	18
M. Ganesh	24AFEEE014	15	Narayana Rakesh	24AFEEE053	18
K. Goutam Sai	24AFEEE017	16	Bheemu Sai Chandan Reddy	24AFEEE058	18
Mydukur Grace Nissy	24AFEEE018	16	Sai Karthik	24AFEEE060	15
D. Guru Babu	24AFEEE019	17	Goula Sai Tharun	24AFEEE063	19
Hasini Nagireddy	24AFEEE022	20	A. Shameer Khan	24AFEEE064	17
Chilakala Jeevana Jyothi	24AFEEE024	20	G. Sravan Kumar Goud	24AFEEE070	17
K. Lakshmi Krishna Veni	24AFEEE028	17	Mandla Sri Lakshmi Gowri	24AFEEE072	15
A. Likitha Reddy	24AFEEE031	20	Singamreddy Supriya	24AFEEE077	18
N. Manvitha Maha Lakshmi	24AFEEE034	20	Surendra Pennam	24AFEEE078	15
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M. Nandhu	24AFEEE040	14	G. Uday Kumar	24AFEEE081	17
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M. Navyasree	24AFEEE043	20	Kasi Yaswanth	24AFEEE091	16
Deepika	25ALEEE003	18	D. Naveen Kumar	25ALEEE015	18
J. Eswar	25ALEEE004	17	S. Suneha Sanam	25ALEEE016	16

12/11/26.

Course Co-ordinator:

P. B. V

Head of the Department

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ASSESSMENT SHEET

Full Name	Roll Number	Marks	Full Name	Roll Number	Marks
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M. Amaresh	24AFEEE003		B. Guru Harsha Reddy	25ALEEE007	
Shaik Aniqa	24AFEEE004		Galam Guru Narendra	25ALEEE008	
Kesagani Banu	24AFEEE006		B. Guruprasanna	25ALEEE009	
M. Dinesh	24AFEEE011		Dharakondugari Poojitha	24AFEEE047	
M. Divya	24AFEEE013		Sunkasula Rahil	24AFEEE051	
M. Ganesh	24AFEEE014		Naravana Rakesh	24AFEEE053	
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D. Guru Brou	24AFEEE019		Goula Sai Tharun	24AFEEE063	
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K. Lakshmi Krishna Veni	24AFEEE028		Mandla Sri Lakshmi Gowri	24AFEEE072	
A. Likitha Reddy	24AFEEE031		Singamreddy Supriya	24AFEEE077	
K. Manvitha Maha Lakshmi	24AFEEE034		Surendra Pennam	24AFEEE078	
K. Mohan Krishna	24AFEEE037		T. Thrilok	24AFEEE080	
M. Nandini	24AFEEE040		G. Uday Kumar	24AFEEE081	
S. Naveen Kumar Yadav	24AFEEE042		K. Vishnu Vanshika	24AFEEE087	
M. Navyasree	24AFEEE043		Kasi Yaswanth	24AFEEE091	
Deepika	25ALEEE003		D. Naveen Kumar	25ALEEE015	
J. Eswar	25ALEEE004		S. Sumeha Sanam	25ALEEE016	

Course Co-ordinator:

Head of the Department

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COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

FINAL GRADE SHEET

Full Name	Roll Number	Marks	Grade	Full Name	Roll Number	Marks	Grade
S. Abdul Malik	24AFEEE001	18	A+	Nalliboyena Goutham	25ALEEE006	19	A+
M. Amaresh	24AFEEE003	18	A+	B. Guru Harsha Reddy	25ALEEE007	18	A+
Shaik Anjum	24AFEEE004	18	A+	Galam Guru Narendra	25ALEEE008	14	B
Kesagani Banu	24AFEEE006	18	A+	B. Guruprasanna	25ALEEE009	20	A+
M. Dinesh	24AFEEE011	18	A+	D Poojitha	24AFEEE047	17	A
M. Divya	24AFEEE013	17	A	Sunkasula Rahil	24AFEEE051	18	A+
M. Ganesh	24AFEEE014	15	B	Narayana Rakesh	24AFEEE053	18	A+
K. Goutam Sai	24AFEEE017	16	A	B Sai Chandan Reddy	24AFEEE058	18	A+
Mydukur Grace Nissy	24AFEEE018	16	A	Sai Karthik	24AFEEE060	15	B
D. Guru Babu	24AFEEE019	17	A	Goula Sai Tharun	24AFEEE063	19	A+
Hasini Nagireddy	24AFEEE022	20	A+	A. Shameer Khan	24AFEEE064	17	A
Chilakala Jeevana Jyothi	24AFEEE024	20	A+	G. Sravan Kumar Goud	24AFEEE070	17	A
K. Lakshmi Krishna Veni	24AFEEE028	17	A	M Sri Lakshmi Gowri	24AFEEE072	15	B
A. Likitha Reddy	24AFEEE031	20	A+	Singamreddy Supriya	24AFEEE077	18	A+
N. Manvitha Maha Lakshmi	24AFEEE034	20	A+	Surendra Pennam	24AFEEE078	15	B
K. Mohan Krishna	24AFEEE037	19	A+	T. Thrilok	24AFEEE080	15	B
M. Nandhu	24AFEEE040	14	B	G. Uday Kumar	24AFEEE081	17	A
S. Naveen Kumar Yadav	24AFEEE042	18	A+	K. Vishnu Vanshika	24AFEEE087	17	A
M. Navyasree	24AFEEE043	20	A+	Kasi Yaswanth	24AFEEE091	16	A
Deepika	25ALEEE003	18	A+	D. Naveen Kumar	25ALEEE015	18	A+
J. Eswar	25ALEEE004	17	A	S. Suneha Sanam	25ALEEE016	16	A

Course Co-ordinator

Head of the Department

ANNAMACHARYA UNIVERSITY

(Estd. under AP Private Universities (Establishment and Regulation) Act, 2016)
(Recognized by UGC under Section 2(f) of the UGC Act, 1956)
Rajampet, YSR kadapa District, AP-516126, INDIA

Department of Electrical and Electronics Engineering

VALUE ADDED COURSE

CERTIFICATE

This is to certify that Mr. **S. Abdul Malik**, *bearing H.T. No.* **24AFEEE001**, *a student of Electrical and Electronics Engineering, has successfully completed the Value-Added Course on* **"Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems"** *during the II Year, II Semester of the academic year 2025–2026 and has been awarded an* **A+** *Grade.*

COURSE COORDINATOR	HOD	Dean School of Engineering

Feedback on Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems-Value added Course 2025-26

Feedback on Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems-Value added Course 2025-26

* Indicates required question

1. Name of the Student *

_____

2. Roll Number *

_____

3. 1. How would you rate the overall coverage of the syllabus in the course? *

Mark only one oval.

- ◯ Excellent
- ◯ Very Good
- ◯ Good
- ◯ Fair
- ◯ Satisfactory

4. 2. How effective was the teaching methodology used for explaining solar PV concepts? *

Mark only one oval.

- ◯ Excellent
- ◯ Very Good
- ◯ Good
- ◯ Fair
- ◯ Satisfactory

5. 3. Was the course material sufficient to understand solar PV system design concepts? *

Mark only one oval.

- ◯ Excellent
- ◯ Very Good
- ◯ Good
- ◯ Fair
- ◯ Satisfactory

6. 4. How would you rate the interaction between the instructor and students during the course? *

Mark only one oval.

- Excellent
- Very Good
- Good
- Fair
- Satisfactory

7. 5. How effectively were your doubts and questions clarified during the sessions? *

Mark only one oval.

- Excellent
- Very Good
- Good
- Fair
- Satisfactory

8. 6. How would you rate the practical examples and case studies used in the course? *

Mark only one oval.

- ◯ Excellent
- ◯ Very Good
- ◯ Good
- ◯ Fair
- ◯ Satisfactory

9. 7. How effective were the system design calculations and sizing exercises? *

Mark only one oval.

- ◯ Excellent
- ◯ Very Good
- ◯ Good
- ◯ Fair
- ◯ Satisfactory

10. 8. How well did the course improve your understanding of renewable energy systems? *

Mark only one oval.

- Excellent
- Very Good
- Good
- Fair
- Satisfactory

11. 9. How effectively were energy-efficient appliances and solar cost analysis explained? *

Mark only one oval.

- Excellent
- Very Good
- Good
- Fair
- Satisfactory

12. 10. Did this course motivate you to adopt or promote solar energy solutions? *

Mark only one oval.

- ◯ Excellent
- ◯ Very Good
- ◯ Good
- ◯ Fair
- ◯ Satisfactory

13. Suggestions / Comments:

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Google Forms

Timestamp	Name of the Student	Roll Number	1. How wou	2. How effectiv	3. Was the c	4. How woul	5. How effec	6. How woul	7. How effe	8. How well	9. How effec	10. Did this	Suggesti
5/7/2026 13:04:19	S.Anjum	24AFEEE004	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	
5/7/2026 13:04:33	K Deepika	25ALEEE003	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
5/7/2026 13:04:57	K banu	24AFEEE006	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Nice
5/7/2026 13:05:16	N. Manvitha Maha Lakshm	24AFEEE034	Excellent	Excellent	Excellent	Excellent	Excellent	Very Good	Excellent	Excellent	Very Good	Excellent	No
5/7/2026 13:06:03	Divya	24AFEEE013	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
5/7/2026 13:07:26	M.Navyasree	24AFEEE043	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Nothing
5/7/2026 13:08:06	C. Jeevana Jyothi	24AFEEE024	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
5/7/2026 13:09:48	G.madhu sudhan	25ALEEE011	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	
5/7/2026 13:11:44	S.Suneha sanam	25ALEEE016	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
5/7/2026 13:11:59	A.Shameer Khan	24AFEEE064	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	No
5/7/2026 13:17:01	A. Likitha Reddy	24AFEEE031	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
5/7/2026 13:17:30	N.Hasini	24AFEEE022	Excellent	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	No
5/7/2026 13:19:42	M.Nandhu	24AFEEE040	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	
5/7/2026 13:25:07	T.Thrilok	24AFEEE080	Excellent	Excellent	Excellent	Excellent	Very Good	Very Good	Very Good	Good	Very Good	Very Good	
5/7/2026 13:25:35	G.uday kumar	24AFEEE081	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	No
5/7/2026 13:37:42	M.Dinesh	24AFEEE011	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	No
5/7/2026 13:38:37	Sampathi Naveen Kumar y	24AFEEE042	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
5/7/2026 13:38:38	S.Abdul Malik	24AFEEE001	Excellent	Excellent	Excellent	Excellent	Very Good	Excellent	Excellent	Excellent	Excellent	Excellent	Nothing
5/7/2026 13:38:50	J Eswar	25ALEEEO04	Good	Very Good	Very Good	Very Good	Very Good	Good	Good	Good	Good	Good	
5/7/2026 13:41:18	Guru Harsha Reddy B	25ALEEE007	Excellent	Excellent	Very Good	Very Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	No
5/7/2026 13:48:08	K Vishnu Vanshika	24AFEEE087	Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	
5/7/2026 13:53:11	G.sai tharun	24AFEEE063	Very Good	Very Good	Very Good	Very Good	Very Good	Good	Good	Good	Good	Good	
5/7/2026 13:55:28	G.Guru Narendra	25ALEEE008	Good	Good	Good	Good	Very Good	Good	Good	Good	Very Good	Very Good	No
5/7/2026 13:59:27	KATHI LAKSHMI KRISHNA	24AFEEE028	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
5/7/2026 14:03:11	BHEEMU SAI CHANDAN RI	24AFEEE058	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	No
5/7/2026 14:05:31	K.Goutam sai	24AFEEE017	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
5/7/2026 14:22:07	B Guruprasanna	25ALEEE009	Excellent	Excellent	Very Good	Very Good	Very Good	Very Good	Very Good	Excellent	Excellent	Excellent	No
5/7/2026 14:53:48	K.Mohan Krishna	24AFEEE037	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Greatful t
5/7/2026 14:54:05	M.Amaresh	24AFEEE003	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	
5/7/2026 14:55:03	M Ganesh	24AFEEE014	Very Good	Good	Good	Good	Good	Good	Good	Good	Very Good	Good	
5/7/2026 15:15:34	N.Goutham	25ALEEE006	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	

Timestamp	Name of the Student	Roll Number	1. How wou	2. How effectiv	3. Was the c	4. How woul	5. How effec	6. How woul	7. How effe	8. How well	9. How effec	10. Did this c	Suggesti
5/7/2026 15:29:29	Sai karthik	24AFEEE060	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Good
5/7/2026 17:26:13	Mandla Sri Lakshmi Gowri	24AFEEE072	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Nothing
5/7/2026 17:27:45	K yaswanth	24AfEEE091	Good	Good	Good	Very Good	Very Good	Very Good	Good	Good	Good	Good	Good
5/7/2026 17:32:24	D.Guru babu	24AFEEE019	Very Good	Very Good	Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Good	
5/7/2026 17:37:27	G.SRAVAN KUMAR GOUD	24AFEEE070	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Nothing
5/7/2026 17:40:33	Rakesh Narayana	24AFEEE053	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
5/7/2026 17:41:35	Supriya	24AFEEE077	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	No
5/7/2026 17:47:06	Naveen Kumar	25ALEEE015	Good	Good	Good	Good	Good	Good	Very Good	Satisfactory	Good	Satisfactory	Example
5/7/2026 18:06:33	P.surendra	24AFEEE078	Very Good	Very Good	Very Good	Excellent	Excellent	Very Good	Very Good	Very Good	Very Good	Very Good	No
5/7/2026 22:55:15	M. Grace Nissy	24AFEEE018	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	NILL
5/8/2026 9:42:55	Poojitha D	24AFEEE047	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	good cou

Annamacharya University Value Added Course 2025-26

COURSE NAME:

Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

ATTEDANCE SHEET

04/02/2026 to 15/04/2026			4/2/2026	5/2/2026	6/2/2026	17/2/26	19/2/26	20/2/26	21/2/26	23/2/26	24/2/26	25/2/26	26/2/26	27/2/26	28/2/26	2/3/2026	4/3/2026	5/3/2026	6/3/2026	7/3/2026
S.No.	Student Name	Roll Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	S. Abdul Malik	24AFEEE001																		
2	M. Amaresh	24AFEEE003																		
3	Shaik Anjum	24AFEEE004																		
4	Kesagani Banu	24AFEEE006																		
5	M. Dinesh	24AFEEE011																		
6	M. Divya	24AFEEE013																		
7	M. Ganesh	24AFEEE014																		
8	K. Goutam Sai	24AFEEE017																		
9	M Grace Nissy	24AFEEE018																		
10	D. Guru Babu	24AFEEE019																		
11	Hasini Nagireddy	24AFEEE022																		
12	C Jeevana Jyothi	24AFEEE024																		
13	K. Lakshmi Krishna	24AFEEE028																		
14	A. Lalitha Reddy	24AFEEE031																		
15	N. Manvitha Maha	24AFEEE034																		
16	K. Mohan Krishna	24AFEEE037																		
17	M. Nandhu	24AFEEE040																		
18	S. Naveen Kumar	24AFEEE042																		
19	M. Navyasree	24AFEEE043																		
20	Deepika	25ALEEE003																		
21	J. Eswar	25ALEEE004																		
22	N Goutham	25ALEEE006																		
23	B. Guru Harsha	25ALEEE007																		
24	G Guru Narendra	25ALEEE008																		
25	B. Guruprasanna	25ALEEE009																		
26	D Poojitha	24AFEEE047																		
27	Sunkasula Rahul	24AFEEE051																		
28	Narayana Rakesh	24AFEEE053																		
29	B Sai Chandan	24AFEEE058																		
30	Sai Karthik	24AFEEE060																		
31	Goula Sai Tharun	24AFEEE063																		
32	A. Shameer Khan	24AFEEE064																		
33	G. Sravan Kumar	24AFEEE070																		
34	M Sri Lakshmi Gowri	24AFEEE072																		
35	S Supriya	24AFEEE077																		
36	Surendra Pennam	24AFEEE078																		
37	T. Thrilok	24AFEEE080																		
38	G. Uday Kumar	24AFEEE081																		
39	K. Vishnu Vanshika	24AFEEE087																		
40	Kasi Yaswanth	24AFEEE091																		
41	D. Naveen Kumar	25ALEEE015																		
42	S. Suncha Sanam	25ALEEE016																		
Total No.of Students			42																	
No.of Students Present			42	40	41	41	40	40	41	40	41	39	41	39	39	40	41	41	41	41
No.of Students absent			0	1	1	1	2	2		2	1	3	1	3	3	2		0	0	1
Signature of the Staff																				

Annamacharya University Value Added Course 2025-26

COURSE NAME:

Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

ATTEDANCE SHEET

04/02/2026 to 15/04/2026			9/3/2026	10/3/2026	11/3/2026	12/3/2026	13/3/2026	16/3/2026	17/3/2026	24/3/2026	25/3/2026	26/3/2026	30/3/2026	31/3/2026	1/4/2026	2/4/2026	4/4/2026	7/4/2026	8/4/2026	9/4/2026	10/4/2026
S.No.	Student Name	Roll Number	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
1	S. Abdul Malik	24AFEEE001																			
2	M. Amaresh	24AFEEE003																			
3	Shaik Anjum	24AFEEE004																			
4	Kesagani Banu	24AFEEE006																			
5	M. Dinesh	24AFEEE011																			
6	M. Divya	24AFEEE013																			
7	M. Ganesh	24AFEEE014																			
8	K. Goutham Sai	24AFEEE017																			
9	M Grace Nives	24AFEEE018																			
10	D. Guru Babu	24AFEEE019																			
11	Hasini Nagireddy	24AFEEE023																			
12	C. Jeevana Jyothi	24AFEEE024																			
13	K. Lakshmi Krishna Yeni	24AFEEE028																			
14	A. Lohitha Reddy	24AFEEE031																			
15	N. Manvitha Maha Lakshmi	24AFEEE034																			
16	K. Mohan Krishna	24AFEEE037																			
17	M. Nandhu	24AFEEE040																			
18	S. Naveen Kumar Yadav	24AFEEE042																			
19	M. Navyasree	24AFEEE043																			
20	Deepika	25ALEEE003																			
21	J. Eswar	25ALEEE004																			
22	N Goutham	25ALEEE006																			
23	B. Guru Harsha Reddy	25ALEEE007																			
24	G Guru Narendra	25ALEEE008																			
25	B. Guruprasanna	25ALEEE009																			
26	D Poojitha	24AFEEE047																			
27	Sankasula Rahul	24AFEEE051																			
28	Narayana Rakesh	24AFEEE053																			
29	B Sai Chandan	24AFEEE058																			
30	Sai Karthik	24AFEEE060																			
31	Gouda Sai Tharun	24AFEEE063																			
32	A. Shameer Khan	24AFEEE064																			
33	G. Sravan Kumar	24AFEEE070																			
34	M Sri Lakshmi Gowri	24AFEEE072																			
35	S Supriya	24AFEEE077																			
36	Surendra Peinam	24AFEEE078																			
37	T. Thrilok	24AFEEE080																			
38	G. Uday Kumar	24AFEEE081																			
39	K. Vishnu Vanshika	24AFEEE087																			
40	Kosi Yaswanth	24AFEEE091																			
41	D. Naveen Kumar	25ALEEE015																			
42	S. Soucha Sanam	25ALEEE016																			
Total No.of Students			42																		
No.of Students Present			41	41	41	41	40	41	40	39	41	40	41	40	40	41	41	42	39	41	38
No.of Students absent			1	1	1	1	2	1	2	3	1	2	1	2	2	1	1	0	3	1	4
Signature of the Staff																					

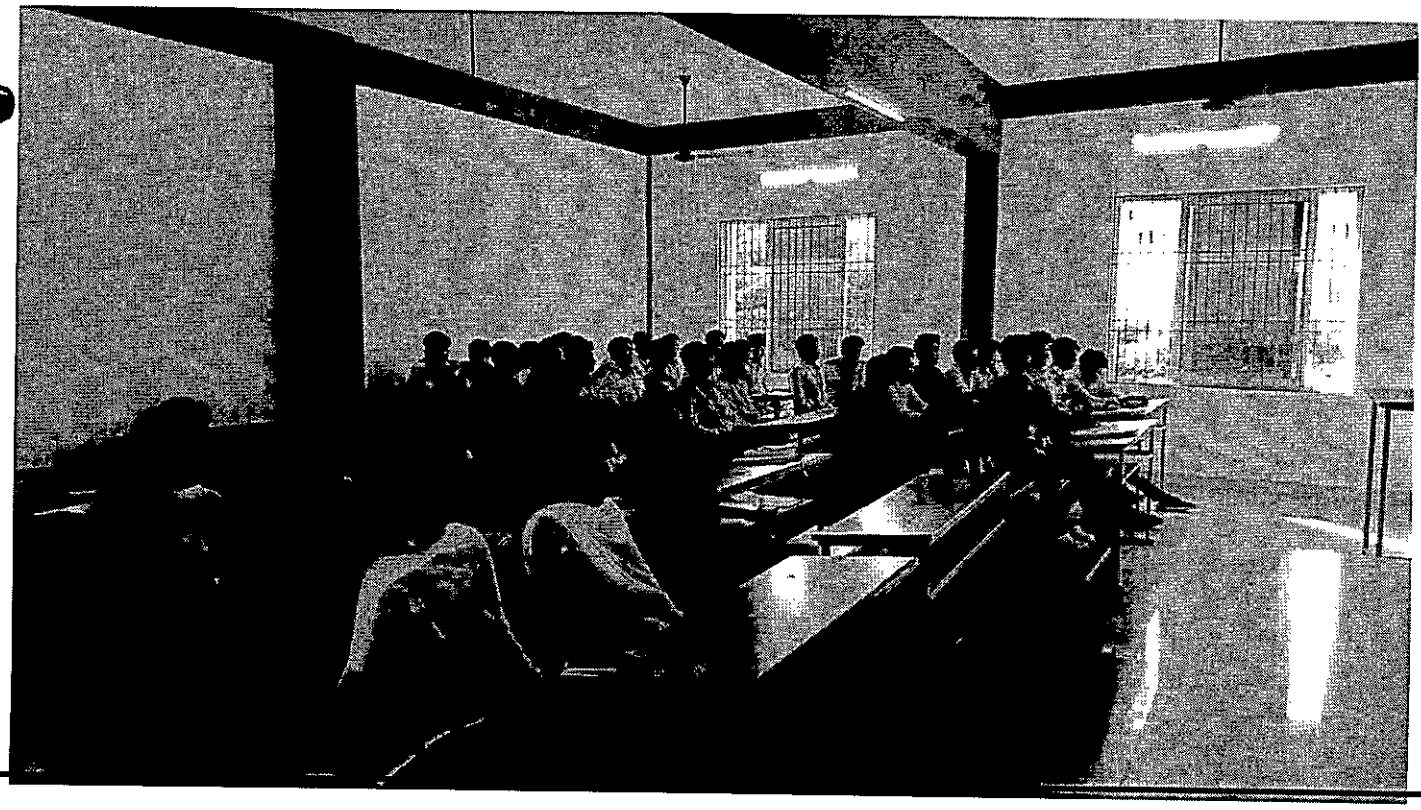
ANNAMACHARYA UNIVERSITY

EXCELLENCE IN EDUCATION; SERVICE TO SOCIETY

(ESTD UNDER AP PRIVATE UNIVERSITIES (ESTABLISHMENT AND REGULATION) ACT, 2016)

RAJAMPET, Annamayya District, A.P – 516126, INDIA.





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RAJAMPET, Annamayya District, A.P – 516126, INDIA.

VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: N. Hasini **ROLL NUMBER:** 24AFEEE022 **DATE:11/04/2026**

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (C)

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates: (C)

A) Voltage level
B) Charging rate
C) Usable battery energy
D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel
B) Battery
C) Electronic Management System
D) Load

9.Charge controller efficiency typically lies between: (C)

A) 50–60%
B) 60–70%
C) 85–95%
D) 95–100%

10.In India, appliance efficiency is rated by: (B)

A) ISRO
B) BEE
C) NTPC
D) DRDO

11.Which system requires less daily energy for the same work? (B)

A) AC solar system
B) DC solar system
C) Both equal
D) Cannot say

12.Which organization provides solar subsidies in India? (B)

A) RBI
B) MNRE
C) SEBI
D) AICTE

13.1 unit of electricity equals to 1 kWh .
14.Solar panel generates DC **power.**
15.Battery capacity is expressed in A-H .
16.Inverter converts DC **power into** AC **power.**
17.Higher star rating appliances consume less **energy.**
18.1 unit of electricity consumption produces approximately 1 **kg of CO_2.**
19.Charge controller supplies DC **power to appliances.**
20.Solar panel efficiency is defined as conversion of sunlight into Electrical energy.

COURSE COORDINATOR

CP (20)

ANNAMACHARYA UNIVERSITY

EXCELLENCE IN EDUCATION; SERVICE TO SOCIETY

(ESTD UNDER AP PRIVATE UNIVERSITIES (ESTABLISHMENT AND REGULATION) ACT, 2016)

RAJAMPET, Annamayya District, A.P – 516126, INDIA.

VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: S. Abdul MALIK ROLL NUMBER: 21AFEEE001 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C) ✓

A) Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh

B) Wp

C) Ohm

D) Hz

4.Effieiency of silicon solar panels is approximately: (D) ✗

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A) ✓

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

7 Depth of Discharge (DoD) indicates: (C) ✓
A) Voltage level
B) Charging rate
C) Usable battery energy
D) Battery cost

8. The heart of a solar system is: (C) ✓
A) Solar panel
B) Battery
C) Electronic Management System
D) Load

9 Charge controller efficiency typically lies between: (C) ✓
A) 50-60%
B) 60-70%
C) 85-95%
D) 95-100%

10. In India, solar PV efficiency is rated by: (B) ✓
A) ISRO
B) BEE
C) NPC
D) MNRE

11. Which system requires less daily energy for the same work? (B) ✓
A) AC solar system
B) DC solar system
C) Both equal
D) Cannot say

12. Which organization provides solar subsidies in India? (B) ✓
A) RBI
B) MNRE
C) SEBI
D) AICTE

13. One unit of electricity equals to 4! ✗
14. Solar panel generates DC. power. ✓
15. Battery capacity is expressed in Ampere-hour (Ah) ✓
16. Inverter converts DC ✓ power into AC. ✓ power.
17. Higher star rating appliances consume less. energy. ✓
18. One unit of electricity consumption produces approximately ~~0.6~~ 1 kg of CO_2. ✓
19. Charge controller supplies DC power to appliances. ✓
20. Solar panel efficiency is defined as conversion of sunlight into Electricity. ✓

COURSE COORDINATOR (18)

ANNAMACHARYA UNIVERSITY

EXCELLENCE IN EDUCATION; SERVICE TO SOCIETY

(ESTD UNDER AP PRIVATE UNIVERSITIES (ESTABLISHMENT AND REGULATION) ACT, 2016)

RAJAMPET, Annamayya District, A.P – 516126, INDIA.

VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: M. Amaresh **ROLL NUMBER:** 24AFEEE003 **DATE:11/04/2026**

1)Energy can neither be created nor destroyed. This is: (C) ✓

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (C) ✓

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (A) ✓

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

7. Depth of Discharge (DOD) indicates: (D) ✗
A) Voltage level
B) Charging rate
C) Usable battery energy
D) Battery cost

8. The heart of a solar system is: (C) ✓
A) Solar panel
B) Battery
C) Electronic Management System
D) Load

9. Charge controller efficiency typically lies between: (C) ✓
A) 50–60%
B) 70–75%
C) 85–95%
D) 96–100%

10. In India, appliance efficiency is rated by: (B) ✓
A) ISO
B) BEE
C) NABL
D) MNRE

11. Which system requires less daily energy for the same work? (B) ✓
A) AC solar system
B) DC solar system
C) Both equal
D) Depends on sun

12. Which organization provides solar subsidies in India? (D) ✗
A) ISRO
B) NASA
C) SEBI
D) MNRE

13. 1 unit of electricity equals to 1 KWh ✓
14. Solar panel generates DC power. ✓
15. Battery capacity is expressed in Ampere-hour (Ah) ✓
16. Inverter converts DC, [redacted] power into AC power. ✓
17. 5 star rating appliances consume less energy ✓
18. 1 unit of electricity consumption produces approximately 1 kg of CO_2. ✓
19. Charge controller supplies DC power to appliances. ✓
20. Solar panel efficiency is defined as conversion of sunlight into Electricity ✓

COURSE COORDINATOR

18

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: S. Anjum ROLL NUMBER: 24AFEEE004 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) KWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (C)

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates: (c) ✓

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (c) ✓

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (c) ✓

A) 50–60%

B) 60–70%

C) 85–95%

D) 96–100%

10.In India, appliance efficiency is rated by: (B) ✓

A) ISRO

B) BEE

C) NPC

D) MNRE

11.Which system requires less daily energy for the same work? (B) ✓

A) AC solar system

B) DC solar system

C) Both equal

D) None of these

12.Which organization provides solar subsidies in India? (B) ✓

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to 1kW ✓.

14.Solar panel generates Dc ✓ power.

15.Battery capacity is expressed in Ampere-hour (Ah) ✓

16.Inverter converts Ac power into DC power. ✗

17.Higher star rating appliances consume Ac energy. ✗

18.1 unit of electricity consumption produces approximately 1 kg of CO_2. ✓

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity. ✓

COURSE COORDINATOR

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: K. Banu ROLL NUMBER: 24AFEEE006 DATE: 11/04/2026

1. Energy can neither be created nor destroyed. This is: (C)
   A) Ohm's Law
   B) Kirchhoff's Law
   C) Law of Conservation of Energy
   D) Faraday's Law
2. Electricity bill includes all EXCEPT: (C)
   A) Fixed charges
   B) Fuel adjustment charges
   C) Temperature charges
   D) Wheeling charges
3. Solar panel rating is generally expressed in: (B)
   A) kWh
   B) Wp
   C) Ohm
   D) Hz
4. Efficiency of silicon solar panels is approximately: (a) 2
   A) 5–10%
   B) 10–12%
   C) 15–18%
   D) 30–40%
5. Which type of solar panel technology is commonly used? . (C) 2
   A) Silicon-based
   B) Iron-based
   C) Copper-based
   D) Plastic-based
6. Which battery type has higher life cycles? (B)
   A) Lead-acid
   B) Lithium-ion
   C) Dry cell
   D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates: (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)

A) 50–60%

B) 70–80%

C) 85–95%

D) 95–100%

10. In India, appliance efficiency is rated by: (b)

A) BIS

B) BEE

C) NPC

D) MNRE

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B)

A) CBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to 1 kwh.

14.Solar panel generates DC power.

15.Battery capacity is expressed in ampere-hour(Ah)

16.Inverter converts DC power into AC power.

17.Higher star rating appliances consume less energy.

18.1 unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity.

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VALUE ADDED COURSE 2025-26

COURSE NAME: **Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems**

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: M. Dinesh ROLL NUMBER: 24AFEEE011 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C) ✓

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (B) X

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A) ✓

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

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7.Depth of Discharge (Dol) indicates: (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)

A) [illegible]-60%

B) [illegible]

C) 85-95%

D) 95-100%

10.In India, appliance efficiency is rated by: (B)

A) [illegible]

B) BEE

C) [illegible]

D) [illegible]

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) [illegible] system

C) [illegible] equal

D) Cannot say

12.Which organization provides solar subsidies in India? (C) X

A) NBI

B) MNRE

C) SEBI

D) MCTE

13.1 unit of electricity equals to 1kwh

14.Solar panel generates DC power.

15.Battery capacity is expressed in Amphere/hour

16.Inverter converts DC power into AC power.

17.Higher star rating appliances consume less energy.

18.1 unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into Electricity.

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: M. Divya ROLL NUMBER: 21AFEE6013 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (B)

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (C)

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)

A) 50–80%

B) 100–[illegible]

C) 85–95%

D) 95–100%

10. In India, appliance efficiency is rated by: (B)

A) ISEO

B) BEE

C) NPC

D) [illegible]

11.Which system requires less daily energy for the same work? (B)

A) Mono solar system

B) Dual solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (A)

A) SEI

B) MNRE

C) SEBI

D) AICTE

13.Unit of electricity equals to 1kWh

14.Solar panel generates DC power.

15.Battery capacity is expressed in Ampere-hour (Ah)

16.Inverter converts Ampere DC power into ~~hour~~ AC power.

17.Higher star rating appliances consume less energy.

18.Unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity.

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(17)

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: M. Ganesh **ROLL NUMBER:** 24AFEE5014 **DATE:** 11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (A)

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (C)

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

7. Depth of Discharge (DoD) indicates: (C)✓

A) Charge level

B) Charging rate

C) Usable battery energy

D) Battery cost

8. The heart of a solar system is: (C)✓

A) Solar panel

B) Battery

C) Electronic Management System

D) Fan

9. Charge controller efficiency typically lies between: (C)✓

A) 50–60%

B) 60–75%

C) 95–98%

D) 80–90%

10. In India, appliance efficiency is rated by: (A)

A) BEE

B) MNRE

C) NTPC

D) CERC

11. Which system requires less daily energy for the same work? (B)✓

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12. Which organization provides solar subsidies in India? (D)

A) RBI

B) MNRE

C) SEBI

D) AICTE

13. Unit of electricity equals to Amperes ✗

14. Solar panel generates DC power. ✓

15. Battery capacity is expressed in Amperhours ✓

16. Inverter converts DC power into AC power ✓

17. Higher star rating appliances consume Less ✓ energy.

18. 1 unit of electricity consumption produces approximately 1 ✓ kg of CO_2.

19. Charge controller supplies DC ✓ power to appliances.

20. Solar panel efficiency is defined as conversion of sunlight into Electrical ✓.

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VALUE ADDED COURSE 2025-26

COURSE NAME: **Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems**

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: K. Goutham Sai ROLL NUMBER: 24AFEEE017 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C) ✓

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (A) ✗

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (A) ✓

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

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7. Depth of Discharge (Dolly) indicates: (C) ✓
A) Voltage level
B) Charging rate
C) Usable battery energy
D) Battery cost

8. The heart of a solar system is: (C) ✓
A) Solar panel
B) Battery
C) Electronic Management System
D) Load

9. Charge controller efficiency typically lies between: (C) ✓
A) 50–60%
B) 60–70%
C) 85–95%
D) 95–100%

10. In India, suppliance efficiency is rated by: (A) ✓
A) SRO
B) BEE
C) NTPC
D) CRISIL

11. Which system requires less daily energy for the same work? (B) ✓
A) AC solar system
B) DC solar system
C) Both equal
D) Cannot say

12. Which organization provides solar subsidies in India? (D) ✓
A) REI
B) MNRE
C) SEBI
D) MCTE

13. 1 unit of electricity equals to Amphers ✓
14. Solar panel generates DC power. ✓
15. Battery capacity is expressed in Amphar hour. ✓
16. Inverter converts DC power into AC power. ✓
17. Higher star rating appliances consume Less energy. ✓
18. 1 unit of electricity consumption produces approximately 1 kg of CO_2. ✓
19. Charge controller supplies DC power to appliances. ✓
20. Solar panel efficiency is defined as conversion of sunlight into electricity. ✓

COURSE COORDINATOR

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT M. Grace Nissy ROLL NUMBER: 24AFEEE018 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (B)

A) Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all **EXCEPT**: (B)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (C)

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates: (DC)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (A)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (DC)

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B)

A) ISRO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B)

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to AC.

14.Solar panel generates Dc power.

15.Battery capacity is expressed in Ampere-hour.

16.Inverter converts DC, AC power into DC, AC power.

17.Higher star rating appliances consume less energy.

18.1 unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity.

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: D. Gurubabu ROLL NUMBER: 24AFEEEE019 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C) ✓

A) Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (D) ✗

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A) ✓

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates: (c) ✓

A) Voltage level

b) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (c) ✓

A) solar panel

B) battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (c) ✓

A) 50–60%

B) 70–80%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B) ✓

A) ISO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B) ✓

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (c) ✗

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to 1kWh ✓

14.Solar panel generates DC power. ✓

15.Battery capacity is expressed in Ampere per hour (Ah) ✓

16.Inverter converts DC power into AC power. ✓

17.Higher star rating appliances consume less energy ✓

18.1 unit of electricity consumption produces approximately 1 kg of CO_2. ✓

19.Charge controller supplies DC power to appliances. ✓

20.Solar panel efficiency is defined as conversion of sunlight into Electricity. ✗

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Copy (17).

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: C. Jeevana Jyothi ROLL NUMBER: 24AFEEE024 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (C)

A) 5–10%

B) 10–12%

C) 15–16%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

24AFEEE024
C. Jeevanajyothi

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7. Depth of Discharge (DoD) indicates (C)
A) Voltage level
B) Charging rate
C) Usable battery energy
D) Battery cost

8. The heart of a solar system is: (C)
A) Solar panel
B) [illegible]
C) Electronic Management System
D) [illegible]

9. Charge controller efficiency typically lies between: (C)
A) 50–60%
B) [illegible]
C) 85–95%
D) 95–100%

10. In India, appliance efficiency is rated by: (B)
A) ISRO
B) [illegible]
C) [illegible]
D) [illegible]

11. Which system requires less daily energy for the same work? (B)
A) [illegible] solar system
B) [illegible] solar system
C) [illegible] equal
D) [illegible] not sure

12. Which organization provides solar subsidies in India? (B)
A) [illegible]
B) [illegible]
C) SEBI
D) [illegible]

13. Unit of electricity equals to 1 kwh
14. Solar panel generates DC power.
15. Battery capacity is expressed in Ah
16. Inverter converts DC, ~~AC~~ power into AC power.
17. Higher star rating appliances consume AC energy.
18. Unit of electricity consumption produces approximately 1 kg of CO_2.
19. Charge controller supplies DC power to appliances.
20. Solar panel efficiency is defined as conversion of sunlight into electrical energy

COURSE COORDINATOR

20

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RAJAMPET, Annamayya District, A.P – 516126, INDIA.

VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: K. Lakshmikrishnaveni ROLL NUMBER: 24AFEEE028 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C) ✓

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (A) ✗

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (B) ✗

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (A) X

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C) ✓

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C) ✓

A) 50–60%

B) 60–70%

C) 95–98%

D) 95–100%

10.In India, appliance efficiency is rated by: (B) ✓

A) SEBI

B) BEE

C) NPIC

D) NEDO

11.Which system requires less daily energy for the same work? (B) ✓

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B) ✓

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to 1kwh ✓

14.Solar panel generates DC power. ✓

15.Battery capacity is expressed in Ampere-hour (Ah) ✓

16.Inverter converts DC, AC power into AC power. ✓

17.Higher star rating appliances consume less energy. ✓

18.1 unit of electricity consumption produces approximately 1 kg of CO_2. ✓

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into Electricity ✓.

COURSE COORDINATOR CPP (17)

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: A Likitha Reddy ROLL NUMBER: 24AFEEE031 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (C)

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)

A) 50-60%

B) 60-70%

C) 85–95%

D) 95-100%

10.In India, appliance efficiency is rated by: (B)

A) ISRO

B) BEL

C) NPC

D) DRDO

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B)

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to 1 kwh.

14.Solar panel generates DC power.

15.Battery capacity is expressed in Ampere-hour

16.Inverter converts DC power into AC power.

17.Higher star rating appliances consume less energy.

18.1 unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity.

COURSE COORDINATOR

20

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VALUE ADDED COURSE 2025-26

COURSE NAME: **Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems**

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: N. Manitha ROLL NUMBER: 24AFEE0B34 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faradaу's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (C)

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates: (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B)

A) ISRO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B)

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to 1kwh.

14.Solar panel generates DC power.

15.Battery capacity is expressed in Ampere-hour

16.Inverter converts DC power into AC power.

17.Higher star rating appliances consume less energy.

18.1 unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity.

COURSE COORDINATOR (20)

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VALUE ADDED COURSE 2025-26

COURSE NAME: **Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems**

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: K. Mohan Krishna ROLL NUMBER: 24AFEEE037 DATE: 11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A) Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (B)

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (B)

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)

A) 50–60%

B) 80–90%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B)

A) ISRO

B) BEE

C) NSPC

D) DRDO

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (C)

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.Unit of electricity equals to 1kwh

14.Solar panel generates DC power.

15.Battery capacity is expressed in Amperes/hour.

16.Inverter converts DC power into AC power.

17.Higher star rating appliances consume less energy.

18.Unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into Electricity

COURSE COORDINATOR

19

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: M. Nandhu ROLL NUMBER: 24AFEEE040 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (D) ✗

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (A) ✓

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (C) ✗

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (A) X

A) Voltage level

B) Charging rate

C) Total Battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)

A) 80-60%

B) 0-[illegible]%

C) 95-99%

D) 95-100%

10.In India, appliance efficiency is rated by: (B)

A) [illegible]

B) [illegible]

C) [illegible]

D) [illegible]

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (D) X

A) [illegible]

B) [illegible]

C) SEBI

D) ANTE

13.1 unit of electricity equals to zero X

14.Solar panel generates DC, AC power.

15.Battery capacity is expressed in Ampere-hour

16.Inverter converts less DC, AC power into _____ power.

17.Higher star rating appliances consume less energy.

18.1 unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into Electricity.

COURSE COORDINATOR

14

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: S.Naveen Kumar Yadav ROLL NUMBER: 24AFEE6042 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C) ✓

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (A) ✗

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A) ✓

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates (C) ✓
A) Voltage level
B) Charging rate
C) Usable battery energy
D) Battery cost

8.The heart of a solar system is: (C) ✓
A) Solar panel
B) Battery
C) Electronic Management System
D) Cord

9.Charge controller efficiency typically lies between: (C) ✓
A) 50–60%
B) 60–70%
C) 85–95%
D) 95–100%

10.In India, appliance efficiency is rated by: (C) ×
A) ISI©
B) BEE
C) NTPC
D) SPCB

11.Which system requires less daily energy for the same work? (B) ✓
A) AC solar system
B) DC solar system
C) Both equal
D) Cannot say

12.Which organization provides solar subsidies in India? (B) ✓
A) PPI
B) MNRE
C) SEBI
D) AICTE

13.1 unit of electricity equals to 1 Kwh ✓

14.Solar panel generates DC power. ✓

15.Battery capacity is expressed in Ampere-hour ✓

16.Inverter converts DC power into AC power. ✓

17.Higher star rating appliances consume less energy ✓

18.1 unit of electricity consumption produces approximately 1 kg of CO_2. ✓

19.Charge controller supplies DC power to appliances. ✓

20.Solar panel efficiency is defined as conversion of sunlight into Electricity. ✓

COURSE COORDINATOR (18)

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: M. Navyasri ROLL NUMBER: 24A11E043 DATE:11/04/2026

1.Energy can neither be created nor destroyed. This is: (C) ✓

A) Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges

B) Fuel adjusment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) Wh

B) W

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (C) ✓

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A) ✓

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B)

A) ISRO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B)

A) RPI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to 1Kwh.

14.Solar panel generates DC power.

15.Battery capacity is expressed in Amphere-hour

16.Inverter converts DC power into AC power.

17.Higher star rating appliances consume Less energy.

18.1 unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into Electricity.

COURSE COORDINATOR (20)

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: K.Deepika ROLL NUMBER: 25ALEEE003 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (B)

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B)

A) ISRO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B)

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to 1kwh.

14.Solar panel generates DC power.

15.Battery capacity is expressed in Amphere-hour (Aph (Ah)

16.Inverter converts DC power into ~~Amphere-hour~~ AC power.

17.Higher star rating appliances consume less energy.

18.1 unit of electricity consumption produces approximately .1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity.

COURSE COORDINATOR

(18)

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: J. Eswar ROLL NUMBER: 25ALEEE004 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (C)

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (C)

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

7. Depth of Discharge (DoD) indicates: (C)
A) Voltage level
B) Charging rate
C) Usable battery energy
D) Battery cost

8. The heart of a solar system is: (C)
A) Solar panel
B) Battery
C) Electronic Management System
D) Load

9. Charge controller efficiency typically lies between: (C)
A) 50–60%
B) 60–70%
C) 85–95%
D) 95–100%

10. In India, appliance efficiency is rated by: (A) ✗
A) ISRO
B) BEE
C) NTPC
D) DRDO

11. Which system requires less daily energy for the same work? (B)
A) AC solar system
B) DC solar system
C) Both equal
D) Cannot say

12. Which organization provides solar subsidies in India? (B)
A) RBI
B) MNRE
C) SEBI
D) NCTE

13. 1 unit of electricity equals to _____ ✗

14. Solar panel generates ___DC___ power.

15. Battery capacity is expressed in Ampere hour (Ah)

16. Inverter converts DC ~~AC~~ power into AC power.

17. Higher star rating appliances consume less energy.

18. 1 unit of electricity consumption produces approximately 1 kg of CO_2.

19. Charge controller supplies DC power to appliances.

20. Solar panel efficiency is defined as conversion of sunlight into electricity.

COURSE COORDINATOR (17)

ANNAMACHARYA UNIVERSITY

EXCELLENCE IN EDUCATION; SERVICE TO SOCIETY

(ESTD UNDER AP PRIVATE UNIVERSITIES (ESTABLISHMENT AND REGULATION) ACT, 2016)

RAJAMPET, Annamayya District, A.P – 516126, INDIA.

VALUE ADDED COURSE 2025-26

COURSE NAME: **Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems**

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: N. Goutham ROLL NUMBER: 25A1EEE006 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all **EXCEPT**: (C)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (C)

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates: (A) ×

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C) ✓

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C) ✓

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B) ✓

A) ISRO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B) ✓

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B) ✓

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to 1 kWh. ✓

14.Solar panel generates DC power. ✓

15.Battery capacity is expressed in Ampere-hour (Ah). ✓

16.Inverter converts DC power into AC power. ✓

17.Higher star rating appliances consume less energy. ✓

18.1 unit of electricity consumption produces approximately ~~0~~ 1 kg of CO_2. ✓

19.Charge controller supplies DC power to appliances. ✓

20.Solar panel efficiency is defined as conversion of sunlight into electricity. ✓

COURSE COORDINATOR (19)

ANNAMACHARYA UNIVERSITY

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(ESTD UNDER AP PRIVATE UNIVERSITIES (ESTABLISHMENT AND REGULATION) ACT, 2016)

RAJAMPET, Annamayya District, A.P – 516126, INDIA.

VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: B Guru Harsha Reddy ROLL NUMBER: 23AL EEE 007 DATE:11/04/2026

1.Energy can neither be created nor destroyed. This is: (C)

A) Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh

B) Wp

C) Ohm

D) %

4.Efficiency of silicon solar panels is approximately: (C)

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates: (C) ✓

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C) ✓

A) solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C) ✓

A) 50–60%

B) 70–80%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B) ✓

A) ISRO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B) ✓

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (C) ✓

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to 1Kwh.

14.Solar panel generates Dc power. ✓

15.Battery capacity is expressed in Ampere/hour ✓

16.Inverter converts Dc power into Ac power. ✓

17.Higher star rating appliances consume less energy. ✓

18.1 unit of electricity consumption produces approximately 1 kg of CO_2. ✓

19.Charge controller supplies Dc power to appliances. ✓

20.Solar panel efficiency is defined as conversion of sunlight into Electricity. ✓

COURSE COORDINATOR (18)

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RAJAMPET, Annamayya District, A.P – 516126, INDIA.

VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: G. Guruvardendra ROLL NUMBER: 25ALEEE008 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (A) ✓

A)Ohm's Law

B) Kirchnoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (B) ✓

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (C) ✓

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (B)✗

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)✓

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)✓

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (C)✗

A) ISRO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B)✓

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B)✓

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to Amps ✗

14.Solar panel generates DC power. ✓

15.Battery capacity is expressed in Ampere hour ✓

16.Inverter converts DC power into AC power. ✓

17.Higher star rating appliances consume less energy. ✓

18.1 unit of electricity consumption produces approximately 1 kg of CO_2. ✓

19.Charge controller supplies DC power to appliances. ✓

20.Solar panel efficiency is defined as conversion of sunlight into Electricity ✓.

COURSE COORDINATOR (14)

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: B.Guruprasanna ROLL NUMBER: 25A1EEE009 **DATE:11/04/2026**

1)Energy can neither be created nor destroyed. This is: (C) ✓

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (C) ✓

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A) ✓

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates: (C) ✓

A) Voltage level
B) Charging rate
C) Usable battery energy
D) Battery cost

8.The heart of a solar system is: (C) ✓

A) Solar panel
B) Battery
C) Electronic Management System
D) Load

9.Charge controller efficiency typically lies between: (C) ✓

A) 50–60%
B) 60–70%
C) 85–95%
D) 95–100%

10.In India, appliance efficiency is rated by: (B) ✓

A) ISRO
B) BEE
C) NTPC
D) DRDO

11.Which system requires less daily energy for the same work? (B) ✓

A) AC solar system
B) DC solar system
C) Both equal
D) Cannot say

12.Which organization provides solar subsidies in India? (B) ✓

A) RBI
B) MNRE
C) SEBI
D) AICTE

13.1 unit of electricity equals to kWh ✗ ✓

14.Solar panel generates DC power. ✓

15.Battery capacity is expressed in Ampere-hour ✓

16.Inverter converts DC power into AC power. ✓

17.Higher star rating appliances consume less energy ✓

18.1 unit of electricity consumption produces approximately 1 kg of CO_2. ✓

19.Charge controller supplies DC power to appliances. ✓

20.Solar panel efficiency is defined as conversion of sunlight into [redacted] electricity ✓

COURSE COORDINATOR

20

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: D. Poojitha. ROLL NUMBER: 24AFEEE047 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A) Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (D) X

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (B)

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (A) X

A) DRD

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Grid not say

12.Which organization provides solar subsidies in India? (A) X

A) RBI

B) MNRE

C) SEBI

D) MCTE

13.1 unit of electricity equals to 1KWh

14.Solar panel generates DC power.

15.Battery capacity is expressed in Ampere-hour(Ah)

16.Inverter converts DC, AC power into _____ power.

17.Higher star rating appliances consume less energy.

18.1 unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity.

COURSE COORDINATOR

(17)

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: S. Rahil ROLL NUMBER: 24AFEEE051 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (B)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (B)

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates: (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B)

A) ISRO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B)

A) DST

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to 1 kw/h

14.Solar panel generates DC power.

15.Battery capacity is expressed in Amphere

16.Inverter converts DC power into AC power.

17.Higher star rating appliances consume less energy.

18.1 unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity.

COURSE COORDINATOR

18

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RAJAMPET, Annamayya District, A.P – 516126, INDIA.

VALUE ADDED COURSE 2025-26

COURSE NAME: **Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems**

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: Narayana Rakesh ROLL NUMBER: 24AFEGE053 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (B.K

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (A)K

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates: (C) ✓

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C) ✓

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C) ✓

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B) ✓

A) ISRO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B) ✓

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B) ✓

A) RBI

B) MNRE

C) SEBI

D) MCTR

13.1 unit of electricity equals to 1 kWh ✓

14.Solar panel generates DC, ~~AC~~ power. ✓

15.Battery capacity is expressed in Ah ✓

16.Inverter converts DC power into AC power. ✓

17.Higher star rating appliances consume less energy. ✓

18.1 unit of electricity consumption produces approximately 1 kg of CO_2. ✓

19.Charge controller supplies DC power to appliances. ✓

20.Solar panel efficiency is defined as conversion of sunlight into electricity. ✓

COURSE COORDINATOR (18)

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RAJAMPET, Annamayya District, A.P – 516126, INDIA.

VALUE ADDED COURSE 2025-26

COURSE NAME: **Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems**

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: B. Sai Chandan reddy ROLL NUMBER: 24AFEEE058 DATE:11/04/2026

1.Energy can neither be created nor destroyed. This is: (C) ✓

A) Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (D) ✗

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (A) ✓

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates:
A) Voltage level (C)
B) Charging rate
C) Usable battery energy
D) Battery cost

8.The heart of a solar system is:
A) solar panel (C)
B) Battery
C) Electronic Management System
D) Load

9.Charge controller efficiency typically lies between: (C)
A) 50–60%
B) 60–70%
C) 85–95%
D) 95–100%

10.In India, appliance efficiency is rated by: (B)
A) ISRO
B) BEE
C) NTPC
D) DRDO

11.Which system requires less daily energy for the same work? (B)
A) AC solar system
B) DC solar system
C) Both equal
D) Cannot say

12.Which organization provides solar subsidies in India? (B)
A) SBI
B) MNRE
C) SEBI
D) AICTE

13.1 unit of electricity equals to 4u . X
14.Solar panel generates DC power.
15.Battery capacity is expressed in Amphere hour
16.Inverter converts DC power into AC power.
17.Higher star rating appliances consume less energy.
18.1 unit of electricity consumption produces approximately 1 kg of CO_2.
19.Charge controller supplies DC power to appliances.
20.Solar panel effeiency is defined as conversion of sunlight into electricity.

COURSE COORDINATOR

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VALUE ADDED COURSE 2025-26

COURSE NAME: **Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems**

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: Sai Karthik ROLL NUMBER: 24AFEEE060 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C) ✓

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (b) ✓

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (b) ✗

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (d) ✗

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (b) ✓

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (a) X

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (c)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (c)

A) 50-60%

B) 60-70%

C) 85-95%

D) 95-100%

10.In India, appliance efficiency is rated by (B)

A) ISRO

B) BEE

C) NASA

D) DRDO

11.Which system requires less daily energy for the same work? (b)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (A) X

A) RBI

B) MNRE

C) SEBI

D) NICTE

13.Unit of electricity equals to Power X

14.Solar panel generates DC power.

15.Battery capacity is expressed in Amphere/hr

16.Inverter converts DC power into AC power.

17.Higher star rating appliances consume less energy.

18.Unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity

COURSE COORDINATOR

15

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: A. Shameer Khan **ROLL NUMBER:** 24AFEEE064 **DATE:** 11/04/2026

1)Energy can neither be created nor destroyed. This is: ✓(C)

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: ✓(C)

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: ✓(B)

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: ✓(A)

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? ✓(C)

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? ✓(B)

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (A)
A) Voltage level
B) Charging rate
C) Usable battery energy
D) Battery cost

8.The heart of a solar system is: (C)
A) Solar panel
B) Battery
C) Electronic Management System
D) Load

9.Charge controller efficiency typically lies between: (C)
A) 50–60%
B) 60–70%
C) 85–95%
D) 95–100%

10.In India, appliance efficiency is rated by: (B)
A) ISRO
B) BEE
C) NPC
D) DRDO

11.Which system requires less daily energy for the same work? (B)
A) AC solar system
B) DC solar system
C) Both equal
D) Cannot say

12.Which organization provides solar subsidies in India? (B)
A) RBI
B) MNRE
C) SEBI
D) AICTE

13.1 unit of electricity equals to 1 kWh
14.Solar panel generates DC power.
15.Battery capacity is expressed in Ampere-hour (Ah)
16.Inverter converts DC power into AC power.
17.Higher star rating appliances consume less energy.
18.1 unit of electricity consumption produces approximately 1 kg of CO_2.
19.Charge controller supplies DC power to appliances.
20.Solar panel efficiency is defined as conversion of sunlight into electricity.

COURSE COORDINATOR

17

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RAJAMPET, Annamayya District, A.P – 516126, INDIA.

VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: G. Sravan kumar goud ROLL NUMBER: 24AFEEE070 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (A) ✗

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (C) ✗

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates (A)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C)

A) 50-60%

B) 60-70%

C) 85-95%

D) 95-100%

10.In India, appliance efficiency is rated by: (B)

A) ISRO

B) BEE

C) NIPC

D) SIDO

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B)

A) BEE

B) ISRO

C) NIBE

D) MNRE

13.Unit of electricity equals to 1Kwh

14.Solar panel generates DC power.

15.Battery capacity is expressed in Ampere-hour (Ah)

16.Inverter converts DC power into AC power.

17.Higher star rating appliances consume less energy.

18.1 unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity.

COURSE COORDINATOR

17

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: M. Sri Lakshmi Gowri ROLL NUMBER: 24AFEEE072 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C) ✓

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (B) ✗

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (B) ✗

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (A) ✗

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C) ✓

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C) ✓

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (A) ✗

A) ISRO

B) B.T.

C) NTPC

D) BIS

11.Which system requires less daily energy for the same work? (C) ✗

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (D)

A) RBI

B) MNRE

C) SEBI

D) MCTL

13.1 unit of electricity equals to 1kWh ✓

14.Solar panel generates DC power. ✓

15.Battery capacity is expressed in Ampere hour ✓

16.Inverter converts DC power into AC power. ✓

17.Higher star rating appliances consume less energy. ✓

18.1 unit of electricity consumption produces approximately 1 kg of CO_2. ✓

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity. ✓

COURSE COORDINATOR

15

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: S. Supriya ROLL NUMBER: 24AFEEE077 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A) Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (B)

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? (C)

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficieacy typically lies between: (C)

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B)

A) ISRO

B) B.E.E.

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B)

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.Unit of electricity equals to 1kwh

14.Solar panel generates DC power.

15.Battery capacity is expressed in Ampere-hours

16.Inverter converts DC power into AC power.

17.A 5-star rating appliances consume less energy.

18.Unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity.

COURSE COORDINATOR

18

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: P. Surendra ROLL NUMBER: 24AEEE078 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C) ✓

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✗

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (A) ✓

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (B) ✗

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (A)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (B)

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by (A)

A) ISTO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (C)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B)

A) BIS

B) MNRE

C) MEI

D) AICTE

13.1 unit of electricity equals to 1kW

14.Solar panel generates DC power.

15.Battery capacity is expressed in Ampere-hour(Ah)

16.Inverter converts DC power into AC power.

17.Higher star rating appliances consume less energy.

18.1 unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies DC power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity.

COURSE COORDINATOR (15)

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

T. Thriloik 24AFEEE080

NAME OF THE STUDENT: ROLL NUMBER: DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (A) ✗

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (A) ✗

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (B) ✗

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (D) ✗

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C) ✓

A) Solar panel

B) Battery

C) Electronic Management System

D) Bond

9.Charge controller efficiency typically lies between: (C) ✓

A) 50–60%

B) 65–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B) ✓

A) SEQ

B) BEE

C) NPC

D) BEDC

11.Which system requires less daily energy for the same work? (B) ✓

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (C) ✗

A) BEE

B) MNRE

C) SEBI

D) MEDC

13.Unit of electricity equals to 1kwh ✓

14.Solar panel generates DC power. ✓

15.Battery capacity is expressed in Ampere hour ✓

16.Inverter converts DC power into AC power. ✓

17.Higher star rating appliances consume less energy. ✓

18.Unit of electricity consumption produces approximately one kg of CO_2. ✓

19.Charge controller supplies DC power to appliances. ✓

20.Solar panel efficiency is defined as conversion of sunlight into electricity. ✓

COURSE COORDINATOR CPf (15).

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VALUE ADDED COURSE 2025-26

COURSE NAME: **Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems**

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: G. Udaykumar ROLL NUMBER: 24AFEEE081 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (A) X

A)Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C) ✓

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B) ✓

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (C) ✓

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (B) X

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B) ✓

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

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7. Depth of Discharge (DoD) indicates: (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8. The heart of a solar system is: (C)

A) Solar panel

B) Battery

C) Electronic Management System

D) [illegible]

9. Charge controller efficiency typically lies between: (C)

A) 50-60%

B) [illegible]%

C) 85-95%

D) 95-100%

10. In India, appliance efficiency is rated by: (B)

A) [illegible]

B) [illegible]

C) [illegible]

D) [illegible]

11. Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12. Which organization provides solar subsidies in India? (A) X

A) [illegible]

B) [illegible]

C) SEBI

D) [illegible]

13. 1 unit of electricity equals to 1 kWh

14. Solar panel generates DC power.

15. Battery capacity is expressed in Amphere hour

16. Inverter converts DC power into AC power.

17. Higher star rating appliances consume less energy.

18. 1 unit of electricity consumption produces approximately 1 kg of CO_2.

19. Charge controller supplies DC power to appliances.

20. Solar panel efficiency is defined as conversion of sunlight into electricity

COURSE COORDINATOR

CPL

17

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: K. Vishnu Vanshika ROLL NUMBER: 24AFEEE087 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A) Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (A) X

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (B) X

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

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7.Depth of Discharge (DoD) indicates: (A) ✗

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C) ✓

A) solar panel

B) Battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (C) ✓

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B) ✓

A) ISRO

B) BEE

C) NTPC

D) MNRE

11.Which system requires less daily energy for the same work? (B) ✓

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B) ✓

A) RBI

B) MNRE

C) SEBI

D) NABARD

13.1 unit of electricity equals to 1KWh ✓

14.Solar panel generates DC ✓ power.

15.Battery capacity is expressed in Ampere-hours ✓

16.Inverter converts DC power into AC power. ✓

17.Higher star rating appliances consume less ✓ energy.

18.1 unit of electricity consumption produces approximately 1 ✓ kg of CO_2.

19.Charge controller supplies DC ✓ power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electricity ✓.

COURSE COORDINATOR

K. yaswanth
24AFEE1

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: K. yaswanth ROLL NUMBER: 24AFEEE091 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: ✓(C)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: ✓(B)

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: X (A)

A) 5–10%

B) 10–12%

C) 15–18%

D) 30–40%

5.Which type of solar panel technology is commonly used? X (C)

A) Silicon-based

B) Iron-based

C) Copper-based

D) Plastic-based

6.Which battery type has higher life cycles? ✓(B)

A) Lead-acid

B) Lithium-ion

C) Dry cell

D) Nickel-cadmium

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7. Depth of Discharge (DoD) indicates: (A) X
A) Voltage level
B) Charging rate
C) Usable battery energy
D) Battery cost

8. The heart of a solar system is: (C) ✓
A) Solar panel
B) Battery
C) Electronic Management System
D) Load

9. Charge controller efficiency typically lies between: (C) ✓
A) 50–60%
B) 60–70%
C) 85–95%
D) 95–100%

10. In India, appliance efficiency is rated by: (B) X
A) ISRO
B) BEE
C) NHPC
D) ORDO

11. Which system requires less daily energy for the same work? (B) ✓
A) AC solar system
B) DC solar system
C) Both equal
D) Cannot say

12. Which organization provides solar subsidies in India? (B) ✓
A) RHI
B) MNRE
C) SEBI
D) MCTDY

13. Unit of electricity equals to 1KW ✓
14. Solar panel generates DC power. ✓
15. Battery capacity is expressed in Ampere-hour (Ah) ✓
16. Inverter converts DC power into AC power. ✓
17. Higher star rating appliances consume less energy. ✓
18. Unit of electricity consumption produces approximately 1 kg of CO_2. ✓
19. Charge controller supplies DC power to appliances. ✓
20. Solar panel efficiency is defined as conversion of sunlight into electricity. ✓

COURSE COORDINATOR

CP 16

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VALUE ADDED COURSE 2025-26

COURSE NAME: **Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems**

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: D Naveen kumar ROLL NUMBER: 25ALEEE015 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A) Ohm's Law
B) Kirchhoff's Law
C) Law of Conservation of Energy
D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges
B) Fuel adjustment charges
C) Temperature charges
D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh
B) Wp
C) Ohm
D) Hz

4.Efficiency of silicon solar panels is approximately: (C)

A) 5–10%
B) 10–12%
C) 15–18%
D) 30–40%

5.Which type of solar panel technology is commonly used? (A)

A) Silicon-based
B) Iron-based
C) Copper-based
D) Plastic-based

6.Which battery type has higher life cycles? (B)

A) Lead-acid
B) Lithium-ion
C) Dry cell
D) Nickel-cadmium

7.Depth of Discharge (DoD) indicates (C)

A) Voltage level

B) Charging rate

C) Usable battery energy

D) Battery cost

8.The heart of a solar system is: (C)

A) solar panel

B) battery

C) Electronic Management System

D) Load

9.Charge controller efficiency typically lies between: (B)

A) 50–60%

B) 60–70%

C) 85–95%

D) 95–100%

10.In India, appliance efficiency is rated by: (B) X

A) ISRO

B) BEE

C) NTPC

D) DRDO

11.Which system requires less daily energy for the same work? (B)

A) AC solar system

B) DC solar system

C) Both equal

D) Cannot say

12.Which organization provides solar subsidies in India? (B)

A) RBI

B) MNRE

C) SEBI

D) AICTE

13.1 unit of electricity equals to 1Kwh.

14.Solar panel generates DC power.

15.Battery capacity is expressed in Amper/hour.

16.Inverter converts DC. power into Ac power.

17.Higher star rating appliances consume less energy.

18.1 unit of electricity consumption produces approximately 1 kg of CO_2.

19.Charge controller supplies Dc power to appliances.

20.Solar panel efficiency is defined as conversion of sunlight into electrical.

COURSE COORDINATOR

CPL (18).

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: S. Sunetha Saram ROLL NUMBER: 25ALEEE016 DATE:11/04/2026

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law

B) Kirchhoff's Law

C) Law of Conservation of Energy

D) Faraday's Law

2.Electricity bill includes all EXCEPT: (C)

A) Fixed charges

B) Fuel adjustment charges

C) Temperature charges

D) Wheeling charges

3.Solar panel rating is generally expressed in: (B)

A) kWh

B) Wp

C) Ohm

D) Hz

4.Efficiency of silicon solar panels is approximately: (B)

A) 5–10%

B) 10–12%

C) 15–16%

D) 30–40%

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D) 95–100%

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COURSE COORDINATOR

16

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VALUE ADDED COURSE 2025-26

COURSE NAME: Design, Installation, and Economic Evaluation of Residential Rooftop Solar PV Systems

COURSE CODE: 25VACEEE01

Course Assessment

NAME OF THE STUDENT: G. Sai Tharun **ROLL NUMBER:** 24AFEEE063 **DATE:11/04/2026**

1)Energy can neither be created nor destroyed. This is: (C)

A)Ohm's Law
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20.Solar panel efficiency is defined as conversion of sunlight into electricity.

COURSE COORDINATOR (19)