

Quality Education for Today & Tomorrow Kovilacheri, Kumbakonam. 612 503. Ph: 0435 2453007 Accredited by NAAC with "B" Grade & Recognized by UGC under Section 2(f) & 12(B) Affiliated to Bharathidasan University, Tiruchirappalli. E-Mail:acasdmn@gmail.com

# **DEPARTMENT OF CHEMISTRY**

Choice Based Credit System (CBCS)-File

Mode of Elective Papers Chosen

BATCH: 2020 - 2022

A MA HOD

Assessment of Chemistry

Assessment of Armani School

Kowachen, Kumbakonam - F. J. 202





PRINCIPAL

Principal

Annai College of Arts & Scir

Kovilachery, Kumbakonam-612



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# Department of Chemistry

**Elective Papers** 

Academic Year: 2020-2021

No	Name of the Major Based Elective	Year II / III	Semester Odd/Even	No. of Students	Credit Hours
1	Solid State Chemistry	I	II	22	5
2	Bioorganic Chemistry	II	III	22	5
3	Green Chemistry	II	IV	22	5
4	Chemistry of Nanoscience and Nanotechnology	П	IV	22	5

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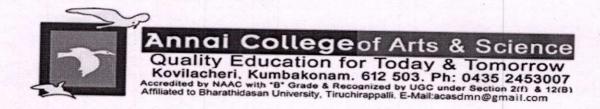


PRINCIPAL

Principal

Annai College of Arts & Science

Kovilachery, Kumbakonam-612 503



# DEPARTMENT OF CHEMISTRY

Date: 07.12.2020

# CIRCULAR

This is to inform you that our department is planned to conduct online meeting on 07.12.2020 regarding the selection of Elective Papers only for first PG students (Batch: 2020-2022). The students are instructed to attend the Zoom meeting at 10.00 A.M without fail.

# COPY TO:

- 1. Department file.
- 2. Department Notice Board.
- 3. Post in the Whatsapp Group.

HOD

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# DEPARTMENT OF CHEMISTRY

MINUTES OF MEETING

Date: 08.12.2020

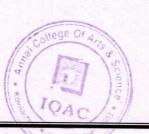
# **AGENDA**

The selection of Elective Papers only for first PG students (Batch: 2020-2022), HOD has arranged a online meeting for class representatives through a Zoom App dated on 08.12.2020.

The following points were discussed in the meeting.

- 1. Discussed the list of Elective papers with the students.
- Student Cleared the doubts regarding the scope of each paper with staff members
- 3. Finally they selected the Elective papers.

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Principal

Annai College of Arts & Scien Kovilachery, Kumbakonani

	Annai College of Arts & Science, Konileakani	<ul> <li>Choose any one Elective-II in the give list *</li> </ul>
	Selection of Elective Papers	Mark only one oval.
	* Required	Pharmaceutical Chemistry Bio-organic Chemistry
<del>-</del>	Name of Department	
	8	Choose any one Elective-IV in the give list *
		Mark only one oval.
رن م	Name of the Student	C Green Chemistry
		Industrial Chemistry
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ri .	reg. No.	Choose any one Elective-V in the give list *
		Mark only one oval.
4	Batch	Selected Topics in Chemistry  Chemistry of Nanoscience and Nanotechnology
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		This content is neither created nor endorsed by Google.
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ن ف	Choose any one Elective-I in the give list *	
	Mark only one oval.	
	Solid State Chemistry Supra molecular Chemistry	

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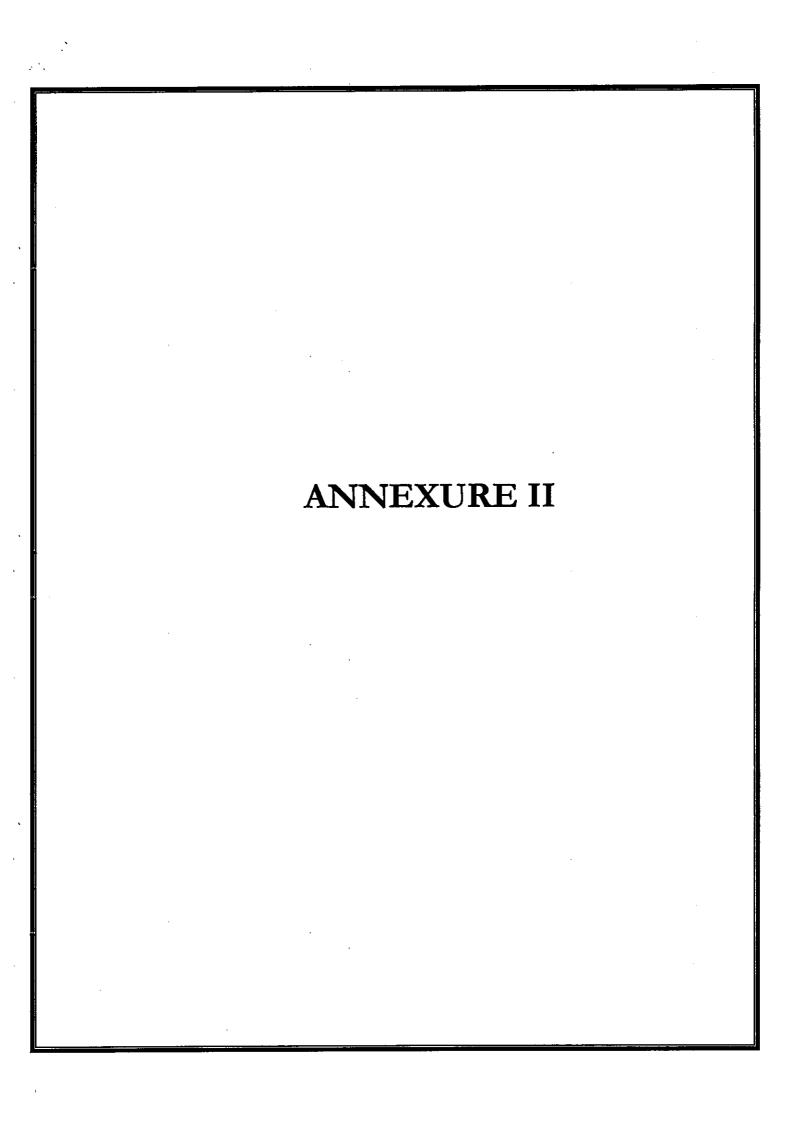
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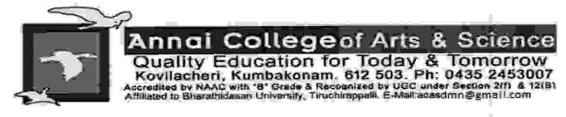
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2	CHEMISTRY	13 CHEMISTRY KALAIYARASAN'S	P 20163906	2020-2022	N.S.		Bio-organic	Andrew Controlled	Chemistry of Nanoscience and	
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# Justification on Major Based Elective Selection

# Solid State Chemistry

Solid-state chemistry, also sometimes referred as materials chemistry, is the study of the synthesis, structure, and properties of solid phase materials, particularly, but not necessarily exclusively of, non-molecular solids.

# **Bioorganic Chemistry**

Bioorganic chemistry is a scientific discipline that combines organic chemistry and biochemistry. It is that branch of life science that deals with the study of biological processes using chemical methods

# Green Chemistry

Green chemistry, also called sustainable chemistry, is an area of chemistry and chemical engineering focused on the design of products and processes that minimize or eliminate the use and generation of hazardous substances

# Chemistry of Nanoscience and Nanotechnology

It is the combination of chemistry and nano science. Nanochemistry is associated with synthesis of building blocks which are dependent on size, surface, shape and defect properties. Nanochemistry is being used in chemical, materials and physical, science as well as engineering, biological and medical applications

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## SEMESTER-II ELECTIVE COURSE-IA (EC-IA)

HOURS/WEEK: 6 CREDITS: 5

# (A) SOLID STATE CHEMISTRY

## **OBJECTIVES**

- 1. To learn the crystal structures of few inorganic solids.
- 2. To study the chemistry of crystallization and vapour phase transport.
- 3. To learn the applications of magnetic materials.
- 4. To study the chemistry of organic solids.

# UNIT I: Crystal Structure and Crystal Engineering of Organic Solids

Types of close packing – hcp and ccp – packing efficiency – SC, BCC, and FCC, radius ratio rule – applications – polyhedral description of solids – structure types: Na<sub>2</sub>O, Cs<sub>2</sub>O, rutile, perovskite (ABO<sub>3</sub>), ReO<sub>3</sub>, K<sub>2</sub>NiF<sub>4</sub>, spinels and antispinels.

Hydrogen bonded supramolecular patterns involving water / carboxyl / halide motifs – concepts of different types of synthons based on non-covalent interactions – principles of crystal engineering and non-covalent synthesis – polymorphism and pseudopolymorphism – supramolecular isomorphism, polymorphism and crystal engineering of pharmaceutical phases.

## UNIT II: Metallo Organic Frameworks

M.O.Fs (Metallo Organic Frameworks) – organometallic systems – combinations of different interactions to design molecular rods, triangles, ladders, networks, etc. Design of nanoporous solids.

Interligand hydrogen bonds in metal complexes – implications for drug design – crystal engineering of NLO and OLED materials.

# UNIT III: Preparative Methods in Solid State Chemistry

Experimental procedure, coprecipitation as a precursor to solid state reaction, other precursor methods, kinetics of solid state reactions – crystallizations of solutions, melts, glasses and gels, solutions and gels: zeolite synthesis – precipitation from solution or melt: flux method, epitaxial growth of thin layers, verneuil flame fusion method.

Graphite intercalation compounds, transition metal dichalcogenide and other intercalation compounds, ion exchange reaction, synthesis of new metastable phases by 'Chimie Douce'.

Electrochemical reduction methods – preparation of thin films, chemical and electrochemical methods, physical methods – growth of single crystals, Czochralski method, Bridgman-Stockbarger methods – zone melting.

Vapour phase transport, hydrothermal methods, comparison of different methods – high pressure and hydrothermal methods and dry high pressure methods.

# UNIT IV: Magnetic Materials and Optical Properties

Selected examples of magnetic materials and their properties – metals and alloys, transition metal oxides, spinels, garnets, ilmenite and perovskites.

Magnetoplumbites – applications – structure/property relations – transformer, information storage, magnetic bubble memory devices, permanent magnets.

Luminescence, Lasers and phosphors – definitions and general comments, configurational coordinate model, some phosphor materials, anti-Stokes phosphors – lasers – the ruby laser, Neodymium lasers

## **UNIT V: Organic Solid State Chemistry**

Topochemical control of solid state organic reactions – intramolecular reactions – conformational effects – intermolecular reactions – molecular packing effects – photodimerization of 2-ethoxycinnamic acid (a form,  $\beta$  form,  $\gamma$  form) – photopolymerization of 2,5-distyrylpyrazine – photopolymerizations of diacetylenes.

Asymmetric syntheses – dimerization of anthracene – control of molecular packing arrangements.

Organic reactions within inorganic host structures – electrically conductive organic solids – organic metals, conjugated systems, doped polyacetylene, polyparaphenylene, polypyrrole – organic charge transfer complexes – new superconductors

## REFERENCES

- 1. A. R. West, Solid State Chemistry and Its Applications; 2<sup>nd</sup> Ed., John Wiley and sons, New York, 2014 (Unit III V).
- 2. J. M. Lehn, Supramolecular Chemistry; VCH, Weinheim, 1995.
- 3. G. R. Desiraju, <u>Crystal Engineering: The Design of Organic Solids</u>; Elsevier, Amsterdam, 1989.
- 4. G. R. Desiraju, and T. Steiner, <u>The Weak Hydrogen Bond in Structural Chemistry</u> and <u>Biology</u>; Oxford University Press: Oxford, 2002.
- 5. G. A. Jeffrey, <u>Introduction to Hydrogen Bonding</u>; Oxford University Press, New York, 1997.
- 6. J. M. Lehn, <u>Transition Metals in Supramolecular Chemistry</u>; Vol 5, John Wiley and Sons, New York, 1999.
- 7. C. N. R. Rao, <u>Current Science</u>, 2001, 81, 1030.
- 8. Journals:
  - (i) Crystal Growth and

Design.http://www.pubs.acs.org/journals/cgdefu/index.html

(ii) Crystal Engineering Communication, http://www.rsc.org/Publishing/ Journals/ce/index.asp

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# SEMESTER-III ELECTIVE COURSE-IIB (EC-IIB)

HOURS/WEEK: 6 CREDITS: 5

# (B) BIO-ORGANIC CHEMISTRY

## **OBJECTIVES**

- 1. To learn the preparation, properties of amino acids and proteins.
- 2. To study the activity of enzymes and cofactors.
- 3. To know basics of lipids and nucleic acids.
- 4. To learn the concept of bioenergetics.
- 5. To learn the principles of lead and analogue synthesis.

## **UNIT I: Amino Acids and Proteins**

Structure, classification, synthesis and properties of amino acids – biosynthesis of amino acids – peptides – N-terminal and C-terminal residue analysis – solid phase peptide synthesis.

Proteins – classification and properties (denaturation, isoelectric point and electrophoresis), primary, secondary, tertiary and quaternary structures of proteins – biological roles of proteins.

## **UNIT II: Enzymes and Cofactors**

Chemical nature of enzymes – characteristics of enzymes – colloidal nature, catalytic nature.

Mechanism of enzymes – Michaelis-Menten hypothesis – Fischer's lock and key model – regulation of enzyme activity.

Structure and biological functions of coenzyme A, NAD+, FAD and vitamin B12.

## **UNIT III: Lipids and Nucleic Acids**

Lipids – definition – simple lipids – fats and oils – compound lipids – phospholipids, glycolipids – physical properties – solubility, melting point, surface tension, emulsification and geometric isomerism – chemical properties – reaction involving -COOH group, -OH group and double bonds.

Nucleic Acid – definition – nucleosides and nucleotides – deoxyribonucleic acid (DNA) – internucleotides linkages – base composition – double helical structure.

## SEMESTER-IV ELECTIVE COURSE-IVA (EC-IVA)

HOURS/WEEK: 6 CREDITS: 5

# (A) GREEN CHEMISTRY

## **OBJECTIVES**

- 1. To learn the green chemistry and their principles.
- 2. To learn the importance of greener reactions.
- 3. To understand the phase-transfer catalyst in green chemistry.

# **UNIT I: Introduction to Green Chemistry**

Introduction to green chemistry – twelve principles of green chemistry – planning a green synthesis in a chemical laboratory – evaluating the type of reaction involved – rearrangement, addition, substitution, elimination and pericyclic reactions.

Selection of appropriate solvent – aqueous phase reaction – reactions in ionic liquids – organic synthesis in solid state – solid supported organic synthesis – selection of starting materials – use of protecting group – use of catalyst – use of microwaves and sonication.

# **UNIT II: Addition and Condensation Reactions**

Addition reactions - Michael addition in [aqueous medium and solid state] - Diels-Alder reactions in aqueous phase.

Condensation reactions - Aldol condensation of aldehydes with nitroalkanes and nitriles - Aldol condensation in solid phase - benzoin condensation under catalytic conditions - applications.

# UNIT III: Oxidation and Reduction Reactions

Oxidation reactions - Baeyer-Villiger oxidation in aqueous phase and solid state - enzymatic Baeyer-Villiger oxidation.

Reduction reactions - Clemmensen reduction - mechanism - limitations - applications

## UNIT IV: Phase-Transfer Catalyst Reactions

Phase-transfer catalyst reactions – Heck reaction – Michael addition reaction – oxidation of toluene to benzoic acid – Reimer-Tiemann reaction – Baker-Venkataraman synthesis – Williamson ether synthesis – Dozen reaction.

## **UNIT - V: Sonication Reactions**

Sonication reactions - Barbier reaction - Reformatsky reaction - Simmons-Smith reaction - Strecker synthesis - Ullmann coupling reaction - Wurtz reaction - Bouveault reaction.

## REFERENCES

- 1. V. K. Ahluwalia, <u>Green Chemistry</u>; 2<sup>nd</sup> Ed., Ane Books Pvt Ltd., New Delhi, 2016. [UNIT- I, II, III, IV, V]
- 2. P. T. Anastas and J. C. Warner, <u>Green chemistry Theory and Practice</u>; Oxford University Press, New York, 2005. [Unit-I]
- 3. V. K. Ahluwalia and K. Agarwal, Organic Synthesis, Special Techniques; 2<sup>nd</sup> Ed., Narosa Publishing House, New Delhi, 2007. [Unit-I]

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## SEMESTER-IV ELECTIVE COURSE-VB (EC-VB)

HOURS/WEEK: 6 CREDITS: 5

# (B) CHEMISTRY OF NANOSCIENCE AND NANOTECHNOLOGY

## **OBJECTIVES**

- 1. To know the synthetic methods of nanomaterials.
- 2. To understand the characterization of nanomaterials.
- 3. To understand carbon clusters and nanostructures.
- 4. To learn nanotechnology and nanodevices.

## **UNIT I: Synthetic Methods**

Definition of nanodimensional materials – historical milestones – unique properties due to nanosize, quantum dots, classification of nanomaterials.

General methods of synthesis of nanomaterials – hydrothermal synthesis, solvothermal synthesis – microwave irradiation– sol-gel and precipitation technologies – combustion flame – chemical vapour condensation process – gas-phase condensation synthesis – reverse micelle synthesis – polymer-mediated synthesis – protein microtubule-mediated synthesis – synthesis of nanomaterials using microorganisms and other biological agents – sonochemical synthesis – hydrodynamic cavitation.

Inorganic nanomaterials – typical examples – nano TiO<sub>2</sub>/ZnO/CdO/CdS, organic nanomaterials – examples – rotaxanes and catenanes

# UNIT II: Characterisation of Nanoscale Materials

Principles of Atomic Force Microscopy (AFM) - Transmission Electron Microscopy(TEM)

Resolution and Scanning Transmission Electron Microscopy (STEM) - Scanning Tunneling Microscopy (STM) - Scanning Nearfield Optical Microscopy (SNOM).

Scanning ion conductance microscope, scanning thermal microscope, scanning probe microscopes and surface plasmon spectroscopy.

## **UNIT III: Reactions in Nanoparticles**

Reactions in nanospace - nanoconfinement - nanocapsules

Cavitands, cucurbiturils, zeolites, M.O.Fs, porous silicon, nanocatalysis.

## UNIT IV: Carbon Clusters and Nanostructures

Nature of carbon bond – new carbon structures – carbon clusters – discovery of  $C_{60}$ -alkali doped  $C_{60}$ -superconductivity in  $C_{60}$ -larger and smaller fullerenes.

Carbon nanotubes – synthesis – single walled carbon nanotubes – structure and characterization – mechanism of formation – chemically modified carbon nanotubes – doping – functionalizing nanotubes – applications of carbon nanotubes.

Nanowires -synthetic strategies - gas phase and solution phase growth - growth control - properties.

## **UNIT V: Nanotechnology and Nanodevices**

DNA as a nanomaterial - DNA - knots and junctions, DNA - nanomechanical device designed by Seeman.

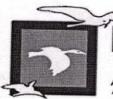
Force measurements in simple protein molecules and polymerase - DNA complexes-molecular recognition and DNA based sensor.

Protein nanoarray, nanopipettes, molecular diodes, self-assembled nanotransistors, nanoparticle mediated transfection.

## REFERENCES

- 1. C. N. R. Rao, A. Muller and A. K. Cheetham (Eds), <u>The Chemistry of Nanomaterials</u>: Vol. 1 and 2; Wiley-VCH; Germany, Weinheim, 2004.
- 2. C. P. Poole, Jr. and F. J. Owens, <u>Introduction to Nanotechnology</u>; Wiley Interscience, New Jersey, 2003.
- 3. K. J. Klabunde (Ed), <u>Nanoscale Materials in Chemistry</u>; 2<sup>nd</sup> Ed., Wiley-Interscience, New York, 2009.
- 4. T. Pradeep, Nano: The Essentials in Understanding Nanoscience and Nanotechnology; 1st Ed., Tata McGraw Hill, New York, 2007.
- 5. H. Fujita (Ed.), <u>Micromachines as Tools in Nanotechnology</u>; Springer-Verlag, Berlin, 2003.
- 6. Bengt Nölting, Methods in Modern Biophysics; 3<sup>rd</sup> Ed., Springer-Verlarg, Berlin, 2009.
- 7. H. Gleiter, <u>Nanostructured Materials</u>: <u>Basic Concepts</u>, <u>Microstructure and Properties</u>, <u>Elsevier</u>, <u>Chennai</u>, 2000.
- 8. W. Kain and B. Schwederski, <u>Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life</u>; 2<sup>nd</sup> Ed., John-Wiley R Sons, New York, 2013.
- 9. T. Tang and P. Sheng (Eds), <u>Nanoscience and Technology</u>, <u>Novel Structures and Phenomena</u>; Taylor and Francis, New York, 2003.
- 10. A. Nabok, Organic and Inorganic Nanostructures; Artech House, Boston, 2005.
- 11. E. A. Rietman, <u>Molecular Engineering of Nanosystems</u>; Springer-Verlag, New York, 2001.
- 12. Home page of Prof. Ned Seeman http://seemanlab4.chem.nyu.edu/
- 13. Nanoletters http://pubs.acs.org/journals/nalefd/index.html
- 14. Nanotation http://www.acsnanotation.org/

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Choice Based Credit System (CBCS)-File

Mode of Elective Papers Chosen

BATCH: 2019 - 2022

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# DEPARTMENT OF CHEMISTRY

Choice Based Credit System (CBCS)-File Mode of Non-Major Elective Chosen 2019 - 2022

A MA HOD

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Department of Chemistry
Assessment age of Archanic Schools
Kowachen, Kumbakonam - Francis



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# DEPARTMENT OF CHEMISTRY

ACADEMIC YEAR: 2020-2021

# Non- Major Elective Papers taken from Physics (NME)

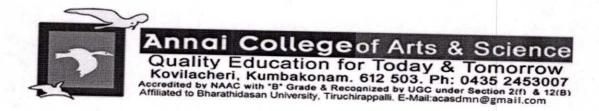
S.No	Name of the Non Major Elective	Year II / III	Semester Odd/Even	No. of Students	Credit Hours
1.	Energy Physics	II	III	42	02
2.	Laser Physics	II	IV	42	02
	Only for	r other Lan	guage Except'		02
3	Basic Tamil	II	III	01	02
4	Special Tamil	II	IV	01	02

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# DEPARTMENT OF CHEMISTRY

Date: 18.06.2020

# **CIRCULAR**

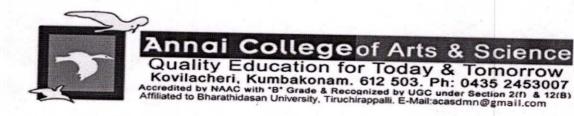
This is to inform you that our Department is planned to conduct online meeting on 18.06.2020 regarding the selection of Non-Major Elective Papers(NME) only for second year students (Batch: 2019-2022). The students are instructed to attend the Zoom meeting at 10.00 A.M without fail.

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# DEPARTMENT OF CHEMISTRY

## MINUTES OF MEETING

Date: 19.06.2020

# **AGENDA**

The selection of Non-Major Elective Papers only for second year students (Batch: 2019-2022), HOD has arranged a meeting for class representatives through a circular dated on 19.06.2020.

The following points were discussed in the meeting.

- 1. Discussed the list of NME papers with the students.
- 2. Student Cleared the doubts regarding the scope of each paper with staff members
- 3. Finally they selected the NME papers.
- The students those who chose Arabic, French, and Hindi as language, they are eligible to select the NME papers.
  - a. Basic Tamil
  - b. Sirappu Tamil

HOD

Assessment of Chemistry

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Annai College of Arts & Science
Kovilachery, Kumbakonam-612 503

Annai College of Arts & Science-Kovilacheri
Selection of Non Major Elective

6. Choose any one Department for Selection of NME in the give list  $^{\star}$ 

Mark only one oval.

* Required	1. Name of Department

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Name of the student	ļ	
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BioChemistry
MicroBiology

Physics

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5. Course

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Quality Education for Today & Tomorrow
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Assessed by NAAC with 18 Grade & Recomized by U.C. under Segtion 2811. & 12(8)
Affiliation to Bhilinghian University, Triuchirapposit & Mark Segardining grant con

S.No	Name of Department	Name of the Student	Reg. No.	Batch	Course	Choose any one Department for Selection of NMF in the give list
1	Chemistry	ANUSUYA S	CB19S 112127	2019-2022	B.Sc.,	Physics
2	Chemistry	ABITHA 5	CB19S 112126	2019-2022	B.Sc.,	Physics
3	Chemistry	CHRISTOPHER M	CB19S 112128	2019-2022	B.Sc.,	Physics
4	chemistry	durga k	cb19s 112129	2019-2022	B.Sc.,	Biochemistry
5	Chemistry	JEYAKUMAR C	CB198 112133	2019-2022	B.Sc.,	Physics
6	chemistry	harish k	cb19s 112131	2019-2022	B.Sc.,	Physics
7	chemistry	gayathri r	cb19s 112130	2019-2022	B.Sc.,	Physics
8	chemistry	jecvitha s	cb19s 112132	2019-2022	B.Sc.,	Bioreclinlogy
9	Chemistry	KALPANA M	CB198 112134	2019-2022	B.Sc.,	Physics
10	Chemistry	KATHIRAVAN S	CB19S 112135	2019-2022	B.Sc.,	Biotechnlogy
11	Chemistry	KOWSALYA R	CB19S 112136	2019-2022	B.Sc.,	Physics
12	chemistry	malieshwaran e	cb19s 112139	2019-2022	B.Sc.,	Physics
13	chemistry	lokesh priyadharsini r	cb19s 112138	2019-2022	B.Sc.,	Physics
14	chemistry	logasri j	cb19s 112137	2019-2022	B.Sc.,	Physics
15	chemistry	manikandan r	ch19s 112140	2019-2022	B.Sc.,	Physics
46	chemistry	manoj s	cb19s 112141	2019-2022	B.Sc.,	Physics
17	chemistry	priyadharshini s	cb19s 112142	2019-2022	B.Sc.,	Physics
18	Chemistry	SIVASUBRAMANIAN G	CB19S 112146	2019-2022	B.Sc.,	Biochemistry
19	Chemistry	SNEHA R	CB19S 112147	2019-2022	B.Sc.,	Physics
20	Chemistry	SRIKANTH T	CB19S 112148	2019-2022	B.Sc.,	Physics
21	chemistry	siyn s	cb19s 112145	2019-2022	B.Sc.,	Physics
22	chemistry	shahila s	cb19s 112144	2019-2022	B.Sc.,	Physics
23	chemistry	santhosh s	cb19s 112143	2019-2022	B.Sc.,	Physics
24	Chemistry	SUBASHALINI B	CB19S 112149	2019-2022	B.Sc.,	Biotechnlogy
2.5	Chemistry	VINSUNEGA T	CB19S 112154	2019-2022	B.Sc.,	Physics
26	Chemistry	VIGNESH M	CB19S 112153	2019-2022	B.Sc.,	Physics
27	Chemistry	Makesh C	CB19S 112164	2019-2022	B.Sc.,	Physics
28	Chemistry	Madhansunivash R	CB19S 112163	2019-2022	B.Sc.,	Physics
29	Chemistry	Jeevadharsan T	CB19S.112161	2019-2022	B.Sc.,	Biotechnlogy
30	Chemistry	ASHA MARIYAM A	CB19S 112157	2019-2022	B.Sc.,	Physics
31	Chemistry	ABUL HASSAN VAKITH M	CB19S 112156	2019-2022	B.Sc.,	Physics
32		Giridharan M	CB19S 112160	2019-2022	B.Sc.,	Physics
33		Divya K	CB19S 112159	2019-2022	B.Sc.,	Physics
34	Chemistry	Ashokraj R	CB19S 112158	2019-2022	B.Sc.,	Physics
35		PRAVINRAJ K	CB19S 112166	2019-2022	B.Sc.,	Physics
36		MEENA R	CB19S 112165	2019-2022	B.Sc.,	Biotechnlogy
37		VIVEKA K	CB19S 112155	2019-2022	B.Sc.,	Physics
38		SOWMIYA M	CB19S 112168	2019-2022	B.Sc.,	Physics
39		RAMYAGANGA R	CB19S 112467	2019-2022	B.Sc.,	Physics
.40		VAISHNAVI V	CB19S 112152	2019-2022	B.Sc.,	Biotechnlogy
41		UBESHKUMAR U	CB198 F12151	2019-2022	B.Sc.,	Physics
42		SURYAKUMARI V	CB19S 112150	2019-2022	B.Sc.,	Physics
43		THANGAPANDI À	CB19S 112169	2019-2022	B.Sc.,	Physics

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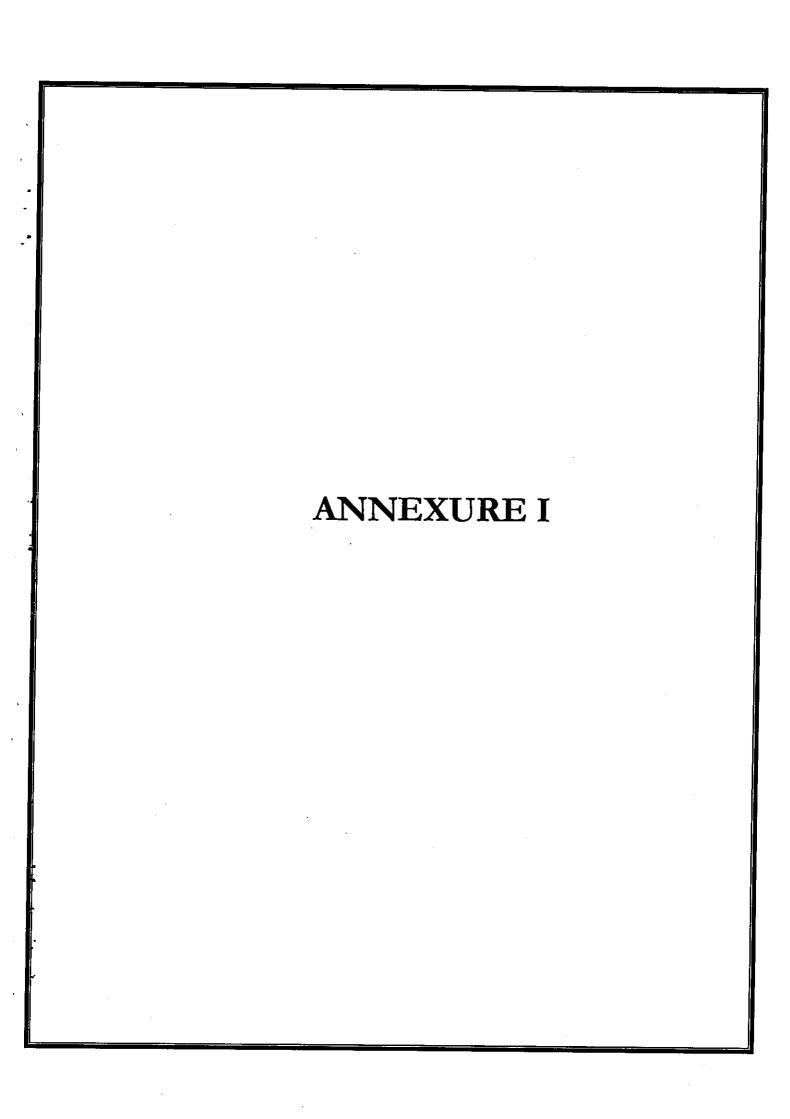
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# Justification on Non-Major Elective Selection

# Energy Physics:

Energy in physics: the capacity for doing work. It may exist in potential, kinetic, thermal, electrical, chemical, nuclear, or other various forms. There are, moreover, heat and work—i.e., energy in the process of transfer from one body to another.

# Laser physics:

Laser physics plays the vital role in the medical field. For e.g Laser technology will remove the cancer cells, using laser beam in industries for cutting and welding, so that they can effectively implement it, at the time of their employment.

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Choice Based Credit System (CBCS)-File

Mode of Skill Based Elective Papers Chosen

BATCH: 2019 - 2022



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# Department of Chemistry

Academic Year: 2020-2021

# Skill Based Elective Papers taken from

# HERBAL MEDICINE (SBE)

No	Name of the Non Major Elective	Year II / III	Semester Odd/Even	No. of Students	Credit Hours			
1	Ethno medicine.	II	IV	43	02.			
2	Pharmacognosy.	Ш	V	43	02			
3	Herbal drugs action	Ш	V	43	02			

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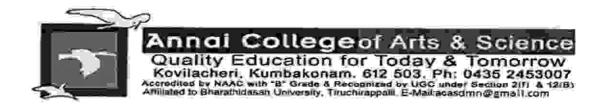
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# DEPARTMENT OF CHEMISTRY

Date: 07.12.2020

## CIRCULAR

This is to inform you that our Department is planned to conduct online meeting on 07.12.2020 regarding the selection of Skill Based Elective Papers (SBE) only for second year students (Batch: 2019-2022). The students are instructed to attend the Zoom meeting at 10.00 A.M without fail.

COPY TO:

- 1. Department file.
- Department Notice Board.
- Post in Whatsapp Gruop.

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# DEPARTMENT OF CHEMISTRY MINUTES OF MEETING

Date: 08.12.2020

## AGENDA

The selection of Skill Based Elective Papers only for second year students (Batch: 2019-2022), HOD has arranged a meeting for class representatives through an online dated on 08.12.2020.

The following points were discussed in the meeting,

- 1. Discussed the list of SBE papers with the students.
- 2. Student Cleared the doubts regarding the scope of each paper with staff members
- 3. Finally they selected the SBE papers.

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Annai College of Arts & Science

Kovilachery, Kumbakonam-612 503

Sales and Marketting Management Tourism a& Travel Management journalism & bublic Relations Computer Application Desktop publishing Yoga & Stress Mgt Atchu Udagankal Herbal Medicine Mark only one oval. Micro biology Office Mgt \_\_\_\_ Electronics Clinical MB Chemistry Biotech HM&CS Coology Coology CRM Annai College of Arts & Science-Kovilacheri 1. Name of Department 2. Name of the Student Reg. No. 5. Course \* Required Batch

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6. Choose any one Skill Based Elective in the give list \*

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S.No	Name of Department	Name of the Student	Reg. No.	Batch	Course	Choose any one Skill Based Elective in the give list
1	Chemistry	ANUSUYA S	CB19S 112127	2019-2022	B.Sc.,	Herbal Medicine
2	Chemistry	ABITHA S	CB19S 112126	2019-2022	B.Sc.,	Herbal Medicine
3	Chemistry	CHRISTOPHER M	CB19S 112128	2019-2022	B.Sc.,	Herbal Medicine
4	chemistry	durga k	cb19s 112129	2019-2022	B.Sc.,	Herbal Medicine
5	Chemistry	JEYAKUMAR C	CB19S 112133	2019-2022	B.Sc.,	Herbal Medicine
6	chemistry	harish k	cb19s 112131	2019-2022	B.Sc.,	Electronics
7	chemistry	gayathri r	cb19s 112130	2019-2022	B.Sc.,	Herbal Medicine
8	chemistry	jeevitha s	cb19s 112132	2019-2022	B.Sc.,	Herbal Medicine
9	Chemistry	KALPANA M	CB19S 112134	2019-2022	B.Sc.,	Herbal Medicine
10	Chemistry	KATHIRAVAN S	CB19S 112135	2019-2022	B.Sc.,	Tourism a& Travel Management
11	Chemistry	KOWSALYA R	CB19S 112136	2019-2022	B.Sc.,	Herbal Medicine
12	chemistry	maheshwaran e	cb19s 112139	2019-2022	B.Sc.,	Herbal Medicine
13	chemistry	lokesh priyadharsini r	cb19s 112138	2019-2022	B.Sc.,	Herbal Medicine
14	chemistry	logasri j	cb19s 112137	2019-2022	B.Sc.,	Herbal Medicine
15	chemistry	manikandan r	cb19s 112140	2019-2022	B.Sc.,	Herbal Medicine
16	chemistry	manoj s	cb19s 112141	2019-2022	B.Sc.,	Herbal Medicine
17	chemistry	priyadharshini s	cb19s 112142	2019-2022	B.Sc.,	Herbal Medicine
18	Chemistry	SIVASUBRAMANIAN G	CB19S 112146	2019-2022	B.Sc.,	Herbal Medicine
19	Chemistry	SNEHA R	CB19S 112147	2019-2022	B.Sc.,	Herbal Medicine
20	Chemistry	SRIKANTH T	CB19S 112148	2019-2022	B.Sc.,	Herbal Medicine
21	chemistry	siva s	cb19s 112145	2019-2022	B.Sc.,	Herbal Medicine
22	chemistry	shahila s	cb19s 112144	2019-2022	B.Sc.,	Herbal Medicine
23	chemistry	santhosh s	cb19s 112143	2019-2022	B.Sc.,	Electronics
24	Chemistry	SUBASHALINI B	CB19S 112149	2019-2022	B.Sc.,	Herbal Medicine
25	Chemistry	VINSUNEGA T	CB19S 112154	2019-2022	B.Sc.,	Herbal Medicine
26	Chemistry	VIGNESH M	CB19S 112153	2019-2022	B.Sc.,	Herbal Medicine
27	Chemistry	Makesh C	CB19S 112164	2019-2022	B.Sc.,	Tourism a& Travel Management
28	Chemistry	Madhanstinivash R	CB19S 112163	2019-2022	B.Sc.,	Herbal Medicine
29	Chemistry	Jeevadharsan T	CB19S 112161	2019-2022	B.Sc.,	Herbal Medicine
30	Chemistry	ASHA MARIYAM A	CB19S 112157	2019-2022	B.Sc.,	Herbal Medicine
31	Chemistry	ABUL HASSAN VAKITH	CB19S 112156	2019-2022	B.Sc.,	Herbal Medicine

32	Chemistry	Giridharan M	CB19S 112160	2019-2022	B.Sc.,	Herbal Medicine
33	Chemistry	Divya K	CB19S 112159	2019-2022	B.Se.,	Herbal Medicine
34	Chemistry	Ashokraj R	CB19S 112158	2019-2022	B.Sc.,	Herbal Medicine
35	Chemistry	PRAVINRAJ K	CB19S 112166	2019-2022	B.Sc.,	Tourism a& Travel Management
36	Chemistry	MEENA R	CB19S 112165	2019-2022	B.Sc.,	Herbal Medicine
37	Chemistry	VIVEKA K	CB19S 112155	2019-2022	B.Sc.,	Herbal Medicine
38	Chemistry	SOWMIYA M	CB19S 112168	2019-2022	B.Sc.,	Herbal Medicine
39	Chemistry	RAMYAGANGA R	CB19S 112167	2019-2022	B.Sc.,	Herbal Medicine
40	Chemistry	VAISHNAVI V	CB19S 112152	2019-2022	B.Sc.,	Herbal Medicine
.41	Chemistry	UBESHKUMAR U	CB198 112151	2019-2022	B.Sc.,	Herbal Medicine
42	Chemistry	SURYAKUMARI V	CB19S 112150	2019-2022	B.Sc.,	Herbal Medicine
43	Chemistry	THANGAPANDI A	CB19S 112169	2019-2022	B.Sc.,	Herbal Medicine

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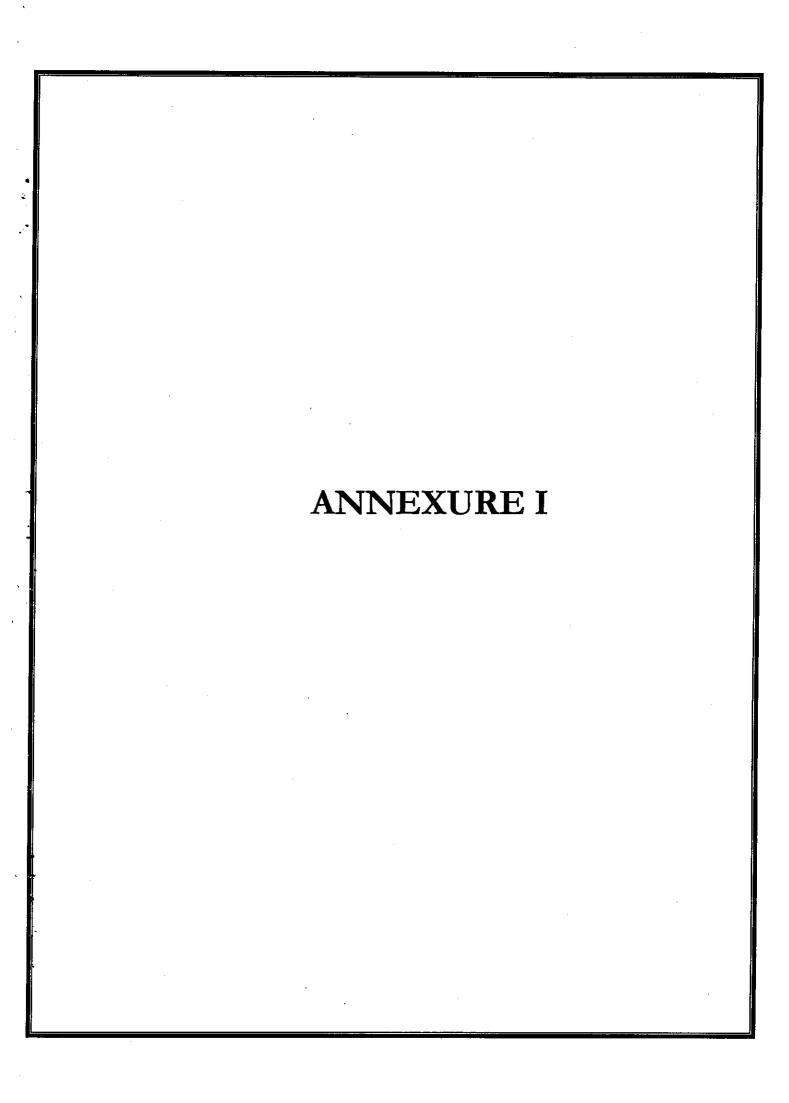
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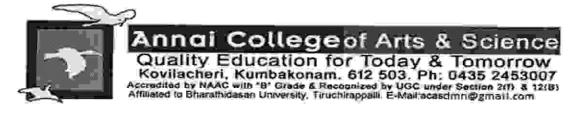
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# Justification on Skill Based Elective Selection

## Ethno medicine

Ethno medicine is a study or comparison of the traditional medicine based on bioactive compounds in plants and animals and practiced by various ethnic groups, especially those with little access to western medicines, e.g., indigenous peoples. Often these traditions constitute significant interactions with insects as well, in Africa, America, or around the globe. The word ethno medicine is sometimes used as a synonym for traditional medicine

# Pharmacognosy

Pharmacognosy is the study of plants and other natural substances as possible sources of drugs. The American Society of Pharmacognosy defines pharmacognosy as "the study of the physical, chemical, biochemical, and biological properties of drugs, drug substances, or potential drugs or drug substances of natural origin as well as the search for new drugs from natural sources"

# Herbal drugs action

It is the study the use of medicinal plants, which are a basis of traditional medicine. An herb is a plant or plant part used for its scent, flavor, or therapeutic properties. It is used to treat diseases or to maintain health is called herbal products, botanical products, or phytomedicines or Herbal supplements.

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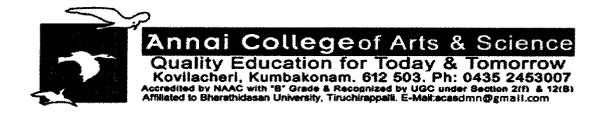
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Department of Chemistry
Assessment of Armania Armania
Kowachen Kompakonam-A - no.

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Choice Based Credit System (CBCS)-File

Mode of Major Based Elective Papers Chosen

Batch: 2019-2022



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# Department of Mathematics

Major Based Elective Papers

Academic Year: 2021-2022

No	Name of the Major Based Elective	Year II / III	Semester Odd/Even	No. of Students	Credit Hours
1	Analytical Chemistry	III	V	43	05
2	Nuclear, Industrial, Chemistry & Metallic State	1111	VI	43	06
3	Polymer chemistry.	111	VI	43	05

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Annai College of Arts & Science
Kovilachery, Kumbakonam-812 503





## DEPARTMENT OF CHEMISTRY

Date: 02.08.2021

# CIRCULAR

This is to inform you that our department is planned to conduct online meeting on 02.08.2021 regarding the selection of Major Based Elective Papers (MBE) only for third year students (Batch: 2019-2022). The students are instructed to attend the Zoom meeting at 10.00 A.M without fail.

## COPY TO:

- 1. Department file.
- 2. Department Notice Board.
- 3. Post in Whatsapp Group.

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# DEPARTMENT OF CHEMISTRY

MINUTES OF MEETING

Date: 03.08.2021

## AGENDA

The selection of Major Based Elective Papers only for third year students (Batch: 2019-2022), HOD has arranged a meeting for class representatives through an online dated on 03.08.2021.

The following points were discussed in the meeting.

- Discussed the list of MBE papers with the students.
- 2. Student Cleared the doubts regarding the scope of each paper with staff members
- Finally they selected the MBE papers.

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		7. Select Major Based Elective-II in the give below *
	Annai College of Arts & Science-Kovilacheri	Mark only one oval.
7	* Required	Uuclear, Industrial, Chemistry & Metallic State
<del>-</del>	1. Name of Department	8. Choose any one Major Based Elective-III in the give list *
		Mark only one oval.
2	Name of the Student	Polymer Chemistry     Pharmaceutical Chemistry
က်	Reg. No.	TOTAL NATIONAL TOTAL TOTAL TOTAL AND
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Ġ	. Choose any one Major Based Elective-I in the give list *	
	Mark only one oval.	
	Analytical Chemistry     Material and nano Chemistry	

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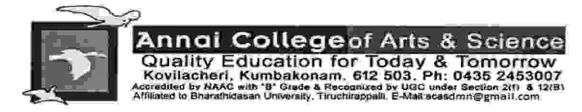
ISTICE OFFOW 2453007	hoose any one Major Based Elective-III in the give list	Polymer Chemistry													
Arts & Sc oday & Tom 503 Ph. 0435	Select Major Based Elective-II in the give below	Nuclear, Industrial, Chemistry & Metallic State	Nucleat, Industrial, Chemistry & Metallic State	Nucleat, Industrial, Chemistry & Metallic State	Nuclear, Industrial, Chemistry & Metallic State	Nucleat, Industrial, Chemistry & Metallic State	Nuclear, Industrial, Chemistry & Metallic State								
FOF TO	Choose any one Major Based Elective I in the give list	Analytical Chemistry													
	Course	B.Sc.,													
	Batch	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022
INTO E	Reg. No.	CB19S 112127	CB19S 112126	CB19S 112128	cb19s 112129	CB19S 112133	cb19s 112131	cb19s 112130	cb19s 112132	CB19S 112134	CB19S 112135	CB19S 112136	cb19s 112139	cb19s 112138	cb19s 112137
	Name of the Student	ANUSUYA S	ABITHA S	CHRISTOPHER M	durga k	JEYAKUMAR C	harish k	gayathri r	jeevitha s	KALPANA M	KATHIRAVAN S	KOWSALYA R	maheshwaran e	lokesh priyadharsini r	logas <del>n</del> j
	Name of Department	Chemistry													
	S.No	1	2	3	4	.5	9	7	-	6	10	11	12	13	14

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Analytical Chemistry																			
B.Sc.,	B.Sc.,	B.Sc.,	B.Sc.	B.Sc.,	B.Sc.	B.Sc.	B.Sc.,	B.Sc.,	B.Sc.	B.Sc.,	B.Sc.	B.Sc.							
2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	2019-2022	3
ob19s-112140	cb19s 112141	cb19 <sub>8</sub> 112142	CB198 112146	CB19S 112147	CB19S 112148	cb19s 112145	cb19s 112144	cb19s-112143	CB19S 112149	CB19S 112154	CB19S 112153	CB19S 112164	CB19S 112163	CB195 112161	CB19S 112157	CB19S 112156	CB19S 112160	CB19\$412159	
manikandan r	manoj s	priyadharshini s	SIVASUBRAMANIAN G	SNEHA R	SRIKANTH T	siva s	shahila s	santhosh s	SUBASHALINI B	VINSUNEGA T	VIGNESH M	Makesh C	Madhansciniyash R	Jeevadharsan T	ASHA MARIYAM A	ABUL HASSAN VAKITH CB19S 112156	Gitidharan M	Divya K.	
chemistry	N.C.																		
52	16	17	-81	19	50	53	22	23	24	25	26	27	28	29	30	31	32	33	70



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ANNEXURE II



# Justification on Major Based Elective Selection

# Analytical Chemistry

Analytical chemistry studies and uses instruments and methods used to separate, identify, and quantify matter. In practice, separation, identification or quantification may constitute the entire analysis or be combined with another method. Separation isolates analyses. Qualitative analysis identifies analyses, while quantitative analysis determines the numerical amount or concentration.

# Nuclear, Industrial, Chemistry & Metallic State

- Nuclear chemistry is the sub-field of chemistry dealing with radioactivity, nuclear processes, and transformations in the nuclei of atoms, such as nuclear transmutation and nuclear properties.
- Chemistry in its industrial applications especially to processes in manufacturing and the arts and to commercial production of chemicals
- The gap between the conduction and valence bands disappears and large numbers of free electrons exist at all temperatures. This is the metallic state. It is the last of these that distinguishes metals from insulators.

# Polymer chemistry

Polymer chemistry is a sub-discipline of chemistry that focuses on the chemical synthesis, structure, and chemical and physical properties of polymers. The principles and methods used within polymer chemistry are also applicable through a wide range of other chemistry sub-disciplines.

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# **Acronym & Abbreviation**

- 1. **CC** Core Course.
- 2. LC Language Course.
- 3. **ELC** English Language Course
- 4. AC Allied Course
- 5. **NME** Non Major Elective
- 6. SBE Skill Based Elective
- 7. MBE Major Based Elective