



CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY

B. Pharma First Year

FIRST SEMESTER

S.No	Subject No.	Board of Studies	Subject	Periods Per Week		Scheme of Examination					Total Marks	Credit = $\frac{[L+T+P]}{2}$
				L	P	Theory			Practical			
						ESE	CT	TA	ESE	TA		
1	341111(41) -A 341111(41)-B	Pharmacy	Remedial Mathematics OR Remedial Biology	5	-	70	15	15	-	-	100	5
2	341112 (41)	Pharmacy	Computer Applications	5	-	70	15	15	-	-	100	5
3	341113 (41)	Pharmacy	Pharmaceutics-I (Introduction to Pharmaceutics)	5	-	70	15	15	-	-	100	5
4	341114 (41)	Pharmacy	Pharmaceutical Chemistry-I (Physical)	5	-	70	15	15	-	-	100	5
5	341115 (41)	Pharmacy	Pharmaceutical Chemistry -II (Inorganic)	5	-	70	15	15	-	-	100	5
6	341121 (41)	Pharmacy	Remedial Biology Practicals	-	3	-	-	-	60	40	100	2
7	341122 (41)	Pharmacy	Computer Application Practicals	-	3	-	-	-	60	40	100	2
8	341123 (41)	Pharmacy	Pharmaceutics-I (Introduction to Pharmaceutics) Practicals	-	3	-	-	-	60	40	100	2
9	341124 (41)	Pharmacy	Pharmaceutical Chemistry- I (Physical) Practicals	-	3	-	-	-	60	40	100	2
10	341125 (41)	Pharmacy	Pharmaceutical Chemistry -II (Inorganic) Practicals	-	3	-	-	-	60	40	100	2
			TOTAL	25	15	350	75	75	300	200	1000	35

Min. Pass Marks : (A) Theory ESA & TA+CT (Combined) : 50% , (B) Practical ESE & TA (Combined) : 50%

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

SEMESTER	: 1 st	BRANCH	: B.PHARMA
SUBJECT	: Computer Applications	CODE	: 341112 (41)
TOTAL THEORY PERIODS	: 40	TOTAL TUT. PERIOD	: 1
TOTAL MARKS IN END SEM	: 70		
EXAM			
MINIMUM NO. OF CLASS TESTS TO BE CONDUCTED	: 2		

Branch: Pharmacy I Semester
Course: Computer Applications (Theory)

History of computer development and respective generation: Abacus, Napier, Bone, Slide rule, PASCAL'S, Calculator. Need to use computers, applications in pharmacy and in general.

Computer Classification: Mainframe, Mini and Micro Computers, Comparison of Analogue and Digital Computers, Hardware and Software, Calculator and Computer.

Operating Systems: Introduction to types of operating systems, UNIX, MS-DOS etc. RAM, Virtual Memory etc.

Type of Languages: Conventional languages; their advantages, limitations; C, PASCAL, FORTRAN, programming of these languages.

Introduction to Computer Networks:
Architecture of seven layers of communications.

Introduction to Data Structure: Like Queues, List, Trees. Binary trees algorithms, Flow chart, Structured system, Analysis and development, Ingress-SQL, Gateways etc. Statistics, Methodologies.

Basic Language:
Constants and Variables-Character se';, constant, variables, Naming the variables getting data into memory, LET, INPUT, READ, DATA, prin1 statement.

Expression:
Arithmetic expression, Hierarchy of operations, Rules of Arithmetic, Evaluation of expressions, Relational expressions, Logical operations, Library function.

Printer Control:
Comma and semicolon control, the TAB function, PRINT, LPPRINT.

Computer graphics
Computer applications in pharmaceutical and clinical studies.

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

SEMESTER	: 1 st	BRANCH : B.PHARMA
SUBJECT	: Pharmaceutical Chemistry	CODE : 341114(41)
TOTAL THEORY PERIODS	: 40	TOTAL TUT. PERIOD : 1
TOTAL MARKS IN END SEM EXAM	: 70	
MINIMUM NO. OF CLASS TESTS TO BE CONDUCTED	: 2	

Branch: Pharmacy I Semester
Course: Pharmaceutical Chemistry-I (Physical)

Behavior of Gases

Kinetic theory of gases, deviation from ideal behavior and explanation.

The Liquid State

Physical properties of drug molecule (surface tension, parachor, viscosity, refractive index, optical rotation, dipole moments and chemical constituents).

Solutions

Ideal and real solutions, solutions of gases in liquids, colligative properties, partition coefficient, conductance and its measurement, Debye Huckel Theory.

Thermodynamics First,

Second and Third laws, Zeroth law, absolute temperature scale, thermo chemical equations, phase equilibrium and phase rule.

Adsorption Freundlich and Gibbs's adsorption isotherms, Langmuir theory of adsorption.

Photochemistry

Consequences of light absorption, Lablenski diagram, Lambert Beer laws, Quantum efficiency.

Chemical Kinetics Zero, First and Second order reaction, complex reactions, theories and reaction kinetic characteristics of homogeneous and heterogeneous catalysis, acid-base enzyme catalysis.

Quantum Mechanics -

Postulates of quantum mechanics, operators in quantum mechanics, Schrodinger wave equation.

I-P-4 PHARMACEUTICAL CHEMISTRY-I (PHYSICAL) PRACTICALS

Experiments based on theory.

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

SEMESTER	: 1 st	BRANCH : B.PHARMA
SUBJECT	: Pharmaceutical Chemistry	CODE : 341115(41)
TOTAL THEORY PERIODS	: 40	TOTAL TUT. PERIOD : 1
TOTAL MARKS IN END SEM EXAM	: 70	
MINIMUM NO. OF CLASS TESTS TO BE CONDUCTED	: 2	

Branch: Pharmacy-1

Semester Course: Pharmaceutical Chemistry (Inorganic) (Theory)

An outline of methods of preparation, uses, sources, of impurities, test for purity and identity including limit tests for iron, arsenic, lead, heavy metals, chloride, sulphate and special tests if any, of the following classes of inorganic pharmaceuticals listed in Indian Pharmacopoeia.

- 1) Acids and Bases: Buffers, Water.
- 2) Gastrointestinal Agents: Acidifying agents, Antacids, Protectives, and Absorbents, Cathartics.
- 3) Major Intra and Extra Cellular Electrolytes: Physiological cations, Electrolytes used for replacement therapy, acid-base balance and combination therapy.
- 4) Essential and Trace Elements: Transition elements and their compounds of pharmaceutical importance, Iron and haematinis, Mineral supplements.
- 5) Cationic and in anionic components of inorganic drugs useful for systemic effects.
- 6) Topical Agents: Protectives, Astringents and Anti infectives.
- 7) Gases and Vapours: Oxygen, Anesthetics and respiratory stimulants.
- 8) Dental Products: Dentifrices, anti-caries agents.
- 9) Complexing and chelating agents used in therapy.
- 10) Miscellaneous Agents: Sclerosing agents, expectorants, emetics, poisons and .
antidotes, sedatives etc., pharmaceutical aids used in pharmaceutical industry
antioxidants, preservatives, diluents, excipients, suspending agents, colorants, filter
aids, adsorbents etc.

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

SEMESTER	: 1st	BRANCH : B.PHARMA
SUBJECT	: Phamaceutics	CODE : 341113(41)
TOTAL THEORY PERIODS	: 40	TOTAL TUT. PERIOD : 1
TOTAL MARKS IN END SEM EXAM	: 70	
MINIMUM NO. OF CLASS TESTS TO BE CONDUCTED	: 2	

Branch: Pharmacy I Semester

Course: Pharmaceutics-I (Introduction To Pharmaceutics) (Practical)

History of pharmaceutical practice through ages, Pharmacy as a career, Pharmacy in relation to allied health profession.

Various systems of medicines, Pharmacopoeias with special reference to Indian, British, United States:
International and Extra Pharmacopoeias.

Routes of drugs administration, classification of pharmaceutical dosage forms.

Definition, general formulation, manufacturing procedures and official products of Aromatic waters, Solutions, Syrups, Spirits, Elixirs, Linctuses, Lotions, Liniments, Glycerites, Gargles, Mouthwashes, Inhalations, Emulsions, Suspensions, Milks and Magmas, Mucilages, Jellies, Infusion, Decoctions, Tinctures and Extracts.

Detailed methods employed in the preparation of plant extractives.

Pharmaceutical Calculations: Different systems of weights and measures, Dilution and concentration of Solutions, Percentage solutions, Calculation by allegation, Proof spirits.

I-P-3 PHARMACEUTICS-I (INTRODUCTION TO PHARMACEUTICS) PRACTICALS

Classes mentioned under theory.

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

SEMESTER	: 1st	BRANCH : B.PHARMA
SUBJECT	: Remedial Biology	CODE : 341111 (B) (41)
TOTAL THEORY PERIODS	: 40	TOTAL TUT. PERIOD : 1
TOTAL MARKS IN END SEM EXAM	: 70	
MINIMUM NO. OF CLASS TESTS TO BE CONDUCTED	: 2	

Branch: Pharmacy I Semester

Course: Remedial Biology

Classification of Plants -

- 1) Structure of plant, cell, Mitosis and Meiosis, Different types of plant tissues and their functions. Simple and compound microscopes use in biology.
- 2) Morphology and Histology of root, stem, bark, wood, leaf, flower, fruit and seed. Modification of root and stem.
- 3) Study of the following families with special reference to medicinally important plants – Apocynaceae, Solanaceae, Graminae, Labiatae, Cruciferae, Papaveraceae, Umbelliferae, Leguminosae, Rubiaceae and Liliaceae.
- 4) Classification and General survey of Animal Kingdom.
- 5) Structure and life history of parasites like Amoeba, Entamoeba, Trypanosoma, Plasmodium, Taenia and Ascaris. General structure and life history of insects like Mosquito and Housefly.

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

SEMESTER	: 1st	BRANCH	: B.PHARMA
SUBJECT	: Remedial Mathematics	CODE	: 341111(A)(41)
TOTAL THEORY PERIODS	: 40	TOTAL TUT. PERIOD	: 1
TOTAL MARKS IN END SEM EXAM	: 70		
MINIMUM NO. OF CLASS TESTS TO BE CONDUCTED	: 2		

Branch: Pharmacy I Semester
Course: Remedial Mathematics

Algebra -

Equation reducible or quadratics, Simultaneous equations (linear and quadratic) determinations, properties of, Solution of simultaneous equations by Cramer's rule, Matrices, Definition of special kinds of matrices, Arithmetic operations on matrices, Matrices, Inverse of a matrix, Solution of simultaneous equations by matrices, Pharmaceutical applications of determinates and matrices. Evaluation on E_{n1} , E_{n2} and E_{n3} . Mensuration and its pharmaceutical applications measures of Central Value Objectives and pre-requisites of and ideal measures, mean, mode and median.

Trigonometry

Measurement of angle,
T-ratios, Addition, Subtraction, and Transformation formulae, T-ratios of multiple, Submultiples, Allied and certain angles. Applications of Trigonometry in pharmaceutical computations.

Analytical Plane Geometry

Certain co-ordinates, distance between two points, area of triangle, a locus of point, straight line; slope and intercept form, double-intercept form, normal (perpendicular form), slope-point and two point form, general equation of first degree.

Calculus

Differential: Limits and functions, definition of differential coefficient, differentiation of standard functions including function of a function (chain rule). Differentiation of implicit functions, logarithmic differentiation, parametric differentiation, successive differentiation.

Integral: Integration as inverse of differentiation, indefinite integrals of standard forms, integration by parts, substitution and partial fractions, formal evaluation of definite integrals.

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

SEMESTER	: 1st	BRANCH : B.PHARMA
SUBJECT	: Computer Application (Practical)	CODE : 341122 (41)
TOTAL THEORY PERIODS	: 40	TOTAL TUT. PERIOD : 1
TOTAL MARKS IN END SEM	: 60	
EXAM		
MINIMUM NO. OF CLASS TESTS TO BE CONDUCTED	:	

Branch: Pharmacy I Semester
Course: Computer Applications (Practical)

Exercises based on the following are to be dealt :

- 1) Computer operating system like UNIX, MS-DOS etc.
- 2) Programming of languages – C, PASCAL and FORTRAN.
- 3) Study of software packages like WORDSTAR, LOTUS - 123