GNCP

Subjectwise Course Outcome - [B. Pharmacy - 2021-22]

B.PHARM EIGHTH SEMESTER 21-22	
Quality Control & Standardization of Herbals [Theory | Elective]	
CO ID.	**Course Outcome**
CO1	to Define pharmaceutical substances, medicinal plant materials and dosage form
CO2	To describe various parameters as per WHO guidelines
CO3	To apply the knowledge of various chromatographic techniques in standardization of herbal drugs
CO4	Describe the role of chemical and biological markers in standardization of herbal products
Pharma Marketing Management [Theory | Elective]	
CO ID.	**Course Outcome**
CO1	To understand the marketing concepts.
CO2	To understand the techniques and applications of marketing concepts in pharmaceutical industry.
CO3	To find out and understand the various emerging concepts in marketing.
CO4	To study about the promotion methods and the role of sales representatives in functioning marketing channels.
BP801T Biostatistics and Research Methodology [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	Discuss the various statistical techniques to solve statistical problems
CO2	Discuss different methodologies and techniques used in research work.
CO3	Explain basic computer skills necessary for the conduct of research.
CO4	Desrcibe the optimization methods to develop and for solving various types of optimization problems.
BP802T Social and Preventive Pharmacy [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	After the successful completion of this course, the student shall be able to:Acquire high consciousness/realization of current issues related to health andpharmaceutical problems within the country and worldwide.
CO2	To have a critical way of thinking based on current healthcare development.
CO3	Evaluate alternative ways of solving problems related to health andpharmaceutical issues
BP809ET Cosmetic Science [Theory | Elective]	
CO ID.	**Course Outcome**
CO1	Classify and define Cosmetics and Cosmeceuticals as per Indian and EU regulations
CO2	Describe the role of cosmetic excipients and building blocks in the formulation of cosmetics
CO3	Explain the structure and function of the skin, hair, teeth and gums
CO4	Describe the fundamentals of sun protection and the formulation of Sunscreens, antiperspirants and deodorants
CO5	Design, Formulate and Evaluate cosmetics and cosmeceuticals (synthetic and herbal) for skin care and hair care as well as dental and oral care
CO6	Design cosmetics and cosmeceuticals that address the problems of dry skin, acne, dermatitis, prickly heat, wrinkles, blemishes, hair fall, Dandruff, body odour, bleeding gums, mouth odour, teeth discoloration and sensitive teeth.
BP813PW Project Work [Practical | Regular]	
CO ID.	**Course Outcome**
CO1	Identify the problems associated with skin care,hair care and body care. Discover the problems associated with existing formulations .
CO2	Take part in carrying out research and make use of published literature and patents
CO3	Justify the project topic, Compile or create,design or plan for a suitable formulation,its evaluation and interpret ,discuss results and draw conclusion
CO4	Perceive alternatives to problem , make use of herbal and synthetic drugs and additives and improve critic skill,presentation and communication . Assess the commercial importance of new drug product

B PHARM SIXTH SEMESTER 21-22	
Medicinal Chemistry - III [Theory | Regular]	
CO ID.	Course Outcome
CO1	Understand the importance of drug design and different techniques of drug design
CO2	understand the chemistry of drugs with respect to biological activity
CO3	Know the metabolism, adverse effects and therapeutic value of drugs
CO4	Know the importance of SAR of drugs
Herbal Drug Technology [Theory | Regular]	
CO ID.	Course Outcome
CO1	Define various terminologies like herbal medicines, organic farming, biopesticides,neutraceuticals,asavas, arishtas, churnas,bhasma,patents
CO2	Classify neutraceuticals, herbal cosmetics,Ayurvedic dosage forms, herbal exipients, herbal formulations, biopesticides, herb-drug interactions
CO3	Elaborate various component parts of GMP for the production of phytomedicines.
CO4	Explain the role of herbal raw materials and herbal extracts in various herbal cosmetics.
CO5	Explain the role of various phytoconstituents present in traditional plant drugs used in herbal formulations.
Herbal Drug Technology [Practical | Regular]	
CO ID.	Course Outcome
CO1	Determine the alcohol contents of Asavas and Arishtas
CO2	Apply the knowledge of thin layer chromatography(TLC) to analyse the herbal extracts of ritha, shikakai,clove, kalmegh, bramhi qualitatively with respect to quality and purity.
CO3	Develop the qualitative fingerprint profile of clove oil, eucalyptus oil and peppermint oil.
CO4	Explain the procedure for the estimation/determination of total alkaloids of the crude drugs such as cinchona bark.
CO5	Formulate and evaluate the various herbal cosmetics like creams, lotions and shampoos and herbal dosage forms like syrups, tablets and mixtures.
BP602T Pharmacology - III [Theory | Regular]	
CO ID.	Course Outcome
CO1	Imparts basic knowledge of pharmacodynamic of various drugs
CO2	Understand the mechanism of drug action and its relevance in the treatment ofdifferent infectious diseases.
CO3	Basic principles of toxicology and treatment of various poisonings.
CO4	Know correlation of pharmacology with related medical sciences.
CO5	Know basics of Immunopharmacology and Chronopharmacology.
BP604T Biopharmaceutics and Pharmacokinetics [Theory | Regular]	
CO ID.	Course Outcome
CO1	Understand and Define the basic concepts in biopharmaceutics and pharmacokinetics
CO2	Select the correct pharmacokinetic model based on plasma level or urinary excretion data that best describes the process of drug absorption, distribution, metabolism and elimination (ADME)
CO3	Determine the effect of Pharmacokinetic (ADME) parameters on the biological effects of the drug
CO4	Carry out biopharmaceutical studies and use data so obtained in the development of new drugs or dosage forms
CO5	Calculate various pharmacokinetic parameters from plasma and urinary excretion data applying compartment modeling and model independent methods
CO6	Apply the various regulations related to developing BA -BE study protocol for the new drug molecule and Design Bioavailability and Bioequivalence studies of new drugs or dosage forms
CO7	Evaluate drug-protein binding as a tool to predict pharmacokinetics of drugs
BP605T Pharmaceutical Biotechnology [Theory | Regular]	
CO ID.	Course Outcome
CO1	Understand the importance of Immobilized enzymes in Pharmaceutical Industries
CO2	Genetic engineering applications in relation to production of pharmaceuticals
CO3	Understand the importance of Monoclonal antibodies in Industries

CO4	Appreciate the use of microorganisms in fermentation technology
BP606T Quality Assurance [Theory | Regular]	
CO ID.	Course Outcome
CO1	Understand the Quality concepts and cGMP aspects in a pharmaceutical industry
CO2	Appreciate the importance of documentation and procedure for documentation
CO3	Understand the scope of quality certifications applicable to pharmaceutical industries
CO4	To Understand the responsibilities of QA & QC departments
BP607P Medicinal Chemistry - III [Practical | Regular]	
CO ID.	Course Outcome
CO1	.Understand the importance of drug design and different techniques of drug design.
CO2	Understand the chemistry of drugs with respect to their biological activity.
PO3	Know the metabolism, adverse effects and therapeutic value of drugs
CO4	Know the importance of SAR of drugs.
BP608 P. Pharmacology - III [Practical | Regular]	
CO ID.	Course Outcome
CO1	Understand dose calculation of drugs as per body weight of animals for bioscreening.
CO2	Evaluate various bioscreening activities on animals by by computer simulation methods.
CO3	Understand various statistical methods for data analysis in experimental pharmacology.
CO4	Understand estimation of biochemical parameters by using auto analyser and their significance.
B PHARM FOURTH SEMESTER 21-22	
BP 403 T Physical Pharmaceutics - II [Theory | Regular]	
CO ID.	Course Outcome
CO1	Understand and explain the properties and principles of dispersed systems, rheology and micromeretics.
CO2	Describe the fundamental and derived properties of powders and their applications in the formulation design.
CO3	Identify and interpret (theoretical) rheological, micromeritics and dispersion factors to be consider for pharmaceutical dosage form design.
CO4	Outline the reaction kinetics, rate, order and factors affecting the rate of reaction; prevent degradation, stabilization of drugs and shelf-life assessment and to describe the reaction kinetics of dosage forms.
BP 407P Physical Pharmaceutics - II [Practical | Regular]	
CO ID.	Course Outcome
CO1	Demonstrate the procedural part involved in the determination of fundamental properties of powder, rheological properties of liquid and rate of reaction in stability studies.
CO2	To know the concept of accelerated stability studies.
CO3	Evaluate and interpret the effect of various suspending agents and lubricants effect on sedimentation parameters, viscosity of formulation and flow properties of powder respectively.
BP 409 P Pharmacognosy & Phytochemistry - I [Practical | Regular]	
CO ID.	Course Outcome
CO1	Implement different chemical tests for the identification of unorganized crude drugs
CO2	Explain the significance of quantitative microscopy with respect to leaf constants and lycopodium spore method
CO3	Perform linear measurements for crude drug identification
CO4	Evaluate different quality control parameters for standardization of herbal drugs
BP401 Pharmaceutical Organic Chemistry - III [Theory | Regular]	
CO ID.	Course Outcome
CO1	understand the method of preparation of organic compounds
CO2	understand the properties of organic compounds
CO3	explain the stereo chemical aspects of organic compounds

CO4	explain the stereo chemical reactions of organic compounds
CO5	know the medicinal uses of organic compounds
CO6	know the application of organic compounds
BP402T Medicinal Chemistry - I [Theory | Regular]	
CO ID.	Course Outcome
CO1	Explain introduction, history, development and the various physiochemical properties and drug metabolism in relation to biological activity
CO2	Explain SAR of some important drug classes and mode of action, uses and side effects at molecular level.
CO3	Summarise synthesis of the important class of compounds.
CO4	Explain drugs acting on the adrenergic nervous system and cholinergic nervous system.
CO5	Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics.
CO6	Describe drugs acting on CNS: General Anaesthetics, Narcotic and Non-Narcotic analgesics and Narcotic antagonists & anti-inflammatory agents.
BP404T Pharmacology - I [Theory | Regular]	
CO ID.	Course Outcome
CO1	Describe the basics of general pharmacology and concepts of pharmacokinetics, pharmacodynamics, adverse drug reaction and drug interactions
CO2	Explain the process by which new drugs are discovered, developed and clinically evaluated
CO3	Understand the pharmacological actions along with adverse effects, drug interaction, contraindication and therapeutic uses of drugs acting on autonomic nervous system and Central nervous system
CO4	Explain the mechanism of drug action at organ system/sub cellular/macromolecular levels
CO5	Apply the basic pharmacological knowledge in the prevention and treatment of various diseases
BP405T Pharmacognosy & Phytochemistry - I [Theory | Regular]	
CO ID.	Course Outcome
CO1	Demonstrate knowledge of basic concept in the principle of Pharmacognosy and classification of crude drug.
CO3	List the factors affecting cultivation and the methods used for collection and preparation of crude drug for the market.
CO2	Apply the knowledge of evaluation techniques for the quality control of herbal drugs
CO5	Explain various alternative and complementary system of Medicine.
CO6	Categorize the different types of secondary metabolites
CO7	Understand and remember the Biological sources, chemical nature and uses of drugs of natural origin
CO4	Apply the knowledge of Plant Tissue Culture techniques in the field of Pharmacognosy
BP406P. Medicinal Chemistry - I [Practical | Regular]	
CO ID.	Course Outcome
CO1	To perform preparation, understand reaction mechanisms and purification by recrystallization of drugs or intermediates.
CO2	To perform assay on drugs.
CO3	To find out partition coefficient and dissociation constant of organic and medicinal compounds.
BP408P Pharmacology - I [Practical | Regular]	
CO ID.	Course Outcome
CO1	Enlist different experimental animals used in experimental pharmacology
CO2	Demonstrate the common laboratory techniques like dissection, blood withdrawal, anaesthesia and euthanasia
CO3	Evaluate drugs for their activity in animals using different experimental models
CO4	Determine the effect of drugs on animals using simulated techniques (software and videos)
B.Pharm.Second Semester	
Human Anatomy & Physiology - II [Theory | Regular]	
CO ID.	Course Outcome
Course outcome not yet added by the respective faculty.(Veerendra Dhoke)	
Pathophysiology [Theory | Regular]	

CO ID.	Course Outcome
CO1	Describe etiology and pathogenesis of the selected disease states.
CO2	Name the signs and symptoms of the disease.
CO3	To understand the body's immune responses .
CO4	Describe the healing and recuperation in a human body.
Human Anatomy & Physiology - II [Practical | Regular]	
CO ID.	Course Outcome
CO1	. Explain the construction, working, care and handling of various instruments, glassware and equipment required for conducting the practical.
CO2	Demonstrate the simple laboratory techniques.
CO3	Identification of different types of bones and their placements in body
CO4	ability to perform the hematological determinations
CO 5	Explain the precautions taken by student while doing the practical in the laboratory.
BP 209P Biochemistry [Practical | Regular]	
CO ID.	Course Outcome
CO-1	know various tests, their principle and procedure to identify the sample of carbohydrate or proteins.
CO-2	Learn about various normal and abnormal constituents in the body fluids like blood and urine and perform qualitative and quantitative analysis of it.
CO-3	Understand the concept and principle of buffer and prepare it in laboratory.
CO-4	Understand the role of enzyme in various biochemical reactions and effect of various parameters on its action.
BP202T Pharmaceutical Organic Chemistry - I [Theory | Regular]	
CO ID.	Course Outcome
CO 1	To write the structure, name and the type of isomerism of the organic compound
CO 2	To write the reaction, name the reaction and orientation of reactions
CO 3	account for reactivity/stability of compounds,
CO 4	identify/confirm the identification of organic compound
BP203T Biochemistry [Theory | Regular]	
CO ID.	Course Outcome
CO-1Biochem	Learn about various biochemical reactions occurring in human body and how they are helpful in metabolism.
CO-2Biochem	Know about various biomolecules in human body playing important role in various biochemical reactions.
CO-3Biochem	Understand the metabolism of nutrient molecules and other biomolecules in physiological and pathological conditions.
CO-4Biochem	Understand the catalytic role of enzymes, importance of enzyme inhibitors in design of new drugs, therapeutic and diagnostic applications of enzymes.
CO-5Biochem	Understand the genetic organization of mammalian genome and functions of DNA in the synthesis of RNAs and proteins.
BP205T Computer Applications in Pharmacy [Theory | Regular]	
CO ID.	Course Outcome
CO1	Understand the number system and its applications.
CO2	Explain about information systems and software
CO3	Understand the computer and programming languages.
CO4	Analyse the different types of databases.
CO5	Explain the applications of computer in Pharmacy.
CO6	Explain bioinformatics and their impact in vaccine discovery.
CO7	Identify the role of computers for data analysis in the field of preclinical development.
BP206T Environmental Sciences [Theory | Regular]	

CO ID.	Course Outcome
CO1	Create awareness about environmental problems among learners
CO2	Impart basic knowledge about the environment and its allied problems.
CO3	Develop an attitude of concern for the environment.
CO4	Motivate learners to participate in environment protection and environment improvement
CO5	Acquire skills to help the concerned individuals in identifying and solving environmental problems.
CO6	Strive to attain harmony with Nature.
BP208P Pharmaceutical Organic Chemistry - I [Practical | Regular]	
CO ID.	Course Outcome
CO 1	To know how to carryout the systematic qualitative analysis of unknown organic compounds
CO 2	To learn about the preparation of suitable solid derivatives from organic compounds
CO 3	To understand how to construct the molecular models
BP210P Computer Applications in Pharmacy [Practical | Regular]	
CO ID.	Course Outcome
CO1	Use MS Word to create questionnaires and other documentation related to pharmacy.
CO2	Create HTML web page.
CO3	Use MS Access to modify the data bases created.
CO4	Generate forms; report; work with queries on MS Access
CO5	Handle web and XML pages to export table, forms and queries.

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Subjectwise Course Outcome - [Pharmaceutical Chemistry - 2021-22]

FY-SECOND SEMESTER	
Seminar [Practical | Regular]	
CO ID.	Course Outcome
Course outcome not yet added by the respective faculty.(Dr. Nidhi Sapkal, Mrs. Archana Mungle)	
MPC 201T Advanced Spectral Analysis [Theory | Regular]	
CO ID.	Course Outcome
CO1	On the basis of hyphenated analytical instrumental techniques student will be able in identification, characterization and quantification of drugs.
CO2	The students will be able to understand the Interpretation of the NMR, Mass and IR spectra of various organic compounds.
CO3	Students will be able to learn the theoretical and practical skills of the hyphenated instruments.
CO4	students will be able in the Identification of organic compounds.
MPC 202T Advanced Organic Chemistry-II [Theory | Regular]	
CO ID.	Course Outcome
CO1	Discuss the principles and applications of green chemistry
CO2	Explain the chemistry, synthesis and side reactions of peptides
CO3	Explain the principles of different types of photochemical reactions
CO4	Discuss the principles of different types of pericyclic reactions
CO5	Explain the applications of homogeneous and heterogeneous catalysis in the synthesis of drugs
CO6	Discuss the applications of biocatalysis and phase transfer catalysis in organic reaction
CO7	Explain the basic concept of stereochemistry
CO8	Discuss the principle of asymmetric synthesis
MPC 203T Computer Aided Drug Design [Theory | Regular]	
CO ID.	Course Outcome
CO1	To understand the role of computational techniques in drug discovery.
CO2	To learn about the CADD techniques and their applications
CO3	To learn various strategies to design and develop new drug like molecules.
CO4	To learn about molecular modeling software to design new drugmolecules
CO5	To learn about the in silico virtual screening protocols
MPC 205P Pharmaceutical Chemistry Practical II [Practical | Regular]	
CO ID.	Course Outcome
CO1	To learn the use of computational software in drug design
CO2	To understand the regulatory requirements related to APIs
CO3	To outline the techniques involved in synthesis of organic compounds or drugs.
CO5	To experiment with the synthesis and analysis of organic compounds
CO 6	To learn the different analytical instruments, like UV, IR, Mass & NMR. To interpret the IR, Mass and NMR spectra.
MPC204T Pharmaceutical Process Chemistry [Theory | Regular]	
CO ID.	Course Outcome
CO1	To understand the strategies for scaling up the manufacturing processes for APIs and intermediates.
CO2	To be able to design various unit processes involved in the synthesis of APIs and intermeidates.

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Subjectwise Course Outcome - [Pharmaceutics - 2021-22]

FY-SECOND SEMESTER	
Seminar/Assignment [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	Enhance the communication skills and knowledge
CO2	Explore certain topic in depth
CO3	Improve organizational skills
Cosmetics and Cosmeceuticals [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	A thorough understanding about the key ingredients used in cosmetics and cosmeceuticals..
CO2	Gain complete knowledge about the various building blocks used for formulating different cosmetic formulations.
CO3	Study about the current technologies applied for cosmetics and cosmeceuticals formulation in the market.
CO4	Understand the key ingredients and basic science to develop cosmetics and cosmeceuticals.
CO5	Gaining scientific knowledge to develop cosmetic and cosmeceuticals giving more emphasis on the safety stability and efficacy of the formulations.
MIP 201T Advanced Biopharmaceutics [Theory | Regular]	
CO ID.	**Course Outcome**
C01	understand the basic concepts in biopharmaceutics and pharmacokinetics
C02	Understand the processes and terms related to the fate of drug in human body.
C03	Explain and describe the physicochemical, dosage form and patient related factors affecting absorption, distribution, metabolism and excretion of drugs.
C04	Justify the significance of the rate of movement of drug in the body administered by various routes of administration.
C05	Understand the concept of compartment modelling and evaluate the quantity/concentration of drug in body at any point of time
C06	Compare and analyze the in vitro drug release profiles for different marketed products
MPH 201T Molecular Pharmaceutics [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	Know the concept of drug targeting.Understand the physiology of tumors and biological processes involved in drug targeting tumors and the brain.
CO2	Know the significance of nanoparticles and liposomes for targeted delivery of drugs.Prepare and evaluate nanoparticles and liposmes.
CO3	Understand the importance of microcapsules, Monoclonal antibodies, niosomes, aquasomes, phytosomes, and electrosomes in drug targeting (nanocarriers)Prepare and evaluate drug-loaded nanocarriers for targeting.
CO4	Know the physiology of pulmonary and nasal systems as a route for effective drug targeting.Prepare and evaluate nanocarriers for drug targeting by pulmonary and nasal routes.
CO5	Understand the significance of gene therapy and know the potential target diseases for gene therapy. Prepare and evaluate effective gene expression systems along with understanding its biodistribution and pharmacokinetics. Know Aptamers and Antisense oligonucleotides as drugs of the future.
MPH 203T Computer Aided Drug Development (CADD) [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	Know the history and importance of computers in pharmaceutical research and drug development. Differentiate between descriptive versus mechanistic modeling and calculate various statistical parameters.
CO2	Understand the importance of Quality by Design in drug development and know the guideline ICHQ8.Know the regulatory and industrial views on QbD.Understand the use of computers in preclinical development and computational modeling of drug disposition.
CO3	Know optimization techniques in formulation development and use of computers in R&D and F&D.Know the ethics of computing in Pharmaceutical research.
CO4	Understand the role of computers in clinical drug development. Know and apply principles of computer-aided biopharmaceutical drug development.Know and use various computer simulation software in PKPD.Collect and manage clinical data. Know regulations in computer systems

CO5	Know the general overview of Artificial Intelligence in drug development.
MPH 205P Pharmaceutics -II (Practical) [Practical | Regular]	
CO ID.	Course Outcome
CO1	Know and use the approaches to improve the solubility of poorly soluble drugs
CO2	Understand the advantages of nanocarriers in designing targeted drug delivery systems and prepare and evaluate nanocarriers using various methods.
CO3	Know the significance of the dissolution profile of a drug product on its performance and prepare a comparative dissolution profile as well as know the extent of drug-protein binding.
CO4	Apply QbD approach for drug product development.
CO5	Develope and evaluate herbal formulations or cosmeceuticals for acne, bleeding gum etc.
CO6	Understand the importance of using computer software like Minitab(DoE), GastroPlusTM, etc. at various stages of drug development i.e. Preclinical, Formulation development, and Clinical stage.

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Subjectwise Course Outcome - [Pharmaceutical Quality Assurance - 2021-22]

FY-SEM II	
Seminar [Practical | Regular]	
CO ID.	Course Outcome
Course outcome not yet added by the respective faculty.(No faculty assigned.)Course outcome not yet added by the respective faculty.()Course outcome not yet added by the respective faculty.(Dr. Suhas Padmane, Dr. Sheelpriya Walde)	
MQA 201T Hazard and Safety Management [Theory | Regular]	
CO ID.	Course Outcome
CO-1	Understand the nature of environment, natural resources and importance of ecosystem
CO-2	Recognize the sources of hazards and the level of the risks associated with them
CO-3	Learn the method of Hazard assessment, procedure, methodology to provide safety standards in Pharmaceutical industries.
MQA 202T Pharmaceutical Validation [Theory | Regular]	
CO ID.	Course Outcome
CO1	Explain concept of calibration, qualification,and validation.
CO2	Describe qualification of various equipments and instruments.
CO3	Understand process validation of different dosage forms.
CO4	Understand validation of equipments employed in the manufacture of pharmaceuticals.
MQA 203 T Audit and Regulatory compliance [Theory | Regular]	
CO ID.	Course Outcome
CO1	Know the definition
CO2	Understand the role of audits in pharmaceutical manufacturing
CO3	Learn the requirements for auditing vendors supplying various raw materials and equipments
CO4	Understand the audit of microbiological laboratory and engineering systems
MQA 204 T Pharmaceutical Manufacturing Technology [Theory | Regular]	
CO ID.	Course Outcome
CO1	Understand the basic requirements in pharmaceutical industry development
CO2	Understand the practices of aseptic process technology
CO3	Learn Non-sterile manufacturing technology
CO4	Know Quality by Design and Process analytical technology
MQA 205T Pharmaceutical Quality Assurance I [Practical | Regular]	
CO ID.	Course Outcome
CO1	Creat presentation using proper format.
CO2	Prepare presentation on the given topic and deliver the contents effectively
CO3	Use effectively audio-visual aids.
CO4	Choose proper format of presentation.
CO5	Use relevant references and apply proper referencing style.
CO6	Defend and answer questions asked during seminar.
CO7	Deliver relevant and useful matter to complete presentation in a stipulated time period.