



# J.K.K. MUNIRAJAH MEDICAL RESEARCH FOUNDATION

## ANNAI J.K.K. SAMPOORANI AMMAL COLLEGE OF PHARMACY

Ethirmedu, B. Komarapalayam-638 183, Namakkal Dist. Tamilnadu,India.

Approved by : Pharmacy Council of India. New Delhi & Affiliated to The Tamilnadu Dr. M.G.R Medical University, Chennai.

Website : [www.jkkmmrfpharmacy.edu.in](http://www.jkkmmrfpharmacy.edu.in) / E-Mail : [principal@jkkmmrfpharmacy.edu.in](mailto:principal@jkkmmrfpharmacy.edu.in)

Contact No : +919789456750, +919943066944, +919943069944.

**Dr.N. SENTHILKUMAR, M.Pharm., Ph.D.,**  
**Principal**

ADD ON COURSE	MODERN TECHNOLOGY TO ENHANCE DISEASE RESISTANCE IN MEDICINAL CROPS
DEPARTMENT	PHARMACOGNOSY
ACADEMIC YEAR	2022-2023
DATE	11.10.2022-19.10.2022
VENUE	SEMINAR HALL

### REPORT

No. of Students Enrolled : 65

No of Students Certified: 59

No.of Students Absent :06

#### Objectives :

The objective of the course provides the knowledge on Genetic modification of plants involves adding a specific stretch of DNA into the plant's genome, giving it new or different characteristics. This could include changing the way the plant grows, or making it resistant to a particular disease

#### Note:

**Certificate will be issued only for the students attending more than three days**

#### Learning Outcomes :

- The natural and unique medicinal plants are used for curing various diseases/ailments and income generation.
- Ayurveda and other Indian literature have mentioned the use of plants in treatment of various human ailments.
- Medicinal plants are important source to combat the serious diseases in all over the world.
- The students were actively participated in these course and gained knowledge.

HOD



PRINCIPAL

**Dr. N.SENTHILKUMAR,**  
**PRINCIPAL,**

**JKK MUNIRAJAH MEDICAL RESEARCH FOUNDATION**  
**ANNAI JKK SAMPOORANI AMMAL COLLEGE OF PHARMACY,**  
**ETHIRMEDU, KOMARAPALAYAM - 638 183,**  
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**Dr.N. SENTHILKUMAR, M.Pharm., Ph.D.,**

**Principal**

REF.NO: JKKM/PH-COGNOSY /REQ/2022/001

Date: 08.10.2022

From,

Department of Pharmacognosy,  
JKKMMRF'S Annai JKK Sampoorani Ammal College of Pharmacy,  
Komarapalayam, Namakkal [Dist],  
Tamil Nadu, PIN: 638183.

To,

The Principal,  
JKKMMRF'S Annai JKK Sampoorani Ammal College of Pharmacy,  
Komarapalayam, Namakkal [Dist],  
Tamil Nadu, PIN: 638183.

**Subject:** Requesting Permission to conduct Value added course ( Modern Technology To Enhance Disease Resistance In Medicinal Crops) -regarding.

Respected Sir,

With due respect, we humbly request you to grand permission to conduct a Value added course on **Modern Technology To Enhance Disease Resistance in Medicinal Crops** during (11.10.2022 to 19.10.2022) in the Seminar Hall. It will be a very informative course for our students.

Kindly do the needful. We will be grateful to you sir.

Thank you,

Dr. N. SENTHILKUMAR,  
PRINCIPAL,

JKK MUNIRAJAH MEDICAL RESEARCH FOUNDATION  
ANNAI JKK SAMPOORANI AMMAL COLLEGE OF PHARMACY,  
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Yours sincerely,

Signature of HOD.



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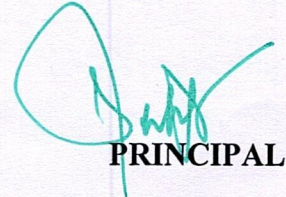
### CIRCULAR

This is inform to the B.PHARM (III & V) and M.PHARM (II and IV SEM) Students that the following value added course can be conducted by the Department of Pharmacognosy, JKKMMRF's ANNAL JKK SAMPOORANI AMMAL COLLEGE OF PHARMACY and it will be commenced as per the schedule:

Course Name	Schedule	Duration	Venue
Modern Technology To Enhance Disease Resistance In Medicinal Crops	11.10.2022 to 19.10.2022	36 HRS	Seminar Hall

All the above mentioned students must enroll and actively participate in the course without Fail.

**NOTE: Certificates should be issued to all the students after completion of the course And examination.**

  
PRINCIPAL



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### VALUE ADDED COURSE

### DEPARTMENT OF PHARMACOGNOSY

### TOPIC: MODERN TECHNOLOGY TO ENHANCE DISEASE RESISTANCE IN

### MEDICINAL CROPS

(DATE: 11.10.2022 TO 19.10.2022)

### SYLLABUS

DATE	TOPIC	TIME	DURATION	RESOURCE PERSONS
11.10.2022	Plant Defense System Introduction	9.00 -10.30AM	1Hr & 30mins	Dr. N. Senthil kumar
		10.45-12.15PM	1Hr & 30mins	
	plant-fungal interaction	1.30-3.00PM	1Hr & 30mins	
		3.15-4.45PM	1Hr & 30mins	
13.10.2022	Limitation in Developing Resistance in Plants	9.00 -10.30AM	1Hr & 30mins	
		10.45-12.15PM	1Hr & 30mins	
	Metabolomics analysis	1.30-3.00PM	1Hr & 30mins	
		3.15-4.45PM	1Hr & 30mins	
14.10.2022	Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)	9.00 -10.30AM	1Hr & 30mins	
		10.45-12.15PM	1Hr & 30mins	
	CRISPR-associated protein 9 (Cas9)	1.30-3.00PM	1Hr & 30mins	
		3.15-4.45PM	1Hr & 30mins	
17.10.2022	PAMP-triggered immunity (PTI),	9.00 -10.30AM	1Hr & 30mins	Mr. R. Vijay Amirthraj
		10.45-12.15PM	1Hr & 30mins	
	Effectors-triggered immunity (ETI).	1.30-3.00PM	1Hr & 30mins	
		3.15-4.45PM	1Hr & 30mins	
18.10.2022	Zinc-finger nucleases (ZFNs)	9.00 -10.30AM	1Hr & 30mins	
		10.45-12.15PM	1Hr & 30mins	
	Transcription activator-like effect or nuclease (TALEN)	1.30-3.00PM	1Hr & 30mins	
		3.15-4.45PM	1Hr & 30mins	
19.10.2022	Complexities of Disease Resistance in Plant	9.00 -10.30AM	1Hr & 30mins	
		10.45-12.15PM	1Hr & 30mins	
	Feedback and Questionnaire session	1.30- 4.45PM	1Hr & 30mins	
			1Hr & 30mins	



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**JKKMMRF'S-ANNAI JKK  
SAMPOORANI AMMAL  
COLLEGE OF PHARMACY**

**Komarapalayam, Namakkal -  
638183**

*Value Added Course*

Organized by

Department of Pharmacognosy

**TOPIC: MODERN TECHNOLOGY  
TO ENHANCE DISEASE  
RESISTANCE IN MEDICINAL  
CROPS**

**On: 11.10.2022-19.10.2022**

**Venue: SEMINAR HALL**



**ABOUT US:**

Dr.J.K.K Munirajah is a reputed industrialist technocrat and educational besides, being a social worker ,a person imbued in deep spiritual values and philanthropist. At Present Annai J.K.K Sampoorani Ammal Charitable Trust runs Paramedical Institutions offering Diploma, Graduate , Post Graduate & Ph.D, Courses and Research Scholarships in Pharmacy, nursing Physiotherapy and Occupational Therapy at Komarapalayam. The Trust has won many national and state awards. These renowned Educational Institutions spared education to promote knowledge, wisdom and service -Orientation.



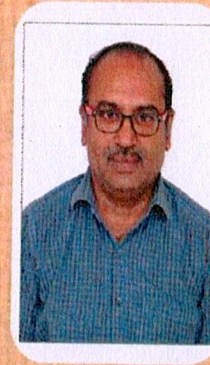
**RESOURCE PERSON**



**Dr. N. Senthil Kumar, M.Pharm., Ph.D**

Principal

JKKMMRF's Annai JKK Sampoorani Ammal College of Pharmacy, Komarapalayam



**Mr. R. Vijay Amirtharaj, M.Pharm**

Professor and Head

JKKMMRF's Annai JKK Sampoorani Ammal College of Pharmacy, Komarapalayam, Namakkal District, Tamil Nadu.



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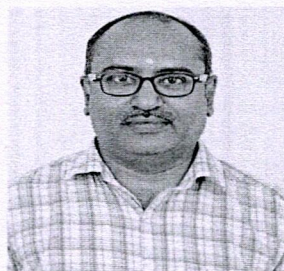
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ADD-ON COURSE TITLE : Modern Technology To Enhance Disease Resistance  
In Medicinal Crops  
ACADEMIC YEAR : 2022-2023  
DATE : 11.10.2022-19.10.2022

### RESOURCE PERSON PROFILE



Name : Vijayamirtharaj R  
Designation : Professor  
Department : Pharmaceutical Chemistry  
Organization : Jkkmunirajah Medical Research Foundation – Annaijkkampoorni  
Ammal College Of Pharmacy, Komarapalayam  
Phone Number : +91 – 8667861370  
Email Id : Mukeshrohith@Yahoo.Co.In  
Qualification : M.Pharm.,  
Experience : 23  
Address : 103, Vallal Nagar, Chithode, Erode-638102

*R. Vijayamirtharaj*



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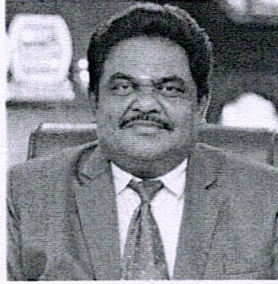
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DATE : 11.10.2022-19.10.2022

### RESOURCE PERSON PROFILE



Name : Dr.N.Senthilkumar  
Designation : Professor & Principal  
Department : Pharmaceutical Chemistry  
Organization : JKK Munirajah Medical Research Foundation - Annai JKK Sampoorni  
Ammal College Of Pharmacy, Komarapalayam  
Phone Number : +91 - 9789456737  
Email Id : [senthilkumarjkkm@gmail.com](mailto:senthilkumarjkkm@gmail.com)  
Qualification : M.Pharm., Ph.D  
Experience : 28 Years.



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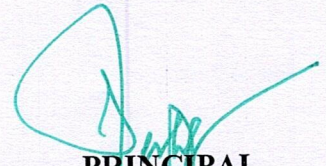
NAME OF THE ORGANIZING DEPARTMENT : DEPARTMENT OF PHARMACOGNOSY  
VALUE ADDED COURSE NAME : Modern Technology To Enhance  
Disease Resistance In Medicinal Crops  
ACADEMIC YEAR : 2022-2023  
DATE : 11.10.2022-19.10.2022

### FOLLOWING FACULTY MEMBERS ORGANIZING VALUE ADDED COURSE PROGRAM

S.NO	NAME OF THE FACILITIES	DESIGNATION
1.	Dr. P. Satheeshkumar	Associate professor
2.	Mrs. R. Kopperundevi	Assistant professor
3.	Ms. Sreelekha	Assistant professor

  
HOD



  
PRINCIPAL

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DEPARTMENT	PHARMACOGNOSY
ACADEMIC YEAR	2022-2023
DATE	11.10.2022-19.10.2022
VENUE	SEMINAR HALL

### STUDENTS ENROLLMENT

S.N O	Register No	Students Name	Year	Course	Signature
1	560021507582	SIVASURYA P	SEM-III	B.PHARM	
2	560021507583	SOUNDHIRARAJAN K	SEM-III	B.PHARM	
3	560021507584	SOWBARNICA S	SEM-III	B.PHARM	
4	560021507585	SOWMIKA M	SEM-III	B.PHARM	
5	560021507586	SRIRAM L	SEM-III	B.PHARM	
6	560021507587	SUDHARSANA R	SEM-III	B.PHARM	
7	560021507588	SURYA PRANESH V R	SEM-III	B.PHARM	
8	560021507589	TAMILSELVAN R	SEM-III	B.PHARM	
9	560021507590	THILAGAVATHI T	SEM-III	B.PHARM	
10	560021507591	THILAGAVATHY K	SEM-III	B.PHARM	
11	560021507592	VASANTHAKUMAR V	SEM-III	B.PHARM	
12	560021507593	VASUDEVAN V	SEM-III	B.PHARM	
13	560021507594	VELAN A R	SEM-III	B.PHARM	



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14	560021507595	VELAN S	SEM-III	B.PHARM	S. Velan
15	560021507596	VIGNESH S	SEM-III	B.PHARM	Vignesh S.
16	560021507597	VINCI JULIET V	SEM-III	B.PHARM	Vinci Juliet
17	560021507598	VISHAL M	SEM-III	B.PHARM	Vishal M.
18	560021507599	VISHALI K	SEM-III	B.PHARM	Vishali K.
19	560021507600	YOGESH D	SEM-III	B.PHARM	Yogesh D.
20	560020507584	TAMILAMUTHAN S J	SEM-V	B.PHARM	Tamilamuthan S.
21	560020507585	THARAKESH S	SEM-V	B.PHARM	Tharakesh S.
22	560020507586	THARUN R	SEM-V	B.PHARM	Tharun R.
23	560020507587	THIRUMURUGAN D	SEM-V	B.PHARM	Thirumurugan D.
24	560020507588	UDHAYAKUMAR S	SEM-V	B.PHARM	Udhayakumar S.
25	560020507589	VAISHNAVI V	SEM-V	B.PHARM	Vaishnavi V.
26	560020507590	VARUNKUMAR S	SEM-V	B.PHARM	Varunkumar S.
27	560020507591	VEERAYUVARAJ P	SEM-V	B.PHARM	Veerayuvraj P.
28	560020507592	VENKATESH G	SEM-V	B.PHARM	Venkatesh G.
29	560020507593	VENKATESH S	SEM-V	B.PHARM	Venkatesh S.
30	560020507594	VIGNESH K	SEM-V	B.PHARM	Vignesh K.
31	560020507595	VIGNESH R	SEM-V	B.PHARM	Vignesh R.
32	560020507596	VIGNESHWARAN R	SEM-V	B.PHARM	Vigneshwaran R.
33	560020507597	VIJAY R	SEM-V	B.PHARM	Vijay R.



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34	560020507598	VISHWA S	SEM-V	B.PHARM	S. Vishwa
35	560020507599	YASAR ARAFATH H	SEM-V	B.PHARM	Yasar
36	560021507601	ARULKUMAR G	SEM-V	B.PHARM	Arulkumar G.
37	560021507602	BALAMURUGAN S	SEM-V	B.PHARM	Balamurugan S
38	560021507603	HEMAVARSHINY K	SEM-V	B.PHARM	Hemavarshini K.
39	560021507604	KANNAN M	SEM-V	B.PHARM	Kannan M.
40	560021507605	KARTHIK K	SEM-V	B.PHARM	Karthik K.
41	560021507606	LOKESH R	SEM-V	B.PHARM	Lokesh R.
42	560021507607	NAVEENKUMAR M	SEM-V	B.PHARM	Naveen M.
43	560021507608	PONNUVEL M	SEM-V	B.PHARM	Ponnuvel M.
44	560021507609	PRABHU M	SEM-V	B.PHARM	Prabhu M.
45	560021507610	SARAN R	SEM-V	B.PHARM	Saran R.
46	560021507611	VELMURUGAN D	SEM-V	B.PHARM	Velmurugan D.
47	261320507501	ASARUDEEN A	SEM-IV	M.PHARM (PHARMACEUTICAL ANALYSIS)	Asaru A.
48	261320507502	ASWIN KUMAR N	SEM-IV	M.PHARM (PHARMACEUTICAL ANALYSIS)	A. Swin
49	261320507503	HARIPRAKASH K	SEM-IV	M.PHARM (PHARMACEUTICAL ANALYSIS)	H. Prakash
50	261320507504	KARTHICK S	SEM-IV	M.PHARM (PHARMACEUTICAL	S. Karthick



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**Principal**

				ANALYSIS)	
51	261320507505	KATHIRAVAN K N	SEM-IV	M.PHARM (PHARMACEUTICAL ANALYSIS)	Kathiravan.K.N
52	261320507507	RAMKUMAR K	SEM-IV	M.PHARM (PHARMACEUTICAL ANALYSIS)	R.K.
53	261320507508	SATHISH KUMAR G	SEM-IV	M.PHARM (PHARMACEUTICAL ANALYSIS)	G. Sathish
54	261320507509	SRIVIJAY R	SEM-IV	M.PHARM (PHARMACEUTICAL ANALYSIS)	Srivijay R.
55	261320507510	VIGNESH S	SEM-IV	M.PHARM (PHARMACEUTICAL ANALYSIS)	S. Vignesh
56	261721507507	SANTHOSH S	SEM-II	M.PHARM (PHARMACOGNOSY)	Santhosh S.
57	261721507508	SURYADEVI M	SEM-II	M.PHARM (PHARMACOGNOSY)	Suryadevi M.
58	261721507509	THAMILARASAN M R	SEM-II	M.PHARM (PHARMACOGNOSY)	Thamilarasan M.R.
59	261821507511	RANJITH KUMAR K	SEM-II	M.PHARM (REGULATORY AFFAIRS)	Ranjith Kumar K.
60	261821507512	ROSELIEN B	SEM-II	M.PHARM (REGULATORY AFFAIRS)	Roselien B.



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61	261821507513	SAMYUKTA D	SEM-II	M.PHARM (REGULATORY AFFAIRS)	
62	261821507514	VIDHYA P	SEM-II	M.PHARM (REGULATORY AFFAIRS)	
63	261821507507	KARTHIK KUMAR S	SEM-II	M.PHARM (REGULATORY AFFAIRS)	
64	261821507508	LANCYJENIFER R	SEM-II	M.PHARM (REGULATORY AFFAIRS)	
65	261821507509	NASEELA V V	SEM-II	M.PHARM (REGULATORY AFFAIRS)	



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ADD ON COURSE	MODERN TECHNOLOGY TO ENHANCE DISEASE RESISTANCE IN MEDICINAL CROPS
DEPARTMENT	PHARMACOGNOSY
ACADEMIC YEAR	2022-2023
DATE	11.10.2022-19.10.2022
VENUE	SEMINAR HALL

### STUDENTS ATTENDANCE

S.N O	Register No	Students Name	11.10.22	13.10.22	14.10.22	17.10.22	18.10.22	19.10.22
1	560021507582	SIVASURYA P						
2	560021507583	SOUNDHIRARAJAN K						
3	560021507584	SOWBARNICA S						
4	560021507585	SOWMIKA M						
5	560021507586	SRIRAM L						
6	560021507587	SUDHARSANA R						
7	560021507588	SURYA PRANESH V R	Ab	Ab	Ab	Ab	Ab	



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8	560021507589	TAMILSELVAN R	/	/	/	/	/	/
9	560021507590	THILAGAVATHI T	/	/	/	/	/	/
10	560021507591	THILAGAVATHY K	/	/	/	/	/	/
11	560021507592	VASANTHAKUMAR V	/	/	/	/	/	/
12	560021507593	VASUDEVAN V	/	/	/	/	/	/
13	560021507594	VELAN A R	/	/	/	/	/	/
14	560021507595	VELAN S	/	/	/	/	/	/
15	560021507596	VIGNESH S	/	/	/	/	/	/
16	560021507597	VINCI JULIET V	/	/	/	/	/	/
17	560021507598	VISHAL M	/	/	/	/	/	/
18	560021507599	VISHALI K	Ab	Ab	Ab	Ab	Ab	/
19	560021507600	YOGESH D	/	/	/	/	/	/
20	560020507584	TAMILAMUTHAN S J	/	/	/	/	/	/
21	560020507585	THARAKESH S	/	/	/	/	/	/



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22	560020507586	THARUN R	/	/	/	/	/	/
23	560020507587	THIRUMURUGAN D	/	/	/	/	/	/
24	560020507588	UDHAYAKUMAR S	/	/	/	/	/	/
25	560020507589	VAISHNAVI V	/	/	/	/	/	/
26	560020507590	VARUNKUMAR S	Ab	Ab	Ab	Ab	/	Ab
27	560020507591	VEERAYUVARAJ P	/	/	/	/	/	/
28	560020507592	VENKATESH G	/	/	/	/	/	/
29	560020507593	VENKATESH S	/	/	/	/	/	/
30	560020507594	VIGNESH K	/	/	/	/	/	/
31	560020507595	VIGNESH R	Ab	Ab	Ab	Ab	Ab	/
32	560020507596	VIGNESHWARAN R	/	/	/	/	/	/
33	560020507597	VIJAY R	/	/	/	/	/	/
34	560020507598	VISHWA S	/	/	/	/	/	/
35	560020507599	YASAR ARAFATH H	/	/	/	/	/	/



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36	560021507601	ARULKUMAR G	/	/	/	/	/	/
37	560021507602	BALAMURUGAN S	/	/	/	/	/	/
38	560021507603	HEMAVARSHINY K	/	/	/	/	/	/
39	560021507604	KANNAN M	/	/	/	/	/	/
40	560021507605	KARTHIK K	/	/	/	/	/	/
41	560021507606	LOKESH R	/	/	/	/	/	/
42	560021507607	NAVEENKUMAR M	/	/	/	/	/	/
43	560021507608	PONNUVEL M	/	/	/	/	/	/
44	560021507609	PRABHU M	AB	Ab	Ab	Ab	Ab	/
45	560021507610	SARAN R	/	/	/	/	/	/
46	560021507611	VELMURUGAN D	/	/	/	/	/	/
47	261320507501	ASARUDEEN A	Ab	Ab	Ab	Ab	Ab	/
48	261320507502	ASWIN KUMAR N	/	/	/	/	/	/
49	261320507503	HARIPRAKASH K	/	/	/	/	/	/



  
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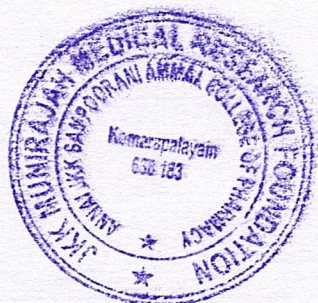
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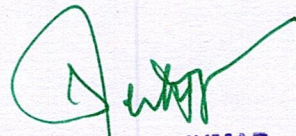
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61	261821507513	SAMYUKTA D	/	/	/	/	/	/
62	261821507514	VIDHYA P	/	/	/	/	/	/
63	261821507507	KARTHIK KUMAR S	/	/	/	/	/	/



  
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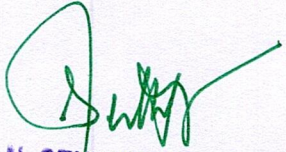
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64	261821507508	LANCYJENIFER R	/	/	/	/	/	/
65	261821507509	NASEELA V V	/	/	/	/	/	/



  
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VALUE ADDED COURSE	MODERN TECHNOLOGY TO ENHANCE DISEASE RESISTANCE IN MEDICINAL CROPS
DEPARTMENT	PHARMACOGNOSY
ACADEMIC YEAR	2022-2023
DATE	11.10.2022-19.10.2022
VENUE	SEMINAR HALL

### MULTIPLE CHOICE QUESTIONS

#### QUESTION AND ANSWER

DATE: 19.10.2022

1. CHOOSE THE CORRECT ANSWER:

TOTAL MARKS: 20X1=20

1) Which of the following is not a method by which pathogens affect the yield of crops?

- a) Reduce the quantity of yield
- b) Reduce the quality of crop produce
- c) Increase in cost production
- d) Increase the flowering period**

2) Which of the following is not a method of the perpetuation of disease by the pathogen?

- a) The entry of pathogen through natural openings
- b) Reproduction by pathogen
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- d) Direct penetration of the pathogen

3) Which of the following is not a method of reducing total biomass of crop?

- a) Damage to leaf tissues
- b) Studying the crop**
- c) Killing branches
- d) Stunting effect

4) Which of the following is not related to Necrosis?

- a) Curling of leaves**
- b) Death of tissues
- c) A common symptom of fungal diseases
- d) Discolouration of leaves

5) Which plant pathogen causes southern leaf blight disease in maize?

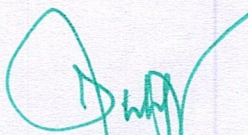


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- a) Puccinia sorghi  
**b) Helminthosporium maydis**  
 c) Macrophomina phaseolina  
 d) None of the above
- 6) The classification of fungi is based on  
 a) Structure of vegetative mycelium  
 b) Sexual stage  
**c) Both mycelial structure and sexual stage**  
 d) None of the above
- 7) Who is known as the Father of tissue culture?  
 a) Bonner  
 b) Laibach  
**c) Haberlandt**  
 d) Gautheret
- 8) The production of secondary metabolites requires the use of \_\_\_\_\_.  
 a) Meristem  
 b) Protoplast  
 c) Axillary buds  
**d) Cell suspension**
- 9) The pair of hormones required for a callus to differentiate are \_\_\_\_\_.  
 a) Ethylene and Auxin  
**b) Auxin and cytokinin**  
 c) Auxin and Abscisic acid  
 d) Cytokinin and gibberellin
- 10) What type of mass spectrometer is used for radiocarbon dating?  
**a) Accelerator Mass Spectrometer**  
 b) Quadrupole Mass Spectrometer  
 c) Sector Mass Spectrometer  
 d) Hybrid Q-TOF Mass Spectrometer
- 11) What has been one of the most successful areas of clinical application for mass spectrometry since the 1990s?  
 a) Anti-doping  
 b) Proteomics  
 c) Metabolomics  
**d) Inborn errors of metabolism**
- 12) The CRISPR/Cas system provides adaptive immunity against foreign genetic elements in what types of





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- a) Bacteria
- b) Archaea
- c) Eukaryotes
- d) A and**

13) Which of the following is not a feature of CRISPR?

- a) Contain palindromic DNA repeats
- b) Have highly conserved spacer regions**
- c) Provide adaptive immunity to Bacteria and Archaea
- d) Used as a molecular biology tool for genome editing

14) CRISPR-Cas9 was discovered in which of the following organisms?

- a) Protists
- b) Fungi
- c) Bacteria**
- d) Viruses

15) Which of the following systems protects our body against disease-causing microbes?

- a) Immune system**
- b) Digestive system
- c) Excretory system
- d) Respiratory system

16) Which of the following immunity is present from our birth?

- a) Innate Immunity**
- b) Active immunity
- c) Passive immunity
- d) Acquired immunity

17) Zinc fingers do not have a role in which of the following processes?

- a) Transcriptional regulation
- b) Ubiquitin-mediated protein degradation
- c) Signal transduction
- d) Cellular transport**

18) Gold nanoparticles are considered as promising candidates for skin immunization and other therapeutic uses. They can be synthesized by using:

- a) Bacteria
- b) Fungi
- c) Algae
- d) Plant

Select the correct answer code:

- a) 1 and 2 only
- b) 1, 2 and 3 only
- c) 3 and 4 only
- d) All of the above**



  
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19) Which among the following is/are gene editing technologies:

- a) CRISPR Cas 9
- b) TALEN
- c) Mega nucleases
- d) SHANEL

Select the correct answer code:

- a) 1, 2 and 3 only
- b) 2 and 3 only
- c) 2, 3 and 4 only
- d) 1 and 4 only

20) Micropropagation, recently seen in news, is more specifically related to:

- a) Tissue culture
- b) Three parent baby
- c) Gene editing
- d) Animal Clonning



A handwritten signature in green ink, appearing to read "Dr. N. Senthilkumar".

Dr. N. SENTHILKUMAR,  
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<b>VALUE ADDED COURSE</b>	<b>MODERN TECHNOLOGY TO ENHANCE DISEASE RESISTANCE IN MEDICINAL CROPS</b>
<b>DEPARTMENT</b>	<b>PHARMACOGNOSY</b>
<b>ACADEMIC YEAR</b>	<b>2022-2023</b>
<b>DATE</b>	<b>11.10.2022-19.10.2022</b>
<b>VENUE</b>	<b>SEMINAR HALL</b>

SIVASURYA. P

**MULTIPLE CHOICE QUESTIONS**

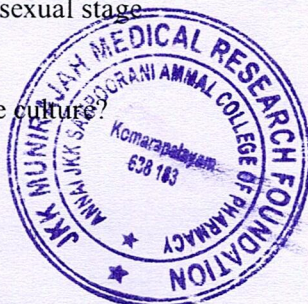
**ANSWER ALL THE QUESTIONS**

**DATE: 19.10.2022**

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**TOTAL MARKS: 20X1=20**

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  - a) Puccinia sorghi
  - b) Helminthosporium maydis
  - c) Macrophomina phaseolina
  - d) None of the above
  
- 6) The classification of fungi is based on
  - a) Structure of vegetative mycelium
  - b) Sexual stage
  - c) Both mycelial structure and sexual stage
  - d) None of the above
  
- 7) Who is known as the Father of tissue culture?
  - a) Bonner
  - b) Lillibach



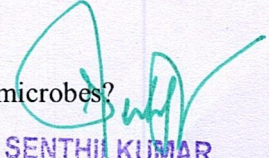
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- c) Haberlandt  
d) Gautheret
- 8) The production of secondary metabolites requires the use of \_\_\_\_\_.  
a) Meristem  
b) Protoplast  
c) Axillary buds  
 d) Cell suspension
- 9) The pair of hormones required for a callus to differentiate are \_\_\_\_\_.  
a) Ethylene and Auxin  
 b) Auxin and cytokinin  
c) Auxin and Abscisic acid  
d) Cytokinin and gibberellin
- 10) What type of mass spectrometer is used for radiocarbon dating?  
 a) Accelerator Mass Spectrometer  
b) Quadrupole Mass Spectrometer  
c) Sector Mass Spectrometer  
d) Hybrid Q-TOF Mass Spectrometer
- 11) What has been one of the most successful areas of clinical application for mass spectrometry since the 1990s?  
a) Anti-doping  
b) Proteomics  
c) Metabolomics  
 d) Inborn errors of metabolism
- 12) The CRISPR/Cas system provides adaptive immunity against foreign genetic elements in what types of organisms?  
a) Bacteria  
b) Archaea  
c) Eukaryotes  
 d) A and B
- 13) Which of the following is not a feature of CRISPR?  
a) Contain palindromic DNA repeats  
 b) Have highly conserved spacer regions  
c) Provide adaptive immunity to Bacteria and Archaea  
d) Used as a molecular biology tool for genome editing
- 14) CRISPR-Cas9 was discovered in which of the following organisms?  
a) Protists  
b) Fungi  
 c) Bacteria  
d) Viruses
- 15) Which of the following systems protects our body against disease-causing microbes?  
 a) Immune system  
b) Digestive system  
c) Excretory system



  
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16) Which of the following immunity is present from our birth?

- a) Innate Immunity
- b) Active immunity
- c) Passive immunity
- d) Acquired immunity

17) Zinc fingers do not have a role in which of the following processes?

- a) Transcriptional regulation
- b) Ubiquitin-mediated protein degradation
- c) Signal transduction
- d) Cellular transport

18) Gold nanoparticles are considered as promising candidates for skin immunization and other therapeutic uses. They can be synthesized by using:

- a) Bacteria
- b) Fungi
- c) Algae
- d) Plant

Select the correct answer code:

- a) 1 and 2 only
- b) 1, 2 and 3 only
- c) 3 and 4 only
- d) All of the above

19) Which among the following is/are gene editing technologies:

- a) CRISPR Cas 9
- b) TALEN
- c) Mega nucleases
- d) SHANEL

Select the correct answer code:

- a) 1, 2 and 3 only
- b) 2 and 3 only
- c) 2, 3 and 4 only
- d) 1 and 4 only

20) Micropropagation, recently seen in news, is more specifically related to:

- a) Tissue culture
- b) Three parent baby
- c) Gene editing
- d) Animal Cloning



  
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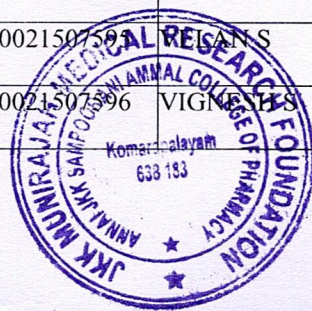
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**Principal**

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DEPARTMENT	PHARMACOGNOSY
ACADEMIC YEAR	2022-2023
DATE	11.10.2022-19.10.2022
VENUE	SEMINAR HALL

### STUDENTS MARK STATEMENT

So.N	Register No	Students Name	Mark	Percentage
1	560021507582	SIVASURYA P	18	90
2	560021507583	SOUNDHIRARAJAN K	19	95
3	560021507584	SOWBARNICA S	16	80
4	560021507585	SOWMIKA M	15	75
5	560021507586	SRIRAM L	Ab	Ab
6	560021507587	SUDHARSANA R	17	85
7	560021507588	SURYA PRANESH V R	18	90
8	560021507589	TAMILSELVAN R	19	95
9	560021507590	THILAGAVATHI T	20	100
10	560021507591	THILAGAVATHY K	16	80
11	560021507592	VASANTHAKUMAR V	20	100
12	560021507593	VASUDEVAN V	18	90
13	560021507594	VELAN A R	Ab	Ab
14	560021507595	VIGNANESH S	18	90
15	560021507596	VIGNANESH S	19	95



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17	560021507598	VISHAL M	15	75
18	560021507599	VISHALI K	18	90
19	560021507600	YOGESH D	Ab	Ab
20	560020507584	TAMILAMUTHAN S J	18	90
21	560020507585	THARAKESH S	19	95
22	560020507586	THARUN R	20	100
23	560020507587	THIRUMURUGAN D	16	80
24	560020507588	UDHAYAKUMAR S	18	90
25	560020507589	VAISHNAVI V	19	95
26	560020507590	VARUNKUMAR S	16	80
27	560020507591	VEERAYUVARAJ P	15	75
28	560020507592	VENKATESH G	18	90
29	560020507593	VENKATESH S	Ab	Ab
30	560020507594	VIGNESH K	18	90
31	560020507595	VIGNESH R	19	95
32	560020507596	VIGNESHWARAN R	20	100
33	560020507597	VIJAY R	16	80
34	560020507598	VISHWA S	18	90
35	560020507599	YASAR ARAFATH H	19	95
36	560021507601	ARULKUMAR G	16	80
37	560021507602	BALAMURUGAN S	15	75
38	560021507603	HEMAVARSHINY K	18	90
39	560021507604	KANNAN M	17	85
40	560021507605	KARTHIK K	18	90
41	560021507606	LOKESH R	19	95
42	560021507607	NAVEENKUMAR M	20	100
43	560021507608	PONNURVEL M	16	80



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44	560021507609	PRABHU M	19	95
45	560021507610	SARAN R	20	100
46	560021507611	VELMURUGAN D	16	80
47	261320507501	ASARUDEEN A	18	90
48	261320507502	ASWIN KUMAR N	19	95
49	261320507503	HARIPRAKASH K	16	80
50	261320507504	KARTHICK S	15	75
51	261320507505	KATHIRAVAN K N	Ab	Ab
52	261320507507	RAMKUMAR K	19	95
53	261320507508	SATHISH KUMAR G	20	100
54	261320507509	SRIVIJAY R	16	80
55	261320507510	VIGNESH S	19	95
56	261721507507	SANTHOSH S	16	80
57	261721507508	SURYADEVI M	15	75
58	261721507509	THAMILARASAN M R	18	90
59	261821507511	RANJITH KUMAR K	19	95
60	261821507512	ROSELIEN B	20	100
61	261821507513	SAMYUKTA D	19	95
62	261821507514	VIDHYA P	19	95
63	261821507507	KARTHIK KUMAR S	20	100
64	261821507508	LANCYJENIFER R	Ab	Ab
65	261821507509	NASEELA V V	18	90



*(Handwritten Signature)*

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### FEEDBACK FORM

NAME OF THE STUDENT: SIVASURYA.P

REGISTER NO: 56002150782

COURSE: B.PHARM II - YEAR (II)-SEM

DATE: 19.10.2022.

TOPIC: MODERN TECHNOLOGY TO ENHANCE

E MAIL:

CONTACT NO:

DISEASE RESISTANCE IN MEDICINAL CROPS

S.no	Description	Satisfactory	Good	Very good	Excellent
1.	Usefulness of the information provided				/
2.	Design of the session? (Organization, format, pacing)			/	
3.	Presentation of information		/		
4.	Overall quality of the session				/
5.	Clarity in delivering concepts			/	
6.	Interaction			/	



*(Signature)*  
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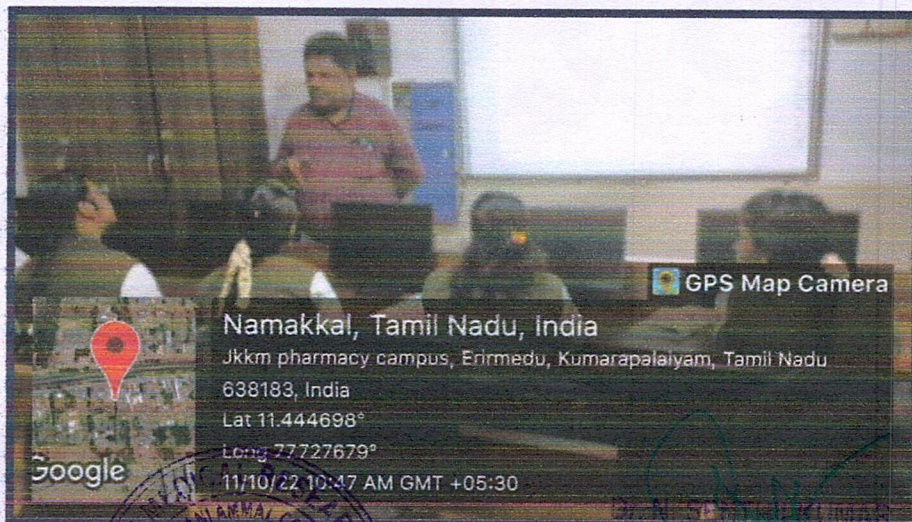
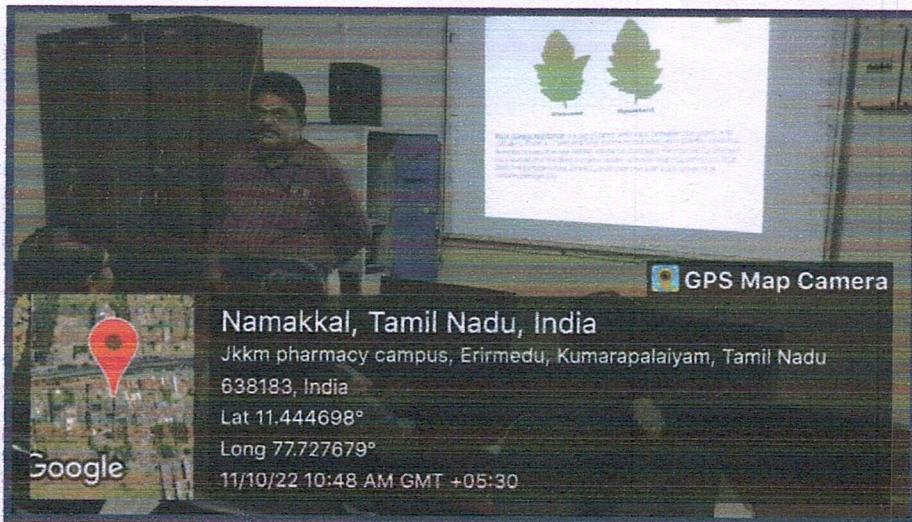
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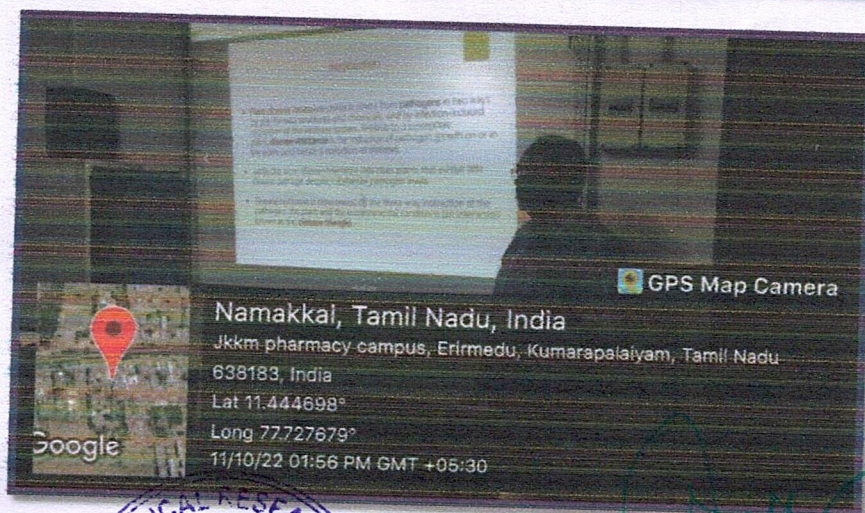
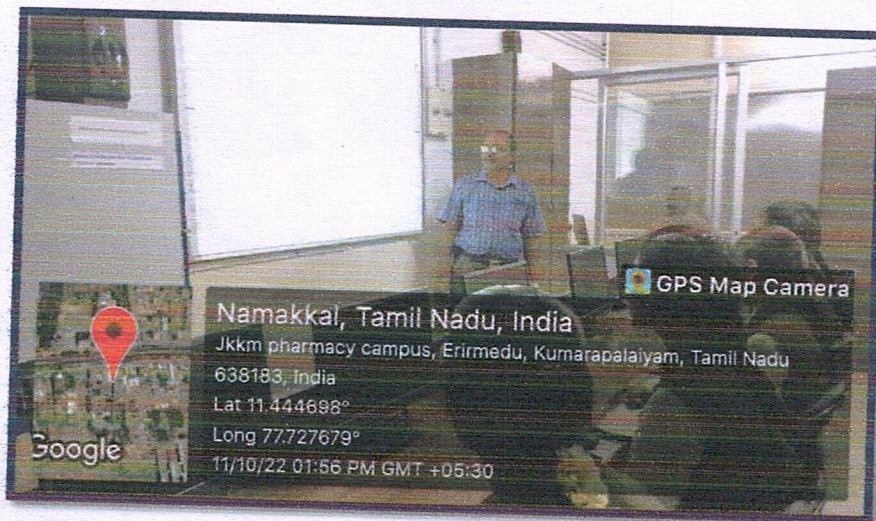
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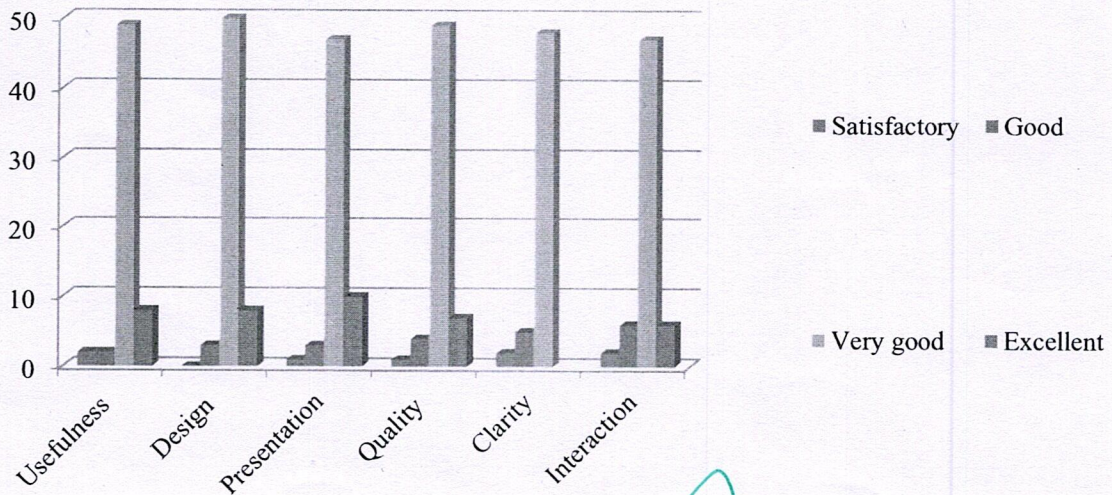
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### STUDENTS FEEDBACK ANALYSIS



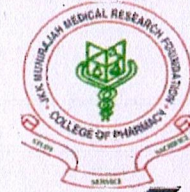
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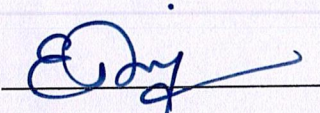


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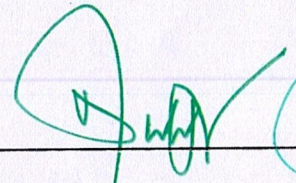
*Department Of Pharmacognosy*

*Certificate of participation*

This is to certify that Mr./Ms./Mrs./Dr. SIVASURYA.P  
has participated in Value Added Course on Modern Technology to  
Enhance Disease Resistance Crops held on 11.10.2022-19.10.2022

  
Organizing Secretary



  
Convenor

Dr. N.SENTHILK  
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