



J.K.K.MUNIRAJAH MEDICAL RESEARCH FOUNDATION'S ANNAI JKK SAMPOORANI AMMAL COLLEGE OF PHARMACY

Ethirmedu, **B.Komarapalayam** – 638 183, Namakkal Dist. Tamilnadu, India

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

Website : www.jkkmmrfpharmacy.edu.in |E-Mail : principal@jkkmmrfpharmacy.edu.in

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



**Dr. N. SENTHILKUMAR,
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VISION

The eminent institute collaborates with university to provide transformative education that produces leaders and innovators while also generating new knowledge for society and industry.

To become a well-known institute by providing excellent pharmaceutical education and research to improve community healthcare and technological aspects of industries.

MISSION

To establish academic excellence at the institute by providing education through high-quality infrastructure and technologies in pharmaceutical sciences.

To prepare pharmacy students for industrial research and social needs through student-centered teaching and learning processes. To prepare pharmacy professionals to be ethically responsible members of society.

QUALITY POLICES

JKKMMRF'S Annai JKK Sampoorani Ammal College Of Pharmacy is committed indulging in excellent pharmaceutical education that aims the overall health enhancement of the society.

- Delivering quality pharmaceutical education by creating a brilliant academic environment
- Constant development in the teaching methodology and infrastructure
- Providing sound relationship between students and faculty
- Expert faculty and fruitful academic guidance




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JKKMMRF'S-ANNAI JKK SAMPOORANI AMMAL COLLEGE OF PHARMCY

I B PHRM- I SEMESTER (21-22) SEC-A

DAYS	MORNING 09.00 - 12.55 (PRACTICAL)		12.55 - 1.40	AFTERN NOON (THEORY)			
	A-BATCH	B-BATCH		1.40 - 2.35	2.35 - 3.30	3.30 - 3.40	3.40 -4.35
MON	HAP	PA	LUNCH	CEUTIECS	PA	BREAK	HAP
TUES	PA	REMEDIAL B/M (1HR)-LIB (2HR)		CEUTIECS	HAP		PA
WED	CEUTIECS	COM.SKILL		PA	CEUTIECS		HAP
THUR	COM.SKILL	PIC		COM.SKILL	PIC		PCI
FRI	PIC	CEUTIECS		PIC	HAP-I		COM.SKILL
SAT	REMEDIAL B/M (1HR)-LIB (2HR)	HAP		PA	CEUTIECS		PIC

SEC-B

DAYS	MORNING 09.00 - 12.55 (PRACTICAL)		12.55 - 1.40	AFTERN NOON (THEORY)			
	C-BATCH	D-BATCH		1.40 - 2.35	2.35 - 3.30	3.30 - 3.40	3.40 -4.35
MON	CEUTIECS	COM.SKILL	L U N C H	PIC	COM.SKILL	B R E A K	CEUTIECS
TUES	PIC	CEUTIECS		PIC	PA		HAP
WED	HAP	PA		PCI	COM.SKILL		PIC
THUR	PA	HAP		HAP	CEUTIECS		PA
FRI	COM.SKILL	REMEDIAL B/M (1HR)-LIB (2HR)		CEUTIECS	PA		HAP
SAT	REMEDIAL B/M (1HR)-LIB (2HR)	PIC		PA	HAP		CEUTIECS

HAP-I : Priyanka.M
PA (T) : Dr. Kalaiselvi.P
(P) : Somireddy sivakameswari
CEUTICS: Mrs.S. Sangeetha

PIC: Mr. V.Suresh Kannan
Remedial Biology: Mr. Vasudevan
R.Mathematics: Mrs.S.Nirmala
COM.SKILL: Mrs.K. Sathyasundari

COURSE IN CHARGE

PRINCIPAL



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Syllabus

BP104T. PHARMACEUTICAL INORGANIC CHEMISTRY (Theory) 45 Hours

Scope: This subject deals with the monographs of inorganic drugs and pharmaceuticals.

Objectives: Upon completion of course, student shall be able to know the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals • understand the medicinal and pharmaceutical importance of inorganic compounds Course Content:

UNIT I 10 Hours

• Impurities in pharmaceutical substances: History of Pharmacopoeia, Sources and types of impurities, principle involved in the limit test for Chloride, Sulphate, Iron, Arsenic, Lead and Heavy metals, modified limit test for Chloride and Sulphate General methods of preparation, assay for the compounds superscripted with asterisk (*), properties and medicinal uses of inorganic compounds belonging to the following classes

UNIT II 10 Hours •

Acids, Bases and Buffers: Buffer equations and buffer capacity in general, buffers in pharmaceutical systems, preparation, stability, buffered isotonic solutions, measurements of tonicity, calculations and methods of adjusting isotonicity. • Major extra and intracellular electrolytes: Functions of major physiological ions, Electrolytes used in the replacement therapy: Sodium chloride*, Potassium chloride, Calcium gluconate* and Oral Rehydration Salt (ORS), Physiological acid base balance. • Dental products: Dentifrices, role of fluoride in the treatment of dental caries, Desensitizing agents, Calcium carbonate, Sodium fluoride, and Zinc eugenol cement.

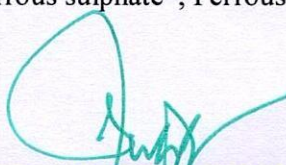
UNIT III 10 Hours

• Gastrointestinal agents Acidifiers: Ammonium chloride* and Dil. HCl Antacid: Ideal properties of antacids, combinations of antacids, Sodium Bicarbonate*, Aluminum hydroxide gel, Magnesium hydroxide mixture Cathartics: Magnesium sulphate, Sodium orthophosphate, Kaolin and Bentonite Antimicrobials: Mechanism, classification, Potassium permanganate, Boric acid, Hydrogen peroxide*, Chlorinated lime*, Iodine and its preparations

UNIT IV 08 Hours

• Miscellaneous compounds Expectorants: Potassium iodide, Ammonium chloride*. Emetics: Copper sulphate*, Sodium potassium tartarate Haematinics: Ferrous sulphate*, Ferrous gluconate




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Poison and Antidote: Sodium thiosulphate*, Activated charcoal, Sodium nitrite, Astringents: Zinc Sulphate, Potash Alum

UNIT V 07 Hours

• Radiopharmaceuticals: Radio activity, Measurement of radioactivity, Properties of α , β , γ radiations, Half-life, radio isotopes and study of radio isotopes - Sodium iodide I131, Storage conditions, precautions & pharmaceutical application of radioactive substances.

BP110P. PHARMACEUTICAL INORGANIC CHEMISTRY (Practical) 4 Hours / Week

I Limit tests for following ions

Limit test for Chlorides and Sulphates

Modified limit test for Chlorides and Sulphates

Limit test for Iron Limit test for Heavy metals

Limit test for Lead Limit test for Arsenic

II Identification test

Magnesium hydroxide Ferrous sulphate Sodium bicarbonate Calcium gluconate Copper sulphate

III Test for purity Swelling power of Bentonite Neutralizing capacity of aluminum hydroxide gel Determination of potassium iodate and iodine in potassium Iodide

IV Preparation of inorganic pharmaceuticals Boric acid Potash alum Ferrous sulphate

Recommended Books (Latest Editions)

1. A.H. Beckett & J.B. Stenlake's, Practical Pharmaceutical Chemistry Vol I & II, Stahlone Press of University of London, 4 th edition.
2. A.I. Vogel, Text Book of Quantitative Inorganic analysis
3. P. Gundu Rao, Inorganic Pharmaceutical Chemistry, 3 rd Edition
4. M.L Schroff, Inorganic Pharmaceutical Chemistry
5. Bentley and Driver's Textbook of Pharmaceutical Chemistry
6. Anand & Chatwal, Inorganic Pharmaceutical Chemistry
7. Indian Pharmacopoeia


COURSE IN CHARGE


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Lesson Plan- Theory

B. Pharm-Ist Sem

Subject: Pharmaceutical Inorganic chemistry

Session No	Topic	Reference/ Text Books	Teaching Aids
1	Impurities in pharmaceutical substances	R-1,3	PPT
2	Acids, Bases and Buffers	R-2,4	PPT
3	Major extra and intracellular electrolytes	R-3,5	PPT
4	Dental products	R-1,6	PPT
5	Gastrointestinal agents	R-2,3	BB
6	Acidifiers	R-1,4	BB
7	Cathartics	R-2,5	BB
8	Antimicrobials	R-1	BB
9	Antacid	R-1,2	PPT
10	Expectorants	R-1,6	PPT
11	Emetics	R-1,3	PPT
12	Haematinics	R-2,4	BB
13	Poison and Antidote	R-3,6	BB
14	Astringents	R-2,3	PPT
15	Radiopharmaceuticals	R-2,6	PPT
16	Radioisotopes	R-3,5	PPT

Text books:

1. A.H. Beckett & J.B. Stenlake's, Practical Pharmaceutical Chemistry Vol I & II, Stahlone Press of University of London, 4th edition.
2. A.I. Vogel, Text Book of Quantitative Inorganic analysis
3. P. Gundu Rao, Inorganic Pharmaceutical Chemistry, 3rd Edition
4. M.L Schroff, Inorganic Pharmaceutical Chemistry
5. Bentley and Driver's Textbook of Pharmaceutical Chemistry
6. Anand & Chatwal, Inorganic Pharmaceutical Chemistry

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Lesson plan- practical

Sem & year: first sem/ I - B. Pharmacy

Subject: pharmaceutical Inorganic chemistry

Course code: BP110P

S.NO	EXPERIMENT
1	Limit test for chloride
2	Limit test for sulphate
3	Limit test for iron
4	Limit test for chloride and sulphate in potassium permagnate
5	Limit test for chloride and sulphate in sodium bi carbonate
6	Preparation of boric acid
7	Preparation of potash alum
8	Preparation of ferrous sulphate
9	Acid neutralizing capacity of aluminum hydroxide gel
10	Swelling powder in bentonite
11	Presence of iodide in potassium iodide
12	Identification test for ferrous sulphate
13	Identification test for sodium bi carbonate
14	Identification test for magnesium hydroxide gel
15	Identification test for copper sulphate

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Program/Course credit structure

As per the philosophy of Credit Based Semester System, certain quantum of academic work viz. theory classes, tutorial hours, practical classes, etc. are measured in terms of credits. On satisfactory completion of the courses, a candidate earns credits. The amount of credit associated with a course is dependent upon the number of hours of instruction per week in that course. Similarly, the credit associated with any of the other academic, co/extra-curricular activities is dependent upon the quantum of work expected to be put in for each of these activities per week.

Credit assignment

Theory and Laboratory courses

Courses are broadly classified as Theory and Practical. Theory courses consist of lecture (L) and /or tutorial (T) hours, and Practical (P) courses consist of hours spent in the laboratory. Credits (C) for a course is dependent on the number of hours of instruction per week in that course, and is obtained by using a multiplier of one (1) for lecture and tutorial hours, and a multiplier of half (1/2) for practical (laboratory) hours. Thus, for example, a theory course having three lectures and one tutorial per week throughout the semester carries a credit of 4. Similarly, a practical having four laboratory hours per week throughout semester carries a credit of 2.

Minimum credit requirements

The minimum credit points required for award of a B. Pharm. degree is 208. These credits are divided into Theory courses, Tutorials, Practical, Practice School and Project over the duration of eight semesters. The credits are distributed semester-wise. Courses generally progress in sequences, building competencies and their positioning indicates certain academic maturity on the part of the learners.

Learners are expected to follow the semester-wise schedule of courses given in the syllabus. The lateral entry students shall get 52 credit points transferred from their D. Pharm program. Such students shall take up additional remedial courses of 'Communication Skills' (Theory and Practical) and 'Computer Applications in Pharmacy' (Theory and Practical) equivalent to 3 and 4 credit points respectively, a total of 7 credit points to attain 59 credit points, the maximum of I and II semester.



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Academic work

A regular record of attendance both in Theory and Practical shall be maintained by the teaching staff of respective courses.

Course of study

The course of study for B. Pharm shall include Semester Wise Theory & Practical as given in Table. The number of hours to be devoted to each theory, tutorial and practical course in any semester shall not be less than that shown in Table.

Course of study for semester I

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP101T	Human Anatomy and Physiology I– Theory	3	1	4
BP102T	Pharmaceutical Analysis I – Theory	3	1	4
BP103T	Pharmaceutics I – Theory	3	1	4
BP104T	Pharmaceutical Inorganic Chemistry – Theory	3	1	4
BP105T	Communication skills – Theory *	2	-	2
BP106RBT BP106RMT	Remedial Biology/ Remedial Mathematics – Theory*	2	=	2
BP107P	Human Anatomy and Physiology I– practical	4	-	2
BP108P	Pharmaceutical Analysis I – practical	4	-	2
BP109P	Pharmaceutics I – practical	4	-	2
BP110P	Pharmaceutical Inorganic Chemistry – practical	4	-	2
BP111P	Communication skills – practical *	2	-	1
BP112P	Remedial Biology-practical*	2	-	1
	Total	32/34 [§] /36 [#]	4	27/29 [§] /30

[#]Applicable ONLY for the students who have studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology (RB)course.

[§]Applicable ONLY for the students who have studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics (RM)course.

* Non-University Examination (NUE)

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