



# Indra Ganesan

## COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai  
Accredited by NAAC with 'B+' Grade, 2(f) & 12B Status Institution by UGC

IG Valley, Madurai Main Road, Manikandam, Tiruchirappalli - 620012

# NAAC DOCUMENTS

## QUALITY INDICATOR FRAME WORK

### CRITERION – 1

## CURRICULAR ASPECTS

SUBMITTED BY

**IQAC**

INTERNAL QUALITY ASSURANCE CELL

**INDRA GANESAN COLLEGE OF ENGINEERING**





**DEPARTMENT OF INFORMATION TECHNOLOGY**

**ACADEMIC YEAR 2021-2022/ ODD SEMESTER**

**1.2 Academic Flexibility (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**

<b>VAC Title:</b>	<b>Manipulation of Nano Technology in Materials</b>				
<b>Resource Person:</b>	<b>Mr.S.Karthikeyan, Project Manager, Fantasy Solution,Trichy..</b>				
<b>Date of conduct from:</b>	<b>13.12.2021</b>	<b>To:</b>	<b>17.12.2021</b>	<b>Duration:</b>	<b>30 Hours</b>
<b>Organized Department:</b>	<b>INFORMATION TECHNOLOGY</b>				
<b>Participant Year:</b>	<b>IT IV,III,II</b>	<b>Semester:</b>	<b>ODD</b>	<b>No. of Students Registered:</b>	<b>75</b>
<b>Venue:</b>	<b>IT Seminar Hall</b>				

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# Indra Ganesan

**COLLEGE OF ENGINEERING**  
Madurai Main Road (NH-45B), Manikandam, Trichy-12.  
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Department of Information Technology

Academic Year 2021-2022 --ODD Semester

11.12.2021

**DEPARTMENT CIRCULAR**

Department of Information Technology and IQAC of IGCE in association with Fantasy Solution, Trichy is going to organize Value Added Course for all Second, Third and Final year students on "Manipulation of Nano Technology in Materials" from 13.12.2021 to 17.12.2021 Certificates will be issued to the eligible participants at the end of the Course. This training is to be provided in our campus.

Resource Person Detail	1. Mr. S. Karthikeyan, Project Manager, Fantasy Solution, Trichy.  2. Mr. R. Ragul Kannan Project Manager Extazy Thillai Nagar Trichy .
Venue	IT Seminar Hall, IGCE

  
HOD/IT

  
PRINCIPAL

Cc:

- Principal office
- IQAC Co-Ordinator
- Class In charges - II, III & IV-Year
- II, III & IV-Year IT Students
- Office File
- Notice Board

  
Dr. G. Balakrishnan, M.E., Ph.D.,  
Principal  
Indra Ganesan College of Engineering  
IG Valley, Madurai Main Road  
Manikandam, Trichy-620 012.



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Value Added Course

**“Manipulation of Nano Technology in Materials”**

SYLLABUS

S.NO	TOPIC COVERED	DURATION (in hours)	DATE
1	Introduction of Manipulation of Nano Technology	3	13.12.2021
2	Manipulating atoms and molecules	3	13.12.2021
3	scanning tunneling microscope (STM) and the atomic force microscope (AFM)	3	14.12.2021
4	Scanning Tunneling Microscope	3	14.12.2021
5	Application of Nano Technology	3	15.12.2021
6	Nano Technology in Energy	3	15.12.2021
7	Carbon nanotubes (CNTs)	3	16.12.2021
8	Nanobiotechnology, bionanotechnology, and nanobiology	3	16.12.2021
9	Nanotechnology in warfare	3	17.12.2021
10	Nanoelectronics	2	17.12.2021
11	Exam	1	17.12.2021
Total Hours (Excluding Exam)		30	-

  
VAC Coordinator



  
HOD/IT

Dr. G. Balakrishnan, M.E., Ph.D.,  
Principal  
Indra Ganesan College of Engineering  
IG Valley, Madurai Main Road  
Manikandam, Trichy-620 012.



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## COLLEGE OF ENGINEERING

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### Value Added Course

Dr. G. Balakrishnan, M.E., Ph.D., "Manipulation of Nano Technology in Materials"

Principal

Indra Ganesan College of Engineering  
IG Valley, Madurai Main Road  
Manikandam, Trichy-620 012.

### STUDENTS PARTICIPATION LIST

S.NO	REG NO	STUDENTS NAME	YEAR/ BRANCH
1	811218205001	Deepa T	IV/IT
2	811218205002	Dharshini K	IV/IT
3	811218205003	Gopi U	IV/IT
4	811218205004	Harish R	IV/IT
5	811218205005	Irudhayaraj A	IV/IT
6	811218205006	Janani S	IV/IT
7	811218205007	Janarthanan	IV/IT
8	811218205008	Kamalesh A	IV/IT
9	811218205009	Kaviyarasu C	IV/IT
10	811218205010	Kayalvizhi.B	IV/IT
11	811218205011	Manoharan T	IV/IT
12	811218205012	Meena R	IV/IT
13	811218205013	Milton Billgates J	IV/IT
14	811218205014	Mohammed Aarif J	IV/IT
15	811218205015	Pavithra.N	IV/IT
16	811218205016	Priyanka A	IV/IT
17	811218205017	Robinson Isaiah E	IV/IT
18	811218205018	Selvi M	IV/IT
19	811218205019	Shalini Gayathri S	IV/IT
20	811218205020	Sivaraman S	IV/IT
21	811218205021	Snekaa R	IV/IT
22	811218205022	Suganya K	IV/IT
23	811218205023	Vasanth S	IV/IT
24	811218205024	Vijayakaran M	IV/IT
25	811218205025	Wilson Jayaraj S	IV/IT
26	811218205026	Antony Arul Doss A	IV/IT
27	811218205027	Geethanjali R	IV/IT
28	811218205301	Dhanalaxmi.K	IV/IT
29	811219205001	Akash V	III/IT
30	811219205002	Akilandeswari J	III/IT
31	811219205003	Aravindhana R	III/IT
32	811219205004	Chitra Bharathy M	III/IT



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S.NO	REG NO	STUDENTS NAME	YEAR/ BRANC H
33	811219205005	Jeevitha M	III/IT
34	811219205006	Kaviya K	III/IT
35	811219205008	Libia Pojathsiyu C	III/IT
36	811219205009	Mageshwaran M	III/IT
37	811219205011	Ranjith M	III/IT
38	811219205012	Ranjith kumar A	III/IT
39	811219205013	Shareen Banu M R	III/IT
40	811219205014	Shobana K	III/IT
41	811219205015	Sivaranjani P	III/IT
42	811219205016	Sowmiya P	III/IT
43	811219205017	Surya A	III/IT
44	811219205018	Swetha S	III/IT
45	811219205019	Tamil selvi T	III/IT
46	811219205020	Vijaya kumar M	III/IT
47	811219205021	Visalini P	III/IT
48	811219205501	Karthick A	III/IT
49	811220205002	Aiswariya V	II/IT
50	811220205004	Anbazhagan S	II/IT
51	811220205005	Balamohan R	II/IT
52	811220205006	Benny A	II/IT
53	811220205007	Boomika P	II/IT
54	811220205008	Charulatha B	II/IT
55	811220205009	Chiranjeevi V	II/IT
56	811220205011	Dinesh M	II/IT
57	811220205012	Gowtham B	II/IT
58	811220205014	Hariharan S	II/IT
59	811220205015	Hemalatha G	II/IT
60	811220205016	Jeeva M	II/IT
61	811220205018	Keerthana S	II/IT
62	811220205019	Kirubhashree D	II/IT
63	811220205020	Krishnan N	II/IT
64	811220205021	Magesh G	II/IT
65	811220205022	Mahasuvetha M	II/IT
66	811220205023	Manikandan M	II/IT
67	811220205024	Meenatchi A	II/IT
68	811220205025	Mohanapriya K	II/IT
69	811220205026	Monisha A	II/IT

**Dr. G. Balakrishnan, M.E., Ph.D.,**

Principal

Indra Ganesan College of Engineering,  
IG Valley, Madurai Main Road  
Manikandam, Trichy-620 012.



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S.NO	REG NO	STUDENTS NAME	YEAR/ BRANCH
70	811220205027	Murugesan K	II/IT
71	811220205029	Pragathi R	II/IT
72	811220205030	Priyanga K	II/IT
73	811220205032	Rajeswari S	II/IT
74	811220205035	Rasika A	II/IT
75	811220205036	Ravikumar M	II/IT

**Dr. G. Balakrishnan, M.E., Ph.D.,**

Principal

Indra Ganesan College of Engineering

IG Valley, Madurai Main Road

Manikandam, Trichy-620 012.

VAC Coordinator

HoD/IT



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Dr. G. Balakrishnan, M.E., Ph.D.,  
Principal

Indra Ganesan College of Engineering  
IG Valley, Madurai Main Road  
Manikandam, Trichy-620 012.

### REPORT ON VALUE ADDED COURSE

Title: **"Manipulation of Nano Technology in Materials"**

Resource Person: **Mr.S.Karthikeyan,**  
**Project Manager,**  
**Fantasy Solution,**  
**Trichy**

**Mr.R.Ragul Kannan**  
**Project Manager**  
**Extazzy Thillai**  
**Nagar Trichy**

Date of conduct from : **13.12.2021** To: **17.12.2021** **30 hours**

Organized Department : **Information Technology**

Participant Year: **2,3,4** No. of Students Registered : **75**

Venue: **IT Seminar Hall**

**Outcome of Value Added Course (VAC): At the end of the Course, Students can be able to**

- Able to engage in research and life-long learning to provide technical solutions to interdisciplinary problems in science and technology.
- Considering the temporal and societal context into account, able to apply ethical and management principles to work in a team as well as to lead a team.
- Independently carry out research/investigation and development work to solve practical problems in Nanotechnology.
- Employ modern engineering and nanotechnology concepts to cater the needs of the community.
- Provide solutions to varied engineering and scientific problems up to molecular/atomic scales through the interpretation of data using modern sophisticated Instruments and computational tools.

#### Assessment Process

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

  
VAC Coordinator

  
HoD/IT

  
Principal





# Indra Ganesan

**COLLEGE OF ENGINEERING**  
Madurai Main Road (NH-456), Manikandam, Trichy-12.  
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## SAMPLE PHOTOS OF VALUE ADDED COURSE

Title: **“Manipulation of Nano Technology in Materials”**

Resource Person: **Mr.S.Karthikeyan,**  
**Project Manager,**  
**Fantasy Solution,**  
**Trichy**

**Mr.R.Ragul Kannan**  
**Project Manager**  
**Extazyy Thillai**  
**Nagar Trichy**

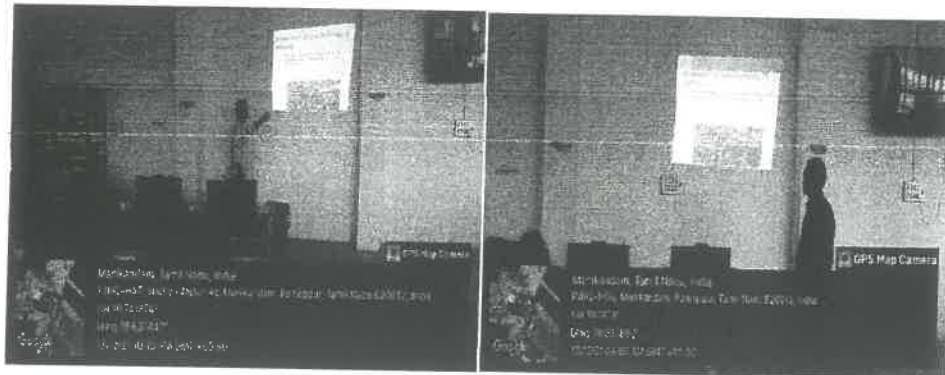
Date of conduct from : **13.12.2021** To: **17.12.2021** **30 hours**

Organized Department : **Information Technology**

Participant Year: **2,3,4** No. of Students Registered : **75**

Venue: **IT Seminar Hall**

### Sample Photos:



  
VAC Coordinator

  
HoD/IT

  
Principal



**Dr. G. Balakrishnan, M.E., Ph.D.,**  
Principal  
Indra Ganesan College of Engineering  
IG Valley, Madurai Main Road  
Manikandam, Trichy-620 012.



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## Department of Information Technology

Academic Year 2021-2022 – Odd Semester

### STUDENTS ATTENDANCE LIST

### Value Added Course

### “Manipulation of Nano Technology in Materials”

Dr. G. Balakrishnan, M.E., Ph.D.,  
Principal  
Indra Ganesan College of Engineering  
IG Valley, Madurai Main Road  
Manikandam, Trichy-620 012.

S. N O	REG NO	STUDENTS NAME	YEA R/ BRA NCH	13.12.21		14.12.21		15.12.21		16.12.21		17.12.21		NO OF SESSIONS ATTENDED	SIGN OF THE STUDENT
				FN	AN	FN	AN	FN	AN	FN	AN	FN	AN		
1	811218205001	Deepa T	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Deepa
2	811218205002	Dharshini K	IV/IT	✓	(A)	(A)	✓	✓	✓	✓	✓	✓	✓	8	Dharshini
3	811218205003	Gopi U	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	U. Gopi
4	811218205004	Harish R	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	R. Harish
5	811218205005	Irudhayaraj A	IV/IT	✓	(A)	✓	✓	✓	✓	✓	✓	✓	✓	9	I. Rudhayaraj
6	811218205006	Janani S	IV/IT	✓	✓	✓	(A)	✓	✓	✓	✓	✓	✓	9	Janani
7	811218205007	Janarthanan	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Janarthanan
8	811218205008	Kamalesh A	IV/IT	✓	(A)	✓	(A)	✓	✓	✓	✓	✓	✓	8	Kamalesh
9	811218205009	Kaviyarasu C	IV/IT	(A)	(A)	✓	✓	✓	✓	✓	✓	✓	✓	8	C. Kaviyarasu
10	811218205010	Kayalvizhi.B	IV/IT	✓	✓	✓	(A)	✓	✓	✓	✓	✓	(A)	8	B. Kayalvizhi
11	811218205011	Manoharan T	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Manoharan T
12	811218205012	Meena R	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Meena R.
13	811218205013	Milton Billgates J	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Milton Billgates J
14	811218205014	Mohammed Aarif J	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	J. Mohammed Aarif

Dr. G. Balakrishnan, M.E., Ph.D.,  
Principal

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S. NO	REG NO	STUDENTS NAME	YEAR / BRANCH	13.12.21		14.12.21		15.12.21		16.12.21		17.12.21		NO OF SESSIONS ATTENDED	SIGNATURE OF THE STUDENT
				FN	AN	FN	AN	FN	AN	FN	AN	FN	AN		
15	811218205015	Pavithra.N	IV/IT	✓	(A)	✓	✓	✓	✓	✓	✓	✓	✓		
16	811218205016	Priyanka A	IV/IT	✓	✓	(A)	✓	✓	✓	✓	✓	✓	✓	9	Priyanka
17	811218205017	Robinson Isaiah E	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	Priyanka
18	811218205018	Selvi M	IV/IT	✓	✓	✓	✓	✓	✓	(A)	✓	✓	✓	9	E. Robinson
19	811218205019	Shalini Gayathri S	IV/IT	✓	(A)	(A)	✓	✓	✓	✓	✓	✓	✓	10	M. Selvi
20	811218205020	Sivaraman S	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	8	S. Shalini
21	811218205021	Snekaa R	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Sivaraman
22	811218205022	Suganya K	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Snekaa R
23	811218205023	Vasanth S	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Vasanth
24	811218205024	Vijayakaran M	IV/IT	✓	(A)	✓	✓	✓	✓	✓	✓	✓	✓	10	Vijayakaran
25	811218205025	Wilson Jayaraj S	IV/IT	(A)	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	Wilson Jayaraj
26	811218205026	Antony Arul Doss A	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	Antony Arul Doss
27	811218205027	Geethanjali R	IV/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Geethanjali
28	811218205301	Dhanalaxmi.K	IV/IT	(A)	(A)	✓	✓	✓	✓	✓	✓	(A)	(A)	8	Dhanalaxmi
29	811219205001	Akash V	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	8	Akash
30	811219205002	Akilandeswari J	III/IT	✓	(A)	✓	✓	✓	✓	✓	✓	✓	✓	10	Akilandeswari
31	811219205003	Aravindhan R	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	Aravindhan
32	811219205004	Chitra Bharathy M	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Chitra Bharathy
33	811219205005	Jeevitha M	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Jeevitha
34	811219205006	Kaviya K	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Kaviya
35	811219205008	Libia Pojathsiyu C	III/IT	✓	✓	✓	✓	(A)	✓	✓	✓	✓	✓	10	Libia Pojathsiyu
36	811219205009	Mageshwaran M	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	Mageshwaran

**G. Balakrishnan, M.E., Ph.D.**  
Principal  
Indra Ganesan College of Engineering  
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S. NO	REG NO	STUDENTS NAME	YEAR / BRANCH	13.12.21		14.12.21		15.12.21		16.12.21		17.12.21		NO OF SESSIONS ATTENDED	SIGNATURE OF THE STUDENT
				FN	AN	FN	AN	FN	AN	FN	AN	FN	AN		
37	811219205011	Ranjith M	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
38	811219205012	Ranjith kumar A	III/IT	✓	(A)	✓	✓	✓	✓	✓	✓	✓	✓	10	M. Ranjith
39	811219205013	Shareen Banu M R	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	Shareen Banu
40	811219205014	Shobana K	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	Shobana
41	811219205015	Sivaranjani P	III/IT	✓	✓	✓	(A)	✓	✓	✓	✓	✓	✓	10	Sivaranjani
42	811219205016	Sowmiya P	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	Sowmiya
43	811219205017	Surya A	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	P. Surya
44	811219205018	Swetha S	III/IT	✓	✓	✓	(A)	✓	✓	✓	✓	✓	✓	10	Swetha
45	811219205019	Tamil selvi T	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	Tamil selvi
46	811219205020	Vijaya kumar M	III/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Vijaya kumar
47	811219205021	Visalini P	III/IT	(A)	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	M. Visalini
48	811219205501	Karthick A	III/IT	✓	✓	(A)	✓	✓	✓	✓	✓	✓	✓	9	A. Karthick
49	811220205002	Aiswariya V	II/IT	✓	✓	(A)	(A)	✓	✓	✓	✓	✓	✓	8	Aiswariya
50	811220205004	Anbazhagan S	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	8	S. Anbazhagan
51	811220205005	Balamohan R	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	(A)	9	R. Balamohan
52	811220205006	Benny A	II/IT	✓	✓	(A)	✓	✓	✓	✓	✓	✓	✓	10	A. Benny
53	811220205007	Boomika P	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	P. Boomika
54	811220205008	Charulatha B	II/IT	✓	(A)	✓	✓	✓	✓	✓	✓	(A)	(A)	8	B. Charulatha
55	811220205009	Chiranjeevi V	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	V. Chiranjeevi
56	811220205011	Dinesh M	II/IT	✓	✓	✓	✓	✓	(A)	✓	✓	✓	✓	10	M. Dinesh
57	811220205012	Gowtham B	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	B. Gowtham
58	811220205014	Hariharan S	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	S. Hariharan
59	811220205015	Hemalatha G	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	G. Hemalatha



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S. NO	REG NO	STUDENTS NAME	YEAR / BRANCH	13.12.21		14.12.21		15.12.21		16.12.21		17.12.21		NO OF SESSIONS ATTENDED	SIGNATURE OF THE STUDENT
				FN	AN	FN	AN	FN	AN	FN	AN	FN	AN		
60	811220205016	Jeeva M	II/IT	✓	✓	(A)	✓	✓	✓	✓	✓	✓	✓		
61	811220205018	Keerthana S	II/IT	✓	✓	(A)	(A)	✓	✓	✓	✓	✓	✓	9	Jeeva
62	811220205019	Kirubhashree D	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	8	S. K. S. 4
63	811220205020	Krishnan N	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	(A)	✓	9	Kirubhashree
64	811220205021	Magesh G	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	N. Krishna
65	811220205022	Mahasuvetha M	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	(A)	✓	9	Magesh
66	811220205023	Manikandan M	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Manikandan
67	811220205024	Meenatchi A	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Meenatchi
68	811220205025	Mohanapriya K	II/IT	✓	✓	✓	✓	✓	✓	✓	(A)	✓	✓	9	Mohanapriya
69	811220205026	Monisha A	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	(A)	(A)	8	Monisha
70	811220205027	Murugesan K	II/IT	✓	✓	✓	✓	✓	✓	✓	(A)	(A)	✓	8	A. Murugesan
71	811220205029	Pragathi R	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	(A)	9	Pragathi
72	811220205030	Priyanga K	II/IT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Priyanga
73	811220205032	Rajeswari S	II/IT	✓	(A)	(A)	✓	✓	✓	✓	✓	✓	✓	9	Rajeswari
74	811220205035	Rasika A	II/IT	✓	✓	(A)	✓	✓	✓	✓	✓	✓	✓	8	Rasika
75	811220205036	Ravikumar M	II/IT	✓	✓	✓	✓	✓	(A)	✓	✓	✓	✓	9	Ravikumar
				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	

*(Signature)*

Dr. G. Balakrishnan, M.E., Ph.D.,  
Principal

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IG Valley, Madurai Main Road  
Manikandam, Trichy-620 012.

*(Signature)*  
VAC Coordinator

*(Signature)*  
HoD/IT



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Name of the Student: Rasika . A

Year/Sem: II

AU Register Number: 811220205035

## Value Added Course

20  
25

### **"Manipulation of Nano Technology in Materials"**

#### **MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)**

1. Nanomaterials are the materials with at least one dimension measuring less than

- a) 1 nm
- b) 10 nm
- c) 100 nm
- d) 1000 nm

2. A material with one dimension in Nano range and the other two dimensions are large is called

- a) Micro-material
- b) Quantum wire
- c) Quantum well
- d) Quantum dot

3. The colour of the nano gold particles is \_\_\_\_\_

- a) Yellow
- b) Orange
- c) Red
- d) Variable

4. The melting point of particles in nano form \_\_\_\_\_

- a) Increases
- b) Decreases
- c) Remains same
- d) Increases then decreases

5. The first talk about nano-technology was given by \_\_\_\_\_

- a) Albert Einstein
- b) Newton
- c) Gordon E. Moore
- d) Richard Feynman

6. Which of the processes of materials was not described as Nanotechnology?


- a) Separation
- b) Creation
- c) Processing
- d) Consolidation

7. The initial tools used to help launch the nanoscience revolution were \_\_\_\_\_

- a) Binoculars
- b) Microscope
- c) Scanning probe instruments
- d) Interferometer

8. When semiconductors are reduced to nanometres they become pure conductors.

- a) True


  
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9. The major difference between the nano materials compared to the bulk form is the big fraction of the total number of atoms on the surface.
- a) True  
 b) False
10. The size of atoms is nearly \_\_\_\_\_
- a) 0.01 nm  
 b) 0.1 nm  
 c) 1 nm  
 d) 10 nm
11. What is nanotechnology?
- a) The study of extremely small particles  
 b) The study of large-scale engineering  
 c) The study of space exploration  
 d) The study of quantum mechanics
12. Which of the following is NOT a characteristic of nanomaterials?
- a) Small size  
 b) Large surface area  
 c) High stability  
 d) Unique properties
13. What is the size range for nanoparticles?
- a) 1 to 10 centimeters  
 b) 1 to 10 micrometers  
 c) 1 to 10 nanometers  
 d) 1 to 10 millimeters
14. Which of the following fields is NOT influenced by nanotechnology?
- a) Medicine  
 b) Electronics  
 c) Agriculture  
 d) Geology
15. What is the term for the process of manipulating matter at the atomic or molecular level?
- a) Nanosynthesis  
 b) Nanomaterialization  
 c) Nanomanipulation  
 d) Nanofabrication
16. Which of the following is an example of a bottom-up approach in nanofabrication?
- a) Lithography  
 b) Chemical vapor deposition  
 c) Molecular self-assembly  
 d) Physical vapor deposition
17. What is the term for a material that exhibits different properties at the nanoscale compared to its bulk form?
- a) Nanostructure  
 b) Nanocomposite  
 c) Nanoparticle  
 d) Nanotube
18. Which of the following is NOT a potential application of nanotechnology in medicine?
- a) Targeted drug delivery  
 b) Tissue engineering  
 c) Gene therapy  
 d) Nuclear power generation

  
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19. What is the term for the ability of nanomaterials to self-repair or adapt to changing conditions?
- a) Self-assembly
  - b) Self-replication
  - c) Self-healing
  - d) Self-organization
20. Which of the following is an example of a top-down approach in nanofabrication?
- a) Nanoparticle synthesis
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  - c) Electron beam lithography
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21. What is the term for the study and control of matter at the nanoscale?
- a) Nanoscience
  - b) Microscience
  - c) Macroscience
  - d) Nanoengineering
22. Which of the following is an example of a carbon-based nanomaterial?
- a) Gold nanoparticle
  - b) Quantum dot
  - c) Carbon nanotube
  - d) Silica nanoparticle
23. What is the term for the property of nanomaterials that allows them to conduct electricity?
- a) Ferromagnetism
  - b) Superconductivity
  - c) Thermoelectricity
  - d) Quantum confinement
24. Which of the following is an example of a nanoparticle-based sunscreen?
- a) Titanium dioxide
  - b) Zinc oxide
  - c) Silver nanoparticles
  - d) Gold nanoparticles
25. What is the term for the process of removing or altering individual atoms or molecules from a surface?
- a) Nanopatterning
  - b) Etching
  - c) Deposition
  - d) Self-assembly

  
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Name of the Student: Akilandeswari . J Year/Sem: 2A

AU Register Number: 811219205002

## Value Added Course

### "Manipulation of Nano Technology in Materials"

#### MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)

18 / 25

1. Nanomaterials are the materials with at least one dimension measuring less than \_\_\_\_\_

- a) 1 nm
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2. A material with one dimension in Nano range and the other two dimensions are large is called \_\_\_\_\_

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- d) Quantum dot

3. The colour of the nano gold particles is \_\_\_\_\_

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4. The melting point of particles in nano form \_\_\_\_\_

- a) Increases
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8. When semiconductors are reduced to nanometres they become pure conductors.

- a) True
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Name of the Student: Javani.S

Year/Sem: IV

AU Register Number: 811218205006

## Value Added Course

### "Manipulation of Nano Technology in Materials"

#### MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)

17  
25

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Name of the Student: \_\_\_\_\_

Year/Sem: \_\_\_\_\_


AU Register Number: \_\_\_\_\_

Value Added Course

**“Manipulation of Nano Technology in Materials”**

**MULTIPLE CHOICE QUESTIONS (25 X 1 = 25 Marks)**

1. Nanomaterials are the materials with at least one dimension measuring less than \_\_\_\_\_
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7. The initial tools used to help launch the nanoscience revolution were \_\_\_\_\_
- Binoculars
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8. When semiconductors are reduced to nanometres they become pure conductors.
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9. The major difference between the nano materials compared to the bulk form is the big fraction of the total number of atoms on the surface.
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d) Nanofabrication

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  - Carbon nanotube
  - Silica nanoparticle

  
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23. What is the term for the property of nanomaterials that allows them to conduct electricity?

- a) Ferromagnetism
- b) Superconductivity
- c) Thermoelectricity
- d) Quantum confinement

24. Which of the following is an example of a nanoparticle-based sunscreen?

- a) Titanium dioxide
- b) Zinc oxide
- c) Silver nanoparticles
- d) Gold nanoparticles

25. What is the term for the process of removing or altering individual atoms or molecules from a surface?

- a) Nanopatterning
- b) Etching
- c) Deposition
- d) Self-assembly

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**Value Added Course**  
**“ Manipulation of Nano Technology in Materials”**

**ANSWER KEY**

1	C	6	B	11	A	16	C	21	A
2	C	7	C	12	C	17	A	22	C
3	D	8	B	13	C	18	D	23	D
4	B	9	A	14	D	19	C	24	A
5	D	10	B	15	D	20	C	25	B


  
VAC Coordinator

  
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Department of Information Technology  
Academic Year 2021 - 2022- Odd Semester

## VALUE ADDED COURSE ASSESMENT SHEET

“Manipulation of Nano Technology in Materials”

S.NO	REG NO	STUDENTS NAME	YEAR/ BRANCH	Attendance Details		VAC-MCQ TEST		OVERALL MARK(100) (50% of A + 50% of B)
				No. of hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
1	811218205001	Deepa T	IV/IT	30	100	20	80	90
2	811218205002	Dharshini K	IV/IT	24	83	15	60	72
3	811218205003	Gopi U	IV/IT	30	100	19	76	88
4	811218205004	Harish R	IV/IT	30	100	22	88	94
5	811218205005	Irudhayaraj A	IV/IT	27	92	18	72	82
6	811218205006	Janani S	IV/IT	27	92	17	68	80
7	811218205007	Janarthanan	IV/IT	30	100	18	72	86
8	811218205008	Kamalesh A	IV/IT	24	83	17	68	76
9	811218205009	Kaviyarasu C	IV/IT	24	92	16	64	78
10	811218205010	Kayalvizhi.B	IV/IT	24	92	16	64	78
11	811218205011	Manoharan T	IV/IT	30	100	20	80	90

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				No. of hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
12	811218205012	Meena R	IV/IT	30	100	20	80	90
13	811218205013	Milton Billgates J	IV/IT	30	92	20	80	86
14	811218205014	Mohammed Aarif J	IV/IT	30	100	22	88	94
15	811218205015	Pavithra.N	IV/IT	27	92	17	68	80
16	811218205016	Priyanka A	IV/IT	27	92	19	76	84
17	811218205017	Robinson Isaiah E	IV/IT	27	92	19	76	84
18	811218205018	Selvi M	IV/IT	30	100	20	80	90
19	811218205019	Shalini Gayathri S	IV/IT	24	83	16	64	74
20	811218205020	Sivaraman S	IV/IT	30	100	22	88	94
21	811218205021	Snekaa R	IV/IT	30	92	18	72	82
22	811218205022	Suganya K	IV/IT	30	100	22	88	94
23	811218205023	Vasanth S	IV/IT	30	100	22	88	94
24	811218205024	Vijayakaran M	IV/IT	27	92	20	80	86
25	811218205025	Wilson Jayaraj S	IV/IT	27	92	19	76	84
26	811218205026	Antony Arul Doss A	IV/IT	30	100	20	80	90
27	811218205027	Geethanjali R	IV/IT	24	83	16	64	74
28	811218205301	Dhanalaxmi.K	IV/IT	24	83	16	64	74
29	811219205001	Akash V	III /IT	30	100	22	88	94
30	811219205002	Akilandeswari J	III /IT	27	92	18	72	82



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				No. of hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
31	811219205003	Aravindhnan R	III/IT	30	100	22	88	94
32	811219205004	Chitra Bharathy M	III/IT	30	92	20	80	86
33	811219205005	Jeevitha M	III/IT	30	92	20	80	86
34	811219205006	Kaviya K	III/IT	30	100	22	88	94
35	811219205008	Libia Pojathsiyu C	III/IT	27	92	20	80	86
36	811219205009	Mageshwaran M	III/IT	30	92	20	80	86
37	811219205011	Ranjith M	III/IT	30	100	22	88	94
38	811219205012	Ranjith kumar A	III/IT	27	92	20	80	86
39	811219205013	Shareen Banu M R	III/IT	27	92	20	80	86
40	811219205014	Shobana K	III/IT	30	100	22	88	94
41	811219205015	Sivaranjani P	III/IT	27	92	20	80	86
42	811219205016	Sowmiya P	III/IT	30	100	22	88	94
43	811219205017	Surya A	III/IT	30	100	20	80	90
44	811219205018	Swetha S	III/IT	27	90	19	76	83
45	811219205019	Tamil selvi T	III/IT	30	100	19	76	88
46	811219205020	Vijaya kumar M	III/IT	30	100	21	84	92
47	811219205021	Visalini P	III/IT	27	90	19	76	83
48	811219205501	Karthick A	III/IT	24	80	20	80	80
49	811220205002	Aiswariya V	II/IT	24	80	20	80	80




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				No. of hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
50	811220205004	Anbazhagan S	II/IT	27	90	19	76	83
51	811220205005	Balamohan R	II/IT	30	100	20	80	90
52	811220205006	Benny A	II/IT	27	90	19	76	83
53	811220205007	Boomika P	II/IT	24	80	21	84	82
54	811220205008	Charulatha B	II/IT	27	90	20	80	85
55	811220205009	Chiranjeevi V	II/IT	30	100	21	84	92
56	811220205011	Dinesh M	II/IT	27	90	20	80	85
57	811220205012	Gowtham B	II/IT	30	100	19	76	88
58	811220205014	Hariharan S	II/IT	30	100	20	80	90
59	811220205015	Hemalatha G	II/IT	30	100	21	84	92
60	811220205016	Jeeva M	II/IT	27	90	21	84	87
61	811220205018	Keerthana S	II/IT	24	80	20	80	80
62	811220205019	Kirubhashree D	II/IT	27	90	21	84	87
63	811220205020	Krishnan N	II/IT	30	100	20	80	90
64	811220205021	Magesh G	II/IT	27	90	19	76	83
65	811220205022	Mahasuvetha M	II/IT	30	100	19	76	88
66	811220205023	Manikandan M	II/IT	30	100	21	84	92
67	811220205024	Meenatchi A	II/IT	27	90	19	76	83
68	811220205025	Mohanapriya K	II/IT	24	80	20	80	80

  
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				No. of hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
69	811220205026	Monisha A	II/IT	24	80	21	84	82
70	811220205027	Murugesan K	II/IT	27	90	22	88	89
71	811220205029	Pragathi R	II/IT	30	100	19	76	88
72	811220205030	Priyanga K	II/IT	27	90	19	76	83
73	811220205032	Rajeswari S	II/IT	24	80	21	84	82
74	811220205035	Rasika A	II/IT	27	90	20	80	85
75	811220205036	Ravikumar M	II/IT	30	100	21	84	92

  
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This is to certify that Mr/Ms. **Murugesan.K** of ..... II ...-IT.....has successfully completed the Value Added Course on **“Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

  
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This is to certify that Mr/Ms. **Rasika.A** of ..... II ...-IT.....has successfully completed the Value Added Course on **Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

  
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This is to certify that Mr/Ms. **Ravikumar.M** of ..... II ...-IT.....has successfully completed the Value Added Course on **Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

  
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This is to certify that Mr/Ms **Jeevitha.M** of ..... I II...-IT.....has successfully completed the Value Added Course on **“Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

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This is to certify that Mr/Ms. **Surya.A** of ..... III ...-IT.....has successfully completed the Value Added Course on **Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

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This is to certify that Mr/Ms. **Swetha.S** of ..... III ...-IT.....has successfully completed the Value Added Course on **Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

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This is to certify that Mr/Ms. **Kaviya.K** of ..... III ...-IT.....has successfully completed the Value Added Course on **-Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

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This is to certify that Mr/Ms. **Aravindhnan.R** of ..... III ...-IT.....has successfully completed the Value Added Course on **Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from **13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021 (5 days)** during the Academic year 2021-2022..

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This is to certify that Mr/Ms. **Akash.V** of ..... III ...-IT.....has successfully completed the Value Added Course on **Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

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This is to certify that Mr/Ms. **Deepa.T** of ..... IV ...-IT.....has successfully completed the Value Added Course on **-Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

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This is to certify that Mr/Ms. **Janani.S** of ..... IV ...-IT.....has successfully completed the Value Added Course on **Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

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This is to certify that Mr/Ms. **Priyanka.A** of ..... IV ...-IT.....has successfully completed the Value Added Course on **Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

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This is to certify that Mr/Ms. **Suganya.K** of ..... IV ...-IT.....has successfully completed the Value Added Course on **Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

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# Indra Ganesan

**COLLEGE OF ENGINEERING**

Madurai Main Road (NH-45B), Manikandam, Trichy-12.

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

## CERTIFICATE of Participation

This is to certify that Mr/Ms. **Vasanth.S** of ..... IV ...-IT.....has successfully completed the Value Added Course on **Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

**Mr.S.karthikeyan**

**Project Manager**

**Fantasy Solution**

**Dr. G. Balakrishnan, M.B., Ph.D.,**

Principal

Indra Ganesan College of Engineering

IG Valley, Madurai Main Road

Manikandam, Trichy-620 012.

**Principal**

**IGCE**



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## CERTIFICATE of Participation

This is to certify that Mr/Ms. **Geethanjali.R** of ..... IV ...-IT.....has successfully completed the Value Added Course on **Manipulation of Nano Technology in Materials** organized by Department of Information Technology and IQAC of our Institution in Association with from 13<sup>th</sup> December 2021 to 17<sup>th</sup> December 2021(5 days) during the Academic year 2021-2022..

**Mr.S.karthikeyan**

**Project Manager**

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