



SRI AUROBINDO UNIVERSITY, INDORE

SYLLABUS FOR Ph.D. ENTRANCE EXAMINATION

Section – A

Research Methodology (Common for all Faculties)

UNIT I:

Process of selection of research question including prioritization and feasibility, process of writing research proposal, scientific writing for thesis and research publications. Review of literature, need for review of literature, primary and secondary sources for review, bibliographic databases, electronic databases, information retrieval, information processing, critical evaluation, organization of materials collected and writing of review, methods of writing references and bibliography.

UNIT II:

Scales of measurement: Basic concepts in response scales, types of scales, categorical scales, nominal scales, ordinal scales and interval or ratio scales, visual analogue scales, Likert scale, composite scales, Guttman scale, combination scores, Criteria for a satisfactory scale, Appropriate selection of scale for measuring a variable, Appropriate use of different statistical procedures for different kinds of scale, Principles and approaches in questionnaire development. Open ended and closed ended questions, Questionnaire validity and reliability.

UNIT III:

Measures of disease frequency and association, prevalence, incidence, crude, specific and adjusted (standardized) rates, relative risk, odds ratio, standardized mortality ratios, attributable risk and interpretation of measures of association. Descriptive epidemiological studies: correlational studies, case reports and case series, cross sectional studies, hypothesis formulation from descriptive studies. Case control studies, Design and conduct of case control studies, analysis and interpretation of results, bias in case control studies.

UNIT IV:

Cohort studies: Types of cohort studies, design and conduct of cohort studies, analysis and interpretation of results, bias in cohort studies, Retrospective cohort studies, Bias in epidemiological studies, Types of bias, control of bias, evaluation of role of bias and confounding, nature of confounding, methods of controlling confounding. Statistical association and cause effect relationship, Evaluation of the presence of valid statistical association, Epidemiological approach to causation, judgment of a cause-effect relationship.

UNIT V:

Interventional studies, Types of interventional studies, design and conduct of randomized controlled trials, blinding in randomized controlled studies, analysis and interpretation of results. Nonrandomized studies, Drug discovery and evaluation: Historical approaches in drug discovery, pharmacological approaches of modern medicine, new approaches in drug discovery, pharmacological evaluation of acute, sub acute, chronic toxicity studies, pharmacological evaluation methods, and OECD guidelines.

UNIT VI:

Sources of data, Presentation and summarization of data, qualitative or discrete data, Quantitative or continuous data, Types of variables, Dependent and independent variables, Selection of variables, Clarifying variables, data presentation, tables, Frequency distribution drawings charts and diagrams. Measures of central tendency and location, Mean, median, mode, position average, and percentile. 2 Measures of dispersion, Range, inter-quartile range, mean deviation, standard deviation and coefficient of variation.

UNIT VII:

Probability: Probability scale, measurement of probability, laws of probability for independent events, conditional probability, Bayes' theorem. Additional law of probability, Multiplication law of probability, Probability distribution, Probability chance from shape of normal distribution or normal curve, binomial distribution, Poisson distribution, normal distribution, Standard normal deviate, Asymmetrical distribution, t distribution.

UNIT VIII:

Statistical sampling, Population, sample, sampling variations and bias, probability sampling methods, Simple random sampling, Systematic random sampling, Stratified random sampling, Multistage sampling, Multiphase sampling, Cluster sampling, Advantages and disadvantages of different types of sampling, Appropriate use of different types of sampling, Non probability sampling methods, Sample size, Concepts in calculation of sample size.

UNIT IX:

Evaluating role of chance, Normal distribution, inferential statistics, hypothesis testing, p value, confidence intervals. Confidence interval for mean, statistical test of significance for difference between two means and more than two means (ANOVA). Confidence interval for proportion, statistical test of significance for difference between two proportions and more than two proportions (chi-squared test).

UNIT X:

Correlation, Correlation coefficient, Positive correlation, Negative correlation, Rank correlation, Linear regression, Simple and multiple regression and logistic regression. Non parametric methods, Sign test, Wilcoxon signed-rank test, median test, Mann-Whitney test, Kruskal-Wallis test, Friedman test, Spearman rank correlation coefficient. Advantages of non-parametric methods over parametric methods, disadvantages of non-parametric methods over parametric methods, and applications of non- parametric tests.

UNIT XI:

Ethics and biomedical research: General principles on ethical considerations involving human subjects, ethical review procedures, Institutional ethics committee, its organization and functions, general ethical issues. Specific principles for clinical evaluation of drugs / devices / diagnosis vaccines / herbal remedies, specific principles in epidemiological studies, specific principles in human genetic research, specific principles for research in transplantation including fetal tissue implantation, Publication ethics.

UNIT XII:

Ethical guidelines for experimental animals: Sources of experimental animals, Lab. Animal husbandry and management, anesthesia and euthanasia, laboratory animal ethics, institutional animal ethics committee, its organization and functions and responsibilities, ethical guidelines for use of animals for scientific research, The 3 R's (Replacement, Reduction, Refinement), CPCSEA guidelines, Ethical principles adopted by CPCSEA for use of animals in scientific experimentation, in-vitro system to replace animals, legal provisions for experimentation of animals.



SRI AUROBINDO UNIVERSITY, INDORE

SYLLABUS FOR Ph.D. ENTRANCE EXAMINATION

Section – B

(FACULTY OF MEDICINE)

UNIT – I

Cell structure and function, nucleic acid structure and function, biomedical importance of chromosomes, nucleosomes, DNA organization, DNA replication, RNA synthesis and regulation of gene expression. Development of organs & systems and common teratogens. Body fluid compartments & measurements, electrolyte balance, acid base balance, composition & functions of blood, plasma protein synthesis & functions, structure & functions of RBC, WBC, Platelets. Blood groups, lymph composition & functions.

UNIT – II

Cardiac cycle, heart sounds, electrocardiogram, arterial blood pressure measurement. Regulation of respiration, pulmonary function tests. General principles of gastrointestinal function, gastrointestinal hormones, digestion and absorption. Regulation of body temperature. Nerve structure and properties, conduction of impulses. Spermatogenesis, ovarian cycle, endometrial cycle, puberty & menopause. Physiology of pregnancy, parturition & lactation. Mechanism of urine formation, endocrine functions of kidney.

UNIT – III

Metabolism of carbohydrates, lipids & proteins. Metabolic functions of vitamins & vitamin deficiency. Metabolism of calcium, phosphorous, magnesium, iron, iodine & copper. Acid base regulation. Response to cell injury, disorders of metabolism & homeostasis, ischemia, infarction & shock, immunology & immune pathology, inflammation & repair, carcinogenesis & neoplasia, ageing & death. Hemorrhagic disorders. Use of blood and blood products, benefits and risk of blood transfusion, blood banking.

UNIT – IV

Drug absorption & routes of administration of drugs, bioavailability, therapeutic index, rational use of drugs, drug–drug interaction, drug resistance, gene therapy, clinical trials, critical evaluation of drug promotional literature and pharmaco-economic. Immunity, natural defense mechanism, acquired immunity, antigen, antibodies, their formation and reactions, hypersensitivity, auto immunity, transplantation and tumor immunology. General properties of bacteria, viruses and fungi.

UNIT – V

Epidemiology and sociological factors of infections, common tropical infections. Congestive cardiac failure, cardiac arrhythmias, rheumatic heart disease, coronary heart disease, hypertension and vascular disorders, diseases of myocardium and pericardium, congenital heart disease. Acute respiratory infections and chronic respiratory infections, tuberculosis, bronchial asthma, restrictive lung disorders, suppurative lung diseases, lung tumors, lung cancer occupational lung disorders.

UNIT – VI

Acid peptic disease, malabsorption syndrome, intestinal infections, inflammatory bowel diseases, viral hepatitis, chronic liver disorder, hepatic failure, portal hypertension, and pancreatic disorders. Acute and chronic renal failure, disorders, nephritic syndrome, urinary tract infections, dialysis, renal transplantation. Diabetes mellitus, dyslipidemias, pituitary disorders, thyroid disorders, diseases of the parathyroid and calcium metabolism, adrenal disorders. Anemia, leukemia, lymphomas, platelet disorders and coagulation disorders.

UNIT – VII

Stroke syndrome, movement disorders, cerebellar disorders, seizure disorders, diseases of spinal cord, nervous system infections, muscular dystrophies and disorders of sleep. Oncogenes, tumor markers, pain management, breast cancer, other common cancers in India, cancer prevention. Cancer screening, palliative care. Common psychiatric diseases, Classification of mental illness, delirium, schizophrenia, mood disorders, neurotic disorders, psychosomatic disorders, psychotherapy.

UNIT – VIII

Birth injuries, birth asphyxia, prematurity, low birth weight, neonatal sepsis. Growth & development normal and abnormal, growth monitoring, growth chart, infant feeding, baby friendly hospital, immunization, immunization schedule, protein energy malnutrition, failure to thrive. Common infectious diseases in children, upper respiratory infections, helminthiasis, malaria, typhoid, dengue and other viral hemorrhagic fevers, convulsive disorders. Psychological problems in children.

UNIT – IX

Structure and functions of skin, eczema, scabies, pediculosis, bacterial infections of skin, mycotic infections of skin, viral infections of skin, tuberculosis of skin, urticaria, connective tissue disorders. Healing and management of wounds, wound infection, infection and injuries of hand and feet, head injuries. Acute & chronic infections of bone & joints, acute osteomyelitis & chronic osteomyelitis, chronic infections of spine, tuberculosis of hip, knee, spine. Tumors involving musculosystem. Osteoarthritis & rheumatoid arthritis.

UNIT – X

Diseases of conjunctiva, diseases of cornea and prevention of corneal morbidity, blindness and eye banking, diseases of lens and its management, medical retinal problems and its management, glaucoma, ocular injuries and its prevention & management, community ophthalmology and prevention of blindness. Acute and chronic otitis media, complications of CSOM, non-suppurative otitis media, deafness & hearing test, vertigo, epistaxis, sinusitis, strider, tracheostomy.

UNIT – XI

Antenatal care, ante partum hemorrhage, pregnancy induced hypertension, preeclampsia, eclampsia, anemia complicating pregnancy, obstructed labor, intrauterine growth retardation, perinatal mortality. Postnatal care, maternal mortality and morbidity. Menstrual disorders, puberty, adolescence, sex hormones, benign lesions of female genital tract, methods of detection of genital

tract malignancies. Temporary and permanent methods of contraception and family planning.

UNIT – XII

Epidemiology of communicable diseases and prevention & control, modes of transmission of diseases, disinfection, levels of prevention and modes of intervention of diseases, epidemiology of non-communicable diseases and prevention & control, concept of screening for disease and screening tests, occupational hazards, ESI, social security, principles of communication and health education, primary health care, universal health coverage, health care delivery, National health programs, fertility rates, demography & family planning, environment & health.

REFERENCES:

1. Davidson's Principles and Practice of Medicine. 23rd Edition
2. Guyton & Hall Textbook of Medical Physiology 13th Edition
3. Harper's Biochemistry 30th Edition
4. Pharmacology by Rang & Dale 8th Edition
5. Textbook of Microbiology by Ananthanarayanan & Jeyaram Panicker 8th Edition
6. Achar's textbook of Pediatrics 4th Edition
7. Clinical Obstetrics by Mudaliar & Menon's 12th Edition
8. Park's Textbook of Preventive and Social Medicine by K Park 21st Edition
9. Parson's Diseases of the Eye 22nd Edition
10. Textbook of Ear, Nose & Throat Diseases by Mohd. Maqbool 11th Edition

SYLLABUS FOR Ph.D. ENTRANCE EXAMINATION
Section – B
(FACULTY OF DENTISTRY)

UNIT – I

(A) Cranial nerves - III, IV, V, VI, VII, IX, XII in detail., Parotid gland. Temporo mandibular joint, muscles of mastication, infratemporal fossa, pterygo - palatine fossa. submandibular region. Walls of the nasal cavity, paranasal air sinuses, Palate. Oral cavity, Tongue. Osteology , The Cell: Basic tissues - Epithelium, Connective tissue including cartilage and bone, Muscle Tissue, Nervous tissue, Medical Genetics: Mitosis, meiosis, Chromosomes, gene structure, Mendelism, modes of inheritance.

(B) Homeostasis, Composition & functions of blood, Body temperature, Functions of skin, General endocrinology - Enumeration of endocrine glands & hormones, Cardio vascular system, Digestive system.

UNIT – II

Carbohydrates- Lipids: Aminoacids: Classification., Introduction to peptides. Proteins: Simple and conjugated; globular and fibrous. Outlines of glycolysis, pyruvate oxidation and citric acid cycle. Introduction to glycogenesis, glycogenolysis, fatty acid synthesis, lipogenesis and lipolysis., Gluconeogenesis. Enzymes: Definition, classification, specificity and active site, Cofactors. Collagen and elastin, Glycosaminoglycans, Bone structure, Membranes.

UNIT – III

Human dentition, types of teeth, & functions, Palmer's & binomial notation systems. Epithelial mesenchymal interaction, detailed study of different stages of development of crown, root & supporting tissues of tooth & detailed study of formation of calcified tissues. Detailed microscopic study of Enamel, dentine, Cementum & Pulp tissue. Age changes. Detailed microscopic study of Periodontal ligament & alveolar bone, Detailed microscopic study of Oral Mucosa, Salivary Glands: TM Joint : Maxillary Sinus: Saliva: Calcium, Phosphorous & fluoride metabolism: Physiology of Taste.

UNIT – IV

(A) Cell Injury & change, Cell death & Necrosis, Inflammation, Healing, Ischaemia and infarction Derangements of body fluids, Disorders of circulation, Cancer, Anaemias & leukaemias, Common diseases of Bones, Haemorrhagic Disorders.

(B) Morphology and, Physiology of bacteria. Detail, account of Sterilisation and Disinfection. Brief account of Culture media and Culture techniques. Basic knowledge of selection, collection, transport, processing of clinical Specimens and identification of bacteria. Bacterial Genetics and Drug Resistance in bacteria. Infection - Definition, Classification, Source, Mode of transmission and types of Infectious disease. Immunity, Structure and functions of Immune system. The Complement System, Immune response, Immuno deficiency disorders - a brief knowledge of various types of immunodeficiency disorders , Autoimmune disorders.

(C') Pyogenic cocci - Staphylococcus, Streptococcus, Pneumococcus, Gonococcus, Meningococcus

Corynebacterium diphtheriae, Mycobacteria - Tuberculosis and Leprosy, Clostridium - Gas gangrene, food poisoning and tetanus, Non-sporing Anaerobes, Spirochaetes - Treponema pallidum - detailed account of Oral Lesions of syphilis, Borrelia vincentii, Actinomycetes, Herpes Virus, Hepatitis B Virus - brief about other types, Human Immunodeficiency Virus (HIV), Candidiasis - in detail. Brief introduction - protozoans and helminths.

UNIT – V

General principles of pharmacology; pharmacokinetics, CNS drugs, Autonomic drugs; Cardiovascular drugs, Gastrointestinal tract drugs, hormones, chemotherapy - Implications of these drugs in clinical dentistry, Autocoids: Histamine, antihistamines, prostaglandins, leukotriens, Drugs acting on blood: coagulants and anticoagulants, hematinics, Implications of these drugs in clinical dentistry.

Vitamins: water soluble vitamins, Vit D, Vit K. and Vit E, Implications, of Vitamins in clinical dentistry.

Anti-septics, astringents, obtundents, mummifying agents, bleaching agents, styptics, disclosing agents, dentifrices, mouth washes, caries and fluorides.

UNIT – VI

A bird's eye view of the different pathological processes involving the oral cavity & oral cavity involvement in systemic diseases, Developmental disturbances of teeth, jaws and soft tissues of oral & paraoral region, Microbial infections of oral soft tissues: Common non-inflammatory diseases involving the jaws. Cysts of the Oral & Para oral region: Tumours of the Oral Cavity.

Traumatic, Reactive & Regressive lesions of Oral Cavity: Non neoplastic Salivary Gland Diseases: Systemic Diseases involving Oral cavity: Mucocutaneous Lesions : Diseases of the Nerves: Pigmentation of Oral & Paraoral region & Discolouration of teeth.

UNIT – VII

Dental caries: Treatment Planning For Operative Dentistry: gnathological Concepts Of Restoration: Physiology of occlusal rehabilitation and restoration. Amalgam Restoration: Pulp Protection: Anterior Restoration; Direct Filling Gold Restorations: Hyper Sensitive Dental And Its Management. Cast Restorations, Vitality tests, Diagnosis and Treatment Planning and Preparation of Case Sheet. Dental porcelain, Aesthetic Dentistry, Endodontics.

UNIT – VIII

Principles of infection control and cross-infection control, Principles of Oral Surgery, Asepsis: Sterilization of instruments, Local anaesthesia General anaesthesia Exodontia: Diseases of the maxillary sinus, Disorders of T.M.Joint, Infections of the Oral cavity Benign cystic lesions of the jaws, Tumours of the Oral cavity, Fractures of the jaws, Salivary gland diseases, Jaw deformities, Oral Implantology.

UNIT – IX

Teeth: Development abnormalities, causes of destruction of teeth and their sequelae and discoloration of teeth. Disease of bone and Osteodystrophies, Common cysts of soft tissue & bone, Tumours Infections of oral and paraoral structures: Bacterial: Fungal; Candida albicans Virus:

Important common mucosal lesions, Cervico-facial lymphadenopathy.

Facial pain: Altered sensations: Cacogeusia, halitosis. Tongue in local and systemic disorders: Oral manifestations of systemic diseases, Disease of salivary glands: Dermatological diseases with oral manifestations: Allergy:

Foci of oral infection and their ill effects on general health Management of dental problems in medically compromised persons, Precancerous lesions , Nerve and muscle diseases: Therapeutics: Gene , Drugs commonly used in oral medicine, Physics of radiation: Biological effects of radiation.

UNIT – X

Growth and Development, Morphologic Development of Craniofacial Structures, Functional Development of Dental Arches and Occlusion, Clinical Application of Growth and Development Malocclusion-In General, Classification of Malocclusion Normal and Abnormal Function o, Stomatognathic System , Etiology of Malocclusion, Diagnosis and Diagnostic Aids, Removable orthodontic appliances, Fixed orthodontic appliances, Extraoral appliances, Myofunctional appliances.

UNIT – XI

Development of periodontal tissues-anatomy, histology, Defensive mechanisms in the oral cavity Age changes in periodontal structures, Classification of periodontal diseases, Gingival disease, Epidemiology of periodontal disease, Periodontitis 8. Periodontal Therapy, Implants, Maintenance phase, Periodontal management of medically compromised patients Systemic effect of periodontal disease in brief.

UNIT – XII

Complete Dentures, Removable partial denture, Fixed Partial Dentures, Implants.

UNIT – XIII

Introduction to pedodontics & preventive dentistry, Growth & development, Development of occlusion from birth through adolescence, Dental anatomy and histology, Dental radiology related to pedodontics. Oral surgical procedures in children, Dental caries, Gingival & periodontal diseases in children. Child psychology, Behaviour management, Pediatric operative dentistry, Traumatic injuries in children, Preventive & interceptive orthodontics, Oral habits in children :Dental care of children with special needs: Congenital abnormalities in children: Dental emergencies in children & their management

Dental materials used in pediatric dentistry. Preventive dentistry, Dental health education & school dental health programmes. Fluorides:

REFERENCES:

1. RJ LAST'S Anatomy – Mc Minn
2. Guyton; Text book of Physiology, 9th edition.
3. Harper's Biochemistry, R.K. Murray et al.
4. Philips Science of Dental Materials
5. Robbin's Text Book Of Pathology -Kumar
6. Text book of Microbiology - R.Ananthanarayan&C.K.JayaramPaniker
7. Tripathi K.D., Essentials of Medical Pharmacology
8. Orban's Oral Histology & Embryology - S.N.Bhaskar
9. Glickman's Clinical Periodontology – Carranza
10. Davidson's Text book of Medicine
11. Bailey & Love - General surgery
12. Burkitt –Oral medicine
13. White & Pharaoh- Radiology
14. A Text Book of Oral Pathology - Shafer, Hine & Levy.
15. Contemporary orthodontics William R. Proffit
16. Textbook of Pedodontics- ShobhaTandon
17. Boucher's "Prosthodontic treatment for edentulous patients
18. Principles of Oral and Maxillofacial surgery; vol.1,,2, 3 Peterson LJ et al
19. Text book of Endodontics by Gross man
20. Text book of Operative dentistry by Sturdevant
21. Text book of Community Dentistry by Soben Peter

SYLLABUS FOR Ph.D. ENTRANCE EXAMINATION
Section – B
(FACULTY OF NURSING)

UNIT – I

Nursing Management of patients with respiratory and cardiovascular problems: Acute and chronic infections, Asthma, Chronic Obstructive Pulmonary Diseases, Bronchiectasis, Pneumonia, Tumors – Larynx and lung. Hypertension, Arteriosclerosis, Coronary artery diseases: Angina pectoris, Myocardial infarction, Endocarditis, pericarditis, Myocarditis, Valvular disorders, congenital disorders, Cardiac dysrhythmias, Congestive cardiac failure

UNIT - II

Nursing Management of patients with digestive system problems: Peptic and Duodenal ulcer, pyloric stenosis, Small and large intestinal disorders-inflammation and infection, enteritis, mal-absorption, obstruction, and perforation, Hernias, Liver: inflammation, abscess, cirrhosis, portal hypertension, hepatic failure, pancreatitis.

UNIT - III

Nursing Management of patients with Genito-urinary problems: Urinary tract infections Nephritis, Nephrotic syndrome, Renal calculus, Acute and chronic renal failure, Dialysis, renal transplantation, Benign prostate hypertrophy, Tumours - Renal, Bladder, Prostate.

UNIT - IV

Nursing Management of patient with disorders of endocrine system: Thyroid and Parathyroid Disorders, Diabetes mellitus, Adrenal disorders, Pituitary disorders.

UNIT - V

Nursing Management of patient with musculoskeletal problems: Bones-inflammation, infection, dislocation, fracture, Osteomalacia and osteoporosis, Arthritis, Amputation, Prosthesis.

UNIT - VI

Nursing management of patient with neurological disorders: Congenital malformations, Head injuries, Spinal injuries, Brain Tumors, Cerebro Vascular Accidents (CVA), Management of unconscious patients, Rehabilitation.

UNIT - VII

Nursing management of patient with disorders of reproductive system: Menstrual disorders, Pelvic Inflammatory Disease, Endometriosis, polyps, Tumours - Cervix, Ovary, Uterus and breast, Fibroids, uterine displacement, Cystocele, Urethrocele, Rectocele, Vaginal disorders; Infections, Fistulas, Diseases of breasts; Deformities.

UNIT - VIII

Nursing management of patient in critical care units, Nursing management of critically ill patient,

CPR –Advance Cardiac Life support, Treatments and procedures.

UNIT - IX

Nursing care of a normal neonate, Neonatal resuscitation, Low birth weight baby, Respiratory disorders and infections, Gastrointestinal infections, congenital disorders, Cardio vascular problem: congenital defects, rheumatic fever, rheumatic heart disease, Genito-urinary disorders: acute glomerulo nephritis, Nephrotic syndrome, hydrocephalus, spina-bifida.

UNIT- X

Nursing management of patient with Schizophrenia, Mood disorders: Bipolar affective disorder, Mania depression and dysthymia: neurotic, stress related and somatization disorders: Anxiety disorder, Phobias, Dissociation and conversion disorder.

UNIT – XI

Assessment and nursing management of normal pregnancy, labour and puerperium, High risk pregnancy :abortion, ectopic Pregnancy, Ante-partum haemorrhage, Intra-uterine growth-retardation, obstructed labour, postpartum complications.

Recommended books:

1. Perry, A.G., & Potter, P.A. (2017). *Fundamentals of nursing* (9th ed.). Philadelphia: Elsevier.
2. Hinkle, L. J., & Cheever, H. K. (2015). *Brunner and Suddarth's textbook of medical surgical nursing* (13th ed.). Philadelphia: Wolters Kluwer Health/ Lippincott, Williams, & Wilkins
3. Park, K. (2015). *Park's textbook of social and preventive medicine* (23rd ed.). Jabalpur: Bhanarsidas, Bhanot publishers
4. Hockenberry, M. J., & Wilson, D. (2013). *Wong's essentials of pediatric nursing* (9th ed.). St. Louis: Elsevier.
5. Townsend, M.C. (2014). *Psychiatric mental health nursing: Concepts of care in evidenced- based practice* (7th ed.). Philadelphia: F.A Davis Company
6. Dutta, D. C., & Konar, H. (2016, Reprint). *Text book of Obstetrics: Including perinatology and contraception* (8th ed.). Calcutta, India: New Central Book Agency

Reference books:

1. Taylor, C.R. ,Lillis, C., & Lemone, P. (2010). *Fundamentals of nursing: The arts and science of nursing care* (7th ed.). Philadelphia: Lippincott Williams & Wilkins
2. Lewis, L. S., Dirksen, R. S., Heitkemper, M. M., & Bucher, L. (2014). *Medical surgical nursing: Assessment and management of clinical practice* (9th ed.). Philadelphia: Elsevier
3. Bennett V Ruth, Brown Linda K.(2014.). *Myles Text Book for Midwifery*. (16th ed). Hongkong:Churchill Livingstone
4. Sreevani, R. (2016). *A guide to mental health and psychiatric nursing* (4th ed.). New Delhi : Jaypee
5. Perry, Anne griffin, Potter Patricia. (2013). *Clinical Nursing skills and Techniques*. (8th ed). St. Louis: C.V. Louis
6. Reeder, S. J., Martin, L. L., & Koniak, D. (2014). *Maternity nursing: Family, newborn, and women's health care* (19th ed.). Philadelphia: Lippincott.

SYLLABUS FOR Ph.D. ENTRANCE EXAMINATION
Section – B
(FACULTY OF PHYSIOTHERAPY)

UNIT – I

Gross anatomy and functional anatomy: Cardiovascular system, respiratory system, central and peripheral nervous system, musculoskeletal system.

UNIT - II

Physiology and applied physiology of: Cardiorespiratory system, central and peripheral nervous system, special senses, muscles and blood.

UNIT - III

Physical agents: Low frequency currents – types of low frequency currents used for therapeutic purposes including electrodiagnostic, Medium frequency currents, High frequency Modalities - ultrasound, wax bath, infrared radiations, ultraviolet radiations, shortwave diathermy, microwave diathermy, LASER, cryotherapy.

UNIT – IV

Therapeutic exercises and massage: Basics of mechanics of human body, types of movements, muscle grading, types of strengthening exercises, exercises for joint mobility, suspension therapy, hydrotherapy, crutch walking, types of massage manipulations including physiological effects and limitations.

UNIT – V

Biomechanics and pathomechanics of: Spine, TM joint, upper extremity, lower extremity, posture, gait, respiration.

UNIT – VI

Physiotherapy in neurological conditions: Principles of assessment and treatment for motor system, sensory system, higher mental functions, perception in central nervous system pathologies, peripheral nervous system pathologies and myopathies. Concepts: motor relearning program, bobath approach, brunnstrome approach, proprioceptive neuromuscular facilitation, roods approach and neurodevelopmental therapy.

UNIT - VII

Physiotherapy in orthopaedic conditions: Principles of assessment and treatment in fractures, soft tissue injuries, post operative conditions including joint replacements, joint and spinal pathologies. Concepts: Cyriax, Mackenzie and Maitland

UNIT - VIII

Physiotherapy in cardiopulmonary conditions: Principles of assessment and treatment in cardiac rehabilitation and pulmonary rehabilitation, stress testing and exercise prescription, Principles of assessment and treatment in intensive care unit setting and post operative conditions.

UNIT – IX

Physiotherapy in Gynecological & Obstetrical conditions: Principles of assessment and treatment in

antenatal and post natal period. Fitness in women's health.

UNIT- X

Rehabilitation medicine and community based physiotherapy: Concept of rehabilitation and team approach, disability evaluation, architectural barrier, orthotics and prosthetic services.

REFERENCES:

1. Biomechanical basis of human movement, Joe Hamill Publishers – Williams & Wilkins, 3rd edition.
2. Samson Wright Applied Physiology – Cyril A. Keele, Eric Neil & Normal Joels, oxford, 13th edition.
3. Sports Physiology – Mcardie, Katch & Katch , Publisher – Lea & Febiger, 4th edition.
4. Sports Physiology - Edward L.Fox – College publishing, 2nd edition.
5. Clayton's Electrotherapy – Therapy & Practice – Angela Forster, All India Traveler, book seller, 9th edition.
6. Electrotherapy Explained – John Low & Ann Reed, Butterwith Heinmann, 3rd edition.
7. Massage for therapists – Margaret Hollis, Blackwell Science Ltd, 2nd edition.
8. The Principles of Exercise therapy – M.Deena Gardiner, CBS Publications & Distributors, 4th edition.
9. Therapeutic Exercise : Foundations & Techniques – Carolyn Kisner, F.A.Davis, 5th edition.
10. Brunnstroms Clinical Kinesiology, Laura K.Myth et al, Publishers – F.A.Davis
11. Joint Structure & Function, Cynthia C.Norkin et al, Publishers – F.A.Davis, 4th edition., 5th edition.
12. DeJongs The Neurologic Examination, William W. Campbell, Wolters Kluwer, 7th edition.
13. Physical Rehabilitation , O'Sullivan, F.A.Davis company, 6th edition.
14. Electrodiagnosis in Diseases of nerve & muscle: Principles & practice, Jun Kimura, OUP USA, 4th edition.
15. Neurological Rehabilitation – Darcy Ann Umphred, Elsevier, 6th edition.
16. Paediatric Neurological Physiotherapy – Suzan Campbell, Elsevier, 4th edition.
17. Essentials of Orthopaedic Physical Assessment, David J.Maggie, Elsevier, 3rd edition.
18. Mechanical diagnosis & therapy – Robin McKenzie, 2nd edition.
19. Aspects of Manipulative therapy – Glasgow, Twomey, Churchill Livingstone, 2nd edition.
20. T.B. of Orthopaedic Medicine – James Cyriax, Bailliere Tindall, 11th edition.
21. Cardio Pulmonary Rehabilitation – Frown Felter & Dean , Mosby, 5th edition.
22. Cardio Pulmonary Rehabilitation – Irwin & Tecklin, 3rd edition.
23. Physiotherapy in Obstetrics & Gynaecology – Polden & Mantle, Jaypee Brothers, 2nd edition.
24. Women's Health – Ruth Sapsford, Lippincott, 1st edition .
25. Rehab of movement – Theoretical basis of clinical practice, Judith Pitt-Brooke, W.B.Saunders, 1st edition.

SYLLABUS FOR Ph.D. ENTRANCE EXAMINATION
Section – B
(FACULTY OF REHABILITATION)

UNIT – I: ADVANCES IN SPEECH SCIENCE

- a) Life span changes in speech mechanism including developmental milestones
- b) Physiology of Speech production: Respiratory System, Laryngeal System, Co-ordination of respiratory and laryngeal systems in phonation, Articulatory and Resonatory systems.
- c) Theories and models of speech production.
- d) Principles, instrumentation and measurement procedures.
- e) Speech Analysis and Synthesis – Techniques, limitations and applications.
- f) Analysis of infant cry.
- g) Recent trends in speech science measurement and application.

UNIT – II: PHONOLOGICAL AND MOTOR SPEECH DISORDERS

- a) Clinical phonology, theories of phonology, disorders of phonology in different clinical populations, recent developments in evaluation of phonology, treatment Practices
- b) MSD in Children - Neurophysiology and functional development of motor control, Primitive postural and oropharyngeal reflexes, associated and communication problems. Assessment and Intervention – Early communication development. Speech language therapy. Neuro developmental approaches.
- c) MSD in adults: Assessment Procedures, review of different types of dysarthria and apraxia, differential diagnosis, Prognostic issues and treatment procedures for the different types of dysarthrias.

UNIT – III: VOICE AND LARYNGECTOMY

- a) Neuroanatomy and Neurophysiology of larynx.
- b) Recent advances in measurement of voice and vocal fold function.
- c) Brief review of voice disorders in children and adults.
- d) Perceptual, acoustic, aerodynamic and physiological characteristics of pathological voices. Differential diagnosis of voice disorders.
- e) Recent advances in voice therapy and treatment outcomes.
- f) Professional voice users – Assessment and management.
- g) Review of current literature and research designs in voice disorders.
- h) Types and characteristics of laryngectomy surgery.
- i) Management of laryngectomy-Esophageal speech, tracheo esophageal speech, artificial larynx, pharyngeal and buccal speech.

UNIT – IV: FLUENCY AND ITS DISORDERS

- a) Neurophysiological and neuropsychological bases of normal fluency and stuttering.
- b) Different perspectives of stuttering.
- c) Theoretical issues in measurement of stuttering. Treatment outcomes in stuttering. Relapse, Prognosis and maintenance.
- d) Recent advances in management of stuttering.
- e) Neurogenic Stuttering
- f) Cluttering – relationship between cluttering and stuttering. Treatment of cluttering.

g) Review of current literature and research designs in fluency disorders.

UNIT – V: CHILDHOOD LANGUAGE DISORDERS AND ADULT LANGUAGE DISORDERS.

a) Language development in exceptional circumstances: extreme deprivation, bilingual language exposure, twins, visual handicap, Williams syndrome (disassociation between language and cognitive functions), Hearing loss, Dyspraxia, Learning disabilities, Dysphasia, Acquired childhood aphasia.

b) Assessment and management of developmental language disorders. Specific assessment and intervention approaches.

c) Counseling, – principles of counseling – types of counseling – individual, group and family, parental, vocational, educational, and rehabilitative – behavioral counseling in the context of speech, language disorders.

d) Assessment and Diagnosis in Neuro language disorders. Advances in aphasia rehabilitation, Assessment of treatment efficacy in aphasia. Right hemisphere brain damage, Dementia, Traumatic Brain Injuries, Primary Progressive aphasia, Sub-cortical aphasias and Schizophasia. Alternative and Augmentative Communication for the language disordered.

UNIT – VI: AUDITORY PHYSIOLOGY

a) Anatomy and physiology of ear: External ear, Middle ear, Inner ear

b) Anatomy and physiology of Afferent Auditory Pathway : Auditory nerve, Central auditory pathways, Auditory cortex

c) Theories of hearing

d) Anatomy and physiology Efferent pathways

e) Vestibular system - anatomy & physiology

UNIT – VII: PSYCHOPHYSICS OF AUDITION

a) Psychoacoustics – review

b) Theory of signal detection

c) Loudness

d) Pitch

e) Differential sensitivity for frequency and intensity and time

f) Perception of quality/timbre and complex tones

g) Masking and critical band concept

h) Adaptation

i) Temporal perception

j) Binaural hearing

UNIT – VIII: SPEECH PERCEPTION AND ITS DISORDERS

a) Introduction to speech perception, Acoustics of speech in relation to production. Coding of speech in the auditory pathway.

b) Theories of speech perception

c) Methods used to study speech perception

d) A) Perception of vowels and consonants in infants and adults

B) Effects of co-articulation on speech perception

e) Perception of speech through the visual and tactile modes and through cochlear implants

f) Dichotic listening

- g) Memory and speech perception
- h) Speech intelligibility
- i) Perception of speech in the hard of hearing
- j) Information processing skills
- k) Word recognition, Sentence comprehension, Processing of phonological morphological, syntactic, semantic and pragmatic aspects of language

UNIT – IX: DIAGNOSTIC AUDIOLOGY

- a) Hearing screening: cost benefit analysis, sensitivity vs specificity, efforts of who and govt of india, genetic counseling, public awareness programs.
- b) Oaes and immittance.
- c) Classification, generators and general principle in recording of auditory evoked potentials.
- d) Factors affecting recording and interpretation of early responses, middle latency response, long latency response, endogenous potentials.
- e) ASSR: introduction , factors affecting recording and interpretation of steady state evoked responses.
- f) Correlation of audiological finding to histopathological findings in conductive hearing loss, genetic hearing loss, cochlear pathology and retro-cochlear pathology
- g) Assessment of auditory disorders in the special population such as deaf-blind, MR, autism, cerebral palsy, patients with hyperacusis.
- h) Non audiological tests, x – rays, pet, mri, ct scan, other tests, lab tests for differential of auditory disorders.
- i) Assessment of auditory processing disorders.
- j) Evaluation of patients with vestibular problems

UNIT- X: REHABILITATIVE AUDIOLOGY

- a) Fundamentals of digital signal processing and communication system
- b) Advances in technology of hearing aids
- c) Evaluation of hearing aids
- d) Selection of special features in hearing aids with reference to specific clients
- e) Tinnitus maskers and their utility
- f) Aids
- g) Cochlear implants, middle ear implants and brainstem implants, and Bone anchored hearing aids (BAHA)
- h) Educational Audiology
- i) Special needs for rehabilitation of Children and Geriatrics.
- j) Tinnitus management
- k) Hair cell regeneration, gene therapy for hearing loss
- l) Management of CAPD cases: Choice of management based on audiological test results, Environmental modifications, Devices, Auditory perceptual training, Communications strategies, Cognitive \ language management, Measuring outcomes
- m) Sign language methods and types, Rehabilitative assessment of persons with hearing

impairment, Hearing inventories, scales etc.

UNIT- XI: AUDITORY PHYSIOLOGY

External ear: Anatomy & Physiology, age related changes and its application, Middle ear: Anatomy & Physiology, impedance concept and its application, Cochlea: Anatomy and Physiology, theories of hearing, Auditory nerve and Vestibular system: anatomy and physiology, Anatomy of other cranial nerve, Central auditory pathway: anatomy and physiology of brainstem, subcortical and cortical auditory areas.

UNIT- XII: BASICS IN AUDITORY PERCEPTION

Loudness: MAP and MAF, measurement and factors affecting, Pitch: theories, measurement and factors affecting, Temporal processing: measurement and factors affecting, Object perception: auditory pattern perception, Masking: Types, physiology and application

UNIT- XIII: BASICS IN AUDITORY PERCEPTION

Loudness perception in auditory disorders: adaptation, fatigue and recruitment, Pitch perception in auditory disorders: Temporal perception auditory disorders, Binaural Hearing: Localization and lateralization, physiology and factors affecting binaural hearing, Perception of music: scales, notes and factors affecting music perception

UNIT- XIV: IMPLANTABLE DEVICES FOR INDIVIDUALS WITH HEARING IMPAIRMENT

Bone anchored hearing aids (BAHA) and middle ear implants: instrumentation, candidacy and benefit, Cochlear implants: design and features, candidacy, factors affecting benefit, Psychophysics of cochlear implants. Habilitation of individuals with cochlear implants: adults and children, Brainstem implant and mid brain implants: design and features, candidacy, factors affecting benefit

UNIT- XV: PHYSIOLOGICAL ASSESSMENT OF THE AUDITORY SYSTEM

Tympanometry and reflexometry: Principle, instrumentation, procedure, Application of Immitance: tympanometry and reflexometry, Non Audiological tests: MRI, fMRI, MEG, X-Ray, CT, PET, SPECT, lab tests,. Oto acoustic emissions – classification, generation and instrumentation, Oto acoustic emissions – Clinical application

UNIT- XVI: SPEECH PERCEPTION

Theories of speech perception: Perception of vowels and consonants: cues for perception, relation between production and perception cues, role of co articulation, Dichotic listening: Factors affecting and application. Memory and speech perception, Infant speech perception

UNIT- XVII: ELECTROPHYSIOLOGICAL ASSESSMENT OF THE AUDITORY SYSTEM

Classification, instrumentation, methods of analysis & generators of auditory evoked potentials: Early and middle latency potentials: factors affecting recording and interpretation; application, Late latency potentials: factors affecting recording and interpretation; application, Steady state evoked potentials: factors affecting recording and interpretation; application, Vestibular assessment: factors affecting recording and interpretation; application.

UNIT- XVIII: REHABILITATIVE AUDIOLOGY

Digital technology in hearing instruments: design and features, electro acoustic performance, Hearing device selection procedures: subjective and objective techniques, Assessment and

Management of individuals with special listening needs: Individuals with deaf blindness, MR, autism, cerebral palsy, LD, multiple disability, Tinnitus and Hyperacusis: Theories, assessment and management, Audiology in practice: National and international standards, acts and legislations, medico legal aspects

UNIT- XIX: CENTRAL AUDITORY PROCESSING DISORDERS

Theoretical basis and classification of (C)APD, Behavioral tests in the assessment of (C)APD: Screening and diagnostic tests for children and adults, Objective test in the assessment of (C)APD: Screening and diagnostic tests for children and adults , Management of (C)APD: Deficit based strategies and management, Factors affecting assessment and management of (C)APD

UNIT- XX: SPEECH PERCEPTION IN CLINICAL POPULATION

Perception of vowels, consonants, coarticulation and suprasegmentals in individuals with different degrees, types and audiogram configuration, Perception of speech through other modalities: segmental and supra segmental perception through visual and tactile modalities, Speech perception in cochlear implantees: Factors affecting perception, Speech intelligibility: subjective and objective methods and factors influencing, Speech perception in adverse listening condition: affect of noise reverberation

SYLLABUS FOR Ph.D. ENTRANCE EXAMINATION
Section – B
(FACULTY OF JOURNALISM & MASS COMMUNICATION)

UNIT – I

Communication Theory : Communication and Journalism -Basic terms, Concept and definition, types and process – Process, Types and functions of Communication – Communication models: SMCR, Shannon and Weaver, Laswell's, Osgood's, Schramm's New Comb's, Convergent Model, Gate-keeping Model – Media Systems & Theories of Mass Communication: Authoritarian, Libertarian, Social-responsibility, Development Media Theory; Normative theories of press – Mass communication in India-Reach, access and nature of audience.

UNIT – II

Media and Society : Role of media in society – Basic roles and responsibilities of newspapers, magazines, photography, radio, television, cinema and digital media Demographic and sociological impact of media; Impact of media on specific audience-Women, children etc. Mass campaigns for specific issues-Social concerns, environment, human rights, gender equality, etc.

UNIT – III

Media Laws and Ethics: Freedom of Expression and Speech: Freedom of media under Indian Constitution – Restrictions on the freedom of speech and expression; – Laws of Defamation – Media laws in India – Ethics in Journalism: Code of Conduct for Journalists – Press Commissions; Press Council of India.

UNIT – IV

History of Media: History of Print and Broadcast media with particular reference to India – Post -independent development in print media: Newspapers and Magazines – History of Television in India, History of News coming on Television with Special reference to India, SITE, phase and evaluation, Expansion of television – Radio Broadcasting in India – Cinema-Historical overview and contemporary analysis-Commercial , parallel and documentary genres-Problems and Prospects for the films industry – Digital Revolution and Global media

UNIT – V

Development Communication: Meaning; Strategies, Models – Role of Communication in Development; Role of mass media as a tool in Development – Community based Media – Dominant Paradigm: Its critique. Alternate paradigms of development. – Information needs in rural settings: Critical Analysis of different media channels regarding development issues – Developmental and rural extension agencies: governmental, semi-governmental, nongovernmental organizations.

UNIT – VI

News Reporting: News- Meaning, Elements, News Values – News Writing: Inverted Pyramid News Writing Style – Conflicts related to media coverage and representation – News Agencies – Specialized areas of Journalism – India's position and approach to international communication issues.

UNIT – VII

Radio and Television: Characteristics of radio, television and Internet as medium of communication – Grammar of TV and Radio and Video – The production team: Role of Producer – The Visual language: Camera Movement – Different types of programmes on Radio and Television – Format for Radio Television-News Sitcoms, Features, Commercial, Operas, Documentation, Cinema, Theatre, Drama.

UNIT – VIII

Advertising & Public Relations: Marketing; Models of Advertising – Advertising's role in society and Social Responsibility – Advertising Agencies-structure and function of different departments – Code of ethics for advertising: Mass media laws concerning advertising — apex bodies in advertising AAAI, ASCI etc. – Public Relations: Evolution and Function – PR in relation to marketing, advertising, publicity, propaganda – Stages of PR: Planning, research, implementation, evaluation, PR campaigns.

SYLLABUS FOR Ph.D. ENTRANCE EXAMINATION

Section – B (FACULTY OF LAW)

UNIT – I: JURISPRUDENCE

1. Nature and sources of law
2. Schools of jurisprudence
3. Law and morality
4. Concept of rights and duties
5. Legal personality
6. Concepts of property, ownership and possession
7. Concept of liability
8. Law, poverty and development
9. Global justice
10. Modernism and post-modernism

UNIT – II: CONSTITUTIONAL AND ADMINISTRATIVE LAW

1. Preamble, fundamental rights and duties, directive principles of state policy.
2. Union and State executive and their interrelationship
3. Union and State legislature and distribution of legislative powers
4. Judiciary
5. Emergency provisions
6. Temporary, transitional and special provisions in respect of certain states
7. Election Commission of India
8. Nature, scope and importance of administrative law
9. Principle of natural justice
10. Judicial review of administrative actions – Grounds.

UNIT – III: PUBLIC INTERNATIONAL LAW AND IHL

1. International law – Definition, nature and basis
2. Sources of International law
3. Recognition of states and governments
4. Nationality, immigrants, refugees and internally displaced persons (IDPs)
5. Extradition and asylum
6. United Nations and its organs
7. Settlement of international disputes
8. World Trade Organization (WTO)
9. International humanitarian law (IHL) - Conventions and protocols
10. Implementation of IHL - Challenges

UNIT – IV: LAW OF CRIMES

1. General principles of criminal liability – *Actus reus* and *mens rea*, individual and group liability and constructive liability

2. Stages of crime and inchoate crimes - Abetment, criminal conspiracy and attempt
3. General exceptions
4. Offences against human body
5. Offences against state and terrorism
6. Offences against property
7. Offences against women and children
8. Drug trafficking and counterfeiting
9. Offences against public tranquility
10. Theories and kinds of punishments, compensation to the victims of crime

UNIT – V: LAW OF TORTS AND CONSUMER PROTECTION

1. Nature and definition of tort
2. General principles of tortious liability
3. General defenses
4. Specific torts – Negligence, nuisance, trespass and defamation
5. Remoteness of damages
6. Strict and absolute liability
7. Tortious liability of the State
8. The Consumer Protection Act 1986 - Definitions, consumer rights and redressal mechanism
9. The Motor Vehicles Act, 1988 - No fault liability, third party insurance and claims tribunal
10. The Competition Act, 2002 - Prohibition of certain agreements, abuse of dominant position and regulation of combinations

UNIT – VI: COMMERCIAL LAW

1. Essential elements of contract and e-contract
2. Breach of contract, frustration of contract, void and voidable agreements
3. Standard form of contract and quasi-contract
4. Specific contracts - Bailment, pledge, indemnity, guarantee and agency
5. Sale of Goods Act, 1930
6. Partnership and limited liability partnership
7. Negotiable Instruments Act, 1881
8. Company law – Incorporation of a company, prospectus, shares and debentures
9. Company law – Directors and meetings
10. Corporate social responsibility

UNIT-VII: FAMILY LAW

1. Sources and schools
2. Marriage and dissolution of marriage
3. Matrimonial remedies - Divorce and theories of divorce
4. Changing dimensions of institution of marriage – *Live-in* relationship
5. Recognition of foreign decrees in India on marriage and divorce
6. Maintenance, dower and *stridhan*
7. Adoption, guardianship and acknowledgement
8. Succession and inheritance

9. Will, gift and *wakf*

10. Uniform Civil Code

UNIT –VIII: ENVIRONMENT AND HUMAN RIGHTS LAW

1. Meaning and concept of ‘environment’ and ‘environmental pollution’

2. International environmental law and UN Conferences

3. Constitutional and legal framework for protection of environment in India

4. Environmental Impact Assessment and control of hazardous waste in India

5. National Green Tribunal

6. Concept and development of human rights

7. Universalism and cultural relativism

8. International Bill of Rights

9. Group rights – Women, children, persons with disabilities, elderly persons, minorities and weaker sections

10. Protection and enforcement of human rights in India – National Human Rights Commission, National Commission for Minorities, National Commission for Women, National Commission for Scheduled Castes, National Commission for Schedule Tribes and National Commission for Backward Classes

UNIT – IX: INTELLECTUAL PROPERTY RIGHTS AND INFORMATION TECHNOLOGY LAW

1. Concept and meaning of intellectual property

2. Theories of intellectual property

3. International conventions pertaining to intellectual properties

4. Copyright and neighboring rights – Subject matters, limitations and exceptions, infringement and remedies

5. Law of patent – Patentability, procedure for grant of patent, limitations and exceptions, infringement and remedies

6. Law of trademark – Registration of trademarks, kinds of trademarks, infringement and passing off, remedies

7. Protection of Geographical Indications

8. Bio-diversity and Traditional Knowledge

9. Information technology law- digital signature and electronic signature, electronic governance, electronic records and duties of subscribers

10. Cybercrimes, penalties and adjudication

UNIT – X: COMPARATIVE PUBLIC LAW AND SYSTEMS OF GOVERNANCE

1. Comparative Law – Relevance, methodology, problems and concerns in Comparison

2. Forms of governments – Presidential and parliamentary, unitary and federal

3. Models of federalism – USA, Canada and India

4. Rule of Law – ‘Formal’ and ‘substantive’ versions

5. Separation of powers – India, UK, USA and France

6. Independence of judiciary, judicial activism and accountability – India, UK and USA

7. Systems of constitutional review – India, USA, Switzerland and France

8. Amendment of the Constitution – India, USA and South Africa

9. *Ombudsman* – Sweden, UK and India

10. Open Government and Right to Information - USA, UK and India

Text Books and Reference Books:

1. V.D. Mahajan, Jurisprudence and Legal Theory. Lucknow: Eastern Book Co.
2. Hart, H. L. A. The Concepts of Law. Oxford: ELBS, OUP, 1970
3. Basu, D. D. Constitutional Law of India, Nagpur: Wadhwa,
4. Jain, M. P. Indian Constitutional Law, 5th ed. Nagpur: Wadhwa & Co.
5. Takwani, C. K. Administrative Law. Lucknow: Eastern Book Co., 2019
6. Sathe, S. P. Administrative Law. LexisNexis, India, 2018
7. Durga Das Basu, Human Rights in Indian Constitutional Law along with International Human Rights Document, Lexis Nexis, Butterworths Wadhwa.
8. Oppenheim, International Law, Biblio Bazaar, LIC, 2010
9. Gaur, K. D. Criminal Law: Cases & Materials. 4th ed. New Delhi: LexisNexis Butterworths, 2019.
10. Chandrachud, Y. V. Ratanlal Dhirajlal's Indian Penal Code. 31st ed. Nagpur: Wadhwa & Co., 2017
11. Singh, Avtar: Introduction to Law of Torts, Nagpur, Lexis Nexis, 2018
12. Aggarwal, V.K.: Consumer Protection Act: Law and Practice, BLH Publisher, New Delhi, 2016.
13. Anson, Law of Contract, Oxford University Press, New York, 2016
14. Mulla, Indian Contract Act, Lexis Nexis, New Delhi, 15th Ed 2015
15. Diwan, Paras (Dr). Dr. Paras Diwan on Hindu Law, 2 nd Ed. New Delhi: Orient Publishing Co. 2018.
16. Kusum. Cases and Materials on Family Law. New Delhi: Universal Law Publishing Co., 2017
17. Shyam Diwan & Armin Rosencranz, Environmental Law and Policy in India, Oxford University Press, 2nd Edition, 2001.
18. P. Leelakrishnan, Environmental Law in India, Lexis Nexis, 3rd Edition, 2008
19. Cormish W. R. Intellectual Property, Patents, Trademarks, Copy Rights and Allied Rights (1999), Asia Law House, Hyderabad.
20. Vikas Vashishth, Law & Practice of Intellectual Property(1999) Bharat Law House, Delhi.
21. P. Narayanan, Intellectual Property Law (1999), (ed.) Eastern Law House, Calcutta.
22. S. Rajkhowa (2016) Comparative Public Law, Shubram Rajkhowa Stuti Deka