



# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

REF.NO:SSIP/ REQ/2020/001

Date: 28/12/2020

## From

Department of Pharmaceutical Chemistry,  
SS institute of pharmacy,  
Sankari, Salem (DIST) - 637301.

## To

The principal,  
SS institute of pharmacy,  
Sankari, Salem (DIST) – 637301.


**Subject:** Letter for requesting permission to conduct **ADD ON COURSE** -Reg.

## Respected sir,


We are requesting you to grant permission to conduct add-on course in the seminar hall on **05/01/2021 to 28/01/2021**. We wish to conduct add on course on the title “**Nuclear And Radio Chemistry**”. This add-on course program would be a great opportunity for students to learn and that would help to shape the students.


Thanking you,

Yours truly,

  
PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301



  
PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301



NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : [ssip1718@gmail.com](mailto:ssip1718@gmail.com) | Website : [www.ssip.edu.in](http://www.ssip.edu.in)



# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.  
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

6

DATE: 21/12/2020

## CIRCULAR

This is to inform that will B.PHARM students have the schedule of following value - added course to be conducted by our SS Institute of Pharmacy and it as mentioned below.

COURSE NAME	SCHEDULE	DURATION	VENUE	RESOURCE PERSON
NUCLEAR AND RADIO CHEMISTRY	05/1/2021 to 28/1/2021	42 HOURS	SEMINAR HALL	M.VANITHA

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

**Note:** Certificates will be issued for the eligible students after completion of the course and examination.



PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301

PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : [ssip1718@gmail.com](mailto:ssip1718@gmail.com) | Website : [www.ssip.edu.in](http://www.ssip.edu.in)

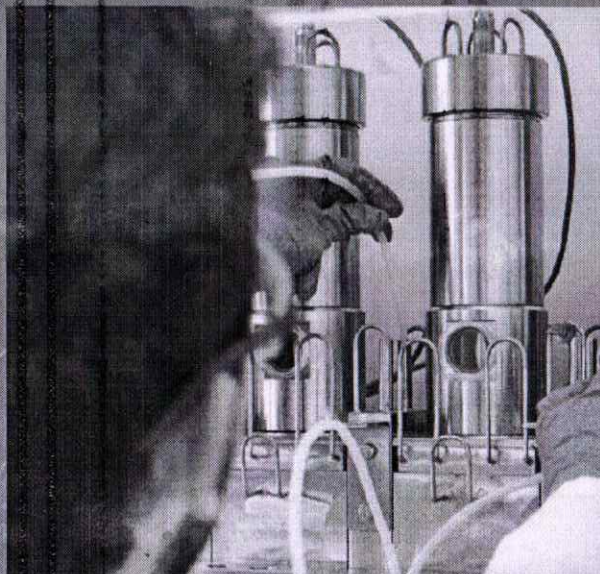


## CONTACT US

E-mail : [ssip1718@gmail.com](mailto:ssip1718@gmail.com)

Mobile : 9443026056

Website : [www.ssip.edu.in](http://www.ssip.edu.in)



## ADDRESS

NH - 47, Manjakalpatti,  
sankari, Tamil Nadu  
637301

## COURSE TITLE

**NUCLEAR AND  
RADIO  
CHEMISTRY**

## RESOURCE PERSON

Mrs.M.VANITHA M.Pharm  
Assistant. Professor  
SS Institute of Pharmacy.

## TOPICS

1. Principles of Nuclear Medicine and Radiopharmaceuticals.
2. Radioisotopes in Diagnostics and Therapeutics.
3. Safety and Regulatory Aspects of Nuclear and Radio Technology in Healthcare.
4. Radiation Dosimetry, Imaging Techniques, and Quality Control.

## SS INSTITUTE OF PHARMACY SANKARI

DEPARTMENT OF  
PHARMACEUTICAL  
CHEMISTRY



**VENUE - Seminar Hall**  
**DATE - 5/1/2021 to 28/1/2021**  
**TIME - 10.00 a.m - 1.00 p.m**





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

## SYLLABUS

### NUCLEAR AND RADIOCHEMISTRY

Sl. No.	Topic	DATE
1	<b>Foundations of Nuclear Chemistry</b> <ul style="list-style-type: none"><li>- Introduction to Nuclear Chemistry</li><li>- Radioactive Decay and Nuclear Reactions</li><li>- Chemical Properties of Radioactive Elements</li></ul>	5/1/2021- 7/1/2021
2	<b>Radiation Detection and Measurement</b> <ul style="list-style-type: none"><li>- Radiation Detection and Measurement</li><li>- Advanced Radiation Detection and Measurement</li></ul>	8/1/2021- 11/1/2021
3	<b>Nuclear Medicine and Power</b> <ul style="list-style-type: none"><li>- Nuclear Medicine and Radiopharmaceuticals</li><li>- Nuclear Power and Fuel Cycle</li></ul>	20/1/2021- 22/1/2021
4	<b>Environmental and Industrial Applications</b> <ul style="list-style-type: none"><li>- Environmental and Geological Applications</li><li>- Radiochemical Synthesis and Kinetics</li></ul>	23/1/2021- 25/1/2021
5	<b>Safety and Regulations</b> <ul style="list-style-type: none"><li>- Nuclear and Radiochemical Safety and Regulations</li></ul>	27/1/2021- 28/1/2021

RESOURCE PERSON:M.Vanitha

TOTAL HOURS:42Hrs



PRINCIPAL.  
SS INSTITUTE OF PHARMACY.  
KUPPANUR (PO), SANKARI (TK).  
SALEM - 637301

PRINCIPAL.  
SS INSTITUTE OF PHARMACY  
KUPPANUR (PO), SANKARI (TK).  
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone.: 04283 241080 | E-mail: [ssip1718@gmail.com](mailto:ssip1718@gmail.com) | Website: [www.ssip.edu.in](http://www.ssip.edu.in)





# SS INSTITUTE OF PHARMACY

*(A unit of VS Educational & Charitable Trust)*

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.  
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

---

## **ADD ON / CERTIFICATE VALUE ADDED COURSES ACADEMIC YEAR 2020-2021**





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.  
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

## ACADAMIC YEAR 2020-2021

S.NO	NAME OF ADD ON CERTIFICATES PROGRAMS	COURSE CODE	NO OF STUDENTS ENROLLED	TYPE OF ADD ON CERTIFICATE PROGRAMS
1.	NUCLEAR AND RADIO CHEMISTRY	21NRC01	24	Self-framed course
2.	ADVANCED TECHNIQUES IN DRUG REPURPOSING	21ATDR02	50	Self-framed course
3.	ADVANCED REMOTE PATIENT MONITORING	21ARPM03	68	Self-framed course
4.	ADVANCED TECHNIQUES IN MEDICAL IMAGING	21ATMI04	62	Self-framed course



*[Signature]*  
PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : [ssip1718@gmail.com](mailto:ssip1718@gmail.com) | Website : [www.ssip.edu.in](http://www.ssip.edu.in)





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

## ADD ON COURSE – ENROLLMENT LIST

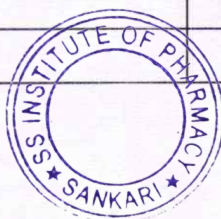
NAME OF ADD ON COURSE : NUCLEAR AND RADIO CHEMISTRY

COURSE INSTRUCTORS : VANITHA. M

YEAR OFFERED : 5<sup>th</sup> sem B.Pharm

COURSE DURATION : 42 hrs

S.NO	NAME OF THE STUDENT	REGISTER NO	COURSE
1.	A.ABDUL AZIM	561897201	3 <sup>rd</sup> B.PHARM
2.	K.ARUNKUMAR	561897202	3 <sup>rd</sup> B.PHARM
3.	K.ARUNKUMAR	561897203	3 <sup>rd</sup> B.PHARM
4.	V.CHANDURU	561897204	3 <sup>rd</sup> B.PHARM
5.	L.DHINESHKUMAR	561897205	3 <sup>rd</sup> B.PHARM
6.	S.GANESAN	561897206	3 <sup>rd</sup> B.PHARM
7.	M.GNANAPRAKASH	561897207	3 <sup>rd</sup> B.PHARM
8.	K.GOKULNATH	561897208	3 <sup>rd</sup> B.PHARM
9.	S.GOKUL RAJ	561897209	3 <sup>rd</sup> B.PHARM
10.	P.HARI VISHVA	561897210	3 <sup>rd</sup> B.PHARM
11.	B.JEEVANANTH	561897211	3 <sup>rd</sup> B.PHARM
12.	V.KALAIYARASAN	561897212	3 <sup>rd</sup> B.PHARM
13.	K.KAYALVIZHI	561897213	3 <sup>rd</sup> B.PHARM
14.	P.MANOBALA	561897214	3 <sup>rd</sup> B.PHARM
15.	R.RAJESHKANNAN	561897215	3 <sup>rd</sup> B.PHARM
16.	M.SAKTHIVEL	561897216	3 <sup>rd</sup> B.PHARM
17.	G.SHAFIULLAH	561897217	3 <sup>rd</sup> B.PHARM
18.	S.SUBASH VARMA	561897218	3 <sup>rd</sup> B.PHARM
19.	J.TAMIL SELVAN	561897219	3 <sup>rd</sup> B.PHARM
20.	N.VASUVI	561897220	3 <sup>rd</sup> B.PHARM
21.	V.VEDHACHALAM	561897221	3 <sup>rd</sup> B.PHARM
22.	M.VIGNESH	561897222	3 <sup>rd</sup> B.PHARM
23.	R.VIJAY	561897223	3 <sup>rd</sup> B.PHARM
24.	P.THINAGARAN	561997251	3 <sup>rd</sup> B.PHARM



PRINCIPAL.  
SS INSTITUTE OF PHARMACY.  
KUPPANUR (PO), SANKARI (TK).  
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : [ssip1718@gmail.com](mailto:ssip1718@gmail.com) | Website : [www.ssip.edu.in](http://www.ssip.edu.in)





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

(b)

## ADD ON COURSE –ATTENDANCE LIST

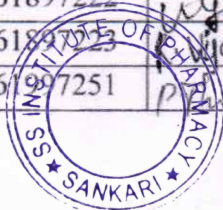
NAME OF ADD ON COURSE : NUCLEAR AND RADIO CHEMISTRY

COURSE INSTRUCTORS : VANITHA. M

YEAR OFFERED : 5<sup>th</sup> sem B.Pharm

COURSE DURATION : 42 hrs

NO	NAME OF THE STUDENT	REGISTER NUMBUR	ATTENDANCE						
			5/1/2021	6/1/21	7/1/21	8/1/21	9/1/21	10/1/21	11/1/21
1.	A.ABDUL AZIM	561897201	Att	Att	Att	Att	Att	Att	Att
2.	K.ARUNKUMAR	561897202	Att	Att	Att	Att	Att	Att	Att
3.	K.ARUNKUMAR	561897203	Att	Att	Att	Att	Att	Att	Att
4.	V.CHANDURU	561897204	Chan	Chan	Chan	Chan	Chan	Chan	Chan
5.	L.DHINESHKUMAR	561897205	Dy	Dy	Dy	Dy	Dy	Dy	Dy
6.	S.GANESAN	561897206	S.Gan	S.Gan	S.Gan	S.Gan	S.Gan	S.Gan	S.Gan
7.	M.GNANAPRAKASH	561897207	GPR	GPR	GPR	GPR	GPR	GPR	GPR
8.	K.GOKULNATH	561897208	Gok	Gok	Gok	Gok	Gok	Gok	Gok
9.	S.GOKUL RAJ	561897209	Gok	Gok	Gok	Gok	Gok	Gok	Gok
10.	P.HARI VISHVA	561897210	Hari	Hari	Hari	Hari	Hari	Hari	Hari
11.	B.JEEVANANTH	561897211	B. Jee	B. Jee	B. Jee	B. Jee	B. Jee	B. Jee	B. Jee
12.	V.KALAIYARASAN	561897212	Kal	Kal	Kal	Kal	Kal	Kal	Kal
13.	K.KAYALVIZHI	561897213	Kay	Kay	Kay	Kay	Kay	Kay	Kay
14.	P.MANOBALA	561897214	P. Man	P. Man	P. Man	P. Man	P. Man	P. Man	P. Man
15.	R.RAJESHKANNAN	561897215	R. Raj	R. Raj	R. Raj	R. Raj	R. Raj	R. Raj	R. Raj
16.	M.SAKTHIVEL	561897216	M. Sak	M. Sak	M. Sak	M. Sak	M. Sak	M. Sak	M. Sak
17.	G.SHAFFIULLAH	561897217	G. Sha	G. Sha	G. Sha	G. Sha	G. Sha	G. Sha	G. Sha
18.	S.SUBASH VARMA	561897218	S. Sub	S. Sub	S. Sub	S. Sub	S. Sub	S. Sub	S. Sub
19.	J.TAMIL SELVAN	561897219	Tamil	Tamil	Tamil	Tamil	Tamil	Tamil	Tamil
20.	N.VASUVI	561897220	N. Vas	N. Vas	N. Vas	N. Vas	N. Vas	N. Vas	N. Vas
21.	V.VEDHACHALAM	561897221	V. Ved	V. Ved	V. Ved	V. Ved	V. Ved	V. Ved	V. Ved
22.	M.VIGNESH	561897222	M. Vign	M. Vign	M. Vign	M. Vign	M. Vign	M. Vign	M. Vign
23.	R.VIJAY	561897223	R. Vij	R. Vij	R. Vij	R. Vij	R. Vij	R. Vij	R. Vij
24.	P.THINAGARAN	561897251	P. Thin	P. Thin	P. Thin	P. Thin	P. Thin	P. Thin	P. Thin



PRINCIPAL  
SS INSTITUTE OF PHARMACY  
KUPPANUR (PO), SANKARI (TK).  
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu

Phone : 04285 241080 | E-mail : [ssip1718@gmail.com](mailto:ssip1718@gmail.com) | Website : [www.ssip1718.com](http://www.ssip1718.com)

PRINCIPAL  
SS INSTITUTE OF PHARMACY  
KUPPANUR (PO), SANKARI (TK)  
SALEM - 637301





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

S.NO	NAME OF THE STUDENT	REGISTER NO	ATTENDANCE						
			20/1/21	22/1/21	23/1/21	24/1/21	25/1/21	27/1/21	28/1/21
1.	A.ABDUL AZIM	561897201	Abul	Abul	Abul	Abul	Abul	Abul	Abul
2.	K.ARUNKUMAR	561897202	Arnk	Arnk	Arnk	Arnk	Arnk	Arnk	Arnk
3.	K.ARUNKUMAR	561897203	Arnk	Arnk	Arnk	Arnk	Arnk	Arnk	Arnk
4.	V.CHANDURU	561897204	Chan	Chan	Chan	Chan	Chan	Chan	Chan
5.	L.DHINESHKUMAR	561897205	Dkt	Dkt	Dkt	Dkt	Dkt	Dkt	Dkt
6.	S.GANESAN	561897206	S.Gan	S.Gan	S.Gan	S.Gan	S.Gan	S.Gan	S.Gan
7.	M.GNANAPRAKASH	561897207	G.P	G.P	G.P	G.P	G.P	G.P	G.P
8.	K.GOKULNATH	561897208	Gokul	Gokul	Gokul	Gokul	Gokul	Gokul	Gokul
9.	S.GOKUL RAJ	561897209	Gokul	Gokul	Gokul	Gokul	Gokul	Gokul	Gokul
10.	P.HARI VISHVA	561897210	Hari	Hari	Hari	Hari	Hari	Hari	Hari
11.	B.JEEVANANTH	561897211	B.Jeevan	B.Jeevan	B.Jeevan	B.Jeevan	B.Jeevan	B.Jeevan	B.Jeevan
12.	V.KALAIYARASAN	561897212	Kal	Kal	Kal	Kal	Kal	Kal	Kal
13.	K.KAYALVIZHI	561897213	Kal	Kal	Kal	Kal	Kal	Kal	Kal
14.	P.MANO BALA	561897214	P.Mano	P.Mano	P.Mano	P.Mano	P.Mano	P.Mano	P.Mano
15.	R.RAJESH KANNAN	561897215	Rajesh	Rajesh	Rajesh	Rajesh	Rajesh	Rajesh	Rajesh
16.	M.SAKTHIVEL	561897216	M.Sakthi	M.Sakthi	M.Sakthi	M.Sakthi	M.Sakthi	M.Sakthi	M.Sakthi
17.	G.SHAFFIULLAH	561897217	Shaf	Shaf	Shaf	Shaf	Shaf	Shaf	Shaf
18.	S.SUBASH VARMA	561897218	Subash	Subash	Subash	Subash	Subash	Subash	Subash
19.	J.TAMIL SELVAN	561897219	Tamil	Tamil	Tamil	Tamil	Tamil	Tamil	Tamil
20.	N.VASUVI	561897220	N.Vasuv	N.Vasuv	N.Vasuv	N.Vasuv	N.Vasuv	N.Vasuv	N.Vasuv
21.	V.VEDHACHALAM	561897221	Ved	Ved	Ved	Ved	Ved	Ved	Ved
22.	M.VIGNESH	561897222	Vign	Vign	Vign	Vign	Vign	Vign	Vign
23.	R.VIJAY	561897223	R.Vijay	R.Vijay	R.Vijay	R.Vijay	R.Vijay	R.Vijay	R.Vijay
24.	P.THINAGARAN	561997251	P.Thin	P.Thin	P.Thin	P.Thin	P.Thin	P.Thin	P.Thin



PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) - 637301, Tamil Nadu  
Phone : 04285 241080 | E-mail : [ssip1718@gmail.com](mailto:ssip1718@gmail.com) | Website : [www.ssip1718.com](http://www.ssip1718.com)

PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.  
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

6

ADD ON COURSE	NUCLEAR AND RADIO CHEMISTRY
DEPARTMENT	PHARMACEUTICAL CHEMISTRY
ACADEMIC YEAR	2020-2021
DATE	05/01/2021 to 28/01/2021
VENUE	SEMINAR HALL
NAME: Hasi Vishwa . P	COURSE: V - Sem

ANSWER ALL THE QUESTIONS:

DATE:28/01/2021

MULTIPLE CHOICE QUESTIONS

MARKS:15

1. What is the primary mode of radioactive decay for unstable nuclei with high atomic numbers?

- ☒ A) Alpha decay
- B) Beta decay
- C) Gamma decay
- D) Electron capture

2. Which of the following is a type of nuclear reaction?

- A) Fission
- B) Fusion
- ☒ C) Radioactive decay
- D) All of the above

3. What is the unit of measurement for radiation activity?

- ☒ A) Becquerel (Bq)
- B) Gray (Gy)
- C) Sievert (Sv)
- D) Curie (Ci)

4. Which radiation detection method is commonly used for alpha and beta radiation?

- A) Scintillation counting
- ☒ B) Gas proportional counting
- C) Semiconductor counting
- D) Liquid scintillation counting

5. What is the primary application of radiopharmaceuticals?

- A) Cancer treatment
- ☒ B) Medical imaging
- C) Nuclear power generation
- D) Environmental monitoring

13



PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301



# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.  
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

6. Which of the following is a type of nuclear reactor?
  - A) Pressurized water reactor (PWR)
  - B) Boiling water reactor (BWR)
  - ☒ C) Gas-cooled reactor (GCR)
  - D) All of the above
7. What is the purpose of the nuclear fuel cycle?
  - A) To generate electricity
  - B) To produce radioisotopes
  - ☒ C) To manage nuclear waste
  - D) To enrich uranium
8. Which radiation protection principle aims to minimize exposure time?
  - ☒ A) Time
  - B) Distance
  - C) Shielding
  - D) Containment
9. What is the unit of measurement for radiation dose?
  - ☒ A) Gray (Gy)
  - B) Sievert (Sv)
  - C) Becquerel (Bq)
  - D) Curie (Ci)
10. Which of the following is a radiochemical separation method?
  - A) Distillation
  - B) Crystallization
  - ☒ C) Solvent extraction
  - D) Ion exchange
11. What is the primary application of radioisotopes in environmental studies?
  - A) Climate change research
  - ☒ B) Water quality monitoring
  - C) Soil analysis
  - D) Air pollution monitoring



*[Signature]*  
PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.  
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

12. Which radiation detection method is commonly used for gamma radiation?

- ☒ A) Scintillation counting
- B) Gas proportional counting
- C) Semiconductor counting
- D) Liquid scintillation counting

13. What is the purpose of radiation monitoring and surveillance?

- A) To detect radiation leaks
- ☒ B) To monitor radiation exposure
- C) To track radioactive waste
- D) To predict radiation accidents

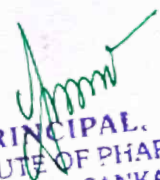
14. Which of the following is a type of radiation incident?

- A) Nuclear accident
- B) Radiation exposure
- C) Radioactive contamination
- ☒ D) All of the above

15. What is the primary principle of radiation safety and protection?

- ☒ A) Minimize exposure time
- B) Maximize distance
- C) Use shielding
- D) Contain radiation



  
PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301.



# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.  
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

ADD ON COURSE	NUCLEAR AND RADIO CHEMISTRY
DEPARTMENT	PHARMACEUTICAL CHEMISTRY
ACADEMIC YEAR	2020-2021
DATE	05/01/2021 to 28/01/2021

ANSWER KEY:

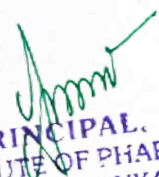
DATE:28/01/2021

MULTIPLE CHOICE QUESTIONS

MARKS:15

- What is the primary mode of radioactive decay for unstable nuclei with high atomic numbers?  
A) Alpha decay  
B) Beta decay  
C) Gamma decay  
D) Electron capture
- Which of the following is a type of nuclear reaction?  
A) Fission  
B) Fusion  
C) Radioactive decay  
D) All of the above
- What is the unit of measurement for radiation activity?  
A) Becquerel (Bq)  
B) Gray (Gy)  
C) Sievert (Sv)  
D) Curie (Ci)
- Which radiation detection method is commonly used for alpha and beta radiation?  
A) Scintillation counting  
B) Gas proportional counting  
C) Semiconductor counting  
D) Liquid scintillation counting
- What is the primary application of radiopharmaceuticals?  
A) Cancer treatment  
B) Medical imaging  
C) Nuclear power generation  
D) Environmental monitoring



  
PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.  
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

6. Which of the following is a type of nuclear reactor?
  - A) Pressurized water reactor (PWR)
  - B) Boiling water reactor (BWR)
  - C) Gas-cooled reactor (GCR)
  - D) All of the above**
7. What is the purpose of the nuclear fuel cycle?
  - A) To generate electricity
  - B) To produce radioisotopes
  - C) To manage nuclear waste**
  - D) To enrich uranium
8. Which radiation protection principle aims to minimize exposure time?
  - A) Time**
  - B) Distance
  - C) Shielding
  - D) Containment
9. What is the unit of measurement for radiation dose?
  - A) Gray (Gy)**
  - B) Sievert (Sv)
  - C) Becquerel (Bq)
  - D) Curie (Ci)
10. Which of the following is a radiochemical separation method?
  - A) Distillation
  - B) Crystallization
  - C) Solvent extraction**
  - D) Ion exchange
11. What is the primary application of radioisotopes in environmental studies?
  - A) Climate change research
  - B) Water quality monitoring**
  - C) Soil analysis
  - D) Air pollution monitoring



*[Signature]*  
**PRINCIPAL,**  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

12. Which radiation detection method is commonly used for gamma radiation?

- A) **Scintillation counting**
- B) Gas proportional counting
- C) Semiconductor counting
- D) Liquid scintillation counting

13. What is the purpose of radiation monitoring and surveillance?

- A) To detect radiation leaks
- B) **To monitor radiation exposure**
- C) To track radioactive waste
- D) To predict radiation accidents


14. Which of the following is a type of radiation incident?

- A) Nuclear accident
- B) Radiation exposure
- C) Radioactive contamination
- D) **All of the above**

15. What is the primary principle of radiation safety and protection?

- A) **Minimize exposure time**
- B) Maximize distance
- C) Use shielding
- D) Contain radiation



  
**PRINCIPAL,**  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,

and The Directorate of Medical Education, Chennai.

## ADD ON COURSE – MARK LIST

NAME OF ADD ON COURSE : NUCLEAR AND RADIO CHEMISTRY

COURSE INSTRUCTORS : VANITHA. M

YEAR OFFERED : 5<sup>th</sup> sem B.Pharm

COURSE DURATION : 42 hrs

S.NO	NAME OF STUDENT	REGISTER N	MARKS (15)	PERCENTAGE (%)
1.	A.ABDUL AZIM	561897201	15	100%
2.	K.ARUNKUMAR	561897202	15	100%
3.	K.ARUNKUMAR	561897203	15	100%
4.	V.CHANDURU	561897204	13	86%
5.	L.DHINESHKUMAR	561897205	13	86%
6.	S.GANESAN	561897206	14	93%
7.	M.GNANAPRAKASH	561897207	14	93%
8.	K.GOKULNATH	561897208	15	100%
9.	S.GOKUL RAJ	561897209	13	86%
10.	P.HARI VISHVA	561897210	13	86%
11.	B.JEEVANANTH	561897211	13	86%
12.	V.KALAIYARASAN	561897212	13	86%
13.	K.KAYALVIZHI	561897213	15	100%
14.	P.MANOBALA	561897214	13	86%
15.	R.RAJESHKANNAN	561897215	14	93%
16.	M.SAKTHIVEL	561897216	15	100%
17.	G.SHAFFIULLAH	561897217	13	86%
18.	S.SUBASH VARMA	561897218	13	86%
19.	J.TAMIL SELVAN	561897219	12	80%
20.	N.VASUVI	561897220	15	100%
21.	V.VEDHACHALAM	561897221	14	93%
22.	M.VIGNESH	561897222	13	86%
23.	R.VIJAY	561897223	14	93%
24.	P.THINAGARAN	561897251	14	93%

TOTAL NUMBER OF STUDENT : 24

TOTAL NUMBER OF PERCENTAGE : 93%

PRINCIPAL.

SS INSTITUTE OF PHARMACY.  
KUPPANUR (PO), SANKARI (TK).

PRINCIPAL.  
SS INSTITUTE OF PHARMACY.  
KUPPANUR (PO), SANKARI (TK).  
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : ssip1718@gmail.com | Website : www.ssip.edu.in





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,

and The Directorate of Medical Education, Chennai.

## ADD ON COURSE : SUMMARY REPORT

**Course code and Name :** 21NRC01/ Nuclear And Radio Chemistry

**Date Of Add On Programme :** 05/01/2021 to 28/01/2021

**Course Duration :** 42 Hours

**Year Offered :** 5<sup>th</sup> Sem B.Pharm

**Course Instructors :** M.Vanitha.,M.Pharm.

### Course Outcomes :

- **Fundamental Knowledge:** Understand the principles of nuclear chemistry, including radioactive decay, nuclear reactions, and radiation types.
- **Radiochemical Techniques:** Master techniques for detecting and analyzing radioactive substances and isotopes.
- **Safety Practices:** Implement safety protocols for handling radioactive materials and managing radiation exposure.
- **Applications:** Explore the use of nuclear chemistry in various fields such as medicine, industry, and environmental monitoring.

**Course Type :** Add on Course

### Assessment Mode:

**Total Duration :** 42 Hours

**Number of Participants :** 24

**Scheme of Exam :** MCQ type, offline Mode

**Date of Exam :** 28/01/2021

Course Coordinator



PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301

PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301





# SS INSTITUTE OF PHARMACY

## CERTIFICATE OF PARTICIPATION



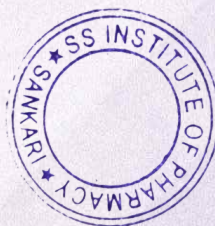
ONE DAY WORKSHOP  
Organized by  
Department of  
PHARMACEUTICA CHEMISTRY

.....M. SAKTHIVEL.....

HAS APPRICATED FOR HIS / HER PARTICIPATION  
IN ONE DAY SEMINAR ON  
NUCLEAR AND RADIO CHEMISTRY

.....05/01/2021 TO 28/01/2021.....

COORDINATOR



PRINCIPAL  
SS INSTITUTE OF PHARMACY  
KUPPANUR (PO), SANKARAPURAM  
SALEM - 637301

PRINCIPAL





# SS INSTITUTE OF PHARMACY

## CERTIFICATE OF PARTICIPATION



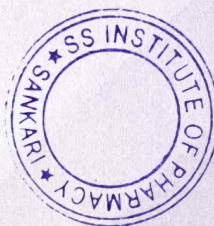
ONE DAY WORKSHOP  
Organized by  
Department of  
PHARMACEUTICA CHEMISTRY


.....V. VEDHACHALAM.....

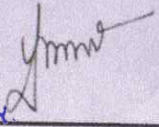
HAS APPRICATED FOR HIS / HER PARTICIPATION  
IN ONE DAY SEMINAR ON  
NUCLEAR AND RADIO CHEMISTRY

.....05/01/2021 TO 28/01/2021.....

  
COORDINATOR



  
PRINCIPAL  
SS INSTITUTE OF PHARMACY  
KUPPANUR (PO), SANKARABHARATHI  
SALEM - 637301

  
PRINCIPAL





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,

and The Directorate of Medical Education, Chennai.

## STUDENT FEEDBACK FORM

STUDENT NAME: V. Kalaiyaran.

DATE: 28.01.2021

YEAR/COURSE: B. Pharm - 5<sup>th</sup> sem

NAME OF THE ADD ON COURSE: Nuclear and radio chemistry

COURSE CODE: 20NRC01

DURATION: 42 hrs.

EVALUATE HONESTLY:

Questions	Excellent	Good	Fair	Poor
How was the objectives of the training		✓		
How satisfied are you with our seminar	✓			
How would you rate the clarity and effectiveness of the presenter's delivery		✓		
Was the seminar duration appropriate			✓	
How engaging and interactive was the seminar	✓			
Usefulness of the information provided		✓		
Overall quality of session	✓			



PRINCIPAL  
SS INSTITUTE OF PHARMACY  
KUPPANUR (PO), SANKARI (TK).  
SALEM - 637301

SIGNATURE





# SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

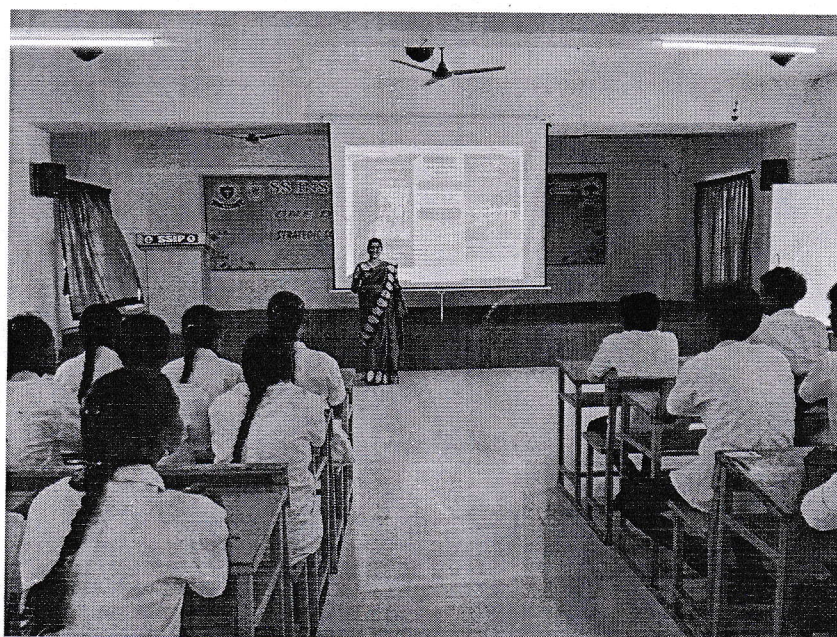
Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.  
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,  
and The Directorate of Medical Education, Chennai.

PHOTOGRAPH

DATE : 06/01/2021


## NUCLEAR AND RADIO CHEMISTRY

NAME OF ADD ON COURSE : NUCLEAR AND RADIO CHEMISTRY  
COURSE INSTRUCTORS : VANITHA. M  
YEAR OFFERED : 5<sup>th</sup> SEM B.PHARM  
COURSE DURATION : 42 HRS



Add-on course regarding the Topic Application of Nuclear And Radio Chemistry conducted on 06/01/2021 the speech delivered By **M.Vanitha.,M.Pharm.** which was an interactive session and students could able to understand the Application of Nuclear And Radio Chemistry in the fields of pharmaceutical sciences



  
PRINCIPAL,  
SS INSTITUTE OF PHARMACY,  
KUPPANUR (PO), SANKARI (TK),  
SALEM - 637301