1.2 AcademicFlexibility(30)

1.2.1 Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)

AND

1.2.2 Percentage of students enrolled in Certificate/ Value added courses and also completed online courses of MOOCs, SWAYAM, NPTEL etc. as against the total number of students during the last five years

VAC Title:	**DESIGN OF LOW-COST SOLAR INVERTER FOR HOUSEHOLD USE**				
Resource Person:	Mr.K.Jagadeesh, Manager, MAS Data Technologies, Coimbatore-641004		Mr.D.Mathesh, CEO, MAS Data Technologies, Coimbatore-641004		
Dat e of conduct from:	**05.02.2024**	**To:**	**10.02.2024**	**Duration:**	**36 Hours**
Organized Department:	**DEPARTMENT OF MECHANICAL ENGINEERING**				
Participant Year:	**2/3/4**	**Semester:**	**EVEN**	**No. of Students Registered:**	**23**
Venue:	**Lecture hall of II & III year MECH,CIVIL,ECE,EEE**				

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SASURIE INSTITUTIONS

SASURIE
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DEPARTMENT OF MECHANICAL ENGINEERING

CIRCULAR

In order to bridge the curricular gap between the Academic Syllabus and Industry requirements, Department of Mechanical Engineering and IQAC of our Institution in association with MAS Data Technologies Ltd, is organizing a **Value Added Course(VAC)** for the students of II, III and IV year of MECH,CIVIL,EEE,ECE on the title **"Design of Low-Cost Solar Inverter for Household Use"** from 05.02.2024 to 10.02.2024. At the end of the VAC, course completion certificates will be issued to the eligible participants as per the following norms.

- Students, who are securing **more than 70% on total score in the VAC test** and secured more than 75% in VAC attendance is eligible to receive the course completion certificate for the VAC attended.

ResourcePerson Details	Mr.K.Jagadeesh, Manager, MAS Data Technologies, Coimbatore-641004	Mr.D.Mathesh, CEO, MAS Data Technologies, Coimbatore-641004.
Venue	**Lecture hall of II&III Year MECH,CIVIL,EEE,ECE**	

HoD/MECH

PRINCIPAL

Copy to:

1. Chairman & Secretary for information
2. Principal office
3. IQAC Co-Ordinator
4. Class Incharges-II, III &IV- Year MECH,CIVIL,EEE,ECE
5. II, III& IV- Year MECH,CIVIL,EEE,ECE Students
6. MECH,CIVIL,EEE,ECE Notice Board
7. Department File

Dr.M.VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL
SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).

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DEPARTMENT OF MECHANICAL ENGINEERING

Ref: SCE / MECH /Students / VAC / 2023 – 2024 / EVEN 05.02.2024

SYLLABUS – VALUE ADDED COURSE

"Design of Low-cost solar Inverter for Household Use"

From 05.02.2024 to 10.02.2024 (6days)

Duration: 36 Hours **Academic Year: 2023 -2024/EVEN**

S.No.	Topics Covered	Duration (In Hours)	Date
1	Introduction to Solar Energy and Inverter technology	4	05.02.2024
2	Design Principles for Low-Cost Solar Inverters	3	05.02.2024
3	Power Conversion and Control	3	06.02.2024
4	Design and Simulation of Inverter Circuits	3	06.02.2024
5	Design of the Power Stage	3	07.02.2024
6	Integration with Solar PV Systems	3	07.02.2024
7	Design Power Factor Correction (PFC)	3	08.02.2024
8	Protection Mechanisms	3	08.02.2024
9	Implementation of Low-Cost Inverters	3	09.02.2024
10	System Integration and Final Design	3	09.02.2024
11	Market and Environmental Considerations	3	10.02.2024
12	Future Trends and Innovations in Solar Inverter Technology	3	10.02.2024
	Total Hours	36	-

After successful completion of 36 Hours VAC, the assessment test for the VAC titled "Design of Low-cost solar Inverter for Household Use" will be conducted on 10.02.2024.

VAC Coordinator

Dr.M.VIJAYAKUMAR ME., Ph.D
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HoD/MECH

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DEPARTMENT OF MECHANICAL ENGINEERING

STUDENTS PARTICIPATION LIST- VALUE ADDED COURSE

"Design of Low-cost solar Inverter for Household Use"

From 05.02.2024 to 10.02.2024 (6days)

Duration: 36 Hours **Academic Year: 2023 -2024/EVEN**

S.NO	Register No	Name of the students	Branch/Year
1.	732422106001	Avinash S	II ECE
2.	732422106002	Boopathi S	II ECE
3.	732422106003	Gireesh Krishnan V	II ECE
4.	732422106004	Gunavarshini S	II ECE
5.	732422106005	Harish K	II ECE
6.	732422106006	Janagan M.P	II ECE
7.	732422106007	Kavipriya S	II ECE
8.	732422106008	Mayilsamy K	II ECE
9.	732422106009	Navin P	II ECE
10.	732422106010	Rakesh Kumar Mandal	II ECE
11.	732422106011	Rohini K	II ECE
12.	732422106012	Sevanthipriya S	II ECE
13.	732422106013	Sundar P	II ECE
14.	732422106015	Vigneshkannan G	II ECE
15.	732422106016	Vishwa S	II ECE
16.	732421106001	Gokul.S	III ECE
17.	732421106002	Rokesh.P	III ECE
18.	732421106003	Sabari Jothi.S	III ECE
19.	732422105001	Emee.M	II EEE
20.	732422114001	Manikkavel V	II MECH
21.	732420114302	Premkumar Y	IV MECH
22.	732422103001	Dharanidharan K	II CIVIL
23.	732422103002	Vishwa T	II CIVIL

VAC Coordinator

HoD/MECH

Dr.M.VIJAYAKUMAR ME., Ph.D.,
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DEPARTMENT OF MECHANICAL ENGINEERING

STUDENTS ATTENDANCE LIST-VALUE ADDED COURSE

"Design of Low-cost solar Inverter for Household Use

"From 05.02.2024 to 10.02.2024(6days)

Duration: 36 Hours **Academic Year: 2023-2024/EVEN**

No	Reg No.	Name of the Student	Year/ Branch	05.02.2024		06.02.2024		07.02.2024		08.02.2024		09.02.2024		10.02.2024		No. of Hours Attended	Signature of the Student
				FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN		
	732422106001	Avinash S	II ECE	/	/	/	/	/	/	/	/	/	/	/	/	36	
	732422106002	Boopathi S	II ECE	/	/	/	/	/	/	/	a	/	/	/	/	33	
	732422106003	Gireesh Krishnan V	II ECE	/	/	a	a	/	/	/	/	/	/	/	/	30	
	732422106004	Gunavarshini S	II ECE	/	/	/	/	/	a	/	/	/	/	/	/	33	
	732422106005	Harish K	II ECE	/	/	/	/	/	/	/	/	a	a	/	/	30	
	732422106006	Janagan M.P	II ECE	/	/	/	/	a	a	/	/	/	/	/	/	30	
	732422106007	Kavipriya S	II ECE	/	a	/	/	/	/	/	/	/	/	/	/	33	
	732422106008	Mayilsamy K	II ECE	/	/	/	/	/	/	/	a	/	/	/	/	33	
	732422106009	Navin P	II ECE	/	/	/	/	/	/	/	/	/	/	/	/	36	
0.	732422106010	Rakesh Kumar Mandal	II ECE	/	/	/	a	/	/	/	/	/	/	/	/	33	
1.	732422106011	Rohini K	II ECE	a	a	/	/	/	/	/	/	/	/	/	/	30	
2.	732422106012	Sevanthipriya S	II ECE	/	/	/	/	/	/	a	a	/	/	/	/	30	
3.	732422106013	Sundar P	II ECE	/	/	/	/	/	/	/	/	a	/	/	/	33	

Dr.M.VIJAYAKUMAR ME., Ph.D.,
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SASURIE INSTITUTIONS

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STUDENTSATTENDANCE LIST-VALUEADDEDCOURSE

.No	Reg No.	Name of the Student	Year/ Branch	05.02.2024		06.02.2024		07.02.2024		08.02.2024		09.02.2024		10.02.2024		No. of Hours Attended	Signature of the Student
				FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN		
4.	732422106015	Vigneshkannan G	II ECE	/	/	/	/	/	/	/	a	/	/	/	/	33	
5.	732422106016	Vishwa S	II ECE	/	/	/	/	/	a	/	/	/	/	/	/	33	
6.	732421106001	Gokul.S	III ECE	/	/	/	/	/	/	/	/	/	/	/	/	36	
7.	732421106002	Rokesh.P	III ECE	/	/	a	a	/	/	/	/	/	/	/	/	30	
8.	732421106003	Sabari Jothi.S	III ECE	/	/	/	/	/	/	/	/	/	/	/	/	36	
9.	732422105001	Emee.M	II EEE	/	/	/	/	/	/	/	/	/	/	/	a	33	
0.	732422114001	Manikkavel V	II MECH	/	/	/	/	/	/	/	/	/	/	/	/	36	
1.	732420114302	Premkumar Y	IV MECH	/	/	/	/	/	/	/	/	/	/	/	/	36	
2.	732422103001	Dharanidharan K	II CIVIL	/	/	/	/	/	/	/	/	/	/	/	/	36	
3.	732422103002	Vishwa T	II CIVIL	/	/	/	/	/	/	/	a	/	/	/	/	33	

VAC Coordinator

Dr.M.VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL
SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).

HoD/MECH

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Report on Value Added Course

Title:	Design of Low-cost solar Inverter for Household Use				
Resource Person:	Mr.K.Jagadeesh, Manager, MAS Data Technologies, Coimbatore-641004	Mr.D.Mathesh, CEO, MAS Data Technologies, Coimbatore-641004.			
Date of conduct from:	05.02.2024	To:	10.02.2024	Duration:	36 Hours
Organized by:	MECHANICAL ENGINEERING and IQAC in association with MAS Data Technologies				
Academic Year:	2023 – 2024		Semester:		EVEN
Participant Year:	II,III,IV Year MECH,CIVIL,ECE,EEE		No.of Students Participated:		23
Venue:	Lecture hall of II &III year MECH,CIVIL,ECE,EEE				

Outcome of Value Added Course(VAC)

At the end of the Course, Students can be able to

- Ability to design a solar inverter suitable for residential use, focusing on cost and efficiency.
- Knowledge of key power components, such as MOSFETs, IGBTs, and transformers, used in solar inverters.
- Experience in implementing PWM control and MPPT algorithms for optimal energy conversion.
- Proficiency in using simulation tools to model and test inverter designs.
- Ability to troubleshoot and improve inverter designs for maximum cost-effectiveness and efficiency.
- Skills in preparing technical documentation and presenting complex engineering ideas clearly.

Assessment Process

- Students, who are securing **more than 70% on total score in the VAC test** and secured more than 75% in VAC attendance is eligible to receive the course completion certificate for the VAC attended
- Total Score=(0.5*Attendance in VAC out of100 percentage+0.5 *Test mark in VAC out of 100marks)

No. of students successfully completed the VAC course is **23 Students** based on the above assessment process.

VAC Co-ordinator **HoD/MECH** **Principal**

Dr.M.VIJAYAKUMAR ME., Ph.D.,
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Vijayamangalam - 638 056, Tirupur (Dt).

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Vijayamangalam, Tirupur

DEPARTMENT OF MECHANICAL ENGINEERING

Certificate of Participation

This is to Certify that **Mr.Viswa.S, II/CIVIL** has successfully completed the **Value Added Course** titled **"Design of Low-Cost Solar Inverter for Household Use"** Organized by the **Department of Mechanical Engineering** in association with IQAC of **Sasurie College of Engineering** and **MAS Data Technologies** from **05.02.2024 to 10.02.2024 (6 days)**.

Co-ordinator

Head of the Department

Principal

Dr.M.VIJAYAKUMAR ME., Ph.D.,
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Vijayamangalam, Tiruppur

DEPARTMENT OF MECHANICAL ENGINEERING

Certificate of Participation

This is to Certify that **Mr.MAYILSAMY K, II/ECE** has successfully completed the **Value Added Course** titled "**Design of Low-Cost Solar Inverter for Household Use**" Organized by the **Department of Mechanical Engineering** in association with IQAC of **Sasurie College of Engineering** and **MAS Data Technologies** from **05.02.2024 to 10.02.2024 (6 days)**.

Co-ordinator

Head of the Department

Principal

Dr.M.VIJAYAKUMAR ME., Ph.D.
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Vijayamangalam, Tiruppur.

DEPARTMENT OF MECHANICAL ENGINEERING

Certificate of Participation

This is to Certify that **Ms.EMEE.M, II/EEE** has successfully completed the **Value Added Course** titled "**Design of Low-Cost Solar Inverter for Household Use**" Organized by the **Department of Mechanical Engineering** in association with IQAC of **Sasurie College of Engineering** and **MAS Data Technologies** from **05.02.2024 to 10.02.2024 (6 days)**.

Co-ordinator

Head of the Department

Principal

Dr.M.VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL
SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).

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Vijayamangalam, Tiruppur.

DEPARTMENT OF MECHANICAL ENGINEERING

Certificate of Participation

This is to Certify that **Mr.Gokul.S, III/ECE** has successfully completed the **Value Added Course** titled **"Design of Low-Cost Solar Inverter for Household Use"** Organized by the **Department of Mechanical Engineering** in association with IQAC of **Sasurie College of Engineering** and **MAS Data Technologies** from **05.02.2024 to 10.02.2024 (6 days)**.

Co-ordinator

Head of the Department

Principal

Dr.M.VIJAYAKUMAR ME., Ph.D.,
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SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).

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Vijayamangalam, Tiruppur.

DEPARTMENT OF MECHANICAL ENGINEERING

Certificate of Participation

This is to Certify that **Mr. MANIKKAVEL V, II / MECH** has successfully completed the **Value Added Course** titled **"Design of Low-Cost Solar Inverter for Household Use"** Organized by the **Department of Mechanical Engineering** in association with IQAC of **Sasurie College of Engineering** and **MAS Data Technologies** from **05.02.2024 to 10.02.2024 (6 days)**.

Co-ordinator

Head of the Department

Principal

Dr.M.VIJAYAKUMAR ME., Ph.D.,
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Vijayamangalam, Tiruppur.

DEPARTMENT OF MECHANICAL ENGINEERING
Certificate of Participation

This is to Certify that **Mr. PREMKUMAR Y, IV / MECH** has successfully completed the **Value Added Course** titled **"Design of Low-Cost Solar Inverter for Household Use"** Organized by the **Department of Mechanical Engineering** in association with IQAC of **Sasurie College of Engineering** and **MAS Data Technologies** from **05.02.2024 to 10.02.2024 (6 days)**.

Co-ordinator

Head of the Department

Principal

Dr.M.VIJAYAKUMAR M.E., Ph.D.,
PRINCIPAL
SASURIE COLLEGE OF ENGINEERING,
Vijayamangalam - 638 056, Tirupur (Dt).

DEPARTMENT OF MECHANICAL ENGINEERING

TEST QUESTION PAPER-VALUE ADDED COURSE

"Design of Low-Cost solar Inverter for Household Use"

From 05.02.2024 to 10.02.2024 (6days)

Duration: 36 Hours **Academic Year : 2023 -2024 /EVEN**

Date of Test :10.02.2024

MULTIPLE CHOICE QUESTIONS (25X1=25 Marks)

Name of the Student: **Year/Sem:**

AU Register Number:

Answer all the questions:

1. What is the primary function of a solar inverter in a household solar system?
a) Convert DC to AC
b) Store solar energy
c) Control the solar panels
d) Charge the batteries

2. Which of the following inverter types is most commonly used in low-cost solar installations?
a) Central inverter
b) Micro inverter
c) String inverter
d) Hybrid inverter

3. Which of the following is a key challenge in designing a low-cost solar inverter?
a) Maintaining high efficiency while minimizing cost
b) Achieving high power output
c) Implementing complex control algorithms
d) Using expensive materials like copper

4. What does MPPT (Maximum Power Point Tracking) do in a solar inverter?
a) Converts DC to AC
b) Adjusts the voltage to match the grid
c) Maximizes the energy extracted from the solar panels
d) Protects the system from overloading

5. What is the typical input voltage range for a household solar inverter?
a) 12V to 24V
b) 120V to 240V
c) 380V to 480V
d) 100V to 400V

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Vijayamangalam - 638 056, Tirupur (Dt).

6. **Which of the following components in a solar inverter is responsible for converting DC into AC?**
   a) Rectifier
   b) Inverter circuit (power switches)
   c) Transformer
   d) Filter capacitor

7. **What type of current do solar panels generate?**
   a) Alternating Current (AC)
   b) Direct Current (DC)
   c) Pulsating Current
   d) Varying Current

8. **Which type of semiconductor is most commonly used in the power electronics of solar inverters?**
   a) Silicon
   b) Gallium Arsenide
   c) Germanium
   d) Copper

9. **Which of the following is the main disadvantage of using a low-cost inverter?**
   a) Higher maintenance costs
   b) Lower efficiency and shorter lifespan
   c) Limited power output
   d) Complex installation

10. **What is the most common topology used in low-cost solar inverters?**
    a) Full-bridge inverter
    b) Half-bridge inverter
    c) Push-pull inverter
    d) Buck converter

11. **In a low-cost inverter design, which of the following is critical for reducing energy loss?**
    a) Using high-frequency switching circuits
    b) Using large transformers
    c) Increasing the inverter size
    d) Using analog control systems

12. **Which of the following is often used to reduce the size of a solar inverter?**
    a) Low-frequency transformers
    b) High-frequency switching
    c) Larger heat sinks
    d) More capacitors

13. **What is the typical output voltage of a solar inverter in a household system?**
    a) 120V AC
    b) 230V AC
    c) 48V DC
    d) 600V AC

14. **What is a common method for cooling low-cost solar inverters?**
    a) Liquid cooling
    b) Air cooling with heat sinks and fans
    c) Thermoelectric cooling
    d) Absorption cooling

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15. What is the primary disadvantage of using a microinverter in a solar system?
a) Higher initial cost
b) Lower efficiency
c) Larger size
d) Limited power output per panel

16. What is the purpose of using a transformer in a solar inverter?
a) Convert DC to AC
b) Regulate the output voltage
c) Step-up or step-down the voltage
d) Reduce energy loss

17. What is the typical lifespan of a solar inverter?
a) 2-3 years
b) 5-10 years
c) 10-15 years
d) 20-30 years

18. Which factor contributes most to the high cost of a solar inverter?
a) Control system complexity
b) Use of digital technology
c) Use of high-quality components
d) Low-frequency transformers

19. What is the main benefit of using a hybrid inverter?
a) It can be used only for off-grid systems
b) It integrates solar power and battery storage
c) It is cheaper than other types
d) It requires no maintenance

20. What is a typical feature of low-cost solar inverters?
a) High-efficiency MPPT
b) Minimal cooling and filtering systems
c) High-frequency transformers
d) Advanced power quality features

21. What is the main safety feature in most solar inverters?
a) Short-circuit protection
b) Energy storage
c) Over-voltage protection
d) Maximum power output regulation

22. Which of the following is used to convert DC into AC in a solar inverter?
a) Inverter circuit
b) Rectifier
c) Capacitor
d) Step-up transformer

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Vijayamangalam - 638 056, Tirupur (Dt).

23. Which type of inverter is typically most cost-effective for small-scale residential use?

a) Hybrid inverter
b) Micro inverter
c) Central inverter
d) String inverter

24. What does the efficiency of a solar inverter represent?

a) The amount of energy lost as heat
b) The ratio of output AC power to input DC power
c) The amount of energy stored in the system
d) The inverter's power rating

25. What is the main reason for using high-frequency switching in solar inverters?

a) To reduce the inverter size and weight
b) To improve voltage regulation
c) To increase output frequency
d) To extend the lifespan of the inverter

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DEPARTMENT OF MECHANICAL ENGINEERING

TEST QUESTION ANSWER KEY- VALUE ADDED COURSE

"Design of Low-cost solar Inverter for Household Use"

From 05.02.2024 to 10.02.2024 (6days)

Duration: 36 Hours **Academic Year : 2023 -2024 /EVEN**

Date of Test :10.02.2024

1	a	6	b	11	a	16	c	21	a
2	c	7	b	12	b	17	c	22	a
3	a	8	a	13	b	18	c	23	d
4	c	9	b	14	b	19	b	24	b
5	d	10	b	15	a	20	b	25	a

VAC Coordinator

Dr.M.VIJAYAKUMAR ME., Ph.D.,
PRINCIPAL
SASURIE COLLEGE OF ENGINEERING.

GUNAVARSHINI.S

II ECE

19/25

SASURIE INSTITUTIONS

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Affiliated to Anna University, Chennai

DEPARTMENT OF MECHANICAL ENGINEERING

TEST QUESTION PAPER-VALUE ADDED COURSE

"Design of Low-cost solar Inverter for Household Use"

From 05.02.2024 to 10.02.2024 (6days)

Duration: 36 Hours **Academic Year : 2023 -2024 /EVEN**

Date of Test :10.02.2024

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4. What does MPPT (Maximum Power Point Tracking) do in a solar inverter?
a) Converts DC to AC
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5. What is the typical input voltage range for a household solar inverter?
a) 12V to 24V
b) 120V to 240V
c) 380V to 480V
d) 100V to 400V

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6. **Which of the following components in a solar inverter is responsible for converting DC into AC?**
   a) Rectifier
   b) Inverter circuit (power switches)
   c) Transformer
   d) Filter capacitor

7. **What type of current do solar panels generate?**
   a) Alternating Current (AC)
   b) Direct Current (DC)
   c) Pulsating Current
   d) Varying Current

8. **Which type of semiconductor is most commonly used in the power electronics of solar inverters?**
   a) Silicon
   b) Gallium Arsenide
   c) Germanium
   d) Copper

9. **Which of the following is the main disadvantage of using a low-cost inverter?**
   a) Higher maintenance costs
   b) Lower efficiency and shorter lifespan
   c) Limited power output
   d) Complex installation

10. **What is the most common topology used in low-cost solar inverters?**
    a) Full-bridge inverter
    b) Half-bridge inverter
    c) Push-pull inverter
    d) Buck converter

11. **In a low-cost inverter design, which of the following is critical for reducing energy loss?**
    a) Using high-frequency switching circuits
    b) Using large transformers
    c) Increasing the inverter size
    d) Using analog control systems

12. **Which of the following is often used to reduce the size of a solar inverter?**
    a) Low-frequency transformers
    b) High-frequency switching
    c) Larger heat sinks
    d) More capacitors

13. **What is the typical output voltage of a solar inverter in a household system?**
    a) 120V AC
    b) 230V AC
    c) 48V DC
    d) 600V AC

14. **What is a common method for cooling low-cost solar inverters?**
    a) Liquid cooling
    b) Air cooling with heat sinks and fans
    c) Thermoelectric cooling
    d) Absorption cooling

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15. What is the primary disadvantage of using a microinverter in a solar system?
a) Higher initial cost
b) Lower efficiency
c) Larger size
d) Limited power output per panel

16. What is the purpose of using a transformer in a solar inverter?
a) Convert DC to AC
b) Regulate the output voltage
c) Step-up or step-down the voltage
d) Reduce energy loss

17. What is the typical lifespan of a solar inverter?
a) 2-3 years
b) 5-10 years
c) 10-15 years
d) 20-30 years

18. Which factor contributes most to the high cost of a solar inverter?
a) Control system complexity
b) Use of digital technology
c) Use of high-quality components
d) Low-frequency transformers

19. What is the main benefit of using a hybrid inverter?
a) It can be used only for off-grid systems
b) It integrates solar power and battery storage
c) It is cheaper than other types
d) It requires no maintenance

20. What is a typical feature of low-cost solar inverters?
a) High-efficiency MPPT
b) Minimal cooling and filtering systems
c) High-frequency transformers
d) Advanced power quality features

21. What is the main safety feature in most solar inverters?
a) Short-circuit protection
b) Energy storage
c) Over-voltage protection
d) Maximum power output regulation

22. Which of the following is used to convert DC into AC in a solar inverter?
a) Inverter circuit
b) Rectifier
c) Capacitor
d) Step-up transformer

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23. **Which type of inverter is typically most cost-effective for small-scale residential use?**
   a) Hybrid inverter
   b) Micro inverter
   c) Central inverter
   d) String inverter

24. **What does the efficiency of a solar inverter represent?**
   a) The amount of energy lost as heat
   b) The ratio of output AC power to input DC power
   c) The amount of energy stored in the system
   d) The inverter's power rating

25. **What is the main reason for using high-frequency switching in solar inverters?**
   a) To reduce the inverter size and weight
   b) To improve voltage regulation
   c) To increase output frequency
   d) To extend the lifespan of the inverter

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DEPARTMENT OF MECHANICAL ENGINEERING

ASSESMENT SHEET- VALUE ADDED COURSE

"Design of Low-cost solar Inverter for Household Use"

From 05.02.2024 to 10.02.2024 (6days)

Duration: 36 Hours

Academic Year: 2023-2024/EVEN

S.No	Reg No.	Name of the Student	Year/ Branch	Attendance Details		VAC-MCQ TEST		OVERALL Score(100) (50%of A +50% of B)
				No. of Hours Attended	Attendance Score (100)(A)	No.of Correct Answers	MCQ Score(100) (B)	
1.	732422106001	Avinash S	II ECE	36	100	18	72	86
2.	732422106002	Boopathi S	II ECE	33	90	19	76	83
3.	732422106003	Gireesh Krishnan V	II ECE	30	80	18	72	76
4.	732422106004	Gunavarshini S	II ECE	33	90	19	76	83
5.	732422106005	Harish K	II ECE	30	80	20	80	80
6.	732422106006	Janagan M.P	II ECE	30	80	20	80	80
7.	732422106007	Kavipriya S	II ECE	33	90	19	76	83
8.	732422106008	Mayilsamy K	II ECE	33	90	19	76	83
9.	732422106009	Navin P	II ECE	36	100	19	76	88
10.	732422106010	Rakesh Kumar Mandal	II ECE	33	90	19	76	83
11.	732422106011	Rohini K	II ECE	30	80	21	84	82
12.	732422106012	Sevanthipriya S	II ECE	30	100	18	72	86
13.	732422106013	Sundar P	II ECE	33	90	19	76	83

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				No. of Hours Attended	Attendance Score (100)(A)	No. of Correct Answers	MCQ Score(100) (B)	
14.	732422106015	Vigneshkannan G	II ECE	33	90	19	76	83
15.	732422106016	Vishwa S	II ECE	33	90	19	76	83
16.	732421106001	Gokul.S	III ECE	36	100	19	76	88
17.	732421106002	Rokesh.P	III ECE	30	80	18	72	76
18.	732421106003	Sabari Jothi.S	III ECE	36	100	21	84	92
19.	732422105001	Emee.M	II EEE	33	90	19	76	83
20.	732422114001	Manikkavel V	II MECH	36	100	19	76	88
21.	732420114302	Premkumar Y	IV MECH	36	100	18	72	86
22.	732422103001	Dharanidharan K	II CIVIL	36	100	21	84	92
23.	732422103002	Vishwa T	II CIVIL	33	90	21	84	87

VAC Coordinator

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